Request IR-1:

Report Tables

(a) Please provide in electronic spreadsheet format all tables and graphs with identification of the data source(s) that appear in the load forecast report and appendices, retaining all formulas and calculations.

Response IR-1:

(a) The following figures are provided in attachments and IRs as listed below:

- Figures 13-16, 49, 59, 63-65, 68, A2, C1-C6 in (Synapse IR-1) Attachment 1, filed electronically
- Figures 1-3, 42, 43, 46, 50-53, 56-58, 60 in 2022 Load Forecast Report (LFR) Attachment 04 10 year Forecast Classes, tab Graphs
- Figures 5-11, 55 in Synapse IR-4 Attachment 1
- Figures 17-19 in NSUARB IR-3 Attachment 1
- Figures 20-21 in Synapse IR-42 Attachment 2
- Figure 22, 33 in 2022 LFR Attachment 03 General Intensities, tabs Shares and Intensities
- Figure 23 in Synapse IR-7 Attachment 1
- Figure 24, 25, 31, 39 in 2022 LFR Attachment 01 Residential Intensities, tabs Intensities, Shares, HP and StructuralVars
- Figure 26-27 in Synapse IR-42 Attachment 1
- Figure 28 in NSUARB IR-16 Attachment 1
- Figure 29 in Synapse IR-10 Attachment 2
- Figure 30 in Synapse IR-11 Attachment 2
- Figure 32 in 2022 LFR Attachment 02 Small General Intensities, tab Intensity
- Figure 34 in 2022 LFR Attachment 04 10 year Forecast Classes, tab CommGrowth
- Figure 35 in Synapse IR-14 Attachment 2, tab Price

- Figure 36 in Synapse IR-15 Attachment 1
- Figure 37, 38, 40, 41 in Synapse IR-17 Attachment 1
- Figure 44 in 2022 LFR Attachment 04 10 year Forecast Classes, tab Small General
- Figure 45 in 2022 LFR Attachment 04 10 year Forecast Classes, tab General Demand
- Figure 47 in 2022 LFR Attachment 04 10 year Forecast Classes, tab Small Industrial
- Figure 48 in 2022 LFR Attachment 04 10 year Forecast Classes, tab Medium Industrial
- Figure 54 in 2022 LFR Attachment 04 10 year Forecast Classes, tab DR
- Figure 61-62 in Synapse IR-28 Attachment 2
- Figure 66-67 in Synapse IR-30 Attachment 1
- Table A1 in 2022 LFR Attachment 04 10 year Forecast Classes, tab Sector Summary
- Model data in Appendix B is provided in 2022 LFR Attachment 05-10
- Regression breakdowns in Appendix B are provided in Synapse IR-33 Attachment 1, Synapse IR-34 Attachment 1, and Synapse IR-35 Attachment 1
- Appendix D in Synapse IR-41 Attachments 1, 2 and 3

2022 LFR Synapse IR-1 Attachment 1 has been filed electronically.

Request IR-2:

Historical Sales and Energy Data (Figures 1, 3, 38, and 42-50)

(a) Please provide in electronic spreadsheet format the customer sales data by rate class since 2006, on a monthly basis.

(b) Please provide in electronic spreadsheet format historical usage and customer data for electric space-heat customers since 2006 on a monthly basis.

(c) Please provide in electronic spreadsheet format system hourly load data from January 2006 through December 2021.

(d) Please provide the magnitude of unmetered historical sales by year and by category since 2006.

Response IR-2:

(a) Please refer to Attachment 1.

(b) Please refer to Attachment 2.

(c) Please refer to Attachment 3, filed electronically.

(d) Unmetered sales can be found in Attachment 1, tab "SalesBilled", column K. In 2021 the class made up around 0.7 percent of total sales.

Year	Month	Res	Seas	ResToD	TotalRes	SmlGen	Gen
2006	1	399,915.4	22.0	9,713.2	409,650.7	23,775.8	220,577.0
2006	2	418,624.3	19.0	10,753.8	429,397.1	22,301.2	214,369.5
2006	3	402,422.0	14.5	10,845.6	413,282.1	24,578.7	214,908.1
2006	4	372,380.0	106.0	9,896.9	382,382.9	20,774.1	202,164.0
2006	5	319,291.9	14,522.2	7,683.9	341,498.1	19,404.8	186,319.9
2006	6	279,603.1	17,720.9	6,090.4	303,414.4	17,166.3	186,965.0
2006	7	258,061.7	5,715.8	4,123.9	267,901.4	17,827.9	193,871.6
2006	8	245,922.5	7,841.9	3,506.8	257,271.2	17,867.8	193,839.4
2006	9	241,839.6	6,847.7	3,556.3	252,243.5	17,423.8	188,490.4
2006	10	245,518.6	6,771.5	4,069.8	256,359.9	16,642.8	182,551.9
2006	11	272,494.4	84.0	5,776.0	278,354.4	17,075.3	187,393.9
2006	12	307,774.6	30.5	7,791.0	315,596.1	17,762.1	191,305.0
2007	1	396,049.5	29.6	11,416.9	407,496.0	23,803.8	223,504.1
2007	2	461,159.1	29.0	14,334.4	475,522.5	26,308.1	239,996.3
2007	3	447,665.2	32.4	14,992.8	462,690.5	27,121.5	228,754.5
2007	4	409,344.3	55.5	13,326.9	422,726.7	22,698.3	217,070.7
2007	5	346,699.8	15,922.8	10,672.5	373,295.1	20,953.3	198,801.7
2007	6	289,658.1	19,838.9	8,061.9	317,558.9	17,819.1	193,747.7
2007	7	259,863.4	6,401.8	5,447.8	271,713.0	17,854.5	191,360.8
2007	8	243,894.3	7,911.1	4,289.1	256,094.5	17,951.6	195,282.2
2007	9	243,721.6	6,979.2	4,189.2	254,890.0	17,472.7	190,876.3
2007	10	241,380.5	6,926.5	4,641.6	252,948.6	16,634.2	186,388.3
2007	11	284,822.9	85.8	7,239.5	292,148.2	17,648.6	199,166.1
2007	12	344,447.7	34.1	10,789.2	355,271.0	19,898.3	205,978.2
2008	1	428,896.5	30.8	15,427.4	444,354.7	25,171.2	233,460.8
2008	2	460,034.5	35.1	17,130.8	477,200.4	25,307.2	238,354.1
2008	3	430,555.7	23.8	16,308.4	446,887.9	25,136.8	218,189.0
2008	4	395,190.2	72.4	15,152.3	410,414.8	22,151.4	216,735.9
2008	5	349,267.3	16,579.1	12,180.6	378,027.0	20,631.4	199,814.0
2008	6	283,393.2	21,030.4	9,055.4	313,479.0	17,887.3	187,982.1
2008	7	246,953.9	6,019.9	5,939.9	258,913.7	16,118.2	175,540.6
2008	8	257,920.5	8,287.5	5,313.4	271,521.4	19,588.5	219,964.7
2008	9	249,268.7	7,052.9	5,000.5	261,322.0	16,793.3	192,249.5
2008	10	248,623.5	7,278.3	5,848.3	261,750.1	15,796.1	184,668.3
2008	11	281,767.4	35.8	8,605.3	290,408.5	16,764.8	192,103.3
2008	12	329,546.3	34.1	12,044.7	341,625.2	17,802.6	203,502.6
2009	1	443,461.4	32.1	18,498.6	461,992.0	25,031.1	241,449.8
2009	2	484,484.1	39.1	21,853.2	506,376.4	24,949.8	239,906.4
2009	3	443,899.7	24.1	20,802.6	464,726.3	25,341.8	221,779.4
2009	4	397,923.0	59.9	17,977.6	415,960.6	21,555.1	218,982.5
2009	5	337,403.1	17,365.6	13,666.6	368,435.4	19,784.2	191,355.8
2009	6	269,762.2	20,730.5	10,251.4	300,744.0	16,579.6	183,269.5
2009	7	256,930.8	6,121.7	7,243.5	270,295.9	17,216.0	193,600.9
2009	8	255,479.7	8,146.1	6,466.0	270,091.8	17,622.6	198,234.4
2009	9	250,079.9	7,111.7	6,047.7	263,239.3	17,361.7	188,686.8
2009	10	253,543.5	7,261.1	7,371.0	268,175.6	16,320.2	187,639.4
2009	11	298,534.5	124.4	11,207.5	309,866.4	17,390.8	195,038.5
2009	12	329,950.9	34.0	14,407.7	344,392.7	17,928.3	198,510.5
2010	1	430,208.5	34.6	20,481.1	450,724.2	24,445.9	238,996.9
2010	2	463,374.4	39.1	23,798.3	487,211.7	24,461.5	225,795.2
2010	3	421,687.8	49.8	21,303.0	443,040.6	24,150.9	222,093.6

Year	Month	Res	Seas	ResToD	TotalRes	SmlGen	Gen
2010	4	383,588.5	47.3	18,926.8	402,562.6	21,062.7	222,176.5
2010	5	321,395.3	17,073.4	14,291.7	352,760.3	19,108.8	186,755.3
2010	6	262,968.3	20,167.8	11,005.9	294,141.9	16,567.3	185,374.3
2010	7	259,944.0	6,014.7	8,058.8	274,017.6	17,601.7	194,812.6
2010	8	250,551.1	7,933.7	7,044.9	265,529.7	17,874.1	197,501.3
2010	9	251,081.6	7,079.1	6,635.3	264,795.9	17,546.2	194,396.0
2010	10	250,651.1	7,006.2	7,649.7	265,307.1	16,485.3	187,976.4
2010	11	285,529.7	106.7	11,267.0	296,903.3	16,813.8	186,761.1
2010	12	331,384.7	36.8	15,741.9	347,163.3	18,849.3	204,431.4
2011	1	429,624.7	29.4	21,876.7	451,530.8	24,648.9	234,921.8
2011	2	460,618.6	42.1	26,112.3	486,773.0	24,881.0	229,015.6
2011	3	440,794.2	36.8	25,017.5	465,848.5	26,166.3	220,685.7
2011	4	402,631.0	112.2	22,370.3	425,113.5	22,256.4	214,436.0
2011	5	356,526.2	16,848.7	18,217.6	391,592.5	21,700.3	201,270.3
2011	6	301,116.2	21,750.7	14,312.0	337,179.0	18,123.3	189,523.5
2011	7	263,681.2	6,868.3	9,616.6	280,166.1	17,531.9	187,680.7
2011	8	246,725.5	7,946.6	7,956.1	262,628.2	16,914.2	189,198.0
2011	9	254,611.1	7,449.3	7,768.9	269,829.3	17,947.0	195,962.0
2011	10	254,130.0	7,145.1	8,417.9	269,693.0	16,596.8	191,868.5
2011	11	282,092.2	123.0	12,022.1	294,237.3	16,256.1	186,953.6
2011	12	323,737.9	34.8	16,387.0	340,159.7	17,520.9	206,255.0
2012	1	418,762.9	58.2	23,654.8	442,475.9	23,592.7	224,622.9
2012	2	455,429.0	30.9	27,794.4	483,254.3	24,348.7	232,762.2
2012	3	434,592.7	33.8	26,377.1	461,003.6	25,208.1	221,039.3
2012	4	384,295.0	65.9	22,589.8	406,950.7	20,670.6	209,173.7
2012	5	328,295.3	16,997.5	18,002.7	363,295.5	20,118.3	195,800.9
2012	6	274,937.8	20,223.7	13,420.1	308,581.5	17,273.0	190,419.3
2012	7	251,766.6	6,048.1	9,474.8	267,289.5	17,196.7	184,826.3
2012	8	243,864.9	7,857.8	8,241.1	259,963.8	17,573.7	198,670.5
2012	9	250,012.1	6,959.3	8,027.7	264,999.0	17,919.9	194,281.6
2012	10	244,727.2	6,857.4	8,629.5	260,214.0	16,480.8	188,682.0
2012	11	283,076.8	104.5	12,544.3	295,725.7	17,517.0	199,735.5
2012	12	328,317.5	27.7	18,000.5	346,345.6	18,249.0	198,875.0
2013	1	441,985.0	22.0	27,366.4	469,373.4	25,669.0	239,185.3
2013	2	497,212.1	33.6	32,066.7	529,312.4	26,521.3	252,073.2
2013	3	450,786.9	38.4	29,331.8	480,157.1	25,855.3	215,192.2
2013	4	400,838.2	113.8	25,773.1	426,725.2	22,364.4	215,418.2
2013	5	351,378.4	18,173.8	20,728.0	390,280.3	21,798.2	197,103.1
2013	6	281,622.5	21,986.6	15,021.2	318,630.3	18,125.1	191,557.9
2013	7	257,166.4	6,399.8	10,544.5	274,110.6	17,152.1	184,427.8
2013	8	248,935.7	8,030.4	8,869.4	265,835.6	18,060.6	204,538.2
2013	9	253,038.5	7,085.0	9,005.1	269,128.6	18,242.3	188,849.6
2013	10	242,908.1	7,040.6	9,591.0	259,539.8	16,714.5	186,005.5
2013	11	287,772.1	89.1	14,617.4	302,478.7	17,664.2	194,673.5
2013	12	355,015.3	29.4	20,935.5	375,980.2	20,118.4	213,001.0
2014	1	472,172.9	60.7	31,302.9	503,536.5	27,729.4	249,141.0
2014	2	504,413.3	96.9	35,792.7	540,302.9	26,815.9	241,737.9
2014	3	458,850.3	38.4	31,935.8	490,824.5	27,354.0	218,553.9
2014	4	419,787.4	59.1	28,529.9	448,376.3	24,066.8	222,882.5
2014	5	364,843.9	17,058.9	23,563.4	405,466.2	22,746.1	194,970.3
2014	6	291,714.3	22,439.8	17,292.4	331,446.5	18,782.5	189,050.4

Year	Month	Res	Seas	ResToD	TotalRes	SmlGen	Gen
2014	7	254,186.2	9,990.4	11,404.0	275,580.6	18,718.0	187,647.3
2014	8	245,091.3	8,105.1	9,363.5	262,560.0	18,064.4	198,293.5
2014	9	243,395.7	7,630.9	9,312.0	260,338.6	19,170.5	183,078.3
2014	10	231,546.5	7,015.2	9,497.0	248,058.6	15,913.3	185,043.9
2014	11	272,805.2	103.0	14,035.8	286,943.9	17,762.9	190,245.1
2014	12	330,645.2	33.4	19,991.8	350,670.5	19,749.6	204,113.5
2015	1	438,733.3	28.1	29,428.6	468,190.0	26,883.9	237,390.6
2015	2	486,740.0	21.8	32,153.4	518,915.2	27,247.9	236,847.0
2015	3	474,237.3	17.0	30,987.3	505,241.6	29,447.0	237,804.5
2015	4	481,667.7	72.8	41,594.3	523,334.8	28,594.6	236,717.1
2015	5	412,760.0	17,384.4	27,189.0	457,333.3	25,823.6	193,088.5
2015	6	281,911.4	23,067.1	16,873.9	321,852.4	18,779.8	176,127.8
2015	7	250,613.1	8,707.0	11,586.8	270,906.9	19,686.5	186,756.2
2015	8	247,308.7	8,639.0	10,228.5	266,176.3	19,167.5	191,034.2
2015	9	250,272.9	7,484.8	9,782.7	267,540.4	19,468.9	188,268.3
2015	10	243,631.1	7,492.6	10,417.0	261,540.8	18,110.7	186,534.8
2015	11	279,212.3	169.3	15,488.0	294,869.7	18,585.4	185,607.2
2015	12	328,006.4	46.7	20,250.6	348,303.7	20,138.2	200,468.4
2016	1	413,481.1	32.8	29,588.2	443,102.0	25,705.9	219,249.0
2016	2	453,719.3	16.1	32,763.3	486,498.6	26,031.8	218,448.7
2016	3	424,414.8	40.9	30,938.0	455,393.8	27,226.5	209,687.2
2016	4	414,654.3	40.5	29,775.6	444,470.3	25,207.8	223,042.5
2016	5	368,241.3	18,471.4	24,999.8	411,712.5	25,596.7	193,478.2
2016	6	283,111.8	22,335.3	17,288.7	322,735.8	19,889.8	182,105.6
2016	7	247,245.2	6,315.1	11,778.7	265,339.1	19,312.4	178,726.8
2016	8	239,302.0	8,427.9	10,121.7	257,851.6	19,542.6	185,583.0
2016	9	251,046.2	7,489.9	10,177.7	268,713.8	20,677.4	193,787.2
2016	10	251,345.2	7,811.3	11,069.2	270,225.6	19,365.8	185,570.8
2016	11	270,174.2	101.7	15,235.4	285,511.3	18,717.4	174,343.0
2016	12	331,206.5	36.9	21,514.1	352,757.5	21,534.7	201,022.4
2017	1	450,945.2	30.8	32,969.3	483,945.2	29,741.1	233,440.4
2017	2	481,239.2	60.8	35,270.0	516,570.0	28,120.5	218,384.2
2017	3	452,576.6	29.8	33,754.9	486,361.4	29,916.7	214,793.3
2017	4	426,183.3	45.2	30,974.5	457,203.1	26,039.0	219,612.9
2017	5	364,989.1	18,293.6	25,118.3	408,401.0	25,450.7	185,008.8
2017	6	290,042.5	22,769.3	17,836.8	330,648.6	20,613.7	187,059.1
2017	7	259,693.0	7,088.6	12,695.7	279,477.2	20,262.8	179,477.5
2017	8	240,831.5	8,003.3	10,251.1	259,085.9	19,479.8	185,807.5
2017	9	248,233.9	7,279.0	10,468.4	265,981.3	20,446.8	192,013.1
2017	10	242,887.3	7,492.6	10,727.2	261,107.1	18,502.4	180,565.0
2017	11	263,445.6	123.7	14,368.5	277,937.8	18,633.6	180,138.7
2017	12	316,533.9	26.9	20,213.5	336,774.3	20,104.8	195,641.2
2018	1	463,649.3	40.5	34,311.8	498,001.6	30,884.3	228,391.1
2018	2	519,762.5	57.0	38,985.1	558,804.6	30,765.8	247,286.6
2018	3	445,366.0	56.9	33,154.0	478,576.9	29,632.5	201,479.4
2018	4	418,911.6	138.7	30,542.0	449,592.3	26,009.4	216,550.9
2018	5	368,336.8	17,691.7	25,664.1	411,692.6	25,694.3	189,090.7
2018	6	282,425.4	23,437.8	17,691.7	323,555.0	20,371.2	180,391.6
2018	7	257,677.8	8,283.8	13,043.2	279,004.8	20,517.7	181,499.3
2018	8	257,101.2	8,336.4	11,108.8	276,546.5	21,248.3	195,592.4
2018	9	262,945.5	7,380.2	10,879.9	281,205.7	21,384.2	190,040.0

Year	Month	Res	Seas	ResToD	TotalRes	SmlGen	Gen
2018	10	250,830.1	7,467.4	11,666.4	269,963.9	19,613.8	182,185.8
2018	11	299,264.2	112.0	18,371.5	317,747.8	21,279.5	186,125.8
2018	12	372,134.2	19.0	25,615.6	397,768.9	23,545.1	210,955.8
2019	1	498,487.8	43.7	37,628.6	536,160.2	33,301.5	238,947.7
2019	2	523,503.0	42.1	39,367.5	562,912.6	31,159.5	227,799.8
2019	3	502,265.5	73.3	38,034.0	540,372.8	33,874.6	229,842.1
2019	4	439,811.5	78.5	32,560.8	472,450.7	26,884.5	206,529.6
2019	5	375,412.0	20,733.9	26,151.0	422,296.9	26,830.6	197,223.5
2019	6	320,667.4	26,458.2	21,234.6	368,360.2	22,591.0	185,728.5
2019	7	266,441.2	7,457.9	14,148.4	288,047.5	20,620.6	175,438.2
2019	8	253,240.3	8,132.3	11,097.8	272,470.5	20,489.8	189,808.1
2019	9	268,983.9	7,167.8	11,616.7	287,768.4	21,251.0	187,698.0
2019	10	241,469.3	6,988.5	11,726.4	260,184.2	18,756.9	164,478.7
2019	11	276,764.6	170.8	17,302.6	294,238.0	20,023.3	185,425.8
2019	12	358,068.6	65.4	24,341.8	382,475.8	22,304.6	194,233.7
2020	1	471,288.7	27.7	35,400.1	506,716.5	31,030.4	234,906.1
2020	2	514,372.2	36.9	38,609.6	553,018.7	30,043.4	229,972.1
2020	3	468,670.8	36.1	36,817.5	505,524.4	31,196.1	211,793.9
2020	4	461,541.6	50.9	36,420.2	498,012.6	27,619.3	219,695.0
2020	5	368,454.4	18,459.1	27,055.6	413,969.1	22,513.0	154,015.1
2020	6	294,710.8	25,643.0	17,450.4	337,804.2	16,999.8	143,637.2
2020	7	307,636.2	9,094.6	12,846.6	329,577.4	19,758.1	165,245.9
2020	8	281,508.2	8,339.1	12,155.7	302,003.0	19,745.8	181,166.8
2020	9	266,352.4	7,024.1	11,550.7	284,927.2	19,617.7	167,744.4
2020	10	251,847.2	7,265.9	11,998.7	271,111.8	18,296.1	169,897.5
2020	11	295,579.0	144.7	17,576.3	313,299.9	19,852.6	175,727.7
2020	12	336,593.1	52.0	21,986.4	358,631.5	20,436.5	180,243.4
2021	1	434,651.4	63.3	31,518.3	466,233.0	28,052.6	209,382.2
2021	2	477,390.4	73.2	35,623.5	513,087.1	27,815.7	204,679.6
2021	3	480,071.3	126.2	36,387.4	516,584.9	31,622.7	209,868.3
2021	4	467,967.3	228.0	33,945.1	502,140.5	28,202.9	209,283.9
2021	5	371,847.0	20,808.1	25,152.5	417,807.7	25,577.5	173,245.2
2021	6	299,192.5	24,453.9	18,254.6	341,901.0	20,084.8	160,819.0
2021	7	282,510.6	6,489.5	14,187.9	303,188.0	20,796.7	170,685.5
2021	8	275,626.0	7,623.6	12,368.8	295,618.4	20,454.0	181,411.6
2021	9	280,376.1	7,066.8	12,085.6	299,528.5	22,751.4	182,258.1
2021	10	264,403.6	7,634.0	11,981.8	284,019.4	20,077.7	175,214.5
2021	11	287,358.1	139.0	16,195.5	303,692.7	21,020.2	171,685.5
2021	12	351,712.4	53.8	22,724.5	374,490.7	23,245.9	188,466.5

LrgGen	Muni	Unm	SmlInd	MedInd	LrgInd	ExLrgInd	GenRep
35,303.4	18,845.6	9,137.4	23,191.1	46,621.1	80,943.8	37,136.0	(305.9)
32,363.9	17,980.0	8,887.8	19,058.4	44,554.0	80,939.8	27,434.4	461.3
35,515.2	18,164.7	9,273.9	21,319.6	45,620.5	88,769.6	30,403.6	655.5
32,564.2	14,947.6	9,070.3	18,374.9	45,260.8	81,871.5	31,211.2	965.7
33,290.6	13,274.0	9,215.1	19,260.6	46,385.8	85,635.6	28,787.2	1,197.3
34,581.1	13,036.9	9,039.5	18,904.9	48,735.3	86,824.8	32,126.8	636.5
38,541.2	13,947.4	9,404.3	23,186.2	48,896.7	87,506.6	32,041.7	1,171.0
37,519.2	13,629.7	8,980.4	20,003.4	49,112.8	95,669.7	33,403.0	2,299.1
34,907.1	13,788.4	9,394.3	21,637.8	48,779.0	89,078.4	26,527.4	1,914.6
34,449.4	15,149.1	8,984.5	17,348.2	47,756.0	82,666.5	104,909.7	1,748.8
33,696.6	15,854.8	9,344.5	19,714.0	48,161.1	79,820.3	124,145.1	2,102.3
33,981.8	18,625.5	9,016.5	17,923.2	47,417.2	74,708.8	159,336.2	(196.1)
34,014.0	20,474.4	9,585.1	23,974.9	47,651.1	81,201.6	170,404.5	135.9
35,966.0	19,343.8	9,058.6	20,902.8	48,356.2	76,182.7	131,250.4	998.5
31,335.3	18,152.8	9,484.5	21,848.4	44,087.7	80,121.3	177,022.7	2,327.5
37,605.5	16,358.0	9,353.0	19,146.3	45,829.0	75,227.0	175,364.5	2,932.3
33,996.8	14,258.6	9,641.8	20,909.4	46,727.0	75,097.2	178,461.3	7,909.1
33,623.7	13,115.4	9,039.7	19,015.8	46,956.7	81,778.8	156,239.2	(18.8)
37,995.3	14,329.2	9,613.7	22,496.6	47,104.4	83,339.4	177,205.1	1,144.6
38,150.7	14,324.2	9,031.7	19,755.7	49,298.2	91,212.2	176,995.2	312.2
34,293.7	13,843.9	9,486.3	22,304.5	49,005.4	87,108.6	168,325.7	(89.7)
35,568.3	15,092.6	8,965.2	17,825.5	45,322.0	87,545.7	173,580.3	765.4
33,195.5	17,093.3	9,568.4	21,116.5	49,582.8	86,891.6	172,902.9	2,044.6
34,509.4	20,731.3	9,099.9	18,808.5	48,060.7	78,329.0	145,715.6	1,082.8
36,255.9	20,772.5	9,374.6	23,822.1	46,457.1	83,975.5	164,946.2	356.3
35,407.9	19,212.6	8,704.3	21,500.9	47,333.7	80,207.1	161,296.0	(193.3)
33,045.9	19,770.3	9,654.3	22,704.9	45,181.3	81,854.7	180,623.3	649.9
33,023.9	15,753.6	9,164.8	19,707.9	45,239.3	80,715.3	165,979.3	136.2
33,713.3	14,386.0	9,645.1	21,912.0	45,639.6	84,563.4	153,443.3	1,249.0
33,961.8	13,048.5	9,162.6	19,341.8	46,187.3	85,091.0	165,640.4	(477.2)
39,994.3	14,993.1	9,343.6	19,191.6	41,242.0	86,069.3	171,263.1	2,468.8
37,648.4	14,319.2	9,524.8	25,017.3	50,297.8	91,572.7	174,381.7	541.3
34,830.0	14,091.5	9,583.1	22,790.0	44,911.2	87,870.8	166,506.9	2,658.6
34,249.8	15,454.8	9,244.8	18,172.3	43,291.1	86,727.9	175,663.1	840.6
33,344.0	16,835.3	9,651.9	20,572.6	42,876.7	81,218.1	165,973.4	1,055.3
33,619.1	18,822.8	9,265.3	19,717.8	40,776.2	66,164.8	130,526.2	1,317.6
37,196.1	22,529.3	9,614.9	25,665.2	44,973.8	80,788.3	102,742.7	203.9
32,137.4	18,864.3	9,117.6	20,792.0	40,662.1	70,317.3	137,643.9	1,467.0
35,925.5	19,542.4	8,909.0	22,700.3	37,762.0	73,353.2	109,875.9	(35.2)
32,875.8	15,620.2	9,351.3	20,317.1	40,787.8	69,235.2	105,069.0	(182.5)
32,462.9	13,877.6	9,466.1	21,186.9	40,729.2	73,519.1	178,836.6	(81.6)
34,361.2	13,157.2	9,239.7	19,059.6	39,810.8	71,684.5	135,353.3	3,126.3
37,683.7	14,206.0	9,672.8	23,751.6	42,376.1	75,247.4	141,524.4	(407.3)
39,019.7	14,617.1	9,238.4	20,240.3	40,262.5	79,656.6	165,461.7	181.5
34,475.8	13,748.0	9,540.5	21,307.3	40,553.8	78,418.9	124,910.9	(9.2)
33,651.1	16,310.0	9,175.0	17,607.1	41,091.4	79,580.3	169,638.6	1,662.7
32,875.8	15,736.4	9,395.3	20,610.1	42,008.5	79,683.8	164,441.8	171.3
34,002.3	19,912.0	9,243.2	19,372.7	41,017.3	69,116.0	159,361.8	200.3
35,384.1	20,847.9	9,638.6	25,630.9	42,028.9	75,147.7	166,131.3	990.1
32,478.8	18,950.1	9,318.0	20,560.8	39,439.4	67,805.8	146,348.9	1,221.4
35,044.8	18,459.2	9,605.0	23,001.9	39,594.6	76,858.5	157,914.4	70.2

LrgGen	Muni	Unm	SmlInd	MedInd	LrgInd	ExLrgInd	GenRep
32,099.8	13,291.1	9,383.3	20,846.0	39,932.8	75,976.9	144,613.1	1,462.0
32,388.7	13,891.1	9,617.1	21,650.5	39,179.9	79,176.7	145,879.9	3,019.2
33,923.4	13,116.9	9,189.3	19,531.3	40,758.0	73,366.4	150,585.0	576.8
39,029.8	14,512.4	9,583.2	23,240.3	44,630.7	78,428.9	174,491.2	1,591.3
38,507.4	14,291.7	9,223.4	20,066.8	42,378.1	87,325.9	168,673.0	2,834.0
35,795.2	13,950.2	9,585.9	21,933.6	42,940.2	80,982.7	159,664.0	6,689.3
34,087.3	15,078.5	9,311.2	18,173.6	40,551.9	82,530.6	155,356.6	1,466.8
33,679.6	17,317.1	9,550.4	19,740.7	40,365.1	78,402.6	129,946.7	1,309.9
33,699.8	19,469.8	9,288.8	20,004.9	43,075.3	73,017.9	157,473.7	(858.5)
35,096.6	20,421.1	9,755.2	25,204.9	40,455.0	77,413.6	159,693.3	(454.4)
30,777.5	19,292.7	9,370.5	22,532.2	41,185.2	72,775.2	150,509.4	(212.7)
37,224.8	19,378.6	9,527.8	23,540.0	39,473.4	77,538.0	169,463.4	(205.0)
32,404.3	15,767.1	9,266.3	20,726.6	41,483.7	75,612.7	169,151.1	97.0
33,505.0	14,060.4	9,637.1	20,967.7	39,017.3	76,648.5	178,375.5	1,811.3
33,139.8	12,650.0	9,296.9	19,855.0	40,659.6	77,452.5	156,522.3	(59.9)
37,969.4	13,607.6	9,712.8	22,971.6	41,769.0	77,012.0	178,918.5	2,008.3
38,383.8	13,564.4	9,124.3	18,455.8	38,999.2	79,399.4	163,566.0	1,500.8
35,811.3	13,258.1	9,667.6	21,985.7	43,146.5	80,836.8	85,857.8	589.8
34,843.2	15,256.8	9,265.7	17,507.9	40,704.1	77,490.5	25,729.1	2,739.8
32,562.4	15,816.5	9,644.1	19,815.8	42,127.2	77,320.6	19,565.4	9,915.8
33,174.9	18,272.9	9,175.4	19,716.1	42,731.9	65,739.9	17,368.1	(667.7)
34,935.9	20,165.5	9,585.6	24,901.7	42,446.6	77,280.9	-	(194.9)
32,873.6	19,771.9	9,240.2	21,602.5	42,302.5	71,112.4	-	346.0
34,269.3	17,927.4	9,055.9	22,909.8	40,729.9	74,691.5	-	(295.6)
31,456.5	16,546.5	9,207.3	19,248.7	39,108.3	72,828.4	-	(363.3)
32,931.6	11,569.2	9,373.1	21,659.1	39,655.7	78,298.2	-	136.6
32,723.6	12,583.5	9,092.7	19,938.8	43,408.3	74,808.3	-	758.9
37,887.8	13,670.3	9,269.1	22,811.9	41,961.3	77,849.5	-	3,823.3
39,210.7	14,316.0	9,069.1	19,645.1	39,817.9	85,202.4	-	1,638.0
34,884.0	13,439.9	9,398.2	21,252.3	44,141.4	79,809.0	-	2,238.1
33,691.7	15,505.5	9,186.9	17,511.4	40,422.8	75,965.8	-	3,820.4
32,563.6	14,998.4	9,157.4	20,427.6	42,519.8	73,975.5	-	5,037.1
33,370.7	20,899.1	8,887.1	18,956.2	39,770.2	63,430.2	-	(540.7)
35,263.3	22,457.2	9,183.9	25,291.6	42,617.1	69,715.2	-	561.3
31,288.8	19,364.0	8,909.7	21,821.5	42,099.9	63,576.7	-	95.0
33,545.3	19,176.4	9,121.9	21,530.7	38,528.7	66,937.6	-	130.9
31,832.7	17,735.3	9,282.4	19,737.4	39,917.5	65,463.8	-	(55.9)
31,505.7	12,946.1	9,329.1	21,322.1	40,137.4	70,049.9	-	435.4
34,315.5	13,190.6	9,149.9	19,302.8	41,560.4	67,481.2	-	2,274.8
38,995.2	14,896.7	9,331.4	21,675.7	41,893.6	69,015.0	-	1,296.5
36,608.7	14,359.9	8,536.4	19,958.8	41,908.1	74,831.2	-	843.5
33,089.0	12,968.5	9,044.6	21,051.4	43,414.0	66,270.2	-	187.3
32,663.7	15,119.8	9,049.3	17,362.7	39,833.8	62,042.1	-	826.7
31,982.7	17,376.4	9,218.1	19,959.9	39,633.7	62,259.7	-	1,647.9
33,052.2	20,940.2	8,987.6	19,981.0	39,910.7	52,819.5	-	228.8
34,501.6	22,217.4	8,895.2	25,414.3	40,016.8	57,447.9	-	2,484.2
30,959.9	19,619.3	8,895.2	22,445.5	40,840.5	53,911.0	-	757.0
33,758.6	20,709.1	8,895.2	22,840.9	40,888.3	60,660.4	-	2,366.8
31,624.9	16,360.8	8,895.2	20,497.4	37,532.4	59,005.2	-	1,204.6
30,965.7	14,359.3	8,895.2	21,407.5	36,924.0	61,115.7	-	554.0
30,935.0	12,830.3	8,895.2	20,212.2	37,561.7	63,083.8	-	1,623.7

LrgGen	Muni	Unm	SmlInd	MedInd	LrgInd	ExLrgInd	GenRep
31,611.6	14,435.1	8,895.2	22,737.7	41,444.8	61,227.2	-	938.5
40,587.6	13,935.3	8,895.2	19,784.3	40,623.8	68,882.4	-	605.2
33,602.2	13,529.3	8,895.2	18,693.4	39,822.5	59,441.4	-	3,770.9
32,477.9	14,432.7	8,895.2	17,001.1	37,899.4	63,916.9	-	3,220.3
30,789.5	16,593.6	8,895.2	20,146.8	38,998.8	57,827.6	-	595.7
31,702.0	18,607.6	8,895.2	21,389.0	38,107.6	50,584.3	-	1,354.4
34,514.6	12,417.4	9,315.5	25,609.1	40,906.0	54,699.9	-	419.2
32,125.7	30,830.4	8,959.8	22,278.9	38,636.6	49,525.4	-	2,821.5
34,601.8	20,947.0	8,769.6	24,162.9	37,300.8	55,284.8	-	2,416.5
32,524.7	16,967.3	10,794.6	21,981.1	40,040.4	52,597.2	-	1,806.4
32,737.9	13,524.6	9,001.4	21,568.7	38,224.2	56,219.9	-	2,280.3
33,362.5	12,721.2	8,691.9	18,672.0	37,348.1	56,807.9	-	3,498.0
37,878.2	13,537.4	9,115.7	23,775.8	40,133.1	57,911.0	-	2,030.1
39,930.7	14,313.8	9,021.1	20,216.1	42,678.1	64,635.1	-	2,558.1
36,723.2	13,504.4	9,118.9	21,213.4	42,436.2	62,967.7	-	2,008.0
33,596.7	14,822.7	9,068.1	17,944.9	38,641.0	58,474.4	-	1,492.8
32,567.6	15,618.6	7,143.5	19,805.3	39,377.1	60,275.1	-	1,754.7
33,969.6	17,383.0	9,138.8	19,698.7	40,026.0	50,766.8	-	1,537.3
35,220.5	19,153.7	8,832.1	24,775.5	39,386.5	55,179.8	-	2,168.8
33,266.0	17,041.8	8,603.2	21,757.0	36,554.0	53,514.4	-	2,928.0
34,956.9	17,557.7	6,745.5	21,283.2	38,163.7	55,564.5	-	737.4
33,370.3	15,308.2	6,602.3	20,696.3	38,491.9	55,214.4	-	318.8
33,269.0	12,695.0	8,861.2	21,402.6	38,536.6	56,091.3	-	1,380.6
33,690.4	11,790.0	5,405.3	20,715.8	38,452.0	56,379.9	-	1,624.8
36,829.8	12,552.5	9,182.6	21,648.3	38,968.2	56,235.9	-	2,499.5
38,262.0	12,649.2	7,344.0	18,704.7	40,608.8	64,174.4	-	3,580.4
35,300.8	12,374.6	7,364.3	21,900.5	40,929.0	58,405.5	-	9,069.5
32,964.0	13,116.9	7,291.9	16,792.3	37,166.7	59,414.7	-	6,319.9
31,360.9	13,851.8	7,470.4	18,544.9	37,512.6	58,546.6	-	6,158.3
32,881.4	18,360.5	3,599.7	18,907.1	38,242.6	52,353.0	-	2,317.2
34,281.8	17,926.7	7,177.9	25,948.0	40,256.8	58,154.2	-	1,225.4
29,850.1	15,974.4	7,088.9	20,609.9	37,050.9	50,519.7	-	3,322.7
34,437.3	17,687.0	7,366.1	22,632.6	35,383.3	59,114.8	-	601.8
30,849.8	13,152.7	7,017.6	19,411.0	37,319.8	55,051.6	-	536.5
32,116.0	11,577.8	7,057.8	20,225.7	36,239.7	59,922.8	-	1,672.4
32,765.6	10,945.4	6,923.1	19,153.7	38,015.2	58,554.7	-	1,649.7
35,686.1	11,237.1	7,168.9	21,931.4	38,253.3	59,798.5	-	1,207.1
37,114.3	12,480.6	6,790.9	19,506.3	39,373.1	66,339.3	-	1,487.4
34,803.2	11,281.4	6,888.6	21,657.2	39,456.6	61,638.7	-	1,572.3
33,990.8	11,059.4	6,697.8	15,938.9	38,997.9	62,615.3	-	2,376.9
31,856.6	13,369.0	6,844.3	19,424.3	39,915.8	61,883.1	-	8,366.5
32,852.5	16,299.5	6,826.8	18,529.3	42,050.0	55,751.6	-	1,703.6
34,181.5	18,013.9	6,913.2	24,461.6	42,019.8	58,778.9	-	651.5
30,706.3	15,094.7	6,831.5	22,989.9	43,220.8	55,145.3	-	730.7
33,387.3	13,626.0	6,525.4	21,684.2	39,732.3	59,510.8	-	464.5
32,434.9	12,381.3	6,834.5	20,150.1	41,521.7	59,050.3	-	982.3
30,433.8	9,637.3	6,825.9	21,245.9	37,928.0	63,750.5	-	279.7
31,601.6	8,982.8	6,621.5	19,015.0	38,558.7	61,754.0	-	351.6
37,521.3	8,645.8	6,846.4	22,714.9	38,497.7	65,178.3	-	1,791.4
39,519.7	8,953.0	6,752.4	21,647.3	39,021.1	71,409.5	-	2,088.1
33,951.6	7,615.7	6,890.4	21,481.1	37,874.2	62,791.5	-	732.5

LrgGen	Muni	Unm	SmlInd	MedInd	LrgInd	ExLrgInd	GenRep
32,373.3	9,194.8	6,644.1	17,667.1	36,162.0	67,226.4	-	2,396.9
30,124.2	11,964.4	6,697.2	21,020.0	37,772.5	63,968.7	-	3,339.1
32,862.5	15,191.3	6,651.7	20,199.1	37,868.9	57,302.5	-	6,583.0
34,045.8	15,444.8	6,913.2	27,439.5	39,337.0	65,682.7	-	691.5
30,942.7	14,795.4	6,677.6	23,560.8	39,501.6	60,609.3	-	782.9
32,754.1	12,280.9	7,018.0	24,381.1	34,958.9	66,397.3	-	720.8
29,199.1	8,116.8	6,723.9	19,876.3	37,374.7	62,724.2	-	2,692.7
32,064.4	7,132.8	6,782.6	22,637.3	37,668.1	66,443.3	-	2,000.4
31,323.4	6,363.6	6,756.5	21,876.7	39,250.6	65,736.8	-	4,076.2
35,885.9	8,065.3	6,899.8	22,759.5	38,539.9	66,321.8	-	1,603.8
37,061.9	8,205.7	6,747.5	20,242.6	41,538.3	71,156.9	-	1,221.1
31,140.3	7,424.3	6,856.2	21,344.1	38,143.0	62,635.5	-	2,339.4
30,987.9	9,009.7	6,641.2	16,672.4	37,735.7	70,347.5	-	1,907.3
30,911.8	11,148.4	6,891.6	20,278.4	38,011.0	64,661.2	-	151.2
32,327.6	14,248.2	6,639.7	20,151.6	38,896.1	53,312.9	-	321.5
33,981.6	5,456.0	6,855.4	27,138.7	40,861.8	67,104.7	-	795.3
30,097.2	4,200.5	6,646.4	22,573.5	39,747.8	61,567.2	-	(1.7)
30,804.6	4,267.1	6,795.9	22,992.8	34,968.7	62,674.4	-	(711.7)
26,698.3	3,599.1	6,664.5	21,364.5	37,490.3	49,841.0	-	672.7
26,906.6	3,097.9	6,686.3	19,009.5	38,462.2	51,919.6	-	(313.4)
28,344.6	2,747.4	6,641.1	19,062.6	39,101.0	54,238.4	-	929.7
32,905.5	2,904.9	7,027.6	23,354.0	40,723.4	62,144.0	-	771.3
32,735.3	2,999.5	7,028.7	21,270.7	43,329.1	66,149.7	-	860.4
30,661.2	2,753.3	6,933.7	19,448.2	37,149.1	62,632.7	-	1,410.6
30,505.3	3,117.5	6,669.0	16,703.7	38,907.0	65,274.2	-	1,487.2
28,262.8	3,469.1	6,739.3	20,376.0	38,232.0	63,983.8	-	1,448.0
29,803.1	4,101.7	6,489.1	20,159.6	39,241.8	58,546.1	-	901.9
30,278.0	4,614.7	6,730.1	25,289.1	40,837.5	62,226.9	-	746.8
28,033.3	4,288.7	5,432.0	21,707.9	40,398.0	57,282.6	-	582.3
30,646.7	4,362.7	7,841.0	23,704.2	38,510.2	61,587.6	-	457.3
28,591.6	3,355.4	5,461.9	22,154.0	42,962.2	59,121.6	-	458.8
27,907.6	2,966.0	6,649.0	21,632.6	36,448.7	65,002.5	-	387.8
30,421.8	2,771.1	7,631.1	19,961.2	40,664.5	62,531.4	-	843.2
34,163.9	2,952.3	5,599.0	21,898.8	41,202.5	63,333.2	-	2,088.8
35,008.4	3,078.1	7,765.6	22,068.3	39,605.2	69,694.4	-	3,066.4
32,520.6	2,883.7	6,627.0	21,553.9	40,213.7	65,011.4	-	615.6
29,957.7	3,058.5	6,535.8	17,880.5	37,806.1	67,497.8	-	725.6
29,437.5	3,623.6	6,643.9	19,432.5	37,159.4	65,820.6	-	1,264.9
30,146.5	4,289.3	6,520.9	19,574.0	40,150.2	60,230.8	-	924.3

Year	Month	Reg	RegSeas	Elec	ElecSeas	Char	ToD	Kentville	KentvilleChar	Solar
2006	1	312843	25317	77825	2253	2469	3254	0	0	9
2006	2	312770	25319	78028	2283	2466	3306	0	0	9
2006	3	312767	25326	78200	2300	2466	3366	0	0	8
2006	4	312769	25330	78342	2309	2463	3396	0	0	8
2006	5	312456	25339	78435	2328	2474	3432	0	0	7
2006	6	312466	25332	78621	2331	2470	3458	0	0	7
2006	7	312384	25339	78812	2351	2473	3495	0	0	7
2006	8	312566	25336	79131	2371	2471	3527	0	0	7
2006	9	312982	25357	79461	2382	2479	3595	0	0	7
2006	10	312957	25332	79689	2403	2482	3671	0	0	9
2006	11	313167	25340	79954	2423	2488	3778	0	0	9
2006	12	313389	25352	80204	2437	2487	3853	0	0	9
2007	1	313426	25346	80472	2441	2485	3915	0	0	10
2007	2	312722	25370	81300	2454	2484	3975	0	0	10
2007	3	310877	25363	83303	2467	2488	4032	0	0	10
2007	4	310553	25358	83477	2476	2480	4073	0	0	10
2007	5	310359	25363	83800	2489	2484	4107	0	0	10
2007	6	310326	25342	83976	2513	2496	4135	0	0	10
2007	7	310337	25367	83797	2489	2484	4106	0	0	10
2007	8	310693	25383	84468	2547	2496	4190	0	0	10
2007	9	310635	25374	85085	2564	2495	4246	0	0	11
2007	10	308387	25365	87533	2570	2497	4357	0	0	12
2007	11	308642	25351	87740	2579	2497	4443	0	0	15
2007	12	308790	25340	87930	2582	2497	4540	0	0	16
2008	1	308882	25338	88238	2590	2494	4607	0	0	17
2008	2	307196	25349	90119	2593	2496	4675	0	0	19
2008	3	306932	25367	90585	2594	2498	4714	0	0	18
2008	4	306516	25352	90845	2609	2503	4765	0	0	19
2008	5	305862	25356	91631	2622	2504	4808	0	0	21
2008	6	305820	25384	91782	2635	2504	4857	0	0	23
2008	7	305674	25393	91924	2647	2504	4941	0	0	24
2008	8	306083	25401	92219	2669	2503	4999	0	0	25
2008	9	306248	25397	92476	2675	2496	5093	0	0	30
2008	10	306307	25392	92687	2693	2491	5239	0	0	34
2008	11	306368	25418	92924	2705	2498	5422	0	0	34
2008	12	306582	25406	93030	2710	2499	5581	0	0	36
2009	1	306267	25380	93583	2721	2494	5689	0	0	37
2009	2	305229	25384	94698	2732	2507	5774	0	0	39
2009	3	304759	25393	95249	2732	2518	5844	0	0	40
2009	4	304467	25393	95267	2745	2526	5919	0	0	40
2009	5	304315	25396	95320	2765	2524	5978	0	0	41
2009	6	304081	25373	95442	2776	2530	6008	0	0	41
2009	7	304383	25388	95571	2788	2536	6054	0	0	41
2009	8	304667	25386	95743	2801	2537	6101	0	0	44
2009	9	304838	25381	95949	2820	2536	6190	0	0	48
2009	10	305059	25389	96224	2827	2537	6317	0	0	48
2009	11	305117	25376	96417	2827	2533	6416	0	0	48
2009	12	305371	25379	96656	2829	2530	6519	0	0	48
2010	1	305370	25358	96953	2822	2526	6618	0	0	48
2010	2	305160	25371	97342	2830	2527	6691	0	0	50
2010	3	305134	25369	97483	2829	2528	6744	0	0	50
2010	4	304909	25375	97545	2829	2532	6802	0	0	51
2010	5	304827	25356	97694	2837	2539	6840	0	0	52

Year	Month	Reg	RegSeas	Elec	ElecSeas	Char	ToD	Kentville	KentvilleChar	Solar
2010	6	304116	25328	98678	2841	2532	6881	0	0	52
2010	7	304164	25342	98820	2850	2535	6919	0	0	51
2010	8	304354	25335	99006	2868	2536	6974	0	0	51
2010	9	304509	25312	99347	2876	2532	7026	0	0	52
2010	10	304654	25284	99605	2886	2528	7139	0	0	56
2010	11	304565	25260	99893	2892	2529	7255	0	0	56
2010	12	304538	25253	100184	2891	2530	7364	0	0	56
2011	1	304642	25208	100546	2889	2535	7446	0	0	56
2011	2	304605	25200	100768	2889	2533	7490	0	0	56
2011	3	304437	25175	100990	2889	2538	7560	0	0	56
2011	4	304317	25157	101151	2899	2542	7618	0	0	56
2011	5	304068	25134	101279	2910	2539	7678	0	0	56
2011	6	303994	25087	101438	2900	2542	7710	0	0	58
2011	7	304058	25059	101698	2913	2540	7752	0	0	59
2011	8	304074	25056	101928	2920	2545	7781	0	0	62
2011	9	304370	25045	102241	2936	2547	7859	0	0	65
2011	10	304420	25027	102461	2962	2548	7968	0	0	66
2011	11	304524	25042	102796	2971	2552	8073	0	0	66
2011	12	304564	25037	102971	2979	2553	8200	0	0	66
2012	1	304564	25037	102971	2979	2553	8200	0	0	66
2012	2	304091	24984	103828	2997	2564	8341	0	0	67
2012	3	303929	24957	104281	2994	2562	8385	0	0	67
2012	4	303684	24953	104343	2999	2567	8432	0	0	69
2012	5	303633	24984	104607	3012	2562	8460	0	0	69
2012	6	303651	24972	104830	3031	2568	8490	0	0	71
2012	7	303596	24950	104953	3045	2565	8522	0	0	76
2012	8	303634	24960	105180	3052	2560	8555	0	0	76
2012	9	303907	24960	105470	3059	2560	8596	0	0	77
2012	10	304083	24943	105665	3062	2567	8695	0	0	76
2012	11	304298	24943	105960	3064	2568	8825	0	0	78
2012	12	304474	24941	106285	3083	2565	8923	0	0	80
2013	1	304528	24916	106545	3086	2577	8996	0	0	92
2013	2	304345	24914	106882	3083	2580	9058	0	0	92
2013	3	304283	24906	107148	3084	2576	9103	0	0	92
2013	4	303823	24902	107247	3086	2575	9136	0	0	92
2013	5	303646	24890	107364	3095	2572	9198	0	0	92
2013	6	303534	24858	107589	3091	2578	9231	0	0	96
2013	7	303291	24855	107785	3103	2574	9266	0	0	88
2013	8	303584	24855	108016	3117	2569	9317	0	0	91
2013	9	303834	24834	108268	3128	2564	9368	0	0	94
2013	10	303906	24780	108518	3136	2563	9450	0	0	92
2013	11	304160	24779	108834	3134	2563	9561	0	0	96
2013	12	304101	24779	109089	3140	2564	9681	0	0	97
2014	1	303885	24769	109621	3158	2564	9750	0	0	98
2014	2	303852	24762	109853	3167	2560	9794	0	0	101
2014	3	303727	24767	110057	3179	2560	9831	0	0	101
2014	4	303357	24761	110074	3181	2558	9877	0	0	100
2014	5	303271	24760	110230	3181	2560	9904	0	0	101
2014	6	303003	24752	110329	3182	2560	9938	0	0	105
2014	7	302846	24730	110422	3193	2557	9964	0	0	107
2014	8	303087	24728	110567	3192	2555	9982	0	0	109
2014	9	303124	24724	110898	3202	2557	10033	0	0	112
2014	10	303233	24664	111102	3209	2556	10123	0	0	115

Year	Month	Reg	RegSeas	Elec	ElecSeas	Char	ToD	Kentville	KentvilleChar	Solar
2014	11	303570	24664	111434	3213	2558	10191	0	0	119
2014	12	303739	24647	111699	3234	2557	10279	0	0	122
2015	1	303966	24608	112026	3231	2558	10336	0	0	124
2015	2	303997	24615	112183	3241	2558	10366	0	0	126
2015	3	303925	24630	112231	3254	2559	10405	0	0	126
2015	4	303695	24625	112228	3266	2563	10425	0	0	128
2015	5	303494	24627	112347	3291	2565	10455	0	0	129
2015	6	303105	24605	112463	3299	2562	10480	0	0	132
2015	7	303007	24639	112583	3311	2561	10496	0	0	137
2015	8	303139	24648	112812	3315	2565	10524	0	0	137
2015	9	303302	24622	112997	3327	2560	10555	0	0	144
2015	10	303388	24601	113327	3341	2554	10606	0	0	146
2015	11	303590	24606	113679	3349	2552	10658	0	0	147
2015	12	303585	24612	113956	3361	2552	10723	0	0	150
2016	1	303530	24610	114298	3371	2550	10788	0	0	155
2016	2	303510	24590	114564	3375	2551	10828	0	0	160
2016	3	303450	24570	114885	3379	2544	10849	0	0	160
2016	4	303388	24550	115101	3389	2548	10866	0	0	162
2016	5	303036	24535	115281	3391	2548	10886	0	0	167
2016	6	302952	24492	115423	3389	2543	10896	0	0	170
2016	7	302952	24505	115647	3402	2547	10909	0	0	176
2016	8	302998	24477	115878	3415	2548	10934	0	0	187
2016	9	303211	24444	116272	3425	2549	10967	0	0	193
2016	10	303433	24406	116573	3425	2547	11009	0	0	202
2016	11	303596	24355	116944	3434	2546	11053	0	0	202
2016	12	303722	24367	117402	3443	2542	11106	0	0	213
2017	1	303829	24339	117761	3435	2542	11144	0	0	230
2017	2	303821	24323	117954	3438	2536	11169	0	0	238
2017	3	303848	24298	118166	3437	2533	11196	0	0	238
2017	4	303752	24275	118248	3442	2531	11216	0	0	238
2017	5	303500	24254	118406	3446	2536	11229	0	0	241
2017	6	303391	24270	118582	3452	2542	11245	0	0	242
2017	7	303410	24250	118757	3463	2549	11258	0	0	252
2017	8	303515	24260	119105	3468	2535	11270	0	0	255
2017	9	303838	24239	119475	3482	2525	11293	0	0	276
2017	10	303714	24205	119810	3479	2524	11346	0	0	278
2017	11	303773	24197	120351	3498	2522	11392	0	0	293
2017	12	303901	24199	120885	3499	2522	11444	0	0	310
2018	1	303798	24164	121339	3501	2522	11488	0	0	342
2018	2	303691	24148	121676	3494	2517	11515	0	0	346
2018	3	303705	24125	122057	3497	2516	11545	0	0	355
2018	4	303461	24110	122196	3500	2514	11579	0	0	363
2018	5	303429	24119	122387	3504	2512	11597	0	0	373
2018	6	303292	24074	122651	3511	2514	11607	0	0	381
2018	7	303123	24088	122993	3516	2511	11618	0	0	387
2018	8	303293	24071	123351	3523	2515	11638	0	0	405
2018	9	303421	24039	123798	3524	2515	11655	0	0	418
2018	10	303343	23992	124389	3534	2517	11686	0	0	434
2018	11	303268	23987	124972	3527	2515	11723	0	0	450
2018	12	303106	23963	125641	3531	2508	11767	0	0	481
2019	1	302962	23920	126001	3532	2506	11811	0	0	525
2019	2	302844	23886	126530	3523	2509	11836	0	0	537
2019	3	302793	23847	126796	3532	2506	11871	0	0	555

Year	Month	Reg	RegSeas	Elec	ElecSeas	Char	ToD	Kentville	KentvilleChar	Solar
2019	4	302659	23845	126884	3530	2503	11895	0	0	580
2019	5	302395	23835	127214	3519	2502	11914	0	0	621
2019	6	302347	23800	127571	3522	2498	11929	0	0	678
2019	7	301992	23784	127856	3534	2494	11951	0	0	754
2019	8	302068	23772	128344	3546	2484	11964	0	0	826
2019	9	302056	23735	128662	3551	2486	11978	0	0	889
2019	10	301790	23684	129039	3559	2483	12014	0	0	981
2019	11	301745	23649	129564	3565	2483	12059	0	0	1050
2019	12	301730	23620	129947	3562	2485	12096	0	0	1155
2020	1	302055	23615	130439	3554	2483	12152	0	0	1232
2020	2	301948	23574	130803	3555	2479	12189	0	0	1272
2020	3	301835	23560	131149	3553	2480	12210	0	0	1309
2020	4	301810	23551	131381	3556	2475	12224	0	0	1381
2020	5	301639	23556	131716	3563	2473	12232	0	0	1440
2020	6	301605	23512	132062	3568	2473	12258	0	0	1526
2020	7	301535	23485	132526	3565	2472	12279	0	0	1600
2020	8	301408	23450	133082	3565	2472	12300	0	0	1697
2020	9	301317	23401	133483	3567	2470	12325	0	0	1812
2020	10	301103	23351	133813	3549	2469	12373	0	0	1908
2020	11	301139	23297	134454	3550	2467	12433	0	0	2012
2020	12	301073	23247	135037	3542	2468	12473	0	0	2081
2021	1	301216	23174	135543	3529	2467	12524	0	0	2141
2021	2	301376	23122	135882	3513	2470	12563	0	0	2226
2021	3	301414	23070	136300	3509	2467	12593	0	0	2279
2021	4	301301	23020	136461	3500	2462	12614	0	0	2373
2021	5	301301	22999	137009	3496	2458	12642	0	0	2510
2021	6	301332	22952	137252	3474	2453	12644	0	0	2630
2021	7	301253	22932	137502	3466	2450	12653	0	0	2749
2021	8	301098	22894	137733	3465	2452	12660	0	0	2967
2021	9	301283	22889	138505	3475	2449	12677	0	0	3112
2021	10	301111	22840	138544	3486	2450	12728	0	0	3272
2021	11	301054	22789	139060	3488	2452	12753	0	0	3437
2021	12	302079	22742	139407	3470	2453	12789	0	0	3558

Wind	SmlGen	Gen	LrgGen	SmlKentvill	SmlInd	MedInd	LrgInd	Int
0	21996	11205	18	0	2220	224	6	25
0	21983	11228	18	0	2214	222	6	25
1	22022	11233	18	0	2211	220	6	25
1	22021	11266	18	0	2218	221	6	25
1	22063	11314	18	0	2219	221	6	25
1	22122	11304	18	0	2216	221	6	25
1	22113	11300	18	0	2215	219	6	25
1	22119	11299	18	0	2215	217	6	25
1	22156	11286	18	0	2224	217	6	26
1	22795	11228	18	0	2225	216	6	26
1	22793	11203	18	0	2238	215	6	26
1	22829	11200	18	0	2234	216	6	26
1	22818	11228	18	0	2231	215	6	26
1	22846	11220	18	0	2228	215	6	26
1	22815	11283	18	0	2233	210	7	26
1	22783	11363	18	0	2238	212	7	26
1	22851	11380	18	0	2242	212	7	26
1	22838	11405	18	0	2239	213	7	26
0	22851	11379	18	0	2242	213	7	26
1	22843	11428	18	0	2249	211	8	26
2	22838	11453	18	0	2249	212	8	26
2	22824	11440	18	0	2256	210	8	26
2	22837	11423	18	0	2251	212	8	26
2	22814	11434	18	0	2254	210	8	26
2	22770	11510	18	0	2247	207	8	26
2	22765	11556	18	0	2243	207	8	26
2	22774	11564	18	0	2251	209	8	26
2	22786	11590	18	0	2249	210	8	26
3	22843	11611	18	0	2253	208	8	26
3	22852	11634	18	0	2256	205	8	27
3	22857	11622	18	0	2260	201	8	27
3	22874	11609	18	0	2266	199	8	27
3	22911	11600	18	0	2269	200	8	27
3	22896	11587	18	0	2266	198	8	27
3	22925	11547	18	0	2272	198	8	27
3	22922	11569	18	0	2260	196	9	26
3	22928	11568	18	0	2260	195	9	26
3	22962	11560	18	0	2257	192	9	26
4	22917	11570	18	0	2257	193	10	25
4	22923	11594	18	0	2267	194	11	25
5	23050	11561	18	0	2268	197	9	25
5	23046	11558	18	0	2266	200	8	25
5	23030	11582	18	0	2261	201	8	25
5	23074	11566	18	0	2264	201	7	26
5	23084	11572	18	0	2261	200	7	26
5	23068	11566	18	0	2267	200	8	25
6	23022	11566	19	0	2269	196	8	25
6	23082	11577	19	0	2266	196	8	25
6	23105	11585	19	0	2262	197	8	25
6	23131	11549	19	0	2261	197	8	25
7	23146	11553	19	0	2257	195	8	25
7	23204	11539	19	0	2263	194	8	25
7	23262	11536	19	0	2260	194	8	26

Wind	SmlGen	Gen	LrgGen	SmlKentvill	SmlInd	MedInd	LrgInd	Int
7	23298	11545	18	0	2257	196	7	27
8	23344	11530	18	0	2262	193	7	27
8	23323	11509	18	0	2261	193	7	27
8	23323	11499	18	0	2257	194	7	27
8	23351	11471	18	0	2251	197	7	27
8	23384	11426	18	0	2249	196	7	27
8	23436	11410	18	0	2251	196	7	27
8	23475	11399	18	0	2250	197	7	26
8	23497	11416	18	0	2243	196	7	26
8	23489	11434	18	0	2235	196	7	26
8	23526	11431	18	0	2241	199	7	26
8	23500	11470	18	0	2247	198	7	26
8	23462	11464	18	0	2234	198	7	26
8	23437	11490	18	0	2233	197	7	26
8	23431	11497	18	0	2237	194	7	26
9	23464	11490	18	0	2237	194	6	25
9	23442	11492	18	0	2238	195	6	25
9	23435	11493	18	0	2241	193	6	25
9	23475	11505	18	0	2236	193	6	25
9	23475	11505	18	0	2236	193	6	25
9	23452	11505	18	0	2232	193	5	24
9	23432	11503	18	0	2234	193	6	23
9	23479	11498	18	0	2232	192	6	24
9	23529	11497	18	0	2238	193	6	24
9	23583	11486	18	0	2236	192	6	24
9	23645	11461	18	0	2237	192	6	24
9	23662	11449	18	0	2236	193	6	24
9	23689	11450	18	0	2237	191	6	24
9	23719	11426	18	0	2231	190	6	24
10	23731	11419	18	0	2230	190	6	24
10	23733	11418	18	0	2225	191	7	24
10	23711	11432	18	0	2223	193	6	24
10	23708	11446	18	0	2221	192	6	23
10	23698	11446	18	0	2218	192	6	23
10	23709	11465	18	0	2210	193	6	23
10	23706	11502	18	0	2213	193	6	23
9	23725	11517	18	0	2212	193	6	23
9	23780	11488	18	0	2211	191	6	23
9	23837	11467	18	0	2211	190	6	23
9	23852	11486	18	0	2215	189	7	23
9	23841	11477	18	0	2214	188	6	25
9	23841	11505	18	0	2211	187	6	25
9	23885	11499	18	0	2205	187	6	25
9	23855	11524	18	0	2203	183	6	25
9	23888	11520	18	0	2201	183	6	25
9	23880	11534	18	0	2198	181	7	25
9	23883	11555	18	0	2200	182	7	25
9	23917	11554	18	0	2198	183	7	25
8	23921	11552	18	0	2193	183	7	25
8	23921	11553	18	0	2188	183	7	25
8	23905	11558	18	0	2190	183	7	25
8	23989	11500	18	0	2183	184	7	25
8	24016	11485	18	0	2177	184	7	25

Wind	SmlGen	Gen	LrgGen	SmlKentvill	SmlInd	MedInd	LrgInd	Int
8	24063	11442	18	0	2177	183	7	25
8	24125	11417	18	0	2177	183	7	25
9	24236	11332	19	0	2183	176	7	25
9	24331	11238	19	0	2181	175	7	25
9	24355	11242	19	0	2179	175	8	24
9	24354	11223	19	0	2175	177	8	24
9	24391	11219	19	0	2176	177	8	24
9	24368	11213	20	0	2175	177	8	24
10	24401	11201	20	0	2177	178	9	24
10	24418	11182	20	0	2174	179	9	24
10	24473	11178	20	0	2162	178	9	24
10	24486	11148	20	0	2165	180	8	25
10	24520	11148	20	0	2168	178	8	27
10	24549	11124	20	0	2166	176	8	27
10	24592	11112	20	0	2161	175	7	28
10	24617	11088	20	0	2164	175	7	28
10	24661	11069	20	0	2167	174	7	28
10	24708	11046	20	0	2173	174	7	28
10	24755	11004	20	0	2177	173	8	27
10	24727	11007	20	0	2174	178	8	27
10	24748	11008	20	0	2173	179	7	28
12	24755	11010	20	0	2169	182	7	27
12	24824	10999	20	0	2162	180	7	27
12	24836	10983	20	0	2162	178	8	26
12	24900	10961	20	0	2162	178	8	26
14	24939	10953	20	0	2156	179	8	26
14	24965	10945	20	0	2151	180	9	25
15	24970	10945	20	0	2151	180	9	25
15	24987	10949	20	0	2148	182	9	25
15	25034	10959	20	0	2154	184	9	25
15	25072	10981	20	0	2152	184	9	25
15	25114	10955	20	0	2148	183	9	25
15	25154	10963	20	0	2150	183	9	25
15	25125	10962	20	0	2147	182	9	25
15	25145	10966	20	0	2148	182	9	25
15	25143	10958	20	0	2145	181	9	25
18	25178	10957	20	0	2147	182	9	25
18	25191	10965	20	0	2145	183	9	25
18	25212	10967	20	0	2145	183	9	25
18	25235	10956	20	0	2142	184	9	25
18	25264	10938	20	0	2144	181	9	25
18	25321	10940	20	0	2141	181	9	25
18	25349	10955	20	0	2145	179	9	25
19	25397	10945	20	0	2142	179	11	25
19	25389	10939	20	0	2142	179	11	25
18	25388	10946	20	0	2144	177	11	25
18	25397	10953	20	0	2136	177	11	25
19	25427	10959	20	0	2141	176	11	25
19	25464	10935	20	0	2144	176	11	25
20	25487	10948	20	0	2142	176	11	25
21	25507	10959	20	0	2143	177	11	25
21	25509	10960	20	0	2150	174	10	26
21	25488	10982	20	0	2145	174	10	26

Wind	SmlGen	Gen	LrgGen	SmlKentvill	SmlInd	MedInd	LrgInd	Int
21	25493	10996	20	0	2143	176	10	26
24	25508	11030	20	0	2145	176	10	26
24	25512	11045	20	0	2144	180	10	26
23	25539	11059	20	0	2138	182	10	26
24	25554	11072	20	0	2137	182	10	26
26	25537	11074	20	0	2142	179	10	26
28	25579	11062	20	0	2142	179	10	25
28	25596	11049	20	0	2146	177	10	25
27	25599	11042	20	0	2143	177	10	25
27	25674	11076	20	0	2138	180	10	25
28	25680	11072	20	0	2141	180	10	25
29	25655	11081	20	0	2143	179	10	25
30	25661	11053	20	0	2143	178	10	25
30	25711	11021	20	0	2141	179	10	24
31	25732	11004	20	0	2137	177	10	24
32	25757	11007	20	0	2136	175	10	24
32	25755	11004	20	0	2135	176	10	25
32	25792	11010	20	0	2135	177	10	25
32	25770	11008	20	0	2135	177	10	25
33	25798	11004	20	0	2129	177	10	25
35	25817	11009	20	0	2120	178	10	25
34	25818	11014	20	0	2126	178	10	25
34	25840	11024	20	0	2127	178	10	25
34	25860	11032	20	0	2125	178	10	25
34	25866	11039	20	0	2125	179	10	24
34	25918	11057	20	0	2124	179	10	24
34	25943	11067	20	0	2124	179	10	24
34	25977	11067	20	0	2121	179	10	24
34	25965	11076	20	0	2119	181	11	23
34	25971	11075	20	0	2115	181	11	23
35	25980	11084	20	0	2114	181	11	23
37	26001	11067	20	0	2116	181	11	23
37	26056	11084	20	0	2113	182	11	23

IndExp	SurpInt	TODExpInt	GenRep	RTP	MerseySys	Muni	Unm	Grid
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1	0	0	4	3	1	6	9162	1
1	0	0	4	3	1	6	9173	1
1	0	0	4	3	1	6	9197	1
1	0	0	4	3	1	6	9228	1
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1	0	0	3	3	1	6	9368	1
1	0	0	3	3	1	6	9392	1
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1	0	0	3	3	1	6	9496	1
1	0	0	3	3	1	6	9534	1
1	0	0	2	3	1	6	9375	1
1	0	0	3	3	1	6	9458	1
1	0	0	3	3	1	6	9480	1
1	0	0	3	3	1	6	9509	1
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1	0	0	3	3	1	6	9590	1
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1	-1	0	3	2	1	6	8990	1
1	-1	0	3	2	1	6	9008	1
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1	-1	0	3	2	1	8	9162	1
1	-1	0	3	2	1	8	9169	1
1	-1	0	3	2	1	8	9192	1
1	-1	0	3	2	1	8	9203	1
1	-1	0	3	2	1	8	9213	1

IndExp	SurpInt	TODExpInt	GenRep	RTP	MerseySys	Muni	Unm	Grid
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1	-1	0	3	2	1	8	9220	1
1	-1	0	3	2	1	8	9223	1
1	-1	0	3	2	1	8	9228	1
1	-1	0	3	2	1	8	9230	1
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1	-1	0	3	2	1	8	9317	1
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1	-1	0	3	2	1	8	9420	1
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IndExp	SurpInt	TODExpInt	GenRep	RTP	MerseySys	Muni	Unm	Grid
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1	-1	0	3	2	1	8	9423	1
1	-1	0	3	2	1	8	9424	1
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1	-1	0	3	1	1	8	9526	1
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IndExp	SurpInt	TODExpInt	GenRep	RTP	MerseySys	Muni	Unm	Grid
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1	-1	0	3	1	1	8	9607	1
1	-1	0	3	1	1	8	9614	1
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1	-1	0	3	1	1	1	9762	1
1	-1	0	3	1	1	1	9764	1
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REDACTED (CONFIDENTIAL INFORMATION REMOVED)

Month	2006 (kWh)	2007 (kWh)	2008 (kWh)	2009 (kWh)	2010 (kWh)	2012 (kWh)	2013 (kWh)	2014 (kWh)	2015 (kWh)	2016 (kWh)	2017 (kWh)	2018 (kWh)	2019 (kWh)	2020 (kWh)	2021 (kWh)
1	1,850	2,260	2,320	2,439	2,079	1,959	2,149	2,004	2,049	1,740	1,674	1,967	1,917	1,969	1,788
2	1,909	2,240	2,099	1,940	1,876	1,834	1,797	1,752	2,020	1,569	1,680	1,569	1,828	1,768	1,660
3	1,779	1,953	2,173	1,968	1,706	1,621	1,663	1,833	1,919	1,542	1,848	1,555	1,664	1,681	1,586
4	1,389	1,568	1,433	1,408	1,246	1,238	1,313	1,320	1,444	1,174	1,162	1,245	1,241	1,351	1,134
5	1,021	1,119	1,132	1,025	970	945	987	992	951	844	888	824	1,050	1,057	961
6	827	795	788	798	799	819	793	718	782	664	658	699	700	774	746
7	795	799	784	799	791	830	818	712	693	661	632	674	674	752	762
8	755	741	776	790	791	847	764	714	698	674	652	668	680	752	791
9	748	741	799	792	783	765	736	682	626	636	616	598	634	733	644
10	1,038	974	1,096	1,241	1,027	990	943	835	985	857	743	952	875	971	798
11	1,334	1,479	1,471	1,388	1,416	1,377	1,423	1,285	1,332	1,154	1,205	1,320	1,251	1,232	1,158
12	1,936	2,287	2,084	2,111	1,825	1,869	2,078	1,667	1,582	1,858	1,810	1,826	1,794	1,555	1,672
Total	15,381	16,956	16,954	16,697	15,309	15,093	15,463	14,514	15,081	13,374	13,568	13,895	14,310	14,594	13,699
HDD	3,521	4,177	4,038	4,192	3,509	3,520	3,919	3,848	4,015	3,808	3,755	3,842	4,017	3,682	3,484

* Amounts extracted from Load Research Sample data (All-Electric customers)

2022 LFR Synapse IR-2 Attachment 3 has been filed electronically.

Request IR-3:

Billed versus Accrued Sales and Regression Period (Section 4.0, p 18)

(a) The report notes that the load forecast uses "billed" sales rather than "accrued" sales. Please identify the quantitative differences between the two for the most recent available year.

(b) The report notes that it uses monthly billed sales data from January 2012 to December 2021 for the residential and commercial energy forecasts, and sales data from January 2010 to December 2020 for Small Industrial, and from January 2006 to December 2021 for Medium Industrial "to improve the fit." Please quantify the nature of the improved fit.

(c) Please identify the effect if the industrial forecast used the same period as the residential and commercial forecasts (that is, January 2012 to December 2021).

Response IR-3:

(a) Please refer to Attachment 1.

(b-c) Please refer to page 31 of the 2022 Load Forecast Report. If the shorter timeframe is used for the industrial forecast, either the economic variable loses statistical relevance (Small Industrial) or the model loses statistical relevance (Medium Industrial).

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

Accrued Sales	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Residential	4,147	4,275	4,186	4,394	4,370	4,484	4,318	4,374	4,581	4,664
Small General	232	239	238	249	255	272	272	280	291	298
General Demand	2,440	2,448	2,450	2,495	2,443	2,448	2,379	2,379	2,411	2,381
Small Industrial	254	254	253	248	250	257	249	246	253	262
Medium Industrial	491	492	498	494	464	477	462	467	470	460
Billed Sales										
Residential	4,144	4,275	4,160	4,362	4,404	4,504	4,264	4,364	4,543	4,688
Small General	235	241	236	248	257	272	269	277	291	298
General Demand	2,447	2,448	2,439	2,482	2,465	2,457	2,365	2,372	2,410	2,383
Small Industrial	254	253	251	249	253	257	247	245	254	261
Medium Industrial	495	492	496	492	471	476	463	463	472	461
Residential variance	-0.1%	0.0%	-0.6%	-0.7%	0.8%	0.4%	-1.3%	-0.2%	-0.8%	0.5%
Small General variance	1.2%	0.7%	-0.8%	-0.1%	0.7%	0.1%	-1.1%	-1.0%	-0.2%	0.0%
General Demand variance	0.3%	0.0%	-0.5%	-0.5%	0.9%	0.3%	-0.6%	-0.3%	-0.1%	0.1%
Small Industrial variance	0.1%	-0.2%	-0.8%	0.5%	1.0%	0.0%	-0.7%	-0.6%	0.4%	-0.3%
Medium Industrial variance	0.9%	0.0%	-0.3%	-0.5%	1.4%	-0.3%	0.3%	-0.8%	0.5%	0.2%

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

2020	2021
4,652	4,661
278	291
2,210	2,244
254	257
469	476
4,675	4,619
277	290
2,234	2,237
253	257
468	476
0.5%	-0.9%
-0.4%	-0.3%
1.1%	-0.3%
-0.3%	0.0%
-0.2%	0.0%

Request IR-4:

Weather Data (Section 4.2, pp 19-29)

(a) **Please provide in electronic spreadsheet format the temperature data on a daily basis for January 2006 through December 2021, and the monthly HDD and CDD values used for this forecast identifying the weather station.**

(b) **Please provide in electronic spreadsheet format the monthly HDD and CDD data for other weather stations in Nova Scotia for the same period.**

(c) **Please provide the calculations used to construct the data values in Figure 7: HDD Trend from the Historic Annual HDD shown in Figure 6. Please identify the years represented on the x-axis for Figure 7.**

(d) **Please provide the data and calculations for Figure 8: CDD Trend. Please identify the years represented on the x-axis for Figure 8.**

(e) **Please provide the data and calculations behind the HDD and CDD forecast in Figure 9.**

(f) **Please provide the hourly peak loads and temperature data for twenty years as referenced on page 23.**

(g) **Please identify which years represent the 10-year averages for the bars in Figure 11.**

(h) **Besides the two climate resources cited on Page 25 were any others investigated? If so, please cite the sources. How do their estimates differ from those presented?**

(i) **Regarding the weighing of weather station data and the comparisons between the two approaches which is presented as the Mean Absolute Percentage Error (MAPE)? Were other comparison approaches investigated? Why was the MAPE method selected?**

Response IR-4:

(a) Please refer to Attachment 1, tab "DailyTemp_Shearwater", filed electronically.

(b) Please refer to Attachment 2, filed electronically, for all the Environment Canada weather stations used in the multiple weather stations analysis.

(c) Please refer to Attachment 1, tab "HDDCDDTrend".

(d) Please refer to Attachment 1, tab "HDDCDDTrend".

(e) Please refer to Attachment 1, tab "MonthlyHDD_CDD".

(f) Please refer to Attachment 1, tab "PeakTemp", columns A-C.

(g) Please refer to Attachment 1, tab "PeakTemp".

(h) The resources cited in the report are those that were investigated for the 2022 forecast. The trends calculated are in line with the trends outlined in those reports.

(i) No other approaches were investigated. MAPE is a common and appropriate measure of forecast accuracy.

2022 LFR Synapse IR-4 Attachment 1 has been filed electronically.

2022 LFR Synapse IR-4 Attachment 2 has been filed electronically.

Request IR-5:

Economic Information (Section 4.3, pp 29-34)

(a) **Please provide in electronic spreadsheet format all economic and provincial statistical data used both in developing the models and the forecasts for the historical analysis and forecast period.**

(b) **Please describe the construction of the work from home variable.**

(c) **Please provide the sources and the assumptions behind the new housing completions variables. To what degree do housing completions represent replacement of existing stock?**

(d) **Regarding Figure 16 and the historical changes. What is the forecast for the population changes during the forecast period?**

(e) **Please discuss why non-manufacturing gross domestic product and non-manufacturing employment continue to be used for the commercial models. Were other drivers considered? Why were they not chosen?**

(f) **Please discuss why manufacturing GDP and manufacturing employment were chosen for the industrial models. Were other drivers considered? Why were they not chosen?**

(g) **What consideration of any was given to labor shortages or increased automation for the industrial sector.**

(h) **What would be the effects on the industrial forecast if 10 years were used for the regression?**

(i) **Please provide the inflation adjustments used to convert to constant dollars.**

(j) **Regarding economic forecasts, identify the scenario/case used for this analysis and the reasons for choosing it.**

(k) **Please indicate any other economic forecasts that are available and indicate why they were not chosen. For example, the use of major bank forecasts for the near term.**

Response IR-5:

(a) Please refer to NSUARB IR-3 Attachment 1.

(b) The COVID-19 pandemic work-from-home variable is a pseudo-binary variable of 1 starting in July 2020, 0.5 in October 2020, 0.33 in March 2022 and 0.16 in September 2022-2032.

(c) The new housing completion forecast is provided by Conference Board of Canada. Housing completions refers to new units, as defined at: https://www.cmhc-schl.gc.ca/en/professionals/housing-markets-data-and-research/housing-research/surveys/methods/methodologies-starts-completions-market-absorption-survey

(d) Population estimates during the forecast period are as follows:

Year	Population (000s)
2022	1001
2023	1005
2024	1010
2025	1015
2026	1020
2027	1023
2028	1026
2029	1029
2030	1032
2031	1034
2032	1036

(e) The non-manufacturing GDP and non-manufacturing employment variables have been used in previous forecasts and provided consistent models with good model fit statistics. Unless there is reason to believe they are no longer relevant (poor model statistics, unusual results) other variables are not considered.

(f) GDP and manufacturing employment were chosen for the industrial models as they provide good overall model statistics. Other variables such as manufacturing GDP and exports were checked but provided worse model statistics or inconsistent coefficients.

(g) Those factors were not considered explicitly, but any significant factors that would impact the employment or GDP variables would be included in the underlying forecast provided by the Conference Board.

(h) The impact to the Small Industrial model is that the ManGDP variable loses some relevance, with the T-Stat dropping from 2.662 to 2.481, and the adjusted R squared dropping from 0.845 to 0.834. The impact to the Medium Industrial model is that the ManEmp variable loses some relevance, with the T-Stat dropping from 17.587 to 4.307, and the adjusted R squared dropping from 0.757 to 0.509. The impact to the forecast would be as follows:

Year	Small Industrial (GWh, current)	Small Industrial (GWh, 10yr)	Medium Industrial (GWh, current)	Medium Industrial (GWh, 10yr)
2022	261	261	478	475
2023	267	268	481	478
2024	272	273	486	483
2025	275	276	492	488
2026	278	279	495	491
2027	279	280	498	493
2028	280	281	499	494
2029	280	281	501	495
2030	280	281	502	496
2031	280	281	503	497
2032	280	282	504	497

(i) The annual CPI is used to adjust to constant dollars. Please refer to NSUARB IR-3 Attachment 1, column R.

(j) The economic forecast used is not based on a certain scenario but rather on Conference Board of Canada's view of the most likely future.

(k) No other economic forecasts were considered for the 2022 Load Forecast, the forecast from the Conference Board provides consistency with prior forecasts. Bank forecasts are checked for discrepancies in the near term GDP and employment forecasts.

Request IR-6:

Residential End-Use Intensity Trends (Section 4.4, pp 35-53)

(a) Please provide in electronic spreadsheet format the end-use data in the form of saturations and efficiencies from NRCan and U.S. EIA used for the residential and commercial models.

(b) Please identify specifically which of that data was used in the SAE modeling and any adjustments, transformations, etc. that were made in that process.

(c) Please identify the adjustments that were made "so that the resulting intensities are consistent with NRCan-reported end-use sales and actual average use derived from NS Power billing data." [page 35, lines 13-15]

(d) Please provide specific information about how the results of the 2019 end use survey of residential customers were used to make any of the above adjustments.

Response IR-6:

(a) Please refer to Attachment 1 for the residential data from NRCan and Attachment 2 for the commercial data from NRCan. The EIA data can be found in 2022 Load Forecast Report Attachment 1 Residential Intensities, "EIAData" tab, 2022 Load Forecast Report Attachment 2 Small General Intensities, "EIAData" tab, and 2022 Load Forecast Report Attachment 3 General Intensities, "EIAData" tab.

(b) Information from the following tables in Attachment 1 is used to populate the tab titled "NRCanDetail" in the 2022 Load Forecast Report Attachment 1 Residential Intensities, filed electronically:

End Use	Consumption Data	End-Use Stock Data
Lighting	Table 3	Assumed 100% of households have lighting
Room and central air-conditioning	Table 4	Table 27
Electric furnace and heat pumps	Table 9	Table 21
Electric hot water	Table 10	Table 28
Refrigerator, freezer, dishwasher, clothes washer, clothes dryer, range, other appliances	Table 13	Table 31

End uses not included in the NRCan data are estimated from EIA data or survey information where available.

Consumption information from the following tables in Attachment 2 is used to populate the tab titled "NRCanDetail" in 2022 LFR Attachment 2 Small General Intensities and 2022 LFR Attachment 3 General Intensities:

End Use	Consumption Data
Space Heat	Table 24
Electric Hot Water	Table 26
Auxiliary Equipment	Table 28
Auxiliary Motors	Table 30
Lighting	Table 31
Space Cooling	Table 32
Outdoor Lighting	Table 34
Total Consumption	Table 1

(c) Please refer to 2022 LFR Attachment 1 Residential Intensities. On the tab labeled "Calibration," individual end-use consumption based on NRCan data is added together to give a household view of energy consumption and is compared to NS Power's billing records for residential customer energy usage. A scaling factor is calculated to align the two data sets. This scaling factor is then applied to the annual end-use intensity values found on the tab titled "Intensities".

(d) There were no further adjustments made to the forecast based on the end-use survey beyond what was done for the 2020 Load Forecast Report.

Residential Sector
List of Tables

Nova Scotia[1]

Secondary Energy Use and GHG Emissions Summary Tables

Table 1: Secondary Energy Use and GHG Emissions by Energy Source
Table 2: Secondary Energy Use and GHG Emissions by End-Use

Detailed Tables

Seconday Energy Use and GHG Emissions by End-Use

Table 3: Lighting Secondary Energy Use and GHG Emissions
Table 4: Space Cooling Secondary Energy Use and GHG Emissions by Cooling System Type
Table 5: Space Heating Secondary Energy Use and GHG Emissions by Energy Source
Table 6: Space Heating Secondary Energy Use and GHG Emissions by Building Type
Table 7: Space Heating Secondary Energy Use and GHG Emissions by Vintage
Table 8: Space Heating Secondary Energy Use by System Type
Table 9: Space Heating GHG Emissions by System Type
Table 10: Water Heating Secondary Energy Use and GHG Emissions by Energy Source
Table 11: Water Heating Secondary Energy Use and GHG Emissions by Building Type
Table 12: Appliance Secondary Energy Use and GHG Emissions by Energy Source
Table 13: Appliance Secondary Energy Use and GHG Emissions by Appliance Type

Explanatory Variables

Housing Stock

Table 14: Total Households by Building Type and Energy Source
Table 15: Housing Stock by Building Type and Vintage
Table 16: Single Detached and Single Attached Housing Stock by Vintage
Table 17: Apartments and Mobile Homes Housing Stock by Vintage
Table 18: Floor Space by Building Type and Vintage
Table 19: Single Detached and Single Attached Floor Space by Vintage
Table 20: Apartments and Mobile Homes Floor Space by Vintage

Space Heating System Stock

Table 21: Heating System Stock by Building Type and Heating System Type
Table 22: Single Detached Heating System Stock by Heating System Type
Table 23: Single Attached Heating System Stock by Heating System Type
Table 24: Apartments Heating System Stock by Heating System Type
Table 25: Mobile Homes Heating System Stock by Heating System Type
Table 26: Heating System Stock Efficiencies

Space Cooling

Table 27: Cooling System Stock by Type, New Unit Efficiencies, Stock Efficiencies and Unit Capacity Ratio

Water Heating

Table 28: Water Heater Stock by Building Type and Energy Source
Table 29: Single Detached and Single Attached Water Heater Stock by Energy Source
Table 30: Apartments and Mobile Homes Water Heater Stock by Energy Source

Appliance

Table 31: Appliance Stock by Appliance Type and Energy Source

Output Thermal Requirements

Table 32: Gross Output Thermal Requirements per Household by Building Type and Vintage
Table 33: Gross Output Thermal Requirements per Square Metre by Building Type and Vintage

House Types Detailed Tables

Single Detached

Table 34: Single Detached Secondary Energy Use and GHG Emissions by Energy Source
Table 35: Single Detached Secondary Energy Use and GHG Emissions by End-Use

Single Attached

Table 36: Single Attached Secondary Energy Use and GHG Emissions by Energy Source
Table 37: Single Attached Secondary Energy Use and GHG Emissions by End-Use

Apartments

Table 38: Apartments Secondary Energy Use and GHG Emissions by Energy Source
Table 39: Apartments Secondary Energy Use and GHG Emissions by End-Use

Mobile Homes

Table 40: Mobile Homes Secondary Energy Use and GHG Emissions by Energy Source
Table 41: Mobile Homes Secondary Energy Use and GHG Emissions by End-Use

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Residential Sector

Nova Scotia[1]
Table 1: Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use (PJ)	**47.3**	**50.4**	**50.8**	**47.8**	**44.5**	**42.5**	**42.7**	**47.5**	**49.2**	**49.0**	**50.8**	**53.8**	**49.0**	**46.9**	**45.1**	**45.4**	**42.1**	**43.2**	**45.6**
Energy Use by Energy Source (PJ)																			
Electricity	13.3	14.3	14.8	14.5	14.8	14.9	14.4	15.0	15.2	15.3	15.0	15.4	15.1	15.9	15.8	15.8	15.9	16.4	17.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.3
Heating Oil	22.5	24.2	25.2	23.0	20.0	17.7	18.6	22.5	22.7	22.7	23.9	26.4	21.6	18.8	17.0	17.1	13.9	14.5	16.1
Other[2]	0.5	0.7	0.8	0.8	0.7	0.9	1.0	0.9	1.1	1.1	1.1	0.8	0.6	0.5	0.5	0.6	0.5	0.5	0.7
Wood	11.0	11.2	10.1	9.5	9.0	9.0	8.6	9.1	10.3	9.6	10.6	11.0	11.5	11.5	11.6	11.6	11.6	11.6	11.6
Shares (%)																			
Electricity	28.1	28.4	29.1	30.3	33.3	35.0	33.8	31.6	30.8	31.2	29.5	28.7	30.9	33.8	35.0	34.9	37.7	38.0	37.3
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.7
Heating Oil	47.5	47.9	49.6	48.2	44.9	41.6	43.7	47.3	46.1	46.3	47.1	49.1	44.1	40.1	37.8	37.7	33.1	33.5	35.2
Other[2]	1.1	1.5	1.5	1.7	1.5	2.2	2.3	2.0	2.2	2.1	2.1	1.5	1.3	1.1	1.0	1.2	1.2	1.1	1.4
Wood	23.2	22.2	19.9	19.9	20.2	21.2	20.2	19.2	20.9	19.6	20.9	20.4	23.5	24.5	25.7	25.6	27.5	26.9	25.4
Activity																			
Total Floor Space (million m^2)	46.4	47.1	47.9	48.9	49.8	50.7	51.6	52.5	53.5	54.3	55.1	55.9	56.7	57.6	58.2	58.9	59.4	60.6	61.3
Total Households (thousands)	359.5	362.6	366.6	370.6	374.0	377.0	379.6	382.9	387.9	392.5	389.8	391.2	393.4	393.3	397.0	400.0	402.0	406.0	410.8
Energy Intensity (GJ/m^2)	**1.02**	**1.07**	**1.06**	**0.98**	**0.89**	**0.84**	**0.83**	**0.90**	**0.92**	**0.90**	**0.92**	**0.96**	**0.86**	**0.81**	**0.77**	**0.77**	**0.71**	**0.71**	**0.74**
Energy Intensity (GJ/household)	**131.7**	**138.9**	**138.6**	**128.9**	**118.9**	**112.6**	**112.4**	**124.0**	**126.8**	**124.9**	**130.3**	**137.5**	**124.4**	**119.3**	**113.5**	**113.4**	**104.8**	**106.4**	**111.1**
Total GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.9**	**2.0**	**2.1**	**1.9**	**1.7**	**1.5**	**1.6**	**1.9**	**1.9**	**1.9**	**2.0**	**2.2**	**1.8**	**1.6**	**1.5**	**1.5**	**1.3**	**1.3**	**1.5**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	1.6	1.7	1.8	1.6	1.4	1.3	1.3	1.6	1.6	1.6	1.7	1.9	1.5	1.3	1.2	1.2	1.0	1.0	1.1
Other[2]	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Shares (%)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.6	0.3	0.4	0.6	0.7	0.8	0.9	0.9	1.0
Heating Oil	84.6	84.7	86.3	85.7	84.8	82.4	83.4	85.5	84.0	83.9	83.9	85.7	83.0	81.1	79.5	79.2	75.9	76.6	77.7
Other[1]	1.7	2.2	2.3	2.5	2.5	3.7	3.8	3.1	3.4	3.4	3.2	2.2	2.0	2.0	1.9	2.2	2.3	2.1	2.7
Wood	13.7	13.0	11.5	11.7	12.7	13.9	12.7	11.5	12.6	11.7	12.3	11.8	14.6	16.4	17.9	17.8	20.9	20.3	18.6
GHG Intensity (tonne/TJ)	**39.8**	**40.1**	**40.7**	**39.8**	**37.5**	**35.8**	**37.1**	**39.3**	**38.9**	**39.2**	**39.8**	**40.7**	**37.7**	**35.1**	**33.7**	**33.8**	**30.9**	**31.0**	**32.1**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]

Table 2: Secondary Energy Use and GHG Emissions by End-Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use (PJ)	**47.3**	**50.4**	**50.8**	**47.8**	**44.5**	**42.5**	**42.7**	**47.5**	**49.2**	**49.0**	**50.8**	**53.8**	**49.0**	**46.9**	**45.1**	**45.4**	**42.1**	**43.2**	**45.6**
Energy Use by End-Use (PJ)																			
Space Heating	32.4	34.4	34.6	32.5	30.0	28.0	27.4	30.8	33.9	33.9	34.6	37.4	32.8	31.4	30.9	31.6	28.4	29.6	30.6
Water Heating	8.3	8.9	8.9	8.3	7.4	7.3	8.0	9.2	8.2	8.0	8.9	9.1	8.6	7.7	6.6	6.4	6.0	5.8	6.6
Appliances	5.0	5.4	5.5	5.3	5.3	5.5	5.6	5.8	5.5	5.5	5.6	5.7	5.8	6.1	5.9	5.8	6.0	6.1	6.6
Lighting	1.6	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.4	1.4	1.4	1.5
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.3
Shares (%)																			
Space Heating	68.5	68.3	68.2	68.0	67.5	65.9	64.3	64.8	68.8	69.2	68.1	69.5	67.0	67.0	68.7	69.7	67.5	68.6	67.1
Water Heating	17.5	17.7	17.6	17.3	16.7	17.2	18.7	19.4	16.7	16.3	17.6	17.0	17.6	16.4	14.8	14.1	14.3	13.5	14.5
Appliances	10.6	10.6	10.8	11.1	12.0	12.9	13.0	12.3	11.2	11.2	11.0	10.6	11.9	13.0	13.0	12.8	14.4	14.1	14.4
Lighting	3.3	3.3	3.4	3.6	3.8	3.9	3.8	3.4	3.1	3.0	3.0	2.8	3.1	3.3	3.2	3.1	3.4	3.3	3.3
Space Cooling	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.6
Activity																			
Total Floor Space (million m^2)	46.4	47.1	47.9	48.9	49.8	50.7	51.6	52.5	53.5	54.3	55.1	55.9	56.7	57.6	58.2	58.9	59.4	60.6	61.3
Total Households (thousands)	359.5	362.6	366.6	370.6	374.0	377.0	379.6	382.9	387.9	392.5	389.8	391.2	393.4	393.3	397.0	400.0	402.0	406.0	410.8
Energy Intensity (GJ/m^2)	**1.02**	**1.07**	**1.06**	**0.98**	**0.89**	**0.84**	**0.83**	**0.90**	**0.92**	**0.90**	**0.92**	**0.96**	**0.86**	**0.81**	**0.77**	**0.77**	**0.71**	**0.71**	**0.74**
Energy Intensity (GJ/household)	**131.7**	**138.9**	**138.6**	**128.9**	**118.9**	**112.6**	**112.4**	**124.0**	**126.8**	**124.9**	**130.3**	**137.5**	**124.4**	**119.3**	**113.5**	**113.4**	**104.8**	**106.4**	**111.1**
Total GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.9**	**2.0**	**2.1**	**1.9**	**1.7**	**1.5**	**1.6**	**1.9**	**1.9**	**1.9**	**2.0**	**2.2**	**1.8**	**1.6**	**1.5**	**1.5**	**1.3**	**1.3**	**1.5**
GHG Emissions by End-Use (Mt of CO_2e)																			
Space Heating	1.5	1.6	1.6	1.5	1.3	1.2	1.2	1.4	1.5	1.5	1.6	1.7	1.4	1.3	1.2	1.3	1.1	1.1	1.2
Water Heating	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.3
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Space Heating	79.9	79.6	79.8	79.8	80.5	79.6	77.4	76.6	79.9	80.3	78.4	79.3	77.7	78.9	81.2	82.2	81.6	82.7	81.2
Water Heating	20.1	20.4	20.2	20.2	19.5	20.4	22.6	23.4	20.1	19.6	21.5	20.7	22.2	21.0	18.7	17.7	18.3	17.2	18.6
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**39.8**	**40.1**	**40.7**	**39.8**	**37.5**	**35.8**	**37.1**	**39.3**	**38.9**	**39.2**	**39.8**	**40.7**	**37.7**	**35.1**	**33.7**	**33.8**	**30.9**	**31.0**	**32.1**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Residential Sector

Nova Scotia[1]
Table 3: Lighting Secondary Energy Use and GHG Emissions

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Lighting Energy Use[2] (PJ)	**1.6**	**1.7**	**1.7**	**1.7**	**1.7**	**1.7**	**1.6**	**1.6**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.6**	**1.5**	**1.4**	**1.4**	**1.4**	**1.5**
Activity																			
Total Households (thousands)	359.5	362.6	366.6	370.6	374.0	377.0	379.6	382.9	387.9	392.5	389.8	391.2	393.4	393.3	397.0	400.0	402.0	406.0	410.8
Energy Intensity (GJ/household)	**4.4**	**4.7**	**4.7**	**4.6**	**4.5**	**4.4**	**4.3**	**4.3**	**3.9**	**3.8**	**3.9**	**3.8**	**3.9**	**3.9**	**3.7**	**3.5**	**3.6**	**3.5**	**3.7**
Total Lighting GHG Emissions Excluding Electricity[2]	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Heat Loss (PJ)	**0.6**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.6**	**0.6**	**0.6**	**0.7**	**0.6**	**0.6**	**0.5**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) Lighting consumes only electricity.

Residential Sector

Nova Scotia[1]

Table 4: Space Cooling Secondary Energy Use and GHG Emissions by Cooling System Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Cooling Energy Use[2] (PJ)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.2**	**0.2**	**0.3**
Energy Use by Cooling System Type (PJ)																			
Room	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Room	60.3	56.0	55.3	59.7	68.2	64.9	65.2	62.0	64.7	61.9	61.4	55.8	54.7	54.7	54.3	54.7	53.9	53.7	53.7
Central	39.7	44.0	44.7	40.3	31.8	35.1	34.8	38.0	35.3	38.1	38.6	44.2	45.3	45.3	45.7	45.3	46.1	46.3	46.3
Activity																			
Cooled Floor Space (million m^2)	3.8	2.8	3.3	3.9	4.1	4.4	5.0	6.7	6.6	7.4	8.4	9.1	10.1	10.8	11.5	7.5	13.0	13.7	14.5
Energy Intensity (MJ/m^2)	**7.3**	**11.7**	**9.2**	**9.8**	**7.2**	**14.2**	**9.9**	**5.4**	**12.2**	**12.1**	**16.5**	**9.7**	**16.7**	**14.9**	**11.9**	**22.7**	**14.5**	**13.6**	**20.2**
Total Space Cooling GHG Emissions Excluding Electricity[2] (Mt of CO_2e)	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) Space cooling consumes only electricity.

Residential Sector

Nova Scotia[1]
Table 5: Space Heating Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Heating Energy Use (PJ)	**32.4**	**34.4**	**34.6**	**32.5**	**30.0**	**28.0**	**27.4**	**30.8**	**33.9**	**33.9**	**34.6**	**37.4**	**32.8**	**31.4**	**30.9**	**31.6**	**28.4**	**29.6**	**30.6**
Energy Use by Energy Source (PJ)																			
Electricity	4.4	4.7	5.0	5.0	5.4	5.2	4.7	4.9	5.7	5.9	5.4	5.9	5.3	5.8	6.1	6.3	6.0	6.5	6.4
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Heating Oil	17.5	18.7	19.6	17.9	15.6	13.5	13.9	16.6	17.5	17.6	18.1	20.3	16.1	14.2	13.3	13.5	10.8	11.4	12.4
Other[2]	0.5	0.7	0.7	0.7	0.6	0.9	0.9	0.9	1.0	1.0	1.0	0.7	0.6	0.5	0.4	0.5	0.5	0.4	0.6
Wood	10.1	10.3	9.3	8.8	8.4	8.4	7.9	8.4	9.7	9.0	9.9	10.3	10.7	10.8	11.0	11.0	10.9	11.0	11.0
Shares (%)																			
Electricity	13.5	13.8	14.5	15.5	17.8	18.5	17.2	15.9	16.7	17.4	15.7	15.7	16.2	18.3	19.7	20.1	21.1	22.0	20.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.6	0.3	0.3	0.5	0.6	0.7	0.7	0.7	0.8
Heating Oil	54.0	54.3	56.5	55.0	52.0	48.4	50.5	53.9	51.8	52.0	52.2	54.3	49.0	45.2	42.8	42.7	38.0	38.6	40.6
Other[2]	1.5	2.0	2.1	2.3	2.1	3.1	3.4	2.8	3.0	2.9	2.9	2.0	1.8	1.6	1.4	1.7	1.7	1.5	2.0
Wood	31.1	29.9	27.0	27.2	28.0	30.0	29.0	27.3	28.5	26.6	28.6	27.6	32.7	34.3	35.4	34.8	38.5	37.1	35.8
Activity																			
Total Floor Space (million m^2)	46.4	47.1	47.9	48.9	49.8	50.7	51.6	52.5	53.5	54.3	55.1	55.9	56.7	57.6	58.2	58.9	59.4	60.6	61.3
Energy Intensity (GJ/m^2)	**0.70**	**0.73**	**0.72**	**0.66**	**0.60**	**0.55**	**0.53**	**0.59**	**0.63**	**0.63**	**0.63**	**0.67**	**0.58**	**0.55**	**0.53**	**0.54**	**0.48**	**0.49**	**0.50**
Total Space Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.5**	**1.6**	**1.6**	**1.5**	**1.3**	**1.2**	**1.2**	**1.4**	**1.5**	**1.5**	**1.6**	**1.7**	**1.4**	**1.3**	**1.2**	**1.3**	**1.1**	**1.1**	**1.2**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	1.2	1.3	1.4	1.3	1.1	1.0	1.0	1.2	1.2	1.3	1.3	1.4	1.1	1.0	0.9	1.0	0.8	0.8	0.9
Other[2]	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
GHG Intensity (tonne/TJ)	**46.4**	**46.7**	**47.6**	**46.8**	**44.7**	**43.3**	**44.7**	**46.4**	**45.2**	**45.4**	**45.8**	**46.4**	**43.7**	**41.4**	**39.9**	**39.9**	**37.4**	**37.4**	**38.9**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Heat Gains (PJ)	**2.5**	**2.7**	**2.9**	**2.8**	**2.9**	**2.7**	**2.4**	**2.5**	**2.8**	**2.9**	**2.6**	**2.8**	**2.5**	**2.7**	**2.9**	**3.0**	**2.9**	**3.1**	**3.1**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]

Table 6: Space Heating Secondary Energy Use and GHG Emissions by Building Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Heating Energy Use (PJ)	**32.4**	**34.4**	**34.6**	**32.5**	**30.0**	**28.0**	**27.4**	**30.8**	**33.9**	**33.9**	**34.6**	**37.4**	**32.8**	**31.4**	**30.9**	**31.6**	**28.4**	**29.6**	**30.6**
Energy Use by Building Type (PJ)																			
Single Detached	25.9	27.5	27.7	25.9	23.9	22.3	21.8	24.5	26.9	27.0	27.5	29.7	26.0	24.9	24.4	24.9	22.4	23.2	24.0
Single Attached	2.0	2.2	2.2	2.1	1.9	1.8	1.8	2.0	2.2	2.2	2.3	2.5	2.2	2.1	2.1	2.2	2.0	2.1	2.2
Apartments	3.0	3.2	3.2	3.0	2.8	2.6	2.6	2.9	3.2	3.2	3.3	3.6	3.1	3.0	3.0	3.1	2.8	3.0	3.1
Mobile Homes	1.5	1.6	1.6	1.5	1.4	1.3	1.2	1.4	1.5	1.5	1.5	1.7	1.4	1.4	1.3	1.4	1.2	1.3	1.3
Shares (%)																			
Single Detached	79.9	79.8	79.9	79.8	79.7	79.6	79.5	79.5	79.4	79.5	79.4	79.4	79.3	79.1	79.0	78.9	78.7	78.5	78.4
Single Attached	6.3	6.3	6.3	6.3	6.4	6.4	6.5	6.5	6.5	6.5	6.6	6.6	6.7	6.8	6.9	6.9	7.0	7.1	7.2
Apartments	9.2	9.2	9.2	9.2	9.3	9.4	9.4	9.5	9.5	9.5	9.6	9.5	9.6	9.7	9.8	9.8	10.0	10.1	10.1
Mobile Homes	4.6	4.6	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3
Activity																			
Total Floor Space (million m^2)	46.4	47.1	47.9	48.9	49.8	50.7	51.6	52.5	53.5	54.3	55.1	55.9	56.7	57.6	58.2	58.9	59.4	60.6	61.3
Energy Intensity (GJ/m^2)	**0.70**	**0.73**	**0.72**	**0.66**	**0.60**	**0.55**	**0.53**	**0.59**	**0.63**	**0.63**	**0.63**	**0.67**	**0.58**	**0.55**	**0.53**	**0.54**	**0.48**	**0.49**	**0.50**
Total Space Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.5**	**1.6**	**1.6**	**1.5**	**1.3**	**1.2**	**1.2**	**1.4**	**1.5**	**1.5**	**1.6**	**1.7**	**1.4**	**1.3**	**1.2**	**1.3**	**1.1**	**1.1**	**1.2**
GHG Emissions by Building Type (Mt of CO_2e)																			
Single Detached	1.2	1.3	1.3	1.2	1.1	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.1	1.0	1.0	1.0	0.8	0.9	0.9
Single Attached	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Apartments	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Mobile Homes	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
GHG Intensity (tonne/TJ)	**46.4**	**46.7**	**47.6**	**46.8**	**44.7**	**43.3**	**44.7**	**46.4**	**45.2**	**45.4**	**45.8**	**46.4**	**43.7**	**41.4**	**39.9**	**39.9**	**37.4**	**37.4**	**38.9**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Residential Sector

Nova Scotia[1]

Table 7: Space Heating Secondary Energy Use and GHG Emissions by Vintage

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Heating Energy Use (PJ)	**32.4**	**34.4**	**34.6**	**32.5**	**30.0**	**28.0**	**27.4**	**30.8**	**33.9**	**33.9**	**34.6**	**37.4**	**32.8**	**31.4**	**30.9**	**31.6**	**28.4**	**29.6**	**30.6**
Energy Use by Vintage (PJ)																			
Before 1946	10.8	11.3	11.3	10.4	9.5	8.7	8.5	9.4	10.2	10.1	10.2	10.9	9.4	8.9	8.7	8.7	7.8	7.9	8.1
1946–1960	3.4	3.6	3.6	3.3	3.0	2.8	2.7	3.0	3.2	3.2	3.2	3.4	3.0	2.8	2.7	2.8	2.5	2.5	2.6
1961–1977	5.1	5.3	5.3	4.8	4.4	4.1	3.9	4.3	4.7	4.6	4.7	5.0	4.3	4.1	4.0	4.0	3.5	3.6	3.7
1978–1983	3.7	3.9	3.8	3.5	3.2	2.9	2.9	3.2	3.4	3.4	3.4	3.7	3.2	3.0	2.9	3.0	2.6	2.7	2.8
1984–1995	7.4	7.7	7.7	7.1	6.4	5.9	5.7	6.3	6.9	6.8	6.8	7.3	6.3	6.0	5.9	5.9	5.3	5.5	5.6
1996–2000	2.0	2.1	2.1	2.0	1.8	1.7	1.6	1.8	2.0	2.0	2.0	2.1	1.9	1.8	1.7	1.8	1.6	1.6	1.7
2001–2005	0.0	0.4	0.9	1.3	1.6	1.9	1.8	2.1	2.3	2.2	2.3	2.5	2.1	2.0	2.0	2.0	1.8	1.9	2.0
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	1.2	1.6	2.0	2.1	1.9	1.8	1.8	1.8	1.6	1.7	1.7
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.7	1.0	1.3	1.6	1.4	1.5	1.5
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	1.0
Shares (%)																			
Before 1946	33.3	32.9	32.6	32.1	31.6	31.2	30.8	30.4	30.1	29.8	29.5	29.2	28.8	28.4	28.0	27.7	27.3	26.7	26.3
1946–1960	10.6	10.5	10.4	10.2	10.0	9.9	9.7	9.6	9.5	9.4	9.3	9.1	9.1	9.0	8.9	8.8	8.7	8.6	8.5
1961–1977	15.7	15.4	15.2	14.9	14.7	14.5	14.3	14.1	13.9	13.7	13.5	13.3	13.1	12.9	12.8	12.6	12.5	12.2	12.0
1978–1983	11.5	11.3	11.1	10.8	10.7	10.5	10.4	10.3	10.1	10.0	9.9	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.1
1984–1995	22.7	22.4	22.1	21.8	21.4	21.1	20.9	20.6	20.3	20.0	19.8	19.6	19.3	19.1	19.0	18.8	18.7	18.5	18.3
1996–2000	6.3	6.2	6.2	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.7	5.6	5.6	5.6	5.6	5.5	5.5
2001–2005	0.0	1.2	2.5	4.1	5.4	6.8	6.7	6.7	6.7	6.6	6.6	6.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.4	3.6	4.7	5.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.1	3.2	4.1	4.9	4.9	4.9	4.9
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.2	3.2
Activity																			
Total Floor Space (million m^2)	46.4	47.1	47.9	48.9	49.8	50.7	51.6	52.5	53.5	54.3	55.1	55.9	56.7	57.6	58.2	58.9	59.4	60.6	61.3
Energy Intensity (GJ/m^2)	**0.70**	**0.73**	**0.72**	**0.66**	**0.60**	**0.55**	**0.53**	**0.59**	**0.63**	**0.63**	**0.63**	**0.67**	**0.58**	**0.55**	**0.53**	**0.54**	**0.48**	**0.49**	**0.50**
Total Space Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.5**	**1.6**	**1.6**	**1.5**	**1.3**	**1.2**	**1.2**	**1.4**	**1.5**	**1.5**	**1.6**	**1.7**	**1.4**	**1.3**	**1.2**	**1.3**	**1.1**	**1.1**	**1.2**
GHG Emissions by Vintage (Mt of CO_2e)																			
Before 1946	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3
1946–1960	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1961–1977	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
1978–1983	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1984–1995	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
1996–2000	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2001–2005	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**46.4**	**46.7**	**47.6**	**46.8**	**44.7**	**43.3**	**44.7**	**46.4**	**45.2**	**45.4**	**45.8**	**46.4**	**43.7**	**41.4**	**39.9**	**39.9**	**37.4**	**37.4**	**38.9**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Residential Sector

Nova Scotia
Table 8: Space Heating Secondary Energy Use by System Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Heating Energy Use (PJ)	**32.4**	**34.4**	**34.6**	**32.5**	**30.0**	**28.0**	**27.4**	**30.8**	**33.9**	**33.9**	**34.6**	**37.4**	**32.8**	**31.4**	**30.9**	**31.6**	**28.4**	**29.6**	**30.6**
Energy Use by System Type (PJ)																			
Heating Oil – Normal Efficiency	8.1	7.8	7.1	5.6	4.4	3.1	2.5	2.2	1.8	1.1	0.7	0.6	0.4	0.3	0.2	0.1	0.1	0.0	0.0
Heating Oil – Medium Efficiency	7.6	9.0	10.5	10.4	9.7	9.1	9.9	12.5	13.7	14.5	15.2	17.3	13.8	12.4	11.8	12.1	9.8	10.5	11.3
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Natural Gas – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Electric	3.5	3.8	4.0	4.0	4.3	4.1	3.8	3.9	4.5	4.7	4.3	4.7	4.2	4.5	4.8	5.0	4.7	5.1	4.9
Heat Pump	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7
Other[1]	0.5	0.7	0.7	0.7	0.6	0.9	0.9	0.9	1.0	1.0	1.0	0.7	0.6	0.5	0.4	0.5	0.5	0.4	0.6
Wood	2.3	2.0	1.8	1.7	1.6	1.7	1.6	1.6	1.9	1.8	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2
Dual Systems																			
Wood/Electric	6.2	6.6	6.1	5.7	5.5	5.4	5.2	5.5	6.3	5.9	6.4	6.7	7.0	7.0	7.1	7.1	7.1	7.1	7.1
Wood/Heating Oil	3.7	4.0	4.0	3.7	3.4	3.2	3.2	3.7	4.0	4.0	4.2	4.6	4.1	3.8	3.6	3.7	3.3	3.3	3.5
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Heating Oil – Normal Efficiency	25.1	22.6	20.4	17.4	14.5	11.0	9.1	7.2	5.4	3.3	1.9	1.7	1.3	0.9	0.5	0.4	0.2	0.1	0.1
Heating Oil – Medium Efficiency	23.5	26.2	30.3	32.0	32.3	32.6	36.0	40.6	40.6	42.6	44.0	46.2	42.1	39.5	38.2	38.2	34.6	35.4	37.0
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Natural Gas – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.6
Electric	10.9	11.2	11.6	12.4	14.3	14.8	13.7	12.7	13.3	13.9	12.5	12.5	12.8	14.5	15.5	15.7	16.4	17.1	16.0
Heat Pump	0.9	0.9	1.0	1.1	1.4	1.5	1.4	1.3	1.4	1.5	1.4	1.4	1.5	1.7	1.9	2.0	2.1	2.3	2.2
Other[1]	1.5	2.0	2.1	2.3	2.1	3.1	3.4	2.8	3.0	2.9	2.9	2.0	1.8	1.6	1.4	1.7	1.7	1.5	2.0
Wood	7.2	5.8	5.2	5.3	5.4	6.0	5.7	5.3	5.6	5.2	5.5	5.3	6.2	6.6	6.9	6.8	7.6	7.4	7.2
Dual Systems																			
Wood/Electric	19.2	19.3	17.5	17.7	18.3	19.3	18.8	17.8	18.5	17.4	18.6	18.0	21.3	22.4	23.0	22.6	24.9	24.0	23.1
Wood/Heating Oil	11.5	11.7	11.6	11.5	11.4	11.3	11.6	11.9	11.9	11.8	12.2	12.3	12.4	12.0	11.7	11.6	11.5	11.3	11.3
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Activity																			
Total Floor Space (million m^2)	46.4	47.1	47.9	48.9	49.8	50.7	51.6	52.5	53.5	54.3	55.1	55.9	56.7	57.6	58.2	58.9	59.4	60.6	61.3
Energy Intensity (GJ/m^2)	**0.70**	**0.73**	**0.72**	**0.66**	**0.60**	**0.55**	**0.53**	**0.59**	**0.63**	**0.63**	**0.63**	**0.67**	**0.58**	**0.55**	**0.53**	**0.54**	**0.48**	**0.49**	**0.50**
Heat Gains (PJ)	**2.5**	**2.7**	**2.9**	**2.8**	**2.9**	**2.7**	**2.4**	**2.5**	**2.8**	**2.9**	**2.6**	**2.8**	**2.5**	**2.7**	**2.9**	**3.0**	**2.9**	**3.1**	**3.1**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**

1) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]
Table 9: Space Heating GHG Emissions by System Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.5**	**1.6**	**1.6**	**1.5**	**1.3**	**1.2**	**1.2**	**1.4**	**1.5**	**1.5**	**1.6**	**1.7**	**1.4**	**1.3**	**1.2**	**1.3**	**1.1**	**1.1**	**1.2**
GHG Emissions by System Type (Mt of CO_2e)																			
Heating Oil – Normal Efficiency	0.6	0.5	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil – Medium Efficiency	0.5	0.6	0.7	0.7	0.7	0.6	0.7	0.9	0.9	1.0	1.0	1.2	0.9	0.8	0.8	0.8	0.7	0.7	0.8
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heat Pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Dual Systems																			
Wood/Electric	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Wood/Heating Oil	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Heating Oil – Normal Efficiency	37.3	33.5	29.6	25.7	22.3	17.4	14.1	10.8	8.2	5.0	2.9	2.5	2.0	1.6	0.9	0.8	0.4	0.1	0.2
Heating Oil – Medium Efficiency	34.7	38.5	43.7	46.8	49.1	51.2	55.1	60.1	61.4	64.3	66.1	68.5	66.1	64.9	64.8	64.7	61.9	63.2	63.9
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3
Natural Gas – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.2	0.2	0.4	0.5	0.6	0.6	0.7	0.8
Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heat Pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	2.0	2.6	2.6	3.0	2.9	4.4	4.6	3.7	4.0	4.0	3.8	2.6	2.5	2.4	2.2	2.6	2.7	2.4	3.2
Wood	3.6	2.9	2.6	2.7	2.9	3.3	3.0	2.7	2.9	2.7	2.8	2.7	3.3	3.7	4.1	4.0	4.8	4.7	4.3
Dual Systems																			
Wood/Electric	9.5	9.5	8.5	8.7	9.4	10.2	9.7	8.8	9.4	8.8	9.3	8.9	11.2	12.4	13.3	13.0	15.3	14.7	13.6
Wood/Heating Oil	12.5	12.6	12.7	12.8	13.0	13.0	13.2	13.4	13.6	13.7	13.9	13.9	14.0	13.9	13.7	13.6	13.6	13.4	13.3
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5
GHG Intensity (tonne/TJ)	**46.4**	**46.7**	**47.6**	**46.8**	**44.7**	**43.3**	**44.7**	**46.4**	**45.2**	**45.4**	**45.8**	**46.4**	**43.7**	**41.4**	**39.9**	**39.9**	**37.4**	**37.4**	**38.9**
Heat Gains (PJ)	**2.5**	**2.7**	**2.9**	**2.8**	**2.9**	**2.7**	**2.4**	**2.5**	**2.8**	**2.9**	**2.6**	**2.8**	**2.5**	**2.7**	**2.9**	**3.0**	**2.9**	**3.1**	**3.1**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]

Table 10: Water Heating Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Water Heating Energy Use (PJ)	**8.3**	**8.9**	**8.9**	**8.3**	**7.4**	**7.3**	**8.0**	**9.2**	**8.2**	**8.0**	**8.9**	**9.1**	**8.6**	**7.7**	**6.6**	**6.4**	**6.0**	**5.8**	**6.6**
Energy Use by Energy Source (PJ)																			
Electricity	2.3	2.5	2.5	2.4	2.4	2.5	2.5	2.6	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	5.0	5.4	5.6	5.2	4.4	4.1	4.8	5.9	5.2	5.1	5.8	6.1	5.5	4.6	3.8	3.6	3.1	3.0	3.6
Other[2]	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.9	0.9	0.8	0.7	0.6	0.6	0.7	0.7	0.6	0.6	0.7	0.7	0.8	0.7	0.6	0.6	0.7	0.6	0.6
Shares (%)																			
Electricity	28.1	27.8	28.0	29.0	32.7	34.1	31.2	28.0	28.8	28.9	26.2	25.2	26.9	30.4	33.3	33.7	37.0	37.7	35.3
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	60.3	61.2	62.9	62.5	58.8	56.5	59.8	63.8	62.7	63.4	65.4	67.0	63.8	60.1	56.7	56.5	51.8	51.7	54.4
Other[2]	0.5	0.6	0.6	0.6	0.5	0.8	0.8	0.7	0.7	0.7	0.7	0.5	0.4	0.4	0.3	0.4	0.4	0.3	0.5
Wood	11.1	10.4	8.5	7.9	7.9	8.6	8.1	7.6	7.8	7.0	7.8	7.4	8.9	9.2	9.6	9.4	10.8	10.2	9.8
Activity																			
Total Households (thousands)	359.5	362.6	366.6	370.6	374.0	377.0	379.6	382.9	387.9	392.5	389.8	391.2	393.4	393.3	397.0	400.0	402.0	406.0	410.8
Energy Intensity (GJ/household)	**23.1**	**24.5**	**24.3**	**22.3**	**19.9**	**19.3**	**21.1**	**24.0**	**21.2**	**20.4**	**22.9**	**23.4**	**21.9**	**19.5**	**16.7**	**16.0**	**15.0**	**14.4**	**16.1**
Total Water Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.4**	**0.4**	**0.4**	**0.4**	**0.3**	**0.3**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.5**	**0.4**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.3**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.3
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**45.6**	**46.2**	**46.9**	**46.5**	**43.9**	**42.6**	**44.9**	**47.5**	**46.7**	**47.0**	**48.6**	**49.6**	**47.6**	**45.0**	**42.7**	**42.5**	**39.5**	**39.3**	**41.2**
Heat Loss (PJ)	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]

Table 11: Water Heating Secondary Energy Use and GHG Emissions by Building Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Water Heating Energy Use (PJ)	**8.3**	**8.9**	**8.9**	**8.3**	**7.4**	**7.3**	**8.0**	**9.2**	**8.2**	**8.0**	**8.9**	**9.1**	**8.6**	**7.7**	**6.6**	**6.4**	**6.0**	**5.8**	**6.6**
Energy Use by Building Type (PJ)																			
Single Detached	6.0	6.4	6.4	5.9	5.4	5.3	5.8	6.7	5.9	5.7	6.3	6.4	6.1	5.4	4.7	4.5	4.2	4.1	4.7
Single Attached	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.5	0.5	0.5	0.5	0.6
Apartments	1.4	1.5	1.5	1.4	1.3	1.2	1.4	1.6	1.4	1.4	1.6	1.7	1.6	1.4	1.2	1.2	1.1	1.1	1.2
Mobile Homes	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Shares (%)																			
Single Detached	72.2	72.1	72.1	72.0	72.2	72.4	72.5	72.7	72.1	71.5	70.9	70.3	70.3	70.3	70.2	70.3	70.3	70.3	70.2
Single Attached	7.0	7.0	7.1	7.1	7.0	6.9	6.7	6.6	6.8	7.1	7.4	7.7	7.8	7.8	7.9	8.2	8.3	8.3	8.3
Apartments	17.2	17.2	17.2	17.2	17.1	17.0	16.9	16.9	17.3	17.7	18.1	18.5	18.5	18.5	18.5	18.3	18.3	18.3	18.4
Mobile Homes	3.7	3.7	3.7	3.6	3.7	3.7	3.8	3.9	3.8	3.7	3.6	3.5	3.5	3.5	3.4	3.1	3.1	3.1	3.1
Activity																			
Total Households (thousands)	359.5	362.6	366.6	370.6	374.0	377.0	379.6	382.9	387.9	392.5	389.8	391.2	393.4	393.3	397.0	400.0	402.0	406.0	410.8
Energy Intensity (GJ/household)	**23.1**	**24.5**	**24.3**	**22.3**	**19.9**	**19.3**	**21.1**	**24.0**	**21.2**	**20.4**	**22.9**	**23.4**	**21.9**	**19.5**	**16.7**	**16.0**	**15.0**	**14.4**	**16.1**
Total Water Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.4**	**0.4**	**0.4**	**0.4**	**0.3**	**0.3**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.5**	**0.4**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.3**
GHG Emissions by Building Type (Mt of CO_2e)																			
Single Detached	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Single Attached	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Apartments	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
Mobile Homes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**45.6**	**46.2**	**46.9**	**46.5**	**43.9**	**42.6**	**44.9**	**47.5**	**46.7**	**47.0**	**48.6**	**49.6**	**47.6**	**45.0**	**42.7**	**42.5**	**39.5**	**39.3**	**41.2**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Residential Sector

Nova Scotia[1]

Table 12: Appliance Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Appliance Energy Use (PJ)	**5.0**	**5.4**	**5.5**	**5.3**	**5.3**	**5.5**	**5.6**	**5.8**	**5.5**	**5.5**	**5.6**	**5.7**	**5.8**	**6.1**	**5.9**	**5.8**	**6.0**	**6.1**	**6.6**
Energy Use by Energy Source (PJ)																			
Electricity	5.0	5.4	5.5	5.3	5.3	5.5	5.6	5.8	5.5	5.5	5.6	5.7	5.8	6.0	5.8	5.8	6.0	6.1	6.5
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.3	99.4	99.6	99.6	99.5	99.4	99.4	99.4	99.4	99.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.8
Activity																			
Total Households (thousands)	359.5	362.6	366.6	370.6	374.0	377.0	379.6	382.9	387.9	392.5	389.8	391.2	393.4	393.3	397.0	400.0	402.0	406.0	410.8
Energy Intensity (GJ/household)	**14.0**	**14.8**	**15.0**	**14.3**	**14.2**	**14.5**	**14.6**	**15.3**	**14.2**	**14.0**	**14.4**	**14.6**	**14.8**	**15.5**	**14.8**	**14.5**	**15.0**	**15.0**	**16.0**
Total Appliance GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.3**	**0.3**	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Residential Sector

Nova Scotia[1]
Table 13: Appliance Secondary Energy Use and GHG Emissions by Appliance Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Appliance Energy Use (PJ)	**5.0**	**5.4**	**5.5**	**5.3**	**5.3**	**5.5**	**5.6**	**5.8**	**5.5**	**5.5**	**5.6**	**5.7**	**5.8**	**6.1**	**5.9**	**5.8**	**6.0**	**6.1**	**6.6**
Energy Use by Appliance Type (PJ)																			
Refrigerator	1.2	1.2	1.2	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.9	0.8	0.8	0.8	0.8	0.8
Freezer	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.4
Dishwasher[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Clothes Washer[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Clothes Dryer	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2
Range	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9
Other Appliances[3]	1.3	1.5	1.6	1.6	1.7	1.8	1.9	2.1	2.0	2.1	2.2	2.4	2.5	2.7	2.6	2.6	2.8	2.9	3.1
Shares (%)																			
Refrigerator	23.9	23.0	22.1	20.7	19.8	19.0	18.4	17.7	17.1	16.4	15.7	15.0	14.5	14.1	13.7	13.3	13.0	12.8	12.7
Freezer	10.5	9.9	9.2	8.8	8.3	7.9	7.6	7.3	7.0	6.7	6.3	6.1	6.0	5.9	5.9	5.8	5.8	5.8	5.7
Dishwasher[2]	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.1	1.0	1.0
Clothes Washer[2]	2.6	2.6	2.6	2.6	2.6	2.5	2.4	2.3	2.1	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.9
Clothes Dryer	18.5	18.5	18.4	18.7	18.7	18.8	18.8	18.9	18.9	18.8	18.7	18.6	18.6	18.5	18.4	18.5	18.5	18.2	17.7
Range	16.1	16.4	16.5	16.8	17.1	17.1	16.9	16.7	16.3	16.6	16.2	15.6	15.2	15.0	14.7	14.5	14.2	14.1	14.1
Other Appliances[3]	26.3	27.5	29.0	30.3	31.4	32.7	34.0	35.4	37.0	37.9	39.8	41.6	42.8	43.8	44.9	45.6	46.3	47.0	47.9
Activity																			
Total Households (thousands)	359.5	362.6	366.6	370.6	374.0	377.0	379.6	382.9	387.9	392.5	389.8	391.2	393.4	393.3	397.0	400.0	402.0	406.0	410.8
Energy Intensity (GJ/household)	**14.0**	**14.8**	**15.0**	**14.3**	**14.2**	**14.5**	**14.6**	**15.3**	**14.2**	**14.0**	**14.4**	**14.6**	**14.8**	**15.5**	**14.8**	**14.5**	**15.0**	**15.0**	**16.0**
Total Appliance GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by Appliance Type (Mt of CO_2e)																			
Refrigerator	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Freezer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dishwasher[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Clothes Washer[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Clothes Dryer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Appliances[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.3**	**0.3**	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**
Heat Loss by Appliance Type (PJ)																			
Refrigerator	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3
Freezer	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2
Dishwasher[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Clothes Washer[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Clothes Dryer	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Range	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other[3]	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.9	0.9	0.9	1.0	0.9	1.0	1.1	1.2	1.2	1.3	1.3

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) Excludes hot water requirements.
3) "Other Appliances" includes small appliances such as microwaves, televisions, cable boxes, video cassette recorders, stereo systems and computers.

Residential Sector

Nova Scotia
Table 14: Total Households by Building Type and Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Households (thousands)	**359.5**	**362.6**	**366.6**	**370.6**	**374.0**	**377.0**	**379.6**	**382.9**	**387.9**	**392.5**	**389.8**	**391.2**	**393.4**	**393.3**	**397.0**	**400.0**	**402.0**	**406.0**	**410.8**
Households by Building Type (thousands)																			
Single Detached	243.2	245.2	247.8	250.3	252.5	254.4	256.1	258.2	261.4	264.4	262.4	263.3	264.6	264.5	266.9	268.8	270.0	272.6	275.7
Single Attached	23.1	23.5	23.9	24.4	24.8	25.2	25.6	26.0	26.5	27.0	27.0	27.2	27.6	27.7	28.2	28.5	28.8	29.3	29.8
Apartments	78.7	79.4	80.3	81.2	82.0	82.7	83.3	84.0	85.2	86.2	85.6	86.0	86.5	86.5	87.3	88.0	88.5	89.4	90.5
Mobile Homes	14.5	14.5	14.6	14.6	14.7	14.7	14.7	14.7	14.8	14.9	14.7	14.7	14.7	14.6	14.7	14.7	14.7	14.8	14.8
Shares (%)																			
Single Detached	67.7	67.6	67.6	67.5	67.5	67.5	67.5	67.4	67.4	67.4	67.3	67.3	67.3	67.2	67.2	67.2	67.2	67.1	67.1
Single Attached	6.4	6.5	6.5	6.6	6.6	6.7	6.7	6.8	6.8	6.9	6.9	7.0	7.0	7.0	7.1	7.1	7.2	7.2	7.3
Apartments	21.9	21.9	21.9	21.9	21.9	21.9	21.9	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Mobile Homes	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6
Households by Energy Source (thousands)																			
Electricity	91.3	93.1	92.1	92.8	94.6	94.8	96.1	96.8	98.5	101.8	101.9	102.8	105.1	105.1	106.1	106.9	107.4	108.5	109.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	214.1	216.5	220.8	223.5	224.7	226.5	227.7	229.8	232.2	233.3	231.5	232.2	233.4	233.4	235.6	237.4	238.5	240.9	243.8
Other[1]	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.4	7.3	7.3	7.4	7.4	7.4	7.5	7.5	7.6	7.7
Wood	46.9	45.8	46.4	47.0	47.4	48.4	48.5	49.0	49.8	49.9	49.1	48.9	47.5	47.5	47.9	48.3	48.5	49.0	49.6
Shares (%)																			
Electricity	25.4	25.7	25.1	25.0	25.3	25.2	25.3	25.3	25.4	25.9	26.1	26.3	26.7	26.7	26.7	26.7	26.7	26.7	26.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	59.5	59.7	60.2	60.3	60.1	60.1	60.0	60.0	59.9	59.5	59.4	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3
Other[1]	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Wood	13.0	12.6	12.6	12.7	12.7	12.8	12.8	12.8	12.8	12.7	12.6	12.5	12.1	12.1	12.1	12.1	12.1	12.1	12.1

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia
Table 15: Housing Stock by Building Type and Vintage

	2000	2001	2002	2003	2004	2005	2006
Total Housing Stock (thousands)	**377.9**	**381.4**	**385.3**	**390.5**	**395.2**	**399.5**	**403.8**
(thousands)							
Single Detached	256.2	258.2	260.7	264.1	266.8	269.6	272.0
Single Attached	24.3	24.5	24.8	25.4	25.9	26.3	26.9
Apartments	82.2	83.2	84.2	85.3	86.7	87.6	88.7
Mobile Homes	15.3	15.4	15.5	15.7	15.9	16.0	16.2
Shares (%)							
Single Detached	67.8	67.7	67.7	67.6	67.5	67.5	67.4
Single Attached	6.4	6.4	6.4	6.5	6.5	6.6	6.7
Apartments	21.7	21.8	21.9	21.9	21.9	21.9	22.0
Mobile Homes	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Housing Stock by Vintage (thousands)							
Before 1946	85.3	84.0	82.7	81.4	80.2	79.0	77.8
1946–1960	34.5	34.1	33.7	33.3	32.9	32.6	32.2
1961–1977	62.6	61.7	60.8	59.9	59.0	58.2	57.3
1978–1983	48.5	47.9	47.4	46.8	46.3	45.7	45.2
1984–1995	111.3	110.4	109.6	108.8	108.0	107.2	106.5
1996–2000	35.8	35.6	35.5	35.4	35.3	35.2	35.1
2001–2005	0.0	7.6	15.5	24.7	33.4	41.6	41.6
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	8.2
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	22.6	22.0	21.5	20.9	20.3	19.8	19.3
1946–1960	9.1	8.9	8.8	8.5	8.3	8.2	8.0
1961–1977	16.6	16.2	15.8	15.3	14.9	14.6	14.2
1978–1983	12.8	12.6	12.3	12.0	11.7	11.4	11.2
1984–1995	29.4	29.0	28.5	27.9	27.3	26.8	26.4
1996–2000	9.5	9.3	9.2	9.1	8.9	8.8	8.7
2001–2005	0.0	2.0	4.0	6.3	8.4	10.4	10.3

Office of Energy Efficiency, Demand Policy and Analysis Division, Market Analysis Group.

Residential Sector

Nova Scotia

Table 16: Single Detached and Single Attached Housing Stock by Vintage

	2000	2001	2002	2003	2004	2005	2006
Total Single Detached Housing Stock (thousands)	**256.2**	**258.2**	**260.7**	**264.1**	**266.8**	**269.6**	**272.0**
Stock by Vintage (thousands)							
Before 1946	58.5	57.6	56.8	55.9	55.0	54.2	53.3
1946–1960	23.5	23.3	23.0	22.7	22.4	22.2	21.9
1961–1977	42.9	42.3	41.7	41.1	40.5	39.9	39.3
1978–1983	33.6	33.2	32.9	32.5	32.1	31.7	31.3
1984–1995	71.3	70.8	70.3	69.8	69.3	68.7	68.2
1996–2000	26.3	26.2	26.1	26.0	26.0	25.9	25.8
2001–2005	0.0	4.8	10.0	16.2	21.5	27.0	27.0
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	5.1
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	22.8	22.3	21.8	21.2	20.6	20.1	19.6
1946–1960	9.2	9.0	8.8	8.6	8.4	8.2	8.1
1961–1977	16.7	16.4	16.0	15.5	15.2	14.8	14.4
1978–1983	13.1	12.9	12.6	12.3	12.0	11.8	11.5
1984–1995	27.8	27.4	27.0	26.4	26.0	25.5	25.1
1996–2000	10.3	10.1	10.0	9.9	9.7	9.6	9.5
2001–2005	0.0	1.9	3.8	6.1	8.1	10.0	9.9
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	1.9
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Single Attached Housing Stock (thousands)	**24.3**	**24.5**	**24.8**	**25.4**	**25.9**	**26.3**	**26.9**
Stock by Vintage (thousands)							
Before 1946	3.8	3.7	3.7	3.6	3.5	3.5	3.4
1946–1960	1.6	1.6	1.6	1.6	1.5	1.5	1.5
1961–1977	2.8	2.8	2.7	2.7	2.6	2.6	2.6
1978–1983	3.4	3.4	3.4	3.3	3.3	3.2	3.2
1984–1995	9.4	9.3	9.2	9.2	9.1	9.0	9.0
1996–2000	3.3	3.3	3.3	3.3	3.3	3.3	3.3
2001–2005	0.0	0.5	1.0	1.8	2.5	3.2	3.2
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.8
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	15.5	15.1	14.7	14.2	13.7	13.2	12.8
1946–1960	6.6	6.5	6.3	6.1	5.9	5.8	5.6
1961–1977	11.5	11.2	10.9	10.5	10.2	9.9	9.5
1978–1983	14.1	13.8	13.5	13.1	12.7	12.3	11.9
1984–1995	38.5	37.9	37.2	36.1	35.2	34.3	33.4
1996–2000	13.7	13.6	13.4	13.0	12.8	12.5	12.2
2001–2005	0.0	1.9	4.0	6.9	9.6	12.0	11.8

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Residential Sector

Nova Scotia
Table 17: Apartments and Mobile Homes Housing Stock by Vintage

	2000	2001	2002	2003	2004	2005	2006
Total Apartments Housing Stock (thousands)	**82.2**	**83.2**	**84.2**	**85.3**	**86.7**	**87.6**	**88.7**
Stock by Vintage (thousands)							
Before 1946	19.4	19.1	18.8	18.5	18.2	17.9	17.7
1946–1960	7.9	7.8	7.7	7.7	7.6	7.5	7.4
1961–1977	14.2	14.0	13.8	13.6	13.4	13.2	13.1
1978–1983	8.8	8.7	8.6	8.5	8.4	8.3	8.2
1984–1995	26.9	26.7	26.5	26.3	26.1	25.9	25.8
1996–2000	4.9	4.9	4.9	4.9	4.9	4.8	4.8
2001–2005	0.0	2.0	3.8	5.8	8.1	9.8	9.8
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	2.0
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	23.6	22.9	22.3	21.7	21.0	20.5	19.9
1946–1960	9.6	9.4	9.2	9.0	8.7	8.5	8.3
1961–1977	17.3	16.9	16.4	16.0	15.5	15.1	14.7
1978–1983	10.7	10.5	10.2	10.0	9.7	9.5	9.3
1984–1995	32.7	32.1	31.5	30.8	30.1	29.6	29.0
1996–2000	6.0	5.9	5.8	5.7	5.6	5.5	5.4
2001–2005	0.0	2.4	4.6	6.8	9.3	11.2	11.1
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	2.3
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Mobile Homes Housing Stock (thousands)	**15.3**	**15.4**	**15.5**	**15.7**	**15.9**	**16.0**	**16.2**
Stock by Vintage (thousands)							
Before 1946	3.6	3.6	3.5	3.5	3.4	3.4	3.3
1946–1960	1.5	1.5	1.4	1.4	1.4	1.4	1.4
1961–1977	2.7	2.6	2.6	2.5	2.5	2.5	2.4
1978–1983	2.6	2.6	2.6	2.5	2.5	2.5	2.4
1984–1995	3.7	3.6	3.6	3.6	3.6	3.5	3.5
1996–2000	1.2	1.2	1.2	1.2	1.2	1.2	1.2
2001–2005	0.0	0.3	0.6	1.0	1.3	1.6	1.6
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.3
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	23.7	23.2	22.6	22.0	21.4	20.9	20.4
1946–1960	9.6	9.4	9.2	9.0	8.8	8.6	8.5
1961–1977	17.4	17.0	16.6	16.2	15.8	15.4	15.0
1978–1983	17.1	16.8	16.5	16.1	15.7	15.4	15.1
1984–1995	24.0	23.6	23.3	22.8	22.4	22.0	21.7
1996–2000	8.1	8.0	7.9	7.8	7.7	7.6	7.5
2001–2005	0.0	1.9	3.9	6.2	8.1	10.1	10.0

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Residential Sector

Nova Scotia
Table 18: Floor Space by Building Type and Vintage

	2000	2001	2002	2003	2004	2005	2006
Total Floor Space (million m^2)	**46.4**	**47.1**	**47.9**	**48.9**	**49.8**	**50.7**	**51.6**
(million m^2)							
Single Detached	35.2	35.8	36.3	37.1	37.7	38.4	39.0
Single Attached	3.2	3.2	3.3	3.4	3.5	3.6	3.7
Apartments	6.6	6.7	6.8	7.0	7.2	7.3	7.4
Mobile Homes	1.4	1.4	1.4	1.5	1.5	1.5	1.5
Shares (%)							
Single Detached	75.9	75.9	75.8	75.8	75.7	75.7	75.6
Single Attached	6.9	6.9	6.9	6.9	7.0	7.0	7.1
Apartments	14.2	14.2	14.3	14.3	14.4	14.4	14.4
Mobile Homes	3.0	3.0	3.0	3.0	3.0	2.9	2.9
m^2)							
Before 1946	10.5	10.5	10.4	10.4	10.4	10.3	10.3
1946–1960	3.8	3.8	3.8	3.8	3.7	3.7	3.7
1961–1977	6.8	6.8	6.7	6.6	6.6	6.6	6.5
1978–1983	5.9	5.8	5.8	5.7	5.7	5.6	5.6
1984–1995	14.6	14.5	14.4	14.3	14.2	14.1	14.0
1996–2000	4.8	4.8	4.8	4.7	4.7	4.7	4.7
2001–2005	0.0	1.0	2.1	3.4	4.6	5.7	5.7
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	1.2
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	22.7	22.2	21.8	21.3	20.8	20.3	19.9
1946–1960	8.2	8.1	7.9	7.7	7.5	7.3	7.2
1961–1977	14.7	14.3	14.0	13.6	13.3	13.0	12.6
1978–1983	12.7	12.4	12.0	11.6	11.3	11.1	10.8
1984–1995	31.4	30.7	30.0	29.2	28.4	27.7	27.0
1996–2000	10.3	10.1	9.9	9.7	9.5	9.3	9.1
2001–2005	0.0	2.2	4.4	6.9	9.2	11.3	11.0

Office of Energy Efficiency, Demand Policy and Analysis Division, Market Analysis Group.

Residential Sector

Nova Scotia
Table 19: Single Detached and Single Attached Floor Space by Vintage

	2000	2001	2002	2003	2004	2005	2006
(million m^2)	**35.2**	**35.8**	**36.3**	**37.1**	**37.7**	**38.4**	**39.0**
Vintage (million m^2)							
Before 1946	8.2	8.2	8.2	8.2	8.2	8.1	8.1
1946–1960	2.9	2.9	2.9	2.9	2.9	2.8	2.8
1961–1977	5.2	5.1	5.1	5.0	5.0	5.0	5.0
1978–1983	4.5	4.5	4.4	4.4	4.3	4.3	4.3
1984–1995	10.6	10.6	10.5	10.4	10.3	10.2	10.2
1996–2000	3.8	3.7	3.7	3.7	3.7	3.7	3.7
2001–2005	0.0	0.7	1.5	2.5	3.3	4.1	4.1
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.8
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	23.4	23.0	22.6	22.1	21.6	21.2	20.8
1946–1960	8.3	8.1	8.0	7.8	7.6	7.4	7.2
1961–1977	14.6	14.3	14.0	13.6	13.3	13.0	12.7
1978–1983	12.8	12.5	12.2	11.8	11.5	11.3	11.0
1984–1995	30.2	29.5	28.8	28.1	27.4	26.7	26.1
1996–2000	10.7	10.5	10.3	10.0	9.8	9.6	9.5
2001–2005	0.0	2.1	4.2	6.7	8.7	10.8	10.6
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	2.1
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(million m^2)	**3.2**	**3.2**	**3.3**	**3.4**	**3.5**	**3.6**	**3.7**
Vintage (million m^2)							
Before 1946	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1946–1960	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1961–1977	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1978–1983	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1984–1995	1.2	1.2	1.2	1.2	1.1	1.1	1.1
1996–2000	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2001–2005	0.0	0.1	0.2	0.3	0.4	0.5	0.5
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.1
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	17.1	16.8	16.5	15.9	15.4	14.9	14.3
1946–1960	6.9	6.7	6.6	6.4	6.2	6.0	5.8
1961–1977	10.6	10.3	10.1	9.7	9.4	9.1	8.7
1978–1983	13.6	13.2	12.9	12.3	12.0	11.6	11.2
1984–1995	37.0	36.1	35.2	34.0	32.9	31.9	30.8
1996–2000	14.8	14.6	14.3	13.8	13.4	13.1	12.7
2001–2005	0.0	2.2	4.5	7.8	10.8	13.5	13.1

Office of Energy Efficiency, Demand Policy and Analysis Division, Market Analysis Group.

Residential Sector

Nova Scotia
Table 20: Apartments and Mobile Homes Floor Space by Vintage

	2000	2001	2002	2003	2004	2005	2006
Total Apartments Floor Space (million m^2)	**6.6**	**6.7**	**6.8**	**7.0**	**7.2**	**7.3**	**7.4**
Apartment Floor Space by Vintage (million m^2)							
Before 1946	1.4	1.4	1.4	1.4	1.4	1.3	1.3
1946–1960	0.6	0.6	0.6	0.6	0.6	0.6	0.6
1961–1977	1.1	1.1	1.1	1.1	1.1	1.0	1.0
1978–1983	0.7	0.7	0.7	0.6	0.6	0.6	0.6
1984–1995	2.4	2.4	2.3	2.3	2.3	2.3	2.3
1996–2000	0.4	0.4	0.4	0.4	0.4	0.4	0.4
2001–2005	0.0	0.2	0.4	0.6	0.8	0.9	0.9
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.2
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	21.4	20.8	20.2	19.6	19.0	18.5	17.9
1946–1960	9.0	8.7	8.5	8.3	8.1	7.9	7.7
1961–1977	16.5	16.0	15.6	15.2	14.7	14.3	13.9
1978–1983	10.1	9.8	9.5	9.2	8.9	8.7	8.5
1984–1995	36.2	35.2	34.3	33.4	32.3	31.6	30.7
1996–2000	6.7	6.6	6.4	6.3	6.1	6.0	5.8
2001–2005	0.0	2.8	5.4	8.0	10.9	13.0	12.7
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	2.8
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Mobile Homes Floor Space (million m^2)	**1.4**	**1.4**	**1.4**	**1.5**	**1.5**	**1.5**	**1.5**
m^2)							
Before 1946	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1946–1960	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1961–1977	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1978–1983	0.3	0.3	0.3	0.3	0.3	0.3	0.2
1984–1995	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1996–2000	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2001–2005	0.0	0.0	0.1	0.1	0.1	0.2	0.2
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)							
Before 1946	22.9	22.4	21.9	21.4	20.9	20.4	20.0
1946–1960	6.3	6.2	6.1	6.0	5.8	5.7	5.6
1961–1977	16.2	15.9	15.6	15.2	14.9	14.5	14.2
1978–1983	18.8	18.4	18.0	17.5	17.1	16.8	16.5
1984–1995	28.2	27.6	27.1	26.5	25.9	25.4	24.9
1996–2000	7.7	7.5	7.4	7.3	7.2	7.1	6.9
2001–2005	0.0	1.9	3.9	6.2	8.2	10.1	9.9

Residential Sector

Nova Scotia
Table 21: Heating System Stock by Building Type and Heating System Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Heating System Stock (thousands)	**377.9**	**381.4**	**385.3**	**390.5**	**395.2**	**399.5**	**403.8**	**408.0**	**412.3**	**415.8**	**419.4**	**422.8**	**426.3**	**430.8**	**433.7**	**436.3**	**439.2**	**446.0**	**450.0**
(thousands)																			
Single Detached	256.2	258.2	260.7	264.1	266.8	269.6	272.0	274.4	276.7	278.6	280.6	282.3	283.9	285.5	286.6	287.6	288.6	291.1	292.8
Single Attached	24.3	24.5	24.8	25.4	25.9	26.3	26.9	27.4	27.9	28.4	29.0	29.6	30.3	30.8	31.3	31.7	32.1	33.0	33.6
Apartments	82.2	83.2	84.2	85.3	86.7	87.6	88.7	89.9	91.3	92.2	93.2	94.1	95.3	97.5	98.8	100.0	101.4	104.7	106.3
Mobile Homes	15.3	15.4	15.5	15.7	15.9	16.0	16.2	16.3	16.4	16.5	16.7	16.8	16.8	16.9	17.0	17.0	17.1	17.2	17.3
Shares (%)																			
Single Detached	67.8	67.7	67.7	67.6	67.5	67.5	67.4	67.3	67.1	67.0	66.9	66.8	66.6	66.3	66.1	65.9	65.7	65.3	65.1
Single Attached	6.4	6.4	6.4	6.5	6.5	6.6	6.7	6.7	6.8	6.8	6.9	7.0	7.1	7.2	7.2	7.3	7.3	7.4	7.5
Apartments	21.7	21.8	21.9	21.9	21.9	21.9	22.0	22.0	22.1	22.2	22.2	22.3	22.4	22.6	22.8	22.9	23.1	23.5	23.6
Mobile Homes	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8
(thousands)																			
Heating Oil – Normal Efficiency	91.4	82.2	72.4	64.2	57.1	47.6	39.1	30.8	25.2	17.7	12.6	10.9	9.5	7.6	4.9	4.2	2.3	1.0	1.4
Heating Oil – Medium Efficiency	104.6	115.7	129.0	139.7	147.9	159.1	168.6	178.3	184.9	191.7	198.1	202.2	205.6	210.8	218.0	219.8	225.2	231.0	232.7
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.0	0.0
Natural Gas – Medium Efficiency	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.0	1.9
Natural Gas – High Efficiency	2.2	2.3	2.4	2.6	2.6	2.9	3.4	4.1	4.3	4.5	4.7	5.0	5.2	5.3	5.3	5.7	5.7	5.7	5.8
Electric	86.6	88.3	87.0	87.7	89.6	89.8	91.2	91.7	93.0	95.7	96.8	97.1	98.6	98.8	97.7	97.8	97.2	98.2	98.7
Heat Pump	11.6	12.1	12.8	13.5	14.1	14.8	15.5	16.1	16.8	17.4	18.0	18.5	18.9	19.4	19.7	20.2	20.5	21.1	21.8
Other[1]	7.5	7.5	7.5	7.6	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.6	7.7	7.6	7.6	7.6	7.6	7.7
Wood	15.3	13.7	13.8	14.1	14.2	14.9	14.7	14.9	15.2	15.2	15.2	15.3	14.9	15.2	15.4	15.5	15.7	16.1	16.4
Dual Systems																			
Wood/Electric	23.2	23.6	23.9	24.2	24.6	24.9	25.2	25.5	25.8	26.1	26.3	26.3	26.2	26.3	26.0	26.1	26.0	26.1	26.3
Wood/Heating Oil	31.6	32.0	32.5	32.9	33.4	33.8	34.2	34.6	35.1	35.5	35.7	35.6	35.6	35.6	35.2	35.4	35.2	35.4	35.6
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
Shares (%)																			
Heating Oil – Normal Efficiency	24.2	21.6	18.8	16.5	14.5	11.9	9.7	7.5	6.1	4.3	3.0	2.6	2.2	1.8	1.1	1.0	0.5	0.2	0.3
Heating Oil – Medium Efficiency	27.7	30.3	33.5	35.8	37.4	39.8	41.8	43.7	44.8	46.1	47.2	47.8	48.2	48.9	50.3	50.4	51.3	51.8	51.7
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4
Natural Gas – High Efficiency	0.6	0.6	0.6	0.7	0.7	0.7	0.8	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3
Electric	22.9	23.2	22.6	22.4	22.7	22.5	22.6	22.5	22.6	23.0	23.1	23.0	23.1	22.9	22.5	22.4	22.1	22.0	21.9
Heat Pump	3.1	3.2	3.3	3.4	3.6	3.7	3.8	3.9	4.1	4.2	4.3	4.4	4.4	4.5	4.5	4.6	4.7	4.7	4.8
Other[1]	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7
Wood	4.0	3.6	3.6	3.6	3.6	3.7	3.6	3.7	3.7	3.7	3.6	3.6	3.5	3.5	3.5	3.6	3.6	3.6	3.6
Dual Systems																			
Wood/Electric	6.1	6.2	6.2	6.2	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.2	6.2	6.1	6.0	6.0	5.9	5.9	5.9
Wood/Heating Oil	8.4	8.4	8.4	8.4	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.4	8.3	8.3	8.1	8.1	8.0	7.9	7.9
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia
Table 22: Single Detached Heating System Stock by Heating System Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Detached Heating System Stock (thousands)	**256.2**	**258.2**	**260.7**	**264.1**	**266.8**	**269.6**	**272.0**	**274.4**	**276.7**	**278.6**	**280.6**	**282.3**	**283.9**	**285.5**	**286.6**	**287.6**	**288.6**	**291.1**	**292.8**
(thousands)																			
Heating Oil – Normal Efficiency	55.2	48.8	41.8	36.0	30.9	23.9	18.1	12.2	8.3	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil – Medium Efficiency	71.2	78.6	87.7	95.0	100.3	108.2	114.3	120.7	124.8	129.0	132.7	134.4	135.4	137.1	140.5	140.8	143.0	145.0	145.9
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0
Natural Gas – Medium Efficiency	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.1	1.1
Natural Gas – High Efficiency	1.6	1.6	1.7	1.8	1.9	2.0	2.4	2.9	3.1	3.2	3.3	3.5	3.6	3.6	3.6	3.9	3.9	3.9	3.9
Electric	56.7	57.7	56.7	57.1	58.2	58.3	59.1	59.3	59.9	61.5	62.0	61.7	62.2	61.7	60.2	59.9	59.0	58.9	58.8
Heat Pump	9.9	10.3	10.9	11.5	12.0	12.6	13.1	13.6	14.2	14.7	15.2	15.5	15.8	16.2	16.3	16.7	16.8	17.3	17.8
Other[1]	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.8	4.8
Wood	1.4	0.1	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dual Systems																			
Wood/Electric	21.9	22.2	22.5	22.8	23.1	23.5	23.7	24.0	24.3	24.6	24.8	24.7	24.7	24.7	24.3	24.5	24.4	24.5	24.6
Wood/Heating Oil	30.4	30.8	31.3	31.7	32.1	32.6	33.0	33.3	33.8	34.1	34.3	34.3	34.2	34.2	33.8	34.0	33.8	33.9	34.2
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7
Shares (%)																			
Heating Oil – Normal Efficiency	21.6	18.9	16.0	13.6	11.6	8.9	6.7	4.4	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil – Medium Efficiency	27.8	30.4	33.7	36.0	37.6	40.1	42.0	44.0	45.1	46.3	47.3	47.6	47.7	48.0	49.0	49.0	49.6	49.8	49.8
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
Natural Gas – High Efficiency	0.6	0.6	0.6	0.7	0.7	0.7	0.9	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.3	1.3	1.3
Electric	22.1	22.3	21.8	21.6	21.8	21.6	21.7	21.6	21.7	22.1	22.1	21.9	21.9	21.6	21.0	20.8	20.4	20.2	20.1
Heat Pump	3.8	4.0	4.2	4.3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.5	5.6	5.7	5.7	5.8	5.8	5.9	6.1
Other[1]	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6
Wood	0.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dual Systems																			
Wood/Electric	8.5	8.6	8.6	8.6	8.7	8.7	8.7	8.8	8.8	8.8	8.8	8.7	8.7	8.6	8.5	8.5	8.4	8.4	8.4
Wood/Heating Oil	11.9	11.9	12.0	12.0	12.0	12.1	12.1	12.1	12.2	12.2	12.2	12.1	12.0	12.0	11.8	11.8	11.7	11.7	11.7
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia
Table 23: Single Attached Heating System Stock by Heating System Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(thousands)	**24.3**	**24.5**	**24.8**	**25.4**	**25.9**	**26.3**	**26.9**	**27.4**	**27.9**	**28.4**	**29.0**	**29.6**	**30.3**	**30.8**	**31.3**	**31.7**	**32.1**	**33.0**	**33.6**
Type (thousands)																			
Heating Oil – Normal Efficiency	6.5	6.0	5.4	4.8	4.4	3.7	3.2	2.6	2.3	1.8	1.3	1.0	0.7	0.5	0.0	0.0	0.0	0.0	0.0
Heating Oil – Medium Efficiency	7.0	7.6	8.5	9.3	9.9	10.8	11.6	12.3	12.9	13.6	14.2	14.8	15.4	15.9	16.7	16.9	17.3	17.9	18.2
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Natural Gas – High Efficiency	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Electric	5.8	5.9	5.8	5.9	6.1	6.2	6.3	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.6	7.7	7.7	7.8	7.9
Heat Pump	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.5	1.6	1.7	1.8	1.9	1.9	2.0	2.1	2.2	2.3
Other[1]	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Wood	2.5	2.4	2.4	2.5	2.6	2.7	2.7	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.1
Dual Systems																			
Wood/Electric	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Wood/Heating Oil	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Heating Oil – Normal Efficiency	26.7	24.4	21.6	19.0	17.0	14.2	11.9	9.6	8.1	6.2	4.6	3.3	2.4	1.5	0.0	0.0	0.0	0.0	0.0
Heating Oil – Medium Efficiency	28.7	31.0	34.2	36.7	38.4	40.9	43.1	45.1	46.3	47.7	49.0	50.1	50.9	51.6	53.4	53.3	53.9	54.2	54.1
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3
Natural Gas – High Efficiency	0.6	0.6	0.6	0.7	0.7	0.7	0.8	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3
Electric	23.8	24.1	23.5	23.3	23.6	23.4	23.5	23.4	23.5	23.9	24.1	24.2	24.6	24.6	24.3	24.2	23.8	23.6	23.6
Heat Pump	3.8	4.0	4.2	4.3	4.5	4.7	4.8	5.0	5.2	5.4	5.5	5.7	5.9	6.1	6.2	6.3	6.4	6.5	6.7
Other[1]	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Wood	10.3	9.8	9.9	9.9	9.9	10.1	10.0	10.1	10.1	10.0	9.9	9.8	9.4	9.4	9.4	9.4	9.2	9.2	9.2
Dual Systems																			
Wood/Electric	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4
Wood/Heating Oil	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia
Table 24: Apartments Heating System Stock by Heating System Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(thousands)	**82.2**	**83.2**	**84.2**	**85.3**	**86.7**	**87.6**	**88.7**	**89.9**	**91.3**	**92.2**	**93.2**	**94.1**	**95.3**	**97.5**	**98.8**	**100.0**	**101.4**	**104.7**	**106.3**
(thousands)																			
Heating Oil – Normal Efficiency	25.3	23.4	21.6	20.2	18.8	17.3	15.5	14.0	12.8	11.3	10.0	8.8	7.8	6.3	4.5	3.8	2.1	1.0	1.4
Heating Oil – Medium Efficiency	22.3	24.9	27.7	29.8	31.7	33.7	35.9	38.1	39.8	41.5	43.2	44.9	46.5	49.2	51.8	53.0	55.5	58.5	59.0
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
Natural Gas – High Efficiency	0.5	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.4
Electric	20.4	20.9	20.6	20.8	21.4	21.4	21.8	22.0	22.5	23.2	23.6	23.9	24.6	25.2	25.5	25.8	26.2	27.0	27.5
Heat Pump	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.0	1.1	1.2	1.2	1.2	1.3	1.4	1.4	1.5	1.6	1.6	1.7
Other[1]	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	2.0
Wood	10.1	9.9	10.0	10.2	10.3	10.6	10.7	10.8	11.0	11.0	11.0	11.0	10.8	11.0	11.2	11.3	11.4	11.8	12.0
Dual Systems																			
Wood/Electric	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Wood/Heating Oil	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Heating Oil – Normal Efficiency	30.7	28.1	25.6	23.6	21.7	19.7	17.5	15.5	14.1	12.3	10.7	9.3	8.2	6.5	4.5	3.8	2.1	0.9	1.3
Heating Oil – Medium Efficiency	27.1	29.9	32.8	34.9	36.5	38.5	40.5	42.3	43.6	45.0	46.4	47.7	48.8	50.5	52.4	53.0	54.7	55.9	55.5
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
Natural Gas – High Efficiency	0.6	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4
Electric	24.8	25.1	24.5	24.4	24.6	24.5	24.6	24.5	24.6	25.1	25.3	25.4	25.8	25.8	25.8	25.8	25.8	25.8	25.8
Heat Pump	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.6
Other[1]	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Wood	12.3	11.9	11.9	11.9	11.9	12.1	12.0	12.0	12.0	11.9	11.8	11.7	11.3	11.3	11.3	11.3	11.3	11.3	11.3
Dual Systems																			
Wood/Electric	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Wood/Heating Oil	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia
Table 25: Mobile Homes Heating System Stock by Heating System Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Mobile Homes Heating System Stock (thousands)	**15.3**	**15.4**	**15.5**	**15.7**	**15.9**	**16.0**	**16.2**	**16.3**	**16.4**	**16.5**	**16.7**	**16.8**	**16.8**	**16.9**	**17.0**	**17.0**	**17.1**	**17.2**	**17.3**
(thousands)																			
Heating Oil – Normal Efficiency	4.4	4.0	3.6	3.3	3.0	2.6	2.3	2.0	1.8	1.5	1.3	1.1	1.0	0.8	0.4	0.4	0.1	0.0	0.0
Heating Oil – Medium Efficiency	4.1	4.6	5.2	5.6	5.9	6.4	6.8	7.2	7.4	7.7	7.9	8.1	8.3	8.5	9.0	9.0	9.3	9.5	9.6
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Natural Gas – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric	3.8	3.8	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.2	4.2	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.5
Heat Pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Wood	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Dual Systems																			
Wood/Electric	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Wood/Heating Oil	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Heating Oil – Normal Efficiency	28.9	26.1	23.4	21.0	19.1	16.5	14.4	12.3	11.0	9.3	7.9	6.8	6.0	5.0	2.6	2.3	0.7	0.0	0.0
Heating Oil – Medium Efficiency	27.1	30.0	33.3	35.7	37.4	39.9	41.9	43.9	45.0	46.3	47.6	48.6	49.4	50.3	52.7	52.9	54.5	55.2	55.4
Heating Oil – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas – Normal Efficiency	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Natural Gas – Medium Efficiency	1.1	1.1	1.1	1.2	1.2	1.2	1.4	1.5	1.6	1.6	1.7	1.8	1.8	1.8	1.9	1.9	2.0	1.9	1.9
Natural Gas – High Efficiency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric	24.7	25.0	24.4	24.3	24.6	24.4	24.5	24.5	24.6	25.1	25.3	25.4	25.8	25.8	25.8	25.8	25.8	25.8	25.7
Heat Pump	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other[1]	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Wood	8.8	8.4	8.4	8.4	8.4	8.5	8.4	8.4	8.4	8.3	8.2	8.0	7.6	7.5	7.5	7.5	7.4	7.4	7.4
Dual Systems																			
Wood/Electric	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0
Wood/Heating Oil	5.1	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.3	5.3	5.3	5.4	5.4	5.4	5.5	5.5	5.6	5.6
Natural Gas/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil/Electric	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia
Table 26: Heating System Stock Efficiencies

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Type (%)																			
Heating Oil – Normal Efficiency	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Heating Oil – Medium Efficiency	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Heating Oil – High Efficiency	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Natural Gas – Normal Efficiency	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
Natural Gas – Medium Efficiency	79	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Natural Gas – High Efficiency	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Electric	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heat Pump	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
Other[1]	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Wood	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Dual Heating Systems Electric/Wood																			
Electricity	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Wood	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Dual Heating Systems Heating Oil/Wood																			
Heating Oil	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Wood	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57
Dual Heating Systems Electric/Natural Gas																			
Electricity	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Natural Gas	79	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Dual Heating Systems Electric/Heating Oil																			
Electricity	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Heating Oil	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia

Table 27: Cooling System Stock by Type, New Unit Efficiencies, Stock Efficiencies and Unit Capacity Ratio

	2000	2001	2002	2003	2004	2005	2006
Total Cooling System Stock (thousands)	**33.0**	**25.0**	**29.0**	**34.0**	**38.0**	**43.0**	**49.7**
System Stock by Type (thousands)							
Room	26.0	19.0	22.0	27.0	32.0	35.0	40.2
Central	7.0	6.0	7.0	7.0	6.0	8.0	9.5
Shares (%)							
Room	78.8	76.0	75.9	79.4	84.2	81.4	80.9
Central	21.2	24.0	24.1	20.6	15.8	18.6	19.1
New Unit Efficiencies							
Room (EER)[1]	9.4	9.4	9.4	9.4	9.4	9.4	10.9
Central (SEER)[2]	10.3	10.3	10.3	10.3	10.3	10.3	13.0
Stock Efficiencies							
Room (EER)[1]	8.3	8.4	8.6	8.8	8.9	9.1	9.5
Central (SEER)[2]	9.6	9.7	9.7	9.8	9.9	10.0	10.3
Unit Capacity Ratio (Btu/hour)							
Room	9,898	9,829	9,797	9,717	9,531	9,345	9,181
Central	33,466	33,624	33,768	33,919	33,389	32,873	32,372

1) Energy Efficiency Ratio.
2) Seasonal Energy Efficiency Ratio.

Residential Sector

Nova Scotia
Table 28: Water Heater Stock by Building Type and Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Water Heater Stock (thousands)	**377.9**	**381.4**	**385.3**	**390.5**	**395.2**	**399.5**	**403.8**	**408.0**	**412.3**	**415.8**	**419.4**	**422.8**	**426.3**	**430.8**	**433.7**	**436.3**	**439.2**	**446.0**	**450.0**
(thousands)																			
Single Detached	256.2	258.2	260.7	264.1	266.8	269.6	272.0	274.4	276.7	278.6	280.6	282.3	283.9	285.5	286.6	287.6	288.6	291.1	292.8
Single Attached	24.3	24.5	24.8	25.4	25.9	26.3	26.9	27.4	27.9	28.4	29.0	29.6	30.3	30.8	31.3	31.7	32.1	33.0	33.6
Apartments	82.2	83.2	84.2	85.3	86.7	87.6	88.7	89.9	91.3	92.2	93.2	94.1	95.3	97.5	98.8	100.0	101.4	104.7	106.3
Mobile Homes	15.3	15.4	15.5	15.7	15.9	16.0	16.2	16.3	16.4	16.5	16.7	16.8	16.8	16.9	17.0	17.0	17.1	17.2	17.3
Shares (%)																			
Single Detached	67.8	67.7	67.7	67.6	67.5	67.5	67.4	67.3	67.1	67.0	66.9	66.8	66.6	66.3	66.1	65.9	65.7	65.3	65.1
Single Attached	6.4	6.4	6.4	6.5	6.5	6.6	6.7	6.7	6.8	6.8	6.9	7.0	7.1	7.2	7.2	7.3	7.3	7.4	7.5
Apartments	21.7	21.8	21.9	21.9	21.9	21.9	22.0	22.0	22.1	22.2	22.2	22.3	22.4	22.6	22.8	22.9	23.1	23.5	23.6
Mobile Homes	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8
(thousands)																			
Electricity	203.6	203.9	202.7	202.4	205.8	206.3	208.6	210.0	210.6	213.0	214.0	214.0	215.3	215.7	216.5	217.5	218.7	221.9	223.6
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	159.7	163.5	169.3	175.4	176.8	180.3	182.4	185.0	188.9	190.3	192.6	195.9	198.6	203.1	205.1	206.8	208.3	212.0	214.1
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	1.7	1.6	1.6	1.4	1.4	1.5	1.4	1.5	1.4	1.4	1.5	1.5	1.4	1.3	1.3	1.3	1.4	1.4	1.4
Wood	13.0	12.4	11.8	11.3	11.2	11.5	11.3	11.5	11.4	11.1	11.4	11.4	11.0	10.7	10.7	10.7	10.8	10.9	10.9
Shares (%)																			
Electricity	53.9	53.5	52.6	51.8	52.1	51.6	51.7	51.5	51.1	51.2	51.0	50.6	50.5	50.1	49.9	49.8	49.8	49.7	49.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	42.3	42.9	43.9	44.9	44.7	45.1	45.2	45.4	45.8	45.8	45.9	46.3	46.6	47.1	47.3	47.4	47.4	47.5	47.6
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Wood	3.4	3.3	3.1	2.9	2.8	2.9	2.8	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.4	2.4

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia
Table 29: Single Detached and Single Attached Water Heater Stock by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(thousands)	**256.2**	**258.2**	**260.7**	**264.1**	**266.8**	**269.6**	**272.0**	**274.4**	**276.7**	**278.6**	**280.6**	**282.3**	**283.9**	**285.5**	**286.6**	**287.6**	**288.6**	**291.1**	**292.8**
Water Heater Stock by Energy Source (thousands)																			
Electricity	138.0	138.0	137.1	136.9	138.9	139.2	140.5	141.2	141.3	142.7	143.1	142.9	143.3	143.0	143.1	143.3	143.7	144.8	145.5
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	108.2	110.7	114.5	118.6	119.3	121.6	122.9	124.4	126.7	127.5	128.9	130.8	132.3	134.6	135.5	136.3	136.9	138.3	139.3
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Wood	8.8	8.4	8.0	7.6	7.6	7.7	7.6	7.7	7.6	7.4	7.6	7.6	7.4	7.1	7.1	7.1	7.1	7.1	7.1
Shares (%)																			
Electricity	53.9	53.5	52.6	51.8	52.1	51.6	51.7	51.5	51.1	51.2	51.0	50.6	50.5	50.1	49.9	49.8	49.8	49.7	49.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	42.3	42.9	43.9	44.9	44.7	45.1	45.2	45.4	45.8	45.8	45.9	46.3	46.6	47.1	47.3	47.4	47.4	47.5	47.6
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Wood	3.4	3.3	3.1	2.9	2.8	2.9	2.8	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.4	2.4
Total <u>Single Attached</u> Water Heater Stock (thousands)	**24.3**	**24.5**	**24.8**	**25.4**	**25.9**	**26.3**	**26.9**	**27.4**	**27.9**	**28.4**	**29.0**	**29.6**	**30.3**	**30.8**	**31.3**	**31.7**	**32.1**	**33.0**	**33.6**
Water Heater Stock by Energy Source (thousands)																			
Electricity	13.1	13.1	13.1	13.1	13.5	13.6	13.9	14.1	14.3	14.6	14.8	15.0	15.3	15.4	15.6	15.8	16.0	16.4	16.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	10.3	10.5	10.9	11.4	11.6	11.9	12.1	12.4	12.8	13.0	13.3	13.7	14.1	14.5	14.8	15.0	15.2	15.7	16.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Wood	0.8	0.8	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Shares (%)																			
Electricity	53.9	53.5	52.6	51.8	52.1	51.6	51.7	51.5	51.1	51.2	51.0	50.6	50.5	50.1	49.9	49.8	49.8	49.7	49.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	42.3	42.9	43.9	44.9	44.7	45.1	45.2	45.4	45.8	45.8	45.9	46.3	46.6	47.1	47.3	47.4	47.4	47.5	47.6
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Wood	3.4	3.3	3.1	2.9	2.8	2.9	2.8	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.4	2.4

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia
Table 30: Apartments and Mobile Homes Water Heater Stock by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Apartments Water Heater Stock (thousands)	**82.2**	**83.2**	**84.2**	**85.3**	**86.7**	**87.6**	**88.7**	**89.9**	**91.3**	**92.2**	**93.2**	**94.1**	**95.3**	**97.5**	**98.8**	**100.0**	**101.4**	**104.7**	**106.3**
(thousands)																			
Electricity	44.3	44.5	44.3	44.2	45.2	45.2	45.9	46.3	46.6	47.3	47.5	47.6	48.1	48.8	49.3	49.8	50.5	52.1	52.8
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	34.7	35.7	37.0	38.3	38.8	39.5	40.1	40.8	41.8	42.2	42.8	43.6	44.4	45.9	46.7	47.4	48.1	49.7	50.6
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Wood	2.8	2.7	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.5	2.5	2.5	2.6
Shares (%)																			
Electricity	53.9	53.5	52.6	51.8	52.1	51.6	51.7	51.5	51.1	51.2	51.0	50.6	50.5	50.1	49.9	49.8	49.8	49.7	49.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	42.3	42.9	43.9	44.9	44.7	45.1	45.2	45.4	45.8	45.8	45.9	46.3	46.6	47.1	47.3	47.4	47.4	47.5	47.6
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Wood	3.4	3.3	3.1	2.9	2.8	2.9	2.8	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.4	2.4
(thousands)	**15.3**	**15.4**	**15.5**	**15.7**	**15.9**	**16.0**	**16.2**	**16.3**	**16.4**	**16.5**	**16.7**	**16.8**	**16.8**	**16.9**	**17.0**	**17.0**	**17.1**	**17.2**	**17.3**
(thousands)																			
Electricity	8.2	8.2	8.2	8.1	8.3	8.3	8.4	8.4	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.6	8.6
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	6.4	6.6	6.8	7.1	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.8	8.0	8.0	8.1	8.1	8.2	8.2
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Wood	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Shares (%)																			
Electricity	53.9	53.5	52.6	51.8	52.1	51.6	51.7	51.5	51.1	51.2	51.0	50.6	50.5	50.1	49.9	49.8	49.8	49.7	49.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	42.3	42.9	43.9	44.9	44.7	45.1	45.2	45.4	45.8	45.8	45.9	46.3	46.6	47.1	47.3	47.4	47.4	47.5	47.6
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Wood	3.4	3.3	3.1	2.9	2.8	2.9	2.8	2.8	2.8	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.4	2.4

1) “Other” includes coal and propane.

Residential Sector

Nova Scotia

Table 31: Appliance Stock by Appliance Type and Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Appliance Stock by Appliance Type (thousands)																			
Refrigerator	408	415	421	428	434	439	444	448	452	457	453	452	455	455	459	462	465	469	475
Freezer	235	236	238	241	241	243	244	246	248	252	249	250	252	252	254	256	257	260	263
Dishwasher	147	153	158	167	172	179	182	188	193	198	199	202	203	203	205	206	207	209	212
Clothes Washer	297	300	303	308	308	312	314	317	320	326	324	324	326	326	329	332	333	337	341
Clothes Dryer	282	286	289	295	298	302	306	311	317	322	320	323	325	325	328	330	332	335	339
Range	337	343	347	353	360	364	367	373	381	386	386	391	393	393	397	400	402	406	411
Other Appliances[1]	4,633	4,893	5,093	5,366	5,526	5,810	5,984	6,133	6,310	6,375	6,401	6,574	6,655	6,681	6,839	6,889	7,001	7,117	7,304
Appliances per Household by Appliance Type																			
Refrigerator	1.14	1.14	1.15	1.16	1.16	1.17	1.17	1.17	1.17	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Freezer	0.65	0.65	0.65	0.65	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Dishwasher	0.41	0.42	0.43	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.51	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Clothes Washer	0.83	0.83	0.83	0.83	0.82	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Clothes Dryer	0.78	0.79	0.79	0.80	0.80	0.80	0.81	0.81	0.82	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Range	0.94	0.94	0.95	0.95	0.96	0.97	0.97	0.97	0.98	0.98	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Other Appliances[1]	12.89	13.49	13.89	14.48	14.78	15.41	15.76	16.02	16.27	16.24	16.42	16.80	16.92	16.99	17.23	17.22	17.41	17.53	17.78
Stock of Electric Appliances (thousands)																			
Refrigerator	408	415	421	428	434	439	444	448	452	457	453	452	455	455	459	462	465	469	475
Freezer	235	236	238	241	241	243	244	246	248	252	249	250	252	252	254	256	257	260	263
Dishwasher	147	153	158	167	172	179	182	188	193	198	199	202	203	203	205	206	207	209	212
Clothes Washer	297	300	303	308	308	312	314	317	320	326	324	324	326	326	329	332	333	337	341
Clothes Dryer	282	286	289	295	298	302	306	311	317	322	320	323	325	325	328	330	332	335	339
Range	337	343	347	353	360	364	367	370	374	375	372	373	375	375	379	382	384	387	392
Other Appliances[1]	4,633	4,893	5,093	5,366	5,526	5,810	5,984	6,133	6,310	6,375	6,401	6,574	6,655	6,681	6,839	6,889	7,001	7,117	7,304
Electric Appliances per Household by Appliance Type																			
Refrigerator	1.14	1.14	1.15	1.16	1.16	1.17	1.17	1.17	1.17	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Freezer	0.65	0.65	0.65	0.65	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Dishwasher	0.41	0.42	0.43	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.51	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Clothes Washer	0.83	0.83	0.83	0.83	0.82	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Clothes Dryer	0.78	0.79	0.79	0.80	0.80	0.80	0.81	0.81	0.82	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Range	0.94	0.94	0.95	0.95	0.96	0.97	0.97	0.97	0.97	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Other Appliances[1]	12.89	13.49	13.89	14.48	14.78	15.41	15.76	16.02	16.27	16.24	16.42	16.80	16.92	16.99	17.23	17.22	17.41	17.53	17.78
Stock of Natural Gas Appliances (thousands)																			
Clothes Dryer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Range	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	7.1	10.8	14.3	18.0	18.1	18.1	18.3	18.4	18.5	18.7	18.9
Natural Gas Appliances per Household by Appliance Type																			
Clothes Dryer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Range	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

1) "Other Appliances" includes small appliances such as microwaves, televisions, cable boxes, video cassette recorders, stereo systems and computers.

Residential Sector

Nova Scotia

Table 32: Gross Output Thermal Requirements per Household by Building Type and Vintage

	2000	2001	2002	2003	2004	2005	2006
Single Detached (GJ/household)							
Before 1946	100.2	101.5	102.8	104.1	105.5	106.8	108.1
1946–1960	79.5	80.0	80.5	81.1	81.6	82.1	82.5
1961–1977	64.9	65.4	65.8	66.3	66.9	67.6	68.3
1978–1983	61.7	61.7	61.7	61.7	62.1	62.5	62.9
1984–1995	58.2	58.2	58.2	58.2	58.2	58.2	58.2
1996–2000	47.4	47.4	47.4	47.4	47.4	47.4	47.4
2001–2005	0.0	49.2	49.2	49.2	49.2	49.2	49.2
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	47.4
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single Attached (GJ/household)							
Before 1946	93.0	94.1	95.2	96.3	96.9	97.5	98.0
1946–1960	78.6	79.1	79.6	80.2	80.7	81.1	81.6
1961–1977	58.6	59.0	59.4	59.8	60.2	60.5	60.9
1978–1983	52.2	52.2	52.2	52.2	52.5	52.8	53.1
1984–1995	44.2	44.2	44.2	44.2	44.2	44.2	44.2
1996–2000	42.4	42.4	42.4	42.4	42.4	42.4	42.4
2001–2005	0.0	44.0	44.0	44.0	44.0	44.0	44.0
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	42.3
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Apartments (GJ/household)							
Before 1946	36.2	36.4	36.7	36.9	37.2	37.4	37.6
1946–1960	33.3	33.6	33.8	34.0	34.2	34.4	34.6
1961–1977	28.7	28.9	29.1	29.3	29.5	29.7	29.9
1978–1983	24.3	24.3	24.3	24.3	24.4	24.6	24.7
1984–1995	24.2	24.2	24.2	24.2	24.2	24.2	24.2
1996–2000	20.9	20.9	20.9	20.9	20.9	20.9	20.9
2001–2005	0.0	21.7	21.7	21.7	21.7	21.7	21.7
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	20.9
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mobile Homes (GJ/household)							
Before 1946	87.6	88.2	88.8	89.4	90.0	90.5	91.0
1946–1960	53.5	53.9	54.3	54.6	54.9	55.3	55.6
1961–1977	64.2	64.6	65.0	65.5	65.9	66.2	66.6
1978–1983	64.5	64.5	64.5	64.5	64.9	65.3	65.6
1984–1995	58.5	58.5	58.5	58.5	58.5	58.5	58.5
1996–2000	40.2	40.2	40.2	40.2	40.2	40.2	40.2
2001–2005	0.0	41.7	41.7	41.7	41.7	41.7	41.7

Office of Energy Efficiency, Demand Policy and Analysis Division, Market Analysis Group.

Residential Sector

Nova Scotia

Table 33: Gross Output Thermal Requirements per Square Metre by Building Type and Vintage

	2000	2001	2002	2003	2004	2005	2006
Single Detached (GJ/m^2)							
Before 1946	0.7	0.7	0.7	0.7	0.7	0.7	0.7
1946–1960	0.6	0.6	0.6	0.6	0.6	0.6	0.6
1961–1977	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1978–1983	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1984–1995	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1996–2000	0.3	0.3	0.3	0.3	0.3	0.3	0.3
2001–2005	0.0	0.3	0.3	0.3	0.3	0.3	0.3
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.3
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single Attached (GJ/m^2)							
Before 1946	0.6	0.6	0.6	0.6	0.6	0.6	0.6
1946–1960	0.6	0.6	0.6	0.6	0.6	0.6	0.6
1961–1977	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1978–1983	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1984–1995	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1996–2000	0.3	0.3	0.3	0.3	0.3	0.3	0.3
2001–2005	0.0	0.3	0.3	0.3	0.3	0.3	0.3
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.3
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Apartments (GJ/m^2)							
Before 1946	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1946–1960	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1961–1977	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1978–1983	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1984–1995	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1996–2000	0.2	0.2	0.2	0.2	0.2	0.2	0.2
2001–2005	0.0	0.2	0.2	0.2	0.2	0.2	0.2
2006–2010	0.0	0.0	0.0	0.0	0.0	0.0	0.2
2011–2015	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016–2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mobile Homes (GJ/m^2)							
Before 1946	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1946–1960	0.9	0.9	0.9	0.9	0.9	0.9	0.9
1961–1977	0.8	0.8	0.8	0.8	0.8	0.8	0.8
1978–1983	0.6	0.6	0.6	0.6	0.6	0.6	0.6
1984–1995	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1996–2000	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2001–2005	0.0	0.5	0.5	0.5	0.5	0.5	0.5

Office of Energy Efficiency, Demand Policy and Analysis Division, Market Analysis Group.

Residential Sector

Nova Scotia[1]

Table 34: Single Detached Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Detached Energy Use (PJ)	**36.8**	**39.2**	**39.5**	**37.1**	**34.5**	**32.9**	**33.0**	**36.7**	**38.1**	**37.9**	**39.1**	**41.5**	**37.7**	**36.0**	**34.6**	**34.9**	**32.2**	**33.0**	**34.8**
Energy Use by Energy Source (PJ)																			
Electricity	10.2	10.9	11.3	11.0	11.3	11.3	11.0	11.4	11.5	11.6	11.4	11.7	11.4	12.0	11.9	11.9	11.9	12.3	12.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Heating Oil	17.7	19.0	19.8	18.1	15.7	13.9	14.6	17.6	17.8	17.7	18.6	20.6	16.7	14.6	13.3	13.4	10.9	11.3	12.5
Other[2]	0.4	0.6	0.6	0.6	0.6	0.7	0.8	0.7	0.8	0.8	0.8	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.5
Wood	8.5	8.7	7.8	7.3	6.9	6.9	6.6	7.0	7.9	7.4	8.2	8.5	8.9	8.9	8.9	8.9	8.9	8.9	8.9
Shares (%)																			
Electricity	27.6	27.9	28.6	29.8	32.8	34.5	33.3	31.0	30.3	30.7	29.0	28.2	30.3	33.2	34.3	34.2	36.9	37.2	36.5
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.5	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.7
Heating Oil	48.1	48.5	50.2	48.8	45.5	42.2	44.2	47.8	46.6	46.8	47.4	49.6	44.5	40.6	38.4	38.4	33.7	34.2	35.9
Other[2]	1.2	1.5	1.6	1.7	1.6	2.3	2.4	2.0	2.2	2.2	2.1	1.5	1.3	1.2	1.1	1.3	1.2	1.1	1.5
Wood	23.1	22.1	19.7	19.8	20.1	21.1	20.1	19.1	20.8	19.5	20.9	20.5	23.7	24.6	25.8	25.6	27.6	26.8	25.4
Activity																			
Total Floor Space (million m^2)	35.2	35.8	36.3	37.1	37.7	38.4	39.0	39.7	40.3	40.8	41.4	41.9	42.4	42.8	43.2	43.6	43.8	44.4	44.8
Total Households (thousands)	243.2	245.2	247.8	250.3	252.5	254.4	256.1	258.1	261.4	264.3	262.4	263.3	264.6	264.5	266.9	268.8	270.0	272.6	275.7
Energy Intensity (GJ/m^2)	**1.05**	**1.10**	**1.09**	**1.00**	**0.92**	**0.86**	**0.85**	**0.93**	**0.95**	**0.93**	**0.95**	**0.99**	**0.89**	**0.84**	**0.80**	**0.80**	**0.74**	**0.74**	**0.78**
Energy Intensity (GJ/household)	**151.5**	**159.8**	**159.5**	**148.3**	**136.7**	**129.3**	**128.8**	**142.2**	**145.7**	**143.5**	**149.2**	**157.6**	**142.3**	**136.2**	**129.7**	**129.7**	**119.4**	**121.2**	**126.2**
Total Single Detached GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.5**	**1.6**	**1.6**	**1.5**	**1.3**	**1.2**	**1.2**	**1.5**	**1.5**	**1.5**	**1.6**	**1.7**	**1.4**	**1.3**	**1.2**	**1.2**	**1.0**	**1.0**	**1.1**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	1.3	1.3	1.4	1.3	1.1	1.0	1.0	1.2	1.3	1.3	1.3	1.5	1.2	1.0	0.9	0.9	0.8	0.8	0.9
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Shares (%)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.6	0.3	0.4	0.6	0.7	0.8	0.9	0.9	1.0
Heating Oil	84.7	84.9	86.4	85.9	85.0	82.5	83.5	85.5	84.1	83.9	83.9	85.7	82.9	81.1	79.7	79.4	76.2	77.0	78.0
Other[2]	1.8	2.3	2.3	2.6	2.6	3.8	3.9	3.1	3.5	3.4	3.3	2.3	2.1	2.0	1.9	2.2	2.3	2.1	2.7
Wood	13.5	12.8	11.3	11.5	12.5	13.7	12.6	11.3	12.4	11.6	12.2	11.7	14.6	16.3	17.7	17.5	20.6	20.0	18.3
GHG Intensity (tonne/TJ)	**40.2**	**40.5**	**41.1**	**40.2**	**37.9**	**36.2**	**37.5**	**39.7**	**39.3**	**39.5**	**40.1**	**41.0**	**38.1**	**35.5**	**34.2**	**34.3**	**31.4**	**31.5**	**32.7**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]

Table 35: Single Detached Secondary Energy Use and GHG Emissions by End-Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Detached Energy Use (PJ)	**36.8**	**39.2**	**39.5**	**37.1**	**34.5**	**32.9**	**33.0**	**36.7**	**38.1**	**37.9**	**39.1**	**41.5**	**37.7**	**36.0**	**34.6**	**34.9**	**32.2**	**33.0**	**34.8**
Energy Use by End-Use (PJ)																			
Space Heating	25.9	27.5	27.7	25.9	23.9	22.3	21.8	24.5	26.9	27.0	27.5	29.7	26.0	24.9	24.4	24.9	22.4	23.2	24.0
Water Heating	6.0	6.4	6.4	5.9	5.4	5.3	5.8	6.7	5.9	5.7	6.3	6.4	6.1	5.4	4.7	4.5	4.2	4.1	4.7
Appliances	3.6	3.9	4.0	3.8	3.8	3.9	4.0	4.2	3.9	3.9	4.0	4.1	4.1	4.3	4.2	4.1	4.3	4.3	4.6
Lighting	1.3	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.3
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Shares (%)																			
Space Heating	70.3	70.1	70.0	69.8	69.3	67.7	66.2	66.7	70.6	71.1	70.1	71.5	69.1	69.1	70.6	71.5	69.4	70.4	69.0
Water Heating	16.2	16.4	16.3	16.0	15.5	16.1	17.6	18.2	15.6	15.1	16.2	15.5	16.1	15.0	13.5	12.9	13.1	12.4	13.4
Appliances	9.9	9.9	10.0	10.3	11.1	12.0	12.1	11.4	10.4	10.3	10.2	9.8	11.0	12.0	12.0	11.8	13.3	13.0	13.3
Lighting	3.5	3.5	3.6	3.8	4.0	4.1	4.0	3.6	3.3	3.3	3.2	3.0	3.4	3.6	3.5	3.4	3.8	3.7	3.7
Space Cooling	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4	0.3	0.4	0.5	0.5	0.7
Activity																			
Total Floor Space (million m^2)	35.2	35.8	36.3	37.1	37.7	38.4	39.0	39.7	40.3	40.8	41.4	41.9	42.4	42.8	43.2	43.6	43.8	44.4	44.8
Total Households (thousands)	243.2	245.2	247.8	250.3	252.5	254.4	256.1	258.1	261.4	264.3	262.4	263.3	264.6	264.5	266.9	268.8	270.0	272.6	275.7
Energy Intensity (GJ/m^2)	**1.05**	**1.10**	**1.09**	**1.00**	**0.92**	**0.86**	**0.85**	**0.93**	**0.95**	**0.93**	**0.95**	**0.99**	**0.89**	**0.84**	**0.80**	**0.80**	**0.74**	**0.74**	**0.78**
Energy Intensity (GJ/household)	**151.5**	**159.8**	**159.5**	**148.3**	**136.7**	**129.3**	**128.8**	**142.2**	**145.7**	**143.5**	**149.2**	**157.6**	**142.3**	**136.2**	**129.7**	**129.7**	**119.4**	**121.2**	**126.2**
Total Single Detached GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.5**	**1.6**	**1.6**	**1.5**	**1.3**	**1.2**	**1.2**	**1.5**	**1.5**	**1.5**	**1.6**	**1.7**	**1.4**	**1.3**	**1.2**	**1.2**	**1.0**	**1.0**	**1.1**
GHG Emissions by End-Use (Mt of CO_2e)																			
Space Heating	1.2	1.3	1.3	1.2	1.1	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.1	1.0	1.0	1.0	0.8	0.9	0.9
Water Heating	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Space Heating	81.7	81.4	81.5	81.6	82.2	81.3	79.1	78.4	81.6	82.0	80.4	81.3	79.9	81.0	83.1	84.0	83.5	84.5	83.1
Water Heating	18.3	18.6	18.5	18.4	17.8	18.7	20.9	21.6	18.4	17.9	19.5	18.6	20.1	18.9	16.8	15.9	16.4	15.4	16.8
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**40.2**	**40.5**	**41.1**	**40.2**	**37.9**	**36.2**	**37.5**	**39.7**	**39.3**	**39.5**	**40.1**	**41.0**	**38.1**	**35.5**	**34.2**	**34.3**	**31.4**	**31.5**	**32.7**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Residential Sector

Nova Scotia[1]

Table 36: Single Attached Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Attached Energy Use (PJ)	**3.0**	**3.3**	**3.3**	**3.1**	**2.9**	**2.8**	**2.8**	**3.1**	**3.3**	**3.3**	**3.4**	**3.7**	**3.4**	**3.3**	**3.2**	**3.2**	**3.0**	**3.1**	**3.3**
Energy Use by Energy Source (PJ)																			
Electricity	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	1.4	1.5	1.5	1.4	1.2	1.1	1.1	1.4	1.4	1.4	1.5	1.7	1.4	1.2	1.1	1.1	0.9	1.0	1.1
Other[2]	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.7	0.8	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Shares (%)																			
Electricity	28.1	28.4	29.3	30.5	33.5	35.2	34.1	31.9	31.1	31.7	30.1	29.4	31.6	34.6	35.8	35.8	38.4	38.7	37.9
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.6
Heating Oil	45.0	45.3	47.0	45.6	42.3	39.0	41.1	44.5	43.3	43.7	44.5	46.3	41.5	37.4	34.6	34.7	30.4	30.9	32.6
Other[2]	1.1	1.4	1.4	1.6	1.5	2.1	2.2	1.9	2.0	2.0	2.0	1.4	1.2	1.1	1.0	1.2	1.2	1.0	1.4
Wood	25.9	24.9	22.3	22.3	22.7	23.7	22.7	21.7	23.6	21.8	23.0	22.6	25.4	26.6	28.1	27.8	29.6	28.8	27.4
Activity																			
Total Floor Space (million m^2)	3.2	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.5	4.5	4.6	4.7	4.9	5.0
Total Households (thousands)	23.1	23.5	23.9	24.4	24.8	25.2	25.6	26.0	26.5	27.0	27.0	27.2	27.6	27.7	28.2	28.5	28.8	29.3	29.8
Energy Intensity (GJ/m^2)	**0.95**	**1.00**	**0.99**	**0.92**	**0.83**	**0.78**	**0.76**	**0.82**	**0.84**	**0.82**	**0.84**	**0.88**	**0.78**	**0.74**	**0.70**	**0.70**	**0.64**	**0.64**	**0.67**
Energy Intensity (GJ/household)	**131.9**	**138.5**	**137.0**	**127.3**	**116.8**	**110.3**	**109.3**	**119.2**	**122.8**	**121.2**	**127.5**	**134.9**	**123.0**	**118.4**	**112.8**	**113.1**	**105.3**	**107.2**	**112.0**
Total Single Attached GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.5	0.3	0.3	0.5	0.6	0.8	0.8	0.9	0.9
Heating Oil	82.6	82.8	84.5	83.9	82.8	80.2	81.4	83.5	81.9	82.2	82.3	83.9	81.1	78.9	76.8	76.6	73.2	74.0	75.3
Other[2]	1.7	2.2	2.2	2.5	2.5	3.7	3.7	3.0	3.3	3.3	3.1	2.2	2.1	2.0	2.0	2.3	2.4	2.2	2.9
Wood	15.8	15.0	13.3	13.6	14.7	16.1	14.9	13.5	14.8	13.6	14.1	13.6	16.4	18.6	20.6	20.3	23.6	22.9	20.9
GHG Intensity (tonne/TJ)	**38.6**	**38.8**	**39.4**	**38.5**	**36.2**	**34.5**	**35.8**	**37.8**	**37.5**	**37.8**	**38.4**	**39.1**	**36.3**	**33.6**	**32.0**	**32.1**	**29.5**	**29.6**	**30.7**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]

Table 37: Single Attached Secondary Energy Use and GHG Emissions by End-Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Single Attached Energy Use (PJ)	**3.0**	**3.3**	**3.3**	**3.1**	**2.9**	**2.8**	**2.8**	**3.1**	**3.3**	**3.3**	**3.4**	**3.7**	**3.4**	**3.3**	**3.2**	**3.2**	**3.0**	**3.1**	**3.3**
Energy Use by End-Use (PJ)																			
Space Heating	2.0	2.2	2.2	2.1	1.9	1.8	1.8	2.0	2.2	2.2	2.3	2.5	2.2	2.1	2.1	2.2	2.0	2.1	2.2
Water Heating	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.5	0.5	0.5	0.5	0.6
Appliances	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Lighting	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Space Heating	67.3	66.9	66.5	66.3	66.1	64.8	63.5	64.3	67.9	67.8	66.2	67.1	64.9	65.2	67.1	67.8	65.9	67.2	65.7
Water Heating	19.0	19.2	19.3	19.0	18.0	18.0	19.3	19.5	17.3	17.4	19.3	19.2	19.7	18.3	16.5	16.2	16.4	15.5	16.6
Appliances	10.8	10.9	11.1	11.5	12.4	13.5	13.7	13.1	11.8	11.8	11.5	11.0	12.3	13.4	13.4	13.1	14.6	14.3	14.5
Lighting	2.9	3.0	3.1	3.2	3.4	3.5	3.3	3.0	2.7	2.7	2.7	2.6	2.8	2.9	2.8	2.7	2.8	2.7	2.7
Space Cooling	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.1	0.3	0.3	0.2	0.3	0.3	0.3	0.5
Activity																			
Total Floor Space (million m^2)	3.2	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.5	4.5	4.6	4.7	4.9	5.0
Total Households (thousands)	23.1	23.5	23.9	24.4	24.8	25.2	25.6	26.0	26.5	27.0	27.0	27.2	27.6	27.7	28.2	28.5	28.8	29.3	29.8
Energy Intensity (GJ/m^2)	**0.95**	**1.00**	**0.99**	**0.92**	**0.83**	**0.78**	**0.76**	**0.82**	**0.84**	**0.82**	**0.84**	**0.88**	**0.78**	**0.74**	**0.70**	**0.70**	**0.64**	**0.64**	**0.67**
Energy Intensity (GJ/household)	**131.9**	**138.5**	**137.0**	**127.3**	**116.8**	**110.3**	**109.3**	**119.2**	**122.8**	**121.2**	**127.5**	**134.9**	**123.0**	**118.4**	**112.8**	**113.1**	**105.3**	**107.2**	**112.0**
Total Single Attached GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
GHG Emissions by End-Use (Mt of CO_2e)																			
Space Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Space Heating	77.7	77.2	77.1	77.2	78.3	77.8	75.9	75.5	78.4	78.2	75.6	75.8	74.2	75.6	78.1	78.6	78.2	79.5	77.9
Water Heating	22.3	22.8	22.9	22.8	21.7	22.2	24.1	24.5	21.6	21.7	24.3	24.1	25.7	24.3	21.8	21.3	21.7	20.3	22.0
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**38.6**	**38.8**	**39.4**	**38.5**	**36.2**	**34.5**	**35.8**	**37.8**	**37.5**	**37.8**	**38.4**	**39.1**	**36.3**	**33.6**	**32.0**	**32.1**	**29.5**	**29.6**	**30.7**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Residential Sector

Nova Scotia[1]
Table 38: Apartments Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Apartments Energy Use (PJ)	**5.4**	**5.8**	**5.8**	**5.5**	**5.2**	**5.0**	**5.1**	**5.7**	**5.8**	**5.8**	**6.1**	**6.4**	**5.9**	**5.7**	**5.4**	**5.5**	**5.2**	**5.3**	**5.7**
Energy Use by Energy Source (PJ)																			
Electricity	1.8	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.4
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	2.4	2.6	2.7	2.5	2.2	1.9	2.1	2.5	2.5	2.5	2.8	3.0	2.5	2.2	1.9	1.9	1.6	1.6	1.8
Other[2]	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1
Wood	1.2	1.2	1.1	1.0	1.0	1.0	0.9	1.0	1.1	1.0	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3
Shares (%)																			
Electricity	32.5	32.7	33.4	34.6	37.8	39.6	38.4	35.9	34.9	35.2	33.4	32.5	35.2	38.3	39.8	39.8	42.9	43.1	42.4
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.6
Heating Oil	44.5	45.0	46.5	45.3	42.0	38.9	41.2	44.8	43.7	44.3	45.4	47.2	42.5	38.2	35.2	35.0	30.2	30.3	32.0
Other[2]	0.9	1.2	1.2	1.3	1.2	1.7	1.8	1.5	1.7	1.7	1.6	1.2	1.0	0.9	0.9	1.0	1.0	0.9	1.2
Wood	22.0	21.2	18.9	18.8	19.0	19.8	18.7	17.8	19.6	18.2	19.2	18.9	21.1	22.1	23.7	23.7	25.4	25.1	23.7
Activity																			
Total Floor Space (million m^2)	6.6	6.7	6.8	7.0	7.2	7.3	7.4	7.6	7.8	7.9	8.0	8.2	8.4	8.7	8.8	9.0	9.2	9.6	9.8
Total Households (thousands)	78.7	79.4	80.3	81.2	82.0	82.7	83.3	84.0	85.2	86.2	85.6	86.0	86.5	86.5	87.3	88.0	88.5	89.4	90.5
Energy Intensity (GJ/m^2)	**0.82**	**0.86**	**0.85**	**0.79**	**0.72**	**0.69**	**0.68**	**0.75**	**0.74**	**0.73**	**0.75**	**0.78**	**0.71**	**0.66**	**0.62**	**0.61**	**0.56**	**0.55**	**0.58**
Energy Intensity (GJ/household)	**68.5**	**72.6**	**72.5**	**67.7**	**62.9**	**60.3**	**61.0**	**67.4**	**67.8**	**66.8**	**70.8**	**74.3**	**68.5**	**65.9**	**62.4**	**62.0**	**58.5**	**59.6**	**62.9**
Total Apartments GHG Emissions Excluding Electricity ($Mt\ of\ CO_2e$)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.2**	**0.2**
GHG Emissions by Energy Source ($Mt\ of\ CO_2e$)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.5	0.3	0.4	0.5	0.7	0.8	0.9	1.0	1.0
Heating Oil	84.6	84.8	86.5	86.0	85.1	82.9	84.2	86.1	84.6	84.8	84.9	86.4	84.1	82.0	79.8	79.4	75.8	76.1	77.4
Other[2]	1.5	1.9	1.9	2.2	2.1	3.2	3.2	2.6	2.8	2.8	2.7	1.9	1.7	1.7	1.7	2.0	2.2	2.0	2.6
Wood	13.9	13.2	11.6	11.8	12.8	13.9	12.6	11.3	12.6	11.5	11.9	11.4	13.8	15.7	17.8	17.8	21.1	20.9	19.0
GHG Intensity (tonne/TJ)	**37.3**	**37.6**	**38.1**	**37.3**	**35.0**	**33.3**	**34.7**	**36.9**	**36.7**	**37.0**	**37.9**	**38.8**	**35.8**	**33.1**	**31.3**	**31.3**	**28.3**	**28.2**	**29.3**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]

Table 39: Apartments Secondary Energy Use and GHG Emissions by End-Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Apartments Energy Use (PJ)	**5.4**	**5.8**	**5.8**	**5.5**	**5.2**	**5.0**	**5.1**	**5.7**	**5.8**	**5.8**	**6.1**	**6.4**	**5.9**	**5.7**	**5.4**	**5.5**	**5.2**	**5.3**	**5.7**
Energy Use by End-Use (PJ)																			
Space Heating	3.0	3.2	3.2	3.0	2.8	2.6	2.6	2.9	3.2	3.2	3.3	3.6	3.1	3.0	3.0	3.1	2.8	3.0	3.1
Water Heating	1.4	1.5	1.5	1.4	1.3	1.2	1.4	1.6	1.4	1.4	1.6	1.7	1.6	1.4	1.2	1.2	1.1	1.1	1.2
Appliances	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.2
Lighting	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Space Heating	55.1	54.9	54.7	54.5	54.3	52.7	51.0	51.5	55.9	56.0	54.5	55.7	53.0	53.4	55.4	56.8	54.8	56.3	54.6
Water Heating	26.4	26.5	26.3	25.8	24.6	24.8	26.7	27.4	24.6	24.5	26.6	26.4	26.9	24.9	22.5	21.5	21.3	20.1	21.4
Appliances	15.7	15.7	16.1	16.5	17.8	19.1	19.1	18.1	16.9	16.9	16.5	16.0	17.8	19.3	19.6	19.3	21.3	20.9	21.2
Lighting	2.8	2.8	2.9	3.0	3.1	3.3	3.1	2.9	2.5	2.3	2.0	1.8	2.0	2.2	2.2	2.1	2.3	2.2	2.2
Space Cooling	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.5
Activity																			
Total Floor Space (million m^2)	6.6	6.7	6.8	7.0	7.2	7.3	7.4	7.6	7.8	7.9	8.0	8.2	8.4	8.7	8.8	9.0	9.2	9.6	9.8
Total Households (thousands)	78.7	79.4	80.3	81.2	82.0	82.7	83.3	84.0	85.2	86.2	85.6	86.0	86.5	86.5	87.3	88.0	88.5	89.4	90.5
Energy Intensity (GJ/m^2)	**0.82**	**0.86**	**0.85**	**0.79**	**0.72**	**0.69**	**0.68**	**0.75**	**0.74**	**0.73**	**0.75**	**0.78**	**0.71**	**0.66**	**0.62**	**0.61**	**0.56**	**0.55**	**0.58**
Energy Intensity (GJ/household)	**68.5**	**72.6**	**72.5**	**67.7**	**62.9**	**60.3**	**61.0**	**67.4**	**67.8**	**66.8**	**70.8**	**74.3**	**68.5**	**65.9**	**62.4**	**62.0**	**58.5**	**59.6**	**62.9**
Total Apartments GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.2**	**0.2**
GHG Emissions by End-Use (Mt of CO_2e)																			
Space Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Water Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Space Heating	66.9	66.6	66.8	67.0	68.3	67.3	64.6	63.8	67.9	67.9	65.0	65.6	63.5	65.3	68.3	69.9	69.2	71.0	68.9
Water Heating	33.1	33.4	33.2	33.0	31.7	32.7	35.4	36.2	32.1	31.9	34.8	34.3	36.4	34.5	31.5	29.9	30.5	28.7	30.7
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**37.3**	**37.6**	**38.1**	**37.3**	**35.0**	**33.3**	**34.7**	**36.9**	**36.7**	**37.0**	**37.9**	**38.8**	**35.8**	**33.1**	**31.3**	**31.3**	**28.3**	**28.2**	**29.3**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Residential Sector

Nova Scotia[1]

Table 40: Mobile Homes Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Mobile Homes Energy Use (PJ)	**2.1**	**2.2**	**2.2**	**2.1**	**1.9**	**1.8**	**1.8**	**2.0**	**2.1**	**2.1**	**2.1**	**2.2**	**2.0**	**1.9**	**1.8**	**1.8**	**1.7**	**1.7**	**1.8**
Energy Use by Energy Source (PJ)																			
Electricity	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	1.0	1.1	1.1	1.0	0.9	0.8	0.8	1.0	1.0	1.0	1.0	1.1	0.9	0.8	0.7	0.7	0.6	0.6	0.6
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Shares (%)																			
Electricity	25.6	25.8	26.4	27.5	30.4	31.9	30.7	28.5	27.8	28.1	26.7	25.8	28.0	30.9	32.4	32.3	35.0	35.5	34.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.5	0.3	0.3	0.5	0.6	0.7	0.7	0.7	0.8
Heating Oil	48.5	48.9	50.7	49.4	46.4	43.1	45.3	49.1	47.8	48.3	48.9	51.0	46.0	41.9	38.9	38.7	33.6	33.9	35.7
Other[2]	1.1	1.5	1.5	1.7	1.6	2.2	2.3	2.0	2.2	2.2	2.1	1.5	1.3	1.2	1.1	1.4	1.3	1.2	1.6
Wood	24.8	23.8	21.3	21.4	21.7	22.8	21.6	20.4	22.2	20.5	21.8	21.4	24.3	25.5	27.1	27.0	29.4	28.6	27.1
Activity																			
Total Floor Space (million m^2)	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
Total Households (thousands)	14.5	14.5	14.6	14.6	14.7	14.7	14.7	14.7	14.8	14.9	14.7	14.7	14.7	14.6	14.7	14.7	14.7	14.8	14.8
Energy Intensity (GJ/m^2)	**1.48**	**1.55**	**1.54**	**1.41**	**1.29**	**1.21**	**1.20**	**1.32**	**1.35**	**1.32**	**1.34**	**1.39**	**1.23**	**1.16**	**1.11**	**1.10**	**1.00**	**1.02**	**1.06**
Energy Intensity (GJ/household)	**142.5**	**150.6**	**150.6**	**140.2**	**129.6**	**123.0**	**123.1**	**136.8**	**140.9**	**138.6**	**144.0**	**151.4**	**135.5**	**129.8**	**124.2**	**123.6**	**113.8**	**116.1**	**120.8**
Total Mobile Homes GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heating Oil	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.6	0.3	0.4	0.6	0.8	0.9	1.1	1.1	1.2
Heating Oil	84.1	84.2	85.8	85.3	84.4	82.0	83.2	85.3	83.9	83.9	83.9	85.6	83.0	81.0	79.0	78.6	74.7	75.4	76.5
Other[2]	1.7	2.2	2.2	2.5	2.5	3.7	3.7	3.0	3.3	3.3	3.1	2.2	2.1	2.0	2.0	2.4	2.5	2.3	3.0
Wood	14.2	13.6	11.9	12.2	13.1	14.4	13.1	11.7	12.9	11.8	12.4	11.9	14.5	16.3	18.2	18.1	21.6	21.1	19.2
GHG Intensity (tonne/TJ)	**40.8**	**41.2**	**41.9**	**41.1**	**38.9**	**37.3**	**38.6**	**40.8**	**40.5**	**40.8**	**41.4**	**42.3**	**39.4**	**36.7**	**34.9**	**34.9**	**31.9**	**31.8**	**33.1**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.
2) "Other" includes coal and propane.

Residential Sector

Nova Scotia[1]

Table 41: Mobile Homes Secondary Energy Use and GHG Emissions by End-Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Mobile Homes Energy Use (PJ)	**2.1**	**2.2**	**2.2**	**2.1**	**1.9**	**1.8**	**1.8**	**2.0**	**2.1**	**2.1**	**2.1**	**2.2**	**2.0**	**1.9**	**1.8**	**1.8**	**1.7**	**1.7**	**1.8**
Energy Use by End-Use (PJ)																			
Space Heating	1.5	1.6	1.6	1.5	1.4	1.3	1.2	1.4	1.5	1.5	1.5	1.7	1.4	1.4	1.3	1.4	1.2	1.3	1.3
Water Heating	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Appliances	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Space Heating	73.1	73.0	72.9	72.8	72.2	70.5	69.0	69.2	73.2	73.8	73.0	74.7	72.4	72.4	73.9	75.5	73.6	74.6	73.3
Water Heating	14.9	15.0	14.9	14.6	14.4	15.1	16.8	17.6	14.8	14.2	15.1	14.4	15.0	14.0	12.5	11.1	11.2	10.6	11.4
Appliances	9.9	9.8	10.0	10.3	11.1	11.9	12.0	11.3	10.2	10.2	10.1	9.7	11.1	12.0	12.1	11.9	13.4	13.1	13.4
Lighting	2.1	2.1	2.1	2.2	2.2	2.2	2.0	1.7	1.5	1.4	1.2	1.1	1.2	1.3	1.3	1.3	1.4	1.4	1.4
Space Cooling	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.4	0.5	0.1	0.3	0.3	0.2	0.3	0.4	0.4	0.5
Activity																			
Total Floor Space (million m^2)	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
Total Households (thousands)	14.5	14.5	14.6	14.6	14.7	14.7	14.7	14.7	14.8	14.9	14.7	14.7	14.7	14.6	14.7	14.7	14.7	14.8	14.8
Energy Intensity (GJ/m^2)	**1.48**	**1.55**	**1.54**	**1.41**	**1.29**	**1.21**	**1.20**	**1.32**	**1.35**	**1.32**	**1.34**	**1.39**	**1.23**	**1.16**	**1.11**	**1.10**	**1.00**	**1.02**	**1.06**
Energy Intensity (GJ/household)	**142.5**	**150.6**	**150.6**	**140.2**	**129.6**	**123.0**	**123.1**	**136.8**	**140.9**	**138.6**	**144.0**	**151.4**	**135.5**	**129.8**	**124.2**	**123.6**	**113.8**	**116.1**	**120.8**
Total Mobile Homes GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
GHG Emissions by End-Use (Mt of CO_2e)																			
Space Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Space Heating	83.3	83.1	83.3	83.4	83.7	82.7	80.5	79.5	82.9	83.5	82.1	83.1	81.7	82.7	84.5	86.3	85.7	86.6	85.5
Water Heating	16.7	16.9	16.7	16.6	16.3	17.3	19.5	20.5	17.1	16.4	17.8	16.9	18.3	17.2	15.4	13.6	14.1	13.3	14.4
Appliances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**40.8**	**41.2**	**41.9**	**41.1**	**38.9**	**37.3**	**38.6**	**40.8**	**40.5**	**40.8**	**41.4**	**42.3**	**39.4**	**36.7**	**34.9**	**34.9**	**31.9**	**31.8**	**33.1**
Heating Degree-Day Index	**0.94**	**0.94**	**0.97**	**0.99**	**1.02**	**0.94**	**0.83**	**0.81**	**0.99**	**1.02**	**0.89**	**0.95**	**0.83**	**0.87**	**0.98**	**1.04**	**0.96**	**1.04**	**0.96**
Cooling Degree-Day Index	**1.26**	**1.84**	**1.47**	**1.73**	**1.28**	**2.29**	**1.57**	**0.83**	**2.09**	**2.14**	**2.94**	**1.75**	**3.03**	**2.68**	**2.29**	**2.71**	**2.84**	**2.71**	**3.86**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production only.

Commercial/Institutional Sector
List of Tables

Atlantic[1]

Secondary Energy Use and GHG Emissions Summary Tables

Table 1: Secondary Energy Use and GHG Emissions by Energy Source
Table 2: Secondary Energy Use and GHG Emissions by End Use
Table 3: Secondary Energy Use and GHG Emissions by Activity Type

Secondary Energy Use and GHG Emissions Summary Tables by Activity Type

Table 4: Wholesale Trade Secondary Energy Use and GHG Emissions by Energy Source
Table 5: Wholesale Trade Secondary Energy Use and GHG Emissions by End Use

Table 6: Retail Trade Secondary Energy Use and GHG Emissions by Energy Source
Table 7: Retail Trade Secondary Energy Use and GHG Emissions by End Use

Table 8: Transportation and Warehousing Secondary Energy Use and GHG Emissions by Energy Source
Table 9: Transportation and Warehousing Secondary Energy Use and GHG Emissions by End Use

Table 10: Information and Cultural Industries Secondary Energy Use and GHG Emissions by Energy Source
Table 11: Information and Cultural Industries Secondary Energy Use and GHG Emissions by End Use

Table 12: Offices Secondary Energy Use and GHG Emissions by Energy Source
Table 13: Offices Secondary Energy Use and GHG Emissions by End Use

Table 14: Educational Services Secondary Energy Use and GHG Emissions by Energy Source
Table 15: Educational Services Secondary Energy Use and GHG Emissions by End Use

Table 16: Health Care and Social Assistance Secondary Energy Use and GHG Emissions by Energy Source
Table 17: Health Care and Social Assistance Secondary Energy Use and GHG Emissions by End Use

Table 18: Arts, Entertainment and Recreation Secondary Energy Use and GHG Emissions by Energy Source
Table 19: Arts, Entertainment and Recreation Secondary Energy Use and GHG Emissions by End Use

Table 20: Accommodation and Food Services Secondary Energy Use and GHG Emissions by Energy Source
Table 21: Accommodation and Food Services Secondary Energy Use and GHG Emissions by End Use

Table 22: Other Services Secondary Energy Use and GHG Emissions by Energy Source
Table 23: Other Services Secondary Energy Use and GHG Emissions by End Use

Secondary Energy Use and GHG Emissions Summary Tables by End Use

Table 24: Space Heating Secondary Energy Use and GHG Emissions by Energy Source
Table 25: Space Heating Secondary Energy Use and GHG Emissions by Activity Type

Table 26: Water Heating Secondary Energy Use and GHG Emissions by Energy Source
Table 27: Water Heating Secondary Energy Use and GHG Emissions by Activity Type

Table 28: Auxiliary Equipment Secondary Energy Use and GHG Emissions by Energy Source
Table 29: Auxiliary Equipment Secondary Energy Use and GHG Emissions by Activity Type

Table 30: Auxiliary Motors Secondary Energy Use and GHG Emissions by Activity Type

Table 31: Lighting Secondary Energy Use and GHG Emissions by Activity Type

Table 32: Space Cooling Secondary Energy Use and GHG Emissions by Energy Source
Table 33: Space Cooling Secondary Energy Use and GHG Emissions by Activity Type

Table 34: Street Lighting Secondary Energy Use and GHG Emissions

Detailed Tables

Secondary Energy Use by Activity Type, End Use and Energy Source

Table 35: Wholesale Trade Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 36: Wholesale Trade Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 37: Retail Trade Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 38: Retail Trade Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 39: Transportation and Warehousing Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 40: Transportation and Warehousing Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 41: Information and Cultural Industries Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 42: Information and Cultural Industries Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 43: Offices Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 44: Offices Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 45: Educational Services Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 46: Educational Services Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 47: Health Care and Social Assistance Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 48: Health Care and Social Assistance Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 49: Arts, Entertainment and Recreation Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 50: Arts, Entertainment and Recreation Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 51: Accommodation and Food Services Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 52: Accommodation and Food Services Space Conditioning Secondary Energy Use by End Use and by Energy Source

Table 53: Other Services Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source
Table 54: Other Services Space Conditioning Secondary Energy Use by End Use and by Energy Source

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 1: Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use (PJ)	**57.2**	**58.4**	**57.6**	**61.8**	**67.6**	**63.0**	**56.3**	**63.6**	**60.6**	**54.3**	**52.7**	**61.6**	**59.5**	**54.7**	**60.1**	**61.5**	**59.3**	**57.4**	**56.8**
Energy Use by Energy Source (PJ)																			
Electricity	29.9	30.2	31.1	31.7	32.0	30.9	27.7	33.5	33.6	33.2	31.3	32.9	33.3	30.4	34.6	34.3	35.1	34.9	36.0
Natural Gas	0.0	0.0	0.0	0.8	1.0	1.6	1.5	1.6	2.5	2.7	2.8	5.3	5.5	6.6	6.7	7.3	8.1	9.6	10.2
Light Fuel Oil and Kerosene	15.6	16.5	16.5	16.7	19.2	14.9	12.2	12.2	10.3	8.3	9.2	11.7	8.6	13.2	14.0	14.5	11.9	9.7	7.0
Heavy Fuel Oil	7.2	6.3	4.9	7.7	10.7	11.4	10.4	11.5	9.0	5.0	4.8	7.6	8.8	1.4	1.4	1.5	1.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	4.5	5.4	5.1	4.9	4.7	4.1	4.5	4.7	5.3	5.0	4.5	4.0	3.2	3.1	3.4	3.9	3.3	3.1	3.6
Shares (%)																			
Electricity	52.3	51.6	54.0	51.3	47.4	49.1	49.3	52.7	55.4	61.2	59.5	53.5	56.0	55.6	57.6	55.8	59.1	60.8	63.4
Natural Gas	0.0	0.0	0.0	1.3	1.4	2.6	2.6	2.6	4.2	5.0	5.4	8.6	9.3	12.1	11.1	11.8	13.6	16.8	17.9
Light Fuel Oil and Kerosene	27.3	28.3	28.6	26.9	28.5	23.7	21.7	19.3	16.9	15.3	17.5	19.0	14.5	24.1	23.4	23.5	20.0	16.9	12.3
Heavy Fuel Oil	12.6	10.8	8.5	12.4	15.8	18.1	18.4	18.1	14.8	9.3	9.2	12.3	14.8	2.6	2.3	2.5	1.6	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	7.8	9.3	8.9	8.0	7.0	6.5	8.0	7.3	8.7	9.3	8.5	6.5	5.5	5.6	5.7	6.3	5.6	5.5	6.4
Activity																			
Total Floor Space (million m^2)	41.9	42.7	43.1	43.8	44.4	45.1	45.8	46.3	46.8	47.4	47.8	48.3	48.9	49.2	49.2	49.2	49.1	49.3	49.3
Energy Intensity[3] (GJ/m^2)	**1.35**	**1.35**	**1.32**	**1.39**	**1.50**	**1.38**	**1.21**	**1.35**	**1.28**	**1.13**	**1.08**	**1.26**	**1.20**	**1.09**	**1.20**	**1.23**	**1.19**	**1.15**	**1.14**
Total GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.9**	**2.0**	**1.8**	**2.1**	**2.5**	**2.2**	**2.0**	**2.1**	**1.8**	**1.4**	**1.4**	**1.9**	**1.7**	**1.5**	**1.6**	**1.7**	**1.5**	**1.3**	**1.2**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5
Light Fuel Oil and Kerosene	1.1	1.2	1.2	1.2	1.4	1.1	0.9	0.9	0.7	0.6	0.7	0.8	0.6	0.9	1.0	1.0	0.8	0.7	0.5
Heavy Fuel Oil	0.5	0.5	0.4	0.6	0.8	0.8	0.8	0.9	0.7	0.4	0.4	0.6	0.7	0.1	0.1	0.1	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
GHG Intensity (tonne/TJ)	**33.5**	**33.8**	**32.1**	**33.9**	**36.9**	**35.6**	**35.4**	**32.9**	**30.4**	**25.8**	**27.1**	**30.9**	**29.2**	**28.1**	**26.8**	**27.9**	**25.2**	**23.3**	**21.2**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.
3) Excludes street lighting.

Commercial/Institutional Sector

Atlantic[1]

Table 2: Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use (PJ)	**57.2**	**58.4**	**57.6**	**61.8**	**67.6**	**63.0**	**56.3**	**63.6**	**60.6**	**54.3**	**52.7**	**61.6**	**59.5**	**54.7**	**60.1**	**61.5**	**59.3**	**57.4**	**56.8**
Energy Use by End Use (PJ)																			
Space Heating	29.0	28.9	29.2	30.2	36.4	31.5	27.2	32.8	29.3	23.9	21.5	30.1	27.6	25.0	27.9	29.4	27.6	26.4	23.7
Water Heating	3.1	3.0	2.9	3.6	3.8	3.4	3.1	3.5	3.3	2.9	3.1	3.9	4.0	3.1	3.3	3.3	2.9	2.5	2.7
Auxiliary Equipment	7.1	7.8	7.6	8.9	9.2	9.3	9.3	9.9	10.0	10.5	10.8	10.5	9.9	9.9	10.7	10.4	10.8	9.4	10.1
Auxiliary Motors	3.9	3.3	3.2	3.4	3.5	3.4	2.8	3.0	3.0	3.3	2.8	3.5	2.8	2.2	3.0	2.8	2.6	2.7	2.3
Lighting	10.4	10.5	10.3	10.2	10.4	10.0	9.8	10.4	10.4	10.3	10.4	10.0	9.2	9.3	9.9	9.8	9.3	10.1	10.4
Space Cooling	3.0	4.2	3.7	4.6	3.5	4.6	3.4	3.1	3.6	2.5	3.0	2.6	5.0	4.4	4.4	5.1	5.4	5.5	6.9
Street Lighting	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.6
Shares (%)																			
Space Heating	50.7	49.6	50.8	48.8	53.9	50.0	48.3	51.6	48.4	44.0	40.9	48.9	46.4	45.6	46.5	47.8	46.5	45.9	41.7
Water Heating	5.5	5.1	5.0	5.9	5.6	5.5	5.5	5.5	5.5	5.4	6.0	6.4	6.8	5.6	5.5	5.4	4.9	4.4	4.8
Auxiliary Equipment	12.5	13.3	13.2	14.5	13.6	14.8	16.6	15.6	16.6	19.3	20.5	17.1	16.7	18.2	17.8	16.9	18.1	16.4	17.8
Auxiliary Motors	6.7	5.6	5.6	5.5	5.2	5.3	5.0	4.7	5.0	6.2	5.2	5.6	4.7	4.1	4.9	4.5	4.3	4.7	4.1
Lighting	18.2	17.9	17.8	16.6	15.4	15.9	17.3	16.3	17.1	19.0	19.8	16.3	15.4	16.9	16.4	15.9	15.7	17.6	18.2
Space Cooling	5.3	7.2	6.4	7.4	5.2	7.3	6.0	4.9	5.9	4.6	5.8	4.2	8.5	8.0	7.3	8.3	9.0	9.7	12.2
Street Lighting	1.2	1.3	1.2	1.4	1.1	1.2	1.3	1.4	1.5	1.7	1.8	1.5	1.5	1.6	1.5	1.3	1.3	1.3	1.1
Activity																			
Total Floor Space (million m^2)	41.9	42.7	43.1	43.8	44.4	45.1	45.8	46.3	46.8	47.4	47.8	48.3	48.9	49.2	49.2	49.2	49.1	49.3	49.3
Energy Intensity[2] (GJ/m^2)	**1.35**	**1.35**	**1.32**	**1.39**	**1.50**	**1.38**	**1.21**	**1.35**	**1.28**	**1.13**	**1.08**	**1.26**	**1.20**	**1.09**	**1.20**	**1.23**	**1.19**	**1.15**	**1.14**
Total GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.9**	**2.0**	**1.8**	**2.1**	**2.5**	**2.2**	**2.0**	**2.1**	**1.8**	**1.4**	**1.4**	**1.9**	**1.7**	**1.5**	**1.6**	**1.7**	**1.5**	**1.3**	**1.2**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	1.7	1.7	1.6	1.8	2.2	2.0	1.7	1.8	1.6	1.2	1.2	1.6	1.4	1.3	1.4	1.5	1.3	1.2	1.0
Water Heating	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Auxiliary Equipment	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Street Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**33.5**	**33.8**	**32.1**	**33.9**	**36.9**	**35.6**	**35.4**	**32.9**	**30.4**	**25.8**	**27.1**	**30.9**	**29.2**	**28.1**	**26.8**	**27.9**	**25.2**	**23.3**	**21.2**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) Excludes street lighting.

Commercial/Institutional Sector

Atlantic[1]

Table 3: Secondary Energy Use and GHG Emissions by Activity Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use (PJ)	**57.2**	**58.4**	**57.6**	**61.8**	**67.6**	**63.0**	**56.3**	**63.6**	**60.6**	**54.3**	**52.7**	**61.6**	**59.5**	**54.7**	**60.1**	**61.5**	**59.3**	**57.4**	**56.8**
Energy Use by Activity Type[2] (PJ)																			
Wholesale Trade	3.3	3.3	3.3	3.4	4.0	3.6	3.2	3.7	3.5	3.1	2.8	3.5	3.4	3.1	3.4	3.4	3.3	3.1	3.1
Retail Trade	8.4	8.8	8.7	9.2	10.9	10.6	9.5	11.0	10.4	9.2	8.4	10.3	10.3	9.4	10.2	10.5	10.1	9.6	9.5
Transportation and Warehousing	2.4	2.4	2.4	2.3	2.7	2.4	2.1	2.3	2.2	1.9	1.8	2.3	2.2	2.0	2.2	2.2	2.1	2.1	2.0
Information and Cultural Industries	1.1	1.1	1.1	1.2	1.4	1.2	1.1	1.2	1.2	1.1	1.0	1.2	1.2	1.1	1.2	1.2	1.2	1.2	1.2
Offices[3]	18.5	18.9	18.6	21.5	19.6	19.3	17.1	19.0	18.6	17.1	18.8	19.7	17.6	16.1	17.6	18.1	17.5	17.0	16.9
Educational Services	8.3	8.4	8.2	8.6	10.4	9.2	8.1	9.1	8.5	7.6	7.1	8.7	8.6	7.9	8.8	9.1	8.8	8.6	8.5
Health Care and Social Assistance	8.5	8.6	8.4	8.5	10.2	9.2	8.3	9.3	8.7	7.7	6.8	8.6	8.8	8.3	9.3	9.5	9.2	8.7	8.7
Arts, Entertainment and Recreation	1.0	1.0	1.0	1.0	1.2	1.1	1.0	1.1	1.0	0.9	0.9	1.1	1.1	1.0	1.1	1.2	1.1	1.1	1.1
Accommodation and Food Services	3.8	3.8	3.8	3.9	4.8	4.4	4.0	4.6	4.3	3.8	3.3	4.1	4.3	3.9	4.3	4.5	4.4	4.4	4.4
Other Services	1.4	1.4	1.4	1.4	1.6	1.4	1.2	1.4	1.3	1.1	1.0	1.2	1.1	1.0	1.1	1.1	1.0	0.9	0.9
Shares (%)																			
Wholesale Trade	5.8	5.8	5.8	5.6	6.1	5.8	5.8	5.9	5.9	5.8	5.4	5.7	5.8	5.8	5.7	5.6	5.6	5.5	5.5
Retail Trade	14.8	15.2	15.3	15.0	16.3	17.0	17.1	17.5	17.4	17.2	16.2	17.0	17.6	17.5	17.3	17.3	17.2	16.9	16.9
Transportation and Warehousing	4.3	4.2	4.1	3.8	4.1	3.8	3.7	3.7	3.7	3.6	3.5	3.7	3.8	3.7	3.7	3.6	3.6	3.6	3.6
Information and Cultural Industries	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1
Offices[3]	32.7	32.7	32.8	35.3	29.3	31.0	30.8	30.3	31.2	32.1	36.4	32.4	30.0	29.9	29.7	29.8	29.9	29.9	30.0
Educational Services	14.6	14.5	14.5	14.0	15.5	14.8	14.7	14.6	14.3	14.2	13.6	14.4	14.7	14.7	14.9	15.0	15.0	15.1	15.2
Health Care and Social Assistance	14.9	14.9	14.8	14.0	15.3	14.7	14.9	14.8	14.5	14.3	13.1	14.2	15.1	15.5	15.7	15.6	15.7	15.4	15.4
Arts, Entertainment and Recreation	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.8	1.7	1.8	1.8	1.9	1.9	1.9	1.9	2.0	1.9
Accommodation and Food Services	6.7	6.7	6.7	6.4	7.2	7.0	7.2	7.3	7.2	7.0	6.3	6.8	7.3	7.3	7.3	7.5	7.5	7.8	7.9
Other Services (Except Public Admin)	2.5	2.4	2.4	2.3	2.4	2.2	2.2	2.2	2.1	2.0	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.6
Activity																			
Total Floor Space (million m^2)	41.9	42.7	43.1	43.8	44.4	45.1	45.8	46.3	46.8	47.4	47.8	48.3	48.9	49.2	49.2	49.2	49.1	49.3	49.3
Energy Intensity[2] (GJ/m^2)	**1.35**	**1.35**	**1.32**	**1.39**	**1.50**	**1.38**	**1.21**	**1.35**	**1.28**	**1.13**	**1.08**	**1.26**	**1.20**	**1.09**	**1.20**	**1.23**	**1.19**	**1.15**	**1.14**
Total GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.9**	**2.0**	**1.8**	**2.1**	**2.5**	**2.2**	**2.0**	**2.1**	**1.8**	**1.4**	**1.4**	**1.9**	**1.7**	**1.5**	**1.6**	**1.7**	**1.5**	**1.3**	**1.2**
GHG Emissions by Activity Type[2] (Mt of CO_2e)																			
Wholesale Trade	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Retail Trade	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Transportation and Warehousing	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0
Information and Cultural Industries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Offices[3]	0.7	0.7	0.7	0.8	0.8	0.7	0.6	0.7	0.7	0.6	0.7	0.8	0.6	0.5	0.6	0.6	0.5	0.5	0.4
Educational Services	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
Health Care and Social Assistance	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Arts, Entertainment and Recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation and Food Services	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Services	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**33.5**	**33.8**	**32.1**	**33.9**	**36.9**	**35.6**	**35.4**	**32.9**	**30.4**	**25.8**	**27.1**	**30.9**	**29.2**	**28.1**	**26.8**	**27.9**	**25.2**	**23.3**	**21.2**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) Excludes street lighting.
3) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.

Commercial/Institutional Sector

Atlantic[1]

Table 4: Wholesale Trade Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Wholesale Trade (PJ)	**3.3**	**3.3**	**3.3**	**3.4**	**4.0**	**3.6**	**3.2**	**3.7**	**3.5**	**3.1**	**2.8**	**3.5**	**3.4**	**3.1**	**3.4**	**3.4**	**3.3**	**3.1**	**3.1**
Energy Use by Energy Source (PJ)																			
Electricity	1.8	1.7	1.8	1.8	1.9	1.8	1.5	2.0	2.1	2.0	1.8	2.0	2.0	1.8	2.1	2.1	2.1	2.1	2.1
Natural Gas	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.5	0.5	0.6	0.5	0.5	0.6	0.6	0.6
Light Fuel Oil and Kerosene	0.9	1.0	1.0	1.0	1.3	1.0	0.7	0.6	0.3	0.1	0.2	0.3	0.1	0.4	0.4	0.4	0.3	0.2	0.1
Heavy Fuel Oil	0.2	0.1	0.0	0.1	0.4	0.4	0.5	0.5	0.4	0.2	0.1	0.2	0.4	0.0	0.1	0.1	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.4	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3
Shares (%)																			
Electricity	54.1	52.3	55.6	53.2	47.6	49.4	48.2	54.9	58.7	66.3	65.0	59.0	59.1	58.4	63.5	61.6	63.1	67.6	69.8
Natural Gas	0.0	0.0	0.0	1.5	2.0	3.7	3.8	3.9	7.1	9.0	10.4	15.8	16.1	20.7	15.1	15.8	18.8	19.8	19.0
Light Fuel Oil and Kerosene	28.8	30.6	30.4	29.7	31.5	26.6	22.8	17.0	9.3	4.2	6.3	9.3	4.3	12.1	12.0	11.6	8.2	5.0	2.6
Heavy Fuel Oil	5.9	3.1	1.0	4.0	8.9	11.5	14.2	14.2	12.6	6.3	4.5	6.0	13.0	0.9	1.5	2.0	1.2	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	11.2	14.0	13.1	11.7	9.9	8.9	10.9	10.0	12.2	14.3	13.8	9.9	7.5	8.0	7.9	9.0	8.8	7.5	8.5
Activity																			
Floor Space (million m^2)	2.79	2.83	2.85	2.89	2.94	2.99	3.03	3.08	3.14	3.16	3.17	3.18	3.20	3.19	3.15	3.14	3.13	3.12	3.11
Energy Intensity (GJ/m^2)	**1.18**	**1.18**	**1.15**	**1.19**	**1.38**	**1.20**	**1.06**	**1.20**	**1.11**	**0.98**	**0.89**	**1.09**	**1.06**	**0.97**	**1.07**	**1.08**	**1.04**	**0.99**	**0.99**
Total GHG Emissions for Wholesale Trade Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**31.7**	**32.6**	**30.3**	**31.9**	**36.1**	**34.7**	**35.4**	**30.7**	**27.0**	**20.9**	**21.4**	**24.9**	**25.3**	**24.2**	**21.7**	**22.8**	**21.1**	**17.8**	**16.4**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 5: Wholesale Trade Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Wholesale Trade (PJ)	**3.3**	**3.3**	**3.3**	**3.4**	**4.0**	**3.6**	**3.2**	**3.7**	**3.5**	**3.1**	**2.8**	**3.5**	**3.4**	**3.1**	**3.4**	**3.4**	**3.3**	**3.1**	**3.1**
Energy Use by End Use (PJ)																			
Space Heating	1.7	1.7	1.8	1.7	2.3	1.9	1.6	2.0	1.8	1.4	1.1	1.7	1.7	1.5	1.7	1.7	1.6	1.5	1.3
Water Heating	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Auxiliary Equipment	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Auxiliary Motors	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1
Lighting	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Space Cooling	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Shares (%)																			
Space Heating	53.1	52.1	53.5	50.2	57.1	52.0	50.9	54.7	51.0	46.1	40.5	49.3	49.0	48.2	49.0	49.3	48.1	47.9	43.4
Water Heating	5.6	5.3	5.2	6.2	5.6	5.6	5.6	5.5	5.6	5.6	6.3	6.5	6.8	5.6	5.4	5.3	4.8	4.5	4.9
Auxiliary Equipment	10.7	11.4	11.2	12.8	11.5	12.6	13.9	13.1	14.1	17.2	19.0	16.0	14.6	16.3	16.1	15.5	16.6	14.7	15.9
Auxiliary Motors	7.2	6.0	6.0	6.0	5.4	5.8	5.5	5.1	5.5	6.8	6.1	6.2	5.1	4.4	5.3	4.9	4.7	5.0	4.4
Lighting	17.6	17.4	17.2	16.5	14.6	15.8	17.2	16.0	17.0	19.0	21.0	17.1	14.9	16.4	15.9	15.6	15.5	16.8	17.4
Space Cooling	5.8	7.8	6.9	8.3	5.7	8.3	6.9	5.6	6.8	5.3	7.1	4.9	9.5	9.0	8.2	9.4	10.3	11.1	14.0
Activity																			
Floor Space (million m^2)	2.79	2.83	2.85	2.89	2.94	2.99	3.03	3.08	3.14	3.16	3.17	3.18	3.20	3.19	3.15	3.14	3.13	3.12	3.11
Energy Intensity (GJ/m^2)	**1.18**	**1.18**	**1.15**	**1.19**	**1.38**	**1.20**	**1.06**	**1.20**	**1.11**	**0.98**	**0.89**	**1.09**	**1.06**	**0.97**	**1.07**	**1.08**	**1.04**	**0.99**	**0.99**
Total GHG Emissions for Wholesale Trade Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**31.7**	**32.6**	**30.3**	**31.9**	**36.1**	**34.7**	**35.4**	**30.7**	**27.0**	**20.9**	**21.4**	**24.9**	**25.3**	**24.2**	**21.7**	**22.8**	**21.1**	**17.8**	**16.4**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 6: Retail Trade Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Retail Trade (PJ)	**8.4**	**8.8**	**8.7**	**9.2**	**10.9**	**10.6**	**9.5**	**11.0**	**10.4**	**9.2**	**8.4**	**10.3**	**10.3**	**9.4**	**10.2**	**10.5**	**10.1**	**9.6**	**9.5**
Energy Use by Energy Source (PJ)																			
Electricity	4.7	4.8	5.0	5.1	5.4	5.2	4.5	6.0	6.1	6.1	5.4	6.1	6.1	5.5	6.5	6.4	6.2	6.4	6.6
Natural Gas	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.7	0.8	0.9	1.7	1.7	2.0	1.6	1.7	2.0	2.0	1.9
Light Fuel Oil and Kerosene	2.3	2.5	2.5	2.6	3.3	2.8	2.2	1.9	1.0	0.4	0.5	1.0	0.4	1.1	1.2	1.3	0.8	0.5	0.3
Heavy Fuel Oil	0.5	0.3	0.1	0.3	0.9	1.2	1.4	1.6	1.3	0.6	0.4	0.6	1.4	0.1	0.2	0.2	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.9	1.2	1.1	1.0	1.0	0.9	1.0	1.1	1.3	1.3	1.1	1.0	0.8	0.7	0.8	0.9	0.9	0.7	0.8
Shares (%)																			
Electricity	56.3	54.6	57.7	55.3	49.7	49.5	47.7	54.6	58.4	66.0	64.8	58.7	58.8	58.2	63.3	60.7	62.0	67.0	69.2
Natural Gas	0.0	0.0	0.0	1.4	2.0	3.7	3.8	3.9	7.2	9.1	10.6	16.1	16.3	21.0	15.3	16.3	19.5	20.5	19.7
Light Fuel Oil and Kerosene	27.5	29.1	28.9	28.3	30.3	26.6	23.1	17.3	9.5	4.3	6.4	9.4	4.3	12.2	12.1	11.9	8.4	5.2	2.7
Heavy Fuel Oil	5.6	2.9	0.9	3.8	8.5	11.5	14.4	14.2	12.7	6.4	4.6	6.0	13.2	0.9	1.5	2.1	1.2	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	10.7	13.4	12.5	11.2	9.6	8.8	10.9	10.0	12.2	14.2	13.7	9.7	7.3	7.8	7.7	9.0	8.9	7.4	8.4
Activity																			
Floor Space (million m^2)	6.12	6.38	6.49	6.63	6.85	6.94	7.15	7.36	7.46	7.53	7.55	7.58	7.74	7.74	7.65	7.63	7.57	7.54	7.49
Energy Intensity (GJ/m^2)	**1.37**	**1.37**	**1.34**	**1.38**	**1.59**	**1.52**	**1.33**	**1.49**	**1.39**	**1.22**	**1.11**	**1.36**	**1.33**	**1.22**	**1.34**	**1.38**	**1.33**	**1.27**	**1.26**
Total GHG Emissions for Retail Trade Excluding Electricity (Mt of CO_2e)	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.3**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Light Fuel Oil and Kerosene	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0
GHG Intensity (tonne/TJ)	**30.2**	**31.0**	**28.8**	**30.5**	**34.7**	**34.6**	**35.7**	**30.9**	**27.2**	**21.0**	**21.5**	**25.1**	**25.5**	**24.2**	**21.8**	**23.3**	**21.7**	**18.1**	**16.7**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 7: Retail Trade Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Retail Trade (PJ)	**8.4**	**8.8**	**8.7**	**9.2**	**10.9**	**10.6**	**9.5**	**11.0**	**10.4**	**9.2**	**8.4**	**10.3**	**10.3**	**9.4**	**10.2**	**10.5**	**10.1**	**9.6**	**9.5**
Energy Use by End Use (PJ)																			
Space Heating	4.2	4.3	4.4	4.4	5.9	5.5	4.9	6.0	5.3	4.3	3.4	5.1	5.1	4.6	5.0	5.3	5.0	4.7	4.2
Water Heating	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5
Auxiliary Equipment	0.9	1.0	1.0	1.1	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.4	1.4	1.5	1.4	1.5	1.3	1.4
Auxiliary Motors	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.4
Lighting	1.7	1.8	1.8	1.8	1.9	1.8	1.8	1.9	2.0	1.9	1.9	1.9	1.7	1.7	1.8	1.8	1.7	1.7	1.7
Space Cooling	0.5	0.7	0.6	0.8	0.7	0.9	0.6	0.6	0.7	0.5	0.6	0.5	1.0	0.8	0.8	1.0	1.0	1.0	1.3
Shares (%)																			
Space Heating	50.2	49.2	50.6	47.6	54.5	51.8	51.3	54.8	51.1	46.4	40.8	49.7	49.3	48.5	49.3	50.5	49.4	49.0	44.4
Water Heating	5.6	5.3	5.2	6.2	5.7	5.8	5.9	5.8	5.9	5.9	6.6	6.8	7.2	5.9	5.7	5.6	5.1	4.7	5.1
Auxiliary Equipment	10.4	11.1	11.0	12.3	11.2	11.2	12.4	11.8	12.7	15.5	17.1	14.4	13.2	14.7	14.6	13.7	14.7	13.7	14.8
Auxiliary Motors	6.8	5.7	5.6	5.7	5.1	5.1	4.8	4.5	4.8	6.0	5.4	5.5	4.5	3.9	4.7	4.3	4.1	4.2	3.7
Lighting	20.9	20.6	20.4	19.5	17.4	17.2	18.9	17.6	18.8	21.0	23.1	18.9	16.4	18.1	17.6	16.8	16.7	17.7	18.4
Space Cooling	6.0	8.1	7.2	8.7	6.0	9.0	6.7	5.5	6.6	5.2	6.9	4.8	9.4	8.9	8.1	9.1	10.0	10.7	13.5
Activity																			
Floor Space (million m^2)	6.12	6.38	6.49	6.63	6.85	6.94	7.15	7.36	7.46	7.53	7.55	7.58	7.74	7.74	7.65	7.63	7.57	7.54	7.49
Energy Intensity (GJ/m^2)	**1.37**	**1.37**	**1.34**	**1.38**	**1.59**	**1.52**	**1.33**	**1.49**	**1.39**	**1.22**	**1.11**	**1.36**	**1.33**	**1.22**	**1.34**	**1.38**	**1.33**	**1.27**	**1.26**
Total GHG Emissions for Retail Trade Excluding Electricity (Mt of CO_2e)	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.3**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**30.2**	**31.0**	**28.8**	**30.5**	**34.7**	**34.6**	**35.7**	**30.9**	**27.2**	**21.0**	**21.5**	**25.1**	**25.5**	**24.2**	**21.8**	**23.3**	**21.7**	**18.1**	**16.7**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 8: Transportation and Warehousing Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Transportation and Warehousing (PJ)	**2.4**	**2.4**	**2.4**	**2.3**	**2.7**	**2.4**	**2.1**	**2.3**	**2.2**	**1.9**	**1.8**	**2.3**	**2.2**	**2.0**	**2.2**	**2.2**	**2.1**	**2.1**	**2.0**
Energy Use by Energy Source (PJ)																			
Electricity	1.2	1.2	1.2	1.2	1.2	1.1	0.9	1.2	1.3	1.3	1.1	1.3	1.3	1.1	1.4	1.3	1.3	1.4	1.4
Natural Gas	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4
Light Fuel Oil and Kerosene	0.8	0.8	0.8	0.7	0.9	0.7	0.5	0.4	0.2	0.1	0.1	0.2	0.1	0.3	0.3	0.3	0.2	0.1	0.1
Heavy Fuel Oil	0.2	0.1	0.0	0.1	0.3	0.3	0.3	0.4	0.3	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2
Shares (%)																			
Electricity	50.1	47.6	52.0	50.5	45.1	46.6	45.3	53.9	57.5	65.1	63.2	57.4	57.6	56.2	62.2	60.0	60.5	67.5	69.6
Natural Gas	0.0	0.0	0.0	1.7	2.2	4.1	4.2	4.2	7.7	9.7	11.4	16.8	17.1	21.5	15.4	16.2	19.8	20.3	19.7
Light Fuel Oil and Kerosene	32.0	34.4	33.6	31.7	33.3	28.1	24.3	17.0	9.5	4.5	6.8	9.9	4.7	13.6	13.3	12.9	9.1	5.5	2.9
Heavy Fuel Oil	6.8	3.7	1.1	4.5	9.7	12.7	15.8	15.3	13.5	6.5	4.9	6.3	13.5	1.0	1.7	2.3	1.3	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	11.2	14.3	13.2	11.6	9.7	8.6	10.5	9.6	11.8	14.1	13.7	9.5	7.1	7.6	7.4	8.7	9.2	6.7	7.8
Activity																			
Floor Space (million m^2)	2.36	2.36	2.36	2.37	2.40	2.43	2.44	2.46	2.52	2.53	2.54	2.55	2.55	2.53	2.51	2.50	2.49	2.48	2.47
Energy Intensity (GJ/m^2)	**1.03**	**1.03**	**1.00**	**0.98**	**1.14**	**0.98**	**0.85**	**0.93**	**0.87**	**0.77**	**0.71**	**0.89**	**0.87**	**0.79**	**0.88**	**0.88**	**0.84**	**0.83**	**0.81**
Total GHG Emissions for Transportation and Warehousing Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**34.6**	**35.9**	**32.8**	**33.8**	**37.9**	**36.7**	**37.5**	**31.4**	**27.9**	**21.5**	**22.5**	**25.9**	**26.2**	**25.5**	**22.6**	**23.8**	**22.7**	**17.8**	**16.4**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 9: Transportation and Warehousing Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Transportation and Warehousing (PJ)	**2.4**	**2.4**	**2.4**	**2.3**	**2.7**	**2.4**	**2.1**	**2.3**	**2.2**	**1.9**	**1.8**	**2.3**	**2.2**	**2.0**	**2.2**	**2.2**	**2.1**	**2.1**	**2.0**
Energy Use by End Use (PJ)																			
Space Heating	1.5	1.5	1.5	1.3	1.8	1.4	1.2	1.4	1.3	1.0	0.8	1.3	1.2	1.1	1.2	1.2	1.1	1.1	1.0
Water Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Auxiliary Equipment	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Auxiliary Motors	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1
Lighting	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Space Cooling	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Shares (%)																			
Space Heating	62.9	61.8	62.6	57.7	63.9	58.8	57.7	60.1	57.1	52.8	47.2	56.0	55.8	55.1	55.6	55.5	54.5	52.6	48.6
Water Heating	3.0	2.8	2.8	3.5	3.2	3.2	3.3	3.3	3.4	3.3	3.9	3.9	4.1	3.4	3.3	3.3	3.0	2.7	3.0
Auxiliary Equipment	2.3	3.4	3.4	5.6	4.9	5.5	6.0	5.8	6.2	7.4	8.4	6.9	7.3	8.2	8.0	7.8	8.4	7.6	8.4
Auxiliary Motors	8.6	7.2	7.2	7.6	6.8	7.5	7.1	6.8	7.3	9.1	8.4	8.3	6.8	5.9	7.1	6.6	6.4	7.0	6.2
Lighting	18.9	18.7	18.7	18.8	16.5	18.2	20.1	19.2	20.4	22.8	25.9	20.6	18.0	19.9	19.2	18.9	18.9	21.0	22.1
Space Cooling	4.4	6.0	5.4	6.8	4.6	6.8	5.8	4.8	5.8	4.5	6.2	4.3	8.0	7.5	6.9	7.9	8.7	9.1	11.7
Activity																			
Floor Space (million m^2)	2.36	2.36	2.36	2.37	2.40	2.43	2.44	2.46	2.52	2.53	2.54	2.55	2.55	2.53	2.51	2.50	2.49	2.48	2.47
Energy Intensity (GJ/m^2)	**1.03**	**1.03**	**1.00**	**0.98**	**1.14**	**0.98**	**0.85**	**0.93**	**0.87**	**0.77**	**0.71**	**0.89**	**0.87**	**0.79**	**0.88**	**0.88**	**0.84**	**0.83**	**0.81**
Total GHG Emissions for Transportation and Warehousing Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**34.6**	**35.9**	**32.8**	**33.8**	**37.9**	**36.7**	**37.5**	**31.4**	**27.9**	**21.5**	**22.5**	**25.9**	**26.2**	**25.5**	**22.6**	**23.8**	**22.7**	**17.8**	**16.4**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 10: Information and Cultural Industries Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Information and Cultural Industries (PJ)	**1.1**	**1.1**	**1.1**	**1.2**	**1.4**	**1.2**	**1.1**	**1.2**	**1.2**	**1.1**	**1.0**	**1.2**	**1.2**	**1.1**	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
Energy Use by Energy Source (PJ)																			
Electricity	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.8	0.8	0.7	0.6	0.7	0.7	0.6	0.8	0.8	0.7	0.8	0.8
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Light Fuel Oil and Kerosene	0.3	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Heavy Fuel Oil	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	54.9	51.2	54.3	56.7	53.1	57.0	56.1	63.6	64.3	66.9	65.8	59.9	59.9	59.6	64.7	62.1	63.5	68.6	70.7
Natural Gas	0.0	0.0	0.0	1.5	2.1	3.8	4.0	4.1	7.1	8.6	10.0	15.4	16.6	19.8	14.3	15.3	18.2	19.1	18.2
Light Fuel Oil and Kerosene	28.2	32.1	31.9	25.9	25.6	17.8	13.2	6.9	3.6	4.1	6.0	9.1	4.3	11.4	11.2	11.1	7.8	4.7	2.5
Heavy Fuel Oil	5.4	2.9	0.9	3.8	8.5	11.2	14.4	14.2	11.4	4.9	3.6	5.0	10.2	0.9	1.5	2.0	1.2	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	11.4	13.8	12.9	12.1	10.8	10.2	12.4	11.2	13.6	15.4	14.6	10.7	9.0	8.3	8.3	9.6	9.3	7.6	8.6
Activity																			
Floor Space (million m^2)	0.71	0.72	0.73	0.74	0.75	0.77	0.78	0.79	0.79	0.81	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.84	0.85
Energy Intensity (GJ/m^2)	**1.55**	**1.55**	**1.52**	**1.57**	**1.81**	**1.59**	**1.40**	**1.58**	**1.48**	**1.30**	**1.19**	**1.45**	**1.41**	**1.29**	**1.42**	**1.46**	**1.41**	**1.37**	**1.36**
Total GHG Emissions for Information and Cultural Industries Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**31.1**	**33.4**	**31.2**	**29.4**	**32.1**	**29.1**	**29.6**	**24.4**	**22.9**	**20.3**	**20.8**	**24.3**	**24.3**	**23.4**	**21.0**	**22.5**	**20.9**	**17.2**	**15.9**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 11: Information and Cultural Industries Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Information and Cultural Industries (PJ)	**1.1**	**1.1**	**1.1**	**1.2**	**1.4**	**1.2**	**1.1**	**1.2**	**1.2**	**1.1**	**1.0**	**1.2**	**1.2**	**1.1**	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
Energy Use by End Use (PJ)																			
Space Heating	0.6	0.6	0.6	0.6	0.8	0.6	0.5	0.7	0.6	0.5	0.4	0.6	0.6	0.5	0.6	0.6	0.6	0.5	0.5
Water Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Auxiliary Equipment	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Auxiliary Motors	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
Lighting	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Space Cooling	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Shares (%)																			
Space Heating	51.4	50.5	51.8	48.6	55.5	50.4	49.3	53.1	49.3	44.4	38.9	47.6	47.4	46.6	47.3	48.6	47.4	46.4	42.0
Water Heating	6.1	5.7	5.6	6.7	6.1	6.1	6.1	6.0	6.1	6.0	6.8	7.0	7.4	6.1	5.9	5.7	5.2	4.8	5.2
Auxiliary Equipment	11.9	12.7	12.6	14.1	12.7	13.9	15.2	14.4	15.5	18.8	20.7	17.5	16.0	17.9	17.7	16.7	17.9	16.4	17.7
Auxiliary Motors	7.0	5.8	5.8	5.8	5.2	5.7	5.3	4.9	5.3	6.6	5.8	6.0	4.9	4.2	5.1	4.7	4.5	4.9	4.3
Lighting	17.9	17.6	17.5	16.7	14.9	16.0	17.4	16.1	17.2	19.1	20.9	17.2	15.0	16.5	16.0	15.4	15.3	17.2	17.8
Space Cooling	5.6	7.6	6.8	8.1	5.6	8.0	6.7	5.5	6.6	5.1	6.8	4.7	9.2	8.7	8.0	9.0	9.8	10.4	13.1
Activity																			
Floor Space (million m^2)	0.71	0.72	0.73	0.74	0.75	0.77	0.78	0.79	0.79	0.81	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.84	0.85
Energy Intensity (GJ/m^2)	**1.55**	**1.55**	**1.52**	**1.57**	**1.81**	**1.59**	**1.40**	**1.58**	**1.48**	**1.30**	**1.19**	**1.45**	**1.41**	**1.29**	**1.42**	**1.46**	**1.41**	**1.37**	**1.36**
Total GHG Emissions for Information and Cultural Industries Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**31.1**	**33.4**	**31.2**	**29.4**	**32.1**	**29.1**	**29.6**	**24.4**	**22.9**	**20.3**	**20.8**	**24.3**	**24.3**	**23.4**	**21.0**	**22.5**	**20.9**	**17.2**	**15.9**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 12: Offices[2] Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Offices[2] (PJ)	**18.5**	**18.9**	**18.6**	**21.5**	**19.6**	**19.3**	**17.1**	**19.0**	**18.6**	**17.1**	**18.8**	**19.7**	**17.6**	**16.1**	**17.6**	**18.1**	**17.5**	**17.0**	**16.9**
Energy Use by Energy Source (PJ)																			
Electricity	8.9	9.2	9.1	9.8	8.6	9.0	8.6	8.8	9.0	8.9	9.1	8.3	8.9	8.6	9.1	9.2	9.3	9.4	9.9
Natural Gas	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	1.5	1.8	2.2	3.0	3.6
Light Fuel Oil and Kerosene	4.8	5.0	5.1	5.3	5.1	4.4	3.9	4.9	5.4	5.2	6.4	6.6	5.0	5.8	5.9	6.1	5.2	4.3	3.0
Heavy Fuel Oil	4.2	4.0	3.8	5.6	5.5	5.5	4.2	4.8	3.6	2.6	2.8	4.2	3.2	1.1	0.8	0.7	0.5	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[3]	0.6	0.7	0.7	0.6	0.4	0.4	0.4	0.4	0.5	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.4
Shares (%)																			
Electricity	48.1	48.8	48.9	45.6	43.9	46.6	50.2	46.6	48.5	52.0	48.5	42.3	50.7	53.5	51.6	50.7	52.9	55.2	58.8
Natural Gas	0.0	0.0	0.0	1.1	0.1	0.1	0.1	0.1	0.4	0.6	0.6	1.1	1.2	2.1	8.6	9.8	12.6	17.7	21.5
Light Fuel Oil and Kerosene	26.2	26.3	27.2	24.5	25.8	22.6	22.9	25.8	29.2	30.5	34.2	33.7	28.6	35.7	33.7	33.7	29.6	25.4	17.5
Heavy Fuel Oil	22.6	21.3	20.2	25.9	28.3	28.7	24.3	25.4	19.4	14.9	15.0	21.4	18.1	7.0	4.4	4.0	2.9	0.0	0.0
Steam	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[3]	3.1	3.6	3.6	2.9	1.9	2.0	2.5	2.2	2.6	2.0	1.7	1.4	1.4	1.8	1.7	1.8	1.9	1.7	2.1
Activity																			
Floor Space (million m^2)	15.28	15.61	15.81	16.16	16.43	16.74	17.03	17.30	17.51	17.86	18.05	18.25	18.53	18.65	18.63	18.67	18.67	18.81	18.84
Energy Intensity (GJ/m^2)	**1.21**	**1.21**	**1.18**	**1.33**	**1.19**	**1.15**	**1.00**	**1.10**	**1.06**	**0.96**	**1.04**	**1.08**	**0.95**	**0.86**	**0.95**	**0.97**	**0.94**	**0.90**	**0.89**
Total GHG Emissions for Offices[2] Excluding Electricity (Mt of CO_2e)	**0.7**	**0.7**	**0.7**	**0.8**	**0.8**	**0.7**	**0.6**	**0.7**	**0.7**	**0.6**	**0.7**	**0.8**	**0.6**	**0.5**	**0.6**	**0.6**	**0.5**	**0.5**	**0.4**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
Light Fuel Oil and Kerosene	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.2
Heavy Fuel Oil	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.3	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[3]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**37.4**	**36.7**	**36.6**	**39.1**	**40.6**	**38.7**	**36.0**	**38.6**	**36.9**	**34.1**	**36.7**	**41.2**	**35.1**	**32.2**	**31.9**	**32.3**	**30.1**	**27.3**	**24.0**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.
3) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 13: Offices2 Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Offices[2] (PJ)	**18.5**	**18.9**	**18.6**	**21.5**	**19.6**	**19.3**	**17.1**	**19.0**	**18.6**	**17.1**	**18.8**	**19.7**	**17.6**	**16.1**	**17.6**	**18.1**	**17.5**	**17.0**	**16.9**
Energy Use by End Use (PJ)																			
Space Heating	9.5	9.4	9.6	11.3	10.5	9.8	8.1	9.6	9.0	7.8	9.2	10.8	8.2	7.4	8.2	8.7	8.2	7.8	7.1
Water Heating	0.5	0.5	0.5	0.7	0.5	0.5	0.5	0.6	0.5	0.5	0.6	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4
Auxiliary Equipment	2.7	2.9	2.8	3.4	3.2	3.5	3.6	3.7	3.8	3.8	4.0	3.5	3.5	3.3	3.5	3.4	3.5	3.0	3.2
Auxiliary Motors	1.2	1.1	1.0	1.1	1.1	1.0	0.9	0.9	0.9	1.0	0.8	1.1	0.9	0.7	0.9	0.9	0.8	0.8	0.7
Lighting	3.6	3.6	3.5	3.5	3.3	3.2	3.1	3.3	3.3	3.4	3.4	2.9	3.0	3.0	3.2	3.2	3.1	3.4	3.5
Space Cooling	1.0	1.3	1.2	1.5	1.0	1.2	0.9	0.9	1.0	0.7	0.9	0.7	1.4	1.2	1.2	1.4	1.5	1.6	2.0
Shares (%)																			
Space Heating	51.4	50.1	51.3	52.8	53.5	50.6	47.3	50.5	48.5	45.6	48.6	55.0	46.4	45.7	46.6	48.1	46.7	46.2	41.9
Water Heating	3.0	2.8	2.7	3.0	2.8	2.8	2.9	2.9	2.9	2.8	3.1	3.4	3.6	2.9	3.1	2.9	2.5	2.3	2.5
Auxiliary Equipment	14.4	15.4	15.2	15.6	16.3	18.2	21.0	19.7	20.4	21.9	21.3	17.6	19.9	20.6	19.7	18.7	20.0	17.6	19.1
Auxiliary Motors	6.7	5.6	5.6	5.1	5.4	5.3	5.0	4.8	4.9	6.0	4.5	5.4	4.9	4.3	5.2	4.7	4.5	4.7	4.1
Lighting	19.2	19.0	18.8	16.5	17.0	16.6	18.3	17.5	18.0	19.6	18.0	14.9	17.1	18.8	18.3	17.7	17.5	19.9	20.6
Space Cooling	5.3	7.1	6.3	7.0	5.0	6.4	5.5	4.6	5.3	4.1	4.5	3.7	8.1	7.6	7.0	8.0	8.7	9.3	11.7
Activity																			
Floor Space (million m^2)	15.28	15.61	15.81	16.16	16.43	16.74	17.03	17.30	17.51	17.86	18.05	18.25	18.53	18.65	18.63	18.67	18.67	18.81	18.84
Energy Intensity (GJ/m^2)	**1.21**	**1.21**	**1.18**	**1.33**	**1.19**	**1.15**	**1.00**	**1.10**	**1.06**	**0.96**	**1.04**	**1.08**	**0.95**	**0.86**	**0.95**	**0.97**	**0.94**	**0.90**	**0.89**
Total GHG Emissions for Offices[2] Excluding Electricity (Mt of CO_2e)	**0.7**	**0.7**	**0.7**	**0.8**	**0.8**	**0.7**	**0.6**	**0.7**	**0.7**	**0.6**	**0.7**	**0.8**	**0.6**	**0.5**	**0.6**	**0.6**	**0.5**	**0.5**	**0.4**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.6	0.6	0.6	0.8	0.7	0.7	0.6	0.7	0.6	0.5	0.6	0.8	0.6	0.5	0.5	0.5	0.5	0.4	0.4
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**37.4**	**36.7**	**36.6**	**39.1**	**40.6**	**38.7**	**36.0**	**38.6**	**36.9**	**34.1**	**36.7**	**41.2**	**35.1**	**32.2**	**31.9**	**32.3**	**30.1**	**27.3**	**24.0**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.

Commercial/Institutional Sector

Atlantic[1]

Table 14: Educational Services Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Educational Services (PJ)	**8.3**	**8.4**	**8.2**	**8.6**	**10.4**	**9.2**	**8.1**	**9.1**	**8.5**	**7.6**	**7.1**	**8.7**	**8.6**	**7.9**	**8.8**	**9.1**	**8.8**	**8.6**	**8.5**
Energy Use by Energy Source (PJ)																			
Electricity	4.4	4.2	4.4	4.5	4.9	4.5	3.9	5.2	5.0	4.9	4.5	5.0	5.0	4.5	5.5	5.4	6.2	5.3	5.5
Natural Gas	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.7	0.7	0.8	1.4	1.5	1.7	1.4	1.6	1.4	2.0	1.9
Light Fuel Oil and Kerosene	2.5	2.7	2.7	2.5	3.0	2.0	1.3	0.8	0.4	0.3	0.5	0.8	0.4	1.0	1.1	1.1	0.5	0.5	0.3
Heavy Fuel Oil	0.5	0.2	0.1	0.4	1.0	1.3	1.5	1.6	1.2	0.5	0.3	0.5	1.2	0.1	0.1	0.2	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	1.0	1.2	1.1	1.1	1.2	1.0	1.1	1.1	1.2	1.1	1.0	0.9	0.6	0.6	0.7	0.8	0.6	0.7	0.8
Shares (%)																			
Electricity	52.7	50.3	53.5	52.5	47.5	49.4	47.8	56.4	59.0	65.0	63.8	57.6	57.6	56.8	62.2	59.5	70.4	62.1	64.7
Natural Gas	0.0	0.0	0.0	1.6	2.3	4.5	4.8	4.9	8.3	9.4	10.9	16.6	16.9	22.1	16.2	17.2	15.6	23.8	22.8
Light Fuel Oil and Kerosene	29.7	32.7	32.5	28.7	29.1	21.3	15.8	8.5	4.2	4.4	6.5	9.6	4.3	12.2	12.1	11.9	6.0	5.8	3.1
Heavy Fuel Oil	5.9	3.0	0.9	4.3	10.0	14.1	18.0	17.9	14.5	6.6	4.8	6.2	13.7	0.9	1.6	2.1	0.9	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	11.7	14.0	13.1	12.8	11.2	10.7	13.5	12.4	14.1	14.6	14.0	10.0	7.5	8.0	8.0	9.3	7.0	8.2	9.4
Activity																			
Floor Space (million m^2)	6.76	6.83	6.88	6.94	6.97	7.02	7.03	7.00	7.00	7.06	7.24	7.32	7.39	7.43	7.56	7.59	7.57	7.64	7.63
Energy Intensity (GJ/m^2)	**1.22**	**1.23**	**1.20**	**1.23**	**1.49**	**1.31**	**1.16**	**1.31**	**1.22**	**1.07**	**0.97**	**1.19**	**1.17**	**1.06**	**1.17**	**1.20**	**1.16**	**1.12**	**1.12**
Total GHG Emissions for Educational Services Excluding Electricity (Mt of CO_2e)	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.2**	**0.2**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Light Fuel Oil and Kerosene	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**32.6**	**34.0**	**31.8**	**32.3**	**36.0**	**34.4**	**35.3**	**29.4**	**26.5**	**21.7**	**22.1**	**25.7**	**26.2**	**24.9**	**22.4**	**23.9**	**16.8**	**20.7**	**19.1**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 15: Educational Services Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Educational Services (PJ)	**8.3**	**8.4**	**8.2**	**8.6**	**10.4**	**9.2**	**8.1**	**9.1**	**8.5**	**7.6**	**7.1**	**8.7**	**8.6**	**7.9**	**8.8**	**9.1**	**8.8**	**8.6**	**8.5**
Energy Use by End Use (PJ)																			
Space Heating	4.3	4.3	4.3	4.2	5.8	4.7	4.1	4.9	4.3	3.4	2.8	4.2	4.1	3.7	4.2	4.5	4.2	4.1	3.6
Water Heating	0.6	0.5	0.5	0.6	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.7	0.7	0.5	0.6	0.6	0.5	0.5	0.5
Auxiliary Equipment	1.0	1.0	1.0	1.2	1.3	1.3	1.2	1.3	1.3	1.4	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.4	1.5
Auxiliary Motors	0.6	0.5	0.5	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.4	0.3	0.5	0.4	0.4	0.4	0.4
Lighting	1.4	1.4	1.4	1.4	1.5	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.2	1.2	1.3	1.3	1.3	1.4	1.4
Space Cooling	0.4	0.6	0.5	0.7	0.6	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.8	0.7	0.7	0.8	0.8	0.9	1.1
Shares (%)																			
Space Heating	52.1	51.3	52.6	49.2	56.1	51.1	50.1	53.8	50.0	45.1	39.5	48.2	48.0	47.3	48.1	49.4	48.2	47.3	42.9
Water Heating	6.9	6.5	6.3	7.6	6.9	6.8	6.9	6.8	6.9	6.8	7.7	7.9	8.3	6.9	6.6	6.5	5.9	5.4	5.9
Auxiliary Equipment	11.7	12.4	12.3	13.8	12.4	13.6	14.9	14.1	15.2	18.4	20.4	17.1	15.7	17.5	17.3	16.3	17.6	16.1	17.4
Auxiliary Motors	7.1	5.9	5.9	5.9	5.3	5.7	5.4	5.0	5.4	6.7	6.0	6.1	5.0	4.3	5.2	4.7	4.5	5.0	4.4
Lighting	16.9	16.7	16.5	15.8	14.0	15.1	16.4	15.2	16.2	18.1	19.9	16.3	14.2	15.6	15.2	14.5	14.5	16.3	16.9
Space Cooling	5.4	7.2	6.4	7.7	5.3	7.7	6.4	5.2	6.3	4.9	6.5	4.5	8.8	8.3	7.6	8.6	9.4	9.9	12.5
Activity																			
Floor Space (million m^2)	6.76	6.83	6.88	6.94	6.97	7.02	7.03	7.00	7.00	7.06	7.24	7.32	7.39	7.43	7.56	7.59	7.57	7.64	7.63
Energy Intensity (GJ/m^2)	**1.22**	**1.23**	**1.20**	**1.23**	**1.49**	**1.31**	**1.16**	**1.31**	**1.22**	**1.07**	**0.97**	**1.19**	**1.17**	**1.06**	**1.17**	**1.20**	**1.16**	**1.12**	**1.12**
Total GHG Emissions for Educational Services Excluding Electricity (Mt of CO_2e)	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.2**	**0.2**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**32.6**	**34.0**	**31.8**	**32.3**	**36.0**	**34.4**	**35.3**	**29.4**	**26.5**	**21.7**	**22.1**	**25.7**	**26.2**	**24.9**	**22.4**	**23.9**	**16.8**	**20.7**	**19.1**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 16: Health Care and Social Assistance Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Health Care and Social Assistance (PJ)	**8.5**	**8.6**	**8.4**	**8.5**	**10.2**	**9.2**	**8.3**	**9.3**	**8.7**	**7.7**	**6.8**	**8.6**	**8.8**	**8.3**	**9.3**	**9.5**	**9.2**	**8.7**	**8.7**
Energy Use by Energy Source (PJ)																			
Electricity	4.4	4.4	4.7	4.4	4.7	4.4	3.9	4.7	4.6	4.7	4.3	4.9	4.8	4.2	4.8	4.7	4.9	4.9	5.0
Natural Gas	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.8
Light Fuel Oil and Kerosene	2.3	2.3	2.3	2.5	3.1	2.4	2.1	2.3	1.9	1.3	0.9	1.6	1.6	2.9	3.2	3.3	3.0	2.6	2.1
Heavy Fuel Oil	1.0	1.0	0.6	0.7	1.5	1.4	1.4	1.3	1.1	0.6	0.7	1.1	1.3	0.1	0.1	0.1	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.8	0.8	0.8	0.8	0.7	0.6	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.6	0.7	0.7	0.5	0.6	0.7
Shares (%)																			
Electricity	51.7	51.6	55.6	52.1	46.5	48.3	47.2	50.8	53.6	61.3	63.9	56.4	54.0	50.6	51.2	50.1	53.5	55.7	58.2
Natural Gas	0.0	0.0	0.0	1.2	1.7	3.0	2.7	2.5	2.5	3.0	2.9	4.3	5.4	7.6	6.4	6.3	7.2	7.6	9.1
Light Fuel Oil and Kerosene	26.9	26.7	27.3	29.0	30.4	25.9	25.5	24.6	21.8	17.2	13.1	18.3	17.9	34.3	34.0	34.8	32.9	29.7	24.7
Heavy Fuel Oil	12.3	11.9	7.1	8.2	14.2	15.8	16.6	14.3	12.7	8.1	9.7	12.9	15.3	0.6	1.0	1.5	1.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	9.1	9.7	10.0	9.5	7.3	7.0	7.9	7.9	9.4	10.4	10.4	8.1	7.5	6.9	7.4	7.3	5.2	7.0	8.1
Activity																			
Floor Space (million m^2)	3.87	3.92	3.95	3.92	3.90	3.92	3.98	3.99	3.97	4.00	4.05	4.15	4.22	4.34	4.43	4.40	4.38	4.37	4.32
Energy Intensity (GJ/m^2)	**2.18**	**2.19**	**2.13**	**2.18**	**2.62**	**2.33**	**2.08**	**2.32**	**2.18**	**1.91**	**1.67**	**2.08**	**2.10**	**1.92**	**2.10**	**2.15**	**2.09**	**2.00**	**2.01**
Total GHG Emissions for Health Care and Social Assistance <u>Excluding</u> Electricity (Mt of CO_2e)	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.3**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1
Heavy Fuel Oil	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**33.9**	**33.8**	**30.8**	**33.1**	**37.4**	**35.9**	**36.7**	**34.1**	**31.9**	**26.0**	**24.3**	**29.7**	**31.2**	**32.3**	**32.1**	**32.9**	**30.4**	**28.6**	**26.5**

1) Data on GHG emissions are presented <u>excluding</u> GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 17: Health Care and Social Assistance Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Health Care and Social Assistance (PJ)	**8.5**	**8.6**	**8.4**	**8.5**	**10.2**	**9.2**	**8.3**	**9.3**	**8.7**	**7.7**	**6.8**	**8.6**	**8.8**	**8.3**	**9.3**	**9.5**	**9.2**	**8.7**	**8.7**
Energy Use by End Use (PJ)																			
Space Heating	3.9	3.9	3.9	3.6	5.1	4.2	3.7	4.4	3.8	2.9	1.9	3.4	3.7	3.4	3.9	4.1	3.8	3.6	3.2
Water Heating	0.8	0.7	0.7	0.9	0.9	0.8	0.7	0.8	0.8	0.7	0.7	0.9	1.0	0.8	0.8	0.8	0.8	0.6	0.7
Auxiliary Equipment	1.4	1.5	1.4	1.7	1.8	1.7	1.7	1.8	1.8	1.9	2.0	2.1	1.9	1.9	2.2	2.1	2.1	1.9	2.0
Auxiliary Motors	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.3
Lighting	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.2	1.3	1.4	1.3	1.3	1.4	1.4
Space Cooling	0.4	0.6	0.5	0.6	0.5	0.7	0.5	0.5	0.5	0.4	0.4	0.4	0.7	0.6	0.7	0.8	0.8	0.8	1.0
Shares (%)																			
Space Heating	46.7	45.7	46.8	42.1	50.1	45.6	44.4	47.8	44.1	38.1	28.8	39.7	41.8	41.1	41.9	43.2	41.8	41.6	37.3
Water Heating	9.2	8.7	8.5	10.3	9.3	9.1	9.0	9.0	9.0	9.0	10.5	10.6	11.2	9.3	8.9	8.8	8.5	7.1	7.6
Auxiliary Equipment	16.2	17.3	17.1	19.4	17.2	18.6	20.3	19.3	20.7	25.2	28.9	23.9	21.0	23.3	23.2	21.9	23.4	21.7	23.3
Auxiliary Motors	5.8	4.8	4.8	4.9	4.3	4.6	4.3	4.0	4.3	5.4	5.0	5.0	4.0	3.4	4.1	3.8	3.6	4.3	3.7
Lighting	16.9	16.6	16.5	15.9	14.0	14.9	16.0	15.0	15.9	17.8	20.4	16.4	13.8	15.2	14.8	14.3	14.1	16.1	16.5
Space Cooling	5.2	6.9	6.2	7.5	5.1	7.3	6.0	4.9	5.9	4.6	6.4	4.3	8.2	7.7	7.1	8.0	8.7	9.3	11.7
Activity																			
Floor Space (million m^2)	3.87	3.92	3.95	3.92	3.90	3.92	3.98	3.99	3.97	4.00	4.05	4.15	4.22	4.34	4.43	4.40	4.38	4.37	4.32
Energy Intensity (GJ/m^2)	**2.18**	**2.19**	**2.13**	**2.18**	**2.62**	**2.33**	**2.08**	**2.32**	**2.18**	**1.91**	**1.67**	**2.08**	**2.10**	**1.92**	**2.10**	**2.15**	**2.09**	**2.00**	**2.01**
Total GHG Emissions for Health Care and Social Assistance Excluding Electricity (Mt of CO_2e)	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.3**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.2**	**0.2**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Water Heating	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**33.9**	**33.8**	**30.8**	**33.1**	**37.4**	**35.9**	**36.7**	**34.1**	**31.9**	**26.0**	**24.3**	**29.7**	**31.2**	**32.3**	**32.1**	**32.9**	**30.4**	**28.6**	**26.5**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 18: Arts, Entertainment and Recreation Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Arts, Entertainment and Recreation (PJ)	**1.0**	**1.0**	**1.0**	**1.0**	**1.2**	**1.1**	**1.0**	**1.1**	**1.0**	**0.9**	**0.9**	**1.1**	**1.1**	**1.0**	**1.1**	**1.2**	**1.1**	**1.1**	**1.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Light Fuel Oil and Kerosene	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Heavy Fuel Oil	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	53.2	50.4	53.8	52.5	47.8	49.4	48.2	57.3	59.7	65.8	64.1	58.5	57.6	57.2	62.8	59.8	60.6	66.8	68.6
Natural Gas	0.0	0.0	0.0	1.7	2.3	4.6	4.8	4.9	8.1	8.9	10.5	15.9	17.0	21.0	15.1	16.1	19.5	20.4	19.7
Light Fuel Oil and Kerosene	29.1	32.5	32.2	28.2	28.1	20.3	14.9	7.2	3.5	4.2	6.2	9.2	4.3	12.2	11.9	11.9	8.4	5.1	2.7
Heavy Fuel Oil	5.8	3.0	0.9	4.3	9.9	13.9	17.9	17.6	13.8	5.6	4.2	5.6	12.3	1.0	1.6	2.1	1.2	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	11.9	14.1	13.1	13.3	11.9	11.8	14.2	12.9	14.9	15.5	15.0	10.8	8.8	8.6	8.7	10.0	10.3	7.8	9.0
Activity																			
Floor Space (million m^2)	0.72	0.74	0.75	0.76	0.76	0.78	0.79	0.80	0.80	0.85	0.86	0.88	0.90	0.92	0.93	0.94	0.95	0.97	0.97
Energy Intensity (GJ/m^2)	**1.34**	**1.33**	**1.30**	**1.33**	**1.56**	**1.35**	**1.20**	**1.36**	**1.26**	**1.12**	**1.01**	**1.25**	**1.19**	**1.09**	**1.21**	**1.24**	**1.19**	**1.15**	**1.13**
Total GHG Emissions for Arts, Entertainment and Recreation Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**32.2**	**33.9**	**31.5**	**32.2**	**35.7**	**34.3**	**35.0**	**28.6**	**25.9**	**21.0**	**21.9**	**25.2**	**26.0**	**24.8**	**22.1**	**23.9**	**22.6**	**18.3**	**17.0**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 19: Arts, Entertainment and Recreation Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Arts, Entertainment and Recreation (PJ)	**1.0**	**1.0**	**1.0**	**1.0**	**1.2**	**1.1**	**1.0**	**1.1**	**1.0**	**0.9**	**0.9**	**1.1**	**1.1**	**1.0**	**1.1**	**1.2**	**1.1**	**1.1**	**1.1**
Energy Use by End Use (PJ)																			
Space Heating	0.5	0.5	0.5	0.5	0.7	0.6	0.5	0.6	0.5	0.4	0.4	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.5
Water Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Auxiliary Equipment	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Auxiliary Motors	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Lighting	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Shares (%)																			
Space Heating	54.3	53.9	55.0	52.0	58.4	53.8	52.4	55.9	52.3	46.9	41.6	50.1	51.1	50.0	50.6	52.2	51.1	50.2	46.2
Water Heating	5.7	5.4	5.3	6.4	5.8	5.8	5.7	5.6	5.8	5.7	6.5	6.6	7.1	5.8	5.6	5.5	5.0	4.6	5.1
Auxiliary Equipment	12.2	13.1	12.9	14.6	12.9	14.3	15.7	14.7	16.0	19.2	21.4	17.8	16.7	18.6	18.3	17.3	18.7	17.1	18.9
Auxiliary Motors	7.4	6.2	6.1	6.2	5.5	6.1	5.6	5.2	5.6	6.9	6.2	6.3	5.3	4.6	5.5	5.0	4.8	5.3	4.7
Lighting	17.6	17.5	17.2	16.6	14.6	15.9	17.2	15.8	17.0	18.8	20.8	16.9	15.1	16.5	16.0	15.4	15.3	17.3	18.2
Space Cooling	2.9	3.9	3.4	4.2	2.8	4.1	3.4	2.8	3.4	2.6	3.5	2.4	4.8	4.5	4.1	4.6	5.1	5.4	6.9
Activity																			
Floor Space (million m^2)	0.72	0.74	0.75	0.76	0.76	0.78	0.79	0.80	0.80	0.85	0.86	0.88	0.90	0.92	0.93	0.94	0.95	0.97	0.97
Energy Intensity (GJ/m^2)	**1.34**	**1.33**	**1.30**	**1.33**	**1.56**	**1.35**	**1.20**	**1.36**	**1.26**	**1.12**	**1.01**	**1.25**	**1.19**	**1.09**	**1.21**	**1.24**	**1.19**	**1.15**	**1.13**
Total GHG Emissions for Arts, Entertainment and Recreation Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**32.2**	**33.9**	**31.5**	**32.2**	**35.7**	**34.3**	**35.0**	**28.6**	**25.9**	**21.0**	**21.9**	**25.2**	**26.0**	**24.8**	**22.1**	**23.9**	**22.6**	**18.3**	**17.0**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 20: Accommodation and Food Services Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Accommodation and Food Services (PJ)	**3.8**	**3.8**	**3.8**	**3.9**	**4.8**	**4.4**	**4.0**	**4.6**	**4.3**	**3.8**	**3.3**	**4.1**	**4.3**	**3.9**	**4.3**	**4.5**	**4.4**	**4.4**	**4.4**
Energy Use by Energy Source (PJ)																			
Electricity	2.1	2.1	2.3	2.2	2.3	2.2	2.0	2.5	2.5	2.4	2.2	2.4	2.4	2.0	2.3	2.3	2.4	2.5	2.7
Natural Gas	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Light Fuel Oil and Kerosene	1.0	1.0	1.0	1.1	1.4	1.1	1.0	1.1	0.9	0.7	0.4	0.8	0.8	1.4	1.6	1.7	1.6	1.4	1.2
Heavy Fuel Oil	0.5	0.5	0.3	0.3	0.7	0.7	0.7	0.7	0.5	0.3	0.3	0.6	0.6	0.0	0.0	0.1	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Shares (%)																			
Electricity	54.8	54.9	59.6	55.7	48.5	50.1	48.7	53.6	56.9	63.2	67.7	57.3	57.1	51.6	52.7	51.5	53.9	57.4	60.0
Natural Gas	0.0	0.0	0.0	1.2	1.7	3.1	2.7	2.5	2.1	2.5	2.1	3.5	4.9	5.8	4.6	4.5	5.2	6.3	7.7
Light Fuel Oil and Kerosene	26.5	26.1	26.7	28.2	29.6	24.9	25.2	23.9	21.6	18.7	12.9	19.6	18.7	36.8	36.2	37.0	35.3	31.1	26.0
Heavy Fuel Oil	12.5	12.2	7.3	8.3	14.4	15.8	16.7	14.4	12.0	7.5	9.1	13.4	13.5	0.7	1.1	1.6	1.2	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	6.2	6.8	6.4	6.5	5.8	6.2	6.7	5.7	7.3	8.2	8.2	6.3	5.8	5.2	5.4	5.5	4.4	5.2	6.4
Activity																			
Floor Space (million m^2)	1.92	1.95	1.99	2.01	2.09	2.15	2.25	2.28	2.30	2.33	2.34	2.36	2.38	2.40	2.40	2.45	2.48	2.55	2.56
Energy Intensity (GJ/m^2)	**1.96**	**1.97**	**1.91**	**1.94**	**2.29**	**2.03**	**1.79**	**2.01**	**1.87**	**1.61**	**1.40**	**1.76**	**1.80**	**1.64**	**1.80**	**1.85**	**1.78**	**1.73**	**1.73**
Total GHG Emissions for Accommodation and Food Services Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**31.9**	**31.8**	**28.3**	**30.8**	**36.2**	**34.7**	**35.8**	**32.3**	**29.8**	**24.9**	**22.0**	**29.4**	**29.2**	**32.1**	**31.5**	**32.5**	**30.6**	**27.8**	**25.6**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 21: Accommodation and Food Services Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Accommodation and Food Services (PJ)	**3.8**	**3.8**	**3.8**	**3.9**	**4.8**	**4.4**	**4.0**	**4.6**	**4.3**	**3.8**	**3.3**	**4.1**	**4.3**	**3.9**	**4.3**	**4.5**	**4.4**	**4.4**	**4.4**
Energy Use by End Use (PJ)																			
Space Heating	1.9	1.9	1.9	1.8	2.6	2.2	2.0	2.4	2.1	1.6	1.1	1.8	2.0	1.8	2.0	2.1	2.0	2.0	1.8
Water Heating	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Auxiliary Equipment	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.8
Auxiliary Motors	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Lighting	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.6	0.7	0.7
Space Cooling	0.2	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.4	0.4	0.4	0.4	0.5	0.5	0.6
Shares (%)																			
Space Heating	50.6	49.5	50.7	46.2	54.4	49.6	48.7	52.3	48.5	42.7	33.7	44.5	46.1	45.5	46.3	47.5	46.3	45.4	40.9
Water Heating	7.8	7.3	7.2	8.8	7.9	7.7	7.7	7.7	7.8	7.9	9.4	9.4	9.4	7.8	7.5	7.3	6.7	6.1	6.6
Auxiliary Equipment	11.5	12.3	12.2	13.8	12.2	13.3	14.6	13.8	14.9	18.5	21.3	17.5	15.5	17.3	17.2	16.2	17.4	15.9	17.1
Auxiliary Motors	7.0	5.8	5.8	5.9	5.2	5.6	5.3	4.9	5.3	6.7	6.2	6.2	4.8	4.2	5.1	4.6	4.5	4.9	4.3
Lighting	17.0	16.8	16.7	16.2	14.2	15.1	16.4	15.4	16.3	18.6	21.4	17.1	14.3	15.7	15.3	14.6	14.6	16.4	16.9
Space Cooling	6.1	8.3	7.4	9.0	6.1	8.7	7.2	5.9	7.2	5.7	7.9	5.3	10.0	9.4	8.6	9.7	10.6	11.3	14.1
Activity																			
Floor Space (million m^2)	1.92	1.95	1.99	2.01	2.09	2.15	2.25	2.28	2.30	2.33	2.34	2.36	2.38	2.40	2.40	2.45	2.48	2.55	2.56
Energy Intensity (GJ/m^2)	**1.96**	**1.97**	**1.91**	**1.94**	**2.29**	**2.03**	**1.79**	**2.01**	**1.87**	**1.61**	**1.40**	**1.76**	**1.80**	**1.64**	**1.80**	**1.85**	**1.78**	**1.73**	**1.73**
Total GHG Emissions for Accommodation and Food Services Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**31.9**	**31.8**	**28.3**	**30.8**	**36.2**	**34.7**	**35.8**	**32.3**	**29.8**	**24.9**	**22.0**	**29.4**	**29.2**	**32.1**	**31.5**	**32.5**	**30.6**	**27.8**	**25.6**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 22: Other Services Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Other Services (PJ)	**1.4**	**1.4**	**1.4**	**1.4**	**1.6**	**1.4**	**1.2**	**1.4**	**1.3**	**1.1**	**1.0**	**1.2**	**1.1**	**1.0**	**1.1**	**1.1**	**1.0**	**0.9**	**0.9**
Energy Use by Energy Source (PJ)																			
Electricity	0.7	0.7	0.7	0.7	0.8	0.7	0.6	0.8	0.7	0.7	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.6
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Light Fuel Oil and Kerosene	0.4	0.5	0.4	0.4	0.5	0.3	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0
Heavy Fuel Oil	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	53.0	50.3	53.6	52.5	47.7	49.4	48.0	57.1	59.5	65.5	64.0	58.2	57.6	57.1	62.6	59.7	60.5	66.7	68.6
Natural Gas	0.0	0.0	0.0	1.7	2.4	4.6	4.9	5.0	8.3	9.3	10.9	16.4	16.9	21.8	15.9	17.0	20.2	21.0	20.3
Light Fuel Oil and Kerosene	29.7	32.9	32.6	28.8	29.0	21.3	15.6	8.0	4.0	4.4	6.4	9.4	4.3	12.2	12.0	11.9	8.4	5.1	2.7
Heavy Fuel Oil	6.0	3.0	0.9	4.4	10.1	14.3	18.3	17.9	14.5	6.5	4.7	6.1	13.6	1.0	1.6	2.1	1.2	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	11.3	13.7	12.8	12.6	10.9	10.5	13.2	12.0	13.7	14.4	13.9	9.9	7.6	8.0	8.0	9.3	9.7	7.2	8.3
Activity																			
Floor Space (million m^2)	1.35	1.34	1.34	1.34	1.33	1.31	1.29	1.28	1.26	1.24	1.21	1.20	1.17	1.14	1.11	1.08	1.05	1.03	1.01
Energy Intensity (GJ/m^2)	**1.05**	**1.04**	**1.02**	**1.05**	**1.23**	**1.07**	**0.94**	**1.07**	**0.99**	**0.88**	**0.79**	**0.98**	**0.94**	**0.86**	**0.95**	**0.98**	**0.94**	**0.91**	**0.89**
Total GHG Emissions for Other Services Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**32.5**	**34.0**	**31.7**	**32.3**	**35.9**	**34.5**	**35.2**	**28.9**	**26.1**	**21.3**	**22.0**	**25.4**	**26.2**	**24.8**	**22.2**	**23.8**	**22.5**	**18.2**	**16.9**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 23: Other Services Secondary Energy Use and GHG Emissions by End Use

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Energy Use for Other Services (PJ)	**1.4**	**1.4**	**1.4**	**1.4**	**1.6**	**1.4**	**1.2**	**1.4**	**1.3**	**1.1**	**1.0**	**1.2**	**1.1**	**1.0**	**1.1**	**1.1**	**1.0**	**0.9**	**0.9**
Energy Use by End Use (PJ)																			
Space Heating	0.8	0.7	0.7	0.7	1.0	0.7	0.6	0.8	0.7	0.5	0.4	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4
Water Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Auxiliary Equipment	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Auxiliary Motors	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Lighting	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
Space Cooling	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Space Heating	54.2	53.6	54.8	51.7	58.2	53.5	52.3	55.8	52.2	46.9	41.6	50.1	50.6	49.7	50.4	51.8	50.7	49.8	45.7
Water Heating	6.1	5.7	5.6	6.7	6.1	6.1	6.1	6.0	6.1	6.0	6.8	6.9	7.4	6.1	5.9	5.8	5.2	4.8	5.3
Auxiliary Equipment	12.2	13.1	12.8	14.5	12.9	14.2	15.6	14.6	15.9	19.2	21.3	17.8	16.5	18.4	18.2	17.2	18.5	17.0	18.6
Auxiliary Motors	7.4	6.2	6.1	6.2	5.5	6.0	5.6	5.2	5.6	6.9	6.2	6.3	5.2	4.5	5.4	5.0	4.8	5.3	4.7
Lighting	16.4	16.3	16.1	15.4	13.6	14.7	16.0	14.7	15.8	17.5	19.4	15.7	13.9	15.3	14.8	14.2	14.2	16.0	16.8
Space Cooling	3.8	5.1	4.6	5.5	3.7	5.5	4.5	3.7	4.4	3.4	4.6	3.2	6.3	5.9	5.4	6.1	6.7	7.1	9.0
Activity																			
Floor Space (million m^2)	1.35	1.34	1.34	1.34	1.33	1.31	1.29	1.28	1.26	1.24	1.21	1.20	1.17	1.14	1.11	1.08	1.05	1.03	1.01
Energy Intensity (GJ/m^2)	**1.05**	**1.04**	**1.02**	**1.05**	**1.23**	**1.07**	**0.94**	**1.07**	**0.99**	**0.88**	**0.79**	**0.98**	**0.94**	**0.86**	**0.95**	**0.98**	**0.94**	**0.91**	**0.89**
Total GHG Emissions for Other Services Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by End Use (Mt of CO2e)																			
Space Heating	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Heating	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary Motors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Space Cooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**32.5**	**34.0**	**31.7**	**32.3**	**35.9**	**34.5**	**35.2**	**28.9**	**26.1**	**21.3**	**22.0**	**25.4**	**26.2**	**24.8**	**22.2**	**23.8**	**22.5**	**18.2**	**16.9**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 24: Space Heating Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Heating Energy Use (PJ)	**29.0**	**28.9**	**29.2**	**30.2**	**36.4**	**31.5**	**27.2**	**32.8**	**29.3**	**23.9**	**21.5**	**30.1**	**27.6**	**25.0**	**27.9**	**29.4**	**27.6**	**26.4**	**23.7**
Energy Use by Energy Source (PJ)																			
Electricity	5.7	4.6	6.6	4.7	5.5	3.8	2.7	7.3	6.7	6.5	3.9	6.0	6.2	4.5	6.6	6.3	6.7	7.3	6.6
Natural Gas	0.0	0.0	0.0	0.7	0.9	1.5	1.3	1.5	2.1	2.1	2.1	4.0	4.1	4.5	4.6	5.3	6.2	7.8	8.2
Light Fuel Oil and Kerosene	13.8	14.9	14.8	14.3	16.8	12.9	10.6	10.1	9.2	8.0	8.7	10.9	8.4	12.9	13.8	14.2	11.7	9.6	6.9
Heavy Fuel Oil	7.1	6.3	4.9	7.6	10.4	11.0	10.0	11.2	8.4	4.4	4.4	7.1	7.4	1.4	1.4	1.5	1.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	2.5	3.2	3.0	2.8	2.8	2.3	2.5	2.7	2.9	2.8	2.4	2.1	1.6	1.6	1.7	2.1	2.0	1.7	2.0
Shares (%)																			
Electricity	19.5	15.7	22.5	15.6	15.2	12.0	9.8	22.2	22.9	27.1	18.0	19.9	22.3	17.9	23.5	21.3	24.4	27.6	27.7
Natural Gas	0.0	0.0	0.0	2.4	2.4	4.8	4.9	4.7	7.2	8.9	10.0	13.3	14.9	18.1	16.4	18.0	22.4	29.5	34.7
Light Fuel Oil and Kerosene	47.5	51.4	50.5	47.4	46.2	40.9	39.1	30.7	31.5	33.6	40.3	36.1	30.3	51.9	49.2	48.4	42.5	36.5	29.3
Heavy Fuel Oil	24.3	21.7	16.7	25.1	28.6	35.0	36.9	34.2	28.6	18.6	20.6	23.6	26.9	5.8	4.9	5.2	3.5	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	8.6	11.1	10.4	9.4	7.6	7.4	9.3	8.3	9.8	11.7	11.2	7.0	5.6	6.3	6.0	7.1	7.2	6.4	8.3
Activity																			
Total Floor Space (million m^2)	41.88	42.67	43.13	43.76	44.43	45.05	45.77	46.34	46.77	47.36	47.84	48.29	48.89	49.16	49.21	49.23	49.11	49.35	49.25
Energy Intensity (GJ/m^2)	**0.69**	**0.68**	**0.68**	**0.69**	**0.82**	**0.70**	**0.59**	**0.71**	**0.63**	**0.50**	**0.45**	**0.62**	**0.57**	**0.51**	**0.57**	**0.60**	**0.56**	**0.53**	**0.48**
Total Space Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.7**	**1.7**	**1.6**	**1.8**	**2.2**	**2.0**	**1.7**	**1.8**	**1.6**	**1.2**	**1.2**	**1.6**	**1.4**	**1.3**	**1.4**	**1.5**	**1.3**	**1.2**	**1.0**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4
Light Fuel Oil and Kerosene	1.0	1.1	1.0	1.0	1.2	0.9	0.8	0.7	0.7	0.6	0.6	0.8	0.6	0.9	1.0	1.0	0.8	0.7	0.5
Heavy Fuel Oil	0.5	0.5	0.4	0.6	0.8	0.8	0.7	0.8	0.6	0.3	0.3	0.5	0.6	0.1	0.1	0.1	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GHG Intensity (tonne/TJ)	**57.1**	**59.5**	**54.6**	**59.4**	**60.0**	**62.0**	**63.4**	**54.6**	**53.2**	**49.2**	**55.6**	**54.0**	**52.2**	**53.2**	**49.6**	**50.7**	**47.5**	**43.7**	**42.4**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 25: Space Heating Secondary Energy Use and GHG Emissions by Activity Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Heating Energy Use (PJ)	**29.0**	**28.9**	**29.2**	**30.2**	**36.4**	**31.5**	**27.2**	**32.8**	**29.3**	**23.9**	**21.5**	**30.1**	**27.6**	**25.0**	**27.9**	**29.4**	**27.6**	**26.4**	**23.7**
Energy Use by Activity Type (PJ)																			
Wholesale Trade	1.7	1.7	1.8	1.7	2.3	1.9	1.6	2.0	1.8	1.4	1.1	1.7	1.7	1.5	1.7	1.7	1.6	1.5	1.3
Retail Trade	4.2	4.3	4.4	4.4	5.9	5.5	4.9	6.0	5.3	4.3	3.4	5.1	5.1	4.6	5.0	5.3	5.0	4.7	4.2
Transportation and Warehousing	1.5	1.5	1.5	1.3	1.8	1.4	1.2	1.4	1.3	1.0	0.8	1.3	1.2	1.1	1.2	1.2	1.1	1.1	1.0
Information and Cultural Industries	0.6	0.6	0.6	0.6	0.8	0.6	0.5	0.7	0.6	0.5	0.4	0.6	0.6	0.5	0.6	0.6	0.6	0.5	0.5
Offices[2]	9.5	9.4	9.6	11.3	10.5	9.8	8.1	9.6	9.0	7.8	9.2	10.8	8.2	7.4	8.2	8.7	8.2	7.8	7.1
Educational Services	4.3	4.3	4.3	4.2	5.8	4.7	4.1	4.9	4.3	3.4	2.8	4.2	4.1	3.7	4.2	4.5	4.2	4.1	3.6
Health Care and Social Assistance	3.9	3.9	3.9	3.6	5.1	4.2	3.7	4.4	3.8	2.9	1.9	3.4	3.7	3.4	3.9	4.1	3.8	3.6	3.2
Arts, Entertainment and Recreation	0.5	0.5	0.5	0.5	0.7	0.6	0.5	0.6	0.5	0.4	0.4	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.5
Accommodation and Food Services	1.9	1.9	1.9	1.8	2.6	2.2	2.0	2.4	2.1	1.6	1.1	1.8	2.0	1.8	2.0	2.1	2.0	2.0	1.8
Other Services	0.8	0.7	0.7	0.7	1.0	0.7	0.6	0.8	0.7	0.5	0.4	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4
Shares (%)																			
Wholesale Trade	6.0	6.0	6.0	5.7	6.3	5.9	6.0	6.1	6.1	5.9	5.3	5.7	6.0	6.0	5.9	5.7	5.7	5.6	5.6
Retail Trade	14.5	14.9	15.1	14.5	16.3	17.4	18.0	18.4	18.1	17.9	15.9	17.0	18.4	18.3	18.1	18.1	18.0	17.8	17.8
Transportation and Warehousing	5.3	5.2	5.0	4.4	4.8	4.5	4.4	4.2	4.3	4.3	3.9	4.2	4.5	4.4	4.4	4.1	4.1	4.1	4.1
Information and Cultural Industries	1.9	1.9	2.0	1.9	2.1	2.0	2.0	2.0	2.0	2.0	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Offices[2]	32.7	32.6	32.7	37.6	28.7	31.0	29.8	29.3	30.8	32.7	42.5	35.9	29.6	29.5	29.4	29.6	29.7	29.7	29.9
Educational Services	14.9	14.8	14.8	14.0	16.0	14.9	15.0	15.0	14.5	14.3	12.9	14.0	15.0	15.0	15.2	15.3	15.3	15.4	15.4
Health Care and Social Assistance	13.6	13.5	13.4	11.9	14.0	13.2	13.5	13.5	13.0	12.2	9.0	11.4	13.4	13.7	14.0	13.9	13.9	13.8	13.7
Arts, Entertainment and Recreation	1.8	1.8	1.8	1.7	1.9	1.8	1.8	1.9	1.8	1.9	1.7	1.8	2.0	2.0	2.0	2.1	2.1	2.1	2.1
Accommodation and Food Services	6.6	6.6	6.6	6.0	7.2	6.9	7.2	7.3	7.1	6.7	5.1	6.1	7.1	7.1	7.2	7.3	7.4	7.6	7.7
Other Services	2.6	2.6	2.6	2.4	2.6	2.4	2.3	2.3	2.2	2.1	1.9	2.0	2.0	2.0	1.9	1.9	1.8	1.8	1.7
Activity																			
Total Floor Space (million m^2)	41.88	42.67	43.13	43.76	44.43	45.05	45.77	46.34	46.77	47.36	47.84	48.29	48.89	49.16	49.21	49.23	49.11	49.35	49.25
Energy Intensity (GJ/m^2)	**0.69**	**0.68**	**0.68**	**0.69**	**0.82**	**0.70**	**0.59**	**0.71**	**0.63**	**0.50**	**0.45**	**0.62**	**0.57**	**0.51**	**0.57**	**0.60**	**0.56**	**0.53**	**0.48**
Total Space Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**1.7**	**1.7**	**1.6**	**1.8**	**2.2**	**2.0**	**1.7**	**1.8**	**1.6**	**1.2**	**1.2**	**1.6**	**1.4**	**1.3**	**1.4**	**1.5**	**1.3**	**1.2**	**1.0**
GHG Emissions by Activity Type (Mt of CO_2e)																			
Wholesale Trade	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Retail Trade	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Transportation and Warehousing	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Information and Cultural Industries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Offices[2]	0.6	0.6	0.6	0.8	0.7	0.7	0.6	0.7	0.6	0.5	0.6	0.8	0.6	0.5	0.5	0.5	0.5	0.4	0.4
Educational Services	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Health Care and Social Assistance	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Arts, Entertainment and Recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation and Food Services	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Services	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**57.1**	**59.5**	**54.6**	**59.4**	**60.0**	**62.0**	**63.4**	**54.6**	**53.2**	**49.2**	**55.6**	**54.0**	**52.2**	**53.2**	**49.6**	**50.7**	**47.5**	**43.7**	**42.4**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.

Commercial/Institutional Sector

Atlantic[1]

Table 26: Water Heating Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Water Heating Energy Use (PJ)	**3.1**	**3.0**	**2.9**	**3.6**	**3.8**	**3.4**	**3.1**	**3.5**	**3.3**	**2.9**	**3.1**	**3.9**	**4.0**	**3.1**	**3.3**	**3.3**	**2.9**	**2.5**	**2.7**
Energy Use by Energy Source (PJ)																			
Electricity	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Natural Gas	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.6	0.7	1.3	1.4	2.1	2.1	2.0	1.9	1.8	1.9
Light Fuel Oil and Kerosene	1.8	1.6	1.7	2.3	2.4	2.1	1.6	2.2	1.0	0.3	0.5	0.8	0.3	0.2	0.3	0.3	0.1	0.1	0.0
Heavy Fuel Oil	0.2	0.0	0.0	0.1	0.2	0.4	0.3	0.3	0.6	0.6	0.4	0.5	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	1.1	1.3	1.1	1.0	0.8	0.7	0.9	0.7	1.1	1.3	1.1	0.9	0.8	0.6	0.8	0.9	0.7	0.5	0.6
Shares (%)																			
Electricity	2.3	1.7	1.6	2.5	5.8	5.6	5.4	5.7	5.6	7.4	14.0	9.3	5.8	5.0	5.3	5.3	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	1.9	2.0	3.1	4.5	3.3	11.8	19.2	21.5	33.1	35.0	67.9	62.3	60.8	65.5	72.5	70.6
Light Fuel Oil and Kerosene	58.7	55.2	59.5	64.6	63.9	60.3	51.6	62.2	30.6	10.1	16.9	21.1	6.3	7.3	8.8	7.8	4.9	3.1	1.7
Heavy Fuel Oil	4.9	0.9	0.1	3.1	6.1	10.5	11.0	8.2	17.6	20.2	12.6	12.5	33.9	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	34.2	42.2	38.8	28.0	22.3	20.4	27.4	20.7	34.4	43.0	35.0	23.9	18.9	19.8	23.6	26.0	24.6	19.4	22.7
Activity																			
Total Floor Space (million m^2)	41.88	42.67	43.13	43.76	44.43	45.05	45.77	46.34	46.77	47.36	47.84	48.29	48.89	49.16	49.21	49.23	49.11	49.35	49.25
Energy Intensity (GJ/m^2)	**0.07**	**0.07**	**0.07**	**0.08**	**0.09**	**0.08**	**0.07**	**0.08**	**0.07**	**0.06**	**0.07**	**0.08**	**0.08**	**0.06**	**0.07**	**0.07**	**0.06**	**0.05**	**0.06**
Total Water Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Light Fuel Oil and Kerosene	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**66.2**	**65.7**	**66.0**	**66.1**	**64.5**	**64.6**	**63.8**	**64.4**	**61.7**	**58.1**	**53.4**	**55.4**	**58.6**	**50.6**	**51.1**	**51.0**	**50.5**	**49.5**	**49.7**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 27: Water Heating Secondary Energy Use and GHG Emissions by Activity Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Water Heating Energy Use (PJ)	**3.1**	**3.0**	**2.9**	**3.6**	**3.8**	**3.4**	**3.1**	**3.5**	**3.3**	**2.9**	**3.1**	**3.9**	**4.0**	**3.1**	**3.3**	**3.3**	**2.9**	**2.5**	**2.7**
Energy Use by Activity Type (PJ)																			
Wholesale Trade	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Retail Trade	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5
Transportation and Warehousing	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Information and Cultural Industries	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Offices[2]	0.5	0.5	0.5	0.7	0.5	0.5	0.5	0.6	0.5	0.5	0.6	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4
Educational Services	0.6	0.5	0.5	0.6	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.7	0.7	0.5	0.6	0.6	0.5	0.5	0.5
Health Care and Social Assistance	0.8	0.7	0.7	0.9	0.9	0.8	0.7	0.8	0.8	0.7	0.7	0.9	1.0	0.8	0.8	0.8	0.8	0.6	0.7
Arts, Entertainment and Recreation	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Accommodation and Food Services	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Other Services	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Shares (%)																			
Wholesale Trade	5.9	5.9	5.8	5.8	6.0	5.8	5.8	5.8	5.9	5.8	5.6	5.7	5.7	5.7	5.5	5.4	5.3	5.4	5.4
Retail Trade	15.1	15.5	15.6	15.7	16.4	17.8	18.0	18.3	18.5	18.4	17.7	17.9	18.3	18.2	17.6	17.7	17.4	17.8	17.8
Transportation and Warehousing	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.2
Information and Cultural Industries	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2
Offices[2]	17.6	17.4	17.5	18.1	14.5	15.8	15.8	15.9	16.0	16.5	18.7	17.2	15.6	15.3	16.4	15.7	15.0	15.5	15.6
Educational Services	18.2	18.1	18.0	17.9	19.0	18.3	18.0	17.7	17.6	17.5	17.2	17.5	17.7	17.7	17.6	17.9	17.6	18.3	18.3
Health Care and Social Assistance	24.9	24.9	24.8	24.2	25.1	24.0	23.9	23.8	23.5	23.3	22.7	23.4	24.5	25.1	25.1	25.2	26.7	24.2	24.0
Arts, Entertainment and Recreation	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.0
Accommodation and Food Services	9.4	9.4	9.5	9.5	10.0	9.7	10.0	10.1	10.1	10.1	9.8	9.9	9.9	9.9	9.8	10.1	10.1	10.6	10.7
Other Services	2.7	2.7	2.6	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.1	2.1	2.0	2.0	1.9	1.8	1.8	1.8	1.8
Activity																			
Total Floor Space (million m^2)	41.88	42.67	43.13	43.76	44.43	45.05	45.77	46.34	46.77	47.36	47.84	48.29	48.89	49.16	49.21	49.23	49.11	49.35	49.25
Energy Intensity (GJ/m^2)	**0.07**	**0.07**	**0.07**	**0.08**	**0.09**	**0.08**	**0.07**	**0.08**	**0.07**	**0.06**	**0.07**	**0.08**	**0.08**	**0.06**	**0.07**	**0.07**	**0.06**	**0.05**	**0.06**
Total Water Heating GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**
GHG Emissions by Activity Type (Mt of CO_2e)																			
Wholesale Trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail Trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation and Warehousing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Information and Cultural Industries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Offices[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Educational Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care and Social Assistance	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Arts, Entertainment and Recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation and Food Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**66.2**	**65.7**	**66.0**	**66.1**	**64.5**	**64.6**	**63.8**	**64.4**	**61.7**	**58.1**	**53.4**	**55.4**	**58.6**	**50.6**	**51.1**	**51.0**	**50.5**	**49.5**	**49.7**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.

Commercial/Institutional Sector

Atlantic[1]

Table 28: Auxiliary Equipment Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Auxiliary Equipment Energy Use (PJ)	**7.1**	**7.8**	**7.6**	**8.9**	**9.2**	**9.3**	**9.3**	**9.9**	**10.0**	**10.5**	**10.8**	**10.5**	**9.9**	**9.9**	**10.7**	**10.4**	**10.8**	**9.4**	**10.1**
Energy Use by Energy Source (PJ)																			
Electricity	6.2	6.9	6.6	7.9	8.1	8.2	8.2	8.7	8.8	9.5	9.8	9.6	9.0	9.0	9.7	9.5	10.2	8.4	9.1
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.9	0.9	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.0	1.0	1.0	0.9	0.9	1.0	0.9	0.6	1.0	1.0
Shares (%)																			
Electricity	87.5	88.1	87.5	88.0	87.8	88.1	88.1	87.6	87.6	90.8	91.0	90.7	90.7	91.1	90.8	90.9	94.4	89.6	89.6
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	12.5	11.9	12.5	12.0	12.2	11.9	11.9	12.4	12.3	9.2	8.9	9.3	9.3	8.9	9.1	9.0	5.6	10.4	10.3
Activity																			
Total Floor Space (million m^2)	41.88	42.67	43.13	43.76	44.43	45.05	45.77	46.34	46.77	47.36	47.84	48.29	48.89	49.16	49.21	49.23	49.11	49.35	49.25
Energy Intensity (GJ/m^2)	**0.17**	**0.18**	**0.18**	**0.20**	**0.21**	**0.21**	**0.20**	**0.21**	**0.21**	**0.22**	**0.23**	**0.22**	**0.20**	**0.20**	**0.22**	**0.21**	**0.22**	**0.19**	**0.21**
Total Auxiliary Equipment GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.1**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
GHG Intensity (tonne/TJ)	**7.7**	**7.3**	**7.7**	**7.3**	**7.5**	**7.3**	**7.3**	**7.6**	**7.6**	**5.6**	**5.5**	**5.7**	**5.7**	**5.5**	**5.6**	**5.5**	**3.4**	**6.4**	**6.3**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic[1]

Table 29: Auxiliary Equipment Secondary Energy Use and GHG Emissions by Activity Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Auxiliary Equipment Energy Use (PJ)	**7.1**	**7.8**	**7.6**	**8.9**	**9.2**	**9.3**	**9.3**	**9.9**	**10.0**	**10.5**	**10.8**	**10.5**	**9.9**	**9.9**	**10.7**	**10.4**	**10.8**	**9.4**	**10.1**
Energy Use by Activity Type (PJ)																			
Wholesale Trade	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Retail Trade	0.9	1.0	1.0	1.1	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.4	1.4	1.5	1.4	1.5	1.3	1.4
Transportation and Warehousing	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Information and Cultural Industries	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Offices[2]	2.7	2.9	2.8	3.4	3.2	3.5	3.6	3.7	3.8	3.8	4.0	3.5	3.5	3.3	3.5	3.4	3.5	3.0	3.2
Educational Services	1.0	1.0	1.0	1.2	1.3	1.3	1.2	1.3	1.3	1.4	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.4	1.5
Health Care and Social Assistance	1.4	1.5	1.4	1.7	1.8	1.7	1.7	1.8	1.8	1.9	2.0	2.1	1.9	1.9	2.2	2.1	2.1	1.9	2.0
Arts, Entertainment and Recreation	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Accommodation and Food Services	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.8
Other Services	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Shares (%)																			
Wholesale Trade	4.9	4.9	4.9	4.9	5.1	4.8	4.8	4.9	4.9	5.1	4.9	5.2	5.0	5.1	5.1	5.0	5.0	4.8	4.8
Retail Trade	12.3	12.5	12.6	12.7	13.3	12.7	12.7	13.1	13.2	13.6	13.3	14.1	13.7	14.0	13.9	13.9	13.8	13.9	13.9
Transportation and Warehousing	0.8	1.1	1.0	1.4	1.5	1.4	1.3	1.3	1.4	1.4	1.4	1.5	1.6	1.7	1.6	1.6	1.6	1.7	1.7
Information and Cultural Industries	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0
Offices[2]	37.3	37.3	37.4	37.5	34.8	37.7	38.6	37.8	37.9	35.9	37.1	32.7	35.3	33.4	32.4	32.5	32.6	31.7	31.8
Educational Services	13.5	13.4	13.3	13.2	14.0	13.4	13.0	13.0	12.9	13.3	13.3	14.2	13.6	13.9	14.3	14.3	14.3	14.6	14.7
Health Care and Social Assistance	19.2	19.0	18.9	18.5	19.1	18.2	17.9	18.1	17.9	18.4	18.1	19.6	18.6	19.5	20.1	19.9	19.9	20.1	20.0
Arts, Entertainment and Recreation	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.7	1.7	1.9	1.8	1.9	1.9	1.9	2.0	2.0	2.0
Accommodation and Food Services	6.1	6.0	6.1	6.0	6.4	6.2	6.3	6.4	6.4	6.6	6.5	6.9	6.7	6.8	6.9	7.0	7.1	7.4	7.5
Other Services	2.4	2.3	2.3	2.3	2.3	2.1	2.0	2.0	2.0	2.0	1.9	2.0	1.8	1.8	1.8	1.7	1.7	1.7	1.7
Activity																			
Total Floor Space (million m^2)	41.88	42.67	43.13	43.76	44.43	45.05	45.77	46.34	46.77	47.36	47.84	48.29	48.89	49.16	49.21	49.23	49.11	49.35	49.25
Energy Intensity (GJ/m^2)	**0.17**	**0.18**	**0.18**	**0.20**	**0.21**	**0.21**	**0.20**	**0.21**	**0.21**	**0.22**	**0.23**	**0.22**	**0.20**	**0.20**	**0.22**	**0.21**	**0.22**	**0.19**	**0.21**
Total Auxiliary Equipment GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.1**
GHG Emissions by Activity Type (Mt of CO_2e)																			
Wholesale Trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail Trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation and Warehousing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Information and Cultural Industries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Offices[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Educational Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care and Social Assistance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arts, Entertainment and Recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation and Food Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**7.7**	**7.3**	**7.7**	**7.3**	**7.5**	**7.3**	**7.3**	**7.6**	**7.6**	**5.6**	**5.5**	**5.7**	**5.7**	**5.5**	**5.6**	**5.5**	**3.4**	**6.4**	**6.3**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.

Commercial/Institutional Sector

Atlantic[1]

Table 30: Auxiliary Motors Secondary Energy Use and GHG Emissions by Activity Type[2]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Auxiliary Motors Energy Use[2] (PJ)	**3.9**	**3.3**	**3.2**	**3.4**	**3.5**	**3.4**	**2.8**	**3.0**	**3.0**	**3.3**	**2.8**	**3.5**	**2.8**	**2.2**	**3.0**	**2.8**	**2.6**	**2.7**	**2.3**
Energy Use by Activity Type (PJ)																			
Wholesale Trade	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1
Retail Trade	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.4
Transportation and Warehousing	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1
Information and Cultural Industries	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
Offices[3]	1.2	1.1	1.0	1.1	1.1	1.0	0.9	0.9	0.9	1.0	0.8	1.1	0.9	0.7	0.9	0.9	0.8	0.8	0.7
Educational Services	0.6	0.5	0.5	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.4	0.3	0.5	0.4	0.4	0.4	0.4
Health Care and Social Assistance	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.3
Arts, Entertainment and Recreation	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Accommodation and Food Services	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other Services	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Shares (%)																			
Wholesale Trade	6.1	6.1	6.1	6.1	6.3	6.3	6.2	6.3	6.3	6.3	6.2	6.2	6.2	6.1	6.0	6.0	6.0	5.8	5.8
Retail Trade	14.9	15.2	15.3	15.4	16.1	16.0	16.3	16.5	16.6	16.5	16.4	16.3	16.4	16.3	16.1	16.1	16.0	15.1	15.1
Transportation and Warehousing	5.4	5.3	5.3	5.2	5.3	5.3	5.2	5.2	5.3	5.2	5.5	5.4	5.4	5.3	5.2	5.2	5.2	5.3	5.3
Information and Cultural Industries	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1
Offices[3]	32.3	32.4	32.4	32.7	30.2	30.3	30.3	30.4	30.5	30.8	30.7	30.8	30.8	30.8	30.8	30.8	30.9	29.6	29.8
Educational Services	15.2	15.1	15.0	15.0	15.8	15.7	15.5	15.3	15.1	15.1	15.3	15.3	15.2	15.2	15.5	15.5	15.5	16.0	16.0
Health Care and Social Assistance	12.7	12.7	12.6	12.3	12.7	12.6	12.6	12.5	12.3	12.3	12.3	12.4	12.5	12.8	13.0	12.9	12.9	13.9	13.8
Arts, Entertainment and Recreation	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2
Accommodation and Food Services	6.8	6.8	6.8	6.8	7.2	7.3	7.5	7.5	7.5	7.5	7.4	7.4	7.4	7.4	7.4	7.5	7.6	8.0	8.1
Other Services	2.7	2.6	2.6	2.6	2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.8
Activity																			
Total Floor Space (million m^2)	41.88	42.67	43.13	43.76	44.43	45.05	45.77	46.34	46.77	47.36	47.84	48.29	48.89	49.16	49.21	49.23	49.11	49.35	49.25
Energy Intensity (GJ/m^2)	**0.09**	**0.08**	**0.07**	**0.08**	**0.08**	**0.07**	**0.06**	**0.06**	**0.06**	**0.07**	**0.06**	**0.07**	**0.06**	**0.05**	**0.06**	**0.06**	**0.05**	**0.05**	**0.05**
Total Auxiliary Motors GHG Emissions Excluding Electricity[2] (Mt of CO_2e)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GHG Intensity (tonne/TJ)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) Auxilliary motors consumes only electricity
3) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.

Commercial/Institutional Sector

Atlantic[1]

Table 31: Lighting Secondary Energy Use and GHG Emissions by Activity Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Lighting Energy Use[2] (PJ)	**10.4**	**10.5**	**10.3**	**10.2**	**10.4**	**10.0**	**9.8**	**10.4**	**10.4**	**10.3**	**10.4**	**10.0**	**9.2**	**9.3**	**9.9**	**9.8**	**9.3**	**10.1**	**10.4**
Energy Use by Activity Type (PJ)																			
Wholesale Trade	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Retail Trade	1.7	1.8	1.8	1.8	1.9	1.8	1.8	1.9	2.0	1.9	1.9	1.9	1.7	1.7	1.8	1.8	1.7	1.7	1.7
Transportation and Warehousing	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Information and Cultural Industries	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Offices[3]	3.6	3.6	3.5	3.5	3.3	3.2	3.1	3.3	3.3	3.4	3.4	2.9	3.0	3.0	3.2	3.2	3.1	3.4	3.5
Educational Services	1.4	1.4	1.4	1.4	1.5	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.2	1.2	1.3	1.3	1.3	1.4	1.4
Health Care and Social Assistance	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.2	1.3	1.4	1.3	1.3	1.4	1.4
Arts, Entertainment and Recreation	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Accommodation and Food Services	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.6	0.7	0.7
Other Services	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
Shares (%)																			
Wholesale Trade	5.6	5.5	5.5	5.5	5.7	5.7	5.7	5.7	5.7	5.7	5.6	5.9	5.6	5.5	5.4	5.4	5.4	5.2	5.2
Retail Trade	16.8	17.2	17.3	17.4	18.2	18.2	18.4	18.7	18.8	18.7	18.6	19.4	18.5	18.4	18.2	18.1	18.0	16.8	16.8
Transportation and Warehousing	4.4	4.3	4.3	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.5	4.7	4.4	4.3	4.3	4.2	4.2	4.3	4.3
Information and Cultural Industries	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0
Offices[3]	34.1	34.2	34.3	34.5	31.9	32.1	32.1	32.2	32.3	32.5	32.5	29.1	32.8	32.8	32.7	32.7	32.8	33.4	33.5
Educational Services	13.4	13.3	13.2	13.2	13.9	13.9	13.7	13.4	13.3	13.3	13.5	14.1	13.4	13.3	13.6	13.6	13.6	13.9	13.9
Health Care and Social Assistance	13.7	13.6	13.6	13.3	13.7	13.6	13.6	13.4	13.3	13.2	13.2	14.1	13.4	13.7	13.9	13.8	13.8	13.9	13.8
Arts, Entertainment and Recreation	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
Accommodation and Food Services	6.2	6.2	6.2	6.2	6.5	6.6	6.8	6.8	6.8	6.8	6.7	7.1	6.7	6.7	6.7	6.8	6.9	7.2	7.2
Other Services	2.2	2.2	2.1	2.1	2.1	2.1	2.0	1.9	1.9	1.8	1.8	1.8	1.7	1.6	1.6	1.5	1.5	1.5	1.5
Activity																			
Total Floor Space (million m^2)	41.88	42.67	43.13	43.76	44.43	45.05	45.77	46.34	46.77	47.36	47.84	48.29	48.89	49.16	49.21	49.23	49.11	49.35	49.25
Energy Intensity (GJ/m^2)	**0.25**	**0.25**	**0.24**	**0.23**	**0.24**	**0.22**	**0.21**	**0.22**	**0.22**	**0.22**	**0.22**	**0.21**	**0.19**	**0.19**	**0.20**	**0.20**	**0.19**	**0.20**	**0.21**
Total Lighting GHG Emissions Excluding Electricity[2] (Mt of CO_2e)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GHG Intensity (tonne/TJ)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) Lighting consumes only electricity and does not include street lighting.
3) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.

Commercial/Institutional Sector

Atlantic[1]

Table 32: Space Cooling Secondary Energy Use and GHG Emissions by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Cooling Energy Use (PJ)	**3.0**	**4.2**	**3.7**	**4.6**	**3.5**	**4.6**	**3.4**	**3.1**	**3.6**	**2.5**	**3.0**	**2.6**	**5.0**	**4.4**	**4.4**	**5.1**	**5.4**	**5.5**	**6.9**
Energy Use by Energy Source (PJ)																			
Electricity	3.0	4.2	3.7	4.6	3.5	4.6	3.4	3.1	3.6	2.5	3.0	2.6	5.0	4.4	4.4	5.1	5.4	5.5	6.9
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Total Floor Space (million m^2)	27.80	29.00	29.99	31.11	32.30	33.46	34.36	35.16	35.84	36.64	37.19	37.72	38.39	38.78	38.99	39.20	39.29	39.87	40.19
Energy Intensity (GJ/m^2)	**0.11**	**0.14**	**0.12**	**0.15**	**0.11**	**0.14**	**0.10**	**0.09**	**0.10**	**0.07**	**0.08**	**0.07**	**0.13**	**0.11**	**0.11**	**0.13**	**0.14**	**0.14**	**0.17**
Total Space Cooling GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by Energy Source (Mt of CO_2e)																			
Electricity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.

Commercial/Institutional Sector

Atlantic[1]

Table 33: Space Cooling Secondary Energy Use and GHG Emissions by Activity Type

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Space Cooling Energy Use (PJ)	**3.0**	**4.2**	**3.7**	**4.6**	**3.5**	**4.6**	**3.4**	**3.1**	**3.6**	**2.5**	**3.0**	**2.6**	**5.0**	**4.4**	**4.4**	**5.1**	**5.4**	**5.5**	**6.9**
Energy Use by Activity Type (PJ)																			
Wholesale Trade	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Retail Trade	0.5	0.7	0.6	0.8	0.7	0.9	0.6	0.6	0.7	0.5	0.6	0.5	1.0	0.8	0.8	1.0	1.0	1.0	1.3
Transportation and Warehousing	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Information and Cultural Industries	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Offices[2]	1.0	1.3	1.2	1.5	1.0	1.2	0.9	0.9	1.0	0.7	0.9	0.7	1.4	1.2	1.2	1.4	1.5	1.6	2.0
Educational Services	0.4	0.6	0.5	0.7	0.6	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.8	0.7	0.7	0.8	0.8	0.9	1.1
Health Care and Social Assistance	0.4	0.6	0.5	0.6	0.5	0.7	0.5	0.5	0.5	0.4	0.4	0.4	0.7	0.6	0.7	0.8	0.8	0.8	1.0
Arts, Entertainment and Recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Accommodation and Food Services	0.2	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.4	0.4	0.4	0.4	0.5	0.5	0.6
Other Services	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Wholesale Trade	6.3	6.2	6.2	6.2	6.6	6.4	6.6	6.6	6.7	6.6	6.6	6.5	6.5	6.4	6.3	6.3	6.3	6.2	6.2
Retail Trade	16.7	17.1	17.2	17.3	18.7	20.5	18.8	19.1	19.3	19.2	19.0	19.1	19.3	19.2	18.9	18.8	18.7	18.6	18.5
Transportation and Warehousing	3.5	3.5	3.4	3.4	3.6	3.5	3.5	3.5	3.6	3.6	3.7	3.8	3.5	3.5	3.4	3.4	3.4	3.4	3.4
Information and Cultural Industries	2.0	2.0	2.0	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2
Offices[2]	32.1	32.2	32.2	32.5	27.6	26.8	27.6	27.7	27.8	28.1	28.0	28.1	28.3	28.3	28.2	28.2	28.3	28.3	28.5
Educational Services	14.6	14.5	14.5	14.4	15.7	15.3	15.4	15.1	15.0	15.0	15.2	15.1	15.0	15.0	15.3	15.3	15.3	15.4	15.4
Health Care and Social Assistance	14.3	14.2	14.2	13.9	14.8	14.4	14.6	14.5	14.3	14.3	14.3	14.3	14.4	14.7	15.0	14.9	14.8	14.8	14.6
Arts, Entertainment and Recreation	0.9	0.9	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1
Accommodation and Food Services	7.6	7.6	7.6	7.6	8.3	8.2	8.6	8.6	8.6	8.6	8.6	8.5	8.5	8.5	8.5	8.6	8.8	9.0	9.0
Other Services	1.8	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.2
Activity																			
Total Floor Space (million m^2)	27.80	29.00	29.99	31.11	32.30	33.46	34.36	35.16	35.84	36.64	37.19	37.72	38.39	38.78	38.99	39.20	39.29	39.87	40.19
Energy Intensity (GJ/m^2)	**0.11**	**0.14**	**0.12**	**0.15**	**0.11**	**0.14**	**0.10**	**0.09**	**0.10**	**0.07**	**0.08**	**0.07**	**0.13**	**0.11**	**0.11**	**0.13**	**0.14**	**0.14**	**0.17**
Total Space Cooling GHG Emissions Excluding Electricity (Mt of CO_2e)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
GHG Emissions by Activity Type (Mt of CO_2e)																			
Wholesale Trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail Trade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation and Warehousing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Information and Cultural Industries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Offices[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Educational Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care and Social Assistance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arts, Entertainment and Recreation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation and Food Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) Data on GHG emissions are presented excluding GHG emissions related to electricity production.
2) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.

Commercial/Institutional Sector

Atlantic

Table 34: Street Lighting Secondary Energy Use and GHG Emissions

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Street Lighting Energy Use[1] (PJ)	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.6
Total Street Lighting GHG Emissions Including Electricity[1] (Mt of CO_2e)	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GHG Intensity (tonne/TJ)	71.8	80.3	69.6	70.8	78.5	70.4	68.2	76.6	70.8	77.9	64.3	61.7	52.5	50.5	49.9	51.1	49.5	53.9	41.3

1) Street lighting consumes only electricity and does not relate to floor space activity.

Commercial/Institutional Sector

Atlantic

Table 35: Wholesale Trade Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Wholesale Trade[1] (PJ)	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Activity																			
Floor Space (million m^2)	2.79	2.83	2.85	2.89	2.94	2.99	3.03	3.08	3.14	3.16	3.17	3.18	3.20	3.19	3.15	3.14	3.13	3.12	3.11
Energy Intensity (MJ/m^2)	**207.42**	**205.12**	**198.33**	**195.53**	**201.36**	**189.92**	**182.21**	**190.95**	**189.69**	**186.05**	**186.04**	**186.20**	**159.03**	**159.74**	**170.36**	**167.95**	**161.13**	**167.12**	**172.11**
Auxiliary Motors Energy Use for Wholesale Trade[1] (PJ)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**
Activity																			
Floor Space (million m^2)	2.79	2.83	2.85	2.89	2.94	2.99	3.03	3.08	3.14	3.16	3.17	3.18	3.20	3.19	3.15	3.14	3.13	3.12	3.11
Energy Intensity (MJ/m^2)	**84.74**	**70.99**	**68.57**	**71.21**	**74.27**	**70.44**	**58.33**	**61.17**	**60.93**	**66.64**	**54.28**	**67.56**	**54.03**	**42.81**	**56.71**	**53.21**	**49.29**	**50.09**	**43.54**
Auxiliary Equipment Energy Use for Wholesale Trade (PJ)	**0.3**	**0.4**	**0.4**	**0.4**	**0.5**	**0.5**	**0.4**	**0.5**	**0.5**	**0.5**	**0.5**	**0.6**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Energy Use by Energy Source (PJ)																			
Electricity	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	92.3	92.0	92.3	92.1	91.2	90.9	90.5	91.3	91.2	92.4	92.1	92.3	92.4	92.1	92.4	92.3	96.0	90.1	90.1
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	7.7	8.0	7.7	7.9	8.8	9.1	9.5	8.7	8.8	7.6	7.9	7.7	7.6	7.9	7.6	7.7	4.0	9.9	9.9
Activity																			
Floor Space (million m^2)	2.79	2.83	2.85	2.89	2.94	2.99	3.03	3.08	3.14	3.16	3.17	3.18	3.20	3.19	3.15	3.14	3.13	3.12	3.11
Energy Intensity (MJ/m^2)	**125.52**	**134.22**	**129.39**	**151.39**	**157.66**	**151.27**	**146.79**	**156.07**	**157.41**	**167.72**	**168.47**	**173.52**	**155.53**	**158.28**	**172.20**	**166.98**	**173.02**	**146.02**	**157.15**
Water Heating Energy Use for Wholesale Trade (PJ)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Light Fuel Oil and Kerosene	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	2.7	1.8	1.6	3.1	6.4	6.2	5.9	6.2	6.4	8.7	17.5	11.1	6.6	5.0	5.9	5.9	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	2.0	2.0	3.3	4.7	3.4	12.2	20.0	23.0	34.3	34.9	69.5	62.0	61.0	66.6	73.6	72.0
Light Fuel Oil and Kerosene	59.7	56.1	60.3	65.9	65.4	62.2	52.4	63.2	31.5	10.1	14.3	20.6	6.3	7.6	9.8	8.7	5.4	3.5	1.9
Heavy Fuel Oil	4.8	0.9	0.1	2.4	6.2	11.1	12.2	8.8	18.8	21.4	12.1	12.1	36.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	32.8	41.2	38.0	26.6	20.0	17.2	24.8	18.3	31.1	39.8	33.2	21.8	16.3	17.9	22.2	24.4	23.0	17.9	21.1
Activity																			
Floor Space (million m^2)	2.79	2.83	2.85	2.89	2.94	2.99	3.03	3.08	3.14	3.16	3.17	3.18	3.20	3.19	3.15	3.14	3.13	3.12	3.11
Energy Intensity (MJ/m^2)	**65.80**	**61.86**	**59.36**	**73.09**	**77.40**	**66.97**	**59.38**	**66.00**	**62.54**	**54.47**	**55.88**	**70.19**	**72.43**	**54.88**	**57.79**	**56.75**	**49.79**	**44.53**	**48.07**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 36: Wholesale Trade Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Wholesale Trade (PJ)	**0.2**	**0.3**	**0.2**	**0.3**	**0.2**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**
Energy Use by Energy Source (PJ)																			
Electricity	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	1.89	1.96	2.02	2.09	2.18	2.26	2.32	2.38	2.45	2.48	2.51	2.53	2.56	2.56	2.54	2.55	2.55	2.56	2.58
Energy Intensity (MJ/m^2)	**100.49**	**132.69**	**112.62**	**136.04**	**106.47**	**131.77**	**95.66**	**86.98**	**97.28**	**65.95**	**79.64**	**66.73**	**127.09**	**108.72**	**109.10**	**125.80**	**132.10**	**134.29**	**166.80**
Space Heating Energy Use for Wholesale Trade (PJ)	**1.7**	**1.7**	**1.8**	**1.7**	**2.3**	**1.9**	**1.6**	**2.0**	**1.8**	**1.4**	**1.1**	**1.7**	**1.7**	**1.5**	**1.7**	**1.7**	**1.6**	**1.5**	**1.3**
Energy Use by Energy Source (PJ)																			
Electricity	0.4	0.3	0.5	0.4	0.4	0.3	0.2	0.6	0.6	0.6	0.3	0.5	0.5	0.4	0.6	0.6	0.5	0.7	0.6
Natural Gas	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5
Light Fuel Oil and Kerosene	0.8	0.9	0.9	0.9	1.1	0.8	0.6	0.5	0.3	0.1	0.2	0.3	0.1	0.4	0.4	0.4	0.3	0.2	0.1
Heavy Fuel Oil	0.2	0.1	0.0	0.1	0.3	0.4	0.4	0.5	0.4	0.2	0.1	0.2	0.4	0.0	0.1	0.1	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Shares (%)																			
Electricity	25.4	20.1	28.0	20.7	19.3	14.9	11.2	29.1	31.7	40.6	30.1	31.0	31.7	27.4	38.5	34.6	34.0	44.3	44.6
Natural Gas	0.0	0.0	0.0	2.7	3.4	6.7	6.9	6.7	12.7	17.0	22.2	27.6	28.1	34.7	23.9	25.5	32.6	34.6	35.8
Light Fuel Oil and Kerosene	48.0	53.1	51.0	50.9	48.8	44.4	39.1	24.8	14.9	7.9	13.2	16.2	7.9	24.2	23.4	22.6	16.4	10.2	5.9
Heavy Fuel Oil	10.5	5.9	1.8	7.6	14.9	20.9	26.6	25.0	22.6	11.0	9.3	10.5	21.5	1.9	3.1	4.1	2.4	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	16.0	20.9	19.2	17.9	13.6	13.1	16.2	14.4	18.1	23.4	25.2	14.7	10.7	11.7	11.2	13.3	14.6	10.9	13.6
Activity																			
Floor Space (million m^2)	2.79	2.83	2.85	2.89	2.94	2.99	3.03	3.08	3.14	3.16	3.17	3.18	3.20	3.19	3.15	3.14	3.13	3.12	3.11
Energy Intensity (MJ/m^2)	**623.82**	**613.99**	**615.12**	**595.29**	**785.45**	**626.20**	**539.59**	**654.15**	**567.83**	**450.16**	**359.29**	**536.10**	**521.61**	**468.54**	**523.45**	**531.78**	**500.37**	**475.90**	**428.57**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 37: Retail Trade Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Retail Trade[1] (PJ)	**1.7**	**1.8**	**1.8**	**1.8**	**1.9**	**1.8**	**1.8**	**1.9**	**2.0**	**1.9**	**1.9**	**1.9**	**1.7**	**1.7**	**1.8**	**1.8**	**1.7**	**1.7**	**1.7**
Activity																			
Floor Space (million m^2)	6.12	6.38	6.49	6.63	6.85	6.94	7.15	7.36	7.46	7.53	7.55	7.58	7.74	7.74	7.65	7.63	7.57	7.54	7.49
Energy Intensity (MJ/m^2)	**285.80**	**282.64**	**273.29**	**269.42**	**277.46**	**261.70**	**251.07**	**263.11**	**261.38**	**256.37**	**256.35**	**256.57**	**219.13**	**220.11**	**234.74**	**231.43**	**222.02**	**225.43**	**232.17**
Auxiliary Motors Energy Use for Retail Trade[1] (PJ)	**0.6**	**0.5**	**0.5**	**0.5**	**0.6**	**0.5**	**0.5**	**0.5**	**0.5**	**0.6**	**0.5**	**0.6**	**0.5**	**0.4**	**0.5**	**0.4**	**0.4**	**0.4**	**0.4**
Activity																			
Floor Space (million m^2)	6.12	6.38	6.49	6.63	6.85	6.94	7.15	7.36	7.46	7.53	7.55	7.58	7.74	7.74	7.65	7.63	7.57	7.54	7.49
Energy Intensity (MJ/m^2)	**93.41**	**78.26**	**75.59**	**78.50**	**81.88**	**77.65**	**64.30**	**67.43**	**67.17**	**73.46**	**59.83**	**74.48**	**59.56**	**47.20**	**62.52**	**58.66**	**54.33**	**54.06**	**46.99**
Auxiliary Equipment Energy Use for Retail Trade (PJ)	**0.9**	**1.0**	**1.0**	**1.1**	**1.2**	**1.2**	**1.2**	**1.3**	**1.3**	**1.4**	**1.4**	**1.5**	**1.4**	**1.4**	**1.5**	**1.4**	**1.5**	**1.3**	**1.4**
Energy Use by Energy Source (PJ)																			
Electricity	0.8	0.9	0.9	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.3	1.3	1.4	1.3	1.4	1.2	1.3
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	92.3	92.0	92.3	92.1	91.2	90.9	90.5	91.3	91.2	93.5	93.2	93.4	93.5	93.2	93.4	93.4	96.6	91.5	91.5
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	7.7	8.0	7.7	7.9	8.8	9.1	9.5	8.7	8.8	6.5	6.8	6.6	6.5	6.8	6.6	6.6	3.4	8.5	8.5
Activity																			
Floor Space (million m^2)	6.12	6.38	6.49	6.63	6.85	6.94	7.15	7.36	7.46	7.53	7.55	7.58	7.74	7.74	7.65	7.63	7.57	7.54	7.49
Energy Intensity (MJ/m^2)	**142.98**	**152.89**	**147.39**	**170.60**	**177.67**	**170.46**	**165.40**	**175.86**	**177.36**	**188.97**	**189.81**	**195.51**	**176.05**	**179.17**	**194.92**	**189.01**	**195.85**	**173.99**	**187.24**
Water Heating Energy Use for Retail Trade (PJ)	**0.5**	**0.5**	**0.5**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**	**0.6**	**0.7**	**0.7**	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**	**0.5**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.3	0.3	0.4
Light Fuel Oil and Kerosene	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	2.7	1.8	1.6	3.1	6.4	6.2	5.9	6.2	6.4	8.7	17.5	11.1	6.6	5.0	5.9	5.9	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	2.0	2.0	3.3	4.7	3.4	12.2	20.0	23.0	34.3	34.9	69.5	62.0	61.0	66.6	73.6	72.0
Light Fuel Oil and Kerosene	59.7	56.1	60.3	65.9	65.4	62.2	52.4	63.2	31.5	10.1	14.3	20.6	6.3	7.6	9.8	8.7	5.4	3.5	1.9
Heavy Fuel Oil	4.8	0.9	0.1	2.4	6.2	11.1	12.2	8.8	18.8	21.4	12.1	12.1	36.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	32.8	41.2	38.0	26.6	20.0	17.2	24.8	18.3	31.1	39.8	33.2	21.8	16.3	17.9	22.2	24.4	23.0	17.9	21.1
Activity																			
Floor Space (million m^2)	6.12	6.38	6.49	6.63	6.85	6.94	7.15	7.36	7.46	7.53	7.55	7.58	7.74	7.74	7.65	7.63	7.57	7.54	7.49
Energy Intensity (MJ/m^2)	**77.06**	**72.46**	**69.52**	**85.61**	**90.65**	**88.38**	**78.37**	**87.10**	**82.54**	**71.89**	**73.75**	**92.64**	**95.59**	**72.42**	**76.27**	**76.68**	**67.29**	**60.18**	**64.96**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 38: Retail Trade Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Retail Trade (PJ)	**0.5**	**0.7**	**0.6**	**0.8**	**0.7**	**0.9**	**0.6**	**0.6**	**0.7**	**0.5**	**0.6**	**0.5**	**1.0**	**0.8**	**0.8**	**1.0**	**1.0**	**1.0**	**1.3**
Energy Use by Energy Source (PJ)																			
Electricity	0.5	0.7	0.6	0.8	0.7	0.9	0.6	0.6	0.7	0.5	0.6	0.5	1.0	0.8	0.8	1.0	1.0	1.0	1.3
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	4.58	4.88	5.08	5.30	5.60	5.79	6.03	6.26	6.41	6.53	6.58	6.64	6.81	6.84	6.80	6.81	6.79	6.83	6.86
Energy Intensity (MJ/m^2)	**110.77**	**146.28**	**124.16**	**149.96**	**117.38**	**163.66**	**105.45**	**95.88**	**107.23**	**72.70**	**87.80**	**74.87**	**142.58**	**121.98**	**122.40**	**141.13**	**148.20**	**150.67**	**187.14**
Space Heating Energy Use for Retail Trade (PJ)	**4.2**	**4.3**	**4.4**	**4.4**	**5.9**	**5.5**	**4.9**	**6.0**	**5.3**	**4.3**	**3.4**	**5.1**	**5.1**	**4.6**	**5.0**	**5.3**	**5.0**	**4.7**	**4.2**
Energy Use by Energy Source (PJ)																			
Electricity	1.1	0.9	1.2	0.9	1.1	0.8	0.5	1.8	1.7	1.7	1.0	1.6	1.6	1.3	1.9	1.8	1.7	2.1	1.9
Natural Gas	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.4	0.7	0.7	0.8	1.4	1.4	1.6	1.2	1.4	1.6	1.6	1.5
Light Fuel Oil and Kerosene	2.0	2.3	2.2	2.2	2.9	2.4	1.9	1.5	0.8	0.3	0.5	0.8	0.4	1.1	1.2	1.2	0.8	0.5	0.2
Heavy Fuel Oil	0.4	0.3	0.1	0.3	0.9	1.1	1.3	1.5	1.2	0.5	0.3	0.5	1.1	0.1	0.2	0.2	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.7	0.9	0.8	0.8	0.8	0.7	0.8	0.9	1.0	1.0	0.9	0.8	0.5	0.5	0.6	0.7	0.7	0.5	0.6
Shares (%)																			
Electricity	25.4	20.1	28.0	20.7	19.3	14.9	11.2	29.1	31.7	40.6	30.1	31.0	31.7	27.4	38.5	34.4	33.8	44.1	44.4
Natural Gas	0.0	0.0	0.0	2.7	3.4	6.7	6.9	6.7	12.7	17.0	22.2	27.6	28.1	34.7	23.9	25.5	32.6	34.7	36.0
Light Fuel Oil and Kerosene	48.0	53.1	51.0	50.9	48.8	44.4	39.1	24.8	14.9	7.9	13.2	16.2	7.9	24.2	23.4	22.7	16.5	10.2	5.9
Heavy Fuel Oil	10.5	5.9	1.8	7.6	14.9	20.9	26.6	25.0	22.6	11.0	9.3	10.5	21.5	1.9	3.1	4.1	2.4	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	16.0	20.9	19.2	17.9	13.6	13.1	16.2	14.4	18.1	23.4	25.2	14.7	10.7	11.7	11.2	13.3	14.6	10.9	13.7
Activity																			
Floor Space (million m^2)	6.12	6.38	6.49	6.63	6.85	6.94	7.15	7.36	7.46	7.53	7.55	7.58	7.74	7.74	7.65	7.63	7.57	7.54	7.49
Energy Intensity (MJ/m^2)	**687.67**	**676.83**	**678.08**	**658.21**	**867.68**	**788.46**	**683.33**	**818.64**	**712.21**	**566.77**	**452.78**	**675.59**	**657.33**	**590.45**	**659.66**	**696.80**	**655.64**	**623.58**	**561.56**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 39: Transportation and Warehousing Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Transportation and Warehousing[1] (PJ)	**0.5**	**0.5**	**0.4**	**0.4**	**0.5**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.5**	**0.5**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**
Activity																			
Floor Space (million m^2)	2.36	2.36	2.36	2.37	2.40	2.43	2.44	2.46	2.52	2.53	2.54	2.55	2.55	2.53	2.51	2.50	2.49	2.48	2.47
Energy Intensity (MJ/m^2)	**194.83**	**192.67**	**186.30**	**183.66**	**189.14**	**178.40**	**171.15**	**179.36**	**178.18**	**174.76**	**183.60**	**183.76**	**156.94**	**157.65**	**168.12**	**165.75**	**159.01**	**173.61**	**178.80**
Auxiliary Motors Energy Use for Transportation and Warehousing[1] (PJ)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**
Activity																			
Floor Space (million m^2)	2.36	2.36	2.36	2.37	2.40	2.43	2.44	2.46	2.52	2.53	2.54	2.55	2.55	2.53	2.51	2.50	2.49	2.48	2.47
Energy Intensity (MJ/m^2)	**88.30**	**73.98**	**71.45**	**74.20**	**77.40**	**73.40**	**60.79**	**63.74**	**63.49**	**69.44**	**59.42**	**73.97**	**59.16**	**46.87**	**62.09**	**58.26**	**53.96**	**57.73**	**50.18**
Auxiliary Equipment Energy Use for Transportation and Warehousing (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Activity																			
Floor Space (million m^2)	2.36	2.36	2.36	2.37	2.40	2.43	2.44	2.46	2.52	2.53	2.54	2.55	2.55	2.53	2.51	2.50	2.49	2.48	2.47
Energy Intensity (MJ/m^2)	**23.30**	**34.81**	**33.47**	**54.62**	**56.47**	**53.78**	**50.92**	**53.75**	**53.82**	**56.95**	**59.67**	**61.47**	**63.59**	**64.71**	**70.40**	**68.27**	**70.74**	**62.84**	**67.63**
Water Heating Energy Use for Transportation and Warehousing (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	2.7	1.8	1.6	3.1	6.4	6.2	5.9	6.2	6.4	8.7	17.5	11.1	6.6	5.0	5.9	5.9	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	2.0	2.0	3.3	4.7	3.4	12.2	20.0	23.0	34.3	34.9	69.5	62.0	61.0	66.6	73.6	72.0
Light Fuel Oil and Kerosene	59.7	56.1	60.3	65.9	65.4	62.2	52.4	63.2	31.5	10.1	14.3	20.6	6.3	7.6	9.8	8.7	5.4	3.5	1.9
Heavy Fuel Oil	4.8	0.9	0.1	2.4	6.2	11.1	12.2	8.8	18.8	21.4	12.1	12.1	36.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	32.8	41.2	38.0	26.6	20.0	17.2	24.8	18.3	31.1	39.8	33.2	21.8	16.3	17.9	22.2	24.4	23.0	17.9	21.1
Activity																			
Floor Space (million m^2)	2.36	2.36	2.36	2.37	2.40	2.43	2.44	2.46	2.52	2.53	2.54	2.55	2.55	2.53	2.51	2.50	2.49	2.48	2.47
Energy Intensity (MJ/m^2)	**30.94**	**29.10**	**27.92**	**34.38**	**36.40**	**31.49**	**27.93**	**31.04**	**29.41**	**25.62**	**27.59**	**34.65**	**35.76**	**27.09**	**28.53**	**28.69**	**25.17**	**22.51**	**24.30**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 40: Transportation and Warehousing Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Transportation and Warehousing (PJ)	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Energy Use by Energy Source (PJ)																			
Electricity	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	1.54	1.58	1.61	1.66	1.71	1.77	1.80	1.84	1.90	1.92	1.94	1.95	1.96	1.96	1.95	1.95	1.96	1.97	1.98
Energy Intensity (MJ/m^2)	**69.78**	**92.47**	**78.40**	**94.85**	**73.95**	**91.89**	**66.44**	**60.40**	**67.57**	**45.80**	**58.07**	**50.45**	**90.07**	**77.05**	**77.32**	**89.16**	**93.62**	**95.18**	**118.22**
Space Heating Energy Use for Transportation and Warehousing (PJ)	**1.5**	**1.5**	**1.5**	**1.3**	**1.8**	**1.4**	**1.2**	**1.4**	**1.3**	**1.0**	**0.8**	**1.3**	**1.2**	**1.1**	**1.2**	**1.2**	**1.1**	**1.1**	**1.0**
Energy Use by Energy Source (PJ)																			
Electricity	0.4	0.3	0.4	0.3	0.3	0.2	0.1	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.5	0.4	0.4	0.5	0.4
Natural Gas	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.3	0.4	0.3	0.3	0.4	0.4	0.3
Light Fuel Oil and Kerosene	0.7	0.8	0.8	0.7	0.9	0.6	0.5	0.3	0.2	0.1	0.1	0.2	0.1	0.3	0.3	0.3	0.2	0.1	0.1
Heavy Fuel Oil	0.2	0.1	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1
Shares (%)																			
Electricity	25.4	20.1	28.0	20.7	19.3	14.9	11.2	29.1	31.7	40.6	30.1	31.0	31.7	27.4	38.5	34.4	33.8	44.1	44.4
Natural Gas	0.0	0.0	0.0	2.7	3.4	6.7	6.9	6.7	12.7	17.0	22.2	27.6	28.1	34.7	23.9	25.5	32.6	34.7	36.0
Light Fuel Oil and Kerosene	48.0	53.1	51.0	50.9	48.8	44.4	39.1	24.8	14.9	7.9	13.2	16.2	7.9	24.2	23.4	22.7	16.5	10.2	5.9
Heavy Fuel Oil	10.5	5.9	1.8	7.6	14.9	20.9	26.6	25.0	22.6	11.0	9.3	10.5	21.5	1.9	3.1	4.1	2.4	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	16.0	20.9	19.2	17.9	13.6	13.1	16.2	14.4	18.1	23.4	25.2	14.7	10.7	11.7	11.2	13.3	14.6	10.9	13.7
Activity																			
Floor Space (million m^2)	2.36	2.36	2.36	2.37	2.40	2.43	2.44	2.46	2.52	2.53	2.54	2.55	2.55	2.53	2.51	2.50	2.49	2.48	2.47
Energy Intensity (MJ/m^2)	**648.82**	**635.25**	**623.83**	**564.72**	**731.30**	**577.24**	**491.07**	**561.73**	**499.19**	**403.83**	**334.82**	**499.59**	**486.09**	**436.63**	**487.81**	**486.59**	**457.85**	**435.46**	**392.16**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 41: Information and Cultural Industries Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Information and Cultural Industries[1] (PJ)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Activity																			
Floor Space (million m^2)	0.71	0.72	0.73	0.74	0.75	0.77	0.78	0.79	0.79	0.81	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.84	0.85
Energy Intensity (MJ/m^2)	**277.21**	**274.14**	**265.07**	**261.32**	**269.11**	**253.83**	**243.52**	**255.20**	**253.52**	**248.66**	**248.64**	**248.85**	**212.54**	**213.49**	**227.68**	**224.47**	**215.34**	**235.10**	**242.13**
Auxiliary Motors Energy Use for Information and Cultural Industries[1] (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**
Activity																			
Floor Space (million m^2)	0.71	0.72	0.73	0.74	0.75	0.77	0.78	0.79	0.79	0.81	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.84	0.85
Energy Intensity (MJ/m^2)	**108.32**	**90.76**	**87.65**	**91.03**	**94.95**	**90.04**	**74.57**	**78.19**	**77.89**	**85.19**	**69.39**	**86.37**	**69.07**	**54.73**	**72.50**	**68.02**	**63.01**	**67.41**	**58.59**
Auxiliary Equipment Energy Use for Information and Cultural Industries (PJ)	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Energy Use by Energy Source (PJ)																			
Electricity	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	94.3	94.1	94.3	93.7	92.7	92.4	92.1	92.8	92.7	94.5	94.3	94.5	94.5	94.3	94.5	94.5	97.2	92.8	92.8
Natural Gas	0.0	0.0	0.0	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.3	0.9	1.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	5.7	5.9	5.7	5.9	6.9	7.1	7.4	6.8	6.8	4.9	5.1	5.0	4.9	4.9	4.8	4.8	2.5	6.4	6.2
Activity																			
Floor Space (million m^2)	0.71	0.72	0.73	0.74	0.75	0.77	0.78	0.79	0.79	0.81	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.84	0.85
Energy Intensity (MJ/m^2)	**184.81**	**197.61**	**190.50**	**220.52**	**229.65**	**220.33**	**213.79**	**227.30**	**229.24**	**244.26**	**245.34**	**252.71**	**226.63**	**230.64**	**250.91**	**243.31**	**252.11**	**223.97**	**241.03**
Water Heating Energy Use for Information and Cultural Industries (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	1.5	1.5	1.5	1.3	5.0	5.0	5.9	5.8	5.0	6.2	13.0	7.8	5.0	5.0	5.7	5.7	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	1.5	1.4	2.1	3.3	2.7	9.5	15.9	18.2	30.1	43.3	56.8	48.5	46.9	52.2	60.7	57.7
Light Fuel Oil and Kerosene	57.4	52.3	56.2	61.7	59.4	55.9	49.2	57.6	29.6	9.7	13.8	21.8	9.3	7.4	9.2	8.0	5.1	3.4	1.8
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	41.1	46.2	42.3	35.4	34.2	37.1	41.6	34.0	55.9	68.2	55.1	40.3	42.4	30.8	36.6	39.4	37.8	30.9	35.5
Activity																			
Floor Space (million m^2)	0.71	0.72	0.73	0.74	0.75	0.77	0.78	0.79	0.79	0.81	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.84	0.85
Energy Intensity (MJ/m^2)	**94.84**	**88.97**	**85.37**	**105.68**	**111.31**	**96.32**	**85.41**	**94.92**	**89.95**	**78.56**	**81.33**	**101.73**	**104.45**	**78.92**	**83.38**	**83.68**	**73.33**	**65.58**	**70.79**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 42: Information and Cultural Industries Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Information and Cultural Industries (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**
Energy Use by Energy Source (PJ)																			
Electricity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	0.48	0.50	0.52	0.54	0.56	0.58	0.60	0.61	0.62	0.64	0.65	0.66	0.66	0.67	0.67	0.67	0.68	0.69	0.71
Energy Intensity (MJ/m^2)	**128.46**	**169.62**	**143.98**	**173.92**	**136.12**	**168.45**	**122.30**	**111.18**	**124.37**	**84.31**	**101.82**	**85.35**	**162.55**	**139.06**	**139.54**	**160.90**	**168.96**	**171.76**	**213.35**
Space Heating Energy Use for Information and Cultural Industries (PJ)	**0.6**	**0.6**	**0.6**	**0.6**	**0.8**	**0.6**	**0.5**	**0.7**	**0.6**	**0.5**	**0.4**	**0.6**	**0.6**	**0.5**	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**
Energy Use by Energy Source (PJ)																			
Electricity	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2
Light Fuel Oil and Kerosene	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Heavy Fuel Oil	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	25.4	15.9	23.8	26.4	27.7	28.2	25.0	44.0	41.7	40.6	30.3	31.3	32.1	27.9	39.1	35.0	34.4	44.8	45.1
Natural Gas	0.0	0.0	0.0	2.8	3.5	7.1	7.6	7.2	13.0	17.1	22.2	27.6	28.1	34.9	24.0	25.6	32.6	34.5	35.7
Light Fuel Oil and Kerosene	48.0	57.6	55.5	44.7	39.5	28.6	20.6	6.5	3.5	8.0	13.0	15.9	7.6	23.5	22.6	21.9	15.9	9.8	5.7
Heavy Fuel Oil	10.5	5.8	1.8	7.8	15.3	22.3	29.1	26.8	23.2	11.0	9.3	10.5	21.5	1.9	3.1	4.1	2.4	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	16.0	20.6	19.0	18.3	14.0	13.9	17.7	15.4	18.6	23.4	25.2	14.7	10.7	11.8	11.2	13.3	14.6	10.9	13.6
Activity																			
Floor Space (million m^2)	0.71	0.72	0.73	0.74	0.75	0.77	0.78	0.79	0.79	0.81	0.82	0.82	0.83	0.83	0.83	0.83	0.83	0.84	0.85
Energy Intensity (MJ/m^2)	**797.51**	**785.01**	**786.41**	**762.45**	**1,005.57**	**801.84**	**691.99**	**838.91**	**727.96**	**577.30**	**461.75**	**688.16**	**669.24**	**601.15**	**671.61**	**709.42**	**667.52**	**634.88**	**571.74**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 43: Offices1 Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use[2] for Offices[1] (PJ)	**3.6**	**3.6**	**3.5**	**3.5**	**3.3**	**3.2**	**3.1**	**3.3**	**3.3**	**3.4**	**3.4**	**2.9**	**3.0**	**3.0**	**3.2**	**3.2**	**3.1**	**3.4**	**3.5**
Activity																			
Floor Space (million m^2)	15.28	15.61	15.81	16.16	16.43	16.74	17.03	17.30	17.51	17.86	18.05	18.25	18.53	18.65	18.63	18.67	18.67	18.81	18.84
Energy Intensity (MJ/m^2)	**232.37**	**229.80**	**222.20**	**219.05**	**203.03**	**191.49**	**183.72**	**192.53**	**191.26**	**187.59**	**187.58**	**159.99**	**161.95**	**162.67**	**173.49**	**171.04**	**164.08**	**179.14**	**184.50**
Auxiliary Motors Energy Use[2] for Offices[1] (PJ)	**1.2**	**1.1**	**1.0**	**1.1**	**1.1**	**1.0**	**0.9**	**0.9**	**0.9**	**1.0**	**0.8**	**1.1**	**0.9**	**0.7**	**0.9**	**0.9**	**0.8**	**0.8**	**0.7**
Activity																			
Floor Space (million m^2)	15.28	15.61	15.81	16.16	16.43	16.74	17.03	17.30	17.51	17.86	18.05	18.25	18.53	18.65	18.63	18.67	18.67	18.81	18.84
Energy Intensity (MJ/m^2)	**81.36**	**68.17**	**65.84**	**68.37**	**64.19**	**60.87**	**50.41**	**52.86**	**52.65**	**57.59**	**46.90**	**58.39**	**46.69**	**37.00**	**49.01**	**45.98**	**42.59**	**42.38**	**36.84**
Auxiliary Equipment Energy Use for Offices[1] (PJ)	**2.7**	**2.9**	**2.8**	**3.4**	**3.2**	**3.5**	**3.6**	**3.7**	**3.8**	**3.8**	**4.0**	**3.5**	**3.5**	**3.3**	**3.5**	**3.4**	**3.5**	**3.0**	**3.2**
Energy Use by Energy Source (PJ)																			
Electricity	2.5	2.7	2.6	3.1	2.9	3.2	3.3	3.4	3.5	3.6	3.9	3.3	3.4	3.2	3.3	3.3	3.4	2.9	3.1
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[3]	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	92.7	92.7	92.7	92.7	91.7	91.7	91.7	91.7	91.7	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[3]	7.3	7.3	7.3	7.3	8.3	8.3	8.3	8.3	8.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Activity																			
Floor Space (million m^2)	15.28	15.61	15.81	16.16	16.43	16.74	17.03	17.30	17.51	17.86	18.05	18.25	18.53	18.65	18.63	18.67	18.67	18.81	18.84
Energy Intensity (MJ/m^2)	**174.15**	**186.20**	**179.50**	**207.78**	**194.75**	**210.14**	**211.28**	**215.96**	**217.41**	**210.32**	**222.15**	**189.11**	**189.36**	**178.05**	**186.54**	**181.42**	**187.98**	**158.65**	**170.74**
Water Heating Energy Use for Offices[1] (PJ)	**0.5**	**0.5**	**0.5**	**0.7**	**0.5**	**0.5**	**0.5**	**0.6**	**0.5**	**0.5**	**0.6**	**0.7**	**0.6**	**0.5**	**0.5**	**0.5**	**0.4**	**0.4**	**0.4**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.3	0.3	0.3
Light Fuel Oil and Kerosene	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.2	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[3]	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	0.7	1.2	1.4	0.6	3.1	3.4	3.0	3.2	2.5	2.5	2.2	2.3	2.5	5.0	2.3	2.4	4.9	4.9	4.9
Natural Gas	0.0	0.0	0.0	1.9	2.0	3.3	4.7	3.4	12.2	19.5	19.2	31.6	34.3	70.0	74.7	72.2	72.3	78.1	76.2
Light Fuel Oil and Kerosene	59.0	56.1	60.3	64.2	65.4	62.2	55.4	65.3	31.5	12.2	30.0	25.1	6.2	7.0	4.8	4.5	2.8	1.8	1.0
Heavy Fuel Oil	7.8	1.4	0.3	7.3	9.5	13.9	12.2	9.7	22.6	27.0	21.0	20.8	41.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[3]	32.5	41.2	38.0	25.9	20.0	17.2	24.8	18.3	31.1	38.9	27.7	20.1	16.0	18.0	18.1	20.9	20.0	15.2	17.9
Activity																			
Floor Space (million m^2)	15.28	15.61	15.81	16.16	16.43	16.74	17.03	17.30	17.51	17.86	18.05	18.25	18.53	18.65	18.63	18.67	18.67	18.81	18.84
Energy Intensity (MJ/m^2)	**35.96**	**33.41**	**32.06**	**40.56**	**33.39**	**32.55**	**28.87**	**32.08**	**30.40**	**27.11**	**32.54**	**37.00**	**33.98**	**25.34**	**29.14**	**27.81**	**23.55**	**21.06**	**22.73**

1) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.
2) Lighting and auxiliary motors consume only electricity.
3) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 44: Offices1 Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Offices[1] (PJ)	**1.0**	**1.3**	**1.2**	**1.5**	**1.0**	**1.2**	**0.9**	**0.9**	**1.0**	**0.7**	**0.9**	**0.7**	**1.4**	**1.2**	**1.2**	**1.4**	**1.5**	**1.6**	**2.0**
Energy Use by Energy Source (PJ)																			
Electricity	1.0	1.3	1.2	1.5	1.0	1.2	0.9	0.9	1.0	0.7	0.9	0.7	1.4	1.2	1.2	1.4	1.5	1.6	2.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	10.11	10.57	10.94	11.44	11.89	12.37	12.71	13.04	13.32	13.72	13.94	14.16	14.44	14.60	14.65	14.76	14.82	15.09	15.26
Energy Intensity (MJ/m^2)	**96.49**	**127.41**	**108.14**	**130.63**	**81.67**	**100.21**	**73.37**	**66.71**	**74.61**	**50.58**	**61.08**	**51.72**	**98.50**	**84.26**	**84.55**	**97.50**	**102.38**	**104.08**	**129.28**
Space Heating Energy Use for Offices[1] (PJ)	**9.5**	**9.4**	**9.6**	**11.3**	**10.5**	**9.8**	**8.1**	**9.6**	**9.0**	**7.8**	**9.2**	**10.8**	**8.2**	**7.4**	**8.2**	**8.7**	**8.2**	**7.8**	**7.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.6	0.5	0.8	0.5	0.3	0.3	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.4	0.4	0.4	0.5	0.7	0.7
Natural Gas	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.4	1.9	2.7	3.3
Light Fuel Oil and Kerosene	4.5	4.7	4.8	4.9	4.7	4.0	3.6	4.5	5.3	5.2	6.3	6.5	5.0	5.7	5.9	6.1	5.2	4.3	2.9
Heavy Fuel Oil	4.1	4.0	3.8	5.5	5.5	5.5	4.1	4.8	3.5	2.4	2.7	4.1	2.9	1.1	0.8	0.7	0.5	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.2	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
Shares (%)																			
Electricity	6.7	5.4	7.8	4.7	2.8	2.9	4.3	3.0	3.0	2.8	2.1	2.5	3.0	6.1	4.4	4.9	6.1	9.4	9.4
Natural Gas	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.5	16.0	23.1	34.3	46.7
Light Fuel Oil and Kerosene	47.6	49.4	49.9	42.8	44.8	41.2	45.0	47.3	58.4	66.1	68.4	59.7	61.1	77.7	71.9	69.8	63.3	55.0	41.7
Heavy Fuel Oil	43.6	42.5	39.4	48.6	52.4	55.9	50.7	49.7	38.7	31.1	29.4	37.7	35.9	15.3	9.5	8.4	6.3	0.0	0.0
Steam	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	2.0	2.6	2.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.8	0.9	1.3	1.3	2.2
Activity																			
Floor Space (million m^2)	15.28	15.61	15.81	16.16	16.43	16.74	17.03	17.30	17.51	17.86	18.05	18.25	18.53	18.65	18.63	18.67	18.67	18.81	18.84
Energy Intensity (MJ/m^2)	**621.62**	**605.37**	**605.31**	**701.97**	**637.10**	**582.83**	**475.10**	**554.65**	**515.92**	**437.09**	**507.44**	**592.38**	**441.09**	**394.57**	**440.81**	**465.63**	**438.12**	**416.70**	**375.26**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Offices" includes activities related to finance and insurance; real estate and rental and leasing; professional, scientific and technical services; public administration; and others.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 45: Educational Services Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Educational Services[1] (PJ)*	**1.4**	**1.4**	**1.4**	**1.4**	**1.5**	**1.4**	**1.3**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.2**	**1.2**	**1.3**	**1.3**	**1.3**	**1.4**	**1.4**
Activity																			
Floor Space (million m^2)	6.76	6.83	6.88	6.94	6.97	7.02	7.03	7.00	7.00	7.06	7.24	7.32	7.39	7.43	7.56	7.59	7.57	7.64	7.63
Energy Intensity (MJ/m^2)	**206.34**	**204.05**	**197.30**	**194.51**	**208.71**	**197.98**	**189.98**	**198.81**	**197.79**	**193.89**	**193.94**	**193.91**	**165.48**	**166.25**	**177.25**	**174.73**	**167.63**	**183.01**	**188.48**
Auxiliary Motors Energy Use for Educational Services[1] (PJ)	**0.6**	**0.5**	**0.5**	**0.5**	**0.6**	**0.5**	**0.4**	**0.5**	**0.5**	**0.5**	**0.4**	**0.5**	**0.4**	**0.3**	**0.5**	**0.4**	**0.4**	**0.4**	**0.4**
Activity																			
Floor Space (million m^2)	6.76	6.83	6.88	6.94	6.97	7.02	7.03	7.00	7.00	7.06	7.24	7.32	7.39	7.43	7.56	7.59	7.57	7.64	7.63
Energy Intensity (MJ/m^2)	**86.66**	**72.61**	**70.13**	**72.83**	**79.15**	**75.48**	**62.53**	**65.47**	**65.32**	**71.40**	**58.17**	**72.34**	**57.80**	**45.81**	**60.66**	**56.91**	**52.72**	**56.40**	**49.02**
Auxiliary Equipment Energy Use for Educational Services (PJ)	**1.0**	**1.0**	**1.0**	**1.2**	**1.3**	**1.3**	**1.2**	**1.3**	**1.3**	**1.4**	**1.4**	**1.5**	**1.4**	**1.4**	**1.5**	**1.5**	**1.5**	**1.4**	**1.5**
Energy Use by Energy Source (PJ)																			
Electricity	0.9	1.0	0.9	1.1	1.2	1.1	1.1	1.2	1.2	1.3	1.4	1.4	1.3	1.3	1.5	1.4	1.5	1.3	1.4
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Shares (%)																			
Electricity	92.5	92.2	92.5	92.3	91.3	91.0	90.7	91.4	91.4	95.1	94.9	95.0	95.1	94.9	95.1	95.0	97.4	93.6	93.6
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	7.5	7.8	7.5	7.7	8.7	9.0	9.3	8.6	8.6	4.9	5.1	5.0	4.9	5.1	4.9	5.0	2.6	6.4	6.4
Activity																			
Floor Space (million m^2)	6.76	6.83	6.88	6.94	6.97	7.02	7.03	7.00	7.00	7.06	7.24	7.32	7.39	7.43	7.56	7.59	7.57	7.64	7.63
Energy Intensity (MJ/m^2)	**142.64**	**152.52**	**147.03**	**170.19**	**184.67**	**178.19**	**172.94**	**183.60**	**185.45**	**197.48**	**198.42**	**204.17**	**182.95**	**186.23**	**202.53**	**196.38**	**203.48**	**180.77**	**194.54**
Water Heating Energy Use for Educational Services (PJ)	**0.6**	**0.5**	**0.5**	**0.6**	**0.7**	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**	**0.7**	**0.7**	**0.5**	**0.6**	**0.6**	**0.5**	**0.5**	**0.5**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.4
Light Fuel Oil and Kerosene	0.3	0.3	0.3	0.4	0.5	0.4	0.3	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	2.7	1.8	1.6	3.1	6.4	6.2	5.9	6.2	6.4	8.7	17.5	11.1	6.6	5.0	5.9	5.9	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	2.0	2.0	3.3	4.7	3.4	12.2	20.0	23.0	34.3	34.9	69.5	62.0	61.0	66.6	73.6	72.0
Light Fuel Oil and Kerosene	59.7	56.1	60.3	65.9	65.4	62.2	52.4	63.2	31.5	10.1	14.3	20.6	6.3	7.6	9.8	8.7	5.4	3.5	1.9
Heavy Fuel Oil	4.8	0.9	0.1	2.4	6.2	11.1	12.2	8.8	18.8	21.4	12.1	12.1	36.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	32.8	41.2	38.0	26.6	20.0	17.2	24.8	18.3	31.1	39.8	33.2	21.8	16.3	17.9	22.2	24.4	23.0	17.9	21.1
Activity																			
Floor Space (million m^2)	6.76	6.83	6.88	6.94	6.97	7.02	7.03	7.00	7.00	7.06	7.24	7.32	7.39	7.43	7.56	7.59	7.57	7.64	7.63
Energy Intensity (MJ/m^2)	**84.11**	**79.09**	**75.89**	**93.45**	**103.09**	**89.72**	**79.57**	**88.30**	**83.81**	**72.95**	**74.86**	**93.94**	**96.86**	**73.40**	**77.27**	**77.69**	**68.16**	**60.96**	**65.81**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 46: Educational Services Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Educational Services (PJ)	**0.4**	**0.6**	**0.5**	**0.7**	**0.6**	**0.7**	**0.5**	**0.5**	**0.5**	**0.4**	**0.5**	**0.4**	**0.8**	**0.7**	**0.7**	**0.8**	**0.8**	**0.9**	**1.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.4	0.6	0.5	0.7	0.6	0.7	0.5	0.5	0.5	0.4	0.5	0.4	0.8	0.7	0.7	0.8	0.8	0.9	1.1
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	4.33	4.47	4.61	4.75	4.87	5.01	5.07	5.10	5.15	5.24	5.40	5.49	5.56	5.62	5.75	5.79	5.81	5.92	5.97
Energy Intensity (MJ/m^2)	**102.76**	**135.71**	**115.18**	**139.12**	**113.46**	**141.22**	**102.55**	**93.09**	**104.28**	**70.65**	**85.35**	**71.48**	**136.01**	**116.38**	**116.75**	**134.60**	**141.35**	**143.70**	**178.48**
Space Heating Energy Use for Educational Services (PJ)	**4.3**	**4.3**	**4.3**	**4.2**	**5.8**	**4.7**	**4.1**	**4.9**	**4.3**	**3.4**	**2.8**	**4.2**	**4.1**	**3.7**	**4.2**	**4.5**	**4.2**	**4.1**	**3.6**
Energy Use by Energy Source (PJ)																			
Electricity	1.0	0.7	1.1	0.9	1.2	0.7	0.5	1.6	1.4	1.3	0.8	1.2	1.2	0.9	1.5	1.4	2.2	1.3	1.2
Natural Gas	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.6	0.6	0.6	1.2	1.2	1.4	1.1	1.2	1.0	1.7	1.6
Light Fuel Oil and Kerosene	2.1	2.4	2.4	2.0	2.6	1.6	1.0	0.4	0.2	0.3	0.4	0.7	0.3	0.9	1.0	1.0	0.5	0.5	0.3
Heavy Fuel Oil	0.5	0.2	0.1	0.4	1.0	1.2	1.4	1.6	1.1	0.4	0.3	0.5	0.9	0.1	0.1	0.2	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.7	0.9	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.8	0.7	0.6	0.5	0.5	0.5	0.6	0.5	0.5	0.6
Shares (%)																			
Electricity	23.8	17.3	25.1	20.5	19.8	15.9	11.5	32.9	33.4	38.1	27.1	28.4	29.4	24.6	36.1	32.0	51.2	33.0	33.3
Natural Gas	0.0	0.0	0.0	3.0	3.8	8.3	8.9	8.7	14.8	17.8	23.2	28.8	29.2	36.5	25.2	26.8	24.3	41.9	43.4
Light Fuel Oil and Kerosene	49.0	56.7	54.5	48.2	43.8	33.5	24.4	7.8	4.0	8.3	13.6	16.5	7.9	24.6	23.7	22.9	11.8	11.9	6.9
Heavy Fuel Oil	10.8	5.7	1.7	8.4	17.0	26.1	34.4	32.1	26.4	11.5	9.7	10.9	22.3	2.0	3.3	4.3	1.8	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	16.4	20.3	18.6	19.8	15.6	16.3	20.9	18.5	21.2	24.3	26.3	15.3	11.2	12.4	11.8	14.0	10.9	13.2	16.5
Activity																			
Floor Space (million m^2)	6.76	6.83	6.88	6.94	6.97	7.02	7.03	7.00	7.00	7.06	7.24	7.32	7.39	7.43	7.56	7.59	7.57	7.64	7.63
Energy Intensity (MJ/m^2)	**637.89**	**628.06**	**629.16**	**607.26**	**835.95**	**670.66**	**580.23**	**702.06**	**609.93**	**483.42**	**384.89**	**574.97**	**559.99**	**503.13**	**561.93**	**593.52**	**558.46**	**531.15**	**478.33**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 47: Health Care and Social Assistance Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Health Care and Social Assistance[1] (PJ)	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.3**	**1.4**	**1.4**	**1.4**	**1.4**	**1.4**	**1.2**	**1.3**	**1.4**	**1.3**	**1.3**	**1.4**	**1.4**
Activity																			
Floor Space (million m^2)	3.87	3.92	3.95	3.92	3.90	3.92	3.98	3.99	3.97	4.00	4.05	4.15	4.22	4.34	4.43	4.40	4.38	4.37	4.32
Energy Intensity (MJ/m^2)	**368.26**	**364.18**	**352.13**	**347.15**	**366.57**	**346.95**	**332.91**	**348.60**	**346.63**	**339.89**	**339.91**	**340.00**	**290.22**	**291.60**	**310.93**	**306.53**	**294.07**	**321.06**	**330.66**
Auxiliary Motors Energy Use for Health Care and Social Assistance[1] (PJ)	**0.5**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.3**	**0.4**	**0.4**	**0.3**	**0.4**	**0.4**	**0.3**	**0.4**	**0.3**
Activity																			
Floor Space (million m^2)	3.87	3.92	3.95	3.92	3.90	3.92	3.98	3.99	3.97	4.00	4.05	4.15	4.22	4.34	4.43	4.40	4.38	4.37	4.32
Energy Intensity (MJ/m^2)	**126.55**	**106.02**	**102.40**	**106.34**	**113.74**	**108.23**	**89.65**	**93.93**	**93.66**	**102.40**	**83.42**	**103.78**	**82.95**	**65.74**	**87.07**	**81.69**	**75.67**	**85.45**	**74.27**
Auxiliary Equipment Energy Use for Health Care and Social Assistance (PJ)	**1.4**	**1.5**	**1.4**	**1.7**	**1.8**	**1.7**	**1.7**	**1.8**	**1.8**	**1.9**	**2.0**	**2.1**	**1.9**	**1.9**	**2.2**	**2.1**	**2.1**	**1.9**	**2.0**
Energy Use by Energy Source (PJ)																			
Electricity	0.9	1.1	1.0	1.2	1.3	1.3	1.3	1.3	1.3	1.4	1.5	1.6	1.4	1.5	1.7	1.6	1.9	1.4	1.5
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.3	0.5	0.5
Shares (%)																			
Electricity	67.9	71.3	67.6	70.3	73.8	75.3	76.0	71.7	71.7	75.2	76.7	76.5	75.0	78.7	77.6	78.1	88.0	76.3	76.3
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	32.1	28.7	32.4	29.7	26.2	24.7	24.0	28.3	28.3	24.8	23.3	23.5	25.0	21.3	22.4	21.9	12.0	23.7	23.7
Activity																			
Floor Space (million m^2)	3.87	3.92	3.95	3.92	3.90	3.92	3.98	3.99	3.97	4.00	4.05	4.15	4.22	4.34	4.43	4.40	4.38	4.37	4.32
Energy Intensity (MJ/m^2)	**353.60**	**378.13**	**364.52**	**422.00**	**450.62**	**433.85**	**421.02**	**447.27**	**451.53**	**480.96**	**483.16**	**497.37**	**439.28**	**447.16**	**486.38**	**471.64**	**488.70**	**434.15**	**467.23**
Water Heating Energy Use for Health Care and Social Assistance (PJ)	**0.8**	**0.7**	**0.7**	**0.9**	**0.9**	**0.8**	**0.7**	**0.8**	**0.8**	**0.7**	**0.7**	**0.9**	**1.0**	**0.8**	**0.8**	**0.8**	**0.8**	**0.6**	**0.7**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.5	0.5	0.5	0.5	0.5	0.5
Light Fuel Oil and Kerosene	0.5	0.4	0.4	0.6	0.6	0.5	0.4	0.5	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1
Shares (%)																			
Electricity	2.7	1.8	1.6	3.1	6.4	6.2	5.9	6.2	6.4	8.7	17.5	11.1	6.6	5.0	5.9	5.9	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	2.0	2.0	3.3	4.7	3.4	12.2	20.0	23.0	34.3	34.9	69.5	62.0	61.0	66.6	73.6	72.0
Light Fuel Oil and Kerosene	59.7	56.1	60.3	65.9	65.4	62.2	52.4	63.2	31.5	10.1	14.3	20.6	6.3	7.6	9.8	8.7	5.4	3.5	1.9
Heavy Fuel Oil	4.8	0.9	0.1	2.4	6.2	11.1	12.2	8.8	18.8	21.4	12.1	12.1	36.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	32.8	41.2	38.0	26.6	20.0	17.2	24.8	18.3	31.1	39.8	33.2	21.8	16.3	17.9	22.2	24.4	23.0	17.9	21.1
Activity																			
Floor Space (million m^2)	3.87	3.92	3.95	3.92	3.90	3.92	3.98	3.99	3.97	4.00	4.05	4.15	4.22	4.34	4.43	4.40	4.38	4.37	4.32
Energy Intensity (MJ/m^2)	**201.54**	**189.50**	**181.83**	**223.91**	**243.10**	**211.08**	**187.20**	**207.87**	**197.18**	**171.69**	**176.16**	**221.14**	**235.27**	**178.29**	**187.73**	**188.75**	**178.08**	**141.07**	**152.27**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 48: Health Care and Social Assistance Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Health Care and Social Assistance (PJ)	**0.4**	**0.6**	**0.5**	**0.6**	**0.5**	**0.7**	**0.5**	**0.5**	**0.5**	**0.4**	**0.4**	**0.4**	**0.7**	**0.6**	**0.7**	**0.8**	**0.8**	**0.8**	**1.0**
Energy Use by Energy Source (PJ)																			
Electricity	0.4	0.6	0.5	0.6	0.5	0.7	0.5	0.5	0.5	0.4	0.4	0.4	0.7	0.6	0.7	0.8	0.8	0.8	1.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	2.62	2.71	2.79	2.83	2.88	2.96	3.03	3.07	3.09	3.14	3.20	3.29	3.36	3.47	3.56	3.55	3.55	3.58	3.57
Energy Intensity (MJ/m^2)	**166.35**	**219.75**	**186.51**	**225.27**	**180.68**	**224.49**	**162.92**	**148.00**	**165.70**	**112.30**	**135.65**	**113.41**	**215.87**	**184.72**	**185.33**	**213.69**	**224.39**	**228.12**	**283.35**
Space Heating Energy Use for Health Care and Social Assistance (PJ)	**3.9**	**3.9**	**3.9**	**3.6**	**5.1**	**4.2**	**3.7**	**4.4**	**3.8**	**2.9**	**1.9**	**3.4**	**3.7**	**3.4**	**3.9**	**4.1**	**3.8**	**3.6**	**3.2**
Energy Use by Energy Source (PJ)																			
Electricity	1.1	0.9	1.4	0.8	1.0	0.6	0.4	1.2	1.0	1.1	0.6	1.0	1.0	0.4	0.6	0.6	0.6	0.8	0.7
Natural Gas	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
Light Fuel Oil and Kerosene	1.8	1.9	1.9	1.9	2.5	1.9	1.7	1.8	1.6	1.2	0.8	1.4	1.5	2.8	3.1	3.2	3.0	2.6	2.1
Heavy Fuel Oil	1.0	1.0	0.6	0.7	1.4	1.4	1.3	1.2	1.0	0.5	0.6	1.0	1.0	0.1	0.1	0.1	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Shares (%)																			
Electricity	26.9	23.6	35.0	23.5	19.4	15.3	11.1	26.1	27.3	36.3	28.3	28.2	27.6	13.2	15.8	14.8	14.8	22.0	21.9
Natural Gas	0.0	0.0	0.0	2.5	3.0	6.0	5.2	4.5	3.1	3.2	1.5	1.7	3.5	2.8	2.0	2.2	3.7	5.8	9.7
Light Fuel Oil and Kerosene	45.8	47.9	47.3	52.9	48.6	44.5	46.9	39.6	42.9	42.7	40.3	40.4	41.1	81.8	79.1	78.9	77.6	70.9	65.8
Heavy Fuel Oil	25.3	25.9	15.1	18.8	27.2	32.4	35.0	28.2	25.0	16.2	29.3	29.2	26.8	1.5	2.5	3.4	2.7	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	1.9	2.6	2.6	2.3	1.8	1.8	1.8	1.6	1.7	1.6	0.7	0.5	1.0	0.7	0.7	0.8	1.2	1.3	2.6
Activity																			
Floor Space (million m^2)	3.87	3.92	3.95	3.92	3.90	3.92	3.98	3.99	3.97	4.00	4.05	4.15	4.22	4.34	4.43	4.40	4.38	4.37	4.32
Energy Intensity (MJ/m^2)	**1,020.21**	**999.82**	**995.29**	**916.72**	**1,311.09**	**1,062.73**	**921.90**	**1,110.43**	**961.11**	**728.74**	**480.68**	**825.67**	**876.03**	**787.33**	**879.46**	**928.95**	**874.08**	**831.34**	**748.66**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 49: Arts, Entertainment and Recreation Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Arts, Entertainment and Recreation[1] (PJ)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Activity																			
Floor Space (million m^2)	0.72	0.74	0.75	0.76	0.76	0.78	0.79	0.80	0.80	0.85	0.86	0.88	0.90	0.92	0.93	0.94	0.95	0.97	0.97
Energy Intensity (MJ/m^2)	**234.65**	**232.05**	**224.38**	**221.20**	**227.80**	**214.86**	**206.13**	**216.02**	**214.59**	**210.48**	**210.47**	**210.65**	**179.91**	**180.72**	**192.73**	**190.01**	**182.28**	**199.01**	**204.96**
Auxiliary Motors Energy Use for Arts, Entertainment and Recreation[1] (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Activity																			
Floor Space (million m^2)	0.72	0.74	0.75	0.76	0.76	0.78	0.79	0.80	0.80	0.85	0.86	0.88	0.90	0.92	0.93	0.94	0.95	0.97	0.97
Energy Intensity (MJ/m^2)	**98.55**	**82.57**	**79.74**	**82.82**	**86.38**	**81.92**	**67.84**	**71.14**	**70.86**	**77.50**	**63.13**	**78.58**	**62.84**	**49.79**	**65.96**	**61.88**	**57.32**	**61.33**	**53.31**
Auxiliary Equipment Energy Use for Arts, Entertainment and Recreation (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Energy Use by Energy Source (PJ)																			
Electricity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	94.7	94.7	94.7	94.3	93.3	93.3	93.3	93.3	93.0	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5
Natural Gas	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.6	0.7
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	5.3	5.3	5.3	5.3	6.3	6.3	6.3	6.3	6.5	5.0	5.0	5.0	5.0	4.9	4.9	4.9	5.0	4.9	4.8
Activity																			
Floor Space (million m^2)	0.72	0.74	0.75	0.76	0.76	0.78	0.79	0.80	0.80	0.85	0.86	0.88	0.90	0.92	0.93	0.94	0.95	0.97	0.97
Energy Intensity (MJ/m^2)	**162.71**	**173.98**	**167.72**	**194.14**	**202.18**	**193.98**	**188.22**	**200.12**	**201.83**	**215.05**	**216.00**	**222.48**	**199.52**	**203.05**	**220.90**	**214.21**	**221.96**	**197.18**	**212.21**
Water Heating Energy Use for Arts, Entertainment and Recreation (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	2.0	1.6	1.5	2.1	5.5	5.4	5.7	5.8	5.5	6.8	13.1	8.8	5.8	5.0	5.7	5.7	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	1.6	1.5	2.3	3.5	2.8	9.1	14.7	17.6	29.1	35.2	57.6	49.3	47.6	52.7	61.0	57.9
Light Fuel Oil and Kerosene	52.3	48.7	53.8	57.6	53.5	47.6	42.2	52.7	24.4	7.5	11.3	18.1	6.3	6.2	7.7	6.7	4.2	2.9	1.5
Heavy Fuel Oil	2.0	0.4	0.1	1.0	2.4	3.9	4.6	3.5	7.0	7.8	4.6	5.1	18.2	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	43.8	49.3	44.6	37.8	37.1	40.9	43.9	35.2	54.0	63.1	53.3	38.9	34.5	31.2	37.2	40.0	38.1	31.1	35.6
Activity																			
Floor Space (million m^2)	0.72	0.74	0.75	0.76	0.76	0.78	0.79	0.80	0.80	0.85	0.86	0.88	0.90	0.92	0.93	0.94	0.95	0.97	0.97
Energy Intensity (MJ/m^2)	**76.62**	**71.95**	**69.04**	**85.27**	**90.01**	**77.89**	**69.06**	**76.76**	**72.74**	**63.48**	**65.73**	**82.07**	**84.35**	**63.82**	**67.41**	**67.66**	**59.30**	**53.03**	**57.24**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 50: Arts, Entertainment and Recreation Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Arts, Entertainment and Recreation (PJ)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	0.24	0.25	0.26	0.27	0.27	0.28	0.29	0.30	0.30	0.32	0.33	0.34	0.35	0.35	0.36	0.37	0.37	0.38	0.39
Energy Intensity (MJ/m^2)	**116.87**	**154.32**	**130.99**	**158.22**	**123.84**	**153.25**	**111.25**	**101.15**	**113.15**	**76.70**	**92.63**	**77.65**	**147.88**	**126.51**	**126.94**	**146.38**	**153.71**	**156.26**	**194.09**
Space Heating Energy Use for Arts, Entertainment and Recreation (PJ)	**0.5**	**0.5**	**0.5**	**0.5**	**0.7**	**0.6**	**0.5**	**0.6**	**0.5**	**0.4**	**0.4**	**0.6**	**0.5**	**0.5**	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**
Energy Use by Energy Source (PJ)																			
Electricity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2
Light Fuel Oil and Kerosene	0.3	0.3	0.3	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Heavy Fuel Oil	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	25.4	19.1	26.7	22.3	21.4	17.8	13.5	34.9	35.6	40.6	30.1	31.1	31.8	27.7	38.8	34.7	34.1	44.5	44.8
Natural Gas	0.0	0.0	0.0	2.9	3.8	8.2	8.7	8.4	14.4	17.0	22.3	27.7	28.2	35.0	24.1	25.7	32.8	34.7	35.9
Light Fuel Oil and Kerosene	48.0	55.5	53.4	47.2	42.9	32.7	23.8	7.6	3.9	8.0	13.0	15.9	7.6	23.6	22.7	22.0	16.0	9.9	5.7
Heavy Fuel Oil	10.5	5.6	1.7	8.2	16.7	25.5	33.6	31.2	25.6	11.0	9.3	10.5	21.6	1.9	3.1	4.1	2.4	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	16.0	19.9	18.2	19.4	15.2	15.9	20.4	18.0	20.5	23.4	25.3	14.8	10.8	11.8	11.3	13.4	14.7	11.0	13.7
Activity																			
Floor Space (million m^2)	0.72	0.74	0.75	0.76	0.76	0.78	0.79	0.80	0.80	0.85	0.86	0.88	0.90	0.92	0.93	0.94	0.95	0.97	0.97
Energy Intensity (MJ/m^2)	**725.53**	**714.29**	**715.51**	**691.49**	**912.85**	**728.07**	**629.52**	**762.89**	**661.87**	**525.20**	**419.92**	**625.92**	**608.84**	**546.90**	**610.99**	**645.39**	**607.27**	**577.58**	**520.14**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 51: Accommodation and Food Services Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Accommodation and Food Services[1] (PJ)	**0.6**	**0.6**	**0.6**	**0.6**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.6**	**0.6**	**0.7**	**0.7**	**0.6**	**0.7**	**0.7**
Activity																			
Floor Space (million m^2)	1.92	1.95	1.99	2.01	2.09	2.15	2.25	2.28	2.30	2.33	2.34	2.36	2.38	2.40	2.40	2.45	2.48	2.55	2.56
Energy Intensity (MJ/m^2)	**334.49**	**330.78**	**319.84**	**315.31**	**324.71**	**306.27**	**293.83**	**307.93**	**305.90**	**300.04**	**300.01**	**300.27**	**256.45**	**257.60**	**274.72**	**270.85**	**259.83**	**283.68**	**292.16**
Auxiliary Motors Energy Use for Accommodation and Food Services[1] (PJ)	**0.3**	**0.2**	**0.2**	**0.2**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.2**	**0.3**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Activity																			
Floor Space (million m^2)	1.92	1.95	1.99	2.01	2.09	2.15	2.25	2.28	2.30	2.33	2.34	2.36	2.38	2.40	2.40	2.45	2.48	2.55	2.56
Energy Intensity (MJ/m^2)	**136.65**	**114.49**	**110.58**	**114.84**	**119.78**	**113.59**	**94.07**	**98.64**	**98.26**	**107.47**	**87.53**	**108.96**	**87.14**	**69.05**	**91.46**	**85.81**	**79.49**	**85.04**	**73.92**
Auxiliary Equipment Energy Use for Accommodation and Food Services (PJ)	**0.4**	**0.5**	**0.5**	**0.5**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.8**	**0.7**	**0.8**
Energy Use by Energy Source (PJ)																			
Electricity	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	84.2	83.7	84.2	83.9	84.1	83.6	83.1	84.2	84.1	86.5	86.0	86.3	86.4	86.0	86.4	86.4	92.6	82.7	82.7
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	15.8	16.3	15.8	16.1	15.9	16.4	16.9	15.8	15.9	13.5	14.0	13.7	13.6	14.0	13.6	13.6	7.4	17.3	17.3
Activity																			
Floor Space (million m^2)	1.92	1.95	1.99	2.01	2.09	2.15	2.25	2.28	2.30	2.33	2.34	2.36	2.38	2.40	2.40	2.45	2.48	2.55	2.56
Energy Intensity (MJ/m^2)	**225.24**	**240.86**	**232.19**	**268.80**	**279.93**	**268.58**	**260.60**	**277.07**	**279.44**	**297.74**	**299.06**	**308.03**	**278.60**	**283.52**	**308.45**	**299.10**	**309.92**	**275.32**	**296.30**
Water Heating Energy Use for Accommodation and Food Services (PJ)	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.3**	**0.3**	**0.4**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Light Fuel Oil and Kerosene	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	2.0	1.6	1.5	2.1	5.5	5.4	5.7	5.8	5.5	6.8	13.1	8.8	5.8	5.0	5.7	5.7	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	1.6	1.5	2.3	3.5	2.8	9.1	14.7	17.6	29.1	35.2	57.6	49.3	47.6	52.7	61.0	57.9
Light Fuel Oil and Kerosene	52.3	48.7	53.8	57.6	53.5	47.6	42.2	52.7	24.4	7.5	11.3	18.1	6.3	6.2	7.7	6.7	4.2	2.9	1.5
Heavy Fuel Oil	2.0	0.4	0.1	1.0	2.4	3.9	4.6	3.5	7.0	7.8	4.6	5.1	18.2	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	43.8	49.3	44.6	37.8	37.1	40.9	43.9	35.2	54.0	63.1	53.3	38.9	34.5	31.2	37.2	40.0	38.1	31.1	35.6
Activity																			
Floor Space (million m^2)	1.92	1.95	1.99	2.01	2.09	2.15	2.25	2.28	2.30	2.33	2.34	2.36	2.38	2.40	2.40	2.45	2.48	2.55	2.56
Energy Intensity (MJ/m^2)	**153.49**	**144.14**	**138.30**	**170.83**	**180.32**	**156.03**	**138.36**	**153.77**	**145.72**	**127.18**	**131.68**	**164.42**	**168.98**	**127.86**	**135.04**	**135.55**	**118.79**	**106.24**	**114.68**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 52: Accommodation and Food Services Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Accommodation and Food Services (PJ)	**0.2**	**0.3**	**0.3**	**0.4**	**0.3**	**0.4**	**0.3**	**0.3**	**0.3**	**0.2**	**0.3**	**0.2**	**0.4**	**0.4**	**0.4**	**0.4**	**0.5**	**0.5**	**0.6**
Energy Use by Energy Source (PJ)																			
Electricity	0.2	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.4	0.4	0.4	0.4	0.5	0.5	0.6
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	1.43	1.49	1.55	1.60	1.70	1.79	1.89	1.94	1.97	2.02	2.03	2.06	2.09	2.11	2.13	2.18	2.22	2.30	2.34
Energy Intensity (MJ/m^2)	**161.68**	**213.57**	**181.26**	**218.93**	**171.26**	**212.04**	**153.85**	**139.89**	**156.47**	**106.07**	**128.10**	**107.17**	**204.10**	**174.60**	**175.21**	**202.02**	**212.14**	**215.67**	**267.88**
Space Heating Energy Use for Accommodation and Food Services (PJ)	**1.9**	**1.9**	**1.9**	**1.8**	**2.6**	**2.2**	**2.0**	**2.4**	**2.1**	**1.6**	**1.1**	**1.8**	**2.0**	**1.8**	**2.0**	**2.1**	**2.0**	**2.0**	**1.8**
Energy Use by Energy Source (PJ)																			
Electricity	0.6	0.5	0.7	0.5	0.6	0.4	0.3	0.7	0.7	0.6	0.4	0.5	0.6	0.3	0.4	0.4	0.3	0.5	0.5
Natural Gas	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.2
Light Fuel Oil and Kerosene	0.8	0.9	0.9	0.9	1.2	0.9	0.9	0.9	0.8	0.7	0.4	0.7	0.8	1.4	1.5	1.7	1.5	1.4	1.1
Heavy Fuel Oil	0.5	0.5	0.3	0.3	0.7	0.7	0.7	0.6	0.5	0.3	0.3	0.5	0.5	0.0	0.0	0.1	0.1	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	29.3	27.4	38.2	27.6	22.5	18.5	14.8	29.3	31.2	36.8	37.2	28.6	30.7	15.2	18.2	17.0	17.0	25.0	24.9
Natural Gas	0.0	0.0	0.0	2.3	2.9	5.8	5.0	4.3	2.9	3.2	1.3	1.7	3.4	2.8	1.9	2.1	3.6	5.6	9.3
Light Fuel Oil and Kerosene	44.3	45.6	45.0	50.1	46.7	42.8	44.9	37.9	40.6	42.3	35.3	40.2	39.3	79.9	76.9	76.8	75.6	68.2	63.2
Heavy Fuel Oil	24.5	24.6	14.4	17.8	26.2	31.2	33.5	26.9	23.7	16.1	25.6	29.1	25.7	1.5	2.4	3.3	2.7	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	1.9	2.4	2.5	2.1	1.7	1.7	1.8	1.5	1.6	1.6	0.6	0.5	0.9	0.7	0.6	0.8	1.2	1.3	2.5
Activity																			
Floor Space (million m^2)	1.92	1.95	1.99	2.01	2.09	2.15	2.25	2.28	2.30	2.33	2.34	2.36	2.38	2.40	2.40	2.45	2.48	2.55	2.56
Energy Intensity (MJ/m^2)	**992.26**	**972.77**	**968.56**	**896.81**	**1,244.78**	**1,004.53**	**870.65**	**1,049.71**	**907.82**	**688.69**	**471.84**	**780.80**	**828.33**	**744.23**	**831.45**	**878.26**	**826.38**	**785.98**	**707.81**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 53: Other Services Non-Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lighting Energy Use for Other Services[1] (PJ)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**	**0.2**
Activity																			
Floor Space (million m^2)	1.35	1.34	1.34	1.34	1.33	1.31	1.29	1.28	1.26	1.24	1.21	1.20	1.17	1.14	1.11	1.08	1.05	1.03	1.01
Energy Intensity (MJ/m^2)	**171.42**	**169.52**	**163.91**	**161.59**	**166.41**	**156.96**	**150.58**	**157.81**	**156.77**	**153.76**	**153.75**	**153.88**	**131.43**	**132.02**	**140.79**	**138.80**	**133.16**	**145.38**	**149.73**
Auxiliary Motors Energy Use for Other Services[1] (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**
Activity																			
Floor Space (million m^2)	1.35	1.34	1.34	1.34	1.33	1.31	1.29	1.28	1.26	1.24	1.21	1.20	1.17	1.14	1.11	1.08	1.05	1.03	1.01
Energy Intensity (MJ/m^2)	**77.03**	**64.54**	**62.33**	**64.73**	**67.52**	**64.03**	**53.03**	**55.61**	**55.39**	**60.58**	**49.34**	**61.42**	**49.12**	**38.92**	**51.56**	**48.37**	**44.81**	**47.94**	**41.67**
Auxiliary Equipment Energy Use for Other Services (PJ)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Energy Use by Energy Source (PJ)																			
Electricity	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	94.7	94.7	94.7	94.3	93.3	93.3	93.3	93.3	93.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0	94.0
Natural Gas	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.6	0.7
Light Fuel Oil and Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	5.3	5.3	5.3	5.3	6.3	6.3	6.3	6.3	6.5	5.5	5.5	5.5	5.5	5.4	5.4	5.4	5.5	5.4	5.3
Activity																			
Floor Space (million m^2)	1.35	1.34	1.34	1.34	1.33	1.31	1.29	1.28	1.26	1.24	1.21	1.20	1.17	1.14	1.11	1.08	1.05	1.03	1.01
Energy Intensity (MJ/m^2)	**127.19**	**135.99**	**131.10**	**151.75**	**158.04**	**151.63**	**147.12**	**156.42**	**157.76**	**168.09**	**168.84**	**173.90**	**155.96**	**158.72**	**172.67**	**167.44**	**173.49**	**154.13**	**165.87**
Water Heating Energy Use for Other Services (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**
Energy Use by Energy Source (PJ)																			
Electricity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Light Fuel Oil and Kerosene	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heavy Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	2.7	1.8	1.6	3.1	6.4	6.2	5.9	6.2	6.4	8.7	17.5	11.1	6.6	5.0	5.9	5.9	5.0	5.0	5.0
Natural Gas	0.0	0.0	0.0	2.0	2.0	3.3	4.7	3.4	12.2	20.0	23.0	34.3	34.9	69.5	62.0	61.0	66.6	73.6	72.0
Light Fuel Oil and Kerosene	59.7	56.1	60.3	65.9	65.4	62.2	52.4	63.2	31.5	10.1	14.3	20.6	6.3	7.6	9.8	8.7	5.4	3.5	1.9
Heavy Fuel Oil	4.8	0.9	0.1	2.4	6.2	11.1	12.2	8.8	18.8	21.4	12.1	12.1	36.0	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[2]	32.8	41.2	38.0	26.6	20.0	17.2	24.8	18.3	31.1	39.8	33.2	21.8	16.3	17.9	22.2	24.4	23.0	17.9	21.1
Activity																			
Floor Space (million m^2)	1.35	1.34	1.34	1.34	1.33	1.31	1.29	1.28	1.26	1.24	1.21	1.20	1.17	1.14	1.11	1.08	1.05	1.03	1.01
Energy Intensity (MJ/m^2)	**63.55**	**59.76**	**57.34**	**70.60**	**74.76**	**64.69**	**57.36**	**63.75**	**60.41**	**52.62**	**53.98**	**67.80**	**69.96**	**53.01**	**55.82**	**56.13**	**49.25**	**44.05**	**47.54**

1) Lighting and auxiliary motors consume only electricity.
2) "Other" includes coal and propane.

Commercial/Institutional Sector

Atlantic

Table 54: Other Services Space Conditioning Secondary Energy Use by End Use and by Energy Source

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Space Cooling Energy Use for Other Services (PJ)	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Energy Use by Energy Source (PJ)																			
Electricity	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares (%)																			
Electricity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Activity																			
Floor Space (million m^2)	0.59	0.60	0.61	0.62	0.63	0.64	0.63	0.63	0.63	0.62	0.62	0.61	0.60	0.59	0.57	0.56	0.55	0.54	0.54
Energy Intensity (MJ/m^2)	**91.36**	**120.63**	**102.39**	**123.66**	**96.77**	**119.77**	**86.95**	**79.05**	**88.42**	**59.94**	**72.40**	**60.71**	**115.62**	**98.91**	**99.25**	**114.44**	**120.18**	**122.17**	**151.75**
Space Heating Energy Use for Other Services (PJ)	**0.8**	**0.7**	**0.7**	**0.7**	**1.0**	**0.7**	**0.6**	**0.8**	**0.7**	**0.5**	**0.4**	**0.6**	**0.6**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.4**
Energy Use by Energy Source (PJ)																			
Electricity	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2
Natural Gas	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1
Light Fuel Oil and Kerosene	0.4	0.4	0.4	0.3	0.4	0.2	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0
Heavy Fuel Oil	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Shares (%)																			
Electricity	25.4	19.1	26.7	22.3	21.4	17.8	13.5	34.9	35.6	40.6	30.1	31.1	31.8	27.7	38.8	34.7	34.1	44.5	44.8
Natural Gas	0.0	0.0	0.0	2.9	3.8	8.2	8.7	8.4	14.4	17.0	22.3	27.7	28.2	35.0	24.1	25.7	32.8	34.7	35.9
Light Fuel Oil and Kerosene	48.0	55.5	53.4	47.2	42.9	32.7	23.8	7.6	3.9	8.0	13.0	15.9	7.6	23.6	22.7	22.0	16.0	9.9	5.7
Heavy Fuel Oil	10.5	5.6	1.7	8.2	16.7	25.5	33.6	31.2	25.6	11.0	9.3	10.5	21.6	1.9	3.1	4.1	2.4	0.0	0.0
Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other[1]	16.0	19.9	18.2	19.4	15.2	15.9	20.4	18.0	20.5	23.4	25.3	14.8	10.8	11.8	11.3	13.4	14.7	11.0	13.7
Activity																			
Floor Space (million m^2)	1.35	1.34	1.34	1.34	1.33	1.31	1.29	1.28	1.26	1.24	1.21	1.20	1.17	1.14	1.11	1.08	1.05	1.03	1.01
Energy Intensity (MJ/m^2)	**567.11**	**558.33**	**559.28**	**542.46**	**715.17**	**570.36**	**493.32**	**597.92**	**518.74**	**411.66**	**329.23**	**490.74**	**477.35**	**428.78**	**479.04**	**506.01**	**476.12**	**452.84**	**407.80**
Heating Degree-Day Index	**0.95**	**0.95**	**0.99**	**0.98**	**1.02**	**0.94**	**0.85**	**0.92**	**0.97**	**0.99**	**0.87**	**0.93**	**0.80**	**0.86**	**0.97**	**1.03**	**0.94**	**1.03**	**0.95**
Cooling Degree-Day Index	**0.99**	**1.63**	**1.34**	**1.59**	**1.18**	**1.70**	**1.39**	**1.10**	**1.66**	**1.60**	**2.20**	**1.22**	**2.24**	**2.03**	**1.92**	**1.98**	**2.03**	**1.99**	**2.78**

1) "Other" includes coal and propane.

Request IR-7:

Residential and Commercial Heating and Heat Pumps (Section 4.4, pp 35-36)

(a) Please provide for all the forecast years:

- **(i) Total number of residential customers,**
- **(ii) Number of customers using primarily electric resistance heating,**
- **(iii) Number of customers using supplemental resistance heating,**
- **(iv) Number of customers using heat pumps for primary heating,**
- **(v) Number of customers using heat pumps for supplemental heating,**
- **(vi) Number of customers using heat pumps for cooling,**
- **(vii) Number of customers using oil for heating,**
- **(viii) Number of customers using natural gas or propane for primary heating,**
- **(ix) Number of customers using other energy sources for primary heating.**

(b) Please indicate the number of new customers from 2022 through 2032 and the breakout of their space heating technology.

(c) Please provide supporting evidence for the 35 percent saturation of customers providing their heat via heat pumps in 2022 (p.36).

(d) Please provide the data sources and the E3 estimates regarding the commercial heat pump saturation forecast.

(e) Please quantify, with underlying calculations, the differences between E3 and the current forecast in regards to peak load impacts as presented in Figure 23.

(f) Please provide more specifics about the work that is underway to collect more detailed data for the residential heat pump forecast as presented in Figure 24.

Response IR-7:

(a) Please see the following table estimating the number of customers for each category:

Year	Existing Residential Customers	Customers with Electric Resistance Primary	Customers with Electric Resistance Supplementary	Customers with Heat Pumps Primary Heating	Customers with Heat Pumps Supplementary	Customers with Heat Pumps for Cooling	Customers with Other Sources of Heating
2022	482,771	91,364	126,330	169,319	20,931	220,153	222,089
2023	482,771	88,199	128,811	183,819	22,723	236,501	210,753
2024	482,771	85,017	131,413	198,516	24,616	253,092	199,238
2025	482,771	81,572	134,411	213,350	26,604	269,867	187,849
2026	482,771	76,814	138,898	228,373	28,618	286,883	177,584
2027	482,771	71,938	143,621	243,584	30,700	304,137	167,249
2028	482,771	67,102	148,380	258,930	32,831	321,557	156,739
2029	482,771	62,222	153,247	274,313	34,991	339,029	146,236
2030	482,771	57,302	158,212	289,737	37,179	356,554	135,732
2031	482,771	52,339	163,276	305,213	39,394	374,147	125,219
2032	482,771	47,383	168,379	320,592	41,612	391,635	114,797

(b) Please refer to the following table estimating the heat sources for new customers (all numbers cumulative). Note that supplementary heating is not broken out for new customers, but is estimated to continue at a share of approximately 35 percent.

Year	New Residential Customers	New Customers with Electric Resistance Heat	New Customers with Heat Pump Heat	New Customers with Non Electric Heating	New Customers with Supplementary Electric Heat
2022	5,751	3,450	1,438	863	2,013
2023	9,694	5,816	2,423	1,454	3,393
2024	13,355	8,013	3,339	2,003	4,674
2025	16,563	9,938	4,141	2,484	5,797
2026	19,293	11,849	4,550	2,894	6,752
2027	21,628	13,483	4,900	3,244	7,570

Year	New Residential Customers	New Customers with Electric Resistance Heat	New Customers with Heat Pump Heat	New Customers with Non Electric Heating	New Customers with Supplementary Electric Heat
2028	23,742	14,963	5,323	3,456	8,310
2029	25,703	16,336	5,715	3,652	8,996
2030	27,526	17,612	6,080	3,834	9,634
2031	29,214	18,794	6,418	4,003	10,225
2032	30,765	19,879	6,728	4,158	10,768

(c) Calculations related to the saturations of end uses are provided in 2022 LFR Attachment 1 Residential Intensities. The heat pump saturation is estimated based on annual sales numbers from heat pump installers in the province.

(d) The data sources are as follows:

- End use intensity data provided by Nova Scotia Power;
- reports from Heritage Gas[1]; and
- EIA Commercial Buildings Energy Consumption Survey (CBECS).

Please refer to Synapse IR-42 Attachment 2 for the heat pump details provided by E3.

(e) Please refer to Attachment 1.

(f) NS Power has been undertaking a study which involves the collection of interval data from heat pumps throughout the province in order to estimate their overall energy consumption as well as their contribution to peak load. Load monitoring devices have been installed across the province and data has been collected. The results of the study will be filed with the NSUARB in M09321.

[1] http://www.heritagegas.com/wp-content/uploads/2019/05/HGAS-3852-01-Gardner-Pinfold-Study-HiRes-WEB.pdf

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

	NS Power HP Energy (GWh)	E3 HP Energy (GWh)	NS Power HP Peak (MW)	E3 HP Peak (MW)	Additional Peak in Forecast (MW)
2025	60	34	26	95	69
2030	147	151	57	289	203

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

	Residential avg use - Current forecast	Residential avg use - no HP growth	Energy Diff	
2012	9,327.70	9,328		
2013	9,729.50	9,730		
2014	9,595.50	9,596		
2015	9,919.98	9,920		
2016	9,501.37	9,501		
2017	9,392.19	9,392		
2018	9,768.50	9,769		
2019	9,841.45	9,841	Existing Customers	
2020	9,703.42	9,703	482,771	
2021	9,587.48	9,587		
2022	9,743.89	9,772	-28	
2023	9,660.85	9,655	3	E3 Current
2024	9,690.49	9,650	19	
2025	9,660.05	9,587	35	2
2026	9,674.41	9,595	38	
2027	9,693.19	9,609	41	
2028	9,756.39	9,664	45	
2029	9,748.54	9,650	47	
2030	9,771.59	9,666	51	55
2031	9,798.09	9,686	54	
2032	9,867.87	9,749	57	

		Peak - Current Fcst	Peak - no Res HP Growth	Difference
2022	1	1,920.47	1,925.53	-5.05
2022	2	1,818.09	1,823.11	-5.01
2022	3	1,615.39	1,619.03	-3.64
2022	4	1,345.46	1,347.37	-1.92
2022	5	1,166.67	1,167.83	-1.16
2022	6	1,058.67	1,059.13	-0.46
2022	7	1,117.55	1,117.83	-0.27
2022	8	1,066.76	1,067.00	-0.23
2022	9	1,052.33	1,052.59	-0.26
2022	10	1,148.90	1,149.74	-0.84
2022	11	1,503.93	1,506.18	-2.24
2022	12	1,813.41	1,817.37	-3.96
2023	1	1,926.13	1,924.15	1.98
2023	2	1,820.27	1,818.24	2.03
2023	3	1,610.44	1,609.23	1.21
2023	4	1,347.45	1,347.25	0.20
2023	5	1,172.61	1,172.79	-0.19
2023	6	1,072.67	1,073.25	-0.58
2023	7	1,108.24	1,108.80	-0.56
2023	8	1,062.12	1,062.61	-0.49
2023	9	1,043.49	1,044.03	-0.54
2023	10	1,144.34	1,144.66	-0.32
2023	11	1,516.37	1,516.09	0.27
2023	12	1,824.56	1,823.39	1.17
2024	1	1,930.63	1,921.48	9.15
2024	2	1,820.71	1,811.52	9.18
2024	3	1,617.57	1,611.35	6.22
2024	4	1,349.77	1,347.39	2.38
2024	5	1,173.12	1,172.29	0.83
2024	6	1,071.51	1,072.20	-0.70
2024	7	1,109.38	1,110.23	-0.85
2024	8	1,062.99	1,063.73	-0.74
2024	9	1,042.72	1,043.53	-0.82
2024	10	1,144.07	1,143.85	0.22
2024	11	1,518.73	1,515.86	2.87
2024	12	1,831.48	1,825.03	6.45
2025	1	1,936.36	1,920.29	16.07
2025	2	1,831.20	1,815.05	16.14
2025	3	1,625.40	1,614.30	11.10
2025	4	1,353.00	1,348.53	4.47
2025	5	1,174.80	1,173.05	1.75
2025	6	1,071.81	1,072.69	-0.88
2025	7	1,112.59	1,113.79	-1.20
2025	8	1,065.55	1,066.59	-1.04
2025	9	1,043.52	1,044.67	-1.15
2025	10	1,145.71	1,145.03	0.69
2025	11	1,523.89	1,518.53	5.36
2025	12	1,841.86	1,830.28	11.58
2026	1	1,942.82	1,925.08	17.74
2026	2	1,836.95	1,819.12	17.83
2026	3	1,633.97	1,621.71	12.26
2026	4	1,358.44	1,353.61	4.82
2026	5	1,178.72	1,176.93	1.79
2026	6	1,074.50	1,075.66	-1.16
2026	7	1,118.11	1,119.60	-1.49
2026	8	1,070.18	1,071.48	-1.29
2026	9	1,046.37	1,047.80	-1.43
2026	10	1,149.09	1,148.48	0.60
2026	11	1,529.76	1,523.96	5.80
2026	12	1,850.73	1,837.99	12.74
2027	1	1,949.93	1,930.71	19.22
2027	2	1,843.47	1,824.14	19.34
2027	3	1,643.31	1,630.01	13.30
2027	4	1,364.88	1,359.76	5.11
2027	5	1,183.68	1,181.89	1.79
2027	6	1,078.32	1,079.77	-1.46
2027	7	1,124.89	1,126.69	-1.79
2027	8	1,075.83	1,077.39	-1.55
2027	9	1,050.07	1,051.79	-1.71
2027	10	1,153.32	1,152.82	0.49
2027	11	1,536.52	1,530.36	6.16
2027	12	1,860.26	1,846.48	13.77
2028	1	1,957.54	1,936.48	21.06
2028	2	1,845.59	1,824.45	21.15
2028	3	1,652.65	1,638.05	14.60
2028	4	1,371.11	1,365.58	5.53
2028	5	1,188.32	1,186.47	1.85
2028	6	1,081.68	1,083.42	-1.74
2028	7	1,131.15	1,133.24	-2.10
2028	8	1,081.04	1,082.86	-1.82
2028	9	1,053.40	1,055.40	-2.01
2028	10	1,157.27	1,156.84	0.42
2028	11	1,543.17	1,536.51	6.66
2028	12	1,869.93	1,854.85	15.08
2029	1	1,965.26	1,942.52	22.74
2029	2	1,857.60	1,834.70	22.90
2029	3	1,662.15	1,646.35	15.80
2029	4	1,377.58	1,371.69	5.89
2029	5	1,193.25	1,191.37	1.88
2029	6	1,085.38	1,087.42	-2.04
2029	7	1,137.84	1,140.24	-2.40
2029	8	1,086.64	1,088.72	-2.08
2029	9	1,057.08	1,059.38	-2.30
2029	10	1,161.65	1,161.32	0.33
2029	11	1,550.45	1,543.34	7.11
2029	12	1,880.37	1,864.08	16.29
2030	1	1,970.53	1,946.11	24.42
2030	2	1,862.55	1,837.96	24.59
2030	3	1,668.84	1,651.81	17.03
2030	4	1,380.84	1,374.51	6.33
2030	5	1,195.05	1,193.03	2.01
2030	6	1,085.83	1,088.05	-2.22
2030	7	1,141.41	1,144.02	-2.61

	Peak Diff	E3 Current
2022	-5.1	
2023	2.0	
2024	9.1	
2025	16.1	31.1
2026	17.7	
2027	19.2	
2028	21.1	
2029	22.7	
2030	24.4	99.7
2031	26.0	
2032	27.5	
	Captured in fcst	0.24

2030	8	1,089.36	1,091.62	-2.26
2030	9	1,057.82	1,060.31	-2.50
2030	10	1,162.86	1,162.51	0.34
2030	11	1,554.05	1,546.40	7.65
2030	12	1,887.20	1,869.65	17.55
2031	1	1,977.23	1,951.24	25.99
2031	2	1,868.87	1,842.70	26.17
2031	3	1,676.51	1,658.32	18.19
2031	4	1,384.89	1,378.15	6.74
2031	5	1,197.49	1,195.37	2.12
2031	6	1,086.84	1,089.25	-2.41
2031	7	1,145.54	1,148.36	-2.82
2031	8	1,092.58	1,095.03	-2.44
2031	9	1,059.03	1,061.73	-2.70
2031	10	1,164.65	1,164.31	0.34
2031	11	1,558.52	1,550.37	8.15
2031	12	1,895.12	1,876.38	18.74
2032	1	1,984.94	1,957.49	27.46
2032	2	1,871.35	1,843.75	27.59
2032	3	1,685.02	1,665.74	19.27
2032	4	1,389.85	1,382.73	7.12
2032	5	1,200.82	1,198.61	2.21
2032	6	1,088.76	1,091.36	-2.60
2032	7	1,150.58	1,153.61	-3.03
2032	8	1,096.63	1,099.25	-2.63
2032	9	1,061.04	1,063.93	-2.90
2032	10	1,167.32	1,167.00	0.32
2032	11	1,564.04	1,555.43	8.60
2032	12	1,904.08	1,884.24	19.84

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

	General Demand - Current forecast	General Demand - no HP growth	Energy Diff	
2012	2465785	2,465,785		
2013	2425576	2,425,576		
2014	2399234	2,399,234		
2015	2411438	2,411,438		
2016	2385133	2,385,133		
2017	2349653	2,349,653		
2018	2447711	2,447,711		
2019	2395106	2,395,106		
2020	2234337	2,234,337		
2021	2297092	2,297,092		
2022	2328758	2,326,263	2,495	E3 Current
2023	2353397	2,344,525	8,872	
2024	2352474	2,336,038	16,436	
2025	2341268	2,316,478	24,790	32.3
2026	2342328	2,308,126	34,202	
2027	2350351	2,305,809	44,542	
2028	2364456	2,308,423	56,033	
2029	2365995	2,298,205	67,790	
2030	2363212	2,282,561	80,651	96
2031	2364139	2,270,334	93,805	
2032	2375581	2,267,901	107,680	

Scaling between model and E3

77%

84%

		Peak - Current Fcst	Peak - no General Demand HP Growth	Peak Diff
2022	1	1,920.47	1,919.46	1.01
2022	2	1,818.09	1,817.08	1.01
2022	3	1,615.39	1,614.68	0.71
2022	4	1,345.46	1,345.12	0.34
2022	5	1,166.67	1,166.49	0.18
2022	6	1,058.67	1,058.64	0.03
2022	7	1,117.55	1,117.55	0.00
2022	8	1,066.76	1,066.76	0.00
2022	9	1,052.33	1,052.33	0.00
2022	10	1,148.90	1,148.79	0.12
2022	11	1,503.93	1,503.53	0.40
2022	12	1,813.41	1,812.64	0.77
2023	1	1,926.13	1,922.52	3.61
2023	2	1,820.27	1,816.66	3.61
2023	3	1,610.44	1,607.88	2.56
2023	4	1,347.45	1,346.23	1.22
2023	5	1,172.61	1,171.96	0.65
2023	6	1,072.67	1,072.56	0.11
2023	7	1,108.24	1,108.24	0.00
2023	8	1,062.12	1,062.12	0.00
2023	9	1,043.49	1,043.49	0.00
2023	10	1,144.34	1,143.92	0.41
2023	11	1,516.37	1,514.93	1.44
2023	12	1,824.56	1,821.83	2.73
2024	1	1,930.63	1,923.96	6.66
2024	2	1,820.71	1,814.08	6.63
2024	3	1,617.57	1,612.83	4.74
2024	4	1,349.77	1,347.52	2.25
2024	5	1,173.12	1,171.92	1.20
2024	6	1,071.51	1,071.31	0.20
2024	7	1,109.38	1,109.38	0.00
2024	8	1,062.99	1,062.99	0.00
2024	9	1,042.72	1,042.72	0.00
2024	10	1,144.07	1,143.30	0.77
2024	11	1,518.73	1,516.08	2.65
2024	12	1,831.48	1,826.43	5.05
2025	1	1,936.36	1,926.29	10.07
2025	2	1,831.20	1,821.15	10.05
2025	3	1,625.40	1,618.20	7.20
2025	4	1,353.00	1,349.57	3.43
2025	5	1,174.80	1,172.98	1.82
2025	6	1,071.81	1,071.51	0.30
2025	7	1,112.59	1,112.59	0.00
2025	8	1,065.55	1,065.55	0.00
2025	9	1,043.52	1,043.52	0.00
2025	10	1,145.71	1,144.55	1.17
2025	11	1,523.89	1,519.84	4.04
2025	12	1,841.86	1,834.16	7.70
2026	1	1,942.82	1,928.95	13.87
2026	2	1,836.95	1,823.12	13.84
2026	3	1,633.97	1,624.00	9.97
2026	4	1,358.44	1,353.69	4.75
2026	5	1,178.72	1,176.20	2.52
2026	6	1,074.50	1,074.08	0.42
2026	7	1,118.11	1,118.11	0.00
2026	8	1,070.18	1,070.18	0.00
2026	9	1,046.37	1,046.37	0.00
2026	10	1,149.09	1,147.47	1.61
2026	11	1,529.76	1,524.16	5.60
2026	12	1,850.73	1,840.07	10.66
2027	1	1,949.93	1,931.90	18.03
2027	2	1,843.47	1,825.48	17.99
2027	3	1,643.31	1,630.29	13.02
2027	4	1,364.88	1,358.68	6.20
2027	5	1,183.68	1,180.39	3.29
2027	6	1,078.32	1,077.77	0.54
2027	7	1,124.89	1,124.89	0.00
2027	8	1,075.83	1,075.83	0.00
2027	9	1,050.07	1,050.07	0.00
2027	10	1,153.32	1,151.21	2.11
2027	11	1,536.52	1,529.20	7.32
2027	12	1,860.26	1,846.33	13.93
2028	1	1,957.54	1,935.00	22.54
2028	2	1,845.59	1,823.15	22.44
2028	3	1,652.65	1,636.30	16.35
2028	4	1,371.11	1,363.32	7.78
2028	5	1,188.32	1,184.19	4.13
2028	6	1,081.68	1,081.00	0.68
2028	7	1,131.15	1,131.15	0.00
2028	8	1,081.04	1,081.04	0.00
2028	9	1,053.40	1,053.40	0.00
2028	10	1,157.27	1,154.62	2.65
2028	11	1,543.17	1,533.99	9.18
2028	12	1,869.93	1,852.45	17.48
2029	1	1,965.26	1,937.89	27.37
2029	2	1,857.60	1,830.30	27.31
2029	3	1,662.15	1,642.21	19.93
2029	4	1,377.58	1,368.09	9.49
2029	5	1,193.25	1,188.22	5.03
2029	6	1,085.38	1,084.55	0.83
2029	7	1,137.84	1,137.84	0.00
2029	8	1,086.64	1,086.64	0.00
2029	9	1,057.08	1,057.08	0.00
2029	10	1,161.65	1,158.42	3.23
2029	11	1,550.45	1,539.25	11.20
2029	12	1,880.37	1,859.06	21.32
2030	1	1,970.53	1,938.01	32.52
2030	2	1,862.55	1,830.11	32.44
2030	3	1,668.84	1,645.06	23.78
2030	4	1,380.84	1,369.52	11.32
2030	5	1,195.05	1,189.04	6.00
2030	6	1,085.83	1,084.84	0.99
2030	7	1,141.41	1,141.41	0.00
2030	8	1,089.36	1,089.36	0.00
2030	9	1,057.82	1,057.82	0.00
2030	10	1,162.86	1,159.00	3.85
2030	11	1,554.05	1,540.70	13.35
2030	12	1,887.20	1,861.78	25.42
2031	1	1,977.23	1,939.44	37.78
2031	2	1,868.87	1,831.18	37.69
2031	3	1,676.51	1,648.79	27.72
2031	4	1,384.89	1,371.69	13.20
2031	5	1,197.49	1,190.49	7.00
2031	6	1,086.84	1,085.68	1.16
2031	7	1,145.54	1,145.54	0.00
2031	8	1,092.58	1,092.58	0.00
2031	9	1,059.03	1,059.03	0.00
2031	10	1,164.65	1,160.16	4.49
2031	11	1,558.52	1,542.96	15.56
2031	12	1,895.12	1,865.49	29.63
2032	1	1,984.94	1,941.84	43.10
2032	2	1,871.35	1,828.44	42.91
2032	3	1,685.02	1,653.29	31.72
2032	4	1,389.85	1,374.74	15.10
2032	5	1,200.82	1,192.81	8.01
2032	6	1,088.76	1,087.44	1.33
2032	7	1,150.58	1,150.58	0.00
2032	8	1,096.63	1,096.63	0.00
2032	9	1,061.04	1,061.04	0.00
2032	10	1,167.32	1,162.18	5.14
2032	11	1,564.04	1,546.23	17.81
2032	12	1,904.08	1,870.18	33.91

	Peak Diff	E3 Current
2022	1.0	
2023	3.6	
2024	6.7	
2025	10.1	63.6
2026	13.9	
2027	18.0	
2028	22.5	
2029	27.4	
2030	32.5	188.8
2031	37.8	
2032	43.1	

Capture in fcst 20.5%

Request IR-8:

Residential Water Heaters (WH) (Section 4.4, p 41)

(a) Are more efficient hot water end-use devices considered in this analysis?

(b) What are the existing or proposed standards for improving hot water efficiency in the province?

(c) Does NSPI or E1 have a plan for promoting HP rather than resistance-based water heaters?

(d) How would the water heating load change if half of the new water heaters were HP based?

(e) Please provide an update of the joint pilot on controlling water heaters directly and looking at potential benefits to the system.

(f) It appears that the Intensity in Figure 25 represents an average that is increasing because the saturation is increasing. Please confirm if this is the driver. Please provide the intensity per electric water heating household for each year in the table.

Response IR-8:

(a) Efficiency of water heaters is taken into account through the efficiencies portion of the intensity equation. This is based on EIA forecasts which show water heaters increasing from around 92 percent in 2021 to 96 percent by 2032.

(b) Water heaters must meet the following standard as of 2008: CAN/CSA-C191-04, Performance of Electrical Storage Tank Water Heaters for Domestic Hot Water Service.

(c) E1 presently offers rebates on both three-element electric resistance water heaters as well as heat pump water heaters. NS Power offers on-bill financing for all types of electric water heaters.

(d) This analysis has not been done for the forecast, and specific heat pump technology is not available for the forecast, but assuming the rate of adoption proposed in this scenario is higher than that in the underlying EIA efficiency data, the overall intensity of water heating would decrease.

(e) The Request for Proposals for the Supply of Electric Water Heater Controllers, inclusive of a Centralized Control Application and Support Services closed on June 4, 2021 and all proponents completed virtual demonstrations during the week of June 14-17, 2021. Following the demonstrations, the Evaluation Committee presented a recommendation for the selection of two vendors, which was approved on June 25, 2021.

The recruitment campaign managed by E1 began on August 26, 2021. The DR Technical Working Group and the third-party installation contractor completed installation and customer support training sessions with each vendor. The DR Technical Working Group completed pilot kick-off meetings with each vendor during the week of September 6-10, 2021.

E1 procured 101 electric water heater controllers, inclusive of a SaaS control application and support services from each vendor. Three Shifted Energy controllers were installed as test units; one was installed in the NSCC Applied Research Laboratory in Dartmouth and two were installed in E1 employee homes. Function testing of test units and associated control applications took place between October 22, 2021 and December 5, 2021. NSCC completed a Testing Report summarizing initial function testing performed in the NSCC Applied Research Laboratory, which was received in May 2022.

Installation of customer controllers began on October 4, 2021. Pilot testing with customer controllers began on November 15, 2021 and is planned to be ongoing until the Pilot ends on October 31, 2022. The recruitment campaign and installation of customer controllers was completed on May 2, 2022. The first customer Survey was distributed to all Pilot

participants through a third-party contractor and the Survey 1 Report was received by the DR Technical Working Group on May 16, 2022.

The DR Technical Working Group is currently developing the second customer survey which will be distributed to all Pilot participants. The DR Technical Working Group has begun the measurement and verification process and will continue to gather data and learnings throughout the remainder of the Pilot.

(f) Confirmed. Estimated intensity per electric water heating household (total intensity/share of household with electric water heat) is provided in the table below:

Year	Estimated Intensity (kWh/water heater)
2022	2,254
2023	2,242
2024	2,230
2025	2,218
2026	2,206
2027	2,196
2028	2,187
2029	2,179
2030	2,171
2031	2,165
2032	2,160

Request IR-9:

Residential Electric Vehicles (EV) (Section 4.4, pp 41-45)

(a) How do the daily load shapes for various types of electric vehicles correspond to NS's system load patterns? How does the peak demand pattern for electric vehicles correspond to NS's summer and winter peak demands?

(b) Please provide more details about E3's EV Load Shaping Tool and how it was used to produce the results for this forecast. Specifically, the calculations behind the values in Figure 27.

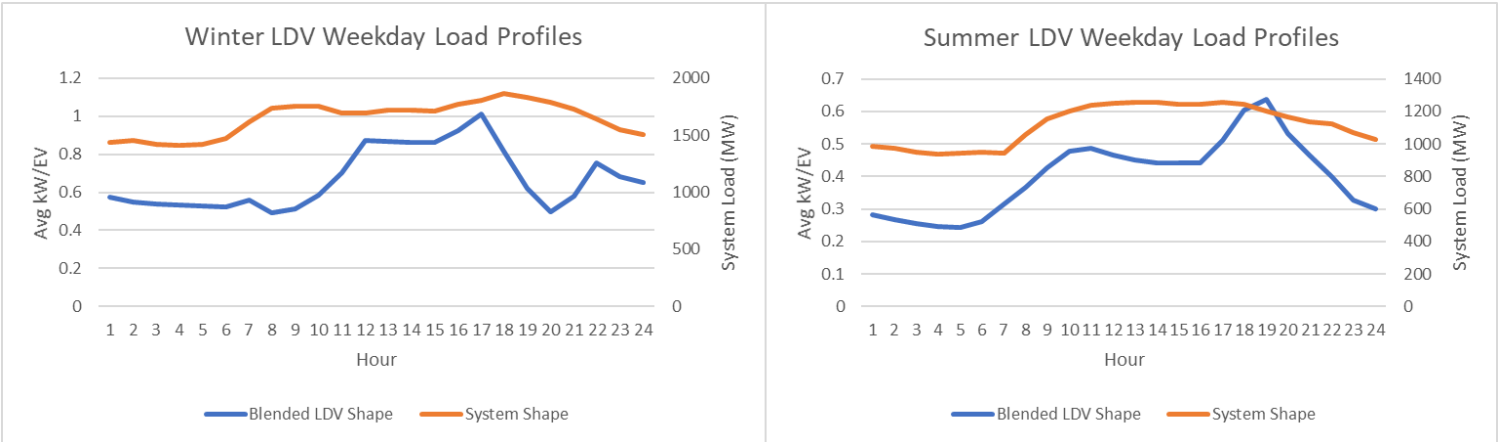
(c) Please provide more specifics about the time of use tariffs currently in the pilot stage.

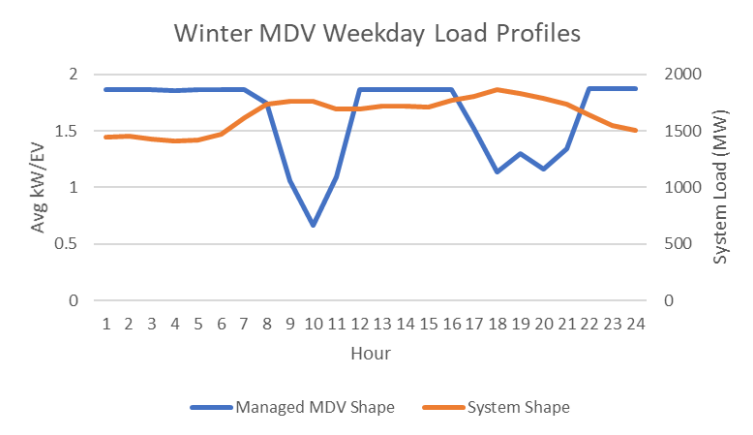
(d) Please provide preliminary results from the SGNS project that are available, especially EV charging patterns.

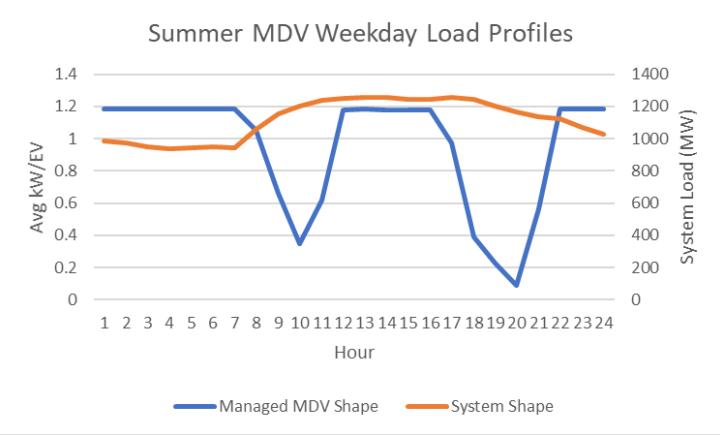
(e) Please provide the inputs and the calculations behind the results in Figure 28.

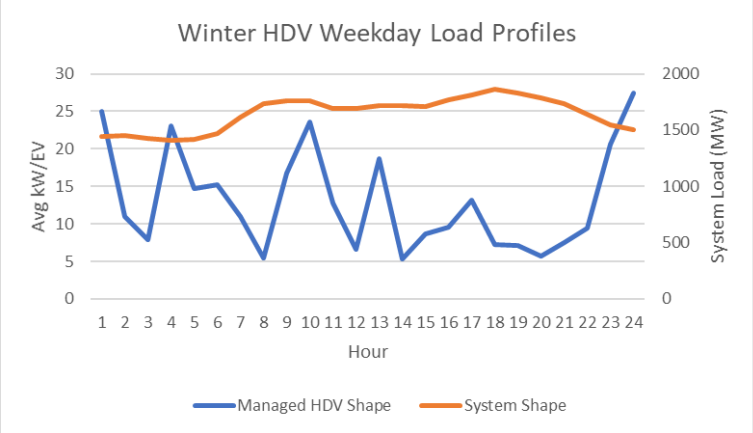
Response IR-9:

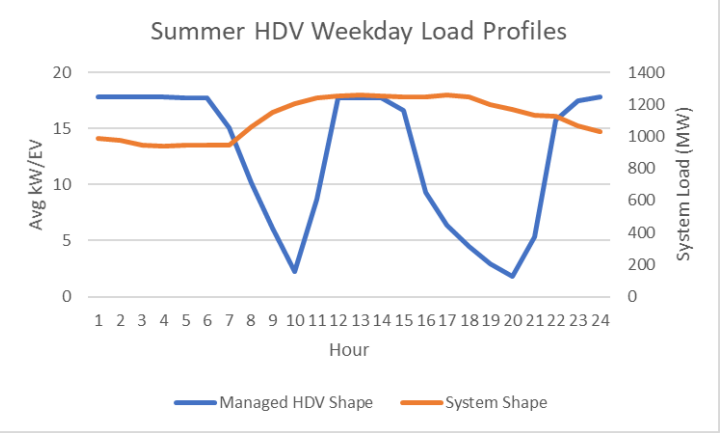
(a) The graphs below are examples of average vehicle load shapes for light duty vehicles (LDV), medium duty vehicles (MDV) and heavy duty vehicles (HDV) compared to the system load shape for a winter and summer weekday:







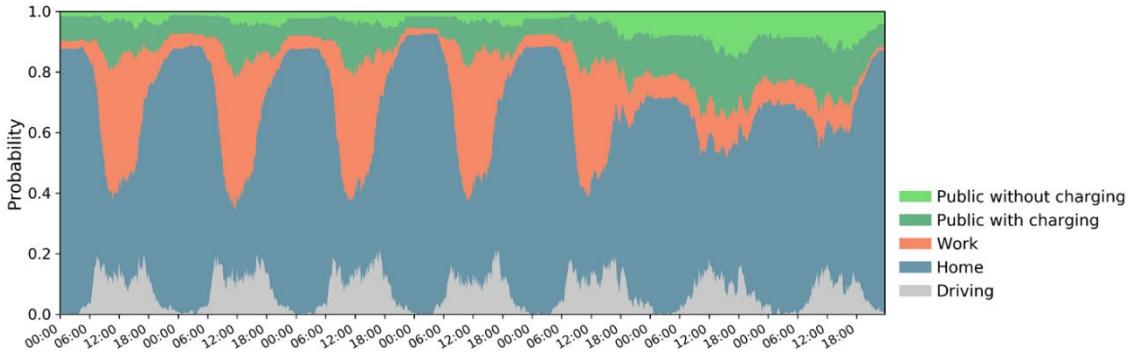




(b) Please refer to NSUARB IR-2 for further details on the inputs used in the EV forecast are provided in NSUARB IR-2. E3 modelled differences in LDV driving behaviors between summer months and winter months; summer versus winter driving habits affecting average daily mileage which in turn affect charging behaviors. Charging profiles for transit buses and parcel trucks reflect relatively flat usage over the course of the year, with reduced efficiency in winter months.

A robust forecast of EV charging loads was developed in E3's EV Load Shape Tool. Charging loads depend on several factors, such as vehicle type, charging access, and the driving behavior of drivers. To model charging behavior, E3 developed a bottom-up modelling approach that simulates driving and charging of thousands of EV drivers.

Driving behavior is captured using travel survey data and converted to 15-minute driving patterns though a Markov-Chain Monte Carlo method. The graph below shows an example of LDV weekly driving patterns expressed as the probability that a driver is at a given location or is driving.



The driving population is characterized by drivers' EV type and access to charging. For LDVs, there are 4 EV types (short and long-range plug-in hybrid and short and long-rang battery electric vehicle) and 6 charging access types (a combination of access to residential, workplace, and public charging), resulting in 24 combinations or customer types. Loads for each customer type get weighted by the percentage of drivers forecasted to represent that customer type. The final load shape therefore captures the diversity of driving behavior, EV types, and charging access across the Nova Scotia driving population.

Charging loads that feature drivers that plug in and begin charging immediately upon arrival at their destination reflect an unmanaged charging scenario. In this scenario, drivers still choose the location of their charging based on the relative electric rates at each location (for example, if a driver has the choice given their driving patterns and charger access to choose between more expensive public charging or less expensive residential charging, they will choose the less expensive residential charging). However, the timing of charging at a given location does not take into consideration any time-varying prices of electricity in an unmanaged charging scenario. In a managed charging scenario, drivers can shift the timing of their charging at a given location to minimize costs of charging based on time-

varying electric rates. A third charge management type, charge management with Vehicle-Grid Integration (VGI), still features drivers that shift their times of charging to minimize charging costs, but also features an aggregator's involvement to smooth peaks in charging that occur at transitions between peak and off-peak rate periods. The charging loads outputted from each charge management type get used with electric rates and electricity supply costs to calculate total bills and electricity supply costs for EV charging. In the blended scenario used for the forecast, 70 percent of EV owners manage their charging through an aggregator and 30 percent remain on flat rates with no shifting of charging times.

(c) Information with respect to the Time-of-Use tariffs currently in the pilot stage can be viewed at the Board's website under matter M09777 Nova Scotia Power Inc. (NSPI) - Time-Varying Pricing (TVP) Tariffs. The Interim report for M09777 is due to be filed with the NSUARB by July 29, 2022 and will provide more information about the time of use tariffs in the pilot stage. There are currently ~1,000 customers on the pilot tariffs and recruitment for the second year of the pilot will be starting over the summer months.

(d) An update to the Smart Grid Nova Scotia Project (M09985) project will be filed at the end of July.

(e) Please refer to NSUARB IR-16 Attachment 1.

Request IR-10:

Solar Generation (PV) (Section 4.4, pp 45-47)

(a) Please provide supporting data for the average capacity and capacity factor for the PV installations used in the forecast.

(b) Have you calculated the impacts of PV on summer peaks over the forecast period? If so, please provide those results.

(c) Please provide the source data and calculations for the values in Figure 29.

Response IR-10:

(a) The average reported capacity is based on 2021 installation data as submitted in the 2021 Net Metering Report (NSUARB matter M010439). Please refer to Attachment 1. The capacity factor used for the forecast continues to be 12.3 percent, based on the range of 12.0-12.5 percent from NRCan estimates for Halifax.

(b) A nominal contribution of 10 percent for June and September and 15 percent for July and August, based on installed capacity, is assumed to reduce summer peaks. Further data is being collected through the Smart Grid project that will help refine the impact to summer peaks.

(c) Please refer to Attachment 2.

Enhanced Net Metering Report

As of December 31, 2021

2021

January 1, 2021 - December 31, 2021

By Resource:

	No. of Interconnections	Nameplate Capacity (kW/AC)	Est. Annual Generation (kWh)
Solar	1,638	14,066.41	15,165,507
Wind	-	-	-
Hydro	-	-	-
Biomass	-	-	-
Combination/Other	-	-	-
Total	1,638	14,066.41	15,165,507

By Location:

	No. of Interconnections	Nameplate Capacity (kW/AC)	Est. Annual Generation (kWh)
Annapolis County	46	398.68	435,179
Antigonish County	36	287.51	309,793
Cape Breton County	29	316.90	341,459
Colchester County	126	1,317.17	1,420,423
Cumberland County	49	378.81	406,991
Digby County	27	241.43	260,137
Guysborough County	9	71.72	77,278
Halifax County	850	6,958.81	7,499,659
Hants County	109	972.83	1,048,218
Inverness County	11	112.74	121,480
Kings County	136	1,228.35	1,324,675
Lunenburg County	79	664.57	716,071
Pictou County	64	602.39	649,787
Queens County	12	79.82	86,004
Richmond County	12	99.98	107,727
Shelburne County	5	33.68	36,291
Victoria County	6	48.92	52,710
Yarmouth County	32	252.09	271,625

Est. Sales Reductions:

	Est. Annual Energy Displacement (kWh)		Est. Annual Value ($$)*
Solar	15,165,507	$	2,427,694.36
Wind	-		-
Hydro	-		-
Biomass	-		-
Combination/Other	-		-
Total	15,165,507	$	2,427,694.36

* $0.16008 per kWh

Payouts:

	Energy (kWh)		Payout ($$)
January	193,213.0	$	29,828.47
February	49,074.0	$	7,856.34
March	187,441.0	$	30,008.75
April	245,143.0	$	39,290.81
May	176,146.0	$	28,175.03
June	167,727.0	$	26,908.10
July	39,956.0	$	6,415.55
August	45,947.0	$	7,344.61
September	68,922.0	$	11,013.54
October	68,559.0	$	10,974.92
November	45,492.0	$	7,756.43
December	235,520.0	$	37,660.06
Total	1,523,140.0	$	243,232.61

Cumulative Totals

As of December 31, 2021

By Resource:

	No. of Interconnections	Nameplate Capacity (kW/AC)	Est. Annual Generation (kWh)
Solar	4,022	33,145.20	36,451,974
Wind	64	698.20	1,811,903
Hydro	1	10.00	8,364
Biomass	-	0.00	-
Combination/Other	6	43.73	78,451
Total	4,093	33,897.13	38,350,692

By Location:

	No. of Interconnections	Nameplate Capacity (kW/AC)	Est. Annual Generation (kWh)
Annapolis County	135	1,023.46	1,157,562
Antigonish County	134	1,132.50	1,249,727
Cape Breton County	136	1,266.55	1,500,767
Colchester County	249	2,364.49	2,616,910
Cumberland County	90	692.40	855,359
Digby County	73	639.28	803,483
Guysborough County	19	144.92	164,152
Halifax County	2043	16,353.12	18,551,485
Hants County	200	1,688.76	1,846,696
Inverness County	59	477.93	536,201
Kings County	404	3,538.09	3,934,124
Lunenburg County	217	1,743.50	1,942,011
Pictou County	137	1,284.23	1,420,327
Queens County	28	202.74	230,568
Richmond County	62	462.48	538,516
Shelburne County	22	130.18	154,218
Victoria County	26	223.45	264,656
Yarmouth County	59	529.03	583,928

Est. Sales Reductions:

	Est. Annual Energy Displacement (kWh)		Est. Annual Value ($$)*
Solar	36,451,974.0	$	5,835,232.00
Wind	1,811,903.0	$	290,049.43
Hydro	8,364.0	$	1,338.91
Biomass	-	$	-
Combination/Other	78,451.0	$	12,558.44
Total	38,350,692	$	6,139,178.78

* $0.16008 per kWh

Payouts:

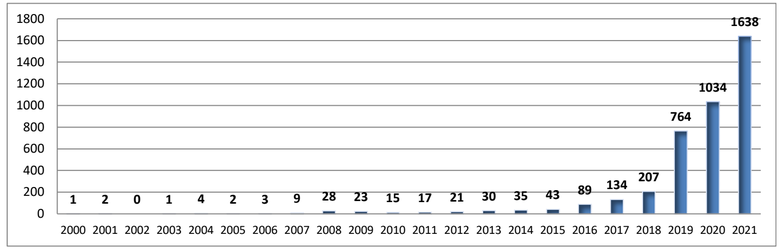
Year	Energy (kWh)		Payout ($$)
2021	1,523,140.0	$	243,232.61
2020	642,490.0	$	101,109.16
2019	332,406.0	$	50,187.92
2018	212,972.0	$	32,513.44
2017	104,705.0	$	15,750.96
2016	62,722.0	$	9,059.53
2015	34,870.0	$	5,162.42
2014	30,880.0	$	4,333.78
2013	26,883.0	$	3,683.64
2012	12,914.0	$	1,710.77
2011	81.0	$	9.78
Total	2,984,063.0	$	466,754.01

Trends

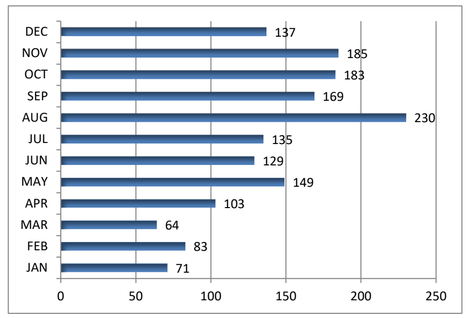
	No. of Interconnections	Nameplate Capacity (kW/AC)	Avg. Nameplate Capacity (kW/AC)	Resource: Solar	Wind	Hydro	Biomass	Other
2021	1,638	14,066.41	8.59	1,638	0	0	0	0
2020	1,034	8,663.12	8.38	1,034	0	0	0	0
2019	764	6,018.88	7.88	764	0	0	0	0
2018	207	1,622.61	7.84	206	1	0	0	0
2017	134	1,011.10	7.55	133	0	1	0	0

* 2020 data adjusted to reflect records not captured in previous report

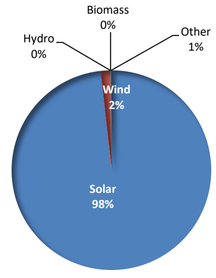
Number of Interconnections by Year:



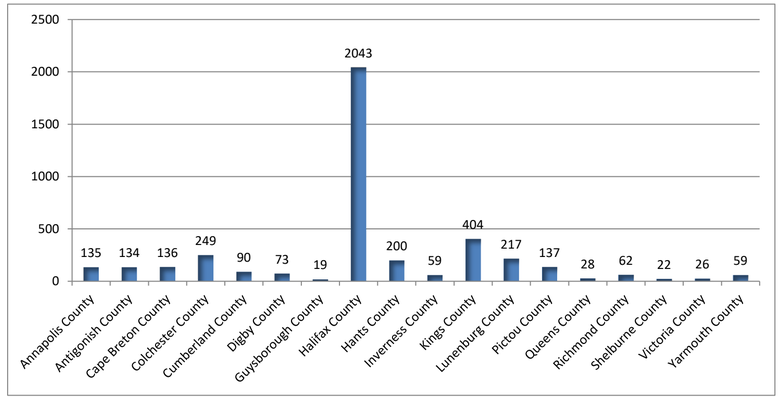
Number of Interconnections by Month (2021):



Total Active by Resource:



Total Active by County:



Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
462350	12/30/2021	Residential	Solar	3.80	4,094	137H-411	Halifax County	No
616731	12/30/2021	Residential	Solar	6.45	6,948	84W-301	Halifax County	No
655022	12/30/2021	Residential - TOU	Solar	9.60	10,344	92H-334	Halifax County	No
636278	12/30/2021	Residential	Solar	9.07	9,773	92H-332	Halifax County	No
632826	12/30/2021	Residential	Solar	11.98	12,908	99V-314	Kings County	No
242377	12/29/2021	Residential	Solar	4.31	4,644	89W-302	Lunenburg County	No
104776	12/29/2021	Residential	Solar	4.62	4,977	101H-412	Halifax County	No
464313	12/29/2021	Residential	Solar	5.01	5,398	70W-313	Lunenburg County	No
742532	12/29/2021	Residential	Solar	7.20	7,758	79V-403	Hants County	No
55290	12/29/2021	Residential	Solar	9.42	10,150	2H-411	Halifax County	No
86121	12/29/2021	Residential	Solar	7.54	8,124	113H-444	Halifax County	No
76977	12/29/2021	Residential	Solar	8.20	8,835	113H-443	Halifax County	No
168485	12/29/2021	Residential	Solar	11.85	12,768	83V-303	Kings County	No
42966	12/29/2021	Residential	Solar	8.73	9,406	23H-301	Halifax County	No
97309	12/29/2021	Residential	Solar	10.00	10,775	131H-423	Halifax County	No
625432	12/29/2021	Residential	Solar	14.55	15,678	50V-402	Kings County	No
302284	12/24/2021	Residential	Solar	4.80	5,172	4C-432	Antigonish County	No
740345	12/24/2021	Residential	Solar	6.96	7,499	4N-312	Cumberland County	No
366313	12/23/2021	Residential	Solar	5.80	6,250	3S-307	Cape Breton County	No
357403	12/23/2021	Residential	Solar	9.50	10,236	11S-302	Cape Breton County	No
86775	12/23/2021	Residential	Solar	5.36	5,774	58H-431	Halifax County	No
315098	12/23/2021	Residential	Solar	9.42	10,150	85S-402	Cape Breton County	No
695442	12/23/2021	Residential	Solar	9.42	10,153	131H-422	Halifax County	No
708264	12/23/2021	Residential	Solar	7.20	7,758	20H-305	Halifax County	No
147390	12/23/2021	Residential	Solar	9.60	10,344	1N-402	Colchester County	No
106244	12/23/2021	Residential	Solar	7.20	7,758	137H-413	Halifax County	No
102211	12/23/2021	Residential	Solar	9.60	10,344	137H-411	Halifax County	No
445854	12/23/2021	Residential	Solar	8.12	8,749	56N-414	Pictou County	No
35924	12/22/2021	Residential	Solar	8.73	9,407	20H-303	Halifax County	No
678352	12/22/2021	Residential	Solar	8.20	8,836	113H-432	Halifax County	No
732206	12/22/2021	Residential	Solar	8.24	8,873	131H-422	Halifax County	No
745535	12/22/2021	Residential	Solar	6.58	7,090	85S-401	Victoria County	No
201924	12/22/2021	Residential - TOU	Solar	8.63	9,299	1V-443	Halifax County	No
708318	12/22/2021	Residential	Solar	12.55	13,523	70W-311	Lunenburg County	No
623436	12/22/2021	Residential	Solar	8.63	9,297	131H-422	Halifax County	No
708948	12/22/2021	Residential	Solar	5.75	6,198	24C-443	Guysborough County	No
619952	12/22/2021	Residential	Solar	5.75	6,196	131H-421	Halifax County	No
728990	12/22/2021	Residential	Solar	6.10	6,573	131H-424	Halifax County	No
733872	12/22/2021	Residential	Solar	6.45	6,948	131H-424	Halifax County	No
178441	12/22/2021	Residential	Solar	10.08	10,856	16V-314	Digby County	No
43868	12/22/2021	Residential	Solar	5.00	5,388	23H-301	Halifax County	No
725696	12/22/2021	Residential	Solar	8.40	9,051	2C-402	Cape Breton County	No
11909	12/22/2021	Residential	Solar	8.95	9,644	104H-431	Halifax County	No
227013	12/22/2021	Residential	Solar	11.40	12,284	546W-321	Lunenburg County	No
698158	12/22/2021	Residential - TOU	Solar	9.44	10,172	83V-302	Kings County	No
125123	12/21/2021	Residential	Solar	7.20	7,758	103H-434	Halifax County	No
626112	12/21/2021	Residential	Solar	8.24	8,879	30N-411	Cumberland County	No
268664	12/21/2021	Residential	Solar	10.15	10,937	87H-311	Halifax County	No
445553	12/21/2021	Residential	Solar	6.10	6,574	92H-331	Halifax County	No
39867	12/21/2021	Residential	Solar	9.60	10,344	20H-302	Halifax County	No
85362	12/21/2021	Residential	Solar	8.63	9,299	113H-433	Halifax County	No
751906	12/21/2021	Residential	Solar	4.80	5,172	36V-302	Kings County	Yes
559956	12/21/2021	Residential	Solar	10.76	11,596	103H-434	Halifax County	No
451606	12/21/2021	Residential	Solar	7.68	8,275	131H-424	Halifax County	No
93940	12/20/2021	Residential	Solar	6.00	6,465	113H-442	Halifax County	No
139214	12/20/2021	Residential	Solar	6.10	6,574	16N-301	Colchester County	No
388790	12/20/2021	Residential	Solar	8.20	8,836	40H-305	Halifax County	No
235976	12/17/2021	Residential	Solar	4.80	5,172	70W-321	Lunenburg County	No
299055	12/17/2021	Residential	Solar	7.33	7,898	57C-422	Kings County	No
664503	12/17/2021	Residential	Solar	8.24	8,879	79V-402	Hants County	No
3869	12/17/2021	Residential	Solar	3.80	4,095	2H-412	Halifax County	No
684046	12/16/2021	Residential - TOU	Solar	9.57	10,312	11S-412	Cape Breton County	No
618541	12/16/2021	Residential	Solar	8.63	9,299	545N-301	Pictou County	No
757042	12/16/2021	Residential	Solar	15.66	16,873	103W-312	Lunenburg County	Yes
631626	12/16/2021	Residential	Solar	8.24	8,835	137H-412	Halifax County	No
147990	12/16/2021	Residential	Solar	8.63	9,299	1N-402	Colchester County	No
481024	12/16/2021	Residential	Solar	8.63	9,297	103W-312	Halifax County	No
202150	12/16/2021	Residential	Solar	9.42	10,150	103W-312	Halifax County	No
143128	12/16/2021	Residential	Solar	6.10	6,574	15N-401	Colchester County	No
737385	12/16/2021	Residential	Solar	9.60	10,344	103H-432	Halifax County	No
624238	12/16/2021	Residential	Solar	15.71	16,928	137H-412	Halifax County	No
186270	12/16/2021	Residential	Solar	8.73	9,407	64V-301	Annapolis County	No
179476	12/16/2021	Residential	Solar	8.63	9,299	55V-313	Kings County	No
396130	12/15/2021	Residential	Solar	12.00	12,930	113H-432	Halifax County	No
464062	12/15/2021	Residential	Solar	8.63	9,299	70W-313	Lunenburg County	No
604793	12/15/2021	Residential	Solar	6.10	6,573	131H-422	Halifax County	No
388305	12/15/2021	Residential	Solar	9.42	10,153	139H-414	Halifax County	No
94597	12/15/2021	Residential	Solar	10.00	10,775	113H-442	Halifax County	No
350899	12/15/2021	Commercial	Solar	15.08	16,249	4S-332	Cape Breton County	No
695037	12/15/2021	Residential	Solar	8.08	8,706	18V-413	Hants County	No
61288	12/15/2021	Residential	Solar	6.00	6,465	139H-414	Halifax County	No
424423	12/14/2021	Residential - TOU	Solar	9.32	10,042	137H-413	Halifax County	No
677083	12/14/2021	Residential - TOU	Solar	9.42	10,150	15N-404	Colchester County	No
274275	12/14/2021	Residential	Solar	6.10	6,574	507H-311	Halifax County	No
633115	12/14/2021	Residential - TOU	Solar	7.89	8,501	2H-411	Halifax County	No
145897	12/14/2021	Residential - TOU	Solar	9.42	10,150	1N-421	Colchester County	No
666881	12/14/2021	Residential	Solar	5.58	6,017	62H-301	Halifax County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
461238	12/14/2021	Residential	Solar	12.20	13,145	92H-334	Halifax County	No
580418	12/14/2021	Residential	Solar	8.50	9,159	92H-331	Halifax County	No
187087	12/14/2021	Residential	Solar	6.98	7,521	65V-302	Annapolis County	No
224257	12/13/2021	Residential - TOU	Solar	5.75	6,196	36W-301	Yarmouth County	No
151124	12/13/2021	Residential	Solar	4.64	5,000	15N-401	Colchester County	No
726747	12/10/2021	Residential	Solar	11.86	18,380	65V-302	Annapolis County	No
627608	12/10/2021	Residential - TOU	Solar	9.42	10,150	4C-424	Antigonish County	No
99204	12/10/2021	Residential	Solar	8.24	8,879	131H-422	Halifax County	No
687848	12/10/2021	Residential	Solar	5.75	6,196	20H-305	Halifax County	No
696006	12/10/2021	Residential	Solar	5.01	5,398	20H-305	Halifax County	No
30775	12/10/2021	Residential - TOU	Solar	7.60	8,189	2H-424	Halifax County	No
600442	12/9/2021	Residential	Solar	10.80	12,960	131H-424	Halifax County	No
620178	12/9/2021	Residential	Solar	11.40	12,284	131H-424	Halifax County	No
406945	12/9/2021	Residential - TOU	Solar	13.96	10,412	131H-421	Halifax County	No
270491	12/9/2021	Residential	Solar	8.38	9,029	126H-311	Halifax County	No
731005	12/8/2021	Residential	Solar	5.75	6,197	88H-401	Halifax County	No
274488	12/8/2021	Residential	Solar	8.63	9,297	88H-401	Halifax County	No
585054	12/8/2021	Residential	Solar	6.58	7,086	16N-301	Colchester County	No
305403	12/8/2021	Residential	Solar	7.54	8,124	4C-441	Antigonish County	No
72893	12/8/2021	Residential	Solar	7.20	7,758	54H-301	Halifax County	No
94740	12/8/2021	Residential	Solar	7.60	8,189	113H-442	Halifax County	No
116358	12/8/2021	Residential	Solar	13.15	14,171	665V-311	Hants County	No
9737	12/8/2021	Residential	Solar	9.42	10,150	104H-441	Halifax County	No
44327	12/8/2021	Residential	Solar	5.00	5,388	23H-301	Halifax County	No
432526	12/7/2021	Residential	Solar	12.91	13,910	92H-331	Halifax County	No
185837	12/7/2021	Residential	Solar	8.38	9,029	65V-303	Lunenburg County	No
439338	12/7/2021	Residential	Solar	7.60	8,189	137H-411	Halifax County	No
250954	12/7/2021	Residential - TOU	Solar	4.30	4,633	682N-211	Colchester County	No
637400	12/6/2021	Residential	Solar	15.08	16,249	11S-411	Cape Breton County	No
660807	12/6/2021	Residential	Solar	9.57	10,311	137H-411	Halifax County	No
246053	12/6/2021	Residential	Solar	5.90	6,357	73W-411	Lunenburg County	No
636472	12/6/2021	Residential - TOU	Solar	9.60	10,344	1N-421	Colchester County	No
749058	12/3/2021	Residential	Solar	9.60	10,344	99V-312	Kings County	No
574881	12/3/2021	Residential	Solar	9.42	10,150	55V-322	Kings County	No
61035	12/3/2021	Residential	Solar	6.58	7,090	54H-302	Halifax County	No
716453	12/3/2021	Commercial	Solar	15.00	16,163	13V-303	Annapolis County	Yes
471929	12/2/2021	Residential	Solar	5.36	5,774	137H-412	Halifax County	No
706925	12/2/2021	Residential	Solar	7.89	8,497	20W-311	Yarmouth County	No
379985	12/2/2021	Residential	Solar	7.89	8,497	501N-301	Pictou County	No
592576	12/2/2021	Residential	Solar	7.89	8,497	137H-412	Halifax County	No
286516	12/2/2021	Residential	Solar	8.63	9,299	55N-203	Pictou County	No
475079	12/2/2021	Residential	Solar	4.19	4,515	83V-302	Lunenburg County	No
286899	12/2/2021	Residential	Solar	11.50	12,391	62N-415	Annapolis County	No
631625	12/2/2021	Residential	Solar	13.64	14,697	137H-412	Halifax County	No
126927	12/2/2021	Residential	Solar	6.00	8,418	103H-432	Halifax County	No
159045	12/1/2021	Residential	Solar	7.20	7,758	77V-303	Digby County	No
174695	12/1/2021	Residential	Solar	9.60	10,344	36V-301	Lunenburg County	No
603872	12/1/2021	Residential	Solar	9.42	10,150	89W-302	Lunenburg County	No
613501	12/1/2021	Residential	Solar	29.32	31,588	103C-311	Inverness County	No
666444	12/1/2021	Residential	Solar	9.60	10,344	15N-404	Colchester County	No
85951	11/30/2021	Residential	Solar	5.36	5,775	113H-444	Halifax County	No
645279	11/30/2021	Residential - TOU	Solar	9.42	10,150	87W-311	Halifax County	No
645276	11/30/2021	Residential - TOU	Solar	9.42	10,150	87W-311	Halifax County	No
645258	11/30/2021	Residential - TOU	Solar	4.89	5,269	87W-311	Halifax County	No
251102	11/29/2021	Residential	Solar	6.00	6,465	37N-412	Cumberland County	No
469691	11/29/2021	Residential	Solar	8.99	9,687	83V-302	Kings County	No
757304	11/26/2021	Residential	Solar	22.80	24,567	101H-421	Halifax County	Yes
80178	11/26/2021	Residential	Solar	6.45	6,950	113H-443	Halifax County	No
746358	11/26/2021	Residential	Solar	9.86	10,624	515C-301	Antigonish County	No
255889	11/26/2021	Residential	Solar	5.01	5,398	30N-412	Cumberland County	No
448786	11/26/2021	Residential	Solar	9.57	10,312	4C-430	Antigonish County	No
54779	11/26/2021	Residential	Solar	8.24	8,873	2H-422	Halifax County	No
141235	11/26/2021	Residential	Solar	6.00	6,465	15N-401	Colchester County	No
348908	11/26/2021	Residential	Solar	9.60	10,344	6S-221	Cape Breton County	No
461317	11/26/2021	Residential	Solar	9.60	10,344	113H-432	Halifax County	No
79763	11/25/2021	Residential	Solar	18.55	19,988	113H-443	Halifax County	No
126353	11/25/2021	Residential	Solar	9.42	10,150	679H-311	Halifax County	No
376291	11/25/2021	Residential	Solar	7.60	8,189	113H-443	Halifax County	No
91291	11/25/2021	Residential	Solar	6.00	6,465	113H-441	Halifax County	No
399085	11/24/2021	Residential	Solar	9.00	9,698	7N-301	Cumberland County	No
152556	11/24/2021	Residential	Solar	7.54	8,124	5N-301	Colchester County	No
82817	11/24/2021	Residential	Solar	8.63	9,297	48H-301	Halifax County	No
735169	11/24/2021	Residential	Solar	14.73	15,871	78W-301	Lunenburg County	No
14558	11/24/2021	Residential	Solar	4.19	4,515	104H-421	Halifax County	No
413699	11/24/2021	Residential	Solar	8.00	8,620	139H-414	Halifax County	No
132976	11/24/2021	Residential	Solar	8.12	8,749	35V-312	Hants County	No
577755	11/23/2021	Residential	Solar	15.00	16,162	56N-414	Pictou County	No
80050	11/23/2021	Residential	Solar	8.24	8,873	113H-443	Halifax County	No
442485	11/23/2021	Residential	Solar	7.89	8,502	15N-404	Colchester County	No
670983	11/23/2021	Residential	Solar	6.45	6,950	131H-423	Halifax County	No
631789	11/23/2021	Residential - TOU	Solar	6.45	6,950	113H-433	Halifax County	No
585263	11/23/2021	Residential	Solar	7.20	7,758	126H-312	Halifax County	No
439354	11/23/2021	Residential	Solar	9.42	10,150	55V-313	Kings County	No
282425	11/23/2021	Residential	Solar	8.38	9,029	501N-301	Pictou County	No
645280	11/23/2021	Residential - TOU	Solar	9.42	10,150	87W-311	Halifax County	No
601776	11/23/2021	Residential	Solar	7.67	8,267	126H-313	Halifax County	No
271081	11/23/2021	Residential	Solar	9.60	10,344	126H-312	Halifax County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
730936	11/22/2021	Residential	Solar	13.70	14,761	642V-311	Hants County	No
664192	11/22/2021	Residential - TOU	Solar	8.40	9,051	79V-401	Hants County	No
165356	11/19/2021	Residential	Solar	7.75	8,351	83V-302	Kings County	No
406942	11/19/2021	Residential	Solar	8.24	8,873	131H-421	Halifax County	No
22733	11/19/2021	Residential	Solar	7.60	8,189	9H-221	Halifax County	No
671639	11/19/2021	Residential	Solar	7.54	8,127	82V-422	Hants County	No
713301	11/19/2021	Residential	Solar	8.76	9,439	104H-411	Halifax County	No
136296	11/19/2021	Residential	Solar	6.60	7,112	18V-413	Hants County	No
566519	11/19/2021	Residential	Solar	11.69	12,596	79V-403	Hants County	No
271970	11/18/2021	Residential	Solar	8.20	8,835	87H-313	Halifax County	No
671552	11/18/2021	Residential	Solar	7.60	8,189	137H-411	Halifax County	No
435586	11/18/2021	Residential	Solar	5.40	5,819	22N-403	Cumberland County	No
582659	11/18/2021	Residential	Solar	6.75	7,274	126H-313	Halifax County	No
593591	11/18/2021	Residential	Solar	8.63	9,297	137H-412	Halifax County	No
621937	11/18/2021	Residential	Solar	8.70	9,374	85S-401	Victoria County	No
644236	11/18/2021	Residential	Solar	6.00	6,465	686H-311	Halifax County	No
470785	11/18/2021	Residential	Solar	9.28	9,999	99V-314	Kings County	No
716052	11/18/2021	Residential	Solar	8.63	9,299	103H-434	Halifax County	No
202751	11/18/2021	Residential	Solar	6.00	6,465	1V-443	Lunenburg County	No
478504	11/18/2021	Residential	Solar	7.20	7,758	103H-432	Halifax County	No
717164	11/18/2021	Residential	Solar	9.60	10,344	1N-405	Colchester County	No
675521	11/18/2021	Residential	Solar	15.00	16,162	56N-414	Halifax County	Yes
304864	11/17/2021	Residential	Solar	9.60	10,344	100C-421	Antigonish County	No
158851	11/17/2021	Residential	Solar	7.15	7,700	16V-315	Digby County	No
436767	11/17/2021	Residential	Solar	7.19	7,747	616N-311	Colchester County	No
193119	11/17/2021	Residential	Solar	6.45	6,950	69V-211	Lunenburg County	No
375501	11/17/2021	Residential	Solar	7.89	8,499	139H-414	Halifax County	No
445350	11/17/2021	Residential	Solar	9.60	10,344	40H-401	Halifax County	No
425613	11/17/2021	Residential	Solar	7.60	8,189	40H-401	Halifax County	No
611073	11/17/2021	Residential	Solar	6.00	6,465	103H-431	Halifax County	No
574109	11/17/2021	Residential	Solar	9.60	10,344	81N-412	Cumberland County	No
165331	11/17/2021	Residential	Solar	8.85	9,536	83V-302	Kings County	No
697649	11/16/2021	Residential	Solar	11.85	12,772	99V-314	Kings County	No
665047	11/16/2021	Residential	Solar	13.24	14,266	129H-413	Halifax County	No
613985	11/16/2021	Residential	Solar	7.19	7,747	131H-422	Halifax County	No
625961	11/16/2021	Residential - TOU	Solar	8.24	8,873	2H-421	Halifax County	No
649239	11/16/2021	Residential	Solar	3.84	4,138	92H-331	Halifax County	No
446665	11/16/2021	Residential	Solar	8.19	8,827	102W-311	Yarmouth County	No
122027	11/16/2021	Residential	Solar	5.75	6,198	92H-331	Halifax County	No
474586	11/16/2021	Residential	Solar	8.58	9,247	99V-312	Kings County	No
656559	11/16/2021	Residential	Solar	15.20	16,378	131H-424	Halifax County	No
609843	11/16/2021	Residential - TOU	Solar	9.28	9,999	131H-424	Halifax County	No
122033	11/16/2021	Residential	Solar	12.91	13,910	92H-331	Halifax County	No
79292	11/16/2021	Residential	Solar	9.60	10,344	113H-431	Halifax County	No
123242	11/16/2021	Residential	Solar	4.97	5,351	103H-434	Halifax County	No
187330	11/16/2021	Residential	Solar	9.42	10,150	65V-302	Annapolis County	No
113125	11/16/2021	Residential	Solar	4.66	5,021	101H-413	Halifax County	No
708921	11/16/2021	Residential	Solar	9.60	10,344	92H-334	Halifax County	No
696889	11/15/2021	Residential	Solar	9.57	10,311	89W-303	Kings County	Yes
247155	11/15/2021	Residential	Solar	9.32	10,042	12V-303	Annapolis County	No
425206	11/15/2021	Residential - TOU	Solar	9.68	10,430	113H-441	Halifax County	No
596344	11/15/2021	Residential - TOU	Solar	9.60	10,344	62H-302	Halifax County	No
415837	11/12/2021	Residential	Solar	7.19	7,747	137H-412	Halifax County	No
61732	11/12/2021	Residential	Solar	8.63	9,299	62H-302	Halifax County	No
454825	11/12/2021	Residential	Solar	8.12	8,749	11S-304	Cape Breton County	No
13408	11/10/2021	Residential	Solar	7.20	7,758	104H-421	Halifax County	No
442304	11/10/2021	Residential	Solar	5.01	5,398	113H-432	Halifax County	No
687262	11/10/2021	Residential	Solar	7.90	8,512	70W-203	Lunenburg County	No
197468	11/10/2021	Residential - TOU	Solar	8.24	8,879	87W-312	Halifax County	No
86959	11/10/2021	Residential	Solar	9.32	10,042	58H-431	Halifax County	No
165910	11/10/2021	Residential	Solar	8.24	8,873	22V-321	Kings County	No
576350	11/10/2021	Residential - TOU	Solar	9.28	9,999	113H-441	Halifax County	No
274909	11/10/2021	Residential	Solar	8.24	8,879	88H-401	Halifax County	No
628463	11/10/2021	Residential	Solar	5.32	5,727	113H-434	Halifax County	No
89983	11/10/2021	Residential	Solar	5.01	5,398	113H-441	Halifax County	No
406738	11/10/2021	Residential	Solar	7.14	7,693	74V-301	Annapolis County	No
613581	11/10/2021	Residential	Solar	7.50	8,081	82V-402	Halifax County	No
682188	11/10/2021	Residential - TOU	Solar	8.70	9,374	677N-301	Colchester County	Yes
744062	11/10/2021	Residential	Solar	11.31	12,186	113H-441	Halifax County	No
480534	11/10/2021	Residential	Solar	3.57	3,849	113H-441	Halifax County	No
79720	11/10/2021	Residential	Solar	7.60	8,189	113H-443	Halifax County	No
684848	11/10/2021	Residential	Solar	9.60	10,344	20H-305	Halifax County	No
78751	11/10/2021	Residential	Solar	9.60	10,344	40H-305	Halifax County	No
115616	11/10/2021	Residential	Solar	9.60	10,344	82V-402	Halifax County	No
235233	11/10/2021	Residential	Solar	9.42	10,163	73W-411	Lunenburg County	No
154228	11/10/2021	Residential	Solar	9.60	10,344	5N-301	Colchester County	No
430279	11/10/2021	Residential	Solar	8.76	9,447	113H-443	Halifax County	No
34670	11/10/2021	Residential	Solar	5.00	5,388	20H-304	Halifax County	No
94050	11/10/2021	Residential	Solar	6.45	6,950	113H-442	Halifax County	No
271181	11/9/2021	Residential	Solar	5.75	6,197	126H-312	Halifax County	No
262681	11/9/2021	Residential	Solar	8.24	8,873	7N-301	Cumberland County	No
719249	11/9/2021	Residential - TOU	Solar	5.75	6,198	87W-311	Halifax County	No
399210	11/9/2021	Residential	Solar	11.17	12,035	101H-422	Halifax County	No
706904	11/9/2021	Residential	Solar	9.60	10,344	104H-441	Halifax County	No
659969	11/9/2021	Residential	Solar	8.23	8,870	131H-423	Halifax County	No
747750	11/9/2021	Residential	Solar	9.42	10,150	131H-424	Halifax County	No
665280	11/8/2021	Residential	Solar	9.60	10,344	73W-411	Lunenburg County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
403319	11/8/2021	Residential	Solar	9.60	10,344	1N-404	Colchester County	No
193168	11/8/2021	Residential	Solar	9.60	10,344	69V-211	Lunenburg County	Yes
413423	11/5/2021	Residential	Solar	8.40	9,051	4C-441	Antigonish County	No
733072	11/5/2021	Residential	Solar	10.15	10,937	20H-305	Halifax County	No
58478	11/5/2021	Residential - TOU	Solar	8.23	8,867	40H-302	Halifax County	No
635127	11/5/2021	Residential	Solar	5.36	5,774	131H-423	Halifax County	No
612140	11/5/2021	Residential	Solar	8.24	8,879	15N-404	Colchester County	No
735191	11/5/2021	Residential	Solar	7.54	8,123	20H-305	Halifax County	No
301335	11/5/2021	Residential	Solar	6.45	6,950	4C-430	Antigonish County	No
715162	11/5/2021	Residential - TOU	Solar	5.01	5,398	131H-422	Halifax County	No
242445	11/5/2021	Residential	Solar	8.24	8,873	89W-302	Lunenburg County	No
62160	11/5/2021	Residential	Solar	9.46	10,193	54H-302	Halifax County	No
331886	11/5/2021	Residential	Solar	9.42	10,150	57C-422	Guysborough County	No
427996	11/5/2021	Residential	Solar	8.24	8,873	15N-404	Colchester County	No
672090	11/5/2021	Residential	Solar	9.42	10,150	129H-413	Halifax County	No
646248	11/5/2021	Residential	Solar	9.60	10,344	131H-421	Halifax County	No
474207	11/5/2021	Residential	Solar	7.00	7,542	131H-423	Halifax County	No
566981	11/5/2021	Residential	Solar	15.10	16,270	535N-331	Pictou County	No
180263	11/4/2021	Residential	Solar	8.19	8,825	55V-313	Kings County	No
599210	11/4/2021	Residential	Solar	8.63	9,296	126H-311	Halifax County	No
448865	11/4/2021	Residential	Solar	7.14	7,698	126H-313	Halifax County	No
250960	11/3/2021	Residential	Solar	8.40	9,051	682N-211	Cumberland County	No
646250	11/3/2021	Residential	Solar	8.19	8,826	131H-421	Halifax County	No
19857	11/3/2021	Residential	Solar	15.20	16,378	2H-413	Halifax County	No
733314	11/3/2021	Residential	Solar	8.24	8,873	127H-411	Halifax County	No
240666	11/3/2021	Residential	Solar	6.10	6,574	70W-313	Lunenburg County	No
357783	11/3/2021	Residential	Solar	4.06	4,375	11S-304	Cape Breton County	No
623395	11/2/2021	Residential	Solar	7.19	7,747	7N-302	Cumberland County	No
618060	11/2/2021	Residential	Solar	8.63	9,296	103W-312	Halifax County	No
717613	11/2/2021	Residential	Solar	8.63	9,299	103W-312	Lunenburg County	No
138421	11/2/2021	Residential	Solar	8.24	8,879	16N-301	Hants County	No
144655	11/2/2021	Residential	Solar	6.40	6,896	1N-403	Colchester County	No
222339	11/2/2021	Residential	Solar	3.84	4,138	25W-302	Shelburne County	No
463857	11/2/2021	Residential	Solar	12.20	13,145	55V-314	Kings County	No
469264	11/2/2021	Residential	Solar	12.07	13,003	36V-302	Kings County	No
430747	11/2/2021	Residential	Solar	8.24	8,873	82V-401	Colchester County	No
141972	11/2/2021	Residential	Solar	8.23	8,870	15N-401	Colchester County	No
174751	11/2/2021	Residential	Solar	7.19	7,747	36V-301	Kings County	No
636791	11/2/2021	Residential	Solar	8.63	9,297	7N-301	Cumberland County	No
733369	11/2/2021	Residential	Solar	11.17	12,033	88H-401	Halifax County	No
437988	11/2/2021	Residential	Solar	10.50	11,314	640V-311	Colchester County	No
645138	11/2/2021	Residential	Solar	17.26	18,597	137H-411	Halifax County	No
703144	11/1/2021	Residential	Solar	8.58	9,245	62N-413	Pictou County	No
55194	11/1/2021	Residential	Solar	6.80	7,322	20H-306	Halifax County	No
478334	11/1/2021	Residential	Solar	4.66	5,021	643V-311	Hants County	No
441582	11/1/2021	Residential	Solar	7.50	8,081	79V-403	Hants County	No
73765	11/1/2021	Residential	Solar	9.42	10,150	54H-301	Halifax County	No
473251	11/1/2021	Residential	Solar	6.10	6,574	101H-421	Halifax County	No
605402	11/1/2021	Residential	Solar	8.82	9,499	137H-412	Halifax County	No
685699	11/1/2021	Residential	Solar	8.24	8,873	79V-401	Hants County	No
667706	11/1/2021	Residential	Solar	12.20	13,146	2H-413	Halifax County	No
662166	11/1/2021	Residential	Solar	10.76	11,596	103H-432	Halifax County	No
126894	11/1/2021	Residential	Solar	8.23	8,868	103H-432	Halifax County	No
155681	11/1/2021	Residential	Solar	7.19	7,747	15N-401	Colchester County	No
730190	11/1/2021	Residential	Solar	5.35	5,764	131H-422	Halifax County	No
713227	11/1/2021	Residential	Solar	9.28	9,999	586C-311	Inverness County	No
111992	11/1/2021	Residential	Solar	7.60	8,189	101H-411	Halifax County	No
587472	11/1/2021	Residential	Solar	4.64	5,000	78W-301	Lunenburg County	No
652202	11/1/2021	Residential	Solar	9.60	10,344	103H-432	Halifax County	No
468281	11/1/2021	Residential	Solar	9.60	10,344	131H-422	Halifax County	No
749907	11/1/2021	Residential	Solar	18.00	19,395	6N-302	Cumberland County	No
47652	10/30/2021	Residential	Solar	8.19	8,826	129H-412	Halifax County	No
646440	10/29/2021	Residential	Solar	8.63	9,297	82V-423	Hants County	No
299165	10/29/2021	Residential	Solar	6.00	6,465	4C-430	Antigonish County	No
293974	10/29/2021	Residential	Solar	5.75	6,196	639N-321	Pictou County	No
112397	10/29/2021	Residential	Solar	5.75	6,195	101H-413	Halifax County	No
418785	10/29/2021	Residential	Solar	8.24	8,873	131H-423	Halifax County	No
575058	10/29/2021	Residential	Solar	5.01	5,398	70W-311	Lunenburg County	No
108101	10/29/2021	Residential	Solar	8.24	8,873	709H-221	Halifax County	No
103702	10/29/2021	Residential	Solar	8.24	8,879	131H-421	Halifax County	No
90348	10/29/2021	Residential	Solar	6.45	6,948	113H-443	Halifax County	No
730945	10/29/2021	Residential	Solar	8.38	9,030	137H-414	Halifax County	No
739815	10/29/2021	Residential	Solar	8.24	8,873	137H-414	Halifax County	No
740747	10/29/2021	Residential	Solar	9.58	10,326	82V-402	Halifax County	No
470549	10/29/2021	Residential	Solar	9.57	10,312	99V-312	Kings County	No
384768	10/28/2021	Residential	Solar	9.60	10,344	20H-305	Halifax County	No
389174	10/28/2021	Residential	Solar	11.50	12,391	56N-414	Pictou County	No
271053	10/28/2021	Residential	Solar	7.20	7,758	126H-312	Halifax County	No
90070	10/28/2021	Residential	Solar	6.45	6,948	113H-441	Halifax County	No
664176	10/28/2021	Residential	Solar	8.24	8,873	137H-412	Halifax County	No
727469	10/28/2021	Residential	Solar	5.01	5,398	113H-434	Halifax County	No
614721	10/28/2021	Residential	Solar	8.24	8,873	23H-301	Halifax County	No
88604	10/28/2021	Residential	Solar	5.48	5,905	113H-432	Halifax County	No
425635	10/28/2021	Residential	Solar	8.63	9,296	103H-432	Halifax County	No
476483	10/28/2021	Residential	Solar	7.60	8,189	113H-432	Halifax County	No
581601	10/28/2021	Residential	Solar	8.63	9,297	137H-411	Halifax County	No
450668	10/28/2021	Commercial	Solar	12.50	13,469	11S-301	Cape Breton County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
148117	10/28/2021	Residential	Solar	9.60	10,344	1N-402	Colchester County	No
623512	10/28/2021	Residential	Solar	9.57	10,312	55V-313	Kings County	No
600071	10/27/2021	Residential	Solar	5.70	6,142	113H-434	Halifax County	No
618216	10/27/2021	Residential	Solar	14.60	15,731	82V-423	Hants County	No
481443	10/27/2021	Residential	Solar	9.60	10,344	81N-411	Colchester County	No
746750	10/27/2021	Residential	Solar	11.40	12,284	127H-411	Halifax County	No
702803	10/26/2021	Residential	Solar	7.54	8,123	87H-312	Halifax County	No
463954	10/26/2021	Residential	Solar	7.19	7,747	126H-312	Halifax County	No
272843	10/26/2021	Residential	Solar	8.24	8,878	87H-312	Halifax County	No
439035	10/26/2021	Residential	Solar	8.24	8,879	25W-301	Shelburne County	No
452420	10/26/2021	Residential	Solar	10.70	11,529	87H-313	Halifax County	No
577938	10/26/2021	Residential	Solar	8.24	8,873	7N-301	Cumberland County	No
245790	10/25/2021	Residential	Solar	6.00	6,465	73W-411	Lunenburg County	No
468185	10/25/2021	Residential	Solar	7.19	7,747	30N-411	Cumberland County	No
143413	10/25/2021	Residential	Solar	4.66	5,024	1N-405	Colchester County	No
465636	10/25/2021	Residential	Solar	5.75	6,198	1N-405	Colchester County	No
655317	10/22/2021	Residential	Solar	7.19	7,747	512W-311	Lunenburg County	No
19899	10/22/2021	Residential	Solar	8.19	8,824	2H-413	Halifax County	No
711736	10/22/2021	Residential	Solar	7.75	8,351	20H-305	Halifax County	No
725153	10/22/2021	Residential	Solar	5.32	5,732	20H-305	Halifax County	No
476067	10/22/2021	Residential	Solar	5.36	5,775	103H-432	Halifax County	No
42788	10/22/2021	Residential	Solar	7.60	8,189	23H-301	Halifax County	No
143306	10/22/2021	Residential	Solar	8.24	8,879	15N-404	Colchester County	No
278611	10/22/2021	Residential	Solar	8.20	8,836	62N-413	Pictou County	No
710922	10/22/2021	Residential	Solar	7.15	7,700	20H-305	Halifax County	No
698765	10/22/2021	Residential	Solar	8.19	8,826	99V-314	Kings County	No
119748	10/22/2021	Residential - TOU	Solar	9.32	10,047	92H-332	Halifax County	No
738782	10/22/2021	Residential - TOU	Solar	4.80	5,172	2H-411	Halifax County	No
563017	10/22/2021	Residential	Solar	5.93	6,389	92H-332	Halifax County	No
710923	10/22/2021	Residential	Solar	7.19	7,747	20H-305	Halifax County	No
684113	10/22/2021	Residential	Solar	19.20	20,688	87W-311	Halifax County	No
737371	10/22/2021	Residential	Solar	11.17	12,036	131H-424	Halifax County	No
568988	10/22/2021	Residential	Solar	11.70	12,607	22V-321	Lunenburg County	No
286017	10/21/2021	Residential	Solar	4.31	4,644	55N-202	Pictou County	No
269369	10/21/2021	Residential	Solar	5.72	6,163	87H-311	Halifax County	No
456862	10/21/2021	Residential	Solar	9.32	10,042	63V-311	Kings County	No
479133	10/21/2021	Residential	Solar	8.63	9,296	22V-322	Kings County	No
202741	10/21/2021	Residential	Solar	8.24	8,873	1V-443	Lunenburg County	No
79212	10/21/2021	Residential	Solar	8.63	9,297	40H-302	Halifax County	No
405506	10/21/2021	Residential	Solar	7.60	8,189	113H-441	Halifax County	No
137978	10/21/2021	Residential	Solar	4.64	5,000	16N-302	Colchester County	No
559880	10/21/2021	Residential	Solar	7.20	7,758	113H-434	Halifax County	No
422125	10/21/2021	Residential	Solar	6.10	6,573	23H-303	Halifax County	No
149315	10/21/2021	Residential	Solar	8.20	8,835	1N-402	Colchester County	Yes
554848	10/21/2021	Residential	Solar	11.87	12,786	16N-301	Colchester County	No
685924	10/21/2021	Residential	Solar	9.60	10,344	113H-432	Halifax County	No
683386	10/20/2021	Residential	Solar	14.40	15,516	57C-426	Guysborough County	No
304655	10/20/2021	Residential - TOU	Solar	5.35	5,765	100C-421	Antigonish County	No
110840	10/20/2021	Residential	Solar	7.20	7,758	101H-411	Halifax County	No
554746	10/20/2021	Residential	Solar	7.19	7,747	101H-421	Halifax County	No
465445	10/20/2021	Residential	Solar	7.14	7,698	634V-311	Hants County	No
63383	10/20/2021	Residential	Solar	6.00	6,465	54H-304	Halifax County	No
41353	10/20/2021	Residential	Solar	7.70	8,297	20H-305	Halifax County	No
94878	10/20/2021	Residential	Solar	4.31	4,644	113H-442	Halifax County	No
401850	10/20/2021	Residential	Solar	8.24	8,879	127H-411	Halifax County	No
721994	10/20/2021	Residential	Solar	12.94	13,945	20H-305	Halifax County	No
109421	10/20/2021	Residential	Solar	3.49	3,760	101H-423	Halifax County	No
674925	10/20/2021	Residential - TOU	Solar	6.80	7,327	137H-411	Halifax County	No
693802	10/20/2021	Residential	Solar	8.24	8,873	131H-422	Halifax County	No
85164	10/20/2021	Residential	Solar	8.38	9,029	126H-313	Halifax County	No
666897	10/20/2021	Residential	Solar	9.60	10,344	82V-402	Halifax County	No
95265	10/20/2021	Residential	Solar	6.80	7,324	113H-434	Halifax County	No
16259	10/20/2021	Residential	Solar	5.36	5,774	104H-441	Halifax County	No
115264	10/20/2021	Residential	Solar	9.42	10,500	82V-402	Halifax County	No
169371	10/20/2021	Residential	Solar	9.32	10,038	22V-321	Kings County	No
13857	10/20/2021	Residential	Solar	9.60	10,344	104H-421	Halifax County	No
558937	10/20/2021	Residential	Solar	7.19	7,747	101H-421	Halifax County	No
383019	10/20/2021	Residential	Solar	6.03	6,495	54H-302	Halifax County	No
644362	10/19/2021	Residential - TOU	Solar	6.45	6,948	99V-314	Kings County	No
388601	10/19/2021	Residential	Solar	6.00	6,465	131H-424	Halifax County	No
105043	10/19/2021	Charitable	Solar	30.00	32,324	131H-423	Halifax County	Yes
732114	10/19/2021	Residential	Solar	9.58	10,323	137H-414	Halifax County	No
172247	10/19/2021	Residential	Solar	8.63	9,296	36V-302	Kings County	No
639059	10/19/2021	Residential - TOU	Solar	8.63	9,297	131H-423	Halifax County	No
732961	10/19/2021	Residential	Solar	8.63	9,297	137H-414	Halifax County	No
185528	10/19/2021	Residential	Solar	3.49	3,760	64V-301	Kings County	No
429927	10/19/2021	Residential	Solar	9.42	10,150	55V-313	Kings County	No
749705	10/19/2021	Residential	Solar	7.00	7,542	4N-312	Cumberland County	Yes
249669	10/18/2021	Residential	Solar	7.20	7,758	614N-301	Cumberland County	No
233568	10/18/2021	Residential	Solar	9.60	10,344	517W-311	Lunenburg County	No
235585	10/18/2021	Residential - TOU	Solar	7.54	8,124	89W-303	Lunenburg County	No
120280	10/18/2021	Residential - TOU	Solar	7.89	8,502	131H-424	Halifax County	No
394247	10/18/2021	Residential	Solar	7.88	8,495	22N-401	Cumberland County	No
740731	10/18/2021	Residential	Solar	9.60	10,344	62N-413	Pictou County	No
696444	10/15/2021	Residential	Solar	10.07	10,846	83V-302	Kings County	No
11493	10/15/2021	Residential	Solar	8.03	8,652	104H-422	Halifax County	No
187818	10/14/2021	Residential	Solar	8.40	9,051	65V-303	Kings County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
270469	10/14/2021	Residential	Solar	7.20	7,758	126H-311	Halifax County	No
210434	10/14/2021	Residential	Solar	8.20	8,835	16W-302	Yarmouth County	No
387558	10/14/2021	Residential - TOU	Solar	7.75	8,351	48H-301	Halifax County	No
234366	10/14/2021	Residential	Solar	11.40	12,284	78W-302	Lunenburg County	No
198356	10/14/2021	Residential	Solar	3.84	4,138	87W-311	Halifax County	No
145450	10/14/2021	Residential	Solar	8.63	9,296	15N-404	Colchester County	No
565676	10/14/2021	Residential	Solar	15.36	16,546	101H-422	Halifax County	No
612060	10/14/2021	Residential	Solar	5.36	5,775	103H-431	Halifax County	No
273604	10/13/2021	Residential	Solar	8.40	9,051	88H-401	Halifax County	No
164329	10/13/2021	Residential	Solar	4.80	5,172	1N-402	Hants County	No
749988	10/13/2021	Residential	Solar	12.50	13,469	644N-311	Pictou County	No
154320	10/13/2021	Commercial	Solar	30.00	32,324	81N-412	Colchester County	Yes
716201	10/13/2021	Commercial	Solar	30.00	32,324	81N-412	Colchester County	Yes
154321	10/13/2021	Residential	Solar	30.00	32,324	81N-412	Colchester County	Yes
607989	10/13/2021	Residential	Solar	5.93	6,390	40H-401	Halifax County	No
737110	10/13/2021	Residential	Solar	9.32	10,042	82V-423	Hants County	No
735134	10/13/2021	Residential	Solar	9.60	10,344	22V-322	Kings County	No
312430	10/13/2021	Residential	Solar	7.33	7,898	103C-311	Inverness County	No
704065	10/13/2021	Residential	Solar	9.42	10,153	57S-402	Cape Breton County	Yes
412932	10/13/2021	Residential	Solar	7.20	7,758	22V-321	Kings County	No
709635	10/13/2021	Residential - TOU	Solar	9.60	10,344	36V-303	Kings County	No
252178	10/12/2021	Residential	Solar	9.38	10,107	647N-312	Cumberland County	No
726696	10/12/2021	Residential	Solar	12.90	13,895	137H-412	Hants County	No
738968	10/12/2021	Residential	Solar	9.42	10,150	545C-211	Richmond County	Yes
583474	10/12/2021	Residential	Solar	11.87	12,786	137H-411	Halifax County	No
278503	10/8/2021	Residential	Solar	4.80	5,172	524N-311	Pictou County	No
241177	10/8/2021	Residential	Solar	8.40	9,051	70W-311	Lunenburg County	No
586037	10/8/2021	Residential	Solar	8.40	9,051	62N-416	Pictou County	No
143229	10/8/2021	Residential	Solar	9.60	10,344	713N-301	Colchester County	No
602094	10/8/2021	Residential - TOU	Solar	8.20	8,835	131H-422	Halifax County	No
416575	10/8/2021	Commercial	Solar	27.60	29,739	89W-304	Lunenburg County	Yes
153946	10/8/2021	Residential	Solar	13.76	14,826	15N-403	Colchester County	No
717612	10/8/2021	Residential	Solar	9.42	10,149	131H-424	Halifax County	No
147362	10/8/2021	Residential	Solar	9.60	10,344	1N-402	Colchester County	No
738376	10/8/2021	Residential - TOU	Solar	4.27	4,601	92H-331	Halifax County	No
445802	10/8/2021	Residential	Solar	12.22	13,162	101H-423	Halifax County	No
749629	10/8/2021	Residential	Solar	6.00	6,465	79V-401	Hants County	Yes
743165	10/8/2021	Residential	Solar	2.40	2,586	79V-403	Hants County	No
664479	10/8/2021	Residential	Solar	7.68	8,273	131H-423	Halifax County	No
661151	10/8/2021	Residential	Solar	7.20	7,758	101H-423	Halifax County	No
712130	10/8/2021	Residential	Solar	9.60	10,343	129H-413	Halifax County	No
631751	10/7/2021	Residential	Solar	12.94	13,943	137H-412	Halifax County	No
253331	10/7/2021	Residential	Solar	7.19	7,747	22N-403	Cumberland County	Yes
647615	10/7/2021	Residential	Solar	8.30	8,938	4N-313	Colchester County	No
28851	10/7/2021	Residential	Solar	5.00	5,387	2H-424	Halifax County	No
458133	10/7/2021	Residential	Solar	8.98	9,672	137H-412	Halifax County	No
305393	10/7/2021	Residential	Solar	4.31	4,648	4C-441	Antigonish County	No
741155	10/7/2021	Residential	Solar	4.80	5,172	87H-313	Halifax County	No
21788	10/7/2021	Residential	Solar	7.10	7,650	2H-413	Halifax County	No
23035	10/7/2021	Residential	Solar	7.60	8,189	104H-413	Halifax County	No
644130	10/7/2021	Residential	Solar	8.24	8,873	92H-334	Halifax County	No
272192	10/7/2021	Residential	Solar	7.60	8,189	87H-313	Halifax County	No
392931	10/7/2021	Residential	Solar	9.60	10,344	15N-404	Colchester County	No
160544	10/7/2021	Residential	Solar	14.21	15,311	4N-312	Pictou County	No
191985	10/7/2021	Residential	Solar	6.28	6,767	12V-302	Annapolis County	No
593262	10/6/2021	Residential	Solar	11.52	12,413	82V-422	Hants County	No
75585	10/6/2021	Residential	Solar	3.29	3,545	48H-302	Halifax County	No
682586	10/6/2021	Residential - TOU	Solar	5.22	5,625	91W-411	Queens County	No
273097	10/5/2021	Residential	Solar	4.66	5,021	87H-312	Halifax County	No
268259	10/5/2021	Residential	Solar	5.40	5,819	96H-411	Halifax County	No
468057	10/5/2021	Residential - TOU	Solar	7.89	8,501	137H-412	Halifax County	No
280545	10/5/2021	Residential	Solar	19.20	20,688	516N-331	Pictou County	No
589287	10/5/2021	Residential	Solar	9.60	10,344	131H-422	Halifax County	No
632743	10/5/2021	Residential - TOU	Solar	15.01	16,173	92H-331	Halifax County	No
645059	10/5/2021	Residential	Solar	6.00	6,465	137H-412	Halifax County	No
378129	10/5/2021	Residential - TOU	Solar	7.70	8,297	48H-301	Halifax County	No
646508	10/4/2021	Residential	Solar	9.60	10,344	15N-403	Colchester County	No
608824	10/4/2021	Residential	Solar	15.00	16,163	15N-404	Colchester County	No
170788	10/4/2021	Residential	Solar	9.07	9,777	22V-313	Kings County	No
631709	10/4/2021	Residential	Solar	9.60	10,344	1N-421	Colchester County	No
113114	9/30/2021	Residential - TOU	Solar	7.54	8,127	101H-413	Halifax County	No
625205	9/29/2021	Residential	Solar	6.00	6,465	82V-423	Hants County	No
454237	9/29/2021	Residential	Solar	7.84	8,448	4C-441	Antigonish County	No
645539	9/29/2021	Residential	Solar	8.73	9,407	131H-424	Halifax County	No
632382	9/29/2021	Residential	Solar	9.07	9,773	131H-422	Halifax County	No
116452	9/29/2021	Residential	Solar	8.70	9,374	82V-422	Hants County	No
157574	9/28/2021	Residential	Solar	9.32	10,046	77V-401	Yarmouth County	No
435232	9/28/2021	Residential	Solar	8.63	9,299	137H-411	Halifax County	No
559765	9/28/2021	Residential	Solar	8.24	8,878	99V-314	Kings County	No
199474	9/28/2021	Residential	Solar	5.75	6,195	87W-311	Halifax County	No
79101	9/28/2021	Residential	Solar	6.00	6,465	40H-302	Halifax County	No
594044	9/28/2021	Residential - TOU	Solar	8.24	8,879	87W-311	Halifax County	No
736746	9/28/2021	Residential	Solar	9.60	10,344	22C-404	Richmond County	No
381976	9/28/2021	Residential	Solar	9.07	9,773	113H-441	Halifax County	No
3901	9/28/2021	Residential	Solar	7.33	7,898	2H-412	Halifax County	No
157399	9/28/2021	Residential	Solar	6.98	7,520	77V-401	Digby County	No
726863	9/28/2021	Residential	Solar	9.42	10,150	131H-424	Halifax County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
478705	9/28/2021	Residential	Solar	7.12	7,676	55V-322	Kings County	No
722506	9/28/2021	Residential	Solar	9.32	10,038	131H-424	Halifax County	No
82808	9/28/2021	Residential	Solar	9.60	10,344	48H-301	Halifax County	No
603513	9/27/2021	Residential - TOU	Solar	19.20	20,690	92H-331	Halifax County	No
714178	9/24/2021	Commercial	Solar	100.00	107,750	82V-401	Hants County	No
555995	9/24/2021	Residential	Solar	8.40	9,051	515C-301	Antigonish County	No
277646	9/24/2021	Residential	Solar	8.24	8,879	545N-301	Pictou County	No
117907	9/24/2021	Residential	Solar	8.63	9,299	82V-401	Hants County	No
641471	9/24/2021	Residential	Solar	8.19	8,824	82V-423	Hants County	No
22877	9/24/2021	Residential	Solar	4.15	4,472	9H-221	Halifax County	No
55190	9/24/2021	Residential	Solar	8.24	8,873	20H-306	Halifax County	No
699836	9/24/2021	Residential	Solar	8.24	8,879	82V-423	Hants County	No
707364	9/24/2021	Residential - TOU	Solar	15.00	16,162	512N-331	Pictou County	No
122529	9/23/2021	Residential	Solar	8.40	9,051	92H-334	Halifax County	No
586612	9/23/2021	Residential	Solar	8.63	9,299	666V-311	Hants County	No
44743	9/23/2021	Residential - TOU	Solar	8.63	9,299	23H-304	Halifax County	No
134789	9/23/2021	Residential	Solar	11.50	12,391	18V-413	Hants County	No
273665	9/23/2021	Residential	Solar	8.24	8,879	88H-401	Halifax County	No
270473	9/23/2021	Residential	Solar	6.80	7,327	126H-311	Halifax County	No
668703	9/23/2021	Residential	Solar	9.42	10,150	92H-334	Halifax County	No
596479	9/23/2021	Residential - TOU	Solar	11.87	12,790	103H-432	Halifax County	No
606844	9/23/2021	Residential	Solar	9.60	10,344	535N-331	Pictou County	No
590742	9/23/2021	Residential	Solar	7.19	7,747	131H-424	Halifax County	No
42823	9/23/2021	Residential	Solar	8.73	9,406	23H-301	Halifax County	No
86417	9/23/2021	Residential	Solar	9.60	10,344	126H-313	Halifax County	No
646249	9/22/2021	Residential	Solar	10.80	11,637	131H-421	Halifax County	No
89385	9/22/2021	Residential	Solar	10.70	11,529	113H-443	Halifax County	No
63786	9/22/2021	Residential	Solar	8.63	9,299	62H-304	Halifax County	No
81603	9/22/2021	Residential	Solar	5.35	5,762	54H-302	Halifax County	No
471209	9/22/2021	Residential	Solar	9.32	10,042	82V-422	Hants County	No
58007	9/22/2021	Residential	Solar	4.31	4,644	40H-302	Halifax County	No
59797	9/22/2021	Residential	Solar	8.54	9,201	139H-414	Halifax County	No
81997	9/22/2021	Residential	Solar	7.60	8,189	48H-301	Halifax County	No
131198	9/22/2021	Residential	Solar	8.24	8,879	20V-311	Hants County	No
455391	9/22/2021	Residential	Solar	8.24	8,879	139H-414	Halifax County	No
618102	9/22/2021	Residential	Solar	7.60	8,189	73W-411	Lunenburg County	No
742820	9/22/2021	Residential	Solar	6.45	6,950	82V-403	Halifax County	No
381493	9/22/2021	Residential	Solar	9.60	10,344	20H-303	Halifax County	No
454986	9/22/2021	Residential	Solar	9.60	10,344	127H-411	Halifax County	No
581056	9/22/2021	Residential	Solar	9.42	10,150	2H-411	Halifax County	No
63513	9/22/2021	Residential	Solar	8.70	9,374	62H-304	Halifax County	No
41975	9/22/2021	Residential	Solar	8.38	9,029	20H-305	Halifax County	No
466514	9/21/2021	Residential	Solar	13.20	14,223	63V-312	Annapolis County	No
123447	9/21/2021	Residential	Solar	7.20	7,758	103H-434	Halifax County	No
638717	9/21/2021	Residential - TOU	Solar	5.71	6,150	88H-402	Colchester County	No
589690	9/21/2021	Residential	Solar	10.76	11,593	99V-314	Kings County	No
121046	9/21/2021	Residential	Solar	5.00	5,388	92H-331	Halifax County	No
670965	9/21/2021	Residential - TOU	Solar	9.32	10,042	99V-314	Kings County	No
362869	9/21/2021	Residential - TOU	Solar	9.57	10,312	11S-301	Cape Breton County	No
172234	9/21/2021	Residential	Solar	8.70	9,374	36V-302	Kings County	No
686631	9/20/2021	Residential	Solar	30.00	32,325	137H-411	Halifax County	No
42099	9/17/2021	Residential	Solar	8.63	9,299	20H-303	Halifax County	No
726838	9/17/2021	Residential	Solar	8.24	8,873	87H-312	Halifax County	No
272443	9/16/2021	Residential	Solar	14.40	15,516	87H-313	Halifax County	No
621597	9/16/2021	Residential	Solar	8.40	9,051	129H-413	Halifax County	No
661815	9/16/2021	Residential	Solar	8.24	8,879	103H-432	Halifax County	No
96028	9/16/2021	Residential	Solar	8.63	9,296	126H-313	Halifax County	No
95847	9/16/2021	Residential	Solar	8.63	9,299	126H-313	Halifax County	No
281869	9/16/2021	Residential - TOU	Solar	8.24	8,879	56N-414	Pictou County	No
417620	9/16/2021	Residential	Solar	8.19	8,825	113H-433	Halifax County	No
481308	9/16/2021	Residential	Solar	9.60	10,344	129H-412	Halifax County	No
101368	9/16/2021	Residential	Solar	7.25	7,812	137H-413	Halifax County	No
725633	9/16/2021	Residential	Solar	15.00	16,163	131H-424	Halifax County	No
742692	9/16/2021	Residential	Solar	9.42	10,150	131H-424	Halifax County	No
622037	9/16/2021	Residential	Solar	8.38	9,030	137H-411	Halifax County	No
11375	9/16/2021	Residential	Solar	8.03	8,652	23H-304	Halifax County	No
706605	9/16/2021	Residential	Solar	9.42	10,150	131H-424	Halifax County	No
605314	9/16/2021	Residential	Solar	9.60	10,344	137H-414	Halifax County	No
680361	9/16/2021	Residential	Solar	9.42	10,153	92H-334	Halifax County	No
166852	9/15/2021	Residential	Solar	12.00	12,930	83V-301	Kings County	No
735601	9/15/2021	Residential	Solar	8.40	9,051	55V-314	Kings County	No
404031	9/15/2021	Residential	Solar	5.35	5,765	581C-311	Antigonish County	No
460849	9/15/2021	Residential	Solar	6.00	6,465	5N-301	Colchester County	No
739313	9/15/2021	Commercial	Solar	32.00	34,480	12V-302	Annapolis County	No
644908	9/15/2021	Residential	Solar	9.32	10,042	63V-313	Kings County	No
73049	9/15/2021	Residential - TOU	Solar	8.20	8,836	54H-301	Halifax County	No
600861	9/15/2021	Residential	Solar	8.24	8,873	113H-434	Halifax County	No
644779	9/15/2021	Residential	Solar	9.60	10,344	127H-411	Halifax County	No
600430	9/15/2021	Residential	Solar	9.42	10,150	89W-302	Lunenburg County	No
376308	9/15/2021	Residential	Solar	5.70	6,142	137H-413	Halifax County	No
406691	9/14/2021	Residential - TOU	Solar	7.12	7,672	1N-421	Colchester County	No
85901	9/14/2021	Residential	Solar	8.63	9,297	113H-433	Halifax County	No
75667	9/14/2021	Residential	Solar	7.19	7,747	48H-302	Halifax County	No
273079	9/14/2021	Residential	Solar	6.80	7,327	87H-312	Halifax County	No
413020	9/14/2021	Residential	Solar	8.63	9,296	113H-433	Halifax County	No
168900	9/14/2021	Residential	Solar	8.24	8,879	83V-303	Kings County	No
477068	9/14/2021	Residential	Solar	6.80	7,324	113H-433	Halifax County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
481117	9/14/2021	Residential	Solar	9.60	10,344	103H-432	Halifax County	No
451131	9/14/2021	Residential	Solar	5.71	6,152	113H-443	Halifax County	No
443651	9/14/2021	Residential	Solar	8.24	8,873	87H-313	Halifax County	No
111285	9/14/2021	Residential	Solar	7.68	8,275	101H-411	Halifax County	No
622218	9/14/2021	Residential	Solar	8.58	9,247	1N-421	Colchester County	No
111994	9/14/2021	Residential	Solar	5.48	5,905	101H-411	Halifax County	No
617745	9/14/2021	Residential	Solar	9.60	10,344	15N-404	Colchester County	No
245964	9/13/2021	Residential	Solar	8.40	9,051	73W-411	Lunenburg County	No
661950	9/13/2021	Residential	Solar	7.19	7,747	73W-411	Lunenburg County	No
647877	9/13/2021	Residential	Solar	9.00	9,697	16V-315	Digby County	No
132179	9/10/2021	Residential - TOU	Solar	7.54	8,123	83V-301	Kings County	No
43310	9/10/2021	Residential	Solar	8.63	9,297	23H-304	Halifax County	No
210051	9/10/2021	Residential	Solar	8.63	9,296	16W-302	Yarmouth County	No
589973	9/10/2021	Residential - TOU	Solar	8.63	9,296	585C-311	Antigonish County	No
621526	9/10/2021	Residential	Solar	6.75	7,276	20H-306	Halifax County	No
703726	9/10/2021	Residential	Solar	5.35	5,759	102W-312	Yarmouth County	No
195345	9/10/2021	Residential - TOU	Solar	5.35	5,765	12V-302	Annapolis County	No
63337	9/10/2021	Residential	Solar	5.00	5,387	54H-304	Halifax County	No
416257	9/10/2021	Residential - TOU	Solar	8.19	8,826	101H-423	Halifax County	No
631588	9/10/2021	Residential	Solar	7.10	7,650	129H-413	Halifax County	No
597656	9/10/2021	Residential - TOU	Solar	8.63	9,297	62N-414	Pictou County	No
710062	9/10/2021	Residential	Solar	11.40	12,284	20H-305	Halifax County	No
589668	9/10/2021	Residential	Solar	8.24	8,873	102W-312	Yarmouth County	No
14261	9/10/2021	Residential	Solar	4.93	5,312	104H-421	Halifax County	No
656969	9/10/2021	Residential	Solar	9.60	10,344	104H-433	Halifax County	No
82164	9/9/2021	Residential	Solar	7.19	7,747	48H-301	Halifax County	No
686321	9/9/2021	Residential	Solar	8.63	9,299	137H-413	Halifax County	No
566766	9/9/2021	Residential - TOU	Solar	9.60	10,344	62H-302	Halifax County	No
716412	9/9/2021	Residential	Solar	9.60	10,344	131H-424	Halifax County	No
594354	9/9/2021	Residential	Solar	8.38	9,025	137H-411	Halifax County	No
581882	9/9/2021	Residential - TOU	Solar	18.56	19,998	82S-304	Cape Breton County	No
692565	9/9/2021	Residential	Solar	8.38	9,029	70V-311	Annapolis County	No
571804	9/9/2021	Residential	Solar	9.60	10,344	652V-212	Lunenburg County	No
737599	9/8/2021	Commercial	Solar	9.00	9,697	65V-303	Kings County	No
660958	9/8/2021	Residential	Solar	8.63	9,296	113H-444	Halifax County	No
747221	9/8/2021	Residential	Solar	15.00	16,162	50N-410	Pictou County	Yes
78353	9/8/2021	Residential	Solar	4.31	4,648	40H-305	Halifax County	No
636344	9/8/2021	Residential - TOU	Solar	14.10	15,192	55V-323	Kings County	No
76998	9/8/2021	Residential	Solar	9.60	10,344	113H-431	Halifax County	No
643830	9/7/2021	Residential	Solar	8.40	9,051	103H-434	Halifax County	No
671890	9/7/2021	Residential	Solar	9.07	9,777	104S-311	Cape Breton County	No
627911	9/7/2021	Residential	Solar	9.60	10,344	101H-421	Halifax County	No
389884	9/3/2021	Residential	Solar	7.19	7,747	77V-302	Digby County	No
442364	9/3/2021	Residential	Solar	7.53	8,113	12V-304	Annapolis County	No
167303	9/3/2021	Residential	Solar	8.63	9,299	83V-302	Kings County	No
710186	9/3/2021	Residential	Solar	8.40	9,051	12V-302	Annapolis County	No
173355	9/3/2021	Residential	Solar	8.20	8,835	99V-311	Kings County	No
589011	9/3/2021	Residential	Solar	8.00	8,620	103H-434	Halifax County	No
139843	9/3/2021	Residential	Solar	8.20	8,836	16N-302	Colchester County	No
681145	9/3/2021	Residential	Solar	12.60	13,577	99V-314	Kings County	No
673738	9/3/2021	Residential	Solar	9.60	10,344	4N-312	Colchester County	Yes
680865	9/2/2021	Residential	Solar	15.20	16,378	79V-401	Hants County	No
179179	9/2/2021	Residential	Solar	8.63	9,297	93V-311	Digby County	No
176429	9/2/2021	Residential	Solar	5.75	6,198	93V-313	Digby County	No
168175	9/2/2021	Residential	Solar	8.24	8,873	36V-302	Kings County	No
569644	9/2/2021	Residential	Solar	8.24	8,879	137H-414	Halifax County	No
663807	9/2/2021	Residential	Solar	7.67	8,267	22N-402	Cumberland County	No
679609	9/2/2021	Residential	Solar	11.40	12,284	1N-404	Colchester County	No
394309	9/2/2021	Residential	Solar	19.00	20,472	15N-404	Colchester County	No
147669	9/2/2021	Residential - TOU	Solar	14.00	15,085	1N-421	Colchester County	No
194608	9/2/2021	Residential	Solar	8.00	8,620	70V-312	Annapolis County	No
478076	9/2/2021	Residential	Solar	15.00	16,163	36V-303	Kings County	No
657859	9/1/2021	Residential	Solar	15.08	16,248	640V-311	Hants County	No
614141	9/1/2021	Residential	Solar	11.50	12,391	70V-311	Annapolis County	No
151525	9/1/2021	Residential	Solar	9.60	10,344	1N-403	Colchester County	No
407824	8/31/2021	Residential	Solar	8.19	8,826	126H-313	Halifax County	No
173437	8/31/2021	Residential	Solar	8.63	9,299	99V-311	Kings County	No
441746	8/31/2021	Residential	Solar	7.50	8,081	58H-431	Halifax County	No
259295	8/31/2021	Residential	Solar	6.58	7,090	22N-402	Cumberland County	No
399457	8/31/2021	Residential	Solar	11.87	12,788	139H-414	Halifax County	No
199519	8/31/2021	Residential	Solar	9.60	10,344	87W-311	Halifax County	No
687667	8/30/2021	Residential	Solar	8.04	8,663	619V-311	Hants County	No
119521	8/30/2021	Residential	Solar	7.54	8,124	92H-332	Halifax County	No
378437	8/30/2021	Residential	Solar	8.63	9,298	70V-312	Annapolis County	No
138657	8/30/2021	Residential	Solar	7.19	7,747	16N-301	Colchester County	No
645315	8/30/2021	Residential	Solar	7.22	7,779	20H-306	Halifax County	No
247983	8/30/2021	Residential	Solar	8.58	9,244	13V-303	Digby County	No
694234	8/30/2021	Residential	Solar	9.60	10,344	2H-421	Halifax County	No
422723	8/30/2021	Residential	Solar	6.80	7,327	92H-331	Halifax County	Yes
606107	8/30/2021	Residential	Solar	8.24	8,879	137H-412	Halifax County	No
728526	8/30/2021	Residential	Solar	15.20	16,378	1N-421	Colchester County	No
711728	8/30/2021	Residential	Solar	7.60	8,190	20H-305	Halifax County	No
608025	8/30/2021	Residential	Solar	9.60	10,344	101H-421	Halifax County	No
732237	8/30/2021	Residential	Solar	6.00	6,465	20H-305	Halifax County	No
606449	8/27/2021	Residential	Solar	5.35	5,765	82V-401	Hants County	No
211861	8/27/2021	Residential	Solar	4.80	5,172	88W-322	Queens County	No
144190	8/27/2021	Residential	Solar	9.32	10,042	1N-405	Colchester County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
564669	8/27/2021	Residential	Solar	8.19	8,824	3N-412	Colchester County	No
263528	8/27/2021	Residential	Solar	7.64	7,058	74N-411	Cumberland County	No
109061	8/27/2021	Residential	Solar	8.24	8,873	127H-411	Halifax County	No
707055	8/27/2021	Residential	Solar	8.24	8,875	77V-302	Digby County	No
90507	8/27/2021	Residential	Solar	7.60	8,189	113H-434	Halifax County	No
604423	8/27/2021	Residential	Solar	15.00	16,162	713N-301	Colchester County	No
239048	8/27/2021	Residential	Solar	9.32	10,039	70W-313	Lunenburg County	No
90351	8/27/2021	Residential	Solar	4.15	4,469	113H-443	Halifax County	No
123503	8/26/2021	Residential	Solar	6.00	6,465	103H-434	Halifax County	No
404351	8/26/2021	Residential	Solar	7.12	7,676	50W-411	Queens County	No
230887	8/26/2021	Residential	Solar	7.20	7,758	46W-303	Queens County	No
559911	8/26/2021	Residential	Solar	6.00	6,465	50W-412	Yarmouth County	No
475193	8/26/2021	Residential	Solar	8.63	9,297	512N-311	Pictou County	No
448433	8/26/2021	Residential	Solar	8.40	9,051	137H-412	Halifax County	No
675448	8/26/2021	Residential	Solar	8.40	9,051	103W-311	Halifax County	No
565716	8/26/2021	Residential	Solar	8.23	8,867	131H-424	Halifax County	No
93320	8/26/2021	Residential	Solar	8.24	8,873	113H-441	Halifax County	No
643849	8/26/2021	Residential	Solar	8.24	8,879	103H-432	Halifax County	No
168368	8/26/2021	Residential - TOU	Solar	8.40	9,051	83V-303	Kings County	No
703171	8/26/2021	Residential	Solar	8.24	8,873	15N-403	Colchester County	No
579039	8/26/2021	Residential	Solar	9.60	10,344	99V-314	Kings County	No
623715	8/25/2021	Residential	Solar	7.20	7,758	24C-443	Guysborough County	No
213897	8/25/2021	Residential	Solar	5.75	6,195	102W-311	Yarmouth County	No
730288	8/25/2021	Residential	Solar	9.67	10,422	131H-424	Halifax County	No
34359	8/25/2021	Residential	Solar	8.63	9,299	20H-306	Halifax County	No
602451	8/25/2021	Residential	Solar	4.92	5,301	113H-444	Halifax County	No
412933	8/25/2021	Residential	Solar	12.20	13,145	36V-303	Kings County	No
705181	8/25/2021	Residential	Solar	8.24	8,879	2H-411	Halifax County	No
455791	8/25/2021	Residential	Solar	8.24	8,879	126H-311	Halifax County	No
311388	8/25/2021	Residential	Solar	7.33	7,898	2C-402	Inverness County	No
216795	8/25/2021	Residential	Solar	9.42	10,150	19W-311	Yarmouth County	No
683516	8/25/2021	Residential	Solar	8.70	9,374	20H-305	Halifax County	No
44674	8/24/2021	Residential	Solar	8.00	8,620	23H-301	Halifax County	No
452978	8/24/2021	Residential	Solar	8.40	9,051	113H-441	Halifax County	No
289634	8/24/2021	Residential	Solar	4.80	5,172	500N-301	Pictou County	No
272428	8/24/2021	Residential	Solar	8.63	9,297	87H-313	Halifax County	No
70986	8/24/2021	Residential	Solar	5.75	6,195	99H-311	Halifax County	No
683626	8/24/2021	Residential	Solar	8.24	8,879	103H-434	Halifax County	No
98309	8/24/2021	Residential	Solar	7.19	7,747	101H-413	Halifax County	No
433662	8/24/2021	Residential	Solar	8.63	9,299	137H-413	Halifax County	No
112333	8/24/2021	Residential	Solar	8.63	9,299	101H-411	Halifax County	No
124621	8/24/2021	Residential	Solar	5.75	6,195	103H-434	Halifax County	No
578708	8/24/2021	Residential	Solar	7.49	8,073	131H-424	Halifax County	No
675753	8/24/2021	Residential	Solar	8.24	8,878	137H-412	Halifax County	No
667511	8/24/2021	Residential	Solar	8.24	8,879	131H-424	Halifax County	No
660430	8/24/2021	Residential	Solar	18.00	19,395	728N-311	Cumberland County	No
78611	8/24/2021	Residential	Solar	3.73	4,019	40H-304	Halifax County	No
744646	8/24/2021	Residential	Solar	10.00	10,775	65V-303	Annapolis County	No
638015	8/23/2021	Residential - TOU	Solar	8.24	8,879	127H-411	Halifax County	No
620363	8/23/2021	Residential - TOU	Solar	14.38	15,495	15N-404	Colchester County	No
245378	8/23/2021	Residential	Solar	7.60	8,189	516W-211	Lunenburg County	No
93037	8/21/2021	Residential - TOU	Solar	9.60	10,344	113H-441	Halifax County	No
393385	8/20/2021	Residential	Solar	4.80	5,172	70W-311	Lunenburg County	No
182457	8/20/2021	Residential	Solar	8.23	8,868	55V-314	Kings County	No
406518	8/20/2021	Residential	Solar	5.36	5,775	20H-303	Halifax County	No
384291	8/20/2021	Residential	Solar	15.36	16,550	2H-413	Halifax County	No
710770	8/20/2021	Residential	Solar	6.05	6,519	20H-305	Halifax County	No
428684	8/19/2021	Residential	Solar	8.73	9,407	113H-441	Halifax County	No
254216	8/19/2021	Residential	Solar	8.20	8,835	30N-411	Cumberland County	No
384417	8/19/2021	Residential	Solar	8.18	8,814	103H-434	Halifax County	No
476245	8/19/2021	Residential	Solar	7.19	7,747	131H-424	Halifax County	No
645818	8/19/2021	Residential	Solar	7.19	7,747	113H-441	Halifax County	No
616630	8/19/2021	Residential	Solar	15.36	16,550	63V-313	Kings County	No
631652	8/19/2021	Residential	Solar	9.42	10,150	131H-424	Halifax County	No
177617	8/19/2021	Charitable	Solar	15.08	16,249	93V-313	Yarmouth County	No
76982	8/19/2021	Residential	Solar	9.60	10,344	113H-431	Halifax County	No
467777	8/19/2021	Residential	Solar	8.56	9,223	131H-424	Halifax County	Yes
564410	8/19/2021	Residential	Solar	8.03	8,652	59C-403	Richmond County	No
602597	8/19/2021	Residential	Solar	4.20	4,525	59C-403	Richmond County	No
734173	8/19/2021	Residential	Solar	9.42	10,150	55V-322	Kings County	No
579454	8/18/2021	Residential	Solar	8.40	9,051	22N-403	Cumberland County	No
117569	8/18/2021	Residential	Solar	8.40	9,051	82V-423	Hants County	No
135976	8/18/2021	Residential	Solar	9.60	10,344	627V-311	Hants County	No
718520	8/18/2021	Residential	Solar	8.63	9,296	131H-424	Halifax County	No
648378	8/18/2021	Residential	Solar	4.23	4,554	581C-311	Antigonish County	No
740929	8/18/2021	Residential	Solar	4.31	4,648	20H-305	Halifax County	No
626758	8/18/2021	Residential	Solar	8.63	9,299	70W-321	Lunenburg County	No
427874	8/18/2021	Residential	Solar	6.79	7,316	35V-312	Hants County	No
727437	8/18/2021	Residential	Solar	8.24	8,873	131H-422	Halifax County	No
155967	8/18/2021	Residential	Solar	5.75	6,196	15N-401	Colchester County	No
604788	8/18/2021	Residential	Solar	7.60	8,189	131H-422	Halifax County	No
609817	8/18/2021	Residential	Solar	5.75	6,196	40H-401	Halifax County	No
701361	8/18/2021	Residential	Solar	7.19	7,747	624V-311	Hants County	No
141920	8/18/2021	Residential	Solar	8.23	8,868	15N-401	Colchester County	No
44794	8/18/2021	Residential	Solar	9.60	10,344	23H-304	Halifax County	No
96824	8/18/2021	Residential	Solar	4.15	4,471	101H-413	Halifax County	No
729012	8/18/2021	Residential	Solar	6.40	6,896	20H-305	Halifax County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
57440	8/18/2021	Residential	Solar	5.75	6,196	40H-401	Halifax County	No
650567	8/18/2021	Residential	Solar	9.60	10,344	113H-431	Halifax County	No
606512	8/18/2021	Residential	Solar	8.03	8,652	83V-303	Kings County	No
470003	8/18/2021	Residential	Solar	6.96	7,499	82V-423	Hants County	No
165268	8/18/2021	Residential	Solar	5.80	6,249	83V-302	Kings County	No
278214	8/17/2021	Residential	Solar	9.60	11,520	50N-410	Pictou County	No
82807	8/17/2021	Residential	Solar	7.89	8,501	48H-301	Halifax County	No
288832	8/17/2021	Residential	Solar	8.40	9,051	56N-401	Pictou County	No
107114	8/17/2021	Residential	Solar	8.40	9,051	101H-423	Halifax County	No
587425	8/17/2021	Residential	Solar	9.08	9,783	4N-312	Colchester County	No
160863	8/17/2021	Residential	Solar	6.00	6,465	4N-312	Pictou County	No
168571	8/17/2021	Residential	Solar	8.85	9,536	83V-303	Kings County	No
479250	8/17/2021	Residential - TOU	Solar	7.19	7,747	507H-311	Colchester County	No
85436	8/17/2021	Residential	Solar	7.19	7,747	113H-433	Halifax County	No
226990	8/17/2021	Residential	Solar	7.54	8,124	555W-311	Lunenburg County	No
405258	8/17/2021	Residential	Solar	8.24	8,879	137H-412	Halifax County	No
97406	8/17/2021	Residential	Solar	8.63	9,296	131H-421	Halifax County	No
110801	8/17/2021	Residential	Solar	8.63	9,299	101H-421	Halifax County	No
664447	8/17/2021	Residential - TOU	Solar	8.63	9,296	131H-423	Halifax County	No
391831	8/17/2021	Residential	Solar	8.63	9,299	131H-423	Halifax County	No
110467	8/17/2021	Residential	Solar	8.98	9,600	101H-411	Halifax County	No
578103	8/17/2021	Residential	Solar	8.24	8,873	101H-422	Halifax County	No
478178	8/17/2021	Residential	Solar	6.58	7,090	22N-403	Cumberland County	No
555612	8/17/2021	Residential	Solar	8.24	8,878	62H-302	Halifax County	No
631410	8/17/2021	Residential - TOU	Solar	9.60	10,344	137H-411	Halifax County	No
11252	8/17/2021	Residential	Solar	5.80	6,250	104H-411	Halifax County	No
578362	8/17/2021	Residential	Solar	7.20	7,758	62H-302	Halifax County	No
449688	8/17/2021	Residential	Solar	7.12	7,676	99V-312	Kings County	No
424421	8/17/2021	Residential	Solar	8.73	9,407	131H-421	Halifax County	No
576486	8/17/2021	Residential	Solar	9.42	10,150	36V-303	Kings County	No
190258	8/17/2021	Residential	Solar	4.20	4,525	63V-313	Kings County	No
375459	8/16/2021	Residential	Solar	7.20	7,758	37N-414	Cumberland County	No
686327	8/16/2021	Residential - TOU	Solar	4.80	5,172	50N-410	Pictou County	No
245865	8/16/2021	Residential	Solar	6.00	6,465	73W-411	Lunenburg County	No
654722	8/16/2021	Residential	Solar	6.05	6,519	1N-402	Colchester County	No
662821	8/16/2021	Residential	Solar	5.75	6,198	73W-411	Lunenburg County	No
251422	8/16/2021	Residential	Solar	5.35	5,765	37N-412	Cumberland County	No
140394	8/16/2021	Residential	Solar	5.75	6,198	82V-401	Annapolis County	No
609573	8/16/2021	Residential	Solar	6.00	6,465	83V-301	Kings County	No
590200	8/16/2021	Residential	Solar	8.63	9,299	131H-422	Halifax County	No
183105	8/16/2021	Residential	Solar	11.50	12,391	55V-313	Kings County	No
459545	8/16/2021	Residential	Solar	8.30	8,938	101H-421	Halifax County	No
683256	8/16/2021	Residential	Solar	7.60	8,189	127H-411	Halifax County	No
97159	8/16/2021	Residential	Solar	7.75	8,349	131H-423	Halifax County	No
35520	8/16/2021	Residential	Solar	9.60	10,344	20H-304	Halifax County	No
645337	8/16/2021	Residential	Solar	7.60	8,189	20H-306	Halifax County	No
467510 -	8/16/2021	Residential	Solar	6.38	6,874	131H-423	Halifax County	No
696645	8/16/2021	Residential	Solar	6.80	7,327	82V-423	Hants County	No
710528	8/16/2021	Residential	Solar	9.60	10,344	16N-301	Colchester County	No
152664	8/16/2021	Residential	Solar	20.00	21,550	677N-301	Colchester County	No
632704	8/16/2021	Residential	Solar	8.73	9,406	655V-211	Digby County	No
116454	8/16/2021	Residential	Solar	9.57	10,311	82V-422	Hants County	No
375991	8/13/2021	Residential	Solar	4.80	5,172	619N-301	Colchester County	No
298687	8/13/2021	Residential	Solar	7.20	7,758	57C-422	Pictou County	No
260890	8/13/2021	Residential	Solar	6.00	6,465	4N-311	Cumberland County	No
585454	8/13/2021	Residential	Solar	4.80	5,172	4N-311	Cumberland County	No
456623	8/13/2021	Residential	Solar	5.36	5,775	101H-421	Halifax County	No
667440	8/13/2021	Residential	Solar	8.63	9,299	92H-332	Halifax County	No
134855	8/13/2021	Residential	Solar	8.63	9,296	18V-413	Hants County	Yes
234042	8/13/2021	Residential	Solar	7.89	8,501	70W-321	Lunenburg County	No
241816	8/13/2021	Residential	Solar	8.24	8,879	70W-313	Lunenburg County	No
672565	8/13/2021	Residential	Solar	15.00	16,162	62N-416	Pictou County	No
287979	8/13/2021	Residential	Solar	9.60	10,344	62N-413	Pictou County	No
91934	8/13/2021	Residential	Solar	7.60	8,188	113H-434	Halifax County	No
295809	8/13/2021	Residential	Solar	9.28	9,999	62N-411	Pictou County	No
427631	8/13/2021	Residential	Solar	8.95	9,641	427631	Halifax County	No
88505	8/12/2021	Residential	Solar	5.35	5,765	58H-421	Halifax County	No
263492	8/12/2021	Residential	Solar	8.40	9,051	74N-411	Halifax County	No
403040	8/12/2021	Residential	Solar	7.75	8,349	113H-433	Halifax County	No
672509	8/12/2021	Residential	Solar	12.00	12,930	50V-402	Kings County	No
628678	8/12/2021	Residential	Solar	8.63	9,299	126H-312	Halifax County	No
620148	8/12/2021	Residential	Solar	7.19	7,747	4N-312	Pictou County	No
733266	8/12/2021	Residential	Solar	8.63	9,299	137H-412	Halifax County	No
119783	8/12/2021	Residential	Solar	7.60	8,189	92H-332	Halifax County	No
425622	8/12/2021	Residential	Solar	8.63	9,299	113H-443	Halifax County	No
173607	8/12/2021	Residential	Solar	8.63	9,299	22V-322	Kings County	No
641443	8/12/2021	Residential	Solar	5.93	6,389	113H-431	Halifax County	No
726676	8/12/2021	Residential	Solar	3.60	3,879	113H-444	Halifax County	No
89440	8/12/2021	Residential	Solar	8.40	9,051	113H-434	Halifax County	No
581594	8/11/2021	Residential	Solar	8.40	9,051	55V-314	Kings County	No
90134	8/11/2021	Residential	Solar	8.63	9,299	113H-434	Halifax County	No
446473	8/11/2021	Residential	Solar	8.63	9,296	101H-421	Halifax County	No
495163	8/11/2021	Residential	Solar	7.60	8,189	20H-305	Halifax County	No
175232	8/11/2021	Residential	Solar	8.63	9,296	99V-312	Kings County	No
140195	8/11/2021	Residential	Solar	8.40	9,051	82V-401	Hants County	No
702449	8/11/2021	Residential	Solar	7.68	8,275	65V-302	Annapolis County	No
139896	8/11/2021	Residential	Solar	9.60	10,344	16N-301	Colchester County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
304768	8/11/2021	Residential	Solar	9.57	10,311	100C-421	Antigonish County	No
686512	8/10/2021	Residential	Solar	7.19	7,747	137H-411	Halifax County	No
631728	8/10/2021	Residential	Solar	8.63	9,299	137H-412	Halifax County	No
454952	8/10/2021	Residential	Solar	11.50	12,395	65V-302	Kings County	No
729066	8/10/2021	Residential	Solar	7.19	7,747	129H-413	Halifax County	No
339324	8/10/2021	Residential	Solar	10.00	10,775	81S-305	Cape Breton County	No
91918	8/10/2021	Residential - TOU	Solar	9.60	10,344	113H-434	Halifax County	No
425804	8/9/2021	Residential	Solar	9.42	10,150	126H-311	Halifax County	No
6663	8/6/2021	Residential	Solar	8.63	9,296	104H-441	Halifax County	No
479927	8/6/2021	Residential	Solar	4.31	4,648	2H-411	Halifax County	No
39796	8/6/2021	Residential	Solar	7.19	7,747	2H-411	Halifax County	No
705182	8/6/2021	Residential	Solar	8.63	9,299	2H-411	Halifax County	No
740700	8/6/2021	Residential	Solar	7.19	7,747	82V-401	Hants County	No
40155	8/6/2021	Residential	Solar	8.63	9,296	2H-411	Halifax County	No
105208	8/6/2021	Residential - TOU	Solar	8.63	9,299	101H-412	Halifax County	No
603063	8/6/2021	Residential	Solar	7.60	8,189	16V-315	Yarmouth County	No
726232	8/6/2021	Residential	Solar	7.60	8,189	20H-305	Halifax County	No
656665	8/6/2021	Residential	Solar	8.63	9,299	104H-433	Halifax County	No
566510	8/6/2021	Residential	Solar	7.60	8,189	709H-221	Halifax County	No
732436	8/5/2021	Residential	Solar	8.63	9,299	137H-412	Halifax County	No
690052	8/5/2021	Residential	Solar	8.23	8,868	103H-432	Halifax County	No
585766	8/5/2021	Residential	Solar	8.20	8,836	137H-411	Halifax County	No
405810	8/4/2021	Residential	Solar	9.60	10,344	82V-423	Hants County	No
130972	8/4/2021	Residential	Solar	7.20	7,758	20V-311	Hants County	No
409754	8/4/2021	Residential	Solar	8.40	9,051	515C-301	Antigonish County	No
600906	8/4/2021	Residential	Solar	8.63	9,296	18V-413	Hants County	No
76991	8/4/2021	Residential	Solar	7.19	7,747	113H-431	Halifax County	No
445598	8/4/2021	Residential	Solar	10.82	11,658	40H-401	Halifax County	No
663928	8/4/2021	Residential	Solar	9.42	10,150	57S-402	Cape Breton County	No
83426	8/4/2021	Residential	Solar	3.60	3,879	40H-304	Halifax County	No
480400	8/3/2021	Residential	Solar	8.63	9,299	99V-311	Kings County	No
627119	8/3/2021	Residential	Solar	9.42	10,150	65V-303	Annapolis County	No
603993	8/3/2021	Residential	Solar	9.60	10,344	55V-314	Kings County	Yes
186071	8/3/2021	Residential	Solar	9.07	9,773	64V-301	Kings County	No
559802	7/30/2021	Residential	Solar	13.60	14,654	82V-402	Halifax County	No
424334	7/30/2021	Residential	Solar	9.07	9,773	16V-315	Digby County	No
647372	7/30/2021	Residential - TOU	Solar	15.00	16,163	56N-401	Pictou County	No
645562	7/29/2021	Residential	Solar	7.20	7,758	131H-424	Halifax County	No
153288	7/29/2021	Residential	Solar	7.20	7,758	1N-403	Colchester County	No
745482	7/29/2021	Residential	Solar	8.20	8,835	512N-311	Pictou County	No
130579	7/28/2021	Residential	Solar	12.00	12,930	79V-403	Hants County	No
6927	7/28/2021	Residential	Solar	7.60	8,189	104H-423	Halifax County	No
594203	7/28/2021	Residential	Solar	6.00	6,465	582C-311	Antigonish County	No
48369	7/28/2021	Residential	Solar	6.09	6,562	137H-414	Halifax County	No
703244	7/28/2021	Residential	Solar	7.60	8,189	99V-314	Kings County	No
121185	7/27/2021	Residential	Solar	8.40	9,050	92H-334	Halifax County	No
121885	7/27/2021	Residential	Solar	4.22	4,547	92H-331	Halifax County	No
597794	7/27/2021	Residential - TOU	Solar	8.40	9,051	84W-301	Halifax County	No
574013	7/27/2021	Residential	Solar	7.60	8,189	92H-334	Halifax County	No
632083	7/27/2021	Residential	Solar	1.75	1,886	126H-312	Halifax County	No
120002	7/27/2021	Residential	Solar	11.89	12,811	137H-412	Halifax County	No
197720	7/27/2021	Residential	Solar	8.20	8,836	87W-312	Lunenburg County	No
120292	7/27/2021	Residential	Solar	8.63	9,299	131H-424	Halifax County	No
671767	7/26/2021	Residential - TOU	Solar	4.80	5,172	62N-411	Pictou County	No
42784	7/26/2021	Residential	Solar	4.80	5,172	23H-301	Halifax County	No
290175	7/26/2021	Residential	Solar	8.24	8,873	62N-416	Pictou County	No
613567	7/26/2021	Residential - TOU	Solar	9.60	10,344	137H-412	Halifax County	No
250994	7/26/2021	Residential	Solar	7.67	8,264	37N-414	Cumberland County	Yes
387063	7/23/2021	Residential - TOU	Solar	8.24	8,873	61N-205	Pictou County	No
238137	7/23/2021	Residential	Solar	7.19	7,747	70W-204	Lunenburg County	No
467961	7/23/2021	Residential	Solar	4.31	4,644	20H-303	Halifax County	No
243527	7/23/2021	Residential	Solar	8.63	9,296	89W-303	Lunenburg County	No
57109	7/23/2021	Residential	Solar	7.19	7,747	40H-401	Halifax County	No
36262	7/23/2021	Residential	Solar	7.20	7,758	20H-303	Halifax County	No
140443	7/23/2021	Residential	Solar	6.98	7,520	82V-401	Hants County	No
741833	7/23/2021	Residential	Solar	7.60	8,189	20H-305	Halifax County	No
717862	7/23/2021	Residential	Solar	5.58	6,013	20H-305	Halifax County	No
446631	7/23/2021	Residential	Solar	11.52	12,413	63V-312	Kings County	No
131327	7/23/2021	Residential	Solar	6.00	6,465	20V-311	Halifax County	No
201350	7/22/2021	Residential	Solar	4.80	5,172	1V-443	Lunenburg County	No
400363	7/22/2021	Residential	Solar	8.40	9,051	137H-412	Halifax County	No
75261	7/22/2021	Residential	Solar	6.00	6,465	54H-301	Halifax County	No
59185	7/22/2021	Residential	Solar	8.63	9,299	139H-414	Halifax County	No
43820	7/22/2021	Residential	Solar	5.75	6,195	23H-301	Halifax County	No
636722	7/22/2021	Residential - TOU	Solar	9.42	10,150	64V-301	Annapolis County	No
607635	7/22/2021	Residential	Solar	7.12	7,676	113H-434	Halifax County	No
717468	7/22/2021	Residential	Solar	9.57	10,311	63V-313	Kings County	No
727692	7/21/2021	Residential	Solar	8.40	9,051	79V-401	Hants County	No
254013	7/21/2021	Residential	Solar	5.35	5,765	17N-203	Cumberland County	No
652843	7/21/2021	Residential	Solar	8.40	9,051	516W-211	Lunenburg County	No
689819	7/21/2021	Residential	Solar	15.03	16,195	104H-433	Halifax County	No
644068	7/21/2021	Residential	Solar	5.00	5,387	129H-413	Halifax County	No
732362	7/21/2021	Residential	Solar	8.40	9,051	78W-302	Lunenburg County	No
255462	7/21/2021	Residential	Solar	4.62	4,974	22N-401	Cumberland County	No
600218	7/21/2021	Residential	Solar	8.63	9,299	113H-443	Halifax County	No
469422	7/21/2021	Residential	Solar	8.40	9,051	5N-301	Colchester County	No
468726	7/21/2021	Residential	Solar	14.97	16,130	99V-311	Kings County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation
630881	7/20/2021	Residential	Solar	8.40	9,051	87H-312	Halifax County	No
583098	7/20/2021	Residential	Solar	7.54	8,123	131H-424	Halifax County	No
690530	7/20/2021	Residential - TOU	Solar	11.40	12,283	16N-301	Colchester County	No
271214	7/20/2021	Residential - TOU	Solar	5.35	5,765	126H-312	Halifax County	No
96392	7/20/2021	Residential	Solar	8.23	8,868	101H-411	Halifax County	No
622616	7/20/2021	Residential	Solar	3.48	3,750	59C-403	Richmond County	No
310645	7/19/2021	Residential	Solar	9.28	9,999	67C-411	Inverness County	Yes
436713	7/19/2021	Residential	Solar	7.33	7,898	16V-314	Yarmouth County	No
203974	7/19/2021	Residential	Solar	15.77	16,992	103W-311	Lunenburg County	No
426831	7/16/2021	Residential	Solar	8.40	9,051	82V-403	Halifax County	No
82071	7/16/2021	Residential	Solar	3.80	4,095	48H-301	Halifax County	No
685395	7/16/2021	Residential	Solar	8.23	8,868	127H-411	Halifax County	No
385801	7/16/2021	Residential	Solar	8.23	8,872	127H-411	Halifax County	No
75482	7/16/2021	Residential	Solar	6.58	7,090	48H-302	Halifax County	No
94601	7/16/2021	Residential	Solar	3.84	4,138	113H-442	Halifax County	No
635905	7/16/2021	Residential	Solar	7.60	8,189	20H-306	Halifax County	Yes
278974	7/16/2021	Residential	Solar	15.00	16,163	50N-410	Pictou County	Yes
227126	7/16/2021	Residential	Solar	11.02	11,874	70W-311	Lunenburg County	No
739108	7/16/2021	Residential	Solar	9.28	9,999	3S-403	Victoria County	No
196729	7/16/2021	Residential	Solar	6.96	7,500	16V-314	Digby County	No
448566	7/15/2021	Residential	Solar	8.40	9,051	102W-311	Yarmouth County	No
665380	7/15/2021	Residential	Solar	8.62	9,288	500N-301	Pictou County	No
123954	7/15/2021	Residential	Solar	8.63	9,296	103H-434	Halifax County	No
734161	7/15/2021	Residential	Solar	6.00	6,465	36W-301	Shelburne County	No
590330	7/15/2021	Residential	Solar	8.40	9,051	126H-311	Halifax County	No
89883	7/15/2021	Residential	Solar	8.63	9,296	113H-434	Halifax County	No
269950	7/15/2021	Residential	Solar	9.60	10,344	126H-313	Halifax County	No
473067	7/14/2021	Residential	Solar	8.30	8,943	70W-312	Lunenburg County	No
643073	7/14/2021	Residential	Solar	6.00	6,465	70V-311	Annapolis County	No
659412	7/14/2021	Residential - TOU	Solar	6.38	6,874	4C-441	Antigonish County	No
435055	7/14/2021	Residential	Solar	4.80	5,172	101H-413	Halifax County	No
158284	7/14/2021	Residential	Solar	8.73	9,407	77V-302	Digby County	No
737912	7/14/2021	Residential	Solar	11.40	12,283	137H-413	Halifax County	No
162975	7/14/2021	Residential - TOU	Solar	9.28	9,999	629N-311	Cumberland County	No
139055	7/14/2021	Residential	Solar	9.60	10,344	16N-301	Colchester County	No
744983	7/14/2021	Residential	Solar	11.60	12,499	82V-402	Halifax County	No
677410	7/14/2021	Residential	Solar	8.40	9,051	137H-413	Halifax County	No
193338	7/14/2021	Residential	Solar	9.42	10,150	70V-311	Lunenburg County	No
47629	7/13/2021	Residential	Solar	7.60	8,189	129H-412	Halifax County	No
671437	7/13/2021	Residential	Solar	7.20	7,758	4N-311	Cumberland County	No
624555	7/13/2021	Residential	Solar	8.63	9,299	65V-301	Annapolis County	No
611212	7/13/2021	Residential	Solar	9.60	10,344	137H-412	Halifax County	No
707786	7/13/2021	Residential	Solar	9.28	9,999	22C-404	Richmond County	No
740988	7/13/2021	Residential	Solar	8.80	9,482	92H-332	Halifax County	No
738775	7/13/2021	Residential	Solar	7.12	7,672	137H-412	Halifax County	No
656778	7/13/2021	Residential	Solar	16.53	17,811	87H-313	Halifax County	No
571317	7/13/2021	Residential	Solar	6.09	6,562	50V-401	Kings County	No
683211	7/13/2021	Residential	Solar	7.25	7,812	137H-412	Halifax County	No
171556	7/13/2021	Residential	Solar	9.50	10,236	99V-314	Kings County	No
145000	7/13/2021	Residential	Solar	7.60	8,189	15N-404	Colchester County	No
151163	7/12/2021	Residential	Solar	7.20	7,758	15N-401	Colchester County	No
192624	7/12/2021	Residential	Solar	4.80	5,172	65V-302	Annapolis County	No
748159	7/12/2021	Commercial	Solar	43.20	46,548	129H-412	Halifax County	Yes
132263	7/12/2021	Residential	Solar	9.60	10,344	83V-301	Kings County	No
249728	7/12/2021	Residential	Solar	7.83	8,437	37N-411	Cumberland County	No
331875	7/9/2021	Residential	Solar	5.35	5,762	57C-422	Guysborough County	No
134079	7/9/2021	Residential	Solar	8.40	9,051	79V-401	Hants County	No
247980	7/9/2021	Residential	Solar	8.40	9,051	13V-303	Digby County	No
453677	7/9/2021	Residential	Solar	7.50	8,081	82V-401	Hants County	No
156916	7/9/2021	Residential	Solar	4.80	5,172	77V-302	Digby County	No
625094	7/9/2021	Residential	Solar	6.38	6,874	2H-411	Halifax County	No
137282	7/9/2021	Residential	Solar	7.60	8,189	18V-413	Hants County	No
274796	7/8/2021	Residential	Solar	12.00	12,930	703H-311	Colchester County	No
44774	7/8/2021	Residential	Solar	8.63	9,297	23H-304	Halifax County	No
458487	7/8/2021	Residential	Solar	7.19	7,747	131H-424	Halifax County	No
725829	7/8/2021	Residential	Solar	9.42	10,153	131H-424	Halifax County	No
726122	7/8/2021	Residential	Solar	15.36	16,550	131H-424	Halifax County	No
6787	7/8/2021	Residential	Solar	7.60	8,189	104H-423	Halifax County	No
80539	7/7/2021	Residential	Solar	8.40	9,051	40H-304	Halifax County	No
213025	7/6/2021	Residential	Solar	4.80	5,172	102W-311	Yarmouth County	No
133223	7/5/2021	Residential	Solar	7.20	7,758	35V-312	Hants County	No
146796	7/5/2021	Residential	Solar	8.40	9,051	1N-421	Colchester County	No

Application ID	In Service Date	Customer Segment	Resource	Nameplate Capacity (kW)	Est. Annual Generation (kWh)	Feeder No.	County	Applying Aggregation	Change
System Changes									
678778	7/11/2017	Residential	Solar	17.27	18,608	113H-443	Halifax County	No	Increased NP Capacity from 9.03 to 17.27
302529	7/25/2016	Residential	Solar	7.28	7,844	49C-301	Antigonish County	No	Increased NP Capacity from 3.44 to 7.28
329134	1/29/2019	Residential	Solar	7.52	8,103	22C-404	Richmond County	No	Increased NP Capacity from 3.68 to 7.52
681231	12/12/2019	Residential	Solar	13.00	14,008	83V-301	Kings County	No	Increased NP Capacity from 9.50 to 13.00
197948	12/19/2017	Residential	Solar	13.10	14,115	87W-312	Halifax County	No	Increased NP Capacity from 10.54 to 13.10
656903	7/28/2020	Residential - TOU	Solar	11.86	12,779	51V-301	Kings County	No	Increased NP Capacity from 9.42 to 11.86
95789	4/15/2020	Residential	Solar	3.50	3,771	113H-434	Halifax County	No	Increased NP Capacity from 1.10 to 3.50
46605	10/6/2020	Residential	Solar	7.60	8,189	129H-411	Halifax County	No	Increased NP Capacity from 6.00 to 7.60
718825	11/1/2019	Residential	Solar	7.54	8,124	89W-302	Lunenburg County	No	Increased NP Capacity from 6.38 to 7.54
437664	1/16/2020	Residential	Solar	10.40	11,206	65V-302	Annapolis County	No	Increased NP Capacity from 9.28 to 10.40
330850	9/4/2015	Residential	Solar	9.36	10,085	545C-211	Richmond County	No	Increased NP Capacity from 8.39 to 9.36
System Retirements									
649794	3/27/2008	Commercial	Wind	53.3	140,072	26N-211	Cumberland County	No	Retired in 2021
Adjustments									
740444	11/26/2020	Residential	Solar	24.26	26,140	20H-301	Halifax County	Yes	Record not captured in 2020 results in previous report
742613	12/4/2020	Residential	Solar	9.57	10,312	73W-411	Lunenburg County	Yes	Record not captured in 2020 results in previous report
631030	7/14/2020	Commercial	Solar	30.00	32,325	4C-432	Antigonish County	No	Record not captured in 2020 results in previous report
82410	5/14/2020	Residential	Solar	8.40	9,051	48H-301	Halifax County	No	Record not captured in 2020 results in previous report
660184	1/21/2020	Residential	Solar	12.00	12,930	4N-312	Colchester County	No	Record not captured in 2020 results in previous report

PV Forecast Based on Maintain Current Market Activity Case (Dunsky study)

Year	Incremental Res Install (MW)	Cumulative Res Installs (MW)	Cumulative Res GWh	Cumulative Comm Installs (MW)	Cumulative Comm GWh	Total Cumulative GWh	Total Cumulative Capacity (MW)	Res Install Est	Comm Install Est	Total Installs
2022	21	21	23	1	1	24	22	2,560	50	2,610
2023	11	32	35	1	2	36	34	3,875	72	3,947
2024	11	44	47	2	2	49	46	5,256	95	5,351
2025	12	56	60	2	3	63	58	6,706	119	6,825
2026	14	69	75	3	3	78	72	8,359	146	8,505
2027	16	85	92	4	4	95	89	10,243	178	10,420
2028	18	103	111	4	5	115	107	12,391	213	12,604
2029	20	123	133	5	5	138	128	14,840	254	15,093
2030	23	146	158	6	6	164	152	17,631	300	17,931
2031	23	169	178	7	7	185	176	20,368	356	20,724
2032	19	188	198	8	8	205	196	22,647	423	23,069

Request IR-11:

New Technologies (Section 4.4, pp 47-49)

(a) Please provide sources for the current costs of home batteries.

(b) Were projected cost declines of home batteries considered in the study? If so, please provide the assumed cost declines.

(c) Please provide further information about the SGNS project including any available reports.

(d) Please provide the assumptions and calculations behind the values in Figure 30.

Response IR-11:

(a) Costs for home batteries are based on procurement costs for Smart Grid Nova Scotia (SGNS) and can be found in July 2020 SGNS Semi-Annual Report, Attachment 3 Battery Recommendation (M09519). Please refer to Partially Confidential Attachment 1 for a copy of the Battery Recommendation. Generic cost estimates can also be found at the following websites:
https://kubyenergy.ca/blog/complete-guide-to-tesla-powerwall-in-canada
https://quebecsolar.ca/the-powerwall-teslas-home-battery-a-comprehensive-review/.

(b) No cost decline was modeled.

(c) Please refer to Synapse IR-9.

(d) Please refer to Attachment 2.

Submitted to:

Shawn Connell	Director, Customer Solutions and Key Accounts
Jason Penney	Director, Procurement
David Landrigan	VP, Commercial

Prepared by:

Hugh Kerr	Procurement Manager

Evaluation Team:

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Chris Cruickshank
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Jill Searle
Hugh Kerr

Risk Reviewers:

All identified risks are mitigated through standard NSPI SWP's and procedures.
Additional risk outside of standard parameters would be reviewed by the following departments if applicable:

Environment
Safety
Risk (Insurance)

Objective:

It is the objective of NSPI to enter into a supply arrangement(s) for Battery Energy Storage Systems (BESS) with a Service Provider(s)/Supplier(s) who:

a) Is competitive from a quality and cost perspective.
b) Meets the required project objectives and specifications.
c) Has the ability to meet required project timelines.

Recommendation:

The Evaluation Team recommends NSPI awards the Battery Energy Storage Systems project to the following 2 proponents, this specific recommendation pertains to Sunverge as pricing negotiations are being finalized with [redacted]:

1. **Sunverge (25 units)**

[redacted]

PO DETAILS		
DESCRIPTION	**VALUE**	**ACCOUNT NUMBER**
Sunverge 19.6 kWh BESS – 25 units (June 9 exchange rate 1.34)	[redacted]	Materials
Annual network fee for 2 years of pilot	[redacted]	Software
Freight	[redacted]	Freight
THIS RECOMMENDATION		
Capital or Operating?	[redacted]	
Total Expenditure of this Recommendation is	[redacted]	
Total Budgeted for this Scope of Work is (for 2 battery suppliers):	[redacted]	
Difference Between Recommended Expenditure and Budgeted Amount is:		
TOTAL PROJECT INFORMATION		
Total Project Budget is:	$ 18,953,453	
Total Committed to Date (as of 31May2020) is:	$ 1,076,386	
Total Spent to Date (as of 31May2020) is:	$ 903,238	
Total Project Value Remaining:	$ 17,877,067	
If Value Remaining is Negative has Project Received Approval to Overspend?	n/a	

Process Overview:

On, Jan 24 ,2020, a Request for Information and Qualifications for the Battery Energy Storage Systems was issued to the following companies:

Contacted and Proposal Submitted

[redacted]

Contacted and Did Not Respond or Declined

[redacted]

Not Contacted and Proposal Submitted

[redacted]

Upon the close date of Feb 7,2020, the evaluation of the proposals focused on the following key selection criteria:

1. Safety performance record[redacted]:

    - Proponents were scored evenly for this criterion as it was determined during the evaluation process that NSPI would choose and evaluate installation contractors independently of proponent's submissions where safety performance record holds more relevance.

2. Direct Experience [redacted]

    - Experience in the BESS industry, competence of team and local presence. Industry partnerships, geographical or market extent of experience.

3. Pricing: Lowest Levelized Cost of Electricity over the lifecycle of the BESS [redacted]

    - Costs were normalized based on capital expenditure, battery size, degradation and other factors based on normal and warranted operating use over the lifecycle of the BESS. Necessary communications hardware and software costs were also factored in. Installation costs were not factored in as varying installation costs were provided by proponents; NSP will work with the selected proponent(s) to award an installation contactor.

4. Timeline [redacted]

    - Demonstrated ability to meet project schedules and ability to meet the NS Smart Grid project schedule. Ability to scale up for the rollout of future programs.

5. BESS Technology and Product Quality [redacted]

    - Strategic alignment with NS Smart Grid project, suitability of product to perform use-cases. Minimal maintenance requirement and simplicity of maintenance. Product warranty and performance guarantee (battery degradation).

6. BESS Third Party Compatibility [redacted]:

    a. Open communications protocols, limited integration, and data restrictions. Limited additional hardware needed to integrate with ESP. Aggregation functionality.

Over the duration of the evaluation process (February 7, 2020 to June 9, 2020), technical Information was gleaned from all proposals and populated into an evaluation summary spreadsheet which made it easier to evaluate proponents on the key differentiating features that would assist with assigning scores within the evaluation matrix. Different aspects of the battery modules, inverters, controllers, gateways, transfer switches, communications mediums (cellular, internet) and integration strategies (direct to inverter versus cloud-to-cloud through a third party) were captured.

After an initial review of the seven proposals, [redacted]

Presentations were scheduled with the six remaining proponents and key component vendors identified in the proposals where appropriate:

[redacted]
3. Sunverge (Battery Modules, Inverter, Controller, Gateway and Aggregation Software).
[redacted]

- [redacted]

Following the presentations, several clarifying questions (through emails and conference calls) were directed to and answered by proponents and associated third parties in order to gain a comprehensive understanding of all BESS product hardware and software component features and costs in order to further refine the LCOE estimates and normalize the submissions across all proponents. After additional proposal clarifications were completed, [redacted]

Additional discussions took place with key component vendors and supplied reference project contacts:

- [redacted]
- Sunverge: Alectra Utilities
- [redacted]
- [redacted]
- [redacted]

Following reference checks and with updates to the evaluation scorecard, a shortlist of five proponents was developed. An API questionnaire was supplied by Siemens and sent to the shortlisted components: Sunverge, [redacted] in order to gauge any ESP integration considerations. In addition to completing the questionnaire a few review calls also took place where Siemens participated to walk through and ask clarifying questions about the completed questionnaire.

Late in the process, [redacted]

Technical and Commercial Evaluation:

Refer to Appendix "A" for complete pricing details of top ranked proposals.
Evaluation of all proposals received based on the defined Key Selection Criteria:

Proponent Comparison Worksheet				
#	Evaluation Criterion	Criterion Weighting (%) Revise Weightings based on Project requirements	Proponents	[redacted]
1	Safety performance record			
	Score			
2	Experience in the industry, competence of team and local presence. Partnerships. Reach.			
	Score			
3	Pricing (Lowest Levelized Cost of Electricity based on normal use).			
	Score			
4	Ability to deliver and alignment with NSPI project timeline. Demonstrated ability to meet schedule. Ability to scale up for the rollout of future programs.			
	Score			
5	BESS Technology and Product Quality: Strategic Alignment; Suitability of product to Perform NSPI/ESP Use-Cases. Minimal Maintenance Requirement & Simplicity of Maintenance. Warranty. Performance Guarantee (degradation).			
	Score			
6	BESS Third Party Compatibility: Open Communications Protocols, Limited Integration/Data Restrictions and limited additional hardware needed to integrate with ESP, Aggregation Functionality (wil have resourcing/cost implications).			
	Score			
	TOTAL SCORE			
	RANK			

[redacted]

The team clearly identifies Sunverge and [redacted] as best value, lowest risk and innovative options satisfying Smart Grid NS project objectives. [redacted]

Risk Review:

All risks identified in this initiative are being mitigated through standard NSPI SWP's and procedures.

Recommendation:

The evaluation team confidently presents this Recommendation and believes the process was both competitive and transparent and requests your approval.

Appendix "A"

	Sunverge	[redacted]	[redacted]
Current Evaluation Rank	1	[redacted]	[redacted]
Battery	(LG)	[redacted]	[redacted]
Power (kW)	5	[redacted]	[redacted]
Recommended Nameplate Energy (kWh)	19.6	[redacted]	[redacted]
Cost			
Project Lump Sum: BESS	[redacted]		
Project Lump Sum: Control Software			
Project Lump Sum *(50 unit basis, excl. Installation and freight)*			

Sunverge will honor the 50-unit pricing for 25 units. Based on conversion rate of 1.34 on June 9, 2020, the price for 19.6 kWh system based on 1.34 conversion rate is [redacted]CAD. Total for 25 units is [redacted]

The annual platform access fee based on 1.34 conversion rate is [redacted] for the **two years of the pilot,** [redacted]

[redacted]

*Peak:				
Scenario	**DER**	**Estimated Peak Impact**	**Units**	**Source**
Uninfluenced by NSPI	Residential BES	-	kW/unit per year Peak impact	Assumed negligible impact
Scenario (Demand Response)	**DER**	**Estimated Incremental Peak Impact (Optimistic Case)**		**Source**
Influenced by NSPI	Residential BES	(5.00)	kW/unit per year incremental peak impact versus equivalent uninfluenced scenario	SGNS (Tesla Powerwall, 5 kW)

Residential Customer Forecast Data:

Year	Customer Count Residential Total (December 31)
2021	484,973
2022	488,527
2023	492,242
2024	495,356
2025	498,291
2026	499,984

**Best estimates based on data available as of April 12, 2021. Still many uknowns and much uncertainty with values presented.*

Residential Customer Uptake Scenario	**50%**	**25%**	**10%**	**5%**	**50%**	**25%**	**10%**	**5%**
Year	2025	2025	2025	2025	2026	2026	2026	2026
DER Peak Impact (kW)								
Residential BES	-	-	-	-	-	-	-	-
***DER Incremental Peak Impact (DR Optimistic Case) (kW)**								
Residential BES	(1,245,727.50)	(622,863.75)	(249,145.50)	(124,572.75)	(1,249,960.00)	(624,980.00)	(249,992.00)	(124,996.00)

**Net Impact of DR program on peak would be summation of "DER Peak Impact (kW)" value and "DER Incremental Peak Impact (DR Optimistic Case) (kW)" value.*

	Residential Uptake			
	50%	25%	10%	5%
Battery Peak Impact - No Control (MW)	0	0	0	0
Battery Peak Impact - Optimal DR Control (MW)	(1,246)	(623)	(249)	(125)

Request IR-12:

End-Use Intensities (Section 4.4, pp. 49-52)

(a) Please provide the underlying calculations for the residential changes in baseboard heating, heat pump heating, cooling and electric water heating in Figure 31. E.g. changes in customer fractions and base use levels for each category.

(b) Please provide the underlying calculations for the small commercial changes in lighting, heating, and miscellaneous uses in Figure 32.

(c) Please provide the underlying calculations for the general commercial changes in lighting, heating, and miscellaneous uses in Figure 33.

(d) Please explain why the commercial heating intensity increases rather than declining as it has historically in Figure 33.

Response IR-12:

(a) Please refer to the 2022 Load Forecast Report Attachment 1 Residential Intensities, filed electronically, for the Residential general details. Tab "Intensities" has the underlying calculations and specific end uses in scope.

(b) Please refer to the 2022 Load Forecast Report Attachment 2 Small General Intensities, filed electronically, for the Small General details. Tab "Intensity" has the underlying calculations and specific end uses in scope.

(c) Please refer to the 2022 Load Forecast Report Attachment 3 General Intensities, filed electronically, for the General commercial details. Tab "Intensity" has the underlying calculations and specific end uses in scope.

(d) The historic trend is driven by slow growth in electric heating shares combined with increased efficiency. In the forecast period electric heating shares are expected to exceed increases in efficiency, causing the overall intensity to increase.

Request IR-13:

Commercial and Industrial Growth (Section 4.4, pp 52-53)

(a) Please provide the detailed calculations behind the values presented in Figure 34.

(b) For the small and medium commercial customers, identify the components of the demand growth in Figure 34. How much is associated with heat pumps for heating, cooling?

(c) How much of the growth represents increases in number or size of customers? How many new customers are included in the forecasts each year?

Response IR-13:

(a) Please refer to Attachment 1. Figure 34 calculations came from the following data sources:

1. C&I account representatives reporting of 2021 influenced solutions, as well as future growth numbers via customer outreach and project completions;
2. Commercial contractors reporting of heat pump installs; and
3. Customer survey responses and known future customer projects based on conversations between customers and C&I account representatives.

The 5 GWh of growth in the Small General class for 2021 is based on customers installing a total of 1545 nameplate tons of new heat pumps. The 12 GWh of growth in the General Demand class is based on customers installing a total of 3710 nameplate tons of new heat pumps in 2021. The number of new heat pumps installed (tons) is representative of what was accomplished in previous years. The nameplate tonnage also aligns and is consistent with previous contractor reporting details.

The growth associated within the industrial class is based on the following:

- Electrification efforts and assisting customers with reducing their dependency on fossil fuel.

- The 10 GWh in the industrial class in 2021 is based on fuel switching and manufacturing/process upgrades or expansion to existing operations and based on nameplate tonnage of 2480 for HVAC, as well as process equipment (eg: motors, pumps).
- The Key Accounts Team has been able to engage with more Industrial Customers in 2021 to gain a better understanding of potential short and long-term projects.

- At the beginning of each year NS Power asks large load customers to complete a survey. The survey details allow the Company to identify potential new growth based on customer responses.

(b) New load (17 GWh) associated with small and medium customers is based on heating, ventilation and air conditioning upgrades and retrofits (not specifically heat pumps). Time spent working with theses two customers classes has resulted in education and awareness of the benefits of electric heating and offsetting fossil fuel usage.

(c) Growth numbers are based on:

1. Expected targets based on previous years data growth numbers, combined with known projects from existing customers.
2. New accounts, project expansions and multi family new construction contributed to 31 percent of 2021 growth:

TOTAL Opportunities	346
Existing Buildings	239
New Construction	107
New Customer Accounts	31%

Calculator V5 - (October 26, 2018)

Old vs. new space/water heating system	Fossil Fuel Displacement or Brand New System
Is there an existing space cooling system OR were tl	None

Customer Rate Class	New Solution	Nameplate Tonnage	Gross Annual GWh
R10	Centralized Heat Pump System (Air-Air)	1545	5.00271

Assumes all energy added to second block where applicable.
Assumes 50% of new solution demand coincides with existing peak demand ***(for Fossil Fuel Displacement or Brand New Systems Only).***
Assumes 100% Power Factor (1KVA = 1KW) for R12, R21, R22, R23, R25.
Talk to Business Solutions for guidance on GWh and FCR for non-HVAC solutions or large industrial HVAC solutions.

Calculator V5 - (October 26, 2018)

Old vs. new space/water heating system	Fossil Fuel Displacement or Brand New System
Is there an existing space cooling system OR were tl	None

Customer Rate Class	New Solution	Nameplate Tonnage	Gross Annual GWh
R11	Centralized Heat Pump System (Air-Air)	3710	12.01298

Assumes all energy added to second block where applicable.
Assumes 50% of new solution demand coincides with existing peak demand ***(for Fossil Fuel Displacement or Brand New Systems Only).***
Assumes 100% Power Factor (1KVA = 1KW) for R12, R21, R22, R23, R25.
Talk to Business Solutions for guidance on GWh and FCR for non-HVAC solutions or large industrial HVAC solutions.

Calculator V5 - (October 26, 2018)

Old vs. new space/water heating system	Fossil Fuel Displacement or Brand New System
Is there an existing space cooling system OR were tl	None

Customer Rate Class	New Solution	Nameplate Tonnage	Gross Annual GWh
R12	Centralized Heat Pump System (Air-Air)	1240	4.01512

Assumes all energy added to second block where applicable.
Assumes 50% of new solution demand coincides with existing peak demand ***(for Fossil Fuel Displacement or Brand New Systems Only).***
Assumes 100% Power Factor (1KVA = 1KW) for R12, R21, R22, R23, R25.
Talk to Business Solutions for guidance on GWh and FCR for non-HVAC solutions or large industrial HVAC solutions.

Calculator V5 - (October 26, 2018)

Old vs. new space/water heating system	Fossil Fuel Displacement or Brand New System
Is there an existing space cooling system OR were tl	None

Customer Rate Class	New Solution	Nameplate Tonnage	Gross Annual GWh
R21	Centralized Heat Pump System (Air-Air)	1240	4.01512

Assumes all energy added to second block where applicable.
Assumes 50% of new solution demand coincides with existing peak demand ***(for Fossil Fuel Displacement or Brand New Systems Only).***
Assumes 100% Power Factor (1KVA = 1KW) for R12, R21, R22, R23, R25.
Talk to Business Solutions for guidance on GWh and FCR for non-HVAC solutions or large industrial HVAC solutions.

Calculator V5 - (October 26, 2018)

Old vs. new space/water heating system	Fossil Fuel Displacement or Brand New System
Is there an existing space cooling system OR were tl	None

Customer Rate Class	New Solution	Nameplate Tonnage	Gross Annual GWh
R22	Centralized Heat Pump System (Air-Air)	1240	4.01512

Assumes all energy added to second block where applicable.
Assumes 50% of new solution demand coincides with existing peak demand ***(for Fossil Fuel Displacement or Brand New Systems Only).***
Assumes 100% Power Factor (1KVA = 1KW) for R12, R21, R22, R23, R25.
Talk to Business Solutions for guidance on GWh and FCR for non-HVAC solutions or large industrial HVAC solutions.

Calculator V5 - (October 26, 2018)

Old vs. new space/water heating system	Fossil Fuel Displacement or Brand New System
Is there an existing space cooling system OR were tl	None

Customer Rate Class	New Solution	Nameplate Tonnage	Gross Annual GWh
R23	Centralized Heat Pump System (Air-Air)	620	2.00756

Assumes all energy added to second block where applicable.
Assumes 50% of new solution demand coincides with existing peak demand ***(for Fossil Fuel Displacement or Brand New Systems Only).***
Assumes 100% Power Factor (1KVA = 1KW) for R12, R21, R22, R23, R25.
Talk to Business Solutions for guidance on GWh and FCR for non-HVAC solutions or large industrial HVAC solutions.

Request IR-14:

Price Data (Section 4.5, pp 54-55)

(a) Please provide the Fuel Stability Price Compliance document that is the basis for the prices in Figure 35.

(b) Please provide the data and calculations used to produce the electricity prices shown in Figure 35.

(c) The report states: "The SAE models are estimated using a -0.15 price elasticity." Please provide supporting data for the use of this elasticity.

(d) Have any estimates of price elasticity been calculated specifically for Nova Scotia/Canada or for winter peaking systems?

Response IR-14:

(a) The year-over-year changes for 2022 from the Fuel Stability Plan are derived 2020-2022 Fuel Stability Plan Compliance Filing Appendix D, tab "Rate Plan" columns V-X (M09288). Please refer to Attachment 1, filed electronically, for a copy of the Rate Plan tab. Year-over-year changes for 2022 (starting in August)-2024 are from M10431 NS Power 2022-2024 General Rate Application, Figure 12-5 as shown below:

	2022	2023	2024
Domestic Service Tariff			
Fuel	0.0%	0.0%	0.0%
Non-Fuel	3.2%	3.2%	3.2%
Total	**3.3%**	**3.3%**	**3.2%**
Small General Tariff			
Fuel	0.4%	0.4%	0.4%
Non-Fuel	3.2%	3.3%	3.3%
Total	**3.6%**	**3.7%**	**3.7%**
General Tariff			
Fuel	1.7%	1.7%	1.7%
Non-Fuel	2.3%	2.3%	2.3%
Total	**4.0%**	**4.0%**	**4.0%**

(b) Please refer to Attachment 2.

(c) There have been studies on the price elasticity of electricity consumption, most dating from the 1980s and 1990s[1], with a range of results from -0.05 to -0.30. The elasticity of -0.15 is near the mid-range. In 1997, a study published in the Journal of Business and Economic Statistics estimated the price elasticities in 49 U.S. States (excluding Hawaii) and found variation across states. The mean of the estimates was –0.16.[2] A 2006 study prepared for the National Energy Research Lab[3] showed that the results had not changed significantly since those earlier reports.

(d) No.

[1] Bohi, Douglas R., and Mary Beth Zimmerman, "An Update on Econometric Studies of Energy Demand Behavior," *Annual Review of Energy,* Vol. 9, 1984, pp. 105–154.

[2] Maddala, G. S, Robert P. Trost, Hongyi Li, and Frederick Joutz, "Estimation of Short-Run and Long-Run Elasticities of Energy Demand from Panel Data Using Shrinkage Estimators," Journal of Business & Economic Statistics, Vol. 15, No. 1, January 1997, pp. 90–101.

[3] M.A Bernstein and J. Griffin, "Regional Differences in the Price-Elasticity of Demand for Energy", RAND Corporation Santa Monica, California for NREL, February 2006.

2022 LFR Synapse IR-14 Attachment 1 has been filed electronically.

Year	Month	Res	Seas	ResToD	SmlGen	Gen
1998	1	34,802,173	0	1,490	1,034,801	17,707,921
1998	2	35,008,177	0	6,852	920,403	16,083,297
1998	3	33,202,968	0	9,010	944,688	17,079,875
1998	4	33,401,718	0	4,256	913,844	16,726,330
1998	5	29,035,826	0	3,402	846,199	14,677,792
1998	6	24,865,609	0	7,013	701,821	13,260,549
1998	7	22,567,510	0	2,078	748,700	14,406,973
1998	8	22,064,531	0	3,641	787,840	14,666,552
1998	9	21,676,825	0	3,298	804,740	13,498,893
1998	10	22,046,642	0	4,954	768,334	13,845,590
1998	11	25,720,760	0	6,740	790,565	14,335,423
1998	12	29,550,215	0	9,307	898,904	15,469,484
1999	1	34,695,125	0	20,652	1,013,965	17,950,399
1999	2	36,067,205	0	15,372	1,053,429	16,854,495
1999	3	33,318,005	0	21,722	1,024,502	16,992,466
1999	4	34,318,020	0	18,350	1,016,387	16,660,837
1999	5	28,267,097	0	16,948	875,823	15,111,267
1999	6	25,537,991	0	13,585	818,985	14,193,174
1999	7	21,907,077	0	6,014	844,543	15,524,071
1999	8	23,112,094	0	13,963	904,081	14,835,136
1999	9	22,380,174	0	14,207	920,672	15,342,183
1999	10	22,910,499	0	15,226	827,584	14,795,660
1999	11	25,600,736	0	21,907	961,710	15,626,999
1999	12	27,247,985	0	26,805	903,558	14,828,326
2000	1	34,645,805	0	59,419	1,088,845	17,774,110
2000	2	39,579,977	0	61,862	1,190,364	17,418,554
2000	3	34,688,543	0	72,891	1,126,909	17,611,627
2000	4	32,712,515	0	41,326	1,008,567	16,208,960
2000	5	29,986,171	0	55,678	979,165	15,624,639
2000	6	27,833,650	0	36,556	922,559	14,807,755
2000	7	23,843,510	0	32,438	929,230	15,538,005
2000	8	23,938,549	0	27,643	987,123	14,706,737
2000	9	22,224,926	0	23,486	926,163	15,005,643
2000	10	24,048,404	0	33,181	952,213	14,843,812
2000	11	25,235,943	0	46,000	923,539	15,988,175
2000	12	30,255,555	0	67,055	994,557	15,936,257
2001	1	36,542,987	0	114,158	1,131,335	19,589,095
2001	2	37,724,093	0	141,157	1,044,981	17,898,001
2001	3	38,851,552	0	176,038	1,067,475	19,391,776
2001	4	33,685,112	0	154,718	930,579	17,262,499
2001	5	31,180,550	0	129,768	861,000	16,797,236
2001	6	27,351,725	0	112,342	794,292	15,412,843
2001	7	24,111,510	0	88,602	814,048	15,974,637
2001	8	23,867,801	0	85,856	837,962	15,828,130
2001	9	23,162,577	0	84,057	856,636	16,072,080
2001	10	23,211,458	0	100,202	800,601	15,316,697

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2001	11	25,038,850	0	136,396	826,424	16,601,288
2001	12	28,985,415	0	207,241	891,222	16,271,700
2002	1	35,222,343	0	292,175	1,049,995	18,315,533
2002	2	38,399,136	0	386,215	1,093,451	18,750,514
2002	3	34,541,819	0	337,103	1,054,733	18,091,254
2002	4	33,068,492	0	314,669	964,923	17,308,624
2002	5	32,826,970	0	259,811	984,250	17,381,560
2002	6	28,838,619	0	220,238	863,952	15,915,673
2002	7	24,637,445	0	150,256	848,971	16,028,830
2002	8	24,412,651	0	141,537	891,732	16,002,817
2002	9	23,737,095	0	128,686	905,503	16,410,938
2002	10	24,364,479	0	152,471	844,464	15,734,624
2002	11	27,452,792	0	209,768	899,122	17,447,071
2002	12	32,855,484	0	314,152	960,633	17,783,266
2003	1	39,563,049	2,588	416,552	1,156,279	20,451,072
2003	2	43,119,966	2,497	506,474	1,202,991	20,508,941
2003	3	40,015,611	4,309	485,926	1,192,537	20,036,183
2003	4	36,930,005	4,662	415,818	1,070,605	18,482,317
2003	5	33,232,001	1,241,684	318,429	1,021,552	17,967,004
2003	6	29,164,486	1,501,335	261,205	880,115	16,592,196
2003	7	25,426,729	699,550	181,305	893,300	16,929,475
2003	8	24,978,170	852,094	166,002	915,078	16,910,198
2003	9	24,621,176	675,137	150,716	907,029	16,802,618
2003	10	24,836,262	816,949	186,473	853,282	16,584,659
2003	11	27,373,217	11,119	222,730	863,685	17,392,293
2003	12	31,191,705	3,295	326,035	907,325	17,156,019
2004	1	39,127,921	3,661	463,240	1,357,113	20,499,505
2004	2	43,678,068	2,130	580,652	1,718,409	19,910,569
2004	3	40,719,103	3,633	543,168	1,731,549	19,985,241
2004	4	38,694,137	3,021	473,904	1,579,181	18,718,731
2004	5	33,978,619	1,191,404	358,443	1,460,928	17,261,890
2004	6	28,483,950	1,480,151	288,318	1,235,301	15,863,335
2004	7	26,295,574	689,825	212,340	1,312,743	16,740,616
2004	8	25,473,644	957,504	193,641	1,324,154	16,294,792
2004	9	25,210,747	856,266	187,744	1,360,988	16,779,247
2004	10	25,687,713	870,696	210,814	1,265,078	16,188,807
2004	11	28,361,130	17,902	273,380	1,368,231	16,761,998
2004	12	32,750,776	4,198	398,519	1,442,160	17,892,387
2005	1	40,670,818	3,061	525,028	2,099,105	19,775,549
2005	2	43,480,706	3,607	699,750	2,305,968	19,338,517
2005	3	39,359,103	4,386	576,201	2,303,974	18,542,042
2005	4	38,186,207	8,323	535,302	2,119,281	18,339,391
2005	5	33,823,378	1,535,999	416,060	1,972,591	16,602,131
2005	6	31,795,525	1,894,244	381,623	1,911,316	17,179,662
2005	7	30,265,717	871,722	295,601	2,024,426	17,398,281
2005	8	26,715,485	1,032,003	238,229	1,871,814	16,617,745

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2005	9	26,783,684	904,222	229,510	1,945,525	17,173,742
2005	10	26,902,924	909,244	247,851	1,786,254	16,461,886
2005	11	28,935,431	90,865	323,345	1,849,373	16,874,104
2005	12	33,477,460	2,584	461,140	1,964,024	17,580,259
2006	1	41,179,132	2,821	669,832	2,466,092	19,658,145
2006	2	42,811,597	1,854	754,525	2,319,222	19,119,845
2006	3	41,403,733	2,254	746,648	2,535,951	19,445,710
2006	4	38,603,615	11,486	654,466	2,189,973	18,338,383
2006	5	36,967,192	1,645,966	551,147	2,332,704	19,417,950
2006	6	34,428,696	2,008,963	480,750	2,079,585	18,260,242
2006	7	30,452,262	854,251	347,426	2,100,493	18,733,353
2006	8	29,153,348	1,117,962	311,026	2,095,939	18,368,724
2006	9	28,808,342	973,076	315,835	2,058,969	18,148,070
2006	10	29,098,270	1,009,834	345,141	1,969,346	17,810,624
2006	11	31,924,892	14,000	447,249	2,014,928	18,521,353
2006	12	35,398,488	4,429	586,080	2,067,171	18,845,833
2007	1	44,454,023	4,154	863,884	2,683,125	21,388,567
2007	2	50,962,211	3,900	1,098,530	2,914,915	22,596,891
2007	3	49,682,379	4,083	1,132,971	3,009,843	22,045,091
2007	4	46,246,357	7,020	968,025	2,591,353	21,046,383
2007	5	40,807,964	1,900,497	778,512	2,499,747	19,941,065
2007	6	35,157,791	2,364,213	620,809	2,182,968	19,216,658
2007	7	32,079,852	960,258	464,973	2,201,137	19,027,735
2007	8	30,297,110	1,166,875	394,216	2,199,869	18,913,853
2007	9	30,339,953	1,026,184	392,519	2,159,603	18,809,654
2007	10	30,013,505	1,065,598	415,999	2,063,990	18,596,136
2007	11	34,751,617	14,652	581,714	2,169,222	19,844,058
2007	12	41,007,326	5,009	833,589	2,387,783	20,513,517
2008	1	50,134,881	4,400	1,209,037	2,949,567	22,759,633
2008	2	53,357,929	4,593	1,368,389	2,950,941	22,926,338
2008	3	50,322,783	3,347	1,286,987	2,948,328	21,647,990
2008	4	46,483,058	10,117	1,133,218	2,622,804	21,319,364
2008	5	41,637,520	2,038,328	896,337	2,488,767	19,951,776
2008	6	34,524,186	2,571,420	700,824	2,192,759	18,773,816
2008	7	30,582,821	921,394	509,347	1,997,609	17,448,883
2008	8	31,971,662	1,217,965	492,374	2,391,765	21,137,124
2008	9	30,968,774	1,037,077	468,569	2,091,058	18,901,455
2008	10	30,809,844	1,112,235	519,763	1,975,284	18,411,471
2008	11	34,452,865	5,472	689,540	2,077,882	19,397,371
2008	12	39,443,946	5,009	945,500	2,168,451	20,389,937
2009	1	52,971,081	4,752	1,479,919	3,023,644	23,953,182
2009	2	59,846,742	5,146	1,836,357	3,144,182	25,427,000
2009	3	56,788,558	3,413	1,785,153	3,254,731	24,108,331
2009	4	51,281,821	8,404	1,499,329	2,805,353	23,450,678
2009	5	44,189,493	2,244,244	1,131,066	2,621,293	21,243,503
2009	6	36,125,875	2,696,700	894,044	2,244,447	20,142,265

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2009	7	34,721,654	1,009,527	695,374	2,331,397	20,883,068
2009	8	34,443,932	1,288,899	652,724	2,367,342	20,927,165
2009	9	33,936,532	1,126,080	620,225	2,346,095	20,502,464
2009	10	34,199,367	1,185,767	712,339	2,215,488	20,403,304
2009	11	39,648,103	20,507	975,831	2,339,531	21,366,869
2009	12	43,221,259	5,602	1,241,138	2,385,888	21,795,268
2010	1	55,203,643	5,003	1,757,967	3,177,698	25,307,361
2010	2	59,007,920	5,007	2,060,829	3,208,018	24,422,748
2010	3	54,226,779	7,016	1,832,255	3,203,353	24,271,500
2010	4	49,649,337	7,683	1,591,990	2,826,431	23,692,068
2010	5	42,360,700	2,297,473	1,195,526	2,617,181	20,793,540
2010	6	35,368,638	2,709,053	981,279	2,306,213	20,375,020
2010	7	35,128,851	997,900	780,527	2,439,187	21,052,809
2010	8	33,906,144	1,265,814	722,103	2,460,185	21,034,999
2010	9	34,095,173	1,123,827	692,512	2,431,890	20,996,994
2010	10	33,914,870	1,157,028	762,769	2,297,506	20,850,480
2010	11	38,180,276	18,029	1,008,981	2,338,475	20,919,193
2010	12	43,454,073	5,748	1,372,189	2,560,513	22,377,315
2011	1	55,964,488	4,585	1,930,581	3,314,278	25,326,438
2011	2	61,108,451	5,614	2,421,374	3,410,373	26,435,739
2011	3	59,760,573	6,363	2,350,944	3,621,284	25,628,072
2011	4	54,871,418	15,195	2,052,700	3,117,305	24,789,338
2011	5	49,177,063	2,337,847	1,648,215	3,072,453	23,316,442
2011	6	42,121,993	3,002,731	1,349,052	2,614,554	22,035,903
2011	7	37,546,113	1,148,035	993,036	2,554,949	21,859,923
2011	8	35,292,991	1,323,814	866,353	2,465,580	21,778,366
2011	9	36,423,311	1,221,937	861,001	2,603,052	22,270,063
2011	10	36,215,315	1,225,662	910,675	2,419,407	22,265,102
2011	11	39,860,505	21,069	1,181,580	2,378,393	22,276,378
2011	12	44,962,454	6,042	1,558,433	2,520,168	23,957,543
2012	1	58,401,399	8,895	2,291,776	3,370,856	26,201,470
2012	2	65,939,067	5,043	2,862,658	3,590,072	28,287,231
2012	3	65,004,602	5,440	2,783,227	3,778,032	27,346,188
2012	4	57,915,754	11,476	2,337,816	3,148,461	26,072,290
2012	5	50,194,043	2,545,588	1,841,824	3,094,623	24,381,508
2012	6	42,680,213	3,053,257	1,447,198	2,699,922	23,567,269
2012	7	39,560,808	1,128,383	1,111,946	2,702,815	23,020,086
2012	8	38,343,823	1,422,088	1,010,168	2,740,167	24,007,078
2012	9	39,331,001	1,255,162	996,484	2,805,396	23,709,080
2012	10	38,455,156	1,283,923	1,043,693	2,595,840	23,358,254
2012	11	43,933,669	19,810	1,386,654	2,734,824	24,688,858
2012	12	50,104,243	4,711	1,917,201	2,818,878	25,057,123
2013	1	66,562,537	4,198	2,889,458	3,883,715	29,185,035
2013	2	75,157,553	5,379	3,468,519	4,049,101	31,463,749
2013	3	69,290,157	6,263	3,173,676	3,995,610	27,930,746
2013	4	62,012,356	17,543	2,686,343	3,489,100	27,534,073

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2013	5	55,009,264	2,856,242	2,140,454	3,435,653	25,530,926
2013	6	44,852,266	3,453,708	1,639,409	2,908,544	24,701,002
2013	7	41,466,731	1,208,620	1,248,086	2,789,559	24,005,016
2013	8	40,127,114	1,480,136	1,109,792	2,897,909	25,452,764
2013	9	40,896,229	1,305,171	1,130,192	2,939,669	24,073,212
2013	10	39,294,608	1,341,658	1,170,308	2,713,215	24,019,291
2013	11	45,893,213	18,106	1,616,433	2,846,627	25,239,621
2013	12	55,402,411	5,445	2,248,732	3,171,378	27,489,580
2014	1	72,978,151	10,908	3,382,179	4,302,624	31,312,022
2014	2	78,597,843	17,782	3,975,462	4,234,493	31,251,164
2014	3	72,883,525	7,291	3,567,017	4,368,938	29,158,440
2014	4	67,314,348	11,010	3,118,999	3,879,815	29,233,893
2014	5	59,085,169	2,774,729	2,524,890	3,753,387	26,203,646
2014	6	47,911,108	3,629,989	1,898,732	3,113,077	25,149,877
2014	7	42,563,212	1,795,873	1,389,952	3,128,223	24,822,704
2014	8	41,063,827	1,536,969	1,208,637	3,015,402	25,508,885
2014	9	40,961,907	1,437,456	1,214,996	3,193,079	24,225,228
2014	10	39,061,580	1,386,800	1,212,964	2,714,755	24,712,790
2014	11	45,366,610	20,595	1,634,371	2,977,285	25,468,642
2014	12	53,858,420	6,748	2,252,146	3,245,330	27,208,362
2015	1	70,157,882	5,292	3,306,602	4,262,497	30,795,032
2015	2	77,193,446	3,694	3,637,598	4,189,098	30,876,874
2015	3	75,495,209	3,129	3,463,076	4,478,498	30,986,036
2015	4	76,474,812	11,902	4,501,228	4,346,620	30,330,807
2015	5	66,303,395	2,869,553	2,889,585	3,994,402	25,949,608
2015	6	46,580,332	3,777,834	1,904,022	2,973,989	23,891,039
2015	7	42,037,174	1,603,270	1,429,449	3,135,203	24,601,926
2015	8	41,412,969	1,621,271	1,312,617	3,047,038	24,721,213
2015	9	42,011,893	1,406,821	1,280,299	3,098,761	24,689,741
2015	10	40,838,183	1,453,458	1,316,090	2,898,332	24,784,845
2015	11	46,363,388	34,084	1,785,752	2,965,945	25,036,725
2015	12	52,478,636	8,724	2,288,334	3,105,380	26,177,753
2016	1	67,275,170	5,985	3,330,904	3,992,363	29,083,782
2016	2	71,819,854	3,130	3,692,342	3,916,304	28,328,826
2016	3	67,445,419	7,845	3,410,080	4,075,945	27,624,999
2016	4	65,888,646	7,640	3,165,491	3,786,468	28,498,077
2016	5	59,136,126	3,027,241	2,648,227	3,877,067	25,618,426
2016	6	46,391,795	3,644,087	1,936,427	3,083,547	24,016,695
2016	7	41,218,451	1,220,324	1,446,067	3,018,763	23,519,467
2016	8	39,882,143	1,576,418	1,295,976	3,036,540	23,977,075
2016	9	41,842,804	1,394,383	1,320,928	3,206,965	24,773,671
2016	10	41,669,788	1,484,298	1,382,647	3,010,450	24,344,958
2016	11	44,821,077	20,863	1,755,844	2,922,645	23,597,811
2016	12	53,503,860	6,806	2,411,689	3,287,235	26,328,716
2017	1	71,698,212	5,867	3,681,222	4,451,797	29,995,109
2017	2	76,615,085	10,560	4,024,197	4,247,990	28,637,329

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2017	3	63,978,368	7,392	3,260,161	3,762,685	22,662,923
2017	4	59,870,053	10,464	2,826,734	3,492,757	25,776,023
2017	5	59,423,886	3,010,171	2,733,957	3,903,576	25,043,547
2017	6	48,069,441	3,733,004	2,035,337	3,213,924	24,824,984
2017	7	43,785,573	1,355,055	1,576,561	3,211,835	23,836,377
2017	8	40,803,316	1,532,343	1,345,503	3,087,455	24,119,116
2017	9	42,078,686	1,379,507	1,383,055	3,238,969	24,752,702
2017	10	41,095,235	1,453,058	1,384,943	2,950,329	24,006,222
2017	11	44,369,255	24,305	1,722,482	2,972,312	24,344,145
2017	12	52,199,463	6,442	2,331,426	3,149,078	26,170,603
2018	1	74,819,599	7,461	3,919,388	4,689,797	29,589,342
2018	2	83,822,352	9,511	4,560,231	4,708,707	32,121,387
2018	3	73,000,864	9,692	3,882,820	4,586,161	27,285,043
2018	4	68,809,942	23,873	3,428,219	4,053,530	28,378,254
2018	5	61,166,459	2,962,521	2,863,641	4,041,030	25,555,655
2018	6	47,857,556	3,896,003	2,087,806	3,272,750	24,232,759
2018	7	44,223,159	1,556,034	1,660,440	3,311,498	24,502,350
2018	8	43,981,746	1,601,415	1,481,203	3,395,517	25,510,782
2018	9	45,042,685	1,413,942	1,472,194	3,432,011	25,077,809
2018	10	43,020,996	1,466,276	1,529,739	3,163,856	24,610,517
2018	11	50,611,702	22,208	2,189,040	3,404,673	25,303,809
2018	12	61,574,027	3,950	2,986,941	3,698,252	28,311,436
2019	1	81,541,674	7,477	4,420,439	5,115,828	31,117,408
2019	2	85,854,802	7,316	4,744,460	4,850,936	30,043,478
2019	3	82,704,389	12,612	4,520,050	5,256,560	30,445,675
2019	4	72,815,919	13,752	3,783,980	4,235,732	27,680,070
2019	5	63,333,667	3,480,336	3,016,621	4,281,886	26,517,062
2019	6	54,621,272	4,425,793	2,509,528	3,655,545	25,072,501
2019	7	46,342,907	1,446,332	1,814,972	3,387,874	23,899,651
2019	8	44,111,458	1,588,691	1,510,919	3,342,015	25,036,053
2019	9	46,730,026	1,392,927	1,598,945	3,474,245	25,032,093
2019	10	42,307,758	1,414,314	1,569,060	3,109,709	23,061,842
2019	11	47,950,906	34,550	2,108,302	3,285,230	25,267,113
2019	12	60,492,633	11,637	2,909,223	3,605,195	26,568,673
2020	1	78,577,990	5,160	4,285,470	4,889,348	30,847,149
2020	2	85,614,851	6,625	4,762,094	4,727,287	30,885,407
2020	3	78,861,838	6,674	4,492,428	4,929,436	29,175,039
2020	4	77,639,806	9,214	4,313,958	4,383,803	29,375,192
2020	5	62,981,024	3,166,596	3,173,277	3,640,862	22,114,159
2020	6	51,218,075	4,356,467	2,134,480	2,857,695	20,912,994
2020	7	53,506,488	1,714,104	1,733,964	3,280,754	23,033,407
2020	8	49,160,970	1,633,559	1,678,623	3,261,193	24,490,865
2020	9	46,931,231	1,385,774	1,619,366	3,257,236	23,129,998
2020	10	44,469,113	1,465,536	1,640,048	3,057,249	23,634,857
2020	11	51,538,481	28,880	2,224,336	3,277,217	24,685,376
2020	12	57,864,398	10,389	2,743,368	3,334,617	25,226,123

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2021	1	73,761,825	11,450	3,955,769	4,477,002	28,425,172
2021	2	80,808,166	13,210	4,508,733	4,426,778	28,466,835
2021	3	81,706,000	22,714	4,539,004	5,012,697	29,325,240
2021	4	79,669,228	39,562	4,094,007	4,489,078	28,798,832
2021	5	64,362,972	3,579,354	3,022,333	4,143,349	24,723,487
2021	6	52,607,099	4,209,583	2,301,838	3,324,438	22,938,926
2021	7	50,080,264	1,308,560	1,913,112	3,445,823	24,112,639
2021	8	48,884,250	1,522,587	1,734,429	3,371,500	24,988,172
2021	9	49,782,131	1,402,300	1,715,187	3,733,776	25,246,203
2021	10	47,041,997	1,532,899	1,679,231	3,322,082	24,524,662
2021	11	50,882,748	29,134	2,122,057	3,466,409	24,553,822
2021	12	61,064,339	10,392	2,888,643	3,768,015	26,656,069

Year	Month	Res	Seas	ResToD	SmlGen	Gen
1998	1	372,498,232	0	23,005	9,577,325	206,858,224
1998	2	375,937,716	0	101,870	8,458,134	185,322,051
1998	3	352,370,827	0	137,668	8,743,170	195,522,629
1998	4	352,345,187	0	76,197	8,234,324	191,497,432
1998	5	299,348,971	0	55,000	7,507,891	163,746,663
1998	6	248,389,390	0	107,951	6,066,920	147,705,864
1998	7	221,571,004	0	26,133	6,324,476	165,783,774
1998	8	216,645,329	0	46,494	6,809,568	171,704,731
1998	9	210,675,733	0	40,472	6,962,271	153,441,776
1998	10	216,155,617	0	70,760	6,454,303	156,006,405
1998	11	261,793,066	0	107,193	6,869,121	163,151,524
1998	12	306,123,178	0	157,119	8,005,256	173,780,521
1999	1	368,693,672	0	346,663	9,486,504	207,462,217
1999	2	387,056,270	0	274,255	9,982,605	190,760,489
1999	3	353,725,584	0	378,973	9,782,402	193,357,687
1999	4	363,780,927	0	332,707	9,491,795	193,985,023
1999	5	292,069,451	0	278,667	7,959,340	168,494,780
1999	6	255,302,262	0	204,327	7,107,427	159,998,473
1999	7	214,711,756	0	77,901	7,484,340	177,423,744
1999	8	226,001,429	0	179,254	8,116,331	173,272,696
1999	9	218,708,906	0	179,079	8,279,265	175,952,686
1999	10	225,710,911	0	209,618	7,297,848	166,901,397
1999	11	258,228,491	0	338,527	8,694,690	172,764,692
1999	12	280,931,700	0	435,437	8,200,492	165,313,318
2000	1	368,541,865	0	946,623	10,364,189	209,327,237
2000	2	426,062,960	0	1,006,611	11,525,817	199,796,797
2000	3	369,322,723	0	1,184,661	10,888,481	204,257,137
2000	4	344,936,354	0	701,110	9,446,280	185,641,409
2000	5	309,333,356	0	938,334	9,033,839	175,572,174
2000	6	283,230,436	0	589,815	8,317,451	168,601,388
2000	7	237,229,651	0	472,222	8,497,251	177,616,735
2000	8	235,107,504	0	370,235	8,989,876	169,915,525
2000	9	217,639,717	0	303,663	8,461,638	174,332,282
2000	10	237,247,576	0	461,011	8,562,469	166,666,599
2000	11	254,453,733	0	708,311	8,353,318	179,695,397
2000	12	314,951,086	0	1,103,352	9,206,772	179,962,613
2001	1	390,469,100	0	1,885,241	10,859,532	229,433,639
2001	2	406,775,360	0	2,303,298	10,098,727	214,361,447
2001	3	416,180,211	0	2,881,329	10,182,887	221,159,260
2001	4	356,975,576	0	2,644,129	8,652,550	197,018,203
2001	5	322,952,486	0	2,220,319	7,682,330	188,463,715
2001	6	276,943,051	0	1,817,161	6,916,471	174,910,068
2001	7	238,371,213	0	1,250,379	7,133,861	181,053,923
2001	8	234,957,448	0	1,149,635	7,391,583	185,442,817
2001	9	227,201,329	0	1,085,844	7,586,960	185,985,292
2001	10	227,216,395	0	1,369,585	6,955,644	172,609,056

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2001	11	252,476,269	0	2,105,222	7,244,683	188,625,130
2001	12	299,953,239	0	3,366,188	8,109,957	186,028,871
2002	1	372,058,509	0	4,721,990	9,936,098	212,352,661
2002	2	414,589,352	0	6,177,528	10,541,914	220,366,542
2002	3	366,450,199	0	5,350,155	10,021,373	204,393,061
2002	4	348,173,581	0	5,259,748	8,966,323	200,265,840
2002	5	342,466,221	0	4,429,151	9,177,665	200,061,759
2002	6	294,083,794	0	3,577,166	7,710,866	179,846,023
2002	7	244,161,029	0	2,158,974	7,474,825	181,712,291
2002	8	240,893,666	0	1,911,272	8,030,463	186,809,038
2002	9	233,359,470	0	1,671,304	8,158,292	189,920,068
2002	10	240,332,726	0	2,113,644	7,440,181	177,066,592
2002	11	280,842,814	0	3,331,710	8,107,415	197,810,449
2002	12	337,168,643	0	5,016,241	8,881,957	199,002,090
2003	1	409,748,386	13,356	6,426,191	11,161,228	234,794,093
2003	2	452,374,442	12,969	7,801,718	11,742,979	237,397,094
2003	3	416,387,502	32,869	7,504,765	11,596,548	225,657,413
2003	4	380,516,182	33,059	6,694,096	10,195,821	207,898,325
2003	5	337,714,466	11,604,193	5,250,917	9,538,323	200,561,024
2003	6	290,096,826	14,096,584	4,120,759	7,850,447	184,841,342
2003	7	246,809,411	5,184,693	2,515,227	7,884,613	189,427,374
2003	8	241,411,857	6,533,025	2,144,934	8,121,384	195,569,960
2003	9	237,086,807	5,231,926	1,911,762	7,999,431	190,444,285
2003	10	239,991,833	5,800,022	2,476,475	7,367,918	185,364,516
2003	11	269,616,417	67,527	3,330,008	7,497,864	176,457,230
2003	12	313,962,078	22,616	5,072,461	8,099,789	188,816,518
2004	1	405,968,266	28,743	7,122,491	13,150,585	237,546,157
2004	2	458,769,716	16,304	8,899,221	17,294,175	230,682,562
2004	3	424,226,889	28,838	8,387,637	17,328,030	227,889,347
2004	4	400,671,259	22,574	7,657,322	15,602,637	217,799,540
2004	5	345,599,645	10,941,646	5,850,390	14,071,602	193,734,621
2004	6	281,752,436	13,816,890	4,485,270	11,400,534	176,280,526
2004	7	256,386,915	5,066,199	3,006,003	12,261,818	190,268,030
2004	8	247,015,418	7,506,359	2,525,296	12,407,190	188,657,063
2004	9	244,009,940	6,767,139	2,394,177	12,771,455	192,604,630
2004	10	249,645,254	6,473,846	2,840,282	11,657,043	182,325,812
2004	11	280,104,524	131,424	4,109,587	12,838,395	186,018,223
2004	12	331,925,579	33,174	6,217,796	13,895,356	202,544,025
2005	1	422,919,082	18,684	8,144,458	21,413,691	231,246,220
2005	2	456,223,435	29,233	10,712,411	23,873,402	223,119,492
2005	3	408,434,750	41,873	8,880,440	23,692,514	210,653,160
2005	4	394,316,039	67,486	8,711,337	21,602,635	214,117,900
2005	5	343,436,875	14,671,151	6,857,662	19,688,543	187,361,239
2005	6	294,935,415	18,042,294	5,573,685	17,310,319	188,385,623
2005	7	266,630,835	6,459,493	3,725,056	17,919,684	187,467,877
2005	8	242,705,254	7,763,477	2,875,626	17,189,404	187,126,085

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2005	9	244,179,228	6,813,239	2,735,192	17,940,994	194,007,658
2005	10	246,275,776	6,414,330	3,058,033	16,272,386	181,298,532
2005	11	268,348,792	13,962	4,526,692	16,927,271	183,181,705
2005	12	317,623,254	23,573	6,717,580	18,370,564	193,306,887
2006	1	399,915,435	22,035	9,713,212	23,775,765	220,576,985
2006	2	418,624,260	18,951	10,753,849	22,301,210	214,369,484
2006	3	402,422,019	14,491	10,845,592	24,578,696	214,908,103
2006	4	372,380,048	105,963	9,896,898	20,774,123	202,163,984
2006	5	319,291,931	14,522,227	7,683,932	19,404,813	186,319,857
2006	6	279,603,065	17,720,901	6,090,404	17,166,333	186,964,956
2006	7	258,061,706	5,715,789	4,123,885	17,827,921	193,871,599
2006	8	245,922,451	7,841,926	3,506,779	17,867,848	193,839,363
2006	9	241,839,569	6,847,675	3,556,298	17,423,792	188,490,365
2006	10	245,518,573	6,771,457	4,069,839	16,642,800	182,551,945
2006	11	272,494,399	84,015	5,776,014	17,075,343	187,393,852
2006	12	307,774,615	30,533	7,790,980	17,762,090	191,304,982
2007	1	396,049,525	29,568	11,416,940	23,803,760	223,504,053
2007	2	461,159,066	29,002	14,334,444	26,308,115	239,996,284
2007	3	447,665,228	32,412	14,992,819	27,121,493	228,754,539
2007	4	409,344,316	55,496	13,326,877	22,698,283	217,070,667
2007	5	346,699,848	15,922,788	10,672,457	20,953,321	198,801,672
2007	6	289,658,093	19,838,863	8,061,923	17,819,057	193,747,684
2007	7	259,863,381	6,401,788	5,447,793	17,854,476	191,360,845
2007	8	243,894,296	7,911,086	4,289,124	17,951,594	195,282,150
2007	9	243,721,630	6,979,179	4,189,172	17,472,668	190,876,327
2007	10	241,380,528	6,926,525	4,641,571	16,634,218	186,388,330
2007	11	284,822,906	85,769	7,239,489	17,648,611	199,166,107
2007	12	344,447,695	34,091	10,789,204	19,898,308	205,978,222
2008	1	428,896,507	30,846	15,427,364	25,171,230	233,460,804
2008	2	460,034,533	35,067	17,130,790	25,307,205	238,354,098
2008	3	430,555,674	23,808	16,308,439	25,136,824	218,188,983
2008	4	395,190,212	72,354	15,152,269	22,151,377	216,735,933
2008	5	349,267,293	16,579,067	12,180,629	20,631,429	199,814,018
2008	6	283,393,186	21,030,437	9,055,420	17,887,300	187,982,119
2008	7	246,953,895	6,019,923	5,939,880	16,118,234	175,540,585
2008	8	257,920,502	8,287,547	5,313,389	19,588,476	219,964,666
2008	9	249,268,663	7,052,855	5,000,469	16,793,313	192,249,494
2008	10	248,623,510	7,278,258	5,848,311	15,796,064	184,668,278
2008	11	281,767,375	35,777	8,605,303	16,764,755	192,103,260
2008	12	329,546,349	34,091	12,044,711	17,802,576	203,502,612
2009	1	443,461,420	32,073	18,498,553	25,031,051	241,449,755
2009	2	484,484,139	39,073	21,853,158	24,949,801	239,906,379
2009	3	443,899,738	24,055	20,802,550	25,341,832	221,779,351
2009	4	397,923,017	59,929	17,977,637	21,555,121	218,982,497
2009	5	337,403,101	17,365,642	13,666,610	19,784,161	191,355,824
2009	6	269,762,165	20,730,481	10,251,354	16,579,583	183,269,472

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2009	7	256,930,780	6,121,674	7,243,462	17,216,018	193,600,889
2009	8	255,479,739	8,146,056	6,465,966	17,622,558	198,234,352
2009	9	250,079,916	7,111,714	6,047,716	17,361,678	188,686,796
2009	10	253,543,539	7,261,107	7,370,963	16,320,218	187,639,388
2009	11	298,534,496	124,397	11,207,501	17,390,779	195,038,537
2009	12	329,950,915	34,023	14,407,724	17,928,296	198,510,488
2010	1	430,208,526	34,604	20,481,095	24,445,891	238,996,932
2010	2	463,374,370	39,073	23,798,257	24,461,492	225,795,203
2010	3	421,687,818	49,813	21,303,017	24,150,893	222,093,623
2010	4	383,588,545	47,302	18,926,771	21,062,727	222,176,508
2010	5	321,395,295	17,073,375	14,291,666	19,108,819	186,755,336
2010	6	262,968,310	20,167,755	11,005,859	16,567,273	185,374,318
2010	7	259,943,970	6,014,739	8,058,845	17,601,651	194,812,636
2010	8	250,551,117	7,933,725	7,044,867	17,874,119	197,501,296
2010	9	251,081,551	7,079,105	6,635,288	17,546,163	194,395,987
2010	10	250,651,141	7,006,214	7,649,728	16,485,295	187,976,408
2010	11	285,529,657	106,664	11,267,029	16,813,775	186,761,137
2010	12	331,384,674	36,758	15,741,908	18,849,309	204,431,403
2011	1	429,624,705	29,435	21,876,709	24,648,913	234,921,771
2011	2	460,618,648	42,078	26,112,308	24,880,964	229,015,567
2011	3	440,794,190	36,824	25,017,454	26,166,302	220,685,704
2011	4	402,630,986	112,156	22,370,329	22,256,448	214,435,964
2011	5	356,526,158	16,848,714	18,217,597	21,700,337	201,270,344
2011	6	301,116,243	21,750,684	14,312,028	18,123,349	189,523,468
2011	7	263,681,153	6,868,346	9,616,611	17,531,929	187,680,724
2011	8	246,725,462	7,946,582	7,956,142	16,914,246	189,197,990
2011	9	254,611,106	7,449,345	7,768,851	17,946,974	195,961,987
2011	10	254,129,973	7,145,095	8,417,893	16,596,798	191,868,543
2011	11	282,092,226	122,992	12,022,078	16,256,063	186,953,626
2011	12	323,737,932	34,766	16,386,991	17,520,902	206,254,965
2012	1	418,762,916	58,187	23,654,768	23,592,661	224,622,926
2012	2	455,429,003	30,894	27,794,368	24,348,733	232,762,209
2012	3	434,592,689	33,843	26,377,109	25,208,122	221,039,316
2012	4	384,295,016	65,922	22,589,799	20,670,596	209,173,746
2012	5	328,295,320	16,997,487	18,002,660	20,118,256	195,800,937
2012	6	274,937,816	20,223,660	13,420,056	17,272,952	190,419,284
2012	7	251,766,637	6,048,064	9,474,759	17,196,697	184,826,258
2012	8	243,864,928	7,857,794	8,241,063	17,573,677	198,670,515
2012	9	250,012,117	6,959,269	8,027,656	17,919,870	194,281,622
2012	10	244,727,162	6,857,399	8,629,465	16,480,816	188,681,953
2012	11	283,076,823	104,509	12,544,338	17,516,960	199,735,484
2012	12	328,317,450	27,743	18,000,456	18,248,983	198,874,979
2013	1	441,984,999	22,046	27,366,374	25,668,963	239,185,332
2013	2	497,212,145	33,603	32,066,667	26,521,334	252,073,154
2013	3	450,786,906	38,356	29,331,804	25,855,296	215,192,243
2013	4	400,838,209	113,840	25,773,106	22,364,356	215,418,219

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2013	5	351,378,439	18,173,771	20,728,041	21,798,235	197,103,141
2013	6	281,622,517	21,986,647	15,021,173	18,125,128	191,557,905
2013	7	257,166,350	6,399,755	10,544,480	17,152,057	184,427,811
2013	8	248,935,700	8,030,408	8,869,443	18,060,588	204,538,153
2013	9	253,038,512	7,085,017	9,005,074	18,242,292	188,849,605
2013	10	242,908,126	7,040,629	9,591,031	16,714,470	186,005,450
2013	11	287,772,148	89,072	14,617,431	17,664,241	194,673,522
2013	12	355,015,349	29,409	20,935,468	20,118,353	213,000,958
2014	1	472,172,897	60,685	31,302,903	27,729,361	249,141,046
2014	2	504,413,257	96,887	35,792,747	26,815,937	241,737,876
2014	3	458,850,293	38,399	31,935,812	27,354,036	218,553,890
2014	4	419,787,375	59,064	28,529,899	24,066,835	222,882,495
2014	5	364,843,929	17,058,887	23,563,410	22,746,147	194,970,336
2014	6	291,714,328	22,439,789	17,292,406	18,782,542	189,050,357
2014	7	254,186,235	9,990,378	11,403,955	18,718,008	187,647,320
2014	8	245,091,329	8,105,147	9,363,525	18,064,350	198,293,489
2014	9	243,395,715	7,630,896	9,311,972	19,170,487	183,078,306
2014	10	231,546,487	7,015,199	9,496,959	15,913,274	185,043,907
2014	11	272,805,211	102,978	14,035,753	17,762,888	190,245,072
2014	12	330,645,223	33,380	19,991,848	19,749,626	204,113,495
2015	1	438,733,298	28,050	29,428,647	26,883,904	237,390,603
2015	2	486,740,043	21,779	32,153,395	27,247,922	236,846,957
2015	3	474,237,316	17,045	30,987,283	29,446,982	237,804,488
2015	4	481,667,740	72,809	41,594,269	28,594,603	236,717,056
2015	5	412,759,971	17,384,389	27,188,970	25,823,602	193,088,496
2015	6	281,911,405	23,067,088	16,873,902	18,779,752	176,127,817
2015	7	250,613,083	8,707,008	11,586,765	19,686,495	186,756,249
2015	8	247,308,738	8,639,001	10,228,541	19,167,522	191,034,170
2015	9	250,272,855	7,484,762	9,782,747	19,468,875	188,268,267
2015	10	243,631,136	7,492,585	10,417,043	18,110,663	186,534,837
2015	11	279,212,320	169,330	15,488,008	18,585,445	185,607,232
2015	12	328,006,398	46,699	20,250,612	20,138,202	200,468,428
2016	1	413,481,071	32,754	29,588,163	25,705,911	219,249,010
2016	2	453,719,290	16,068	32,763,251	26,031,757	218,448,691
2016	3	424,414,849	40,947	30,938,037	27,226,483	209,687,197
2016	4	414,654,254	40,451	29,775,600	25,207,759	223,042,487
2016	5	368,241,338	18,471,352	24,999,819	25,596,702	193,478,211
2016	6	283,111,807	22,335,336	17,288,673	19,889,831	182,105,630
2016	7	247,245,242	6,315,104	11,778,720	19,312,447	178,726,838
2016	8	239,302,039	8,427,896	10,121,686	19,542,595	185,582,959
2016	9	251,046,212	7,489,867	10,177,727	20,677,360	193,787,226
2016	10	251,345,152	7,811,278	11,069,159	19,365,755	185,570,781
2016	11	270,174,180	101,684	15,235,386	18,717,381	174,343,031
2016	12	331,206,486	36,898	21,514,110	21,534,677	201,022,362
2017	1	450,945,217	30,750	32,969,256	29,741,069	233,440,440
2017	2	481,239,230	60,759	35,270,022	28,120,532	218,384,173

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2017	3	452,576,572	29,843	33,754,945	29,916,685	214,793,341
2017	4	426,183,349	45,197	30,974,542	26,038,952	219,612,936
2017	5	364,989,078	18,293,573	25,118,328	25,450,690	185,008,757
2017	6	290,042,543	22,769,281	17,836,780	20,613,721	187,059,063
2017	7	259,692,977	7,088,553	12,695,693	20,262,768	179,477,488
2017	8	240,831,537	8,003,339	10,251,050	19,479,776	185,807,496
2017	9	248,233,910	7,279,003	10,468,402	20,446,832	192,013,128
2017	10	242,887,268	7,492,624	10,727,218	18,502,359	180,565,039
2017	11	263,445,601	123,729	14,368,455	18,633,598	180,138,654
2017	12	316,533,853	26,906	20,213,521	20,104,789	195,641,216
2018	1	463,649,341	40,526	34,311,770	30,884,305	228,391,125
2018	2	519,762,476	57,022	38,985,083	30,765,786	247,286,612
2018	3	445,365,997	56,866	33,154,001	29,632,523	201,479,392
2018	4	418,911,622	138,690	30,541,990	26,009,439	216,550,938
2018	5	368,336,776	17,691,673	25,664,128	25,694,333	189,090,657
2018	6	282,425,439	23,437,803	17,691,713	20,371,238	180,391,643
2018	7	257,677,808	8,283,841	13,043,190	20,517,687	181,499,264
2018	8	257,101,208	8,336,421	11,108,849	21,248,316	195,592,381
2018	9	262,945,519	7,380,194	10,879,945	21,384,164	190,039,998
2018	10	250,830,119	7,467,432	11,666,372	19,613,809	182,185,767
2018	11	299,264,242	112,027	18,371,528	21,279,487	186,125,756
2018	12	372,134,226	19,025	25,615,599	23,545,140	210,955,771
2019	1	498,487,818	43,732	37,628,606	33,301,475	238,947,736
2019	2	523,503,007	42,080	39,367,523	31,159,541	227,799,774
2019	3	502,265,541	73,304	38,033,984	33,874,648	229,842,126
2019	4	439,811,490	78,455	32,560,800	26,884,529	206,529,563
2019	5	375,411,956	20,733,938	26,150,980	26,830,610	197,223,495
2019	6	320,667,363	26,458,225	21,234,647	22,590,977	185,728,493
2019	7	266,441,231	7,457,884	14,148,396	20,620,564	175,438,236
2019	8	253,240,336	8,132,331	11,097,827	20,489,753	189,808,136
2019	9	268,983,908	7,167,780	11,616,727	21,251,022	187,698,012
2019	10	241,469,330	6,988,500	11,726,361	18,756,867	164,478,742
2019	11	276,764,638	170,815	17,302,559	20,023,338	185,425,813
2019	12	358,068,646	65,418	24,341,775	22,304,595	194,233,723
2020	1	471,288,702	27,662	35,400,129	31,030,444	234,906,135
2020	2	514,372,238	36,850	38,609,609	30,043,371	229,972,140
2020	3	468,670,840	36,108	36,817,497	31,196,103	211,793,897
2020	4	461,541,557	50,875	36,420,188	27,619,314	219,694,982
2020	5	368,454,446	18,459,137	27,055,555	22,512,998	154,015,074
2020	6	294,710,778	25,643,037	17,450,415	16,999,771	143,637,209
2020	7	307,636,247	9,094,551	12,846,649	19,758,067	165,245,900
2020	8	281,508,243	8,339,106	12,155,677	19,745,799	181,166,826
2020	9	266,352,352	7,024,124	11,550,730	19,617,676	167,744,424
2020	10	251,847,151	7,265,915	11,998,688	18,296,148	169,897,491
2020	11	295,578,964	144,672	17,576,250	19,852,619	175,727,737
2020	12	336,593,090	51,971	21,986,418	20,436,515	180,243,395

Year	Month	Res	Seas	ResToD	SmlGen	Gen
2021	1	434,651,421	63,308	31,518,299	28,052,589	209,382,170
2021	2	477,390,378	73,212	35,623,512	27,815,740	204,679,574
2021	3	480,071,327	126,174	36,387,409	31,622,703	209,868,282
2021	4	467,967,332	228,020	33,945,123	28,202,865	209,283,928
2021	5	371,846,998	20,808,106	25,152,546	25,577,468	173,245,250
2021	6	299,192,516	24,453,889	18,254,565	20,084,832	160,819,028
2021	7	282,510,639	6,489,466	14,187,900	20,796,745	170,685,462
2021	8	275,626,018	7,623,577	12,368,778	20,453,990	181,411,607
2021	9	280,376,071	7,066,803	12,085,611	22,751,371	182,258,109
2021	10	264,403,590	7,633,991	11,981,816	20,077,684	175,214,541
2021	11	287,358,130	139,009	16,195,529	21,020,161	171,685,450
2021	12	351,712,373	53,836	22,724,507	23,245,877	188,466,492

Year	Month	CPI	CPI Index	Res_Nom	SmlGen_Nom	Gen_Nom	Res_Real	SmlGen_Real	Gen_Real
1998	1	0.903	0.89	0.09343	0.10805	0.08560	0.10350	0.11969	0.09483
1998	2	0.903	0.89	0.09312	0.10882	0.08679	0.10310	0.12048	0.09609
1998	3	0.904	0.89	0.09423	0.10805	0.08735	0.10428	0.11958	0.09667
1998	4	0.904	0.89	0.09480	0.11098	0.08734	0.10485	0.12275	0.09661
1998	5	0.905	0.89	0.09700	0.11271	0.08964	0.10723	0.12459	0.09909
1998	6	0.905	0.89	0.10011	0.11568	0.08978	0.11062	0.12782	0.09920
1998	7	0.906	0.89	0.10185	0.11838	0.08690	0.11248	0.13074	0.09597
1998	8	0.907	0.89	0.10185	0.11570	0.08542	0.11231	0.12759	0.09420
1998	9	0.908	0.89	0.10289	0.11559	0.08797	0.11330	0.12728	0.09688
1998	10	0.909	0.89	0.10199	0.11904	0.08875	0.11216	0.13090	0.09759
1998	11	0.911	0.90	0.09825	0.11509	0.08787	0.10788	0.12638	0.09648
1998	12	0.912	0.90	0.09653	0.11229	0.08902	0.10584	0.12312	0.09761
1999	1	0.913	0.90	0.09410	0.10689	0.08652	0.10304	0.11703	0.09474
1999	2	0.915	0.90	0.09318	0.10553	0.08835	0.10190	0.11539	0.09661
1999	3	0.916	0.90	0.09419	0.10473	0.08788	0.10285	0.11436	0.09596
1999	4	0.917	0.90	0.09434	0.10708	0.08589	0.10286	0.11676	0.09365
1999	5	0.918	0.90	0.09678	0.11004	0.08968	0.10538	0.11981	0.09765
1999	6	0.920	0.90	0.10003	0.11523	0.08871	0.10876	0.12529	0.09645
1999	7	0.921	0.91	0.10203	0.11284	0.08750	0.11078	0.12252	0.09500
1999	8	0.924	0.91	0.10227	0.11139	0.08562	0.11071	0.12059	0.09269
1999	9	0.926	0.91	0.10233	0.11120	0.08719	0.11046	0.12004	0.09412
1999	10	0.929	0.91	0.10150	0.11340	0.08865	0.10926	0.12207	0.09542
1999	11	0.932	0.92	0.09914	0.11061	0.09045	0.10641	0.11872	0.09708
1999	12	0.934	0.92	0.09699	0.11018	0.08970	0.10380	0.11792	0.09600
2000	1	0.937	0.92	0.09401	0.10506	0.08491	0.10032	0.11211	0.09061
2000	2	0.940	0.92	0.09290	0.10328	0.08718	0.09885	0.10989	0.09277
2000	3	0.942	0.93	0.09392	0.10350	0.08622	0.09967	0.10982	0.09149
2000	4	0.945	0.93	0.09484	0.10677	0.08731	0.10035	0.11297	0.09239
2000	5	0.948	0.93	0.09694	0.10839	0.08899	0.10228	0.11436	0.09389
2000	6	0.951	0.93	0.09827	0.11092	0.08783	0.10339	0.11669	0.09240
2000	7	0.953	0.94	0.10051	0.10936	0.08748	0.10544	0.11473	0.09178
2000	8	0.955	0.94	0.10182	0.10980	0.08655	0.10666	0.11503	0.09067
2000	9	0.956	0.94	0.10212	0.10945	0.08607	0.10681	0.11448	0.09003
2000	10	0.958	0.94	0.10136	0.11121	0.08906	0.10585	0.11613	0.09301
2000	11	0.959	0.94	0.09918	0.11056	0.08897	0.10341	0.11527	0.09277
2000	12	0.961	0.94	0.09606	0.10802	0.08855	0.10001	0.11247	0.09219
2001	1	0.962	0.95	0.09359	0.10418	0.08538	0.09728	0.10829	0.08875
2001	2	0.964	0.95	0.09274	0.10348	0.08349	0.09625	0.10740	0.08666
2001	3	0.965	0.95	0.09335	0.10483	0.08768	0.09675	0.10864	0.09087
2001	4	0.966	0.95	0.09436	0.10755	0.08762	0.09764	0.11129	0.09067
2001	5	0.968	0.95	0.09655	0.11208	0.08913	0.09975	0.11579	0.09208
2001	6	0.969	0.95	0.09876	0.11484	0.08812	0.10188	0.11847	0.09090
2001	7	0.971	0.95	0.10115	0.11411	0.08823	0.10419	0.11754	0.09089
2001	8	0.973	0.96	0.10158	0.11337	0.08535	0.10437	0.11648	0.08769
2001	9	0.976	0.96	0.10195	0.11291	0.08642	0.10449	0.11572	0.08857
2001	10	0.978	0.96	0.10216	0.11510	0.08874	0.10444	0.11768	0.09072
2001	11	0.981	0.96	0.09917	0.11407	0.08801	0.10115	0.11634	0.08976
2001	12	0.983	0.97	0.09663	0.10989	0.08747	0.09830	0.11179	0.08898
2002	1	0.985	0.97	0.09467	0.10567	0.08625	0.09607	0.10724	0.08753
2002	2	0.988	0.97	0.09262	0.10372	0.08509	0.09376	0.10501	0.08614
2002	3	0.990	0.97	0.09426	0.10525	0.08851	0.09519	0.10629	0.08939
2002	4	0.993	0.98	0.09498	0.10762	0.08643	0.09569	0.10842	0.08707
2002	5	0.995	0.98	0.09585	0.10724	0.08688	0.09633	0.10777	0.08731
2002	6	0.998	0.98	0.09806	0.11204	0.08850	0.09831	0.11232	0.08872
2002	7	1.000	0.98	0.10091	0.11358	0.08821	0.10092	0.11359	0.08822
2002	8	1.003	0.99	0.10134	0.11104	0.08566	0.10106	0.11073	0.08542
2002	9	1.006	0.99	0.10172	0.11099	0.08641	0.10115	0.11037	0.08593

Year	Month	CPI	CPI Index	Res_Nom	SmlGen_Nom	Gen_Nom	Res_Real	SmlGen_Real	Gen_Real
2002	10	1.009	0.99	0.10138	0.11350	0.08886	0.10052	0.11254	0.08811
2002	11	1.011	0.99	0.09775	0.11090	0.08820	0.09666	0.10966	0.08722
2002	12	1.014	1.00	0.09745	0.10816	0.08936	0.09608	0.10664	0.08811
2003	1	1.017	1.00	0.09655	0.10360	0.08710	0.09494	0.10187	0.08565
2003	2	1.020	1.00	0.09532	0.10244	0.08639	0.09347	0.10045	0.08471
2003	3	1.023	1.01	0.09610	0.10284	0.08879	0.09397	0.10055	0.08682
2003	4	1.026	1.01	0.09705	0.10500	0.08890	0.09464	0.10239	0.08669
2003	5	1.028	1.01	0.09840	0.10710	0.08958	0.09569	0.10414	0.08711
2003	6	1.031	1.01	0.10053	0.11211	0.08976	0.09749	0.10872	0.08705
2003	7	1.034	1.02	0.10302	0.11330	0.08937	0.09962	0.10956	0.08642
2003	8	1.036	1.02	0.10347	0.11268	0.08647	0.09991	0.10880	0.08349
2003	9	1.037	1.02	0.10385	0.11339	0.08823	0.10012	0.10932	0.08506
2003	10	1.039	1.02	0.10349	0.11581	0.08947	0.09963	0.11150	0.08614
2003	11	1.040	1.02	0.10153	0.11519	0.09856	0.09759	0.11073	0.09475
2003	12	1.042	1.02	0.09935	0.11202	0.09086	0.09536	0.10752	0.08722
2004	1	1.043	1.03	0.09638	0.10320	0.08630	0.09237	0.09891	0.08271
2004	2	1.045	1.03	0.09521	0.09936	0.08631	0.09112	0.09509	0.08260
2004	3	1.047	1.03	0.09598	0.09993	0.08770	0.09172	0.09549	0.08380
2004	4	1.048	1.03	0.09657	0.10121	0.08594	0.09215	0.09658	0.08201
2004	5	1.050	1.03	0.09832	0.10382	0.08910	0.09367	0.09891	0.08489
2004	6	1.051	1.03	0.10110	0.10835	0.08999	0.09618	0.10309	0.08561
2004	7	1.053	1.04	0.10256	0.10706	0.08798	0.09743	0.10170	0.08358
2004	8	1.055	1.04	0.10313	0.10672	0.08637	0.09774	0.10115	0.08186
2004	9	1.058	1.04	0.10332	0.10656	0.08712	0.09770	0.10077	0.08238
2004	10	1.060	1.04	0.10290	0.10852	0.08879	0.09707	0.10238	0.08376
2004	11	1.062	1.04	0.10125	0.10657	0.09011	0.09530	0.10031	0.08482
2004	12	1.065	1.05	0.09867	0.10379	0.08834	0.09266	0.09747	0.08296
2005	1	1.067	1.05	0.09617	0.09803	0.08552	0.09010	0.09185	0.08012
2005	2	1.070	1.05	0.09531	0.09659	0.08667	0.08910	0.09030	0.08103
2005	3	1.072	1.05	0.09637	0.09724	0.08802	0.08988	0.09070	0.08210
2005	4	1.075	1.06	0.09684	0.09810	0.08565	0.09013	0.09130	0.07971
2005	5	1.077	1.06	0.09848	0.10019	0.08861	0.09144	0.09303	0.08228
2005	6	1.079	1.06	0.10781	0.11041	0.09119	0.09987	0.10229	0.08449
2005	7	1.082	1.06	0.11351	0.11297	0.09281	0.10493	0.10443	0.08579
2005	8	1.084	1.07	0.11007	0.10889	0.08881	0.10157	0.10048	0.08195
2005	9	1.086	1.07	0.10969	0.10844	0.08852	0.10104	0.09989	0.08154
2005	10	1.087	1.07	0.10924	0.10977	0.09080	0.10046	0.10095	0.08350
2005	11	1.089	1.07	0.10783	0.10925	0.09212	0.09899	0.10030	0.08457
2005	12	1.091	1.07	0.10540	0.10691	0.09094	0.09659	0.09798	0.08334
2006	1	1.093	1.07	0.10297	0.10372	0.08912	0.09421	0.09490	0.08154
2006	2	1.095	1.08	0.10227	0.10400	0.08919	0.09340	0.09498	0.08146
2006	3	1.097	1.08	0.10289	0.10318	0.09048	0.09381	0.09407	0.08250
2006	4	1.099	1.08	0.10367	0.10542	0.09071	0.09436	0.09596	0.08257
2006	5	1.101	1.08	0.11578	0.12021	0.10422	0.10521	0.10923	0.09470
2006	6	1.102	1.08	0.12313	0.12114	0.09767	0.11170	0.10989	0.08859
2006	7	1.104	1.09	0.11800	0.11782	0.09663	0.10686	0.10669	0.08750
2006	8	1.106	1.09	0.11855	0.11730	0.09476	0.10719	0.10606	0.08568
2006	9	1.108	1.09	0.11912	0.11817	0.09628	0.10754	0.10668	0.08692
2006	10	1.109	1.09	0.11852	0.11833	0.09756	0.10683	0.10666	0.08794
2006	11	1.111	1.09	0.11716	0.11800	0.09884	0.10544	0.10620	0.08895
2006	12	1.113	1.09	0.11501	0.11638	0.09851	0.10335	0.10457	0.08852
2007	1	1.115	1.10	0.11224	0.11272	0.09570	0.10070	0.10113	0.08586
2007	2	1.116	1.10	0.11051	0.11080	0.09416	0.09900	0.09926	0.08435
2007	3	1.118	1.10	0.11098	0.11098	0.09637	0.09927	0.09926	0.08620
2007	4	1.120	1.10	0.11298	0.11417	0.09696	0.10089	0.10195	0.08658
2007	5	1.122	1.10	0.11770	0.11930	0.10031	0.10495	0.10638	0.08944
2007	6	1.123	1.10	0.12138	0.12251	0.09918	0.10806	0.10907	0.08830

Year	Month	CPI	CPI Index	Res_Nom	SmlGen_Nom	Gen_Nom	Res_Real	SmlGen_Real	Gen_Real
2007	7	1.125	1.11	0.12345	0.12328	0.09943	0.10974	0.10959	0.08839
2007	8	1.128	1.11	0.12422	0.12254	0.09685	0.11016	0.10867	0.08589
2007	9	1.131	1.11	0.12449	0.12360	0.09854	0.11012	0.10933	0.08717
2007	10	1.133	1.11	0.12434	0.12408	0.09977	0.10972	0.10949	0.08804
2007	11	1.136	1.12	0.12201	0.12291	0.09964	0.10739	0.10819	0.08770
2007	12	1.139	1.12	0.11905	0.12000	0.09959	0.10453	0.10536	0.08744
2008	1	1.142	1.12	0.11689	0.11718	0.09749	0.10238	0.10264	0.08539
2008	2	1.145	1.13	0.11599	0.11660	0.09619	0.10134	0.10188	0.08404
2008	3	1.147	1.13	0.11688	0.11729	0.09922	0.10187	0.10223	0.08648
2008	4	1.150	1.13	0.11762	0.11840	0.09837	0.10227	0.10295	0.08553
2008	5	1.153	1.13	0.11921	0.12063	0.09985	0.10340	0.10463	0.08661
2008	6	1.156	1.14	0.12182	0.12259	0.09987	0.10541	0.10607	0.08642
2008	7	1.159	1.14	0.12384	0.12393	0.09940	0.10690	0.10698	0.08580
2008	8	1.158	1.14	0.12396	0.12210	0.09609	0.10701	0.10540	0.08295
2008	9	1.158	1.14	0.12424	0.12452	0.09832	0.10726	0.10750	0.08488
2008	10	1.158	1.14	0.12392	0.12505	0.09970	0.10700	0.10797	0.08608
2008	11	1.158	1.14	0.12227	0.12394	0.10097	0.10558	0.10702	0.08719
2008	12	1.158	1.14	0.11969	0.12181	0.10019	0.10336	0.10519	0.08652
2009	1	1.158	1.14	0.11945	0.12080	0.09921	0.10316	0.10432	0.08568
2009	2	1.158	1.14	0.12353	0.12602	0.10599	0.10669	0.10884	0.09154
2009	3	1.158	1.14	0.12793	0.12843	0.10870	0.11050	0.11094	0.09390
2009	4	1.158	1.14	0.12887	0.13015	0.10709	0.11133	0.11243	0.09251
2009	5	1.158	1.14	0.13097	0.13249	0.11102	0.11315	0.11447	0.09591
2009	6	1.157	1.14	0.13392	0.13537	0.10991	0.11571	0.11696	0.09496
2009	7	1.157	1.14	0.13514	0.13542	0.10787	0.11677	0.11701	0.09321
2009	8	1.159	1.14	0.13482	0.13434	0.10557	0.11629	0.11588	0.09106
2009	9	1.161	1.14	0.13570	0.13513	0.10866	0.11684	0.11635	0.09356
2009	10	1.164	1.14	0.13489	0.13575	0.10874	0.11593	0.11667	0.09346
2009	11	1.166	1.15	0.13281	0.13453	0.10955	0.11394	0.11541	0.09399
2009	12	1.168	1.15	0.13099	0.13308	0.10979	0.11218	0.11397	0.09403
2010	1	1.170	1.15	0.12832	0.12999	0.10589	0.10969	0.11112	0.09052
2010	2	1.172	1.15	0.12734	0.13115	0.10816	0.10866	0.11191	0.09230
2010	3	1.174	1.15	0.12859	0.13264	0.10928	0.10954	0.11298	0.09309
2010	4	1.176	1.16	0.12943	0.13419	0.10664	0.11005	0.11410	0.09067
2010	5	1.178	1.16	0.13180	0.13696	0.11134	0.11187	0.11625	0.09450
2010	6	1.180	1.16	0.13450	0.13920	0.10991	0.11395	0.11794	0.09312
2010	7	1.182	1.16	0.13514	0.13858	0.10807	0.11429	0.11720	0.09140
2010	8	1.186	1.17	0.13533	0.13764	0.10651	0.11409	0.11604	0.08979
2010	9	1.190	1.17	0.13579	0.13860	0.10801	0.11412	0.11648	0.09077
2010	10	1.194	1.17	0.13531	0.13937	0.11092	0.11336	0.11676	0.09293
2010	11	1.197	1.18	0.13372	0.13908	0.11201	0.11168	0.11616	0.09355
2010	12	1.201	1.18	0.13113	0.13584	0.10946	0.10917	0.11310	0.09113
2011	1	1.205	1.18	0.13026	0.13446	0.10781	0.10812	0.11160	0.08948
2011	2	1.209	1.19	0.13267	0.13707	0.11543	0.10978	0.11342	0.09552
2011	3	1.212	1.19	0.13557	0.13839	0.11613	0.11183	0.11416	0.09579
2011	4	1.216	1.20	0.13628	0.14006	0.11560	0.11207	0.11518	0.09507
2011	5	1.220	1.20	0.13793	0.14159	0.11585	0.11309	0.11608	0.09498
2011	6	1.223	1.20	0.13989	0.14426	0.11627	0.11434	0.11792	0.09504
2011	7	1.227	1.21	0.14239	0.14573	0.11647	0.11603	0.11875	0.09491
2011	8	1.229	1.21	0.14305	0.14577	0.11511	0.11638	0.11860	0.09365
2011	9	1.231	1.21	0.14305	0.14504	0.11364	0.11620	0.11781	0.09231
2011	10	1.233	1.21	0.14251	0.14578	0.11604	0.11557	0.11822	0.09411
2011	11	1.235	1.21	0.14130	0.14631	0.11915	0.11441	0.11846	0.09647
2011	12	1.237	1.22	0.13889	0.14384	0.11615	0.11228	0.11628	0.09390
2012	1	1.239	1.22	0.13946	0.14288	0.11665	0.11256	0.11532	0.09415
2012	2	1.241	1.22	0.14478	0.14744	0.12153	0.11667	0.11881	0.09793
2012	3	1.243	1.22	0.14958	0.14987	0.12372	0.12034	0.12058	0.09954

Year	Month	CPI	CPI Index	Res_Nom	SmlGen_Nom	Gen_Nom	Res_Real	SmlGen_Real	Gen_Real
2012	4	1.245	1.22	0.15071	0.15232	0.12464	0.12106	0.12235	0.10012
2012	5	1.247	1.23	0.15289	0.15382	0.12452	0.12262	0.12336	0.09987
2012	6	1.249	1.23	0.15524	0.15631	0.12377	0.12430	0.12516	0.09910
2012	7	1.251	1.23	0.15713	0.15717	0.12455	0.12563	0.12566	0.09958
2012	8	1.252	1.23	0.15723	0.15592	0.12084	0.12558	0.12453	0.09651
2012	9	1.253	1.23	0.15732	0.15655	0.12203	0.12552	0.12491	0.09737
2012	10	1.255	1.23	0.15713	0.15751	0.12380	0.12526	0.12555	0.09868
2012	11	1.256	1.23	0.15520	0.15612	0.12361	0.12359	0.12432	0.09843
2012	12	1.257	1.24	0.15261	0.15447	0.12599	0.12141	0.12289	0.10023
2013	1	1.258	1.24	0.15060	0.15130	0.12202	0.11968	0.12024	0.09697
2013	2	1.260	1.24	0.15116	0.15267	0.12482	0.12001	0.12122	0.09910
2013	3	1.261	1.24	0.15371	0.15454	0.12979	0.12192	0.12258	0.10295
2013	4	1.262	1.24	0.15471	0.15601	0.12782	0.12259	0.12362	0.10128
2013	5	1.263	1.24	0.15655	0.15761	0.12953	0.12393	0.12477	0.10254
2013	6	1.264	1.24	0.15926	0.16047	0.12895	0.12596	0.12691	0.10198
2013	7	1.266	1.24	0.16124	0.16264	0.13016	0.12740	0.12850	0.10284
2013	8	1.268	1.25	0.16119	0.16045	0.12444	0.12718	0.12659	0.09818
2013	9	1.269	1.25	0.16162	0.16115	0.12747	0.12733	0.12696	0.10043
2013	10	1.271	1.25	0.16177	0.16233	0.12913	0.12726	0.12770	0.10158
2013	11	1.273	1.25	0.15948	0.16115	0.12965	0.12528	0.12659	0.10185
2013	12	1.275	1.25	0.15606	0.15764	0.12906	0.12241	0.12365	0.10123
2014	1	1.277	1.26	0.15456	0.15516	0.12568	0.12106	0.12154	0.09844
2014	2	1.279	1.26	0.15582	0.15791	0.12928	0.12188	0.12351	0.10112
2014	3	1.280	1.26	0.15884	0.15972	0.13342	0.12405	0.12474	0.10420
2014	4	1.282	1.26	0.16035	0.16121	0.13116	0.12506	0.12573	0.10230
2014	5	1.284	1.26	0.16195	0.16501	0.13440	0.12612	0.12850	0.10466
2014	6	1.286	1.26	0.16424	0.16574	0.13303	0.12772	0.12889	0.10345
2014	7	1.288	1.27	0.16745	0.16712	0.13228	0.13003	0.12977	0.10272
2014	8	1.288	1.27	0.16755	0.16693	0.12864	0.13006	0.12958	0.09986
2014	9	1.289	1.27	0.16829	0.16656	0.13232	0.13059	0.12925	0.10268
2014	10	1.289	1.27	0.16870	0.17060	0.13355	0.13087	0.13234	0.10360
2014	11	1.290	1.27	0.16630	0.16761	0.13387	0.12895	0.12997	0.10381
2014	12	1.290	1.27	0.16289	0.16432	0.13330	0.12627	0.12738	0.10333
2015	1	1.291	1.27	0.15991	0.15855	0.12972	0.12391	0.12286	0.10052
2015	2	1.291	1.27	0.15859	0.15374	0.13037	0.12284	0.11909	0.10098
2015	3	1.291	1.27	0.15919	0.15209	0.13030	0.12327	0.11777	0.10090
2015	4	1.292	1.27	0.15877	0.15201	0.12813	0.12290	0.11766	0.09918
2015	5	1.292	1.27	0.16063	0.15468	0.13439	0.12430	0.11969	0.10399
2015	6	1.293	1.27	0.16523	0.15836	0.13565	0.12781	0.12249	0.10492
2015	7	1.293	1.27	0.16774	0.15926	0.13173	0.12970	0.12314	0.10186
2015	8	1.295	1.27	0.16745	0.15897	0.12941	0.12936	0.12280	0.09997
2015	9	1.296	1.27	0.16786	0.15916	0.13114	0.12954	0.12283	0.10120
2015	10	1.297	1.28	0.16762	0.16003	0.13287	0.12923	0.12338	0.10244
2015	11	1.298	1.28	0.16605	0.15958	0.13489	0.12789	0.12291	0.10389
2015	12	1.300	1.28	0.15999	0.15420	0.13058	0.12310	0.11865	0.10047
2016	1	1.301	1.28	0.16270	0.15531	0.13265	0.12506	0.11938	0.10196
2016	2	1.302	1.28	0.15829	0.15044	0.12968	0.12155	0.11552	0.09958
2016	3	1.304	1.28	0.15891	0.14971	0.13174	0.12190	0.11484	0.10106
2016	4	1.305	1.28	0.15890	0.15021	0.12777	0.12177	0.11511	0.09792
2016	5	1.306	1.28	0.16059	0.15147	0.13241	0.12294	0.11596	0.10137
2016	6	1.308	1.29	0.16386	0.15503	0.13188	0.12533	0.11857	0.10087
2016	7	1.309	1.29	0.16671	0.15631	0.13159	0.12738	0.11943	0.10055
2016	8	1.310	1.29	0.16666	0.15538	0.12920	0.12721	0.11860	0.09862
2016	9	1.311	1.29	0.16667	0.15510	0.12784	0.12711	0.11828	0.09749
2016	10	1.313	1.29	0.16579	0.15545	0.13119	0.12630	0.11843	0.09995
2016	11	1.314	1.29	0.16590	0.15615	0.13535	0.12627	0.11885	0.10302
2016	12	1.315	1.29	0.16154	0.15265	0.13097	0.12284	0.11607	0.09959

Year	Month	CPI	CPI Index	Res_Nom	SmlGen_Nom	Gen_Nom	Res_Real	SmlGen_Real	Gen_Real
2017	1	1.316	1.29	0.15900	0.14969	0.12849	0.12079	0.11372	0.09762
2017	2	1.318	1.30	0.15920	0.15106	0.13113	0.12083	0.11465	0.09952
2017	3	1.319	1.30	0.16101	0.15222	0.13325	0.12209	0.11542	0.10104
2017	4	1.320	1.30	0.16191	0.15280	0.13431	0.12265	0.11575	0.10174
2017	5	1.321	1.30	0.16281	0.15338	0.13536	0.12322	0.11608	0.10245
2017	6	1.323	1.30	0.16573	0.15591	0.13271	0.12531	0.11788	0.10034
2017	7	1.324	1.30	0.16861	0.15851	0.13281	0.12736	0.11974	0.10032
2017	8	1.326	1.30	0.16943	0.15850	0.12981	0.12774	0.11950	0.09787
2017	9	1.329	1.31	0.16951	0.15841	0.12891	0.12758	0.11922	0.09702
2017	10	1.331	1.31	0.16919	0.15946	0.13295	0.12710	0.11978	0.09987
2017	11	1.334	1.31	0.16842	0.15951	0.13514	0.12629	0.11961	0.10134
2017	12	1.336	1.31	0.16491	0.15663	0.13377	0.12343	0.11723	0.10012
2018	1	1.339	1.32	0.16137	0.15185	0.12956	0.12056	0.11345	0.09679
2018	2	1.341	1.32	0.16127	0.15305	0.12990	0.12026	0.11413	0.09686
2018	3	1.343	1.32	0.16391	0.15477	0.13542	0.12201	0.11521	0.10081
2018	4	1.346	1.32	0.16426	0.15585	0.13105	0.12204	0.11579	0.09737
2018	5	1.348	1.33	0.16606	0.15727	0.13515	0.12316	0.11665	0.10024
2018	6	1.351	1.33	0.16945	0.16066	0.13433	0.12545	0.11893	0.09945
2018	7	1.353	1.33	0.17162	0.16140	0.13500	0.12682	0.11926	0.09976
2018	8	1.355	1.33	0.17107	0.15980	0.13043	0.12625	0.11793	0.09626
2018	9	1.357	1.33	0.17130	0.16049	0.13196	0.12625	0.11829	0.09726
2018	10	1.359	1.34	0.17151	0.16131	0.13508	0.12624	0.11873	0.09943
2018	11	1.360	1.34	0.16912	0.16000	0.13595	0.12432	0.11761	0.09993
2018	12	1.362	1.34	0.16546	0.15707	0.13421	0.12147	0.11531	0.09852
2019	1	1.364	1.34	0.16358	0.15362	0.13023	0.11993	0.11263	0.09547
2019	2	1.366	1.34	0.16400	0.15568	0.13189	0.12008	0.11398	0.09656
2019	3	1.368	1.34	0.16466	0.15518	0.13246	0.12040	0.11347	0.09686
2019	4	1.369	1.35	0.16556	0.15755	0.13402	0.12090	0.11505	0.09787
2019	5	1.371	1.35	0.16870	0.15959	0.13445	0.12303	0.11639	0.09805
2019	6	1.373	1.35	0.17034	0.16181	0.13500	0.12406	0.11785	0.09832
2019	7	1.375	1.35	0.17393	0.16430	0.13623	0.12652	0.11951	0.09910
2019	8	1.375	1.35	0.17419	0.16311	0.13190	0.12667	0.11861	0.09592
2019	9	1.376	1.35	0.17373	0.16349	0.13336	0.12630	0.11886	0.09696
2019	10	1.376	1.35	0.17521	0.16579	0.14021	0.12735	0.12050	0.10191
2019	11	1.376	1.35	0.17326	0.16407	0.13627	0.12589	0.11922	0.09902
2019	12	1.377	1.35	0.16894	0.16163	0.13679	0.12272	0.11742	0.09937
2020	1	1.377	1.35	0.16673	0.15757	0.13132	0.12109	0.11444	0.09537
2020	2	1.377	1.35	0.16645	0.15735	0.13430	0.12085	0.11424	0.09751
2020	3	1.378	1.35	0.16827	0.15801	0.13775	0.12215	0.11470	0.09999
2020	4	1.378	1.35	0.16822	0.15872	0.13371	0.12207	0.11518	0.09703
2020	5	1.378	1.36	0.17093	0.16172	0.14358	0.12401	0.11733	0.10417
2020	6	1.379	1.36	0.17379	0.16810	0.14560	0.12605	0.12193	0.10560
2020	7	1.379	1.36	0.17393	0.16605	0.13939	0.12612	0.12040	0.10107
2020	8	1.384	1.36	0.17463	0.16516	0.13518	0.12620	0.11935	0.09769
2020	9	1.389	1.37	0.17620	0.16604	0.13789	0.12690	0.11958	0.09931
2020	10	1.393	1.37	0.17657	0.16710	0.13911	0.12674	0.11994	0.09985
2020	11	1.398	1.37	0.17436	0.16508	0.14048	0.12473	0.11809	0.10049
2020	12	1.403	1.38	0.17191	0.16317	0.13996	0.12257	0.11633	0.09978
2021	1	1.407	1.38	0.16970	0.15959	0.13576	0.12059	0.11340	0.09647
2021	2	1.412	1.39	0.16927	0.15915	0.13908	0.11988	0.11271	0.09850
2021	3	1.417	1.39	0.17020	0.15852	0.13973	0.12014	0.11189	0.09863
2021	4	1.421	1.40	0.17025	0.15917	0.13761	0.11977	0.11198	0.09681
2021	5	1.426	1.40	0.17309	0.16199	0.14271	0.12137	0.11359	0.10007
2021	6	1.431	1.41	0.17583	0.16552	0.14264	0.12289	0.11568	0.09969
2021	7	1.436	1.41	0.17727	0.16569	0.14127	0.12349	0.11542	0.09841
2021	8	1.441	1.42	0.17736	0.16483	0.13774	0.12308	0.11439	0.09559
2021	9	1.447	1.42	0.17755	0.16411	0.13852	0.12275	0.11345	0.09576

Year	Month	CPI	CPI Index	Res_Nom	SmlGen_Nom	Gen_Nom	Res_Real	SmlGen_Real	Gen_Real
2021	10	1.452	1.43	0.17792	0.16546	0.13997	0.12252	0.11395	0.09639
2021	11	1.458	1.43	0.17707	0.16491	0.14302	0.12148	0.11314	0.09812
2021	12	1.463	1.44	0.17362	0.16209	0.14144	0.11867	0.11079	0.09667
2022	1	1.469	1.44	0.17175	0.16024	0.13845	0.11694	0.10911	0.09427
2022	2	1.474	1.45	0.17131	0.15979	0.14184	0.11621	0.10839	0.09621
2022	3	1.480	1.45	0.17225	0.15916	0.14250	0.11641	0.10756	0.09631
2022	4	1.485	1.46	0.17230	0.15982	0.14034	0.11601	0.10761	0.09449
2022	5	1.491	1.47	0.17518	0.16265	0.14554	0.11751	0.10910	0.09762
2022	6	1.496	1.47	0.17795	0.16619	0.14547	0.11893	0.11107	0.09722
2022	7	1.502	1.48	0.17941	0.16636	0.14407	0.11946	0.11078	0.09593
2022	8	1.505	1.48	0.18321	0.17077	0.14325	0.12175	0.11348	0.09520
2022	9	1.508	1.48	0.18341	0.17002	0.14406	0.12165	0.11277	0.09555
2022	10	1.511	1.49	0.18379	0.17142	0.14557	0.12167	0.11348	0.09636
2022	11	1.514	1.49	0.18291	0.17085	0.14874	0.12086	0.11288	0.09827
2022	12	1.517	1.49	0.17935	0.16793	0.14709	0.11827	0.11073	0.09700
2023	1	1.519	1.49	0.18109	0.17146	0.14684	0.11918	0.11284	0.09664
2023	2	1.522	1.50	0.18063	0.17098	0.15043	0.11865	0.11231	0.09882
2023	3	1.525	1.50	0.18161	0.17030	0.15113	0.11907	0.11165	0.09908
2023	4	1.528	1.50	0.18167	0.17100	0.14884	0.11888	0.11190	0.09739
2023	5	1.531	1.51	0.18470	0.17403	0.15435	0.12063	0.11367	0.10081
2023	6	1.534	1.51	0.18763	0.17782	0.15428	0.12231	0.11592	0.10057
2023	7	1.537	1.51	0.18916	0.17801	0.15280	0.12307	0.11581	0.09941
2023	8	1.540	1.51	0.18926	0.17709	0.14898	0.12293	0.11503	0.09677
2023	9	1.542	1.52	0.18947	0.17631	0.14982	0.12286	0.11433	0.09715
2023	10	1.545	1.52	0.18985	0.17776	0.15139	0.12291	0.11508	0.09801
2023	11	1.547	1.52	0.18895	0.17717	0.15469	0.12212	0.11450	0.09997
2023	12	1.550	1.52	0.18527	0.17414	0.15298	0.11954	0.11236	0.09870
2024	1	1.553	1.53	0.18688	0.17780	0.15271	0.12038	0.11452	0.09836
2024	2	1.555	1.53	0.18641	0.17730	0.15645	0.11987	0.11401	0.10060
2024	3	1.558	1.53	0.18743	0.17660	0.15718	0.12032	0.11337	0.10090
2024	4	1.560	1.53	0.18748	0.17733	0.15479	0.12016	0.11365	0.09920
2024	5	1.563	1.54	0.19061	0.18047	0.16053	0.12196	0.11547	0.10271
2024	6	1.565	1.54	0.19363	0.18440	0.16045	0.12369	0.11780	0.10250
2024	7	1.568	1.54	0.19521	0.18459	0.15891	0.12450	0.11773	0.10134
2024	8	1.571	1.54	0.19531	0.18364	0.15494	0.12435	0.11691	0.09865
2024	9	1.573	1.55	0.19553	0.18283	0.15581	0.12428	0.11621	0.09904
2024	10	1.576	1.55	0.19593	0.18434	0.15745	0.12432	0.11697	0.09990
2024	11	1.579	1.55	0.19500	0.18372	0.16087	0.12353	0.11638	0.10191
2024	12	1.581	1.55	0.19120	0.18059	0.15910	0.12091	0.11420	0.10061
2025	1	1.584	1.56	0.19062	0.18136	0.15576	0.12034	0.11449	0.09834
2025	2	1.587	1.56	0.19014	0.18085	0.15958	0.11984	0.11398	0.10058
2025	3	1.589	1.56	0.19117	0.18013	0.16032	0.12029	0.11334	0.10088
2025	4	1.592	1.57	0.19123	0.18088	0.15788	0.12013	0.11362	0.09918
2025	5	1.595	1.57	0.19443	0.18408	0.16374	0.12193	0.11544	0.10268
2025	6	1.597	1.57	0.19750	0.18809	0.16366	0.12366	0.11776	0.10247
2025	7	1.600	1.57	0.19912	0.18828	0.16209	0.12446	0.11769	0.10131
2025	8	1.603	1.58	0.19922	0.18731	0.15804	0.12431	0.11688	0.09862
2025	9	1.605	1.58	0.19944	0.18649	0.15893	0.12424	0.11617	0.09900
2025	10	1.608	1.58	0.19985	0.18802	0.16060	0.12428	0.11693	0.09987
2025	11	1.611	1.58	0.19890	0.18740	0.16409	0.12348	0.11634	0.10188
2025	12	1.613	1.59	0.19502	0.18420	0.16228	0.12088	0.11417	0.10058
2026	1	1.616	1.59	0.19443	0.18498	0.15888	0.12031	0.11446	0.09831
2026	2	1.619	1.59	0.19394	0.18447	0.16277	0.11980	0.11395	0.10055
2026	3	1.622	1.59	0.19500	0.18373	0.16353	0.12026	0.11331	0.10085
2026	4	1.624	1.60	0.19505	0.18449	0.16104	0.12009	0.11359	0.09915
2026	5	1.627	1.60	0.19831	0.18776	0.16701	0.12190	0.11541	0.10266
2026	6	1.630	1.60	0.20145	0.19185	0.16693	0.12362	0.11773	0.10244

Year	Month	CPI	CPI Index	Res_Nom	SmlGen_Nom	Gen_Nom	Res_Real	SmlGen_Real	Gen_Real
2026	7	1.632	1.61	0.20310	0.19205	0.16533	0.12443	0.11766	0.10129
2026	8	1.635	1.61	0.20320	0.19106	0.16120	0.12428	0.11685	0.09859
2026	9	1.638	1.61	0.20343	0.19022	0.16211	0.12421	0.11614	0.09898
2026	10	1.641	1.61	0.20384	0.19178	0.16381	0.12426	0.11691	0.09985
2026	11	1.643	1.62	0.20287	0.19114	0.16737	0.12346	0.11632	0.10186
2026	12	1.646	1.62	0.19892	0.18788	0.16552	0.12085	0.11414	0.10056
2027	1	1.649	1.62	0.19832	0.18868	0.16206	0.12029	0.11444	0.09829
2027	2	1.651	1.62	0.19782	0.18815	0.16602	0.11979	0.11394	0.10053
2027	3	1.654	1.63	0.19890	0.18741	0.16680	0.12024	0.11329	0.10083
2027	4	1.657	1.63	0.19896	0.18818	0.16426	0.12008	0.11358	0.09914
2027	5	1.660	1.63	0.20228	0.19152	0.17035	0.12188	0.11540	0.10265
2027	6	1.662	1.63	0.20548	0.19569	0.17027	0.12361	0.11772	0.10243
2027	7	1.665	1.64	0.20716	0.19589	0.16864	0.12441	0.11765	0.10128
2027	8	1.668	1.64	0.20727	0.19488	0.16443	0.12427	0.11684	0.09858
2027	9	1.671	1.64	0.20750	0.19403	0.16535	0.12421	0.11614	0.09898
2027	10	1.673	1.65	0.20792	0.19562	0.16708	0.12425	0.11690	0.09985
2027	11	1.676	1.65	0.20693	0.19497	0.17072	0.12345	0.11631	0.10185
2027	12	1.679	1.65	0.20290	0.19164	0.16884	0.12085	0.11414	0.10056
2028	1	1.682	1.65	0.20229	0.19246	0.16530	0.12028	0.11443	0.09829
2028	2	1.685	1.66	0.20177	0.19192	0.16934	0.11977	0.11392	0.10052
2028	3	1.687	1.66	0.20288	0.19116	0.17014	0.12023	0.11328	0.10083
2028	4	1.690	1.66	0.20293	0.19195	0.16755	0.12007	0.11357	0.09914
2028	5	1.693	1.66	0.20633	0.19535	0.17376	0.12188	0.11539	0.10264
2028	6	1.696	1.67	0.20959	0.19960	0.17367	0.12360	0.11771	0.10242
2028	7	1.699	1.67	0.21131	0.19981	0.17201	0.12441	0.11764	0.10127
2028	8	1.701	1.67	0.21141	0.19878	0.16771	0.12427	0.11684	0.09858
2028	9	1.704	1.68	0.21165	0.19791	0.16866	0.12419	0.11613	0.09897
2028	10	1.707	1.68	0.21208	0.19953	0.17043	0.12424	0.11689	0.09984
2028	11	1.710	1.68	0.21107	0.19887	0.17414	0.12344	0.11630	0.10184
2028	12	1.713	1.68	0.20696	0.19547	0.17221	0.12084	0.11413	0.10055
2029	1	1.716	1.69	0.20633	0.19631	0.16860	0.12028	0.11443	0.09828
2029	2	1.718	1.69	0.20581	0.19576	0.17273	0.11977	0.11392	0.10052
2029	3	1.721	1.69	0.20693	0.19498	0.17354	0.12023	0.11328	0.10082
2029	4	1.724	1.70	0.20699	0.19579	0.17090	0.12006	0.11356	0.09912
2029	5	1.727	1.70	0.21045	0.19926	0.17723	0.12187	0.11538	0.10263
2029	6	1.730	1.70	0.21378	0.20360	0.17715	0.12359	0.11770	0.10241
2029	7	1.733	1.70	0.21553	0.20381	0.17545	0.12440	0.11763	0.10126
2029	8	1.736	1.71	0.21564	0.20275	0.17107	0.12425	0.11683	0.09857
2029	9	1.738	1.71	0.21588	0.20186	0.17203	0.12418	0.11612	0.09896
2029	10	1.741	1.71	0.21632	0.20352	0.17383	0.12423	0.11688	0.09983
2029	11	1.744	1.72	0.21529	0.20284	0.17762	0.12343	0.11630	0.10183
2029	12	1.747	1.72	0.21110	0.19938	0.17566	0.12083	0.11412	0.10054
2030	1	1.750	1.72	0.21046	0.20023	0.17197	0.12026	0.11442	0.09827
2030	2	1.753	1.72	0.20992	0.19967	0.17618	0.11976	0.11391	0.10051
2030	3	1.756	1.73	0.21107	0.19888	0.17701	0.12021	0.11327	0.10081
2030	4	1.759	1.73	0.21113	0.19970	0.17432	0.12005	0.11355	0.09912
2030	5	1.762	1.73	0.21466	0.20324	0.18078	0.12186	0.11537	0.10262
2030	6	1.765	1.74	0.21806	0.20767	0.18069	0.12358	0.11769	0.10240
2030	7	1.767	1.74	0.21984	0.20788	0.17896	0.12439	0.11762	0.10125
2030	8	1.770	1.74	0.21995	0.20681	0.17449	0.12425	0.11682	0.09857
2030	9	1.773	1.74	0.22020	0.20590	0.17547	0.12417	0.11611	0.09895
2030	10	1.776	1.75	0.22065	0.20759	0.17731	0.12422	0.11688	0.09983
2030	11	1.779	1.75	0.21960	0.20690	0.18117	0.12343	0.11629	0.10183
2030	12	1.782	1.75	0.21532	0.20337	0.17917	0.12082	0.11412	0.10054
2031	1	1.785	1.76	0.21467	0.20424	0.17541	0.12026	0.11441	0.09827
2031	2	1.788	1.76	0.21412	0.20366	0.17971	0.11975	0.11390	0.10050
2031	3	1.791	1.76	0.21529	0.20286	0.18055	0.12021	0.11326	0.10081

Year	Month	CPI	CPI Index	Res_Nom	SmlGen_Nom	Gen_Nom	Res_Real	SmlGen_Real	Gen_Real
2031	4	1.794	1.76	0.21536	0.20370	0.17780	0.12004	0.11354	0.09911
2031	5	1.797	1.77	0.21895	0.20731	0.18440	0.12185	0.11537	0.10262
2031	6	1.800	1.77	0.22242	0.21182	0.18430	0.12357	0.11768	0.10240
2031	7	1.803	1.77	0.22424	0.21204	0.18254	0.12438	0.11762	0.10125
2031	8	1.806	1.78	0.22435	0.21094	0.17798	0.12423	0.11681	0.09855
2031	9	1.809	1.78	0.22460	0.21002	0.17898	0.12417	0.11610	0.09895
2031	10	1.812	1.78	0.22506	0.21175	0.18086	0.12421	0.11686	0.09982
2031	11	1.815	1.78	0.22399	0.21104	0.18479	0.12342	0.11628	0.10182
2031	12	1.818	1.79	0.21962	0.20744	0.18275	0.12081	0.11411	0.10053
2032	1	1.821	1.79	0.21896	0.20832	0.17892	0.12025	0.11441	0.09826
2032	2	1.824	1.79	0.21841	0.20774	0.18330	0.11975	0.11390	0.10050
2032	3	1.827	1.80	0.21960	0.20691	0.18416	0.12020	0.11325	0.10080
2032	4	1.830	1.80	0.21966	0.20777	0.18136	0.12003	0.11354	0.09910
2032	5	1.833	1.80	0.22333	0.21145	0.18808	0.12184	0.11536	0.10261
2032	6	1.836	1.81	0.22687	0.21606	0.18799	0.12357	0.11768	0.10239
2032	7	1.839	1.81	0.22872	0.21628	0.18619	0.12437	0.11761	0.10124
2032	8	1.842	1.81	0.22884	0.21516	0.18154	0.12423	0.11680	0.09855
2032	9	1.845	1.81	0.22909	0.21422	0.18256	0.12416	0.11610	0.09894
2032	10	1.848	1.82	0.22956	0.21598	0.18447	0.12420	0.11685	0.09981
2032	11	1.851	1.82	0.22847	0.21526	0.18849	0.12341	0.11627	0.10181
2032	12	1.854	1.82	0.22402	0.21159	0.18641	0.12080	0.11410	0.10052

Year	Month	Res	SmlGen	Gen
1998	1			
1998	2			
1998	3			
1998	4			
1998	5			
1998	6			
1998	7			
1998	8			
1998	9			
1998	10			
1998	11			
1998	12			
1999	1	0.108130	0.125077	0.096768
1999	2	0.108091	0.124855	0.096760
1999	3	0.107991	0.124431	0.096804
1999	4	0.107872	0.123997	0.096745
1999	5	0.107706	0.123497	0.096498
1999	6	0.107552	0.123099	0.096379
1999	7	0.107398	0.122888	0.096150
1999	8	0.107256	0.122203	0.096069
1999	9	0.107123	0.121620	0.095943
1999	10	0.106886	0.121016	0.095714
1999	11	0.106645	0.120280	0.095533
1999	12	0.106522	0.119642	0.095583
2000	1	0.106351	0.119208	0.095449
2000	2	0.106125	0.118798	0.095105
2000	3	0.105871	0.118340	0.094784
2000	4	0.105605	0.117962	0.094412
2000	5	0.105395	0.117646	0.094306
2000	6	0.105137	0.117191	0.093993
2000	7	0.104689	0.116475	0.093655
2000	8	0.104244	0.115826	0.093387
2000	9	0.103906	0.115362	0.093218
2000	10	0.103602	0.114899	0.092877
2000	11	0.103318	0.114404	0.092676
2000	12	0.103068	0.114117	0.092316
2001	1	0.102752	0.113663	0.091999
2001	2	0.102500	0.113345	0.091844
2001	3	0.102283	0.113137	0.091335
2001	4	0.102040	0.113039	0.091284
2001	5	0.101815	0.112898	0.091140
2001	6	0.101605	0.113018	0.090989
2001	7	0.101479	0.113165	0.090864
2001	8	0.101375	0.113400	0.090790
2001	9	0.101184	0.113521	0.090542
2001	10	0.100990	0.113625	0.090421

Year	Month	Res	SmlGen	Gen
2001	11	0.100873	0.113753	0.090230
2001	12	0.100684	0.113842	0.089980
2002	1	0.100542	0.113786	0.089712
2002	2	0.100441	0.113698	0.089610
2002	3	0.100233	0.113499	0.089567
2002	4	0.100104	0.113303	0.089443
2002	5	0.099941	0.113064	0.089144
2002	6	0.099655	0.112395	0.088746
2002	7	0.099358	0.111884	0.088564
2002	8	0.099085	0.111554	0.088342
2002	9	0.098809	0.111076	0.088153
2002	10	0.098531	0.110630	0.087933
2002	11	0.098204	0.110202	0.087715
2002	12	0.097830	0.109645	0.087503
2003	1	0.097645	0.109216	0.087431
2003	2	0.097551	0.108768	0.087274
2003	3	0.097526	0.108389	0.087155
2003	4	0.097424	0.107911	0.086941
2003	5	0.097337	0.107409	0.086909
2003	6	0.097284	0.107106	0.086892
2003	7	0.097215	0.106806	0.086753
2003	8	0.097108	0.106470	0.086604
2003	9	0.097012	0.106309	0.086443
2003	10	0.096926	0.106221	0.086371
2003	11	0.096852	0.106134	0.086206
2003	12	0.096930	0.106223	0.086834
2004	1	0.096870	0.106296	0.086759
2004	2	0.096656	0.106050	0.086514
2004	3	0.096460	0.105603	0.086338
2004	4	0.096273	0.105181	0.086087
2004	5	0.096065	0.104696	0.085696
2004	6	0.095897	0.104261	0.085512
2004	7	0.095788	0.103791	0.085392
2004	8	0.095605	0.103136	0.085155
2004	9	0.095424	0.102499	0.085019
2004	10	0.095222	0.101786	0.084795
2004	11	0.095009	0.101027	0.084598
2004	12	0.094818	0.100159	0.083770
2005	1	0.094593	0.099321	0.083416
2005	2	0.094404	0.098733	0.083201
2005	3	0.094236	0.098333	0.083069
2005	4	0.094083	0.097935	0.082928
2005	5	0.093914	0.097495	0.082736
2005	6	0.093729	0.097004	0.082518
2005	7	0.094037	0.096938	0.082424
2005	8	0.094662	0.097166	0.082608

Year	Month	Res	SmlGen	Gen
2005	9	0.094981	0.097110	0.082616
2005	10	0.095259	0.097036	0.082546
2005	11	0.095542	0.096917	0.082524
2005	12	0.095848	0.096916	0.082503
2006	1	0.096176	0.096958	0.082534
2006	2	0.096518	0.097212	0.082652
2006	3	0.096877	0.097602	0.082688
2006	4	0.097203	0.097883	0.082721
2006	5	0.097556	0.098271	0.082960
2006	6	0.098703	0.099622	0.083995
2006	7	0.099688	0.100255	0.084337
2006	8	0.099849	0.100443	0.084480
2006	9	0.100317	0.100908	0.084791
2006	10	0.100859	0.101474	0.085239
2006	11	0.101390	0.101950	0.085610
2006	12	0.101928	0.102442	0.085975
2007	1	0.102491	0.102992	0.086407
2007	2	0.103032	0.103511	0.086766
2007	3	0.103498	0.103867	0.087007
2007	4	0.103953	0.104300	0.087315
2007	5	0.104497	0.104800	0.087650
2007	6	0.104476	0.104561	0.087211
2007	7	0.104173	0.104493	0.087187
2007	8	0.104413	0.104735	0.087262
2007	9	0.104661	0.104952	0.087279
2007	10	0.104875	0.105173	0.087299
2007	11	0.105116	0.105409	0.087307
2007	12	0.105279	0.105574	0.087203
2008	1	0.105377	0.105640	0.087113
2008	2	0.105518	0.105765	0.087074
2008	3	0.105713	0.105984	0.087049
2008	4	0.105930	0.106232	0.087072
2008	5	0.106045	0.106315	0.086984
2008	6	0.105916	0.106170	0.086748
2008	7	0.105695	0.105920	0.086591
2008	8	0.105458	0.105702	0.086375
2008	9	0.105196	0.105430	0.086130
2008	10	0.104958	0.105277	0.085940
2008	11	0.104731	0.105151	0.085777
2008	12	0.104580	0.105054	0.085734
2009	1	0.104482	0.105039	0.085658
2009	2	0.104547	0.105179	0.085682
2009	3	0.104993	0.105760	0.086307
2009	4	0.105712	0.106485	0.086925
2009	5	0.106467	0.107275	0.087507
2009	6	0.107279	0.108095	0.088282

Year	Month	Res	SmlGen	Gen
2009	7	0.108137	0.109002	0.088994
2009	8	0.108960	0.109838	0.089611
2009	9	0.109733	0.110711	0.090286
2009	10	0.110532	0.111449	0.091010
2009	11	0.111277	0.112174	0.091624
2009	12	0.111973	0.112874	0.092191
2010	1	0.112708	0.113605	0.092816
2010	2	0.113253	0.114172	0.093219
2010	3	0.113417	0.114427	0.093282
2010	4	0.113336	0.114597	0.093215
2010	5	0.113230	0.114736	0.093062
2010	6	0.113123	0.114885	0.092944
2010	7	0.112977	0.114966	0.092791
2010	8	0.112771	0.114982	0.092640
2010	9	0.112587	0.114995	0.092535
2010	10	0.112360	0.115006	0.092303
2010	11	0.112146	0.115013	0.092259
2010	12	0.111958	0.115076	0.092223
2011	1	0.111708	0.115003	0.091982
2011	2	0.111577	0.115043	0.091895
2011	3	0.111669	0.115169	0.092163
2011	4	0.111861	0.115268	0.092389
2011	5	0.112029	0.115358	0.092755
2011	6	0.112131	0.115344	0.092795
2011	7	0.112163	0.115343	0.092955
2011	8	0.112308	0.115472	0.093248
2011	9	0.112499	0.115685	0.093569
2011	10	0.112672	0.115796	0.093697
2011	11	0.112856	0.115918	0.093795
2011	12	0.113083	0.116109	0.094039
2012	1	0.113342	0.116374	0.094269
2012	2	0.113712	0.116684	0.094658
2012	3	0.114286	0.117133	0.094859
2012	4	0.114995	0.117668	0.095171
2012	5	0.115744	0.118266	0.095592
2012	6	0.116538	0.118872	0.096000
2012	7	0.117368	0.119475	0.096338
2012	8	0.118167	0.120051	0.096727
2012	9	0.118933	0.120545	0.096965
2012	10	0.119710	0.121137	0.097386
2012	11	0.120518	0.121748	0.097768
2012	12	0.121283	0.122236	0.097931
2013	1	0.122044	0.122787	0.098458
2013	2	0.122637	0.123197	0.098694
2013	3	0.122916	0.123398	0.098792
2013	4	0.123048	0.123564	0.099076

Year	Month	Res	SmlGen	Gen
2013	5	0.123175	0.123670	0.099173
2013	6	0.123285	0.123788	0.099396
2013	7	0.123423	0.123934	0.099636
2013	8	0.123571	0.124171	0.099908
2013	9	0.123704	0.124342	0.100047
2013	10	0.123855	0.124513	0.100302
2013	11	0.124021	0.124691	0.100544
2013	12	0.124162	0.124881	0.100828
2014	1	0.124245	0.124944	0.100911
2014	2	0.124360	0.125052	0.101034
2014	3	0.124515	0.125243	0.101202
2014	4	0.124693	0.125423	0.101305
2014	5	0.124899	0.125598	0.101390
2014	6	0.125081	0.125909	0.101567
2014	7	0.125228	0.126074	0.101689
2014	8	0.125447	0.126181	0.101680
2014	9	0.125688	0.126430	0.101820
2014	10	0.125959	0.126621	0.102007
2014	11	0.126260	0.127008	0.102176
2014	12	0.126567	0.127290	0.102339
2015	1	0.126889	0.127601	0.102514
2015	2	0.127126	0.127711	0.102688
2015	3	0.127207	0.127343	0.102677
2015	4	0.127142	0.126762	0.102402
2015	5	0.126961	0.126089	0.102142
2015	6	0.126810	0.125355	0.102086
2015	7	0.126817	0.124822	0.102209
2015	8	0.126790	0.124269	0.102137
2015	9	0.126731	0.123704	0.102146
2015	10	0.126644	0.123170	0.102023
2015	11	0.126507	0.122423	0.101926
2015	12	0.126419	0.121834	0.101932
2016	1	0.126155	0.121106	0.101694
2016	2	0.126250	0.120816	0.101814
2016	3	0.126142	0.120519	0.101697
2016	4	0.126028	0.120275	0.101711
2016	5	0.125934	0.120062	0.101605
2016	6	0.125821	0.119751	0.101387
2016	7	0.125614	0.119424	0.101048
2016	8	0.125421	0.119115	0.100939
2016	9	0.125242	0.118765	0.100827
2016	10	0.125039	0.118385	0.100517
2016	11	0.124795	0.117973	0.100310
2016	12	0.124661	0.117635	0.100238
2017	1	0.124639	0.117421	0.100164
2017	2	0.124283	0.116949	0.099802

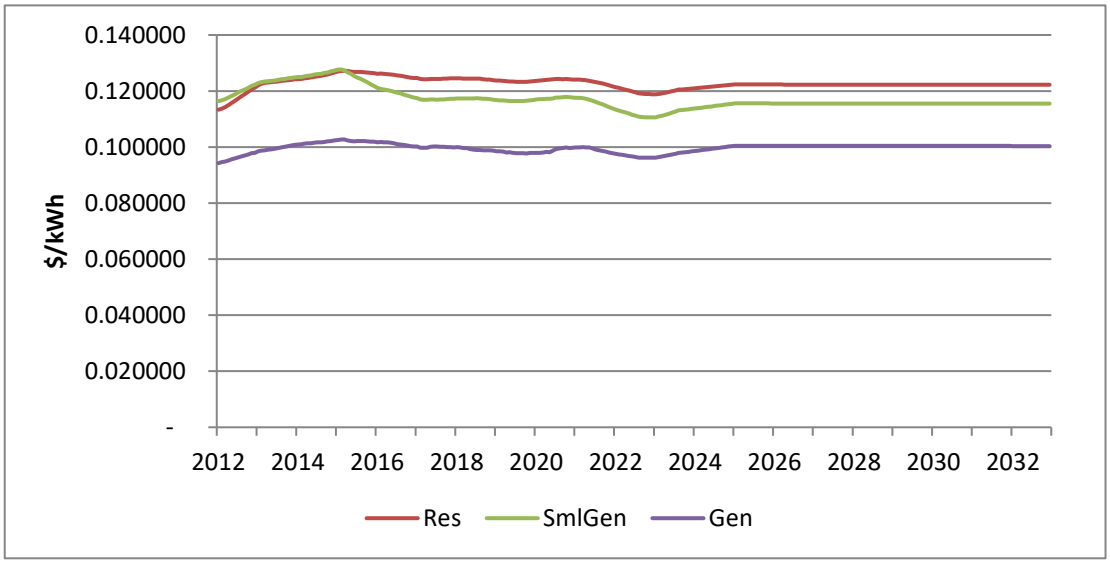
Year	Month	Res	SmlGen	Gen
2017	3	0.124223	0.116876	0.099798
2017	4	0.124238	0.116925	0.099796
2017	5	0.124311	0.116978	0.100114
2017	6	0.124334	0.116988	0.100204
2017	7	0.124332	0.116931	0.100160
2017	8	0.124331	0.116956	0.100142
2017	9	0.124376	0.117031	0.100080
2017	10	0.124415	0.117110	0.100040
2017	11	0.124481	0.117223	0.100034
2017	12	0.124483	0.117286	0.099894
2018	1	0.124532	0.117383	0.099938
2018	2	0.124513	0.117360	0.099869
2018	3	0.124465	0.117317	0.099647
2018	4	0.124459	0.117299	0.099628
2018	5	0.124409	0.117303	0.099264
2018	6	0.124404	0.117350	0.099079
2018	7	0.124416	0.117437	0.099005
2018	8	0.124370	0.117398	0.098958
2018	9	0.124246	0.117267	0.098823
2018	10	0.124135	0.117189	0.098843
2018	11	0.124064	0.117102	0.098806
2018	12	0.123900	0.116935	0.098689
2019	1	0.123736	0.116774	0.098556
2019	2	0.123683	0.116706	0.098446
2019	3	0.123668	0.116694	0.098421
2019	4	0.123534	0.116549	0.098092
2019	5	0.123438	0.116487	0.098134
2019	6	0.123428	0.116465	0.097952
2019	7	0.123312	0.116375	0.097858
2019	8	0.123288	0.116396	0.097803
2019	9	0.123323	0.116453	0.097775
2019	10	0.123327	0.116500	0.097750
2019	11	0.123420	0.116648	0.097957
2019	12	0.123551	0.116782	0.097881
2020	1	0.123656	0.116958	0.097951
2020	2	0.123753	0.117109	0.097942
2020	3	0.123817	0.117130	0.098021
2020	4	0.123962	0.117233	0.098283
2020	5	0.124060	0.117244	0.098213
2020	6	0.124141	0.117323	0.098722
2020	7	0.124307	0.117662	0.099329
2020	8	0.124274	0.117736	0.099494
2020	9	0.124234	0.117797	0.099641
2020	10	0.124284	0.117858	0.099837
2020	11	0.124233	0.117811	0.099665
2020	12	0.124136	0.117716	0.099788

Year	Month	Res	SmlGen	Gen
2021	1	0.124123	0.117626	0.099823
2021	2	0.124081	0.117540	0.099914
2021	3	0.124000	0.117412	0.099996
2021	4	0.123833	0.117178	0.099883
2021	5	0.123641	0.116911	0.099864
2021	6	0.123421	0.116600	0.099523
2021	7	0.123158	0.116080	0.099030
2021	8	0.122939	0.115665	0.098808
2021	9	0.122679	0.115251	0.098633
2021	10	0.122333	0.114741	0.098338
2021	11	0.121982	0.114241	0.098049
2021	12	0.121711	0.113829	0.097852
2022	1	0.121385	0.113367	0.097592
2022	2	0.121082	0.113008	0.097409
2022	3	0.120775	0.112649	0.097218
2022	4	0.120465	0.112288	0.097025
2022	5	0.120151	0.111923	0.096831
2022	6	0.119829	0.111550	0.096627
2022	7	0.119499	0.111165	0.096421
2022	8	0.119163	0.110778	0.096215
2022	9	0.119052	0.110702	0.096182
2022	10	0.118961	0.110645	0.096164
2022	11	0.118889	0.110606	0.096162
2022	12	0.118837	0.110585	0.096175
2023	1	0.118804	0.110580	0.096202
2023	2	0.118991	0.110892	0.096400
2023	3	0.119195	0.111218	0.096617
2023	4	0.119417	0.111559	0.096849
2023	5	0.119655	0.111917	0.097091
2023	6	0.119916	0.112297	0.097356
2023	7	0.120198	0.112701	0.097636
2023	8	0.120499	0.113121	0.097926
2023	9	0.120598	0.113250	0.098057
2023	10	0.120699	0.113380	0.098191
2023	11	0.120802	0.113513	0.098328
2023	12	0.120907	0.113648	0.098469
2024	1	0.121013	0.113784	0.098612
2024	2	0.121112	0.113924	0.098755
2024	3	0.121213	0.114065	0.098904
2024	4	0.121318	0.114209	0.099056
2024	5	0.121425	0.114355	0.099207
2024	6	0.121535	0.114505	0.099365
2024	7	0.121650	0.114662	0.099525
2024	8	0.121769	0.114821	0.099686
2024	9	0.121887	0.114978	0.099842
2024	10	0.122005	0.115135	0.099999

Year	Month	Res	SmlGen	Gen
2024	11	0.122123	0.115292	0.100157
2024	12	0.122240	0.115449	0.100319
2025	1	0.122355	0.115603	0.100478
2025	2	0.122352	0.115600	0.100475
2025	3	0.122350	0.115598	0.100473
2025	4	0.122347	0.115595	0.100471
2025	5	0.122344	0.115593	0.100469
2025	6	0.122342	0.115590	0.100466
2025	7	0.122338	0.115587	0.100464
2025	8	0.122335	0.115584	0.100461
2025	9	0.122332	0.115581	0.100459
2025	10	0.122328	0.115577	0.100456
2025	11	0.122325	0.115575	0.100453
2025	12	0.122322	0.115571	0.100451
2026	1	0.122319	0.115569	0.100448
2026	2	0.122316	0.115566	0.100446
2026	3	0.122313	0.115563	0.100443
2026	4	0.122311	0.115561	0.100441
2026	5	0.122308	0.115558	0.100439
2026	6	0.122305	0.115556	0.100437
2026	7	0.122303	0.115553	0.100434
2026	8	0.122300	0.115551	0.100432
2026	9	0.122297	0.115548	0.100430
2026	10	0.122295	0.115546	0.100428
2026	11	0.122292	0.115544	0.100426
2026	12	0.122291	0.115542	0.100425
2027	1	0.122289	0.115540	0.100423
2027	2	0.122287	0.115538	0.100422
2027	3	0.122286	0.115537	0.100421
2027	4	0.122284	0.115536	0.100419
2027	5	0.122283	0.115534	0.100418
2027	6	0.122282	0.115533	0.100417
2027	7	0.122281	0.115533	0.100417
2027	8	0.122280	0.115532	0.100416
2027	9	0.122279	0.115531	0.100416
2027	10	0.122279	0.115531	0.100415
2027	11	0.122279	0.115531	0.100415
2027	12	0.122278	0.115530	0.100414
2028	1	0.122277	0.115529	0.100414
2028	2	0.122277	0.115529	0.100413
2028	3	0.122276	0.115528	0.100412
2028	4	0.122275	0.115527	0.100412
2028	5	0.122274	0.115527	0.100412
2028	6	0.122274	0.115526	0.100411
2028	7	0.122273	0.115525	0.100410
2028	8	0.122272	0.115525	0.100410

Year	Month	Res	SmlGen	Gen
2028	9	0.122272	0.115524	0.100410
2028	10	0.122271	0.115523	0.100409
2028	11	0.122270	0.115523	0.100408
2028	12	0.122269	0.115522	0.100407
2029	1	0.122268	0.115521	0.100406
2029	2	0.122268	0.115520	0.100406
2029	3	0.122267	0.115520	0.100406
2029	4	0.122267	0.115520	0.100405
2029	5	0.122266	0.115519	0.100404
2029	6	0.122265	0.115518	0.100404
2029	7	0.122264	0.115517	0.100403
2029	8	0.122263	0.115516	0.100402
2029	9	0.122262	0.115515	0.100401
2029	10	0.122261	0.115514	0.100401
2029	11	0.122260	0.115513	0.100400
2029	12	0.122260	0.115513	0.100400
2030	1	0.122259	0.115512	0.100399
2030	2	0.122258	0.115511	0.100398
2030	3	0.122257	0.115510	0.100397
2030	4	0.122256	0.115509	0.100397
2030	5	0.122256	0.115509	0.100396
2030	6	0.122255	0.115508	0.100395
2030	7	0.122254	0.115507	0.100395
2030	8	0.122253	0.115506	0.100394
2030	9	0.122253	0.115506	0.100394
2030	10	0.122252	0.115505	0.100393
2030	11	0.122251	0.115505	0.100393
2030	12	0.122251	0.115504	0.100392
2031	1	0.122250	0.115504	0.100392
2031	2	0.122250	0.115503	0.100391
2031	3	0.122249	0.115503	0.100391
2031	4	0.122249	0.115502	0.100390
2031	5	0.122248	0.115501	0.100390
2031	6	0.122247	0.115501	0.100389
2031	7	0.122247	0.115501	0.100389
2031	8	0.122247	0.115500	0.100389
2031	9	0.122245	0.115499	0.100388
2031	10	0.122245	0.115498	0.100387
2031	11	0.122244	0.115498	0.100386
2031	12	0.122243	0.115497	0.100386
2032	1	0.122242	0.115496	0.100385
2032	2	0.122242	0.115496	0.100385
2032	3	0.122241	0.115495	0.100384
2032	4	0.122240	0.115494	0.100384
2032	5	0.122240	0.115494	0.100383
2032	6	0.122239	0.115493	0.100382

Year	Month	Res	SmlGen	Gen
2032	7	0.122238	0.115492	0.100382
2032	8	0.122237	0.115492	0.100381
2032	9	0.122237	0.115491	0.100381
2032	10	0.122236	0.115491	0.100380
2032	11	0.122235	0.115490	0.100379
2032	12	0.122235	0.115489	0.100379


0.140000
0.120000
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2012
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2018
2020
2022
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2026
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2032
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Gen

Year	Res	Res Growth	SmlGen	SmlGen Growth	Gen	Gen Growth
1999	0.1074310		0.1227172		0.0962455	
2000	0.1047759	-2.47%	0.1166857	-4.91%	0.0938482	-2.49%
2001	0.1016316	-3.00%	0.1133672	-2.84%	0.0909517	-3.09%
2002	0.0993943	-2.20%	0.1120614	-1.15%	0.0887027	-2.47%
2003	0.0972342	-2.17%	0.1072469	-4.30%	0.0868177	-2.13%
2004	0.0958407	-1.43%	0.1037071	-3.30%	0.0854696	-1.55%
2005	0.0946074	-1.29%	0.0975753	-5.91%	0.0827573	-3.17%
2006	0.0989220	4.56%	0.0995850	2.06%	0.0839987	1.50%
2007	0.1042052	5.34%	0.1045306	4.97%	0.0871578	3.76%
2008	0.1054266	1.17%	0.1057199	1.14%	0.0865489	-0.70%
2009	0.1078410	2.29%	0.1086567	2.78%	0.0886729	2.45%
2010	0.1128224	4.62%	0.1147051	5.57%	0.0927740	4.63%
2011	0.1122130	-0.54%	0.1154590	0.66%	0.0929402	0.18%
2012	0.1170495	4.31%	0.1191824	3.22%	0.0961387	3.44%
2013	0.1233201	5.36%	0.1239114	3.97%	0.0995712	3.57%
2014	0.1252453	1.56%	0.1259811	1.67%	0.1015933	2.03%
2015	0.1268368	1.27%	0.1250902	-0.71%	0.1022401	0.64%
2016	0.1255919	-0.98%	0.1194855	-4.48%	0.1011489	-1.07%
2017	0.1243704	-0.97%	0.1170561	-2.03%	0.1000190	-1.12%
2018	0.1243260	-0.04%	0.1172783	0.19%	0.0992123	-0.81%
2019	0.1234757	-0.68%	0.1165692	-0.60%	0.0980521	-1.17%
2020	0.1240714	0.48%	0.1174648	0.77%	0.0989071	0.87%
2021	0.1231583	-0.74%	0.1160895	-1.17%	0.0991428	0.24%
2022	0.1198408	-2.69%	0.1116054	-3.86%	0.0966685	-2.50%
2023	0.1199733	0.11%	0.1123397	0.66%	0.0974269	0.78%
2024	0.1216076	1.36%	0.1145983	2.01%	0.0994522	2.08%
2025	0.1223392	0.60%	0.1155877	0.86%	0.1004646	1.02%
2026	0.1223042	-0.03%	0.1155547	-0.03%	0.1004359	-0.03%
2027	0.1222822	-0.02%	0.1155339	-0.02%	0.1004178	-0.02%
2028	0.1222733	-0.01%	0.1155256	-0.01%	0.1004106	-0.01%
2029	0.1222644	-0.01%	0.1155171	-0.01%	0.1004032	-0.01%
2030	0.1222545	-0.01%	0.1155078	-0.01%	0.1003951	-0.01%
2031	0.1222470	-0.01%	0.1155006	-0.01%	0.1003889	-0.01%
2032	0.1222386	-0.01%	0.1154928	-0.01%	0.1003821	-0.01%

Request IR-15:

Demand Side Management (Section 4.6, pp 56-58)

(a) Please provide the source data for the DSM values used in this forecast.

(b) Please provide the DSM values used in the latest IRP.

(c) Please provide the DSM levels as presented in the latest E1 potential study.

(d) Please provide the inputs and calculations used to create Figure 36.

Response IR-15:

(a) As outlined in the 2022 Load Forecast Report, the values for 2020-2022 are obtained from the EfficiencyOne's (E1) Application for the 2020-2022 DSM Supply Agreement (M09096). Between 2023 and 2025 DSM amounts are based on E1's proposed Settlement Plan from its 2023-2025 DSM Resource Plan Filing, March 11, 2022 (M10473). Beyond 2025, the values are based on the E1 Potential Study base case values from the E1 DSM Potential Study, Exhibit N-1, August 14, 2019 (M08929).

(b-c) Please refer to the table below. The values are from the E1 Potential Study referred to in part (a).

Year	Energy (GWh)	Demand (MW)
2022	127.1	34.8
2023	130.8	25.3
2024	124.2	24.7
2025	125.6	23.7
2026	136.3	25.0
2027	137.1	25.2
2028	147.0	26.6
2029	135.1	24.5
2030	133.3	24.2
2031	130.6	23.4
2031	128.2	22.8

(d) Please refer to Attachment 1, filed electronically. Note that there was an error when producing Figure 36 in the report, the values in the last column used the wrong adjustment factor. This was an error in the figure only, not in the model. The corrected table is shown below.

Year	Forecast Residential DSM savings (GWh)	Forecast Commercial and Industrial DSM savings (GWh)	DSM captured by Residential end use forecast (GWh)	DSM captured by Comm/Ind end use forecast (GWh)	DSM Adjustment for Residential with Coefficient (GWh)	DSM Adjustment for Comm/Ind with Coefficient (GWh)
2022	55.5	71.6	27.1	35.0	28.4	27.2
2023	69.3	51.4	33.8	25.1	35.5	19.5
2024	60.9	81.7	29.7	39.9	31.2	31.0
2025	65.6	83.9	32.0	40.9	33.6	31.9
2026	69.6	66.7	34.0	32.5	35.7	25.3
2027	71.6	65.5	34.9	32.0	36.6	24.9
2028	73.0	74.0	35.6	36.1	37.4	28.1
2029	73.7	61.4	35.9	30.0	37.7	23.3
2030	73.3	60.0	35.8	29.3	37.5	22.8
2031	74.1	56.5	36.2	27.6	37.9	21.5
2032	73.2	55.0	35.7	26.9	37.5	20.9

2022 LFR Synapse IR-15 Attachment 1 has been filed electronically.

Request IR-16:

Demand Side Management Adjustment (Section 4.6, pp 57-58)

(a) Please provide the details of the data and statistical analysis that was used to develop the coefficient for the DSM variable in the Residential SAE Model.

(b) Please provide the details of the data and statistical analysis that were used to develop the coefficient for the DSM variable for the Commercial and Industrial forecast.

(c) Please provide the statistical measures associated with those coefficients.

(d) Please provide the historical and forecasted annual values of DSM that are used for this forecast for each sector.

Response IR-16:

(a) Please refer to section 4.6 (Demand Side Management) of the Report for a description of the process used to develop the coefficient for the DSM variable. The model fit and model statistics are provided in Appendix B and in 2022 Load Forecast Report Attachment 5 Residential Model, filed electronically.

(b-c) Please refer to section 4.6 (Demand Side Management) of the Report for a description of the process used to develop the coefficient for the DSM variable. The model fit and model statistics are provided in Appendix B. Please refer to Attachment 1, filed electronically, for the model coefficients, inputs and outputs.

(d) In the residential class, DSM amounts are in 2022 LFR Attachment 5 Residential Model, filed electronically, in column G of the Inputs tab. Commercial and industrial class amounts are in Attachment 1 in column D of the Inputs tab.

2022 LFR Synapse IR-16 Attachment 1 has been filed electronically.

Request IR-17:

Residential Sector (Section 5)

(a) Please provide the annual adjustments made to the SAE model for (1) EVs, (2) residential solar and (3) new customers.

(b) Please provide the inputs and calculations used to produce those adjustments.

(c) Please provide the source data and calculations behind the results in Figure 37.

(d) Please explain in more detail the reasoning behind the continued work-from-home impacts at 2023 levels.

(e) The report cites increased electric heating load as one of the recent growth factors. Please quantify how much is associated with existing homes converting to electric heat and the form of that heat (e.g. resistance or heat pumps), and how much is associated with new homes and the heating technologies used. Please indicate how this relates to the results from the end use survey of building efficiency and house size.

(f) Please provide the inputs and calculations used to create Figure 37.

(g) Are there any proposed regulations under consideration for improved building shell efficiency? If so, please discuss and indicate how they might affect the values in Figures 38 and 40.

(h) Please provide the inputs and calculations used to create Figure 38.

(i) Please provide the inputs and calculations used to create Figure 39.

(j) Please provide the inputs and calculations used to create Figure 40.

(k) Please provide the inputs and calculations used to create Figure 41.

(l) Please explain the factors behind the increase in water heat load. What efficiency improvements, if any, are included?

Response IR-17:

(a) The adjustments are provided in Figure 40 of the Report.

(b) Please refer to NSUARB IR-16 for the EV adjustments and Synapse IR-10 for the solar adjustments. New customers are provided in Attachment 1.

(c) Please refer to Attachment 1, filed electronically.

(d) The COVID-19 variable is used to explain increased work-from-home activity, largely due to public restrictions related to COVID-19. NS Power anticipates that as restrictions are eased the associated impact to residential sales will decrease. The long-term impact of work from home is still unknown, but current indications are that this trend will continue to a lesser extent as both employees and employers have adapted to this arrangement. Given there is no detailed way to quantify the impact; it is estimated in the forecast.

(e) Existing home shares of electric heat and resulting intensities are provided in 2022 Load Forecast Report Attachment 1 Residential Intensities, filed electronically. From 2022-2032 electric baseboard intensity will decrease from 2,193 kWh/household to 1,118 kWh/household, while over the same period heat pumps will increase from 1,214 kWh/household to 2,204 kWh/household. For new homes, 85 percent are estimated to have electric heating, of which approximately 50 percent are estimated to have heat pumps. These are captured by the average annual consumption of both single and multi-family dwellings as determined by billing analysis. Building size and efficiency impact heating requirements through the structural variables outlined in Figure 39.

(f) Please refer to Attachment 1.

(g) NS Power is not aware of specific proposed changes to building structure efficiency. Improvement in structural efficiency is assumed via the EIA forecast for building shell efficiency. If the structural efficiency were to improve, all else being equal, the heating and cooling loads would be expected to decline.

(h) Please refer to Attachment 1.

(i) Please refer to the StructuralVars tab of 2022 LFR Attachment 1 Residential Intensities, filed electronically, for the inputs and calculations for Figure 39 .

(j) Please refer to Attachment 1.

(k) Please refer to Attachment 1.

(l) Water heater load is increasing due to increased saturation over the forecast period, increasing from 68 percent in 2022 to 82 percent in 2032.

2022 LFR Synapse IR-17 Attachment 1 has been filed electronically.

Request IR-18:

Commercial Sector (Section 6.0).

(a) Please explain and quantify the impacts of COVID on the 2021 loads.

(b) Please explain and quantify the ongoing effects of COVID in the commercial forecast.

(c) Please explain why the current forecast (Figure 42) remains fairly level through 2032 whereas the previous one showed a decline.

Response IR-18:

(a-b) The impact of COVID-19 was not quantified for 2021 loads as it is difficult to isolate the impact of COVID-19 from the overall economic drivers. Figure 43 shows the relative change of sales compared to the relative change of GDP and employment indicators.

(c) The forecast remains fairly level through 2032 rather than showing a decrease primarily due the expected additional load from the recently announced hospital development projects referenced in section 6.3 of the Report. Please refer to Synapse IR-21.

Request IR-19:

Small General Service (Section 6.1).

(a) Please explain and quantify the specific reasons for the differences from the 2021 forecast.

(b) Please identify and quantify in detail the specific components in the forecast model that are causing the increase to about 2025 and the leveling thereafter as shown in Figure 44.

Response IR-19:

(a) The specific differences from 2021 can be found by comparing the model parameters found in Appendix B of both the 2021 and 2022 Load Forecast reports. The components that make up the regression model in 2022 show slower growth in the average use over the 10 year period, contributing 1.5 percent growth in 2022 compared to 3.7 percent growth in 2021. The heating component increases by 7.1 percent over the 10 year period in 2022 compared to 6.3 percent growth in the 2021 forecast, while the other component decreased from -2.7 percent growth in 2021 to -5 percent growth in 2022.

(b) The main contributor to the growth in the 2022 forecast is an increased forecast for Small General customers, (increase of 1,600 or 6 percent between 2021 and 2025), driven by the forecast economic recovery in 2022 and 2023, and then in line with historic growth in customer count of around 1 percent per year.

Request IR-20:

General Service (Section 6.2).

(a) Please explain and quantify the specific reasons for the differences from the 2021 forecast.

(b) Please quantity separately the effects of space heating and increased efficiency to the General class sales forecast.

Response IR-20:

(a) The general service forecast for 2022 is similar to the 2021 forecast, as shown in Figure 45 of the 2022 Load Forecast report. Details of the model is provided in Appendix B of the 2022 Load Forecast Report, and the 2021 details can be compared to those provided in the 2020 load forecast. The heating component of the regression model contributes 4.9 percent growth over the 10 year period of the 2022 forecast compared to 1.2 percent in the 2021 forecast. This growth was offset by the other component, which decreased from -1.1 percent in the 2021 forecast to -4.4 percent in the 2022 forecast.

(b) The share and efficiencies used in the forecast are in 2022 Load Forecast Report Attachment 3 General Intensities, filed electronically. On the Efficiencies tab, the Heat component increases by 5 percent over the forecast period, while on the Shares tab the share of electric heating in the province increases by 26 percent (from 52 percent saturation in 2022 to 66 percent saturation in 2032).

Request IR-21:

Large General Service (Section 6.3).

(a) Please explain and quantify the specific reasons for the differences from the 2021 forecast.

(b) The report indicates that about half of the increase is associated with hospital redevelopment projects. Please quantify that amount. Also please identify and quantify the other sources of the increase.

Response IR-21:

(a) As outlined in the 2022 Load Forecast Report, the increase in the large general forecast is related to new facilities and expansions coming online in the next 4 or 5 years.

(b) 2 hospitals, one in Halifax and one in Cape Breton, account for an estimated 41 GWh of growth, while government buildings account for an estimated 11 GWh and universities account for an estimated 4 GWh.

Request IR-22:

Small Industrial (Section 7.1).

(a) Please explain and quantify the specific reasons for the differences from the 2021 forecast.

(b) Please explain why the sales forecast increases to about 2026 and remains level thereafter.

Response IR-22:

(a) The difference between the 2022 forecast and the 2021 forecast is less than 5GWh/year by 2032. The manufacturing GDP economic indicator growth is slightly higher in the 2022 forecast (2 percent per year compared to 1.8 percent per year in the 2021 forecast).

(b) Sales increase in the near term with the increase in the economic variable, which slows after 2026 as shown in Figure 19 of the Report.

Request IR-23:

Medium Industrial (Section 7.2).

(a) Please explain and quantify the specific reasons for the differences from the 2021 forecast.

(b) Please explain and quantify the factors behind the 0.1 percent growth rate.

Response IR-23:

(a) The medium industrial forecast is driven by the manufacturing employment economic indicator, which changed. The near term growth was positive in the 2021 forecast but is negative for 2022 and 2023 in the 2022 forecast, as shown in Figure 19 of the Report.

(b) Growth in the manufacturing employment indicator is an average of 0.5 percent per year, which will be offset by DSM over the forecast period.

Request IR-24:

Other Industrial (Section 7.3).

(a) Please explain and quantify the specific reasons for the differences from the 2021 forecast.

(b) Of the twenty-three responses that were received from the annual survey (1) what fraction of the sector load does that represent?

(c) What is the aggregate percentage load change from the responses?

(d) Based on past experience how reliable are the new project values given in Figure 49?

Response IR-24:

(a) The difference is a decrease of 20GWh in forecast new projects (96 GWh by 2025 in the 2021 forecast and 76 GWh in the 2022 forecast), offset by a 40 GWh increase in existing customer load based on the survey results.

(b) The 23 responses received from the annual survey represent approximately 75 percent of the sector load.

(c) The aggregate load change from the responses is +2 percent.

(d) Near term estimates generally reflect projects that are late in the planning stages, while the longer-term estimates involve projects that may still be in the conception stage and are subject to change. To reflect the higher uncertainty with longer term forecasts for new projects, recognizing that not all new projects are likely to reach completion, scaling factors are used to reduce the total amount of new load for these projects in the forecast. These vary

from 10 percent to 100 percent depending on the proposed timing and likelihood of completion. As these projects move closer to completion, the scaling factors are updated accordingly.

Request IR-25:

Municipal (Section 7.4).

(a) Please provide the total municipal loads in GWh and MW over the forecast period.

(b) What changes if any are anticipated with the municipal supply in the forecast period.

Response IR-25:

(a) The total municipal loads over the forecast period are provided in the table below.

Year	Total Estimated Load (GWh)	Load served by NS Power (GWh)	Peak (MW)
2022	192	70	41
2023	193	70	41
2024	194	70	41
2025	194	70	41
2026	195	70	41
2027	195	70	41
2028	196	70	42
2029	196	70	42
2030	197	70	42
2031	197	70	42
2032	198	70	42

(b) There are no changes anticipated in the forecast period.

Request IR-26:

System Losses and Unbilled Sales (Section 8).

(a) Please provide the system losses and unbilled sales for each year of the last five years.

(b) Please identify and discuss the reasons for any significant changes either in the historical or forecast values of the system losses or unbilled sales.

(c) How are unmetered sales represented in the forecast?

Response IR-26:

(a) Please refer to 2022 Load Forecast Report Attachment 4 10-Year Forecast Classes (filed electronically), tab "Annual Sales" for historic and forecast load data associated with system losses and unbilled sales.

(b) Historical annual system losses typically constitute 6 to 7 percent of net system requirement and are forecast to remain at this level going forward.

(c) Unmetered sales (consisting mainly of streetlights) are assumed to remain constant over the forecast and are included in the Commercial class.

Request IR-27:

Net System Requirement (Section 9).

(a) Please provide the source data and the calculations used to produce the values in Figure 51.

(b) Please provide the source data and the calculations used to produce the values in Figures 52 and 53.

(c) Please provide the separate contribution of each load component element (residential, small general service, general service, large general service, small industrial, medium industrial, large industrial, municipal, losses, own use,) to the total NSR as shown in Figure 52 following the format as used in Table A1.

(d) Please provide the inputs and calculations used to create Figure 53.

Response IR-27:

(a) Please refer to Attachment 1.

(b) For Figure 52, please refer to 2022 Load Forecast Report Attachment 4 10-Year Forecast Classes (filed electronically), tab Graphs, cells E11 to F31 and cells A110 to G123 for Figure 53.

(c) Please refer to Attachment 1.

(d) Please refer to part (b).

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

	Res	Comm	Ind	Other	Losses	NSR	
2021 Forecast	4,718	3,070	2,487	66	698	11,039	From 2021 Load Forecast document
Est. Weather Impact	- 141	- 28		- 3	- 12	- 184	See Synapse IR-17 Attachment 1 tab Figure 37 and CA IR-14
Large Customer New Projects			- 12			- 12	Variance Actuals vs Forecast
Large Customer Actuals			- 5			- 5	Variance Actuals vs Forecast
Other Variance	42	- 69	10	9	71	65	Difference between forecast and actual
Actuals	4,619	2,973	2,480	72	757	10,903	

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

Year	Residential	Small General	General Demand	Large General	Small Industrial	Medium Industrial	Large Industrial	Other Industrial	Municipal	Unmetered	Losses	NSR
2012	4160	236	2439	411	251	496	907	511	191	111	763	10476
2013	4362	248	2482	404	249	492	791	1073	201	109	784	11194
2014	4404	257	2465	394	253	471	717	1082	198	107	692	11037
2015	4504	272	2457	415	257	476	680	1043	197	108	691	11099
2016	4264	269	2365	411	247	463	681	1053	179	87	789	10809
2017	4364	277	2372	401	245	463	709	1044	163	83	753	10873
2018	4543	291	2410	399	254	472	746	1142	154	81	758	11249
2019	4688	298	2383	389	261	461	776	890	147	82	704	11077
2020	4675	277	2239	362	254	468	726	895	68	80	688	10731
2021	4619	290	2237	367	257	476	759	988	72	79	757	10902
2022	4715	311	2326	375	261	476	758	1047	70	79	726	11144
2023	4682	318	2345	393	267	474	760	1047	70	79	727	11162
2024	4712	321	2333	410	272	473	788	1051	70	79	732	11240
2025	4713	323	2311	429	275	476	809	1047	70	79	732	11265
2026	4735	325	2301	436	278	479	813	1047	70	79	734	11298
2027	4761	327	2295	435	279	480	811	1047	70	79	735	11319
2028	4811	329	2292	433	280	480	808	1047	70	79	737	11366
2029	4829	328	2277	431	280	480	805	1047	70	79	736	11363
2030	4862	327	2258	429	280	480	802	1047	70	79	736	11371
2031	4923	327	2244	427	280	480	799	1047	70	79	739	11414
2032	5027	328	2240	425	280	480	796	1047	70	79	746	11519

Request IR-28:

Peak Demand (Section 10, pp 80-88)

(a) Please provide details about the Demand Response (DR) resources modeled in this analysis. What sectors are represented and what are the potentials in each sector?

(b) Please provide the basis for the ELCC of 48 percent that is used in the forecast.

(c) Please provide the calculations and assumptions used to produce the DR savings in Figure 54.

(d) Please explain why the demand response decline after 2027.

(e) What period was used to calibrate the peak model? Please provide in electronic format the data used for that calibration.

(f) Please provide the sources and the derivations of the values in Figure 58. Please also provide the values for the intervening years between 2021 and 2032.

(g) Please provide further information about the Unexplained values in Figure 59.

(h) Please provide the data and calculations behind the peak share values in Figures 61 and 62 including the actual load values as well as the percentages. Please provide the same data and calculations for 2032.

Response IR-28:

(a) The requested details are contained in E1's DSM 2019 Potential Study. Please refer to Attachment 1.

(b) The basis for the ELCC is described in the 2021 Load Forecast Report on pages 72 and 73.

(c) Please refer to 2022 Load Forecast Report Attachment 4 (filed electronically) 10-year Forecast Classes, DR tab.

(d) EfficiencyOne's DSM Potential Study states as follows page 13: "The decline in potential is associated with the decrease in baseline peak demand for DR with progressively higher savings from energy efficient measures."

(e) Please refer to Synapse IR-02 Attachment 3 for the hourly data used in the model. The calibration period for the peak model was January 2012 to December 2021. For inputs to the SAE system peak model, please refer to the 2022 Load Forecast Report Attachment 10 Peak Model, filed electronically.

(f) Please refer to 2022 Load Forecast Report Attachment 04 10-Year Forecast Classes, filed electronically. Modeled Peak, Large Cust and Inter. Cust are from the tab Demand Annual Profile, EV and DR values come from their respective tabs (EV is grossed to system level using the residential loss factor of 16.3 percent), while C&I Elect comes from the Comm Growth tab (grossed to system level using an average loss factor of 7.6 percent). DSM is the cumulative DSM amount using a blended average coefficient of 49 percent. Please refer to the table below which has been updated with intervening years between 2021 and 2032:

	Modeled Peak (MW)	Res Heat Peak (MW)	EV (MW)	DR (MW)	C&I Elect. (MW)	Large Cust. (MW)	DSM (MW)	Firm Peak (MW)	Inter. Cust. (MW)	System Peak (MW)
2022	1,920	7	3	-0	10	99	-18	2021	144	2,165
2023	1,927	17	6	-4	19	103	-33	2035	146	2,185
2024	1,933	25	10	-12	41	105	-45	2057	146	2,215
2025	1,939	32	16	-24	62	108	-58	2076	152	2,253
2026	1,947	45	23	-36	81	110	-69	2102	154	2,291
2027	1,954	58	32	-39	100	111	-82	2133	153	2,326
2028	1,963	70	41	-39	118	111	-95	2170	153	2,361
2029	1,971	83	52	-39	135	111	-107	2207	153	2,398
2030	1,977	95	64	-38	152	111	-119	2243	152	2,434
2031	1,985	108	81	-38	172	112	-131	2289	152	2,479
2032	1,993	120	103	-37	193	112	-141	2342	152	2,532

(g) Unexplained is the name for the components that all the available drivers and models cannot explain. All forecasting models have uncertainty in their predictions, and the unexplained item attempts to quantify this. It is calculated as the difference between forecast minus actuals.

(h) Please refer to Attachment 2.

EfficiencyOne

Nova Scotia Energy Efficiency and Demand Response Potential Study for 2021-2045

Prepared by Navigant for EfficiencyOne

FILED
August 14, 2019

NAVIGANT

Nova Scotia Energy Efficiency and Demand Response Potential Study for 2021-2045

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NAVIGANT

Nova Scotia Energy Efficiency and Demand Response Potential Study for 2021-2045

TABLE OF CONTENTS

E. EXECUTIVE SUMMARY 1
E.1 Estimation of Energy Efficiency Potential 1
E.2 Estimation of Demand Response Potential 2
E.3 Findings 4
E. 3.1 EE Potential Results 4
E. 3.2 DR Potential Results 13
1. INTRODUCTION 16
1.1 Context and Study Goals 16
1.2 Stakeholder Engagement 16
1.3 Caveats and Limitations 17
1.3.1 Program Design 17
1.3.2 Measure Characterization 17
1.4 Interpreting Results 18
1.5 Report Organization 18
2. GLOBAL DATA 20
2.1 Segmentation of Customer Sectors 20
2.1.1 Residential Sector 21
2.1.2 BNI Sector 22
2.2 End Use Definitions 22
2.3 Fuel Shares 23
2.4 End Use Allocations 23
2.5 Electricity Consumption 24
3. ENERGY EFFICIENCY MEASURE CHARACTERIZATION 25
3.1 Energy Efficiency Measure List 25
3.2 Energy Efficiency Measure Characterization Key Parameters 25
3.3 Energy Efficiency Measure Characterization Approaches and Sources 27
3.3.1 Energy and Demand Savings 27
3.3.2 Incremental Costs 27
3.3.3 Building Stock and Densities 27
3.4 Codes and Standards Adjustments 27
4. ENERGY EFFICIENCY TECHNICAL POTENTIAL FORECAST 28
4.1 Approach to Estimating Energy Efficiency Technical Potential 28
4.2 Energy Efficiency Technical Potential Results by Sector 29
4.3 Energy Efficiency Technical Potential Results by End Use 33
4.4 Energy Efficiency Technical Potential Results by Measure 35
5. ENERGY EFFICIENCY ECONOMIC POTENTIAL RESULTS 39

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5.1 Approach to Estimating Economic Potential 39
5.2 Energy Efficiency Economic Potential Results by Sector 40
5.3 Energy Efficiency Economic Potential Results by End Use 46

6. ENERGY EFFICIENCY MARKET POTENTIAL APPROACHES 52

6.1 Calculation of "Equilibrium" Market Share 53
6.2 Calculation of the Approach to Equilibrium Market Share 54
6.3 Behavioural Measures 54
6.4 Energy Efficiency Investment Strategy 54
6.5 Energy Efficiency Incentive Strategy 55
6.6 Re-Participation 55
6.7 Energy Efficiency Model Calibration 55
6.7.1 Detailed Backcasting 56

7. REFERENCE FORECAST APPROACH 60

7.1 Scenario Configuration 60

8. ENERGY EFFICIENCY MARKET POTENTIAL RESULTS BY SCENARIO 61

8.1 Comparison of Energy Efficiency Savings by Potential Type 61
8.2 Energy Efficiency Potential Results by Sector 67
8.3 Energy Efficiency Potential Results by End Use 71
8.4 Energy Efficiency Potential Results by Customer Segment 73
8.5 Energy Efficiency Potential Results by Measure 75
8.6 Cost Effectiveness Tests and Investment 79
8.7 Non-Programmatic Savings 82
8.8 Hourly Loadshape Disaggregation 82

9. ENERGY EFFICIENCY MARKET POTENTIAL SENSITIVITY ANALYSIS RESULTS 83

10. DEMAND RESPONSE METHODOLOGY 86

10.1 Demand Response Market Characterization 86
Level 1: Sector 87
Level 2: Customer Class 87
Level 3: Customer Segment 88
10.2 Demand Response Baseline Projections 88
10.2.1 Customer Count Projections 89
10.2.2 Peak Period Definition and Peak Demand Projections 90
10.2.3 Battery Adoption Projections 93
10.2.4 Electric Vehicle Projections 93
10.3 Characterization of Demand Response Options 95
10.4 Key Assumptions for Demand Response Potential and Cost- Effectiveness Assessment 97
10.4.1 Demand Response Base Case Assumptions 98
10.4.2 Descriptions of Scenarios and Related Assumptions 101

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11. DEMAND RESPONSE POTENTIAL AND COST-EFFECTIVENESS RESULTS . 103

11.1 Demand Response Technical Potential Results 104
11.2 Demand Response Base Case Achievable Potential Results 105
11.2.1 Achievable Potential Results by Demand Response Option 105
11.3 Demand Response Base Case Cost-effectiveness Assessment Results 107
11.3.1 Benefit-Cost Assessment by Demand Response Option 107
11.3.2 Demand Response Levelized Costs & Supply Curves 107
11.4 Cost-Effective Demand Response Achievable Potential Results 108
11.4.1 Achievable Potential by DR Option for Cost-Effective DR Options 108
11.4.2 Achievable Potential by DR Sub-Option for Cost-Effective DR Options 109
11.4.3 Achievable Potential by Customer Class for Cost-Effective DR Options 110
11.4.4 Achievable Potential by Building Type for Cost-Effective Demand Response Options 111
11.5 Demand Response Investment Levels 112
11.6 Demand Response Scenario Analysis Results 113
11.6.1 Comparison of Cost Results Across Demand Response Scenarios 113
11.6.2 Comparison of Potential Results Across Scenarios 114
11.7 Demand Response Snapback Effects 117

12. CONCLUSION 118

12.1 Energy Efficiency 118
12.2 Demand Response 118

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NAVIGANT

Nova Scotia Energy Efficiency and Demand Response Potential Study for 2021-2045

TABLE OF FIGURES

Figure ES-1. Winter Baseline Peak Forecast by DR Scenario (GW at generator) 2
Figure ES-2. Summary of Demand Response Options Considered in Study 3
Figure ES-3. EE Technical and Economic Potential Electricity Savings (GWh, gross at generator) 4
Figure ES-4. EE Market Potential Electricity Cumulative Savings (GWh, net at generator) 5
Figure ES-5. EE Technical and Economic Potential Electricity Savings as a Percent of Total Sales (%) ... 6
Figure ES-6. EE Market Potential Electricity Cumulative Savings as a Percent of Total Sales (%) 7
Figure ES-7. EE Technical and Economic Potential Winter Peak Demand Savings (MW, gross at generator)..... 8
Figure ES-8. EE Market Potential Winter Peak Demand Cumulative Savings (MW, net at generator) 9
Figure ES-9. EE Technical and Economic Potential Winter Peak Demand Savings as a Percent of Total Load (%)..... 10
Figure ES-10. EE Market Potential Winter Peak Demand Savings as a Percent of Total Load (%) 11
Figure ES-11. EE Total Portfolio Annual Investment, by Achievable Potential Scenario (nominal $) 12
Figure ES-12. DR Achievable Base Case, Benefit-Cost Assessment by Option (TRC and PAC Test Benefit-Cost Ratios) 13
Figure ES-13. DR Achievable Potential for Cost-Effective Options (MW at generator and Percent of Peak Demand) 13
Figure ES-14. DR Annual Program Costs by Option for Cost-Effective DR Options ($) 14
Figure ES-15. DR All Scenarios, Achievable Potential (MW at Meter and Percent of Peak Demand)..... 15

Figure 1-1. Summary of Project Scope 16
Figure 2-1. Customer Segments by Sector..... 21
Figure 2-2. Description of Residential Segments 21
Figure 2-3. Base Year Housing Stocks (Residential units)..... 21
Figure 2-4. Description of BNI Segments..... 22
Figure 2-5. Base Year BNI Area (million m^2) 22
Figure 2-6. End Uses by Sector 23
Figure 2-7. Nova Scotia Electric Electricity Consumption in 2019 (GWh at meter) 24
Figure 4-1. EE Technical Potential, Electricity Savings by Sector (GWh, gross at generator) 29
Figure 4-2. EE Technical Potential, Winter Peak Demand Savings by Sector (MW, gross at generator) .. 30
Figure 4-3. EE Technical Potential, Electricity Savings by Sector as a Percent of Sector Sales (%) 31
Figure 4-4. EE Technical Potential, Winter Peak Demand Savings by Sector as a Percent of Sector Load (%)..... 32
Figure 4-5. EE Technical Potential, Electricity Savings by End Use (GWh, gross at generator) 33
Figure 4-6. EE Technical Potential, Winter Peak Demand Savings by End Use (MW, gross at generator)..... 34
Figure 4-7. EE Technical Potential, 2021 Top 40 Residential Measures for Electricity Savings (GWh, gross at generator) 35
Figure 4-8. EE Technical Potential, 2021 Top 40 BNI Measures for Electricity Savings (GWh, gross at generator)..... 36
Figure 4-9. EE Technical Potential, 2021 Top 40 Residential Measures for Winter Peak Demand Savings (MW, gross at generator)..... 37
Figure 4-10. EE Technical Potential, 2021 Top 40 BNI Measures for Winter Peak Demand Savings (MW, gross at generator)..... 38
Figure 5-1. EE Economic Potential, Electricity Savings by Sector (GWh, gross at generator) 40
Figure 5-2. EE Economic Potential, Winter Peak Demand Savings by Sector (MW, gross at generator) .. 41
Figure 5-3. EE Economic Potential, Electricity Savings by Sector, PAC Test Screen (GWh, gross at generator)..... 42
Figure 5-4. EE Economic Potential, PAC Screen, Winter Peak Demand Savings by Sector (MW, gross at generator) 43
Figure 5-5. EE Economic Potential, Electricity Savings by Sector as a Percent of Sector Sales (%)..... 44

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Figure 5-6. EE Economic Potential, Winter Peak Demand Savings by Sector as a Percent of Load (%) .. 45
Figure 5-7. EE Economic Potential, Electricity Savings by End Use (GWh, gross at generator)..... 46
Figure 5-8. EE Economic Potential, Winter Peak Demand Savings by End Use (MW, gross at generator)..... 47
Figure 5-9. EE Economic Potential, 2021 Top 40 Residential Measures for Electricity Savings (GWh, gross at generator)..... 48
Figure 5-10. EE Economic Potential, 2021 Top 40 BNI Measures for Electricity Savings (GWh, gross at generator) 49
Figure 5-11. EE Economic Potential, 2021 Top Residential 40 Measures for Winter Peak Demand Savings (MW, gross at generator)..... 50
Figure 5-12. EE Economic Potential, 2021 Top BNI 40 Measures for Winter Peak Demand Savings (MW, gross at generator)..... 51
Figure 6-1. EE Market Potential Methodology Overview..... 53
Figure 6-2. EE Backcast Results for Residential Screw-in LED 57
Figure 6-3. EE Backcast Results for BNI LED Troffer 58
Figure 6-4. EE Backcast Results for BNI Linear Replacement Lamps..... 59
Figure 8-1. EE Market Potential, Cumulative Electricity Savings, by Scenario (GWh, net at generator).... 61
Figure 8-2. EE Market Potential, Cumulative Electricity Savings, by Scenario, as a Percent of Sales (%) 62
Figure 8-3. EE Market Potential, Incremental Electricity Savings by Scenario, as a Percent of Sales (%) 63
Figure 8-4. EE Market Potential, Cumulative Winter Peak Demand Savings (MW, net at generator)..... 64
Figure 8-5. EE Market Potential, Cumulative Winter Peak Demand Savings, by Scenario, as a Percent of Load (%)..... 65
Figure 8-6. EE Market Potential, Incremental Winter Peak Demand Savings by Scenario, as a Percent of Load (%)..... 66
Figure 8-7. EE Residential Market Potential, Cumulative Electricity Savings (GWh, net at generator) 67
Figure 8-8. EE BNI Market Potential, Cumulative Electricity Savings (GWh, net at generator) 68
Figure 8-9. EE Residential Market Potential, Cumulative Winter Peak Demand Savings (MW, net at generator)..... 69
Figure 8-10. EE BNI Market Potential, Cumulative Winter Peak Demand Savings (MW, net at generator)..... 70
Figure 8-11. EE Base Case Market Potential, Cumulative Electricity Savings by End Use (GWh, net at generator)..... 71
Figure 8-12. EE Base Case Market Potential, Cumulative Winter Peak Demand Savings by End Use (MW, net at generator) 72
Figure 8-13. EE Base Case Market Potential, Cumulative Electricity Savings by Customer Segment (GWh, net at generator) 73
Figure 8-14. EE Base Case Market Potential, Cumulative Winter Peak Demand Savings by Customer Segment (MW, net at generator)..... 74
Figure 8-15. EE Base Case Market Potential, 2021 Top 40 Residential Measures for Electricity Savings (GWh, net at generator) 75
Figure 8-16. EE Market Potential, 2021 Top 40 BNI Measures for Electricity Savings (GWh, net at generator)..... 76
Figure 8-17. EE Base Case Market Potential, 2021 Top 40 Residential Measures for Winter Peak Demand Savings (MW, net at generator) 77
Figure 8-18. EE Base Case Market Potential, 2021 Top 40 BNI Measures for Winter Peak Demand Savings (MW, net at generator) 78
Figure 8-19. EE Base Case Market Potential, Benefit-Cost Test Ratios for the Portfolio and by Sector ... 79
Figure 8-20. EE Base Case Market Potential, Cost Test Net Benefits for the Portfolio and by Sector (million $)..... 80
Figure 8-21. EE Base Case Investment, by Investment Type for the Portfolio (nominal million $) 81
Figure 8-22. Cumulative Achievable Potential (Base Case) and Non-Programmatic Electricity Savings (GWh, net at generator)..... 82
Figure 9-1. EE Residential 2045 Cumulative Achievable Potential Sensitivity (GWh, net at generator)..... 84

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Figure 9-2. EE BNI 2045 Cumulative Achievable Potential Sensitivity (GWh, net at generator) 85
Figure 10-1. DR Potential Assessment Steps 86
Figure 10-2. Market Segmentation for DR Potential Assessment 87
Figure 10-3. Mapping Between Nova Scotia Power Rate Class and DR Study Customer Class 88
Figure 10-4. Mapping Between Nova Scotia Power Building Type and Business Type 88
Figure 10-5. Customer Count Forecast by Customer Class 89
Figure 10-6. Customer Count Forecast by Building Type 90
Figure 10-7. Baseline Peak Projection Steps 90
Figure 10-8. Winter Baseline Peak Forecast by DR Scenario (GW at generator) 91
Figure 10-9. Winter Baseline Peak Forecast by Customer Class (GW at generator) 92
Figure 10-10. Winter Baseline Peak Forecast by Building Type (GW at generator) 92
Figure 10-11. Battery Capacity Projections (MW at meter) 93
Figure 10-12. Vehicle Adoption Forecast from VAST™ 94
Figure 10-13. Demand Impacts from PEVs 94
Figure 10-14. Summary of DR Options Considered in Study 95
Figure 10-15. Summary of DR Sub-Options 96
Figure 10-16. Key Variables for DR Potential and Cost Estimates 97
Figure 10-17. Program Hierarchy to Account for Participation Overlaps 99
Figure 10-18. Summary of Benefit-Cost Streams for TRC in DRSim™ 100
Figure 10-19. Summary of Changes in Programmatic Assumptions Across Scenarios 102
Figure 11-1. Technical Potential by DR Sub-Option 104
Figure 11-2. DR Achievable Potential by DR Option (MW at generator) 105
Figure 11-3. DR Achievable Potential by DR Option (% of Peak Demand) 106
Figure 11-4. DR Benefit-Cost Assessment by DR Option (TRC and PAC Test Benefit-Cost Ratios) 107
Figure 11-5. DR Base Achievable Scenario Levelized Costs vs. 2045 Potential (MW at generator) 108
Figure 11-6. DR Achievable Potential by DR Option for Cost-Effective DR Options (MW at generator) 108
Figure 11-7. DR Achievable Potential by DR Option for Cost-Effective DR Options (Percent of Peak Load) 109
Figure 11-8. DR Achievable Potential by DR Sub-Option for Cost-Effective DR Options (MW at generator) 110
Figure 11-9. DR Achievable Potential by Customer Class for Cost-Effective DR Options (MW at generator) 111
Figure 11-10. DR Achievable Potential by Building Type for Cost-Effective DR Options (MW at generator) 111
Figure 11-11. DR Annual Program Costs by DR Option for Cost-Effective DR Options ($) 112
Figure 11-12. DR Cost-Effective Results by DR Options and by Scenarios 113
Figure 11-13. DR Annual Portfolio Costs by Scenarios for Cost-Effective DR Options 114
Figure 11-14. DR Achievable Potential by Scenario (MW at generator) 115
Figure 11-15. DR Achievable Potential by Scenario (Percent of Peak Demand) 115
Figure 11-16. DR Achievable Potential by DR Option, High Scenario, (MW at generator) 116
Figure 11-17. DR Achievable Potential by DR Option, Low Scenario, (MW at generator) 116

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Nova Scotia Energy Efficiency and Demand Response Potential Study for 2021-2045

E. EXECUTIVE SUMMARY

EfficiencyOne engaged Navigant Consulting, Inc. (Navigant) to prepare energy efficiency (EE) and demand response (DR) potential studies for electricity for the province of Nova Scotia over a 25-year forecast horizon, from 2021 to 2045.

For energy efficiency, the study's objective is to assess the potential in the residential and business, nonprofit and institutional (BNI) sectors by analyzing energy efficiency measures, defining operational and maintenance activities to keep existing devices or equipment in good working order, and improving end user behaviours to reduce energy consumption. The energy efficiency analysis efforts provide input data to Navigant's Demand Side Management Simulator (DSMSim™) model, which calculates technical, economic and market savings potential across Nova Scotia. These results[1] will be used to inform integrated resource planning (IRP), and energy efficiency and demand response program design in Nova Scotia.

E.1 Estimation of Energy Efficiency Potential

Navigant employed its proprietary DSMSim™ potential model to estimate the technical, economic and market savings potential for electricity and winter peak demand across Nova Scotia. DSMSim™ is a bottom-up technology diffusion and stock tracking model implemented using a System Dynamics[2] framework. The model explicitly accounts for different types of efficient measures such as retrofit (RET), replace-on-burnout (ROB), and new construction (NEW), and the impacts these measures have on savings potential. The model then reports the technical, economic and market potential savings in aggregate in total for the province, and by sector, customer segment, end use category, and highest-impact measures.

This study defines **technical potential** as the energy savings that can be achieved assuming that all installed measures can immediately be replaced with the efficient measure, wherever technically feasible, regardless of the cost, market acceptance, or whether a measure has failed (or "burned out") and is in need of being replaced.

Economic potential is a subset of technical potential, using the same assumptions regarding immediate replacement as in technical potential, but limiting the calculation only to those measures that have passed the benefit-cost test chosen for measure screening, in this case the Total Resource Cost (TRC) test or the Program Administrator Cost (PAC) test.

Market potential (also referred to as achievable potential) further considers the likely rate of demand-side management (DSM) resource acquisition, given factors like the rate of equipment turnover (a function of a measure's lifetime), simulated incentive levels, consumer willingness to adopt efficient technologies, and the likely rate at which marketing activities can facilitate technology adoption. The adoption of DSM measures can be broken down into calculation of the "equilibrium" market share and calculation of the dynamic approach to equilibrium market share, as discussed in more detail below.

Technical potential savings reported in this study are "gross", rather than "net," meaning they do not include the effects of natural change, spillover, freeridership, and other effects not attributable to DSM programs. Providing gross potential is advantageous because it permits a reviewer to more easily calculate net potential when new information about net-to-gross ratios or changing end use intensities become available.

[1] Demand Response analysis results are provided in Appendix D. Energy Efficiency analysis results are provided in Appendix F.

[2] See Sterman, John D. *Business Dynamics: Systems Thinking and Modeling for a Complex World*. Irwin McGraw-Hill, 2000, for detail on System Dynamics modelling. Also see http://en.wikipedia.org/wiki/System_dynamics for a high-level overview.

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E.2 Estimation of Demand Response Potential

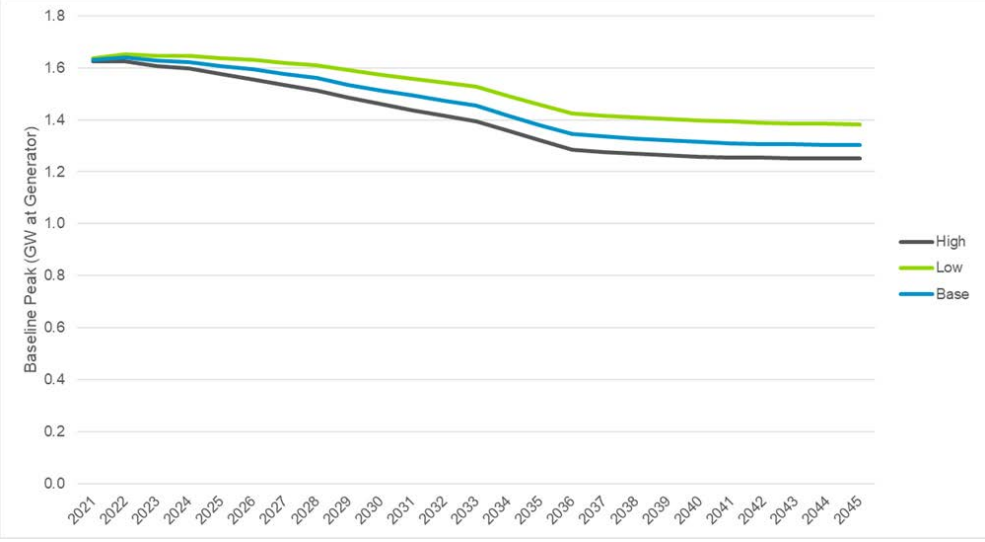
Navigant developed DR potential and cost estimates using a bottom-up analysis. The analysis involved five steps: (1) characterize the market, (2) develop baseline projections, (3) define and characterize DR options, (4) develop key assumptions for potential and costs, and (5) estimate potential and costs. Navigant used both primary data from EfficiencyOne and relevant secondary sources for this analysis, as documented in this report. The DR potential analysis efforts provide input data to Navigant's Demand-Response Simulator (DRSim™) model, which calculates total DR potential across Nova Scotia.

Navigant developed DR potential and cost estimates using a bottom-up analysis. The analysis involved five steps: (1) characterize the market, (2) develop baseline projections, (3) define and characterize DR options, (4) develop key assumptions for potential and costs, and (5) estimate potential and costs. Navigant used both primary data from EfficiencyOne and relevant secondary sources for this analysis, as documented in this report. The DR potential analysis efforts provide input data to Navigant's Demand-Response Simulator (DRSim™) model, which calculates total DR potential across Nova Scotia.

The foundation for the DR potential assessment is to develop disaggregated bottom-up peak demand projections (post EE) by customer class, segment and end use. The steps to determine the baseline peak projections were: (1) define the peak period, (2) calculate coincident peak demand factors, (3) obtain end use shares, (4) determine energy sales after subtracting Navigant's energy efficiency potential study results, and (5) apply coincident peak demand factors and end use shares to calculate bottom-up peak demand projections.

Three different scenarios from the energy efficiency potential study were considered in the baseline winter peak projections: (1) low, (2) base, and (3) mid. These correspond to the scenarios low, base, and high, respectively, in the DR study. Figure ES-1 shows the baseline peak projections across the three DR scenarios.

Figure ES-1. Winter Baseline Peak Forecast by DR Scenario (GW at generator)



Source: Navigant analysis

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The DR options included in the analysis are representative of commonly deployed and emerging DR programs in the industry and are listed in Figure ES-2.

Figure ES-2. Summary of Demand Response Options Considered in Study

DR Option	Brief Description	Eligible Customer Classes	End Use
Direct Load Control (DLC)	Control of electric loads by a thermostat and/or load control switch.	Residential Small Commercial Small Industrial	Electric Furnace[3] Heat Pump[4] HVAC[5] Hot Water
BNI Curtailment	Firm capacity reduction commitment. $/kW payment based on delivered capacity, administered through third party aggregators.	Large Commercial Large Industrial Interruptible	HVAC Lighting Water Heating Total Facility
BTM Battery Control	Use of batteries for load shifting and dispatching to the grid.	All classes	Batteries
EV Charging Control	Charging modulation to reduce EV demand during peak periods	EV	EV
Critical Peak Pricing (CPP)	A rate schedule with significantly higher peak prices to discourage consumption during peak times	All classes	Total Facility
Behavioural Demand Response (BDR)	Targeted notifications and incentives are provided to customers to encourage peak shaving	Residential	Total Facility

Source: Navigant

Navigant calculated both technical and market potential associated with implementing DR programs for this study. Technical potential refers to the theoretical maximum potential under 100% participation of the eligible load. Navigant calculated technical potential by multiplying the eligible load/customers by the unit impact for each sub-option. An important caveat is that, by definition, technical potential calculation does not consider participation overlaps. Therefore, the technical potential estimates for each DR option should be considered independently.

Navigant assessed cost-effectiveness of DR options and calculated achievable potential by multiplying achievable participation assumptions (subject to program participation hierarchy) by the technical potential estimates. Achievable potential also accounts for customer opt-out during DR events. In addition to the potential estimates, Navigant developed annual and levelized costs by DR options.

[3] Electric furnace and heat pump apply to residential. For small commercial and industrial, Navigant refers to the end use load type as HVAC.

[4] *Ibid.*

[5] *Ibid.*

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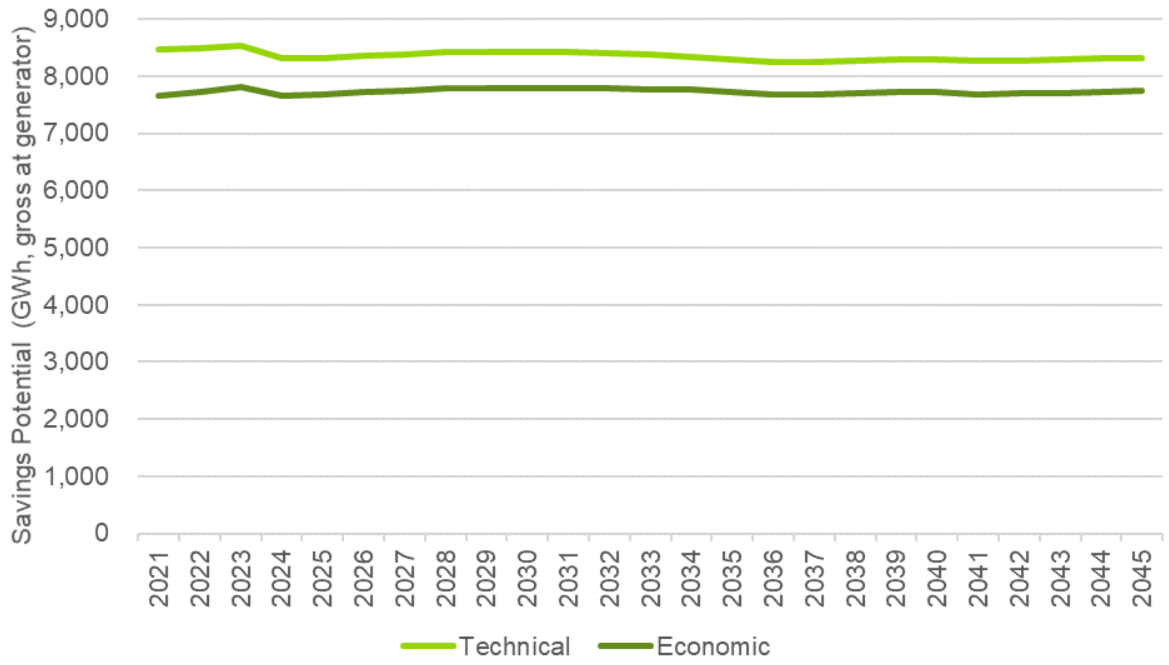
E.3 Findings

E. 3.1 EE Potential Results

Figure ES-3 provides the technical and economic potential at generator for Nova Scotia. Technical and economic potential remain relatively flat over the 25-year study horizon, around 8,300 GWh and 7,700 GWh (gross at generator), respectively.

Figure ES-3. EE Technical and Economic Potential Electricity Savings (GWh, gross at generator)



Source: Navigant analysis

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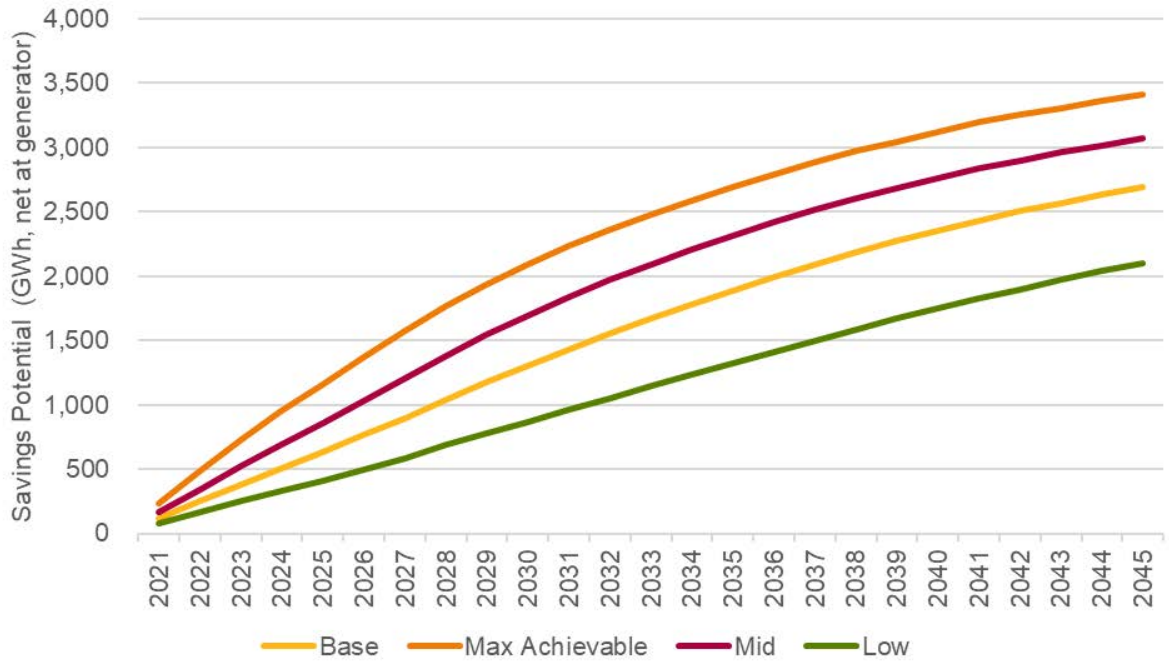
Figure ES-4 shows the cumulative potential results for the four market potential scenarios presented; (1) maximum achievable, (2) mid case, (3) base case, and (4) low case, which range from more than 2,000 GWh to just under 3,500 GWh (net at generator) over the 25-year period. Technical and economic potential savings are gross, while market potential is net of freeridership.

Figure ES-4. EE Market Potential Electricity Cumulative Savings (GWh, net at generator)



Source: Navigant analysis

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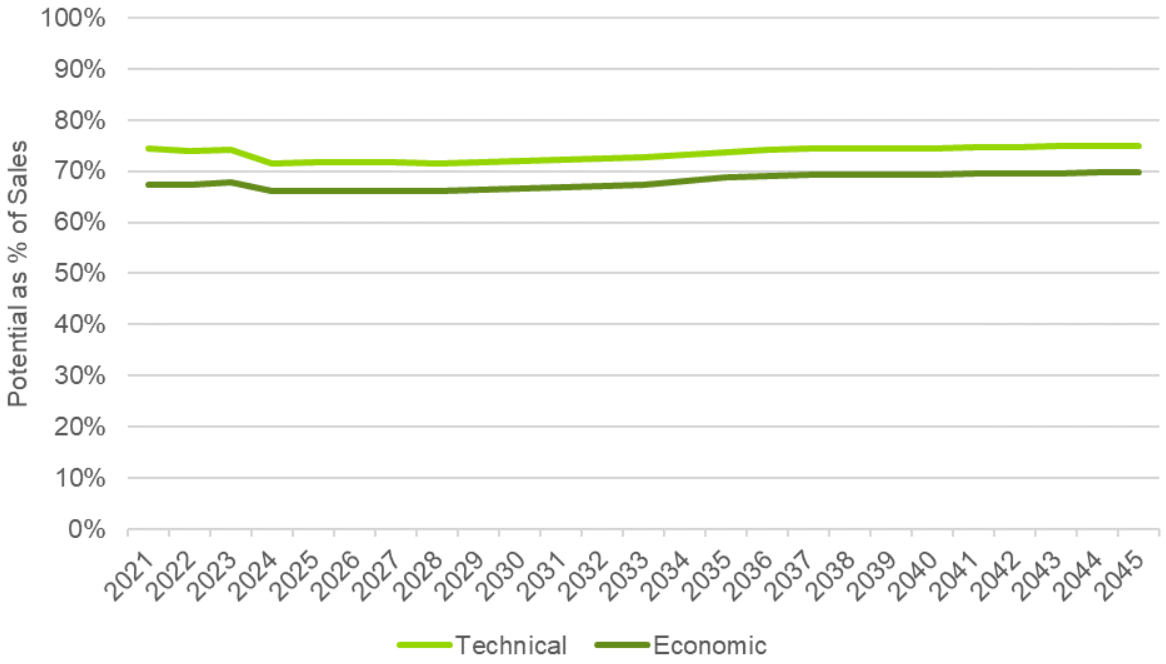
Figure ES-5 presents the technical and economic electricity savings at generator potential as a percentage of customers' total electricity consumption. Annually, technical and economic potential savings ranges from 66% to 75% of electricity sales over the 25-year period. These technical potential savings are due in part to the inclusion of fuel-switching measures, allowing a very large portion of HVAC load to be technically removed.

Figure ES-5. EE Technical and Economic Potential Electricity Savings as a Percent of Total Sales (%)



Source: Navigant analysis

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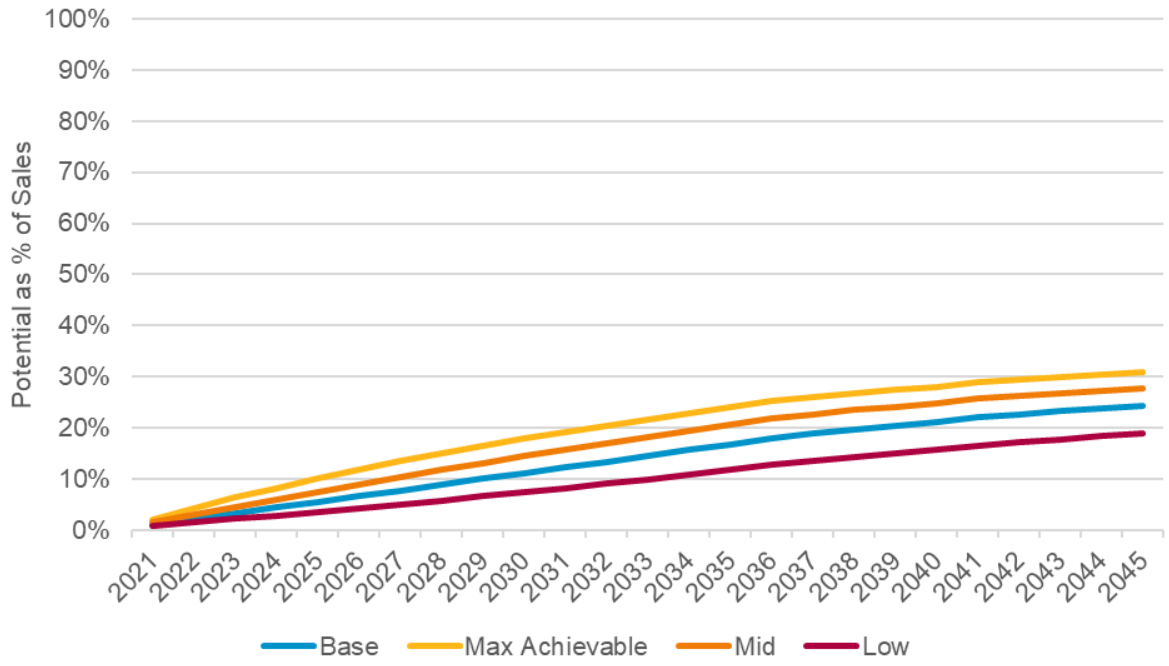
Figure ES-6 presents cumulative achievable electricity savings at generator potential as a percentage of customers' total electricity consumption for the four market potential scenarios. Overall, market potential scenarios range from the low case at 19% to maximum achievable at 31% of electricity sales over the 25-year period.

Figure ES-6. EE Market Potential Electricity Cumulative Savings as a Percent of Total Sales (%)



Source: Navigant analysis

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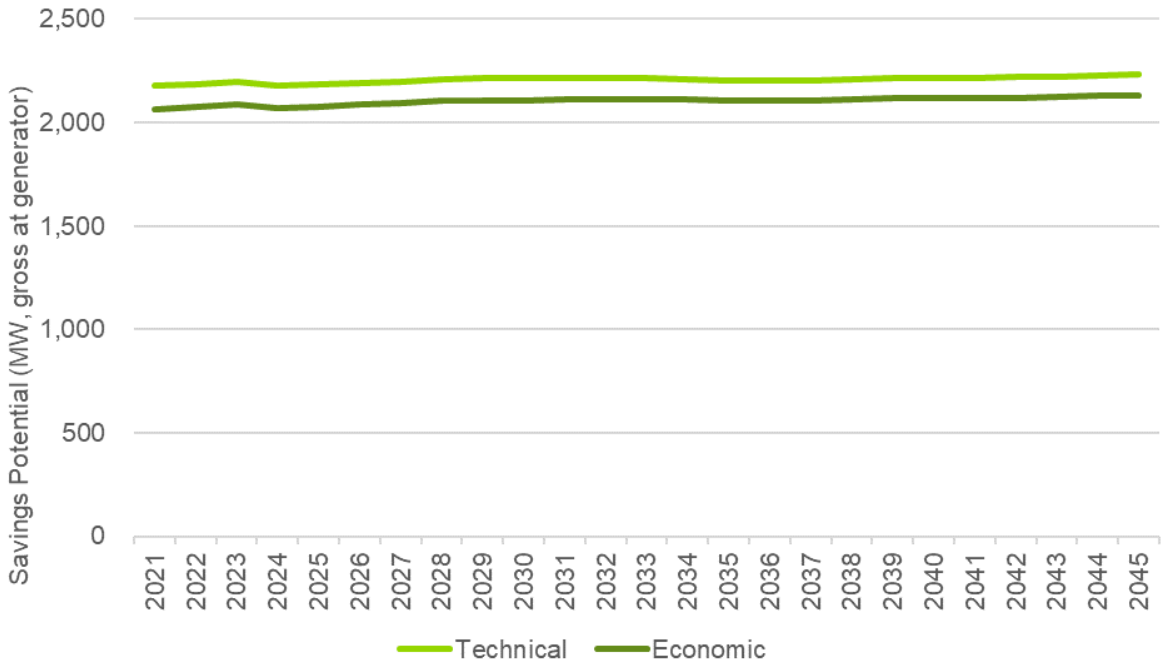
The total technical and economic winter peak at generator demand savings potential are shown in Figure ES-7. Similar to the electricity results, technical and economic savings remain relatively flat over the 25-year study horizon, at around 2,100 to 2,200 MW (gross at generator). Technical and economic potential savings are gross.

Figure ES-7. EE Technical and Economic Potential Winter Peak Demand Savings (MW, gross at generator)



Source: Navigant analysis

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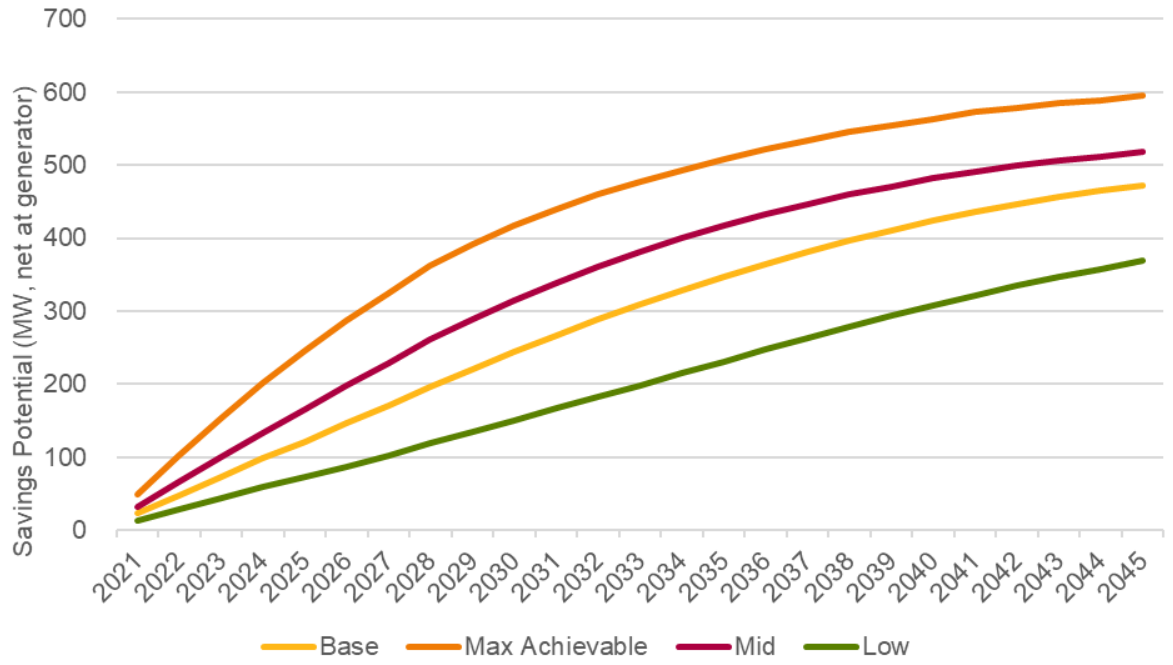
Figure ES-8 presents market winter peak demand results for four market potential scenarios; (1) maximum achievable, (2) mid case, (3) base case, and (4) low case, and ranges between 375 MW and 600 MW (net at generator) over the 25-year period. Market potential is net of freeridership.

Figure ES-8. EE Market Potential Winter Peak Demand Cumulative Savings (MW, net at generator)



Source: Navigant analysis

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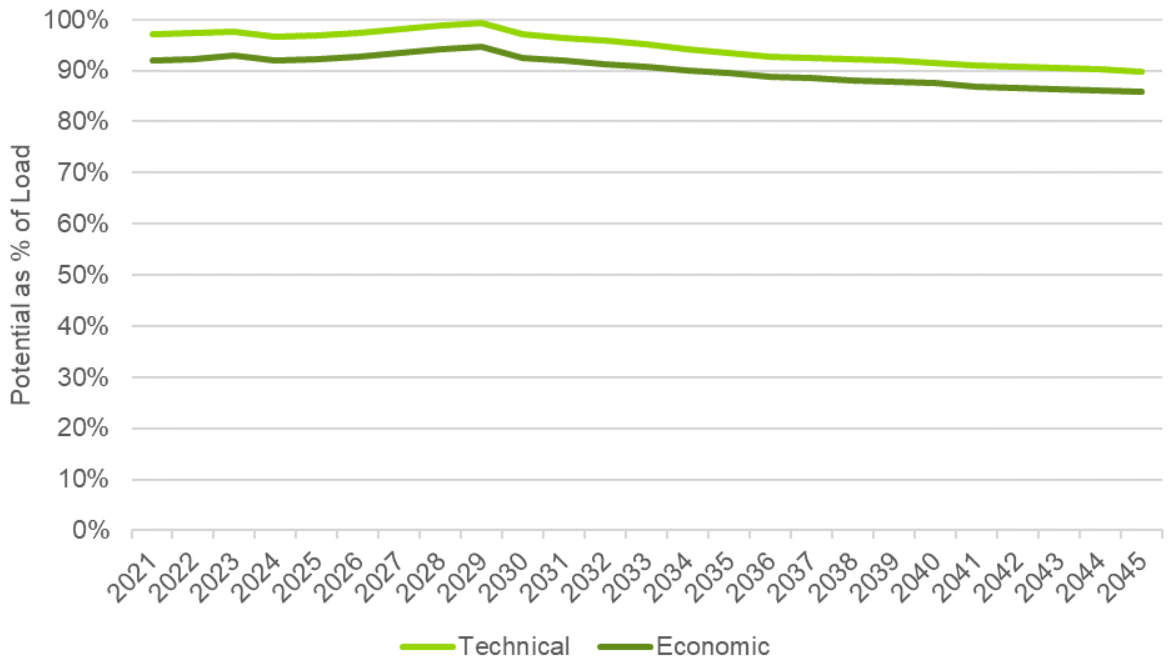
Figure ES-9 presents the technical and economic winter peak demand at generator savings potential as a percentage of customers' total winter peak electricity load. Annually, technical and economic potential savings ranges around 85% to 99% over the 25-year period, in a large part due to fuel switching potential in HVAC.

The demand percent of sales values presented in this report are also higher than expected due to differing line loss factors in this study and the forecasted Nova Scotia Power system requirement document. The system requirement document, from which the total at generator demand forecast is sourced, indicates a 6.7% average line loss when calculating generation requirements. Line losses for the residential sector used in the at generator potential estimates are 14.7%, per NS Power's 2014 Cost of Service Study.

Figure ES-9. EE Technical and Economic Potential Winter Peak Demand Savings as a Percent of Total Load (%)



Source: Navigant analysis

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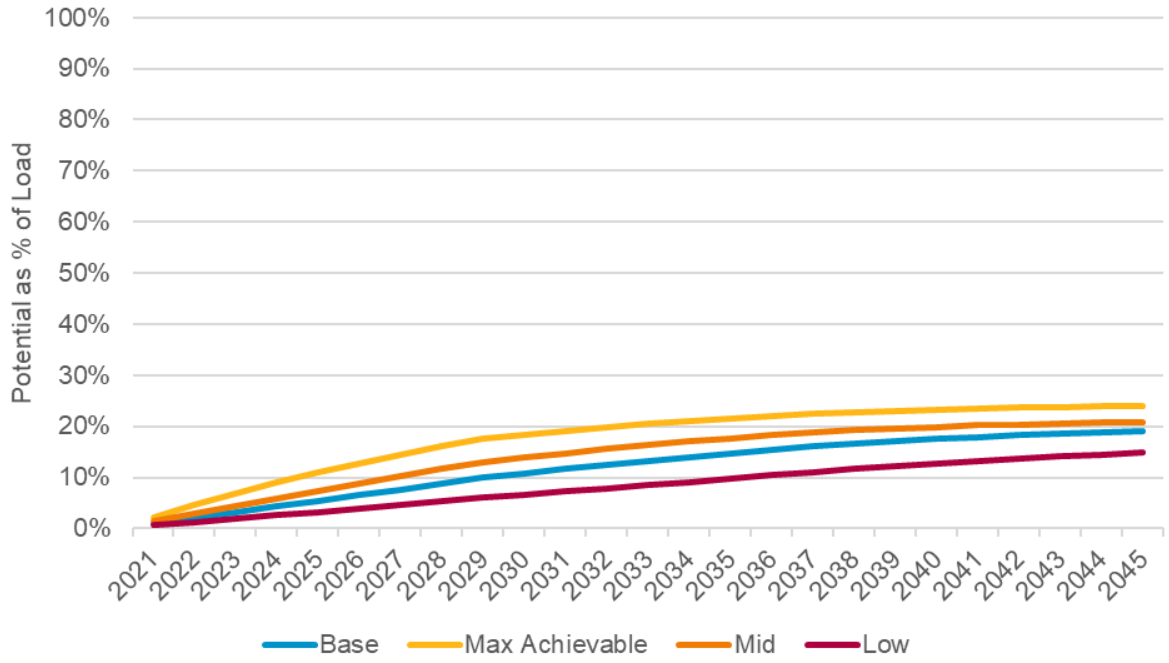
Figure ES-10 presents the market winter peak demand at generator savings potential as a percentage of customers' total winter peak electricity load. Overall, market potential scenarios range from the low case at 15% to maximum achievable at 24% over the 25-year period.

Figure ES-10. EE Market Potential Winter Peak Demand Savings as a Percent of Total Load (%)



Source: Navigant analysis

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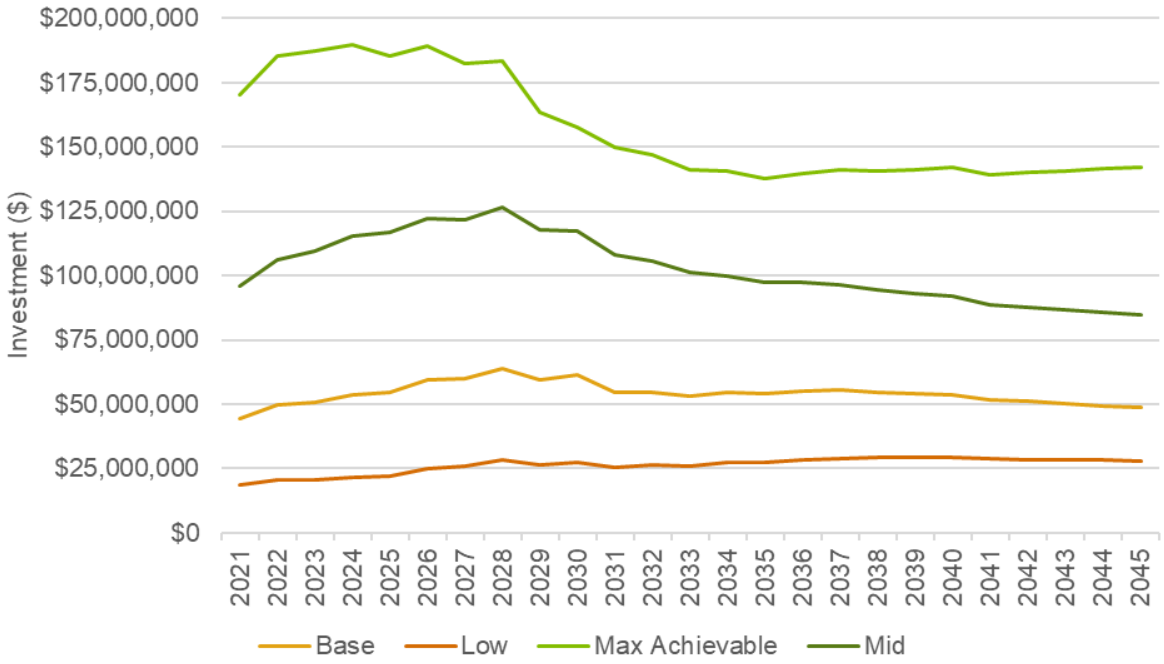
Figure ES-11 presents the level of investment in nominal dollars for each of the four achievable scenarios over the 25-year time horizon. The maximum achievable scenario reaches close to $190 million in 2024 and then declines to around $140 million annually. The mid case varies between $96 million to more than $126 million in 2028 and then declines to below $85 million. The base case ranges from around $44 million to $64 million annually. The low case varies from approximately $18 million to $28 million annually.

Figure ES-11. EE Total Portfolio Annual Investment, by Achievable Potential Scenario (nominal $)



Source: Navigant analysis

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E. 3.2 DR Potential Results

Figure ES-12 shows the TRC benefits, costs (in NPV 2020 dollars) and benefit-cost (BC) ratios calculated for each DR option, as well as the results from the PAC test for the base case. All DR options, other than BTM Battery Control and EV Charging control are cost-effective for this case.

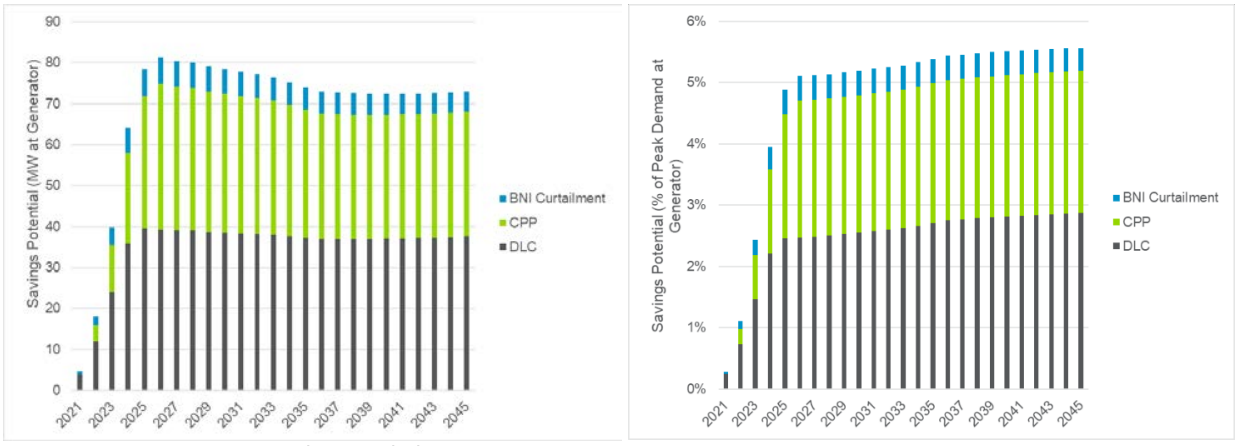
Figure ES-12. DR Achievable Base Case, Benefit-Cost Assessment by Option (TRC and PAC Test Benefit-Cost Ratios)

DR Option	Benefits (NPV 2020 million $)	Costs (NPV 2020 million $)	TRC Test Benefit-Cost Ratio	PAC Test Benefit Cost Ratio
CPP	65.05	25.23	2.58	2.58
DLC	81.47	66.60	1.22	1.06
BNI Curtailment	12.67	11.03	1.15	0.87
Behavioural DR	5.52	5.78	0.96	0.96
BTM Battery Control	19.17	22.91	0.84	0.73
EV Charging Control	3.05	11.08	0.28	0.26

Source: Navigant analysis

Figure ES-13 shows the MW breakdown of the DR achievable potential by cost-effective DR option, and the achievable potential as a percentage of Nova Scotia Power's peak demand. The cost-effective DR achievable potential under the base case is estimated to increase steadily to about 80 MW by 2027 and then declines and plateaus at about 70 MW from 2035 onward. The decline in potential is associated with the decrease in baseline peak demand for DR with progressively higher savings from energy efficient measures. Under the base scenario, the cost-effective achievable potential steadily increases to around 5% of peak demand in 2027 and increases slightly during the following years. DLC constitutes almost half of the total potential followed by CPP at 42%. BNI Curtailment share is significantly smaller at around 8%.

Figure ES-13. DR Achievable Potential for Cost-Effective Options (MW at generator and Percent of Peak Demand)



Source: Navigant analysis

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E. 2.2.1 Demand Response Investment Levels

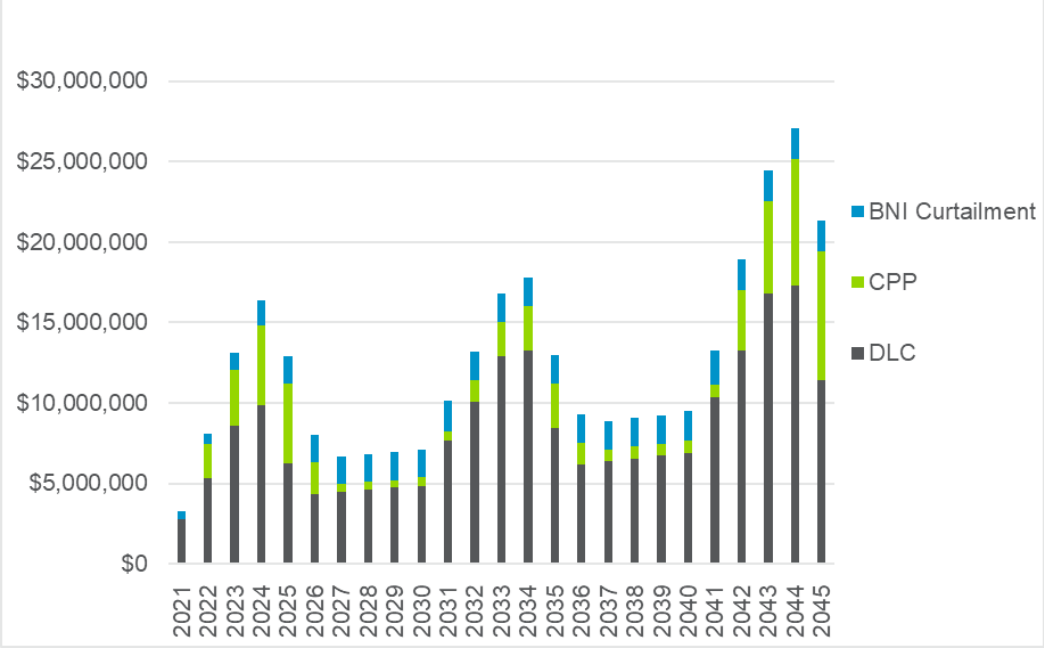
Figure ES-14 summarizes the annual program investment for cost-effective DR options in the base case. The results indicate the following:

- The program investment for DLC increase steadily from 2021 to 2024 and then drop until 2026. The costs remain steady and then spike back up in 2031 because the DLC program has a life of 10 years, so technology enablement and program development costs are re-incurred at this time. From then on, costs fluctuate in accordance with program participation, which is tied to the saturation of the end-use devices (heat pumps, electric furnace, water heating), until it reaches 2041, when the program costs are re-incurred again. The two main cost components for DLC are the control equipment cost (thermostats and switches), and customer incentives for DR program participation.

- CPP program investment is relatively high during its initial ramp up between 2022 to 2026, and then drops in 2027-2028 when the program is fully ramped up. The program has a life of 10 years and the technology is assumed to have a 20-year life, so program development costs and technology enablement are re-incurred on a 20 and 10 year cycle, respectively. Enabling technology costs for customers that are offered the rate in conjunction with enabling technologies is a major cost component. Other significant costs are marketing and outreach to customers to enroll them in rates.

- The investment for BNI curtailment is tied directly to the potential estimates, as majority of the program costs are rolled into an aggregator payment and represented as a delivery cost in terms of $/kW-yr.

Figure ES-14. DR Annual Program Costs by Option for Cost-Effective DR Options ($)



Source: Navigant Analysis

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E. 2.2.2 Scenario Analysis

For the low and high cases, Navigant adjusted assumed participation levels, incentive amounts, marketing spending, and equipment saturation to determine the impacts on the DR achievable potential. The peak demand forecasts also varied by case, as these were tied to the different demand reduction scenario impacts from the energy efficiency potential study. Three different scenarios from the Energy Efficiency Potential Study were considered in the baseline winter peak projections: (1) low, (2) base, and (3) mid. These correspond to the scenarios low, base, and high, respectively, in the DR study. A critical assumption for the high case was the default opt-out participation model for CPP.

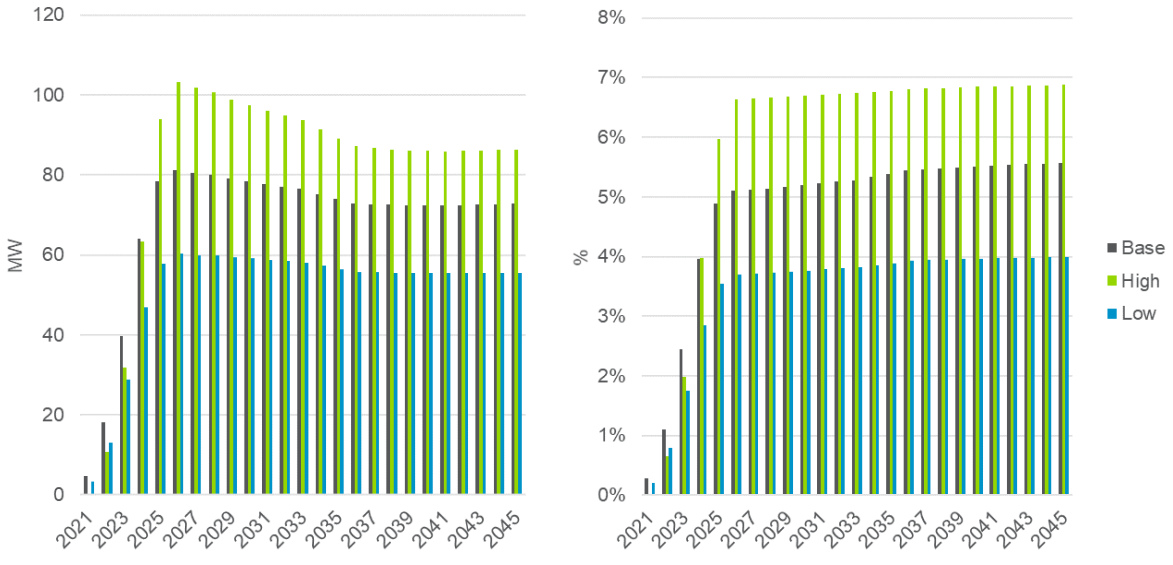
The high participation in the CPP program under the default opt-out model causes the remaining pool of customers available to participate in other DR programs to be relatively small. The fixed costs of the program, such as annual program administration costs and program startup costs, get allocated over a smaller number of customers for DLC and BNI Curtailment, which render these options to be not cost-effective under the high scenario. High scenario costs are only associated with CPP and behavioural DR, so annual program costs are lower in the high scenario than the base scenario, despite greater savings potential, primarily from CPP. The low scenario costs are lower than the base scenario costs due to lower participation levels and lower per participant incentives and marketing costs.

The annual portfolio costs (in nominal dollars) are expected to increase from:

- $3.3 million in 2021 to $21.4 million in 2045 for the base scenario
- $2.7 million in 2022 to $12.0 million in 2045 for the high scenario
- $2.4 million in 2021 to $12.1 million in 2045 for the low scenario

Figure ES-15 shows achievable MW potential and percent of peak load potential reduction by scenario for cost-effective DR options only. The high scenario is 18% greater than the base scenario potential, while the low potential is approximately 24% lower than the base case potential. The 2045 potential under the low, base, and high scenarios represents approximately 4.1%, 5.6%, and 6.9% of NS Power's peak demand in 2045, respectively.

Figure ES-15. DR All Scenarios, Achievable Potential (MW at Meter and Percent of Peak Demand)



Source: Navigant Analysis

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1. INTRODUCTION

This section provides an overview of the potential study, including background and study goals, a discussion of the report's organization and key caveats and limitations of the potential study. Navigant's best-in-class modeling tools ensure the rigour, validity and sensibility required of the DSM Potential Study results. Our potential study models have been validated in numerous provinces and U.S. states, and our DSM potential studies and models have been quoted by ACEEE as being "robust and transparent… [and] their methodology for forecasting participation is industry standard best-practice."[6]

As is typical in the development of such studies, Navigant worked collaboratively with EfficiencyOne and stakeholders, through the Demand Side Management Advisory Group (DSMAG) to ensure the study, to the fullest extent, best reflects current Nova Scotia market conditions. Navigant received considerable guidance and feedback from the DSMAG, including EfficiencyOne staff, particularly in the development of global input assumptions and measure characterizations. We also carefully considered, and as appropriate, were responsive to stakeholders' input, incorporating their feedback into the analysis approach.

1.1 Context and Study Goals

Navigant was retained by EfficiencyOne to develop an estimate of the potential for electric energy efficiency and demand response in Nova Scotia during the 2021 to 2045 (25-year) timeframe. Navigant worked with EfficiencyOne and stakeholders to develop information on current levels and patterns of energy use in Nova Scotia, characterize potential measures which could be implemented to increase energy efficiency and demand response through DSM programs in the province, and develop estimates of energy efficiency and demand response potential. The study data and analysis will be used to inform integrated resource planning, and energy efficiency and demand response program design in Nova Scotia. Figure 1-1 summarizes the various elements of the project scope.

Figure 1-1. Summary of Project Scope

Element	Dimensions
Forms of Energy	Electricity
Type of Potential	Energy Efficiency (Energy and Demand) and Demand Response Technical, Economic (EE only), Achievable
Sectors	Residential and Business, Nonprofit and Institutional (BNI)
Climate	Single Weather Zone
Time Horizon	2021- 2045 (25 years)

1.2 Stakeholder Engagement

EfficiencyOne engaged stakeholders beginning in the fall of 2018 to encourage input into the development of the 2019 Electricity Demand Side Management Potential Study. The stakeholder engagement process and level of participation in Nova Scotia was typical of what Navigant has seen in other jurisdictions. Navigant appreciates the thorough review and comments provided by stakeholders, and thanks them for their feedback and participation in the process. Navigant carefully considered all stakeholder input and, as appropriate, incorporated this feedback to inform and enhance the potential study, in terms of meeting study objectives, reflecting the Nova Scotia content, and using the most up to date Nova Scotia data. Stakeholder engagement throughout the study included the following:

[6] ACEEE study titled "Cracking the TEAPOT: Technical, Economic, and Achievable Energy Efficiency Potential Studies," August 2014.

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- Baseline Study and Pre-Modelling Scenarios' Assumptions WebEx Presentation held May 28, 2019
- 2019 Potential Study Technical Conference held July 16, 2019
- Three formal stakeholder review and comment periods:
    - On March 22, 2019, EfficiencyOne shared draft Potential Study Assumptions and Modelling Plan with the DSMAG, and invited written comments from stakeholder until April 5, 2019
    - On May 27, 2019, EfficiencyOne shared a draft Baseline Study Report with the DSMAG, and invited written comments from stakeholder until June 7, 2019
    - On July 15, 2019, EfficiencyOne shared a draft Potential Study Report with the DSMAG. and invited written comments from stakeholder until July 26, 2019

1.3 Caveats and Limitations

There are several caveats and limitations associated with the results of this study, as detailed below.

1.3.1 Program Design

The results of this study provide the savings potential in Nova Scotia. However, this potential study is not intended to provide, nor does it have information on, detailed program designs. Different program designs and delivery mechanisms would inevitably result in different levels of adoption of efficient technologies, which means the output of this study is an estimate of what could be achieved under the specific set of assumptions outlined in this study. Program design is typically a separate activity and is outside the scope of this study.

1.3.2 Measure Characterization

The scope of this study employed both primary data collection techniques and a variety of secondary data sources for estimates of measure savings, costs and market presence (e.g., saturations and densities). Primary data, specific to Nova Scotia was used wherever possible. Where Nova Scotia-specific data was not available, the best available data was used. This situation and approach did not limit our ability to achieve the study objectives and is consistent with the previous electricity potential study for Nova Scotia and Navigant's experience in other jurisdictions.

Furthermore, the team considers the measure list used in this study to appropriately focus on those technologies likely to have the highest impact on savings potential over the study horizon. However, there is always the possibility unidentified emerging technologies may arise that could increase savings opportunities over the forecast horizon, and broader societal changes may affect levels of energy use in ways not anticipated in the study. Similarly, this study does not make assumptions about future code and standard changes beyond those already planned for the study period.

Potential studies must make assumptions about the adoption of technologies and options that inevitably come with a degree of uncertainty. While techniques such as use of payback acceptance curves and technology diffusion models are considered to provide reasonable aggregate estimates of savings potential, such techniques (which must be applied to dozens or in some cases hundreds of energy efficiency measures) are limited in their ability to accurately predict adoption for specific measures or in specific customer segments.

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For energy efficiency, model calibration steps (e.g., comparing forecast results with past achieved results) seek to ground the forecasts in the real world, but inaccuracies are bound to exist the further one drills into a technology or segment—even if the aggregate results are considered to be reasonable. One reason that aggregate results can in many cases be more reliable than individual technology or segment results is that forecasting inaccuracies, at the measure-level will exhibit a pooling effect when aggregated up to the portfolio (whereby positive or negative differences at a finer level of aggregation can help to offset each other in an aggregate result). While more in-depth technology adoption techniques do exist (e.g., discrete choice analysis) to improve the forecast accuracy for any given technology, application of these techniques to the quantity of measures analyzed in studies such as this are not typically warranted considering the dramatic increase in costs one would have to incur to calibrate a different adoption model for every single measure.

1.4 Interpreting Results

This report includes a high-level account of savings potential results across Nova Scotia and focuses largely on aggregated forms of savings potential. Energy efficiency potentials are estimated at the finest level of granularity, which is at the measure-level within each customer segment. The measure-level data is mapped to the various customer segments and end-use categories to permit a reviewer to easily create custom aggregations. Measure level results are available in the study appendices as noted below. Demand response potentials are estimated using a bottom-up analysis, with primary data from NS Power and relevant secondary sources of information, as documented in the study appendices (noted below).

1.5 Report Organization

The report is organized as follows:

Section 2 – provides an overview of **Global Data** developed and used in the study.

Section 3 – discusses the **Energy Efficiency Measure Characterization**, including key parameters.

Section 4 – presents the **Energy Efficiency Technical Potential Forecast** for energy efficiency measures, including a summary of results by sector and end use**.**

Section 5 – provides the **Energy Efficiency Economic Potential Results** for energy efficiency measures, including a summary of results by sector and end use**.**

Section 6 – presents the **Energy Efficiency Market Potential Approaches**, including discussion of equilibrium market share, behavioural measures, investment and incentive strategy, re-participation, and model calibration.

Section 7 – discusses the **Reference Forecast Approach** and scenario configuration.

Section 8 – presents the **Energy Efficiency Market Potential Approach by Scenario** for energy efficiency measures, including a summary of results by sector, end use, customer segment, and measure, as well as cost-effectiveness tests and investment.

Section 9 – provides the **Energy Efficiency Market Potential Sensitivity Analysis Results** by differing key assumptions.

Section 10 – presents the **Demand Response Methodology,** including market characterization, baseline projections, characterization of options, and key assumptions.

Section 11 – provides the **Demand Response Potential and Cost-Effectiveness Results** for the technical and achievable potentials, investment levels, scenario analysis, and discusses snapback effects. Achievable

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potential results are presented for DR options, sub-options, customer class, and building type for cost-effective DR options.

Section 12 – presents the **Conclusion** of the study.

The report also includes the following eleven Appendices:

- Appendix A. Modelling Plan
- Appendix B. Residential Sector and BNI Sector Baseline Study
    - Appendix B-1. Electricity Usage Online Survey Instrument - Residential & Site Visit Follow-up
    - Appendix B-2. Electricity Usage Online Survey Instrument - Commercial
    - Appendix B-3. Electricity Usage Tables - Residential - Self Reported
    - Appendix B-4. Electricity Usage Tables - Commercial - Self Reported
- Appendix C. Demand Response Model Inputs
- Appendix D. Demand Response Model Outputs
- Appendix E. Energy Efficiency Model Inputs
- Appendix F. Energy Efficiency Model Outputs
- Appendix G. EE Base Case Achievable 8760 Loadshape Disaggregation

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2. GLOBAL DATA

Navigant aggregated multiple data sources to simulate many elements of the market conditions in Nova Scotia that help to define the potential for energy saving technologies modelled in this study. These inputs include energy and demand forecasts, residential household counts, business and industrial building stock, heating and hot water fuel splits, and end use energy allocations. Together, these are referred to as the "global" data because they help to define the context of the modeled savings potential, and the scope of potential adoption. To develop these inputs, Navigant used data sources from the Nova Scotia Baseline Study (see Appendix B), EfficiencyOne, Nova Scotia Power, Statistics Canada, Natural Resources Canada, the U.S. Department of Energy's Energy Information Agency (EIA), and others.

Where possible, Navigant prioritized primary data, or data specific to Nova Scotia including:

- Historical consumption and demand data
- Residential accounts data
- Residential (2019) and BNI (2019) end use (Baseline Study) surveys, and site visits (see Appendix B)
- ENS program evaluation reports
- NS Power end use intensity-based forecasts (Load Forecast Models)
- Previous Nova Scotia DSM potential studies

Where Nova Scotia-specific information was not available, Navigant utilized secondary data, including internal Navigant data sources. Navigant's review of these resources was generally used to support the data sources provided by EfficiencyOne and to ensure consistency among EfficiencyOne data, Navigant's estimates, and publicly-available resources. In order to develop the final estimates of energy consumption, Navigant compared and calibrated estimates with actual sales data obtained from Nova Scotia Power's End Use Intensity Models.

2.1 Segmentation of Customer Sectors

Navigant developed electricity consumption, demand, floorspace, customer counts, fuel splits, and end use allocations by sector, and customer segment where possible. Where data was not available to estimate these splits, Navigant aggregated to the sector level. Navigant worked with EfficiencyOne and the DSM Advisory Group to determine an appropriate level of segmentation for each sector.

The segmentation also reflects Navigant's modeling approach for representing efficiency measures within the DSMSim™ model. DSMSim™ models energy efficiency measures at the segment level, and tracks building and equipment stocks for each segment within Nova Scotia. Differences in fuel choices (i.e., space and water heating market shares), types of equipment used (i.e., use of a furnace or boiler for space heating), and equipment and system efficiency levels are all represented within the model for each segment, as required and as permitted by data availability.

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Figure 2-1 shows the segmentation used for the residential and BNI sectors, with additional detail provided for each sector in the following sections.

Figure 2-1. Customer Segments by Sector

Residential	BNI
Mi'kmaw Households	Small Commercial
Single Family Market Rate	Large Commercial
Single Family Low Income	Institutional
Multifamily Market Rate	Industrial
Multifamily Low Income	

Source: Navigant

2.1.1 Residential Sector

Navigant divided residential customers into five segments based on the type of residential building occupied, as shown in Figure 2-2.

Figure 2-2. Description of Residential Segments

Segment	Description
Mi'kmaw	Mi'kmaw Households, blended building type
Single-Family Market Rate	Detached, attached, row and/or townhouses, less than four units
Single-Family Low Income	Detached, attached, row and/or townhouses, less than four units
Multifamily Market Rate	Apartments, attached housing, four or more units
Multifamily Low Income	Apartments, attached housing, four or more units

Source: Navigant

Navigant developed the breakdown of the residential sector into dwelling types based on Nova Scotia customer and StatsCan data. Figure 2-3 shows the stock (residential households) estimates by housing type and Appendix A describes the methodology used to develop this data. Individually-metered multifamily building units are included in the residential sector for purposes of this study, while master-metered multifamily buildings are included in the BNI stock.

Figure 2-3. Base Year Housing Stocks (Residential units)

Housing Type	Dwellings
Mi'kmaw	11,260
Single Family Market Rate	364,233
Single Family Low Income	16,252
Multifamily Market Rate	40,470
Multifamily Low Income	48,756
Total	480,971

Source: Navigant analysis based on Nova Scotia and StatsCan data

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2.1.2 BNI Sector

Navigant divided the BNI sector into four segments. Figure 2-4 provides a list and description for the BNI segments.

Figure 2-4. Description of BNI Segments

Segment	Description
Small Commercial	BNI customer segments were designed to align with 2018 NS Power Data (sales) and EfficiencyOne's Rate and Bill Impact Analysis (customer counts) reports, and reflect blended averages based on rate-code / size bins.
Large Commercial	
Institutional	
Industrial	

Source: Navigant

Navigant selected the BNI segments with the goal that the building types within those segments be reasonably similar in terms of electricity use, operating and mechanical systems, and annual operating hours. This approach allowed for consistency in building characteristics within each segment as required by the measure characterization and modeling processes. These segments were mapped to usage and demand data by rate classes and building type descriptions provided by EfficiencyOne, allowing for the customer segment level disaggregation in this study.

Navigant used household counts for residential, and floorspace for BNI as the stock bases to scale customer adoption. In order to best forecast floorspace for BNI, Navigant applied end-use intensities derived from Nova Scotia Power's 2018 End Use Intensity Model to the load forecast before DSM. Residential household counts were estimated directly from account forecast data, assuming one household per account on average. Figure 2-5 summarizes the resulting floor space estimates developed for each BNI segment for the study's base year, 2019.

Figure 2-5. Base Year BNI Area (million m^2)

Segment	Floor Area (million m^2)	Floor Area (%)
Small Commercial	6.07	13%
Large Commercial	24.53	53%
Institutional	2.84	6%
Industrial	13.16	28%
Total	**46.60**	**100%**

Source: Navigant analysis

2.2 End Use Definitions

The next step in the base year calibration analysis involved the establishment of specific end uses for each customer sector. This potential study defines end uses as a specific activity or customer need that requires energy, such as space heating or domestic water heating, without specifying the particular type of equipment used to satisfy that need.

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Figure 2-6 presents the list of end uses by sector used in the potential study. These end use categories are used primarily for the binning of potential estimates, and for quality control steps to check the range of savings forecasts against the estimated end use consumption.

Figure 2-6. End Uses by Sector

Residential	BNI
Lighting	Lighting
HVAC	HVAC
Domestic Hot Water	Refrigeration
Refrigeration	Cooking & Laundry
Other	Domestic Hot Water
	Process
	Energy Management
	Electronics & IT
	Other

Source: Navigant

2.3 Fuel Shares

Navigant developed fuel share and equipment data for each end use based on the segmentations defined in the previous sections, using the 2019 Nova Scotia Baseline Study results for space heating, and domestic hot water heating. These shares are available in Appendix B.

2.4 End Use Allocations

End use allocations describe the share of baseline energy consumed by a given customer application, such as lighting, refrigeration, of HVAC. Navigant used Nova Scotia Power's 2018 End Use Intensity Model (associated with the 2018 Load Forecast), which calibrates provincial and regional end use allocations to Nova Scotia-specific load characteristics. Navigant mapped NS Power building types and end uses to the customer segments and end uses defined in this study, and used the 2019 estimates as the basis for the baseline end use consumption. End use allocations are used in this study to aggregate results to more digestible categories, and for quality control of intermediate outputs.

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2.5 Electricity Consumption

EfficiencyOne provided Navigant with information on actual sales and customer numbers for Nova Scotia for 2018 through the 2018 Emera Management Discussion & Analysis (MD&A) report. These consumption data were then disaggregated to the customer segment level using customer class and rate segmentations in the 2018 RBIA. Finally, for the energy efficiency modeling portion of the study, these values were calibrated to the 2018 Nova Scotia Power load forecast (before DSM). Figure 2-7 shows the estimated total electricity consumption by sector in 2019 before DSM.

As stated previously, Navigant included individually-metered multifamily housing types in the residential sector and master-metered multifamily housing types in the BNI sector development of stocks and sales forecasts.

Figure 2-7. Nova Scotia Electric Electricity Consumption in 2019 (GWh at meter)

Segment	GWh Consumption
Residential	4,950
BNI	6,209
Total	11,159

Source: Navigant analysis

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3. ENERGY EFFICIENCY MEASURE CHARACTERIZATION

Navigant and EfficiencyOne fully characterized 183 measures across Nova Scotia's residential and BNI sectors. Navigant prioritized measures with high impact, data availability, inclusion in EfficiencyOne's most recent DSM Plan and those most likely to be cost-effective as criteria for inclusion into DSMSim™.

3.1 Energy Efficiency Measure List

Navigant and EfficiencyOne developed a comprehensive measure list of energy efficiency measures likely to contribute to economic potential. Navigant reviewed current ENS program offerings, EfficiencyOne's 2020-2022 DSM Plan, the 2018 potential study update, and potential model measure lists from other jurisdictions to identify energy efficiency measures with the highest expected economic impact. Navigant worked with EfficiencyOne to finalize the measure list and ensure it contained technologies viable for future DSM program planning activities. Navigant did not include a generic future emerging technologies measure that would attempt to capture potential savings from technologies not currently ready for the market. All measures included are currently available in the market and economically viable.

3.2 Energy Efficiency Measure Characterization Key Parameters

The measure characterization effort consisted of defining more than 50 individual parameters for each of the 183 measures included in this study. This section defines 10 key parameters and how these impact technical and economic potential savings estimates.

1. **Measure Definition**: The team used the following variables to qualitatively define each characterized measure:
   - ***Replacement Type****:* Replacing the baseline technology with the efficient technology can occur in three variations:
     i. **Retrofit (RET):** where the model considers the baseline to be the existing equipment, and uses the energy and demand savings between the existing equipment and the efficient technology during technical potential calculations. RET also applies the full installed cost of the efficient equipment during the economic screening. For early retirement measures, the full cost will be reduced by the calculated deferred replacement credit.
     ii. **Replace On Burnout (ROB):** where the model considers the baseline to be the code-compliant technology option, and uses the energy and demand savings between the current code option and the efficient technology during technical potential calculations. ROB also applies the incremental cost between the efficient and code-compliant equipment during the economic screening.
     iii. **New Construction (NEW):** where the model considers the baseline to be the least cost, code-compliant option, and uses the energy and demand savings between this specific current code option and the efficient technology during technical potential calculations. NEW also applies the incremental cost between the efficient and code-compliant equipment during the economic screening.
   - ***Baseline Definition***: Describes the baseline technology.
   - ***EE Definition***: Describes the efficient technology set to replace the baseline technology.
   - ***Unit Basis***: The normalizing unit for energy, demand, cost, and density estimates.

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2. **Sector, and End Use Mapping:** The team mapped each measure to the appropriate end uses, customer segments and sectors. Where Nova Scotia-specific information was not available, Navigant utilized secondary data, including internal Navigant data sources. Navigant's review of these resources was generally used to support the data sources provided by EfficiencyOne and to ensure consistency among EfficiencyOne data, Navigant's estimates, and publicly-available resources. In order to develop the final estimates of energy consumption, Navigant compared and calibrated estimates with actual sales data obtained from Nova Scotia Power's End Use Intensity Models. Section 1.1 describes the breakdown of customer segments with each sector.
3. **Annual Energy Consumption:** The annual energy consumption in kilowatt-hours (kWh) for each of the base and energy-efficient technologies
4. **Coincident Electric Demand**: The peak coincident demand in kilowatts (kW) for each of the base and energy-efficient technologies
5. **Fuel Type Applicability Multipliers**: Assigns the percentage of electric fuel type to measures with electric fuel type such as water heaters and space heating equipment
6. **Measure Lifetime:** The lifetime in years for the base and energy-efficient technologies. The Base and EE measure lifetime only differ in instances where the two cases represent inherently different technologies, such as light-emitting diodes (LEDs) or compact fluorescent lamp (CFL) bulbs compared to a baseline incandescent bulb.
7. **Incremental Costs:** The incremental cost between the assumed baseline and efficient technology, using the following variables:
    - ***Base Costs***: The cost of the base equipment, including both material and labor costs. This is zero for retrofit measures.
    - ***EE Costs:*** The cost of the energy-efficient equipment, including both material and labor costs.
8. **Technology Densities**: This study defines "density" as the number of units of the baseline and efficient technologies. For residential, these densities are on a per home basis, and for BNI these are per 1,000 square meters of building space.[7]
    - ***Base Initial Saturation***: The saturation of the baseline equipment as a percent of total equipment in a territory for a given customer segment
    - ***EE Initial Saturation:*** The saturation of the efficient equipment as a percent of total equipment in a territory for a given customer segment
    - ***Total Maximum Density***: The total number of both the baseline and efficient units in a territory for a given technology
9. **Technology Applicability:** The percentage of the base technology that can be reasonably and practically replaced with the specified efficient technology. For instance, occupancy sensors may only be practical for certain interior lighting fixtures (an applicability less than 1.0), while all existing incandescent exit signs can be replaced with efficient LED signs (an applicability of 1.0).
10. **Competition Group**: The team combined efficient measures competing for the same baseline technology density into a single competition group to avoid the double-counting of savings. (Appendix A provides further explanation on competition groups).

[7] See the accompanying model input workbook for density and saturation sources.

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3.3 Energy Efficiency Measure Characterization Approaches and Sources

This section provides approaches and sources for the main measure characterization variables.

3.3.1 Energy and Demand Savings

Navigant took three general bottom-up approaches to analyzing residential and BNI measure energy and demand savings:

1. **Program Evaluation Data:** For most measures, Navigant used measure-specific program evaluation data from EfficiencyOne to inform energy savings.
2. **Technical Reference Manual (TRM) Standard Algorithms:** Navigant used TRM standard algorithms for unit energy savings and demand savings calculations for certain measures not included in ENS current or historical programs.
3. **Technical Reference Manual (TRM) Standard Algorithms:** Navigant used TRM standard algorithms for unit energy savings and demand savings calculations for certain measures not included in ENS current or historical programs.
4. **Engineering Analysis:** Navigant used appropriate engineering algorithms to calculate energy savings for any measures not included in ENS programs or available TRMs.

3.3.2 Incremental Costs

Navigant relied primarily on EfficiencyOne-provided program data and TRM data for incremental cost data. Navigant conducted secondary research and used a variety of other publicly-available cost data sources indicated in the accompanying measure input detail.

3.3.3 Building Stock and Densities

Navigant relied heavily on the 2019 Nova Scotia Baseline Study (see Appendix B) for information on equipment densities and saturations. Density and saturation inputs for between 70-80% of savings (depending on impact and potential type) were sourced from this study. For lower impact measures, measures not well suited for baseline research, and measures characterized directly through program offerings (e.g. custom, strategic energy management, and behavioural), EfficiencyOne historic program results and other secondary sources were used. These sources are indicated in the accompanying EE measure input detail (see Appendix E).

3.4 Codes and Standards Adjustments

Estimates of future adjustments in savings related to codes and standards are included as part of the measure characterization process.[8] To develop these estimates, Navigant worked with EfficiencyOne to characterize high-impact anticipated codes and standards, based on Canada's Forward Regulatory Plan 2019-2021 (in reference to *Canada's Energy Efficiency Regulations).* This forward regulatory plan consists of planned Amendments 15-16, as well as yet-formalized future planned Amendments. Building code impacts are based on publicly-available information regarding Canada's future goals with respect to building code evolution and adoption.

[8] See the accompanying EE measure input workbook (Appendix E) for codes and standards adjustments.

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4. ENERGY EFFICIENCY TECHNICAL POTENTIAL FORECAST

This section briefly describes Navigant's approach to calculating technical potential and presents the results for Nova Scotia pertaining to total technical savings potential at different levels of aggregation. Results are shown by sector, end use category and highest-impact measures.

4.1 Approach to Estimating Energy Efficiency Technical Potential

This study defines **technical potential** as the total energy savings available assuming that all applicable installed baseline measures can *immediately* be replaced with the "efficient" measure/technology—wherever technically feasible—regardless of the cost, market acceptance, or whether a measure has failed and must be replaced.

The *Modelling Plan for Nova Scotia Energy Efficiency and Demand Response Potential Studies* (see Appendix A) discusses the approach to estimating technical potential in more detail. Navigant used its DSMSim™ model to estimate the technical potential for demand-side resources considered for this study. DSMSim™ is a bottom-up technology-diffusion and stock-tracking model implemented using a System Dynamics framework.[9]

[9] See Sterman, John D. *Business Dynamics: Systems Thinking and Modeling for a Complex World*. Irwin McGraw-Hill. 2000 for detail on System Dynamics modelling. Also see http://en.wikipedia.org/wiki/System_dynamics for a high-level overview.

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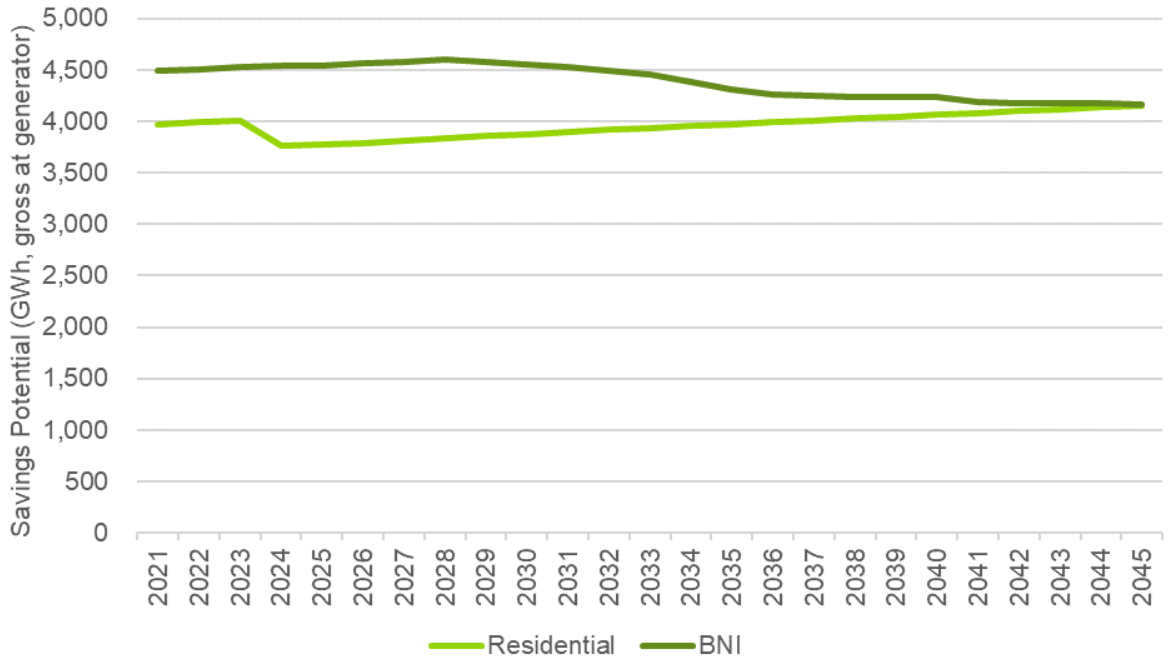
4.2 Energy Efficiency Technical Potential Results by Sector

Figure 4-1 shows the total electricity technical savings potential, gross at generator, for each sector. The BNI sector technical electricity savings is relatively flat, decreasing slightly near the end of the forecast horizon, reflecting moderately shrinking stocks in line with electric load. The residential sector savings potential ranges from about 3,760 to 4,150 GWh, with savings increasing with the slowly growing customer base over time. The BNI sector savings potential ranges from about 4,165 to 4,600 GWh, with savings increasing slightly and then decreasing over time.

Figure 4-1. EE Technical Potential, Electricity Savings by Sector (GWh, gross at generator)



Source: Navigant analysis

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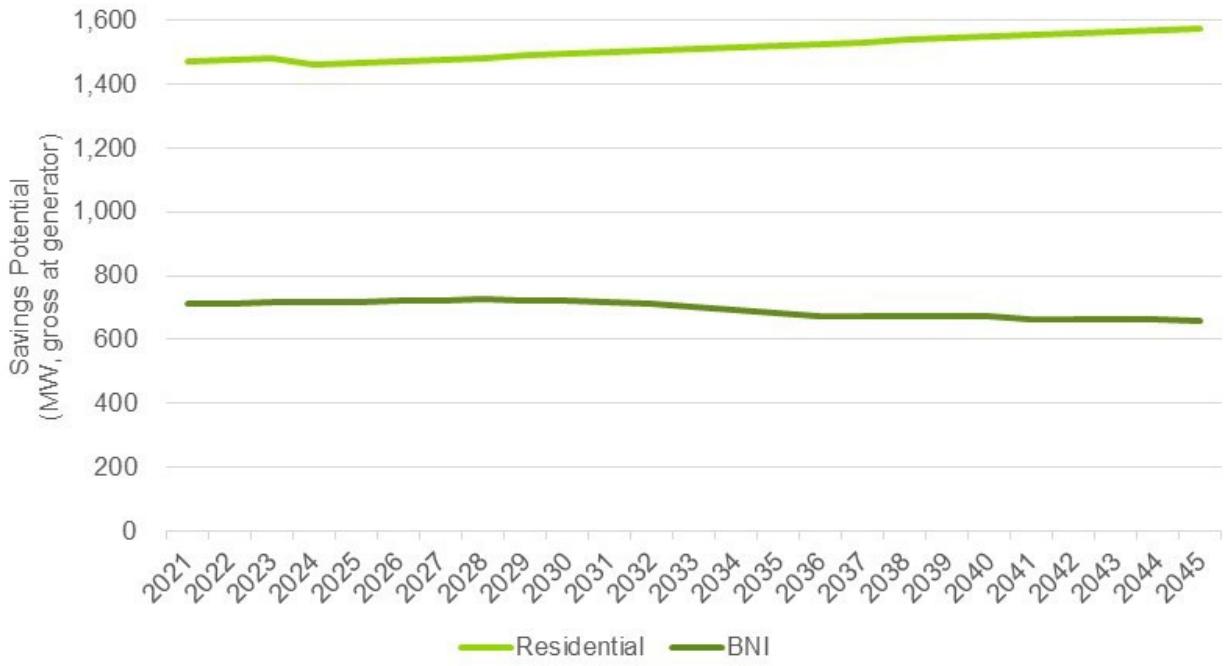
Figure 4-2 shows the winter peak demand technical savings potential, gross at generator, for each sector. The BNI sector winter peak savings ranges between about 660 to 730 MW annually. The residential sector winter peak savings ranges from about 1,460 to 1,570 MW, reflecting the higher overall peak winter load for residential relative to BNI.

Figure 4-2. EE Technical Potential, Winter Peak Demand Savings by Sector (MW, gross at generator)



Source: Navigant analysis

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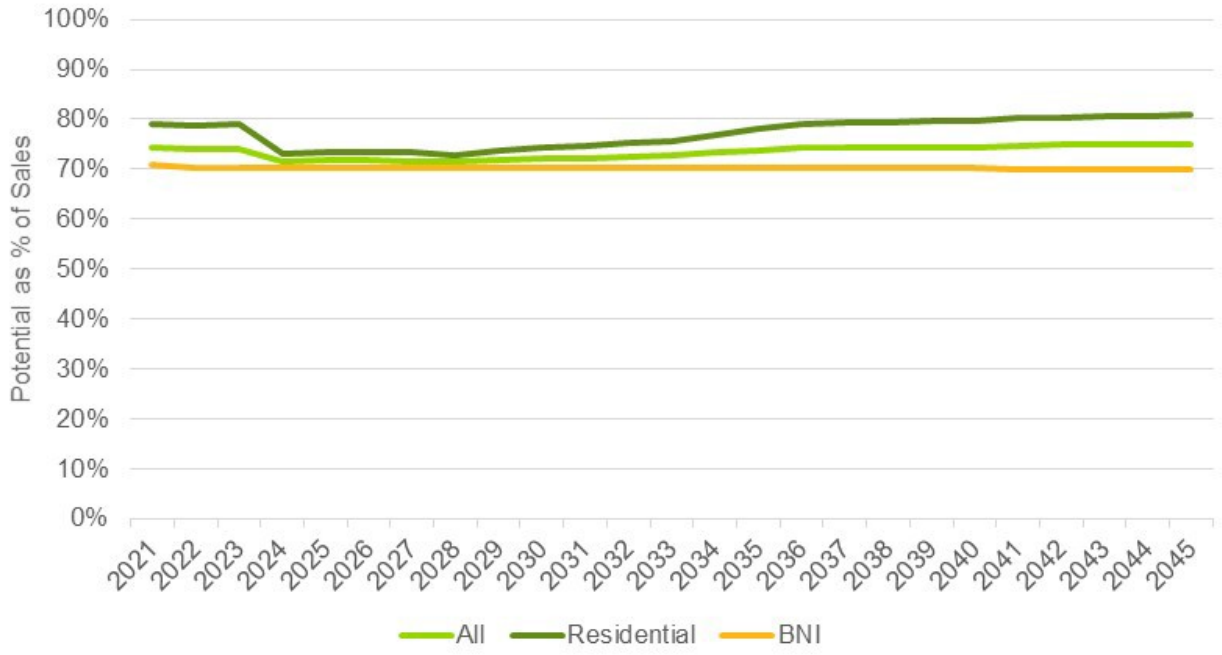
Figure 4-3 shows the electricity technical savings potential for each sector as a percentage of that sector's total forecasted consumption. BNI sector and residential sector technical savings potential as a percent of consumption ranges between 70% to 81% annually. These technical potential savings are due in part to fuel-switching measures, allowing a very large portion of HVAC load to be technically removed.

Figure 4-3. EE Technical Potential, Electricity Savings by Sector as a Percent of Sector Sales (%)

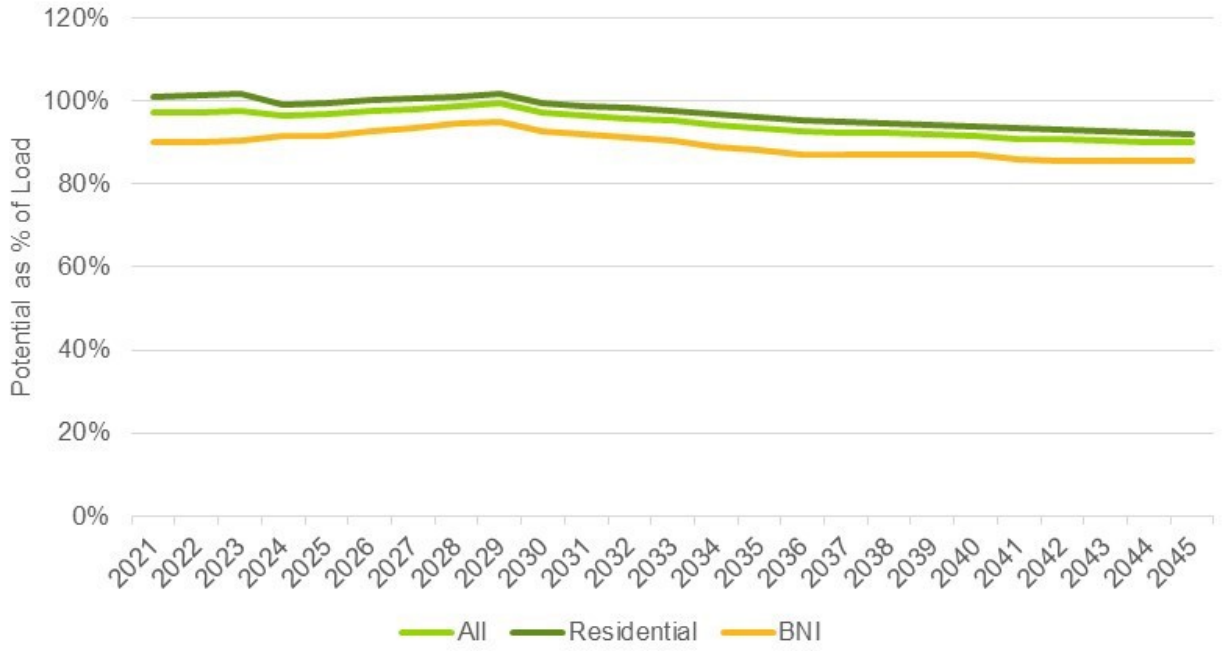


Source: Navigant analysis

Figure 4-4 shows the winter peak demand technical savings potential for each sector as a percentage of that sector's total forecasted electric load. BNI sector and residential sector technical savings potential as a percent of electric load range from 78% to 99% annually. Similar to the electricity savings as a percent of sales above, this is in a large part due to fuel switching potential in HVAC.

The demand percent of sales values presented in this report are higher than expected due to differing line loss factors in this study and the forecasted Nova Scotia Power system requirement document. The system requirement document, from which the total at generator demand forecast is sourced, indicates a 6.7% average line loss when calculating generation requirements. Line losses for the residential sector used in the at generator potential estimates are 14.7%. The potential study used these higher line loss factors from the 2014 COSS in response to stakeholder feedback to the modelling assumptions, and because it reflects the most recent data available.

Figure 4-4. EE Technical Potential, Winter Peak Demand Savings by Sector as a Percent of Sector Load (%)

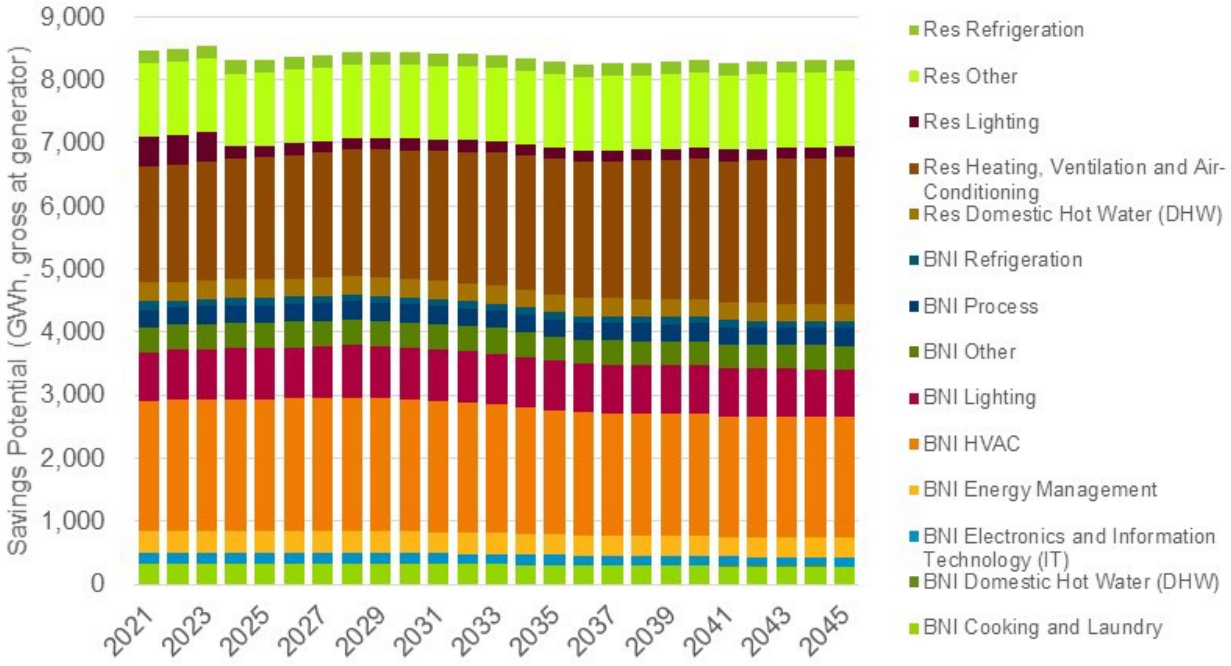


Source: Navigant analysis

4.3 Energy Efficiency Technical Potential Results by End Use

Figure 4-5 shows the electricity technical savings potential, gross at generator, across all end uses and sectors. The technical potential reflects the large role of electric space heating in Nova Scotia relative to other end uses across both sectors, and the relatively small role of lighting, especially after accounting for expected codes and standards around general service (i.e., screw-in) lamps.

Figure 4-5. EE Technical Potential, Electricity Savings by End Use (GWh, gross at generator)



Source: Navigant analysis

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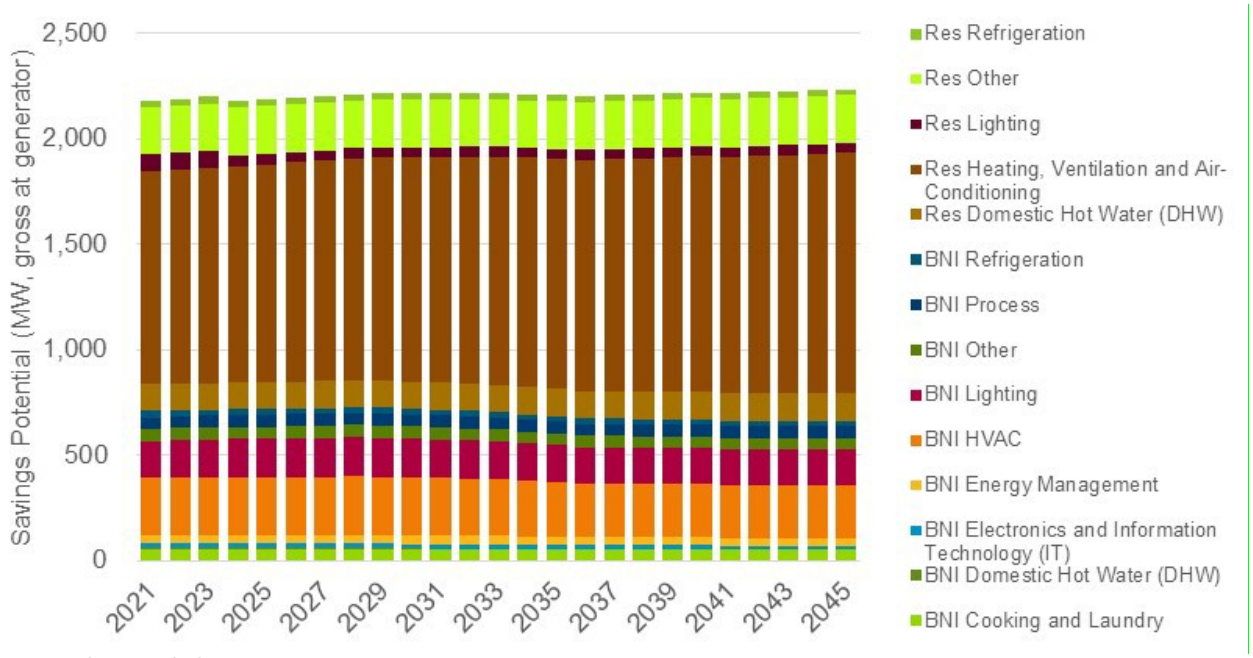
Figure 4-6 shows the winter peak demand technical savings potential, gross at generator, across all end uses and sectors. The dominant end use is residential lighting, followed by BNI lighting. The dominant end use for savings potential again is HVAC, demonstrating the even larger role that electric space heating plays in demand savings potential relative to energy savings potential in Nova Scotia. This is true across end-uses, and represents more than 75% of the total potential for demand reduction through energy efficiency.

Figure 4-6. EE Technical Potential, Winter Peak Demand Savings by End Use (MW, gross at generator)



Source: Navigant analysis

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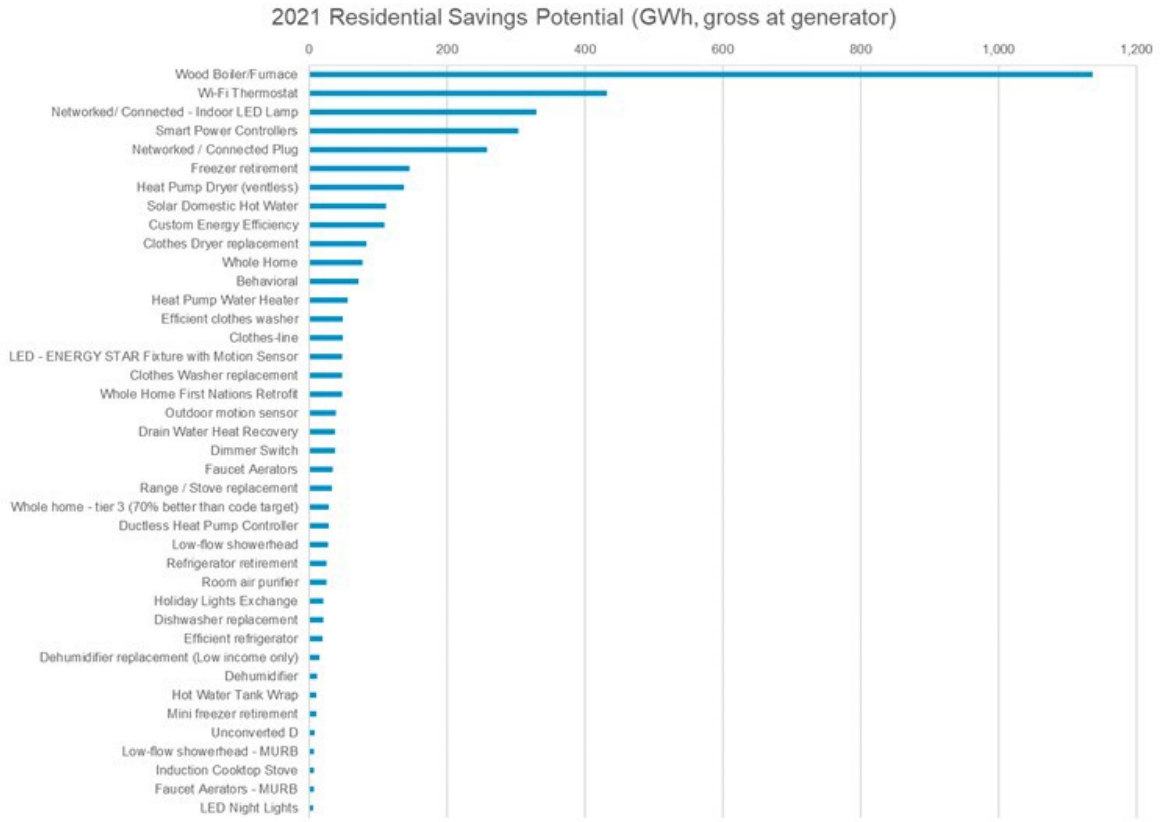
4.4 Energy Efficiency Technical Potential Results by Measure

Figure 4-7 and Figure 4-8 present the top forty measures ranked by their electricity technical savings potential for residential and BNI, gross at generator, in 2021. The measure-level demand savings potential shown is after adjustments made to competition groups, meaning that the measures shown in this section are the measures with the greatest savings potential for their respective competition group. As an example, the measure with the most technical potential in residential heating is the Wood Boiler/Furnace – out competing heat pumps and pellet stoves.

Figure 4-7. EE Technical Potential, 2021 Top 40 Residential Measures for Electricity Savings (GWh, gross at generator)



Source: Navigant analysis

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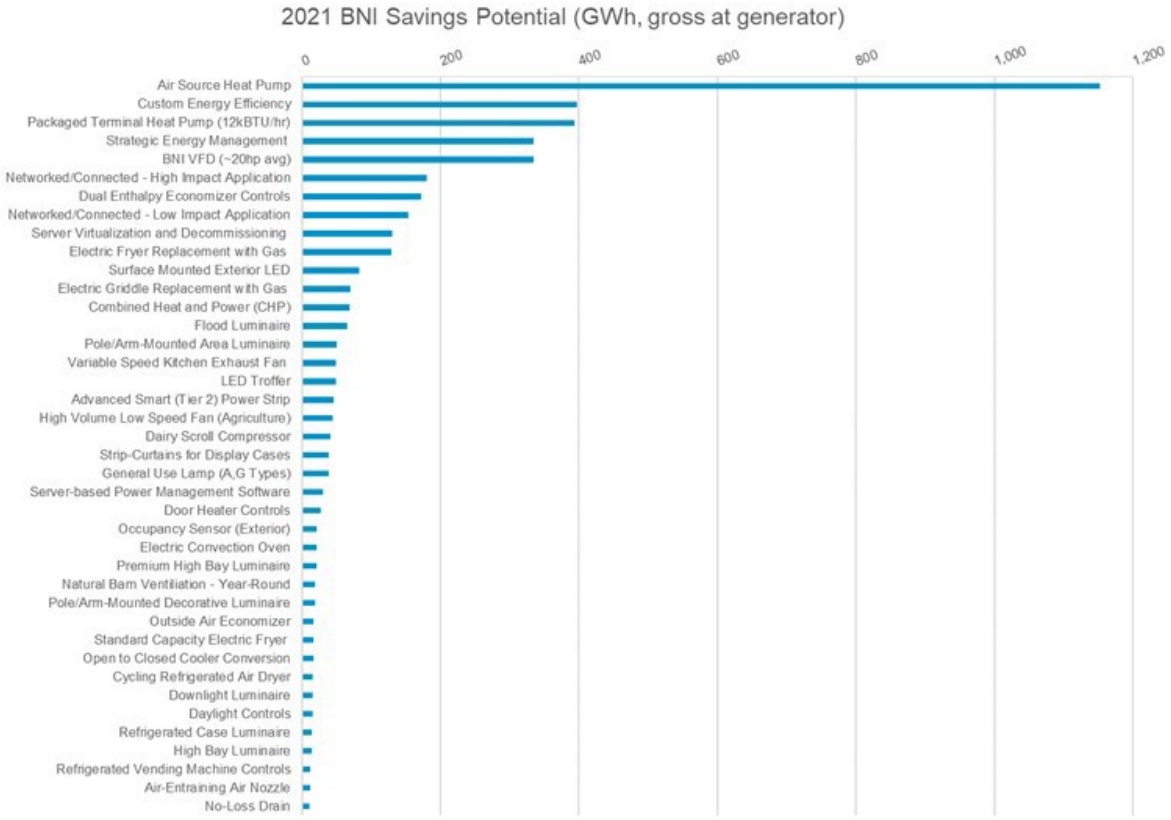
Figure 4-8. EE Technical Potential, 2021 Top 40 BNI Measures for Electricity Savings (GWh, gross at generator)



Source: Navigant analysis

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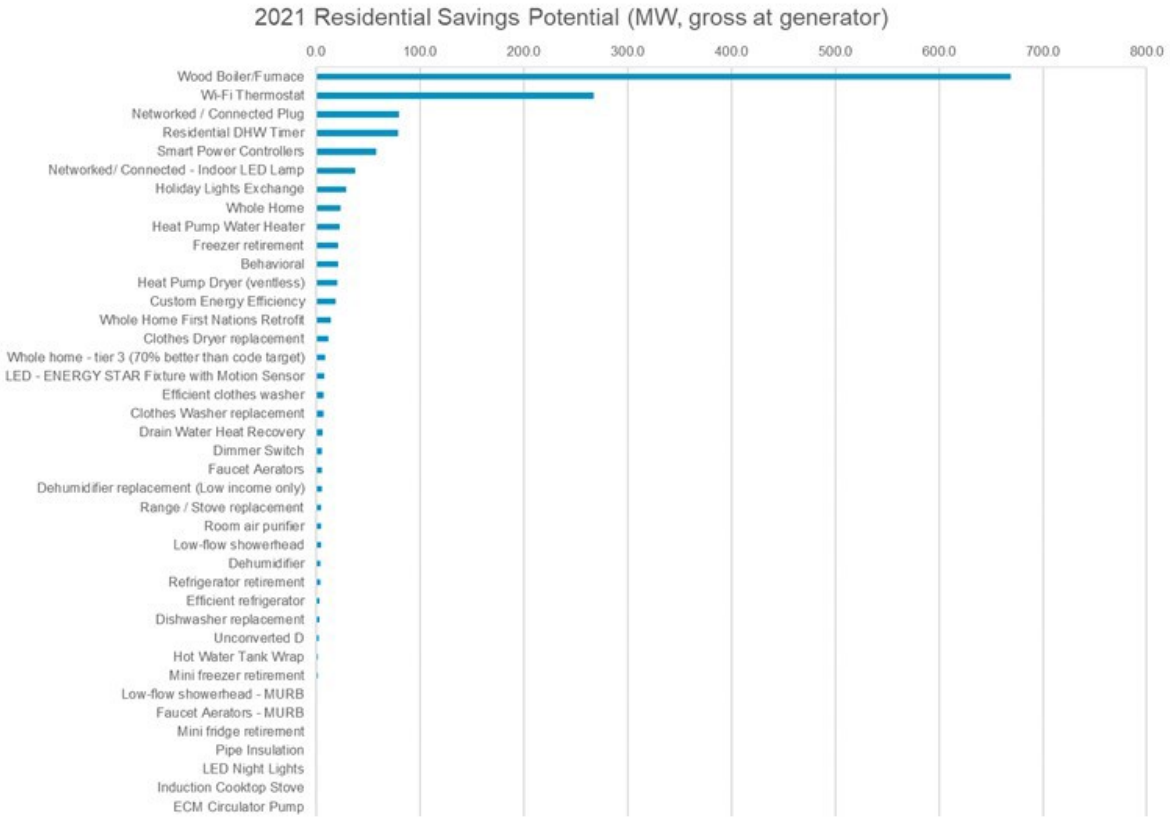
Figure 4-9 and Figure 4-10 present the top forty measures ranked by their winter peak demand technical savings potential for residential and BNI, gross at generator, in 2021. Because of the importance of HVAC, and the fact that these graphs show technical potential after competition, the savings decay down the curve is dramatic. This means that a few measures, such as Wi-Fi Thermostats, Wood Furnaces, and Air Source heat pumps represent the majority of the technical demand reduction potential for each sector.

Figure 4-9. EE Technical Potential, 2021 Top 40 Residential Measures for Winter Peak Demand Savings (MW, gross at generator)



Source: Navigant analysis

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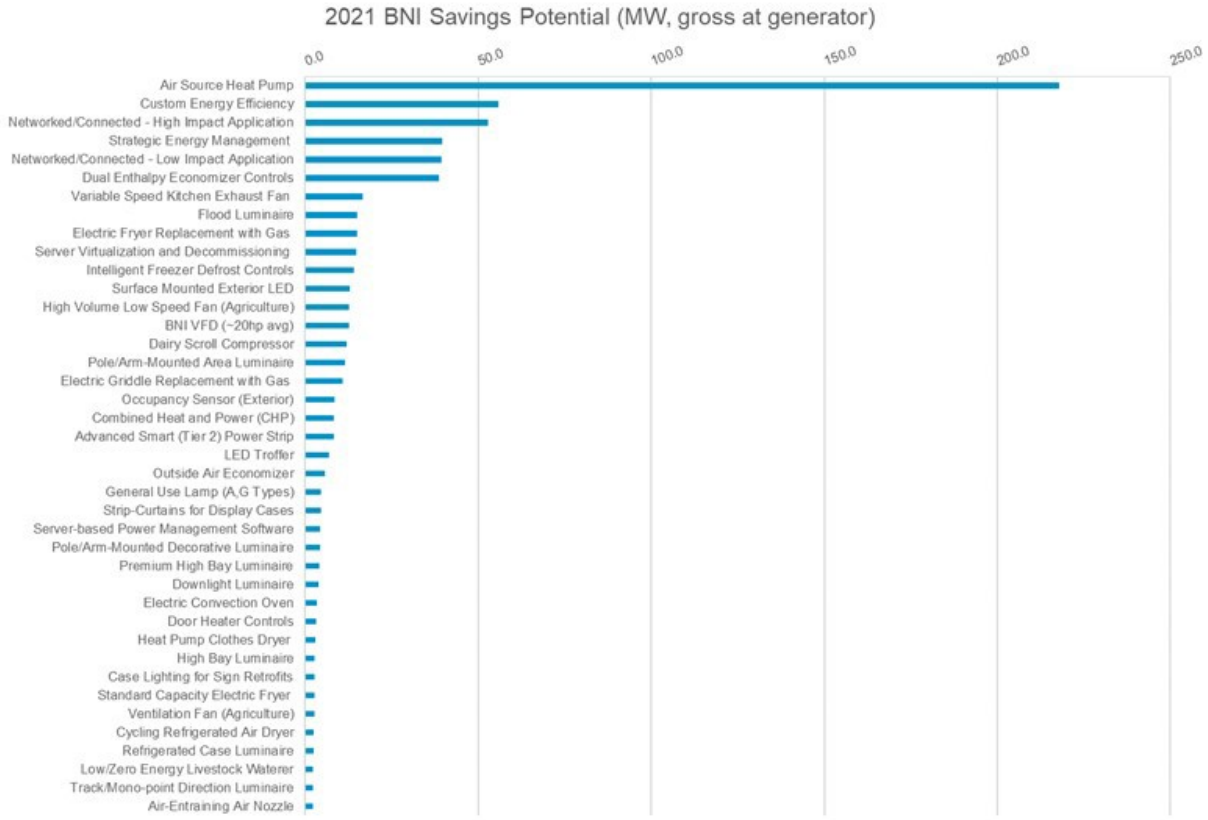
Figure 4-10. EE Technical Potential, 2021 Top 40 BNI Measures for Winter Peak Demand Savings (MW, gross at generator)



Source: Navigant analysis

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5. ENERGY EFFICIENCY ECONOMIC POTENTIAL RESULTS

This section describes the economic savings potential, which is potential that meets a prescribed level of cost effectiveness, available in Nova Scotia. The section begins by explaining Navigant's approach to calculating economic potential. It then presents the results for economic savings potential at different forms of aggregation. Results are shown by sector, end use category and highest-impact measures. Additionally, Navigant developed an economic potential scenario using a PAC of 1.0 as the measure screen instead of a TRC of 1.0. Results for this scenario are shown by sector.

5.1 Approach to Estimating Economic Potential

Economic potential is a subset of technical potential, using the same assumptions regarding immediate replacement as in technical potential, but including only those measures that have passed the benefit-cost test chosen for measure screening (in this case the Total Resource Cost (TRC) test, per EfficiencyOne and the DSM Advisory Group's guidance). The TRC ratio for each measure is calculated each year and compared against the measure-level TRC ratio screening threshold of 1.0. A measure with a TRC ratio greater than or equal to 1.0 is a measure that provides monetary benefits greater than or equal to its costs. If a measure's TRC meets or exceeds the threshold, it is included in the economic potential. Measures with TRC ratios less than 1.0 were non-cost-effective and do not appear in the economic potential.

The TRC test is a cost-benefit metric that measures the net benefits of energy efficiency measures from combined stakeholder viewpoint of the program administrator and the customers. The TRC benefit-cost ratio is calculated in the model using Equation 1.

Equation 1. Benefit-Cost Ratio for Total Resource Cost Test

$$TRC = \frac{PV(Avoided\ Costs)}{PV(Technology\ Cost + Admin\ Costs)}$$

Where:

- *PV( )* is the present value calculation that discounts cost streams over time; using the selected discount rate (6.84%);
- *Avoided Costs* are the monetary benefits resulting from electricity and capacity savings (e.g., avoided costs of infrastructure investments, due to electricity conserved by efficient measures);
- *Technology Cost* is the incremental equipment cost to the customer;
- *Admin Costs* are the administrative costs incurred by the program administrator.

Navigant calculated TRC ratios for each measure based on the present value of benefits and costs (as defined above) over each measure's life. Similar to technical potential, only one "economic" measure (meaning that its TRC ratio meets the threshold) from each competition group is included in the summation of economic potential across measures (e.g., at the end use category, customer segment, sector, service territory or total level). If a competition group is composed of more than one measure that passes the TRC test, then the economic measure that provides the greatest electric savings potential is included in the summation of economic potential. This approach ensures that double-counting is not present in the reported economic potential.

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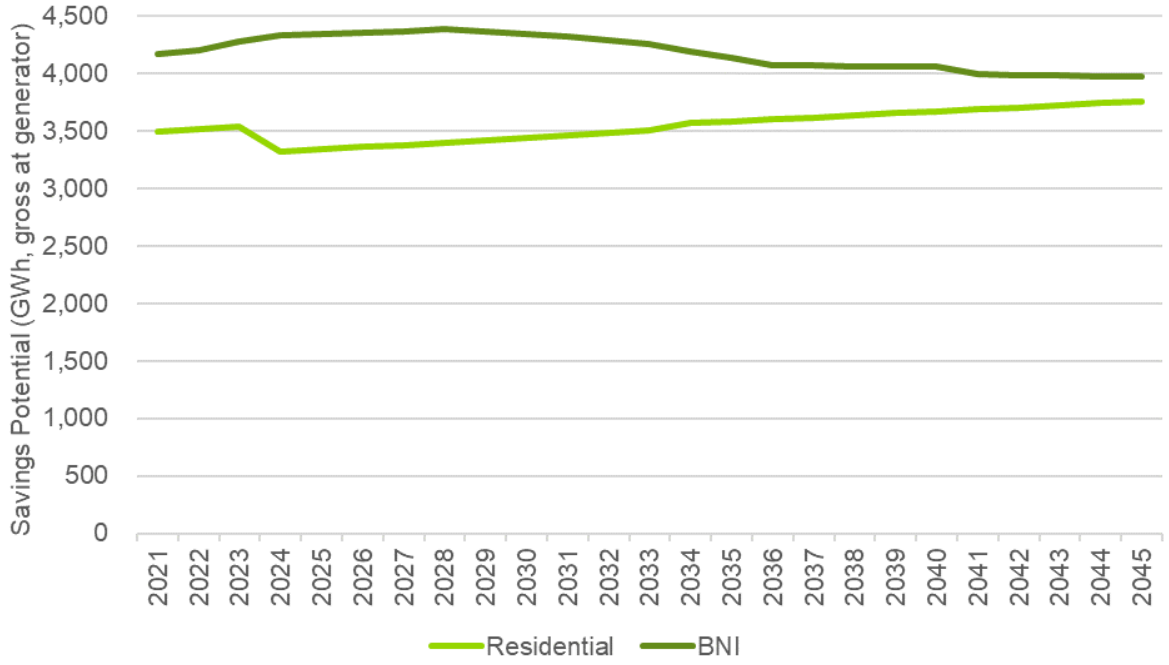
5.2 Energy Efficiency Economic Potential Results by Sector

Figure 5-1 shows economic electricity savings potential, gross at generator, across all sectors. The residential and BNI economic savings potential grew at a relatively similar rate to technical potential – the majority of measures that comprise the technical potential and win their competition group are also cost-effective, creating a similar trajectory. Further, this shape is reflected in the NS Power load forecast and the customer stock data.

Figure 5-1. EE Economic Potential, Electricity Savings by Sector (GWh, gross at generator)



Source: Navigant analysis

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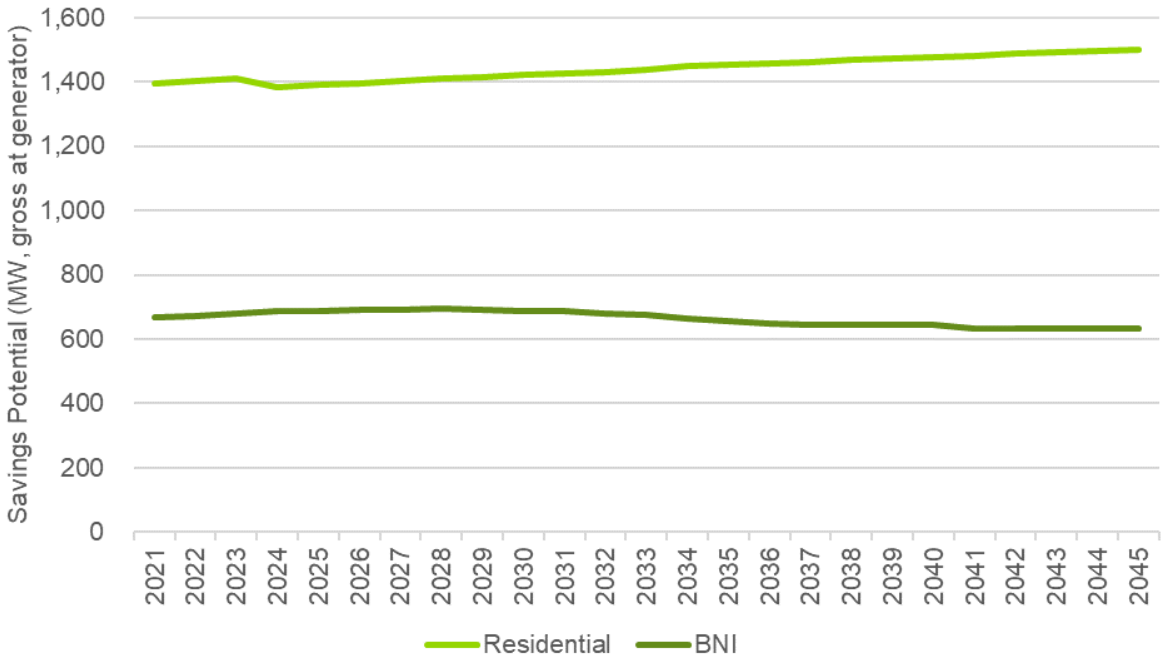
Figure 5-2 winter peak demand potential, gross at generator, in each of the sectors. Relatively high avoided costs (from the 2014 Integrated Resource Plan) in the province make high saving measures more likely to screen, decreasing the gap between technical and economic demand potential.

Figure 5-2. EE Economic Potential, Winter Peak Demand Savings by Sector (MW, gross at generator)



Source: Navigant analysis

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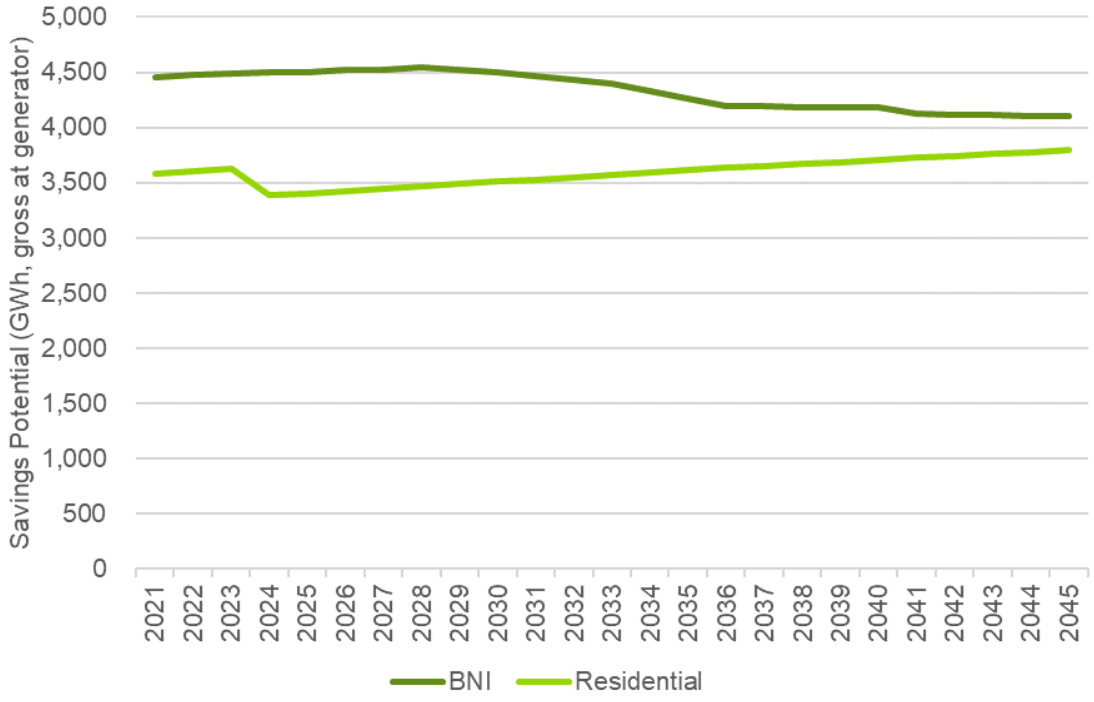
Figure 5-3 presents the economic electricity potential, gross at generator, in each of the sectors using a program administrator cost (PAC) test screen of 1.0. Changing to the PAC as the primary screening test can alter the measures allowed to compete for economic potential due to differences in incentives and incremental costs. Administrative costs are included in both cost tests. In the total resource cost (TRC) test, incremental measure costs are in the denominator, while in the PAC, incentives replace incremental costs. The economic potential with a PAC screen is close to that with a TRC screen for both sectors (103% for residential, and 107% for BNI in 2021). This result indicates that measures screen similarly between the two tests, with slightly more measures screening under the PAC test.

Figure 5-3. EE Economic Potential, Electricity Savings by Sector, PAC Test Screen (GWh, gross at generator)



Source: Navigant analysis

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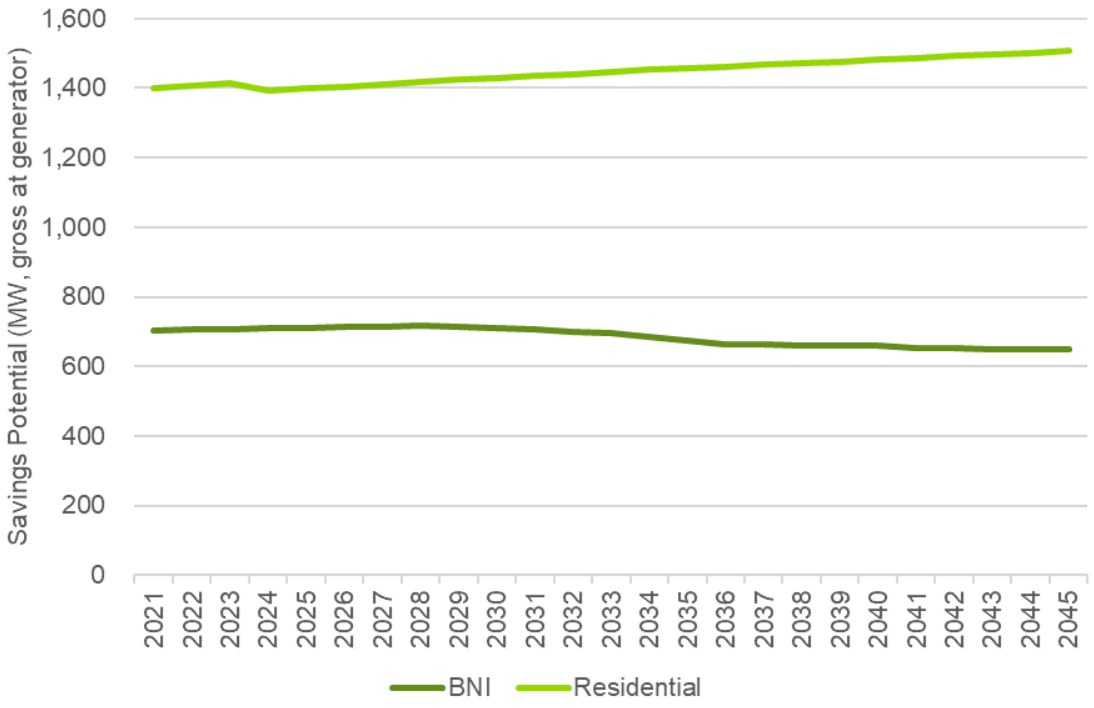
Figure 5-4 presents the economic winter peak demand potential, gross at generator, in each of the sectors using a PAC cost test screen of 1.0. As with the electricity results, the economic potential with a PAC test screen is close to that using a TRC screen for both sectors (100% for residential, and 106% for BNI in 2021). This result indicates that the measures that screen under the PAC test have slightly higher demand to electricity savings ratios, and that cost effectiveness screening was not a major limiting factor for economic potential. This is further demonstrated by the similarity of the economic potential and the technical potential, as the vast majority of these 'technically' superior measures in each competition group also pass the TRC screen of 1.0.

Figure 5-4. EE Economic Potential, PAC Screen, Winter Peak Demand Savings by Sector (MW, gross at generator)



Source: Navigant analysis

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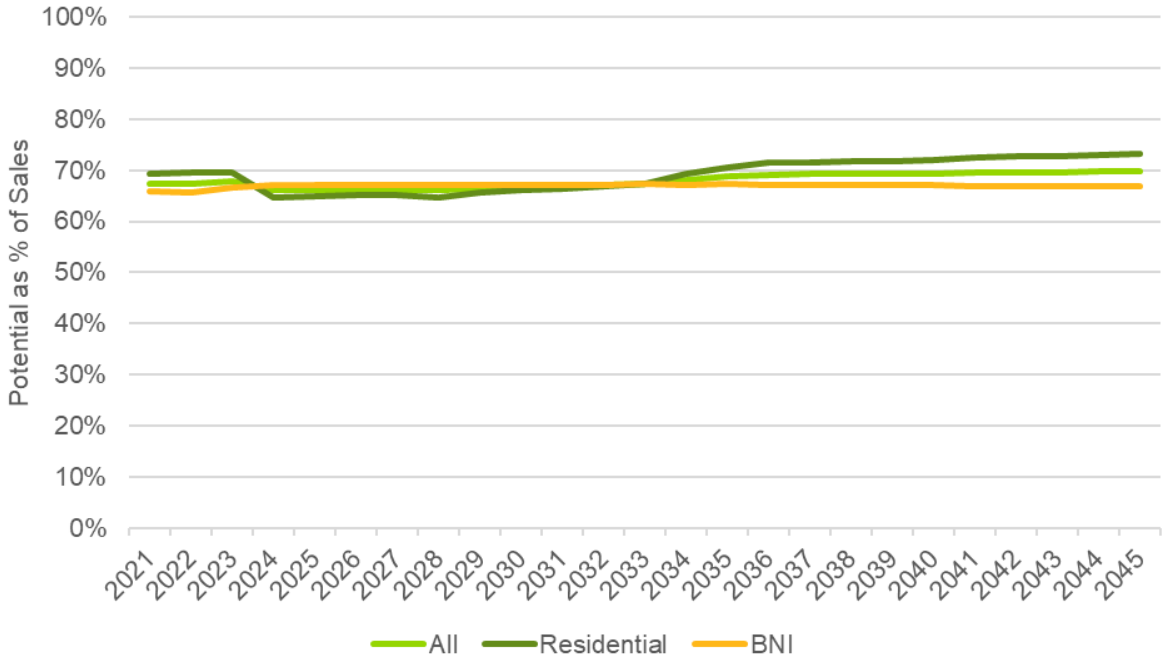
Figure 5-5 shows the economic electricity potential as a percentage of sales. BNI and Residential economic energy savings potential relative to sales in the respective sectors is very similar, suggesting similar opportunities for economic savings despite, for example, industrial processes which can be difficult to address through DSM programs. This emphasizes the relative importance of HVAC equipment potential and remaining potential in BNI lighting in Nova Scotia.

Figure 5-5. EE Economic Potential, Electricity Savings by Sector as a Percent of Sector Sales (%)



Source: Navigant analysis

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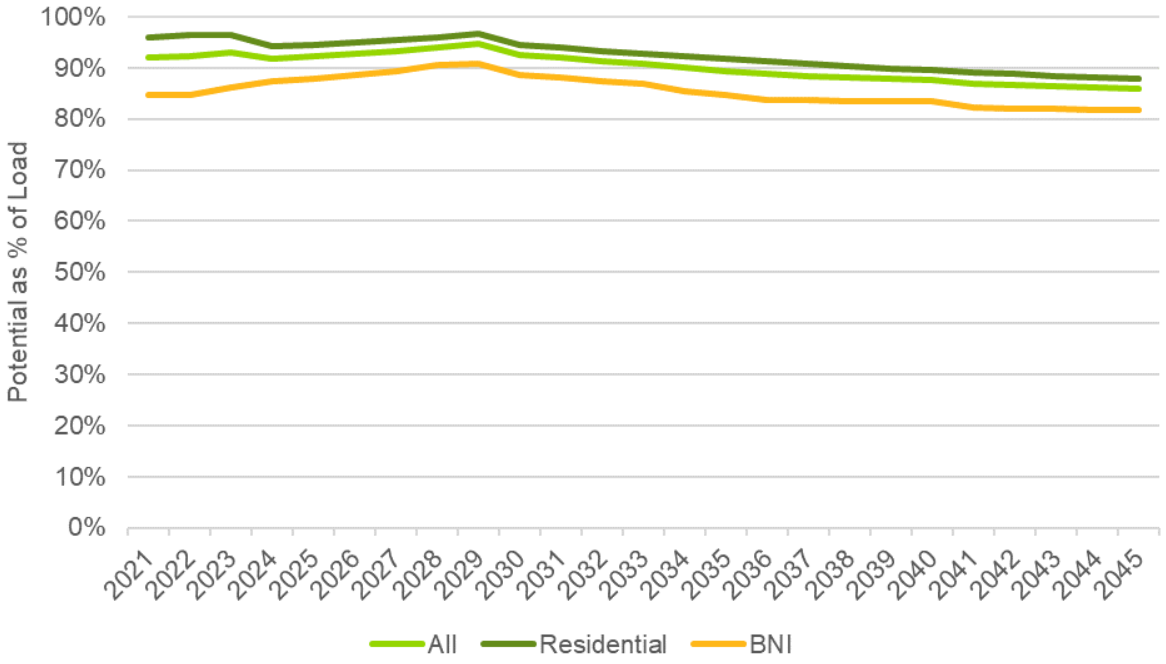
Figure 5-6 shows the economic winter peak demand potential as a percentage of consumption. Very similar trends to the economic electricity percent of sales are exhibited with demand. Percent of consumption is stable between 81% to 96% for all sectors. The economic potential as a percentage of consumption within the BNI sector also closely follows technical potential, as the vast majority of technical competition group winners (highest saving measures) have a TRC of more than 1.0. Similar to the electricity savings as a percent of sales above, this is in a large part due to fuel switching potential in HVAC. In the residential sector this is also due to differences in the line loss factors used for the total load (6.7%) and the potential (14.7%) as discussed in section 4.2.

Figure 5-6. EE Economic Potential, Winter Peak Demand Savings by Sector as a Percent of Load (%)



Source: Navigant analysis

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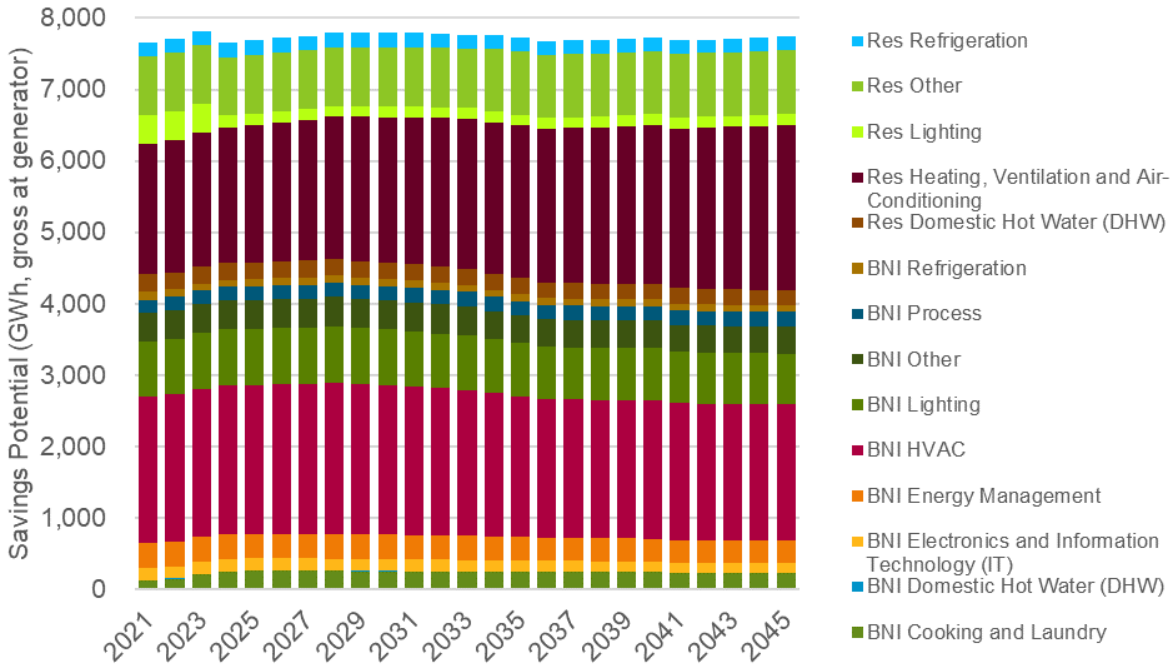
5.3 Energy Efficiency Economic Potential Results by End Use

Figure 5-7 shows the economic electricity potential, gross at generator, by end use for both BNI and Residential. HVAC potential stands out for both sectors as an area with large economic savings opportunities, and unlike general service lighting, there are no large codes or standards that are expected to be rolled out in the study horizon to limit this potential. Aside from lighting and HVAC, Res Other, which includes plug loads and most appliances, shows high potential savings due mostly to Wi-Fi enabled plugs, which are commercially available, but currently at very low penetrations.

Figure 5-7. EE Economic Potential, Electricity Savings by End Use (GWh, gross at generator)



Source: Navigant analysis

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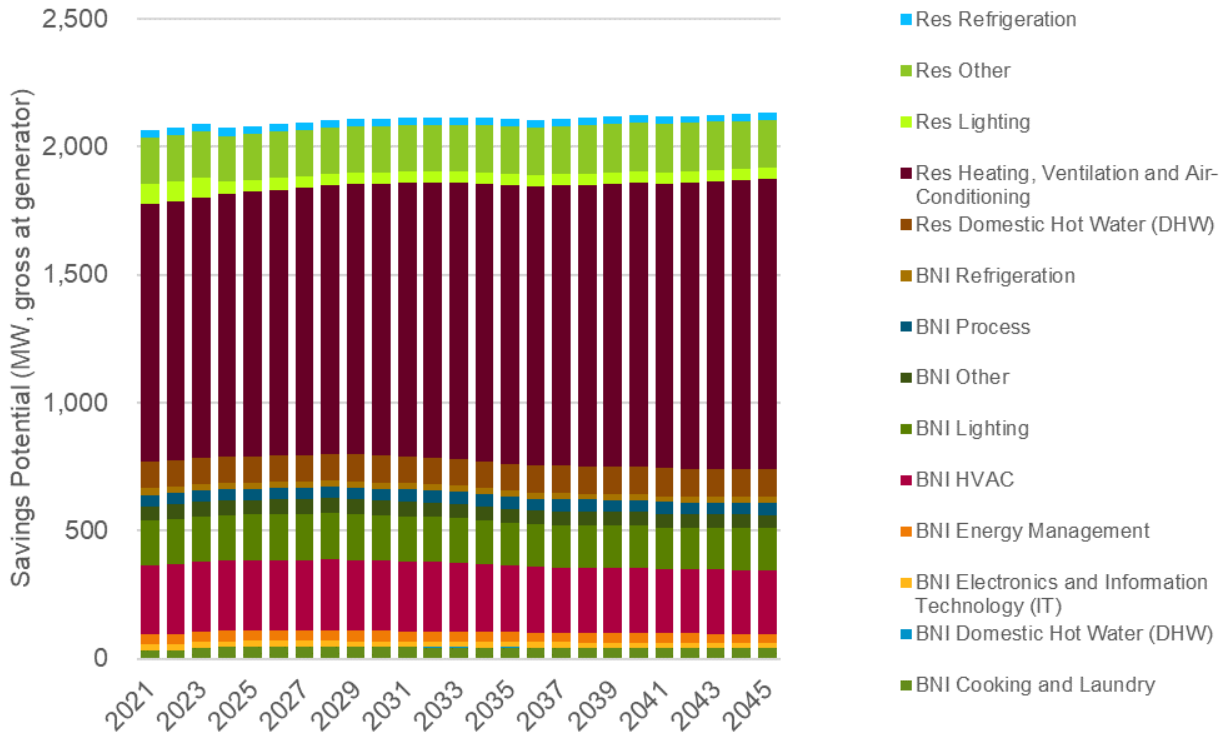
Figure 5-8 shows the economic winter peak demand potential, gross at generator, by end use, which is dominated by Res HVAC for both sectors and BNI lighting. This is largely due to res HVAC competition group measures reducing HVAC equipment demand entirely though fuel switching and high peak coincidence of BNI lighting technologies.

Figure 5-8. EE Economic Potential, Winter Peak Demand Savings by End Use (MW, gross at generator)



Source: Navigant analysis

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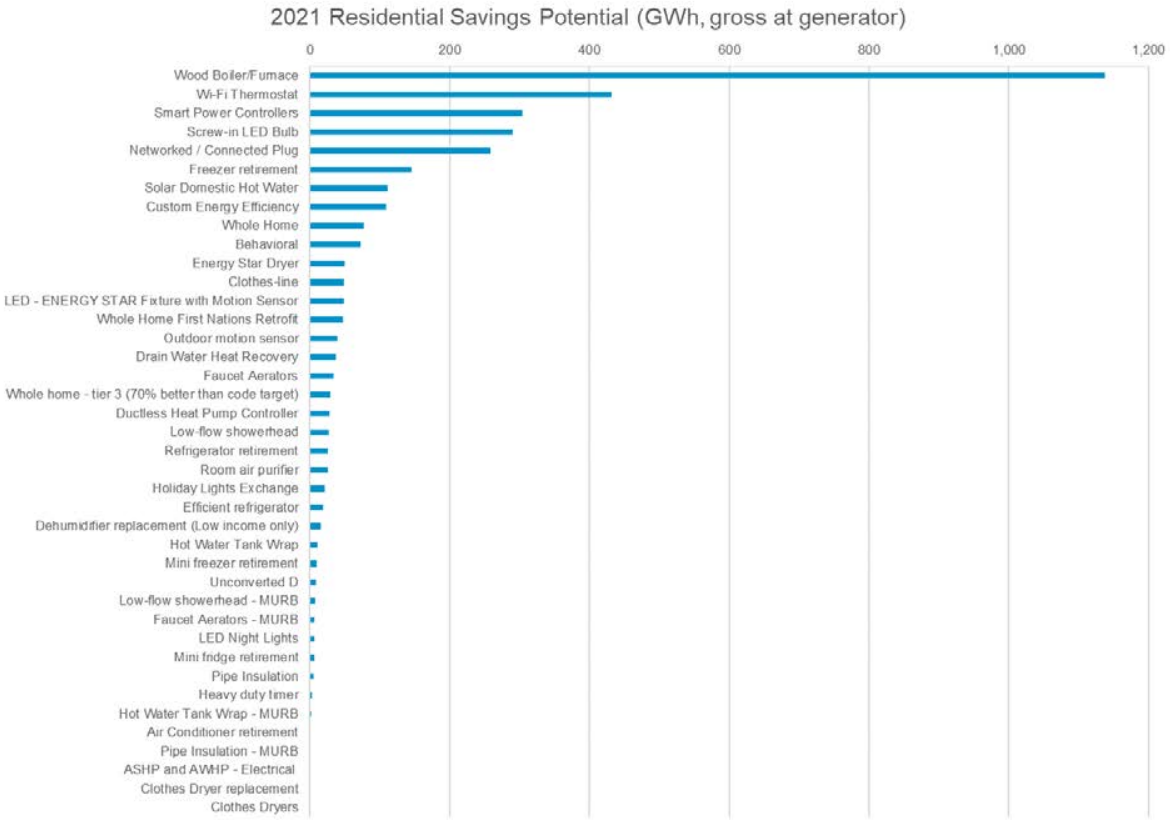
The measure-level economic energy savings potential in 2021, gross at generator, shown in Figure 5-9 and Figure 5-10 are after adjustments made to competition groups as detailed in section 3.2.4. The figures highlight the economic potential from the top 40 highest energy-savings measures for each sector. When compared with technical potential, only a few measures have dropped out – most notably Residential Networked/ Connected - Indoor LED Lamps and Residential Ventless Heat Pump Dryers do not screen at a TRC >= 1.0 threshold, and thus drop out of the economic potential top 40. As discussed earlier, most technical potential is economically achievable (i.e., passes a TRC test of 1.0). Therefore, the measure mix of the top 10 measures is largely the same as the technical potential results for both sectors.

Figure 5-9. EE Economic Potential, 2021 Top 40 Residential Measures for Electricity Savings (GWh, gross at generator)



Source: Navigant analysis

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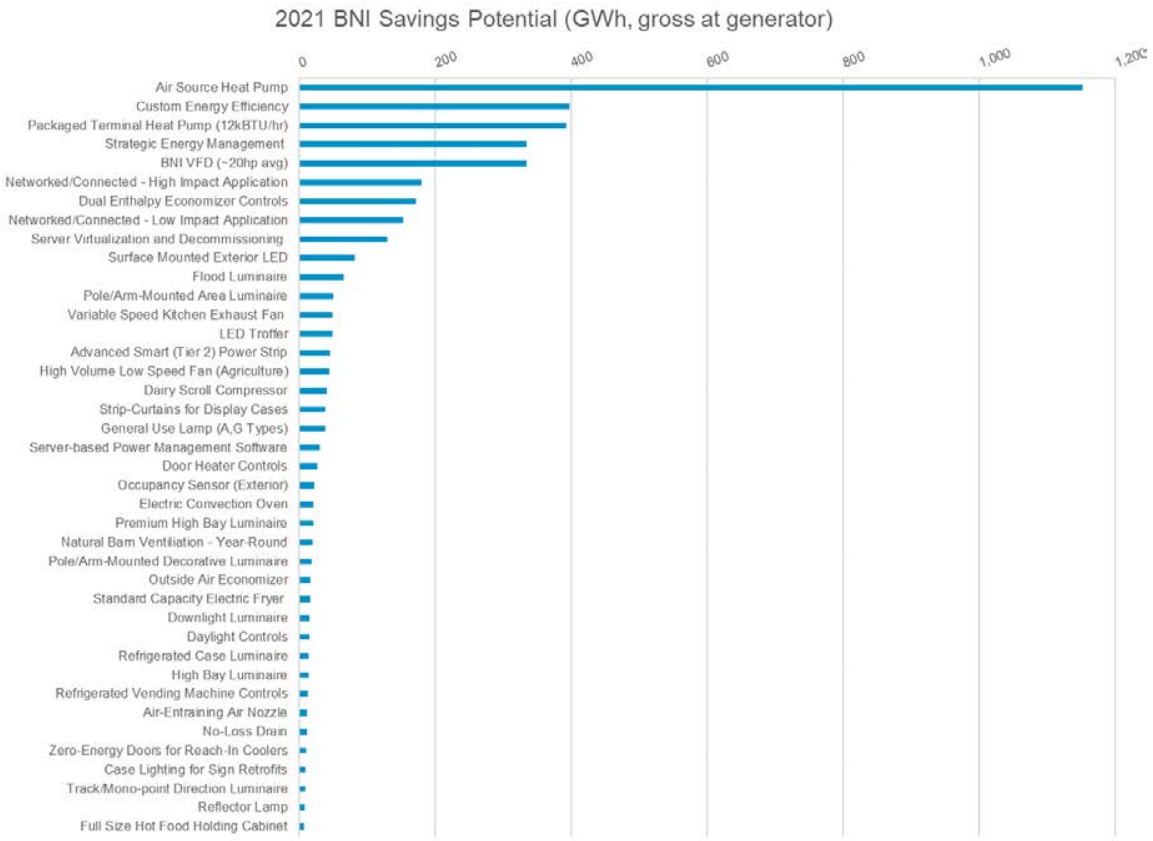
Figure 5-10. EE Economic Potential, 2021 Top 40 BNI Measures for Electricity Savings (GWh, gross at generator)



Source: Navigant analysis

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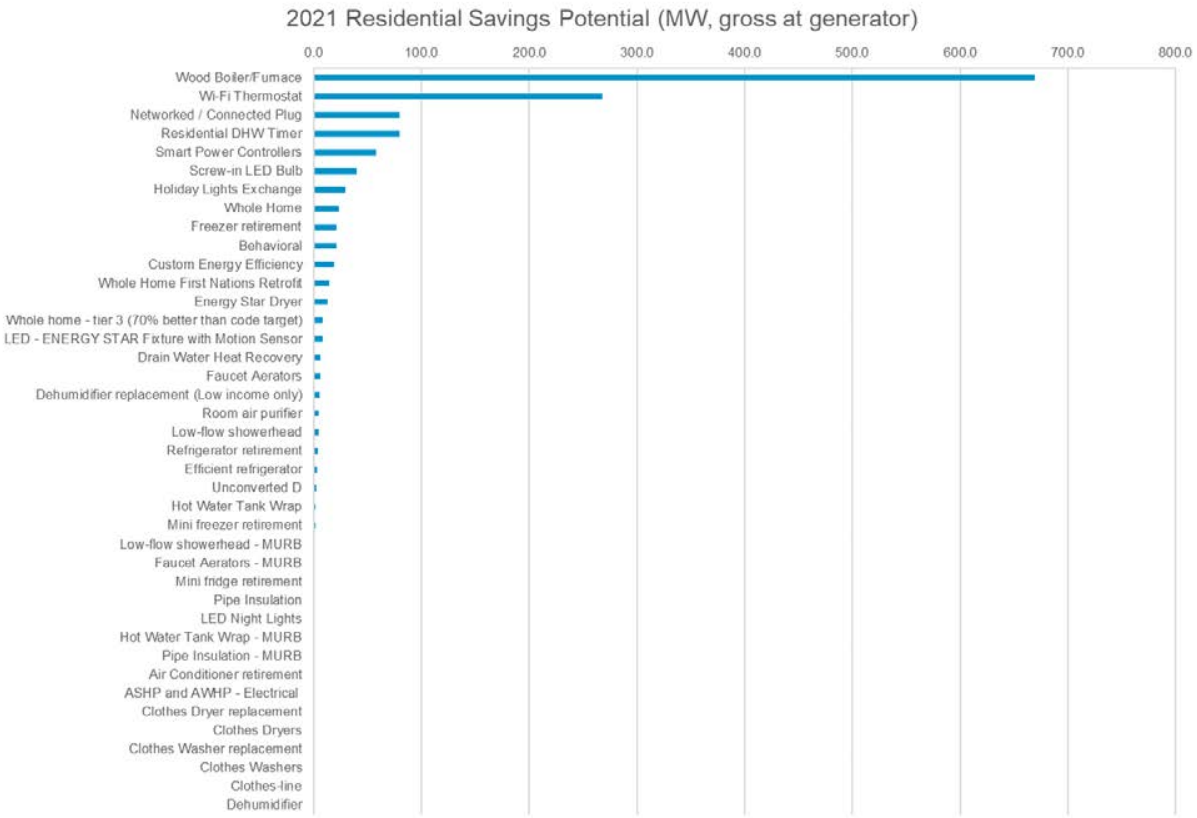
Figure 5-11 and Figure 5-12 provide the 40 highest winter peak demand-saving measures regarding economic potential for residential and BNI, gross at generator, in 2021. Compared with the technical potential results, only a few large measures drop out of the highest 20 measures: Residential Tier 3 Whole Home, Networked/ Connected - Indoor LED Lamp, and Heat Pump Water Heaters. As discussed earlier, most technical potential is economically achievable, passes a TRC test of 1.0. Therefore, the measure mix of top 10 to 20 measures is largely the same as the technical potential results for both sectors.

Figure 5-11. EE Economic Potential, 2021 Top Residential 40 Measures for Winter Peak Demand Savings (MW, gross at generator)



Source: Navigant analysis

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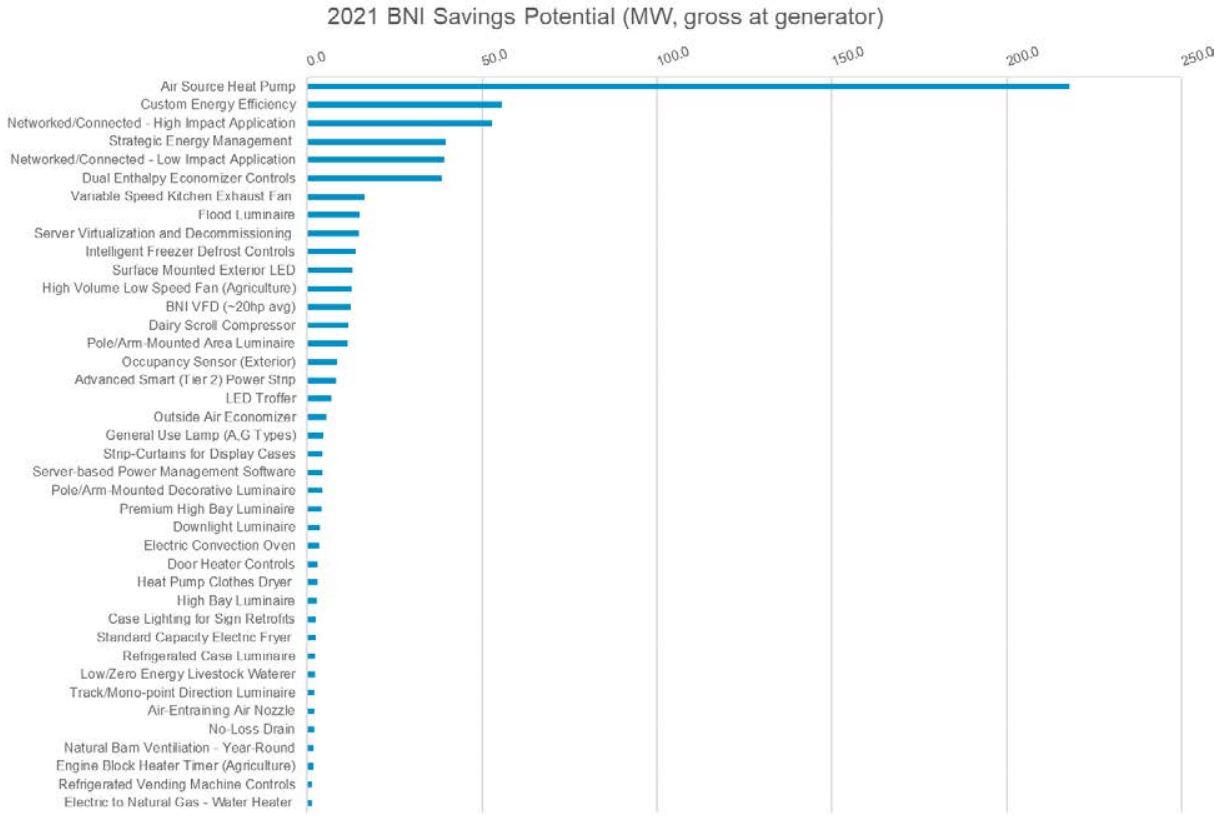
Figure 5-12. EE Economic Potential, 2021 Top BNI 40 Measures for Winter Peak Demand Savings (MW, gross at generator)



Source: Navigant analysis

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6. ENERGY EFFICIENCY MARKET POTENTIAL APPROACHES

Market potential further considers the likely rate of demand-side management (DSM) resource acquisition, given factors like the rate of equipment turnover (a function of a measure's lifetime), simulated incentive levels, consumer willingness to adopt efficient technologies, word of mouth effects that increase awareness in customers, and the likely rate at which marketing activities can facilitate technology adoption. The adoption of DSM measures can be broken down into calculation of the "equilibrium" market share and calculation of the dynamic approach to equilibrium market share, as discussed in more detail below.

Market potential differs from program potential in that market potential does not specifically take into account the various delivery mechanisms that can be used by program managers to tailor their approach depending on the specific measure or market. Rather, market potential represents a high-level assessment of savings that could be achieved over time, factoring in broader assumptions about customer acceptance and adoption rates that are not dependent on a particular program design. Additional effort is typically undertaken by program designers, using the directional guidance from a market potential study, to develop detailed plans for delivering energy efficiency programs. Market potential in this report relies on a Total Resource Cost (TRC) measure screen for cost effectiveness, with the threshold set at TRC of 0.7, intended to reflect Nova Scotia regulatory practice of screening at the program level.

Figure 6-1 summarizes the key methodology considerations and decision points informing the analysis in this report, with more detail provided in the report sections noted in the right-hand column of the figure. Navigant decided upon this methodology through discussions with EfficiencyOne and the DSM Advisory Group about which approach best serves the objective of the study to understand market savings potential. Since this study's scope for market potential estimates are not intended to be program-specific and are most reasonable when results are considered in aggregate, the methodology presented here focuses primarily on portfolio-level or sector-level approaches.

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Figure 6-1. EE Market Potential Methodology Overview

Methodology Parameters	Approach
Benefit-cost test screen	Use the TRC as the primary screen for economic and market potential.
Diffusion parameters	Adjust diffusion parameters within ranges recommended by industry standard data sources to produce savings that are reasonably aligned with EfficiencyOne's DSM sector-level historical achievements.
Budget constraints	Do not apply budget constraints.
Incentive strategy	Set incentive levels to yield a desired customer payback time (years) by end use and sector.
Treatment of administrative costs	Include measure level variable administrative costs that scale per kWh saved, and fixed admin at the portfolio level, that does not scale with kWh saved.
Net-to-Gross (NTG)	Market potential estimates are developed using net savings based on historical program NTG values.
Re-participation	Assume 85% of measures re-participate as an efficient measure at the end of their measure life.
Codes and standards	Use the same assumptions about codes and standards as in technical and economic potential.

6.1 Calculation of "Equilibrium" Market Share

The equilibrium market share can be thought of as the percentage of individuals choosing to purchase a technology provided those individuals are fully aware of the technology and its relative merits (e.g., the energy- and cost-saving features of the technology). For DSM measures, a key differentiating factor between the base technology and the efficient technology is the energy and cost savings associated with the efficient technology. Of course, that additional efficiency often comes at a premium in initial cost. This study calculates an equilibrium market share as a function of the payback time of the efficient technology relative to the baseline technology. In effect, measures with more favourable customer payback times after incentives will have higher equilibrium market share, which reflects consumers' economically rational decision making. While such approaches certainly have limitations, they are nonetheless directionally reasonable and simple enough to permit estimation of market share for the hundreds of technologies appearing in most potential studies.

To inform this study, the team used equilibrium "payback acceptance" curves that Navigant developed using primary research from the 2019 Nova Scotia Baseline Study (see Appendix B). To develop these curves, Navigant relied on surveys of 1000 residential and 200 BNI customers. These surveys presented decision makers with numerous "choices" between technologies with low up-front costs, but high annual energy costs, and measures with higher up-front costs but lower annual energy costs. Navigant fitted generalized logit models to customer willingness to pay survey results by technology cost bin and sector to develop the set of curves, which Navigant used in this study.

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As the curves show, the proportion of customers who will accept different payback periods for an energy efficiency investment is different for residential and BNI customers.[10] The model uses this information to simulate how customers in each sector will accept measures with differing payback periods.

Since the payback time of a technology can change over time, as technology costs and/or energy costs change over time, the "equilibrium" market share can also change over time. The equilibrium market share is therefore recalculated for every year of the forecast to ensure the dynamics of technology adoption take this effect into consideration. As such, "equilibrium" market share is a bit of an oversimplification and a misnomer, as it can itself change over time and is therefore never truly in equilibrium, but it is used nonetheless to facilitate understanding of the approach.

6.2 Calculation of the Approach to Equilibrium Market Share

Two approaches are used for calculating the approach to equilibrium market share, one for technologies being modeled as retrofit (RET) measures, and one for technologies simulated as replace-on-burnout (ROB) or new construction (NEW) measures.[11] The *Modelling Plan for Nova Scotia Energy Efficiency and Demand Response Potential Studies* (see Appendix A) discusses the approach to equilibrium market share in more detail.

6.3 Behavioural Measures

Behaviour measures typically impose little to no direct costs to the participant[12] and their rate of adoption is highly dependent on the marketing and incentive efforts taken by program administrators. Given these unique characteristics of behaviour measures, the payback acceptance curves and technology diffusion models have limited applicability to these types of measures. As such, this study models the adoption of behaviour measures in terms of an equilibrium saturation level relative to economic potential, and a given amount of time to reach that equilibrium state. Equilibrium saturation levels were derived from Navigant's review of mature behavioral programs in North America.

6.4 Energy Efficiency Investment Strategy

EfficiencyOne elected to view market potential without imposing any explicit budget constraints on the simulated results. The implication of this decision is that market potential is only constrained by stock turnover and customer willingness to adopt efficient measures. Without future budget constraints, the program administrator spending falls out naturally from the input assumptions for per-unit-of-savings incentive and administrative costs and a given year's level of market savings, without tying spending to a given budget level. In this study, the per-unit-of-savings incentive and administrative spending levels are fixed at the same levels (in real dollars, compared with nominal dollars) over the study horizon. Therefore, changes in spending (in real dollars) only reflect a changing mix and magnitude of savings among measures. Importantly, Navigant broke out administrative spending into variable and fixed components according to guidance from EfficiencyOne. Fixed administrative spending was specified at the portfolio level, and thus was not allocated back down to measures or sectors for cost effectiveness or net benefits calculations, but was included in total portfolio spending, cost effectiveness, and net benefits calculations.

[10] These payback curves represent customer payback acceptance in aggregate across each sector. In practice, customer behaviour can vary across sub-sectors. However, there is minimal industry-wide data available on customer payback acceptance at the sub-sector level.

[11] Each of these approaches can be better understood by visiting Navigant's technology diffusion simulator, available at: http://forio.com/simulate/navigantsimulations/technology-diffusion-simulation.

[12] Participants may incur indirect costs through implementation of adjustments to typical operations in response to energy information feedback (e.g., through upgrading a water heater). However, estimating these indirect costs requires additional data on the actions taken by the participant beyond participating in the behavioural program and is beyond the scope of this analysis.

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6.5 Energy Efficiency Incentive Strategy

Per EfficiencyOne's guidance, and as discussed with the DSM Advisory Group, this study calculates measure-level incentives based on targeted payback basis. A targeted payback incentive represents the dollar amount provided for each measure that would reduce the customer's simple payback to a specified time (years). Since a single targeted payback is set for each sector and end use, the model bounds the actual incentive provided to each measure to be at least 10% of the incremental measure cost, and to not exceed more than 100% of the incremental measure cost.

6.6 Re-Participation

The model assumes that 85% of program participants re-adopt energy efficient measures after the end of the efficient measures' expected useful lifetimes. This implies that efficient measures generally do not revert to a minimum code or lower efficiency level. As such, the model's cost accounting incurs an incentive cost upon the initial conversion of a minimum code or lower efficiency measure to an efficient measure, but it does not incur incentive costs when replacing incumbent equipment that was already updated to efficient equipment during the study horizon. Thus, incremental savings are counted only for new program participants, and 85% of these savings are summed up year over year to represent cumulative potential. For the 15% of program participants that revert to the baseline after the effective useful life of the measure, this savings is removed from the cumulative potential to reflect the in-situ condition at each time-step.

Behaviour measures, such as home energy reports, are an exception to this approach. When a behaviour measure is re-adopted at the end of its expected useful lifetime, the incentives provided for those measures are added to total program administrator spending. The rationale is that similar savings opportunities provided by behaviour measures are only available with ongoing support and/or administration from the program administrator. Since ongoing program administrator support is required to achieve behaviour measure savings, the incentives provided to repeat adopters are incurred multiple times throughout the study horizon.

6.7 Energy Efficiency Model Calibration

Any model simulating *future* product adoption faces challenges with "calibration," as there is no future world against which one can compare simulated results to actual results. Engineering models, on the other hand, can often be calibrated to a higher degree of accuracy since simulated performance can be compared directly with performance of actual hardware. Unfortunately, DSM potential models do not have this luxury, and therefore must rely on other techniques to provide both the developer and the recipient of model results with a level of comfort that simulated results are reasonable. For this study, Navigant took a number of steps to ensure that forecast model results were reasonable, including:

- Identifying the subset of potential measures that were included in historic ENS program offerings in order to have a basis for comparison with historic program achievements.
- Ensuring similar trends and magnitudes between EfficiencyOne's historical sector and end use-level savings and simulated sector and end use-level savings from the measure subset in the model's base year. 2017 historical achievements were used in the calibration process as they represent the most recent available data.
- Detailed three-year (2016-2018) backcasting for a small subset of the most influential lighting measures in ENS programs – LED Troffers, Screw-in LEDs, and Linear Replacement Lamps.

Before making comparisons of model results to historic achievements, it was first necessary to identify the potential measures that were included in ENS historic program offerings. The simulated savings from this subset of potential measures became the basis for comparing modelled savings to historic savings during

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the calibration process. It is important to note that although the team calibrated to historical results for this subset of measures, the model's results for *total* market potential may significantly differ from EfficiencyOne's historically achieved program savings. This occurs because the study includes additional detailed three-year (2016-2018) backcasting for a small subset of the most influential lighting measures in ENS programs – LED Troffers, Screw-in LEDs, and Linear Replacement Lamps.

Before making comparisons of model results to historic achievements, it was first necessary to identify the potential measures that were included in ENS historic program offerings. The simulated savings from this subset of potential measures became the basis for comparing modelled savings to historic savings during the calibration process. It is important to note that although the team calibrated to historical results for this subset of measures, the model's results for *total* market potential may significantly differ from EfficiencyOne's historically achieved program savings. This occurs because the study includes additional measures that have historically not been included in programs, but may exclude certain historical measures as well. This discrepancy can cause calibrated base year potential to be lower or higher than historic program data.

To obtain close agreement with EfficiencyOne's historic savings across a wide variety of metrics, Navigant adjusted incentive levels, technology diffusion coefficients and payback acceptance curves. Calibration required an iterative process of modifying the aforementioned parameters until all goals of calibration were reasonably satisfied. For example, the marketing effectiveness parameters are the key lever for calibrating the magnitude of historic savings for each sector and end use combination, whereas the word-of-mouth parameter strongly influences how rapidly adoption and savings ramp up over time. Navigant varied these diffusion parameters within the commonly observed ranges until simulated savings were trending reasonably compared with historic savings at the sector level.

To summarize, the calibration process ensures that forecast potential is grounded against real-world data considering the many factors that determine likely adoption of DSM measures, including both economic and non-economic factors.

6.7.1 Detailed Backcasting

To further explore model validation, Navigant worked with EfficiencyOne to obtain three years of historic data on savings, units installed, and annual incentive levels for several high-impact measures: Screw-in LEDs for residential, and Linear Replacement Lamps and LED Troffers for BNI. In this exercise, Navigant used the DSMSim™ model to simulate adoption of these measures in the backcast period, feeding the model only information on available stocks, incentive levels, and estimated historical (2016) awareness. If the model accurately depicts the system that it attempts to simulate, results (Navigant Simulated Backcast) should be on the same order as actuals (EfficiencyOne's Historical Achievements).

It is worth noting that because DSMSim™ is a structural systems dynamics model, without regression or optimization routines to guarantee fitting, the results below represent the characterization of the system – structural limits on stock, the behavior of customers in response to price, and the role of awareness in technology adoption - rather than explicit best-fit parameter tuning. This result gives Navigant a high degree of confidence in the structure and function of the model and its applicability to energy efficiency technology adoption in Nova Scotia.

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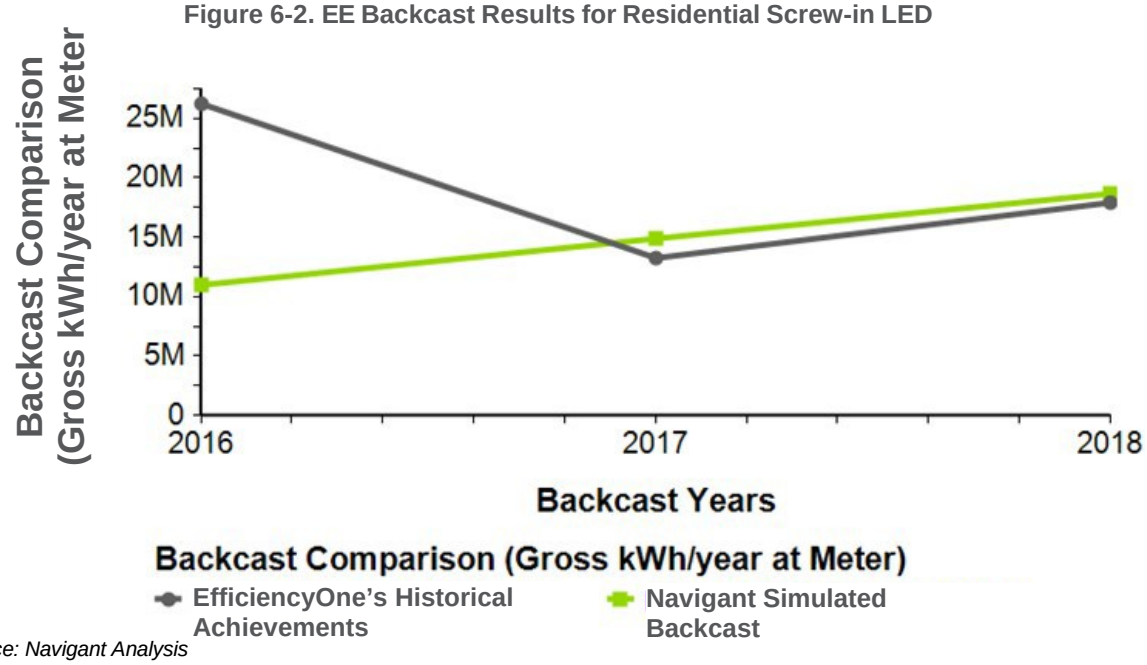
Figure 6-2 shows the fit of the backcast simulation to residential screw-in LEDs. The model was not able to explain the high savings achieved in 2016, which were higher than 2017 levels despite a lower incentive. This could be due to a one-time marketing push, or factors exogenous to the model, such as local economic trends, or contractor activity. However, both 2017 and 2018, as well as the slope of these years demonstrates a strong fit, perhaps more characteristic of "normal" market conditions.

Figure 6-2. EE Backcast Results for Residential Screw-in LED



Source: Navigant Analysis

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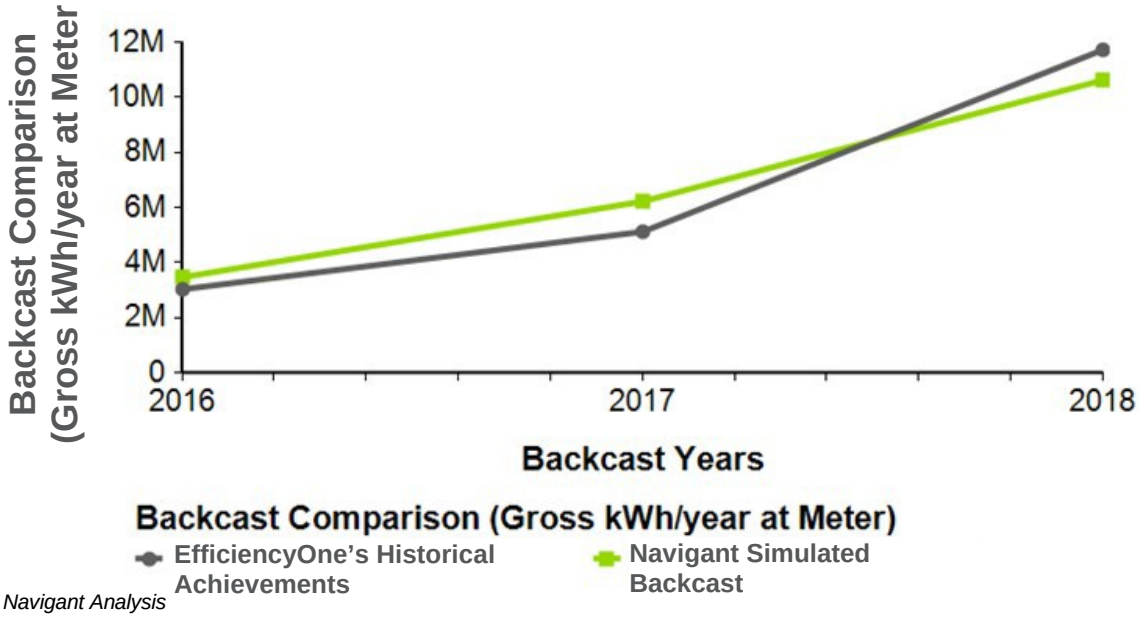
Figure 6-3 shows the backcasting results for LED Troffers in the BNI sector, demonstrating a close fit in both the individual annual adoptions, and the overall trend. It is worth noting that the slope between 2017 and 2018 is slightly higher in the historical achievements, perhaps suggesting that there are minor non-economic factors that might cause the adoption of LED Troffers to be slightly higher than one would expect based on economics alone. However, due to the small size of this difference, and the uncertain attribution of this observation, Navigant did not attempt to model these non-economic effects in the potential study results.

Figure 6-3. EE Backcast Results for BNI LED Troffer



Source: Navigant Analysis

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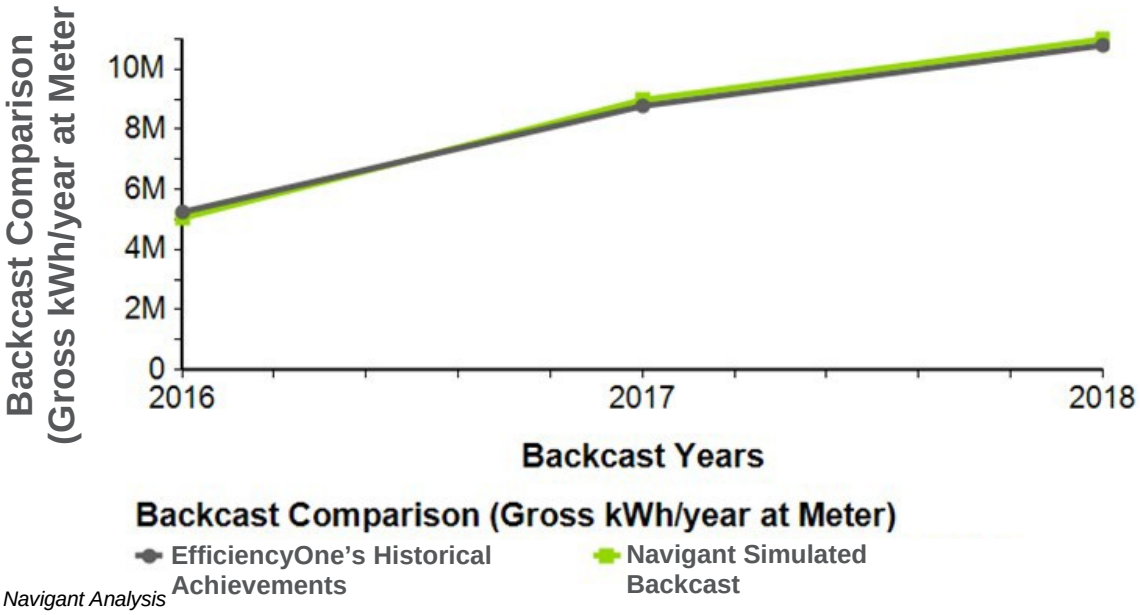
Figure 6-4 shows the fit for BNI Linear Replacement Lamps during the backcasting period. Both the trajectory and the individual year estimates for the historical savings are quite good, with no noteworthy deviations. While Bass diffusion models are often used to simulate emerging technologies, one of the known features of Bass diffusion models is their ability to fit more mature markets (past the inflection point) with a high degree of confidence. Both the high penetration of these measures in Nova Scotia, and the historic trend, is indicative that BNI Linear Replacement Lamps are past the inflection point. In the absence of other factors, Nova Scotia can expect slower growth in these measures in the future as market saturation increases.

Figure 6-4. EE Backcast Results for BNI Linear Replacement Lamps



Source: Navigant Analysis

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7. REFERENCE FORECAST APPROACH

The reference scenario (base) was developed through the calibration process detailed in Section 5. The targeted paybacks used as the incentive strategy were set during this calibration and act as the basis for adjustments when developing alternative scenarios. Three alternative scenarios were developed through adjustments to targeted payback times, marketing effects, and administrative spending relative to the reference scenario. Administrative spending was increased or decreased according to the scenario change to the marketing coefficient. The four alternative scenarios' configurations are detailed below.

7.1 Scenario Configuration

Navigant developed three alternative achievable scenarios relative to the reference (Base Scenario). These four scenarios, in addition to the PAC test-based Economic potential, form the five scenarios discussed with the DSM Advisory Group.

- Max Achievable Scenario
  - Targeted Payback – 0 years for all measures
  - Marketing Effect – 200% of reference scenario at the sector and end use level
- Mid Scenario
  - Targeted Payback – Half of reference scenario at the sector and end use level
  - Marketing Effect – 150% of reference scenario at the sector and end use level
- Low Scenario
  - Targeted Payback – Double of reference scenario at the sector and end use level
  - Marketing Effect – 50% of reference scenario at the sector and end use level

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8. ENERGY EFFICIENCY MARKET POTENTIAL RESULTS BY SCENARIO

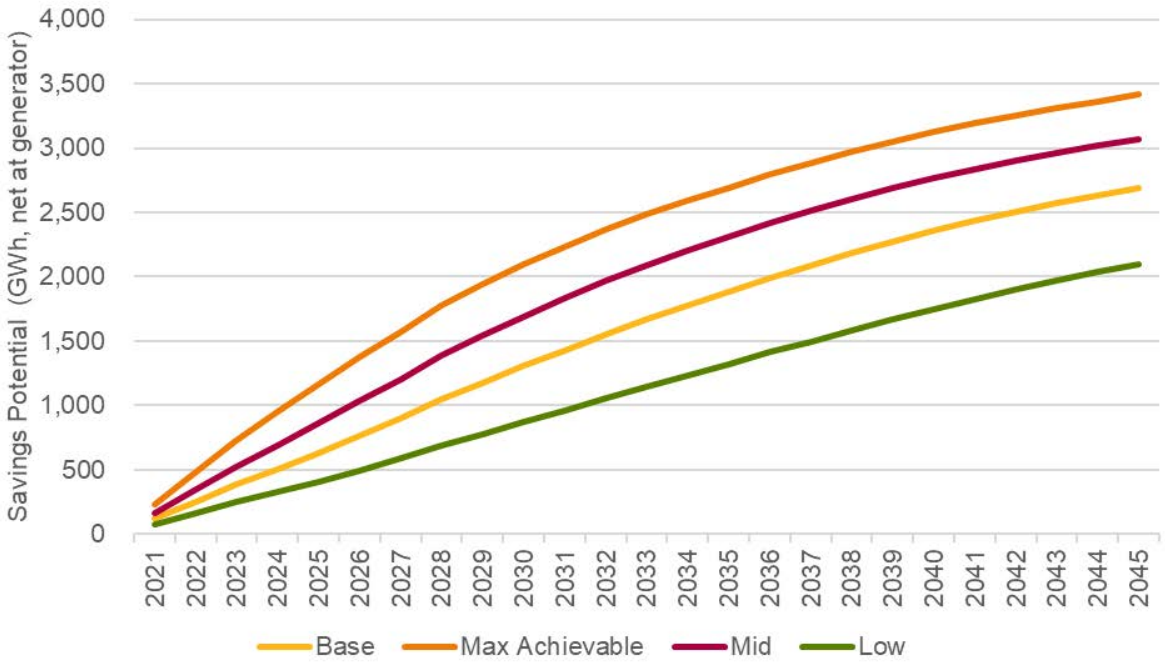
This section provides the market potential results calculated by the model at varying levels of aggregation, using the TRC benefit-cost test as a screen set to 0.7. At-the-meter, net savings results are shown by sector, end use category, and by highest-impact measures.

8.1 Comparison of Energy Efficiency Savings by Potential Type

Values shown below for market potential are termed "cumulative market" potential, in that these represent the accumulation of each year's annual incremental market potential (e.g., an annual incremental market potential of 0.8% per year for ten years would result in a cumulative market potential of 8.0% of forecast consumption if all efficient equipment had measure lives of at least ten years). It is important to note that as measures installed in earlier years reach the end of their effective useful lives (EUL), these are removed from the cumulative potential. It is then assumed that 85% reparticipate (get added back into potential with a reset EUL), while the remaining 15% are included in available stock for later adoption.

As shown in Figure 8-1, the cumulative market potential, net at generator, for each scenario, which accounts for the rate of DSM acquisition, increases steadily throughout the study period, reaching 2,100 GWh in 2045 for the low scenario and around 3,415 GWh in 2045 for the maximum achievable scenario. The base case reaches 2,690 GWh in 2045, which equates to 35% of the economic potential. The mid case reaches 3,070 GWh in 2045.

Figure 8-1. EE Market Potential, Cumulative Electricity Savings, by Scenario (GWh, net at generator)



Source: Navigant analysis

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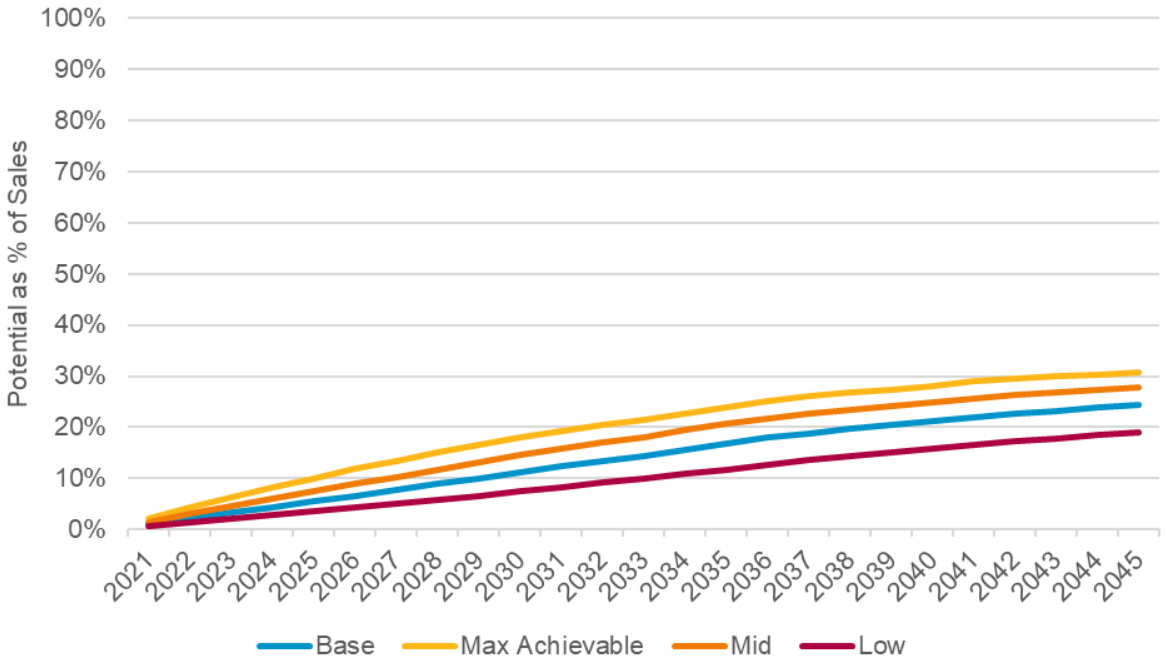
Under the cost effectiveness screen requiring each measure to meet or exceed a TRC ratio of 0.7, base scenario market potential increases from 1.1% in 2021 to 22.3% in 2045 of forecast electricity consumption, as shown in Figure 8-2. In 2045, the low, mid and maximum achievable scenarios cumulate to 19.0%, 27.7% and 30.8%, respectively.

Figure 8-2. EE Market Potential, Cumulative Electricity Savings, by Scenario, as a Percent of Sales (%)



Source: Navigant analysis

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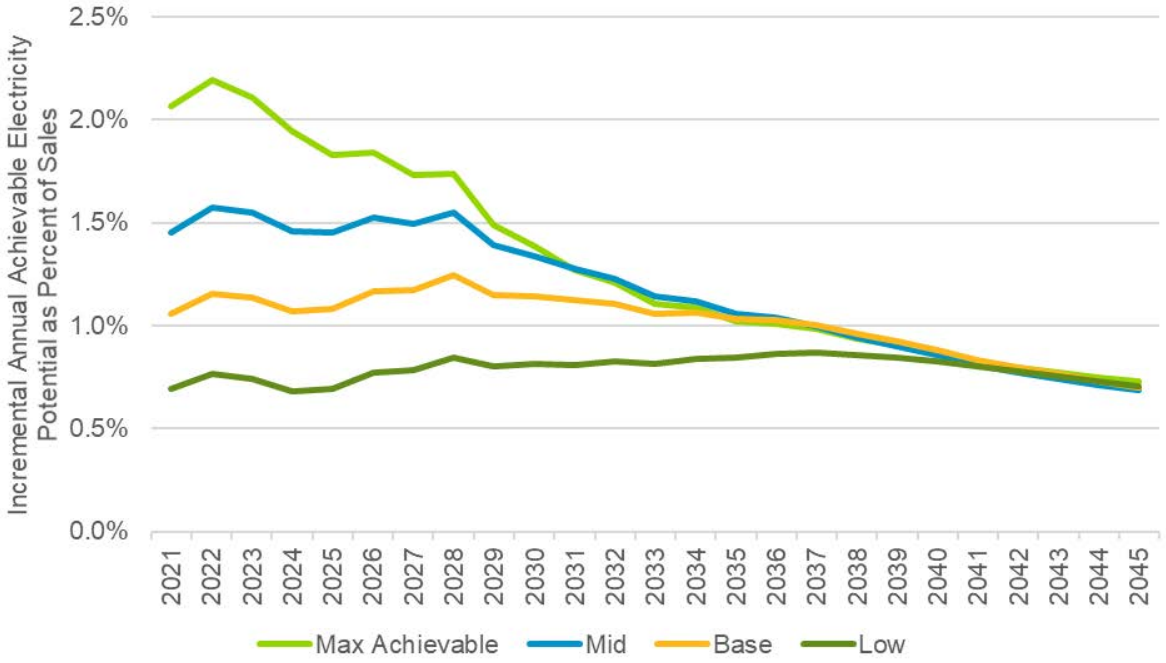
Figure 8-3 show incremental annual electricity savings as a percent of sales for each scenario. The base scenario achieves 1.1% of sales in 2021 and decreasing to 0.7% by 2045 with a maximum of 1.2% in 2029. Each scenario exhibits similar trends with initially high and growing incremental annual potential followed by reductions in potential through time. This downward slope is caused by efficient technology saturation in certain end uses—such as BNI lighting—and code and standard impacts.

The convergence of the scenarios' incremental percent of sales throughout the second half of the study period is due to the nature of the residential and BNI sector percent of sales. The residential sector shows significant saturation in the first 10 years of the study period for the maximum achievable and mid scenarios. Therefore, incremental annual potential crosses the lower (base and low cases) investment scenarios as those continue to gain market share at a slower rate. However, the commercial sector does not show this saturation therefore, the incremental annual potential stays constant in relation to each other through the study period. These trends cancel each other out when viewing the total portfolio incremental achievable. If the trends continue, the scenarios would likely diverge with maximum achievable being lower annually than the other scenarios after the 25-year study period.

Figure 8-3. EE Market Potential, Incremental Electricity Savings by Scenario, as a Percent of Sales (%)



Source: Navigant analysis

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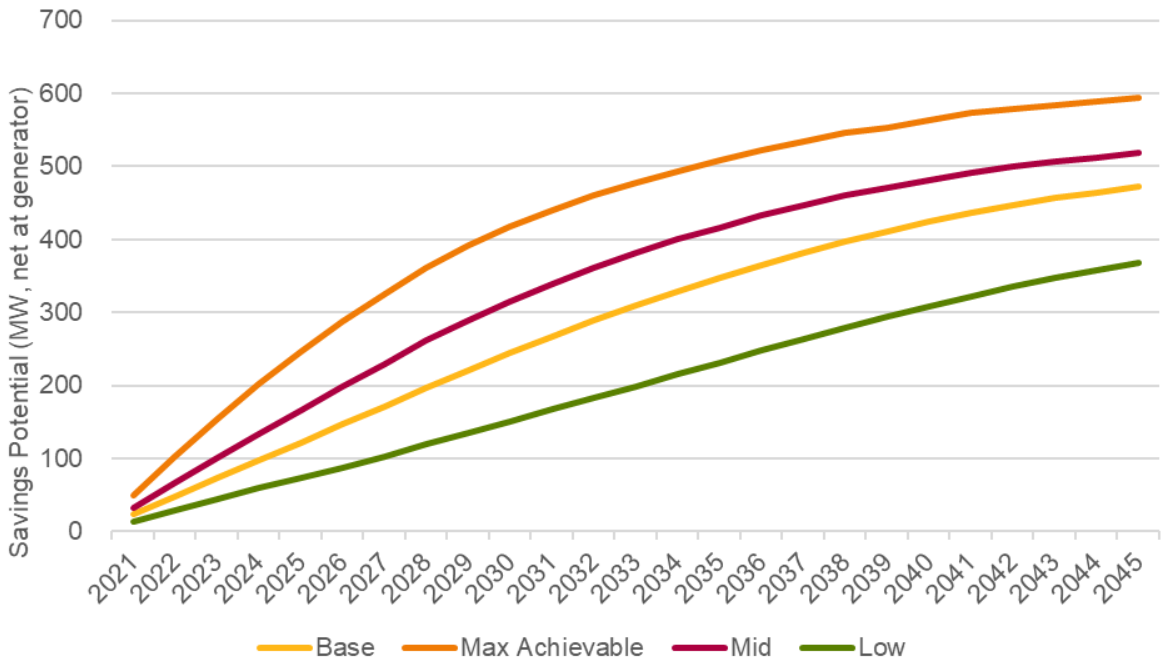
Figure 8-4 shows the cumulative winter peak demand potential, net at generator, by scenario. These demand savings are auxiliary impacts from the installation of energy efficiency measures, whereas the demand savings from demand-focused measures are estimated in a separate analysis on demand response potential. The market potential increases steadily throughout the study period for each scenario, reaching 470 MW in 2045 for the base scenario. By 2045, the base scenario market potential reaches 22% of the economic potential.

Figure 8-4. EE Market Potential, Cumulative Winter Peak Demand Savings (MW, net at generator)



Source: Navigant analysis

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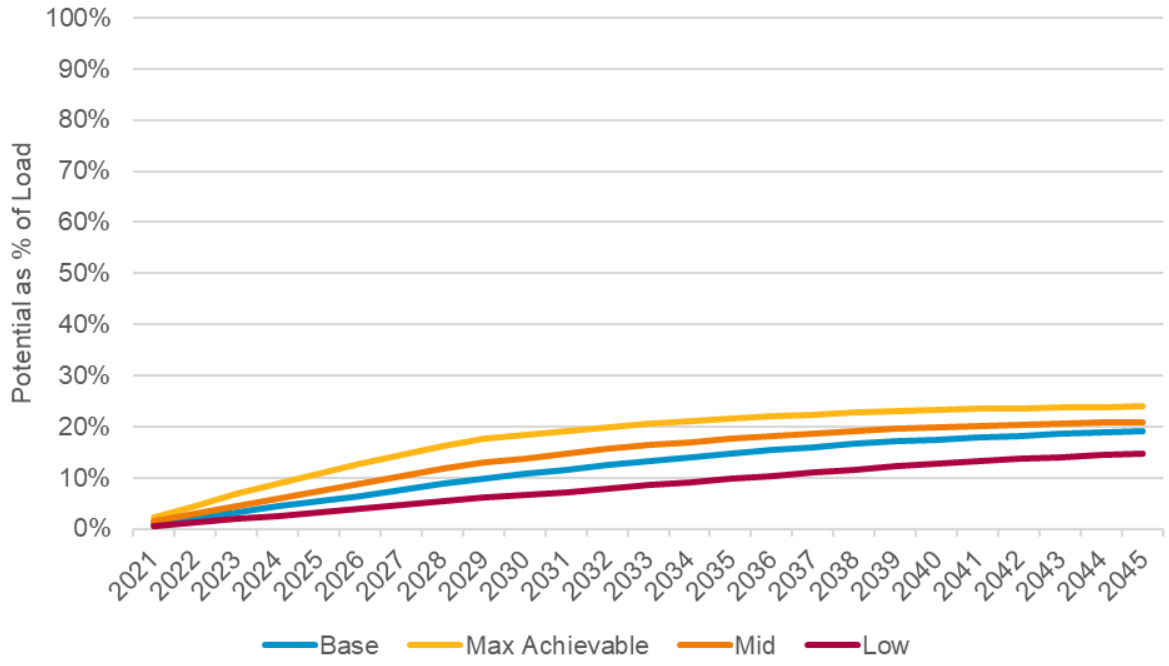
Figure 8-5 shows the cumulative winter peak demand potential by scenario as a percent of load. The base scenario cumulates to 1.0% in 2021 and 19.0% in 2045.

Figure 8-5. EE Market Potential, Cumulative Winter Peak Demand Savings, by Scenario, as a Percent of Load (%)



Source: Navigant analysis

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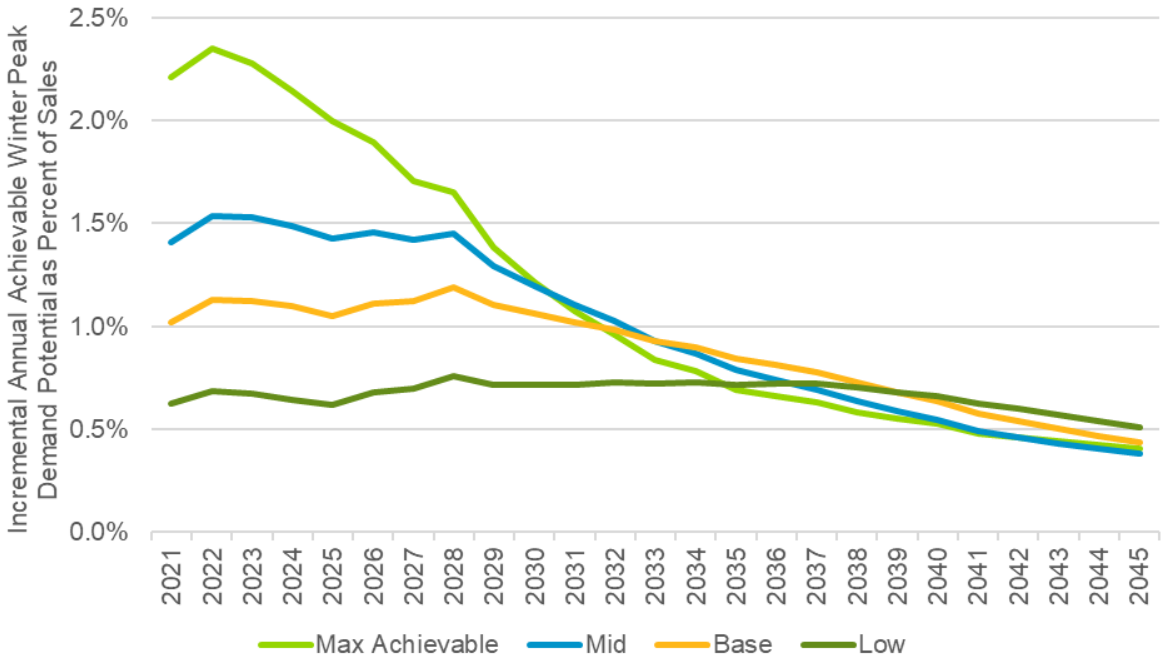
Figure 8-6 shows incremental winter peak demand savings by scenario as a percent of sales. The base scenario achieves 1.0% of consumption in 2021 and drops to 0.4% by 2045 with a peak of 1.2% in 2028. A similar trend is exhibited to incremental electricity potential with a downward trend through time. This is due to efficient technology saturation and costs and standards increases through time.

Figure 8-6. EE Market Potential, Incremental Winter Peak Demand Savings by Scenario, as a Percent of Load (%)



Source: Navigant analysis

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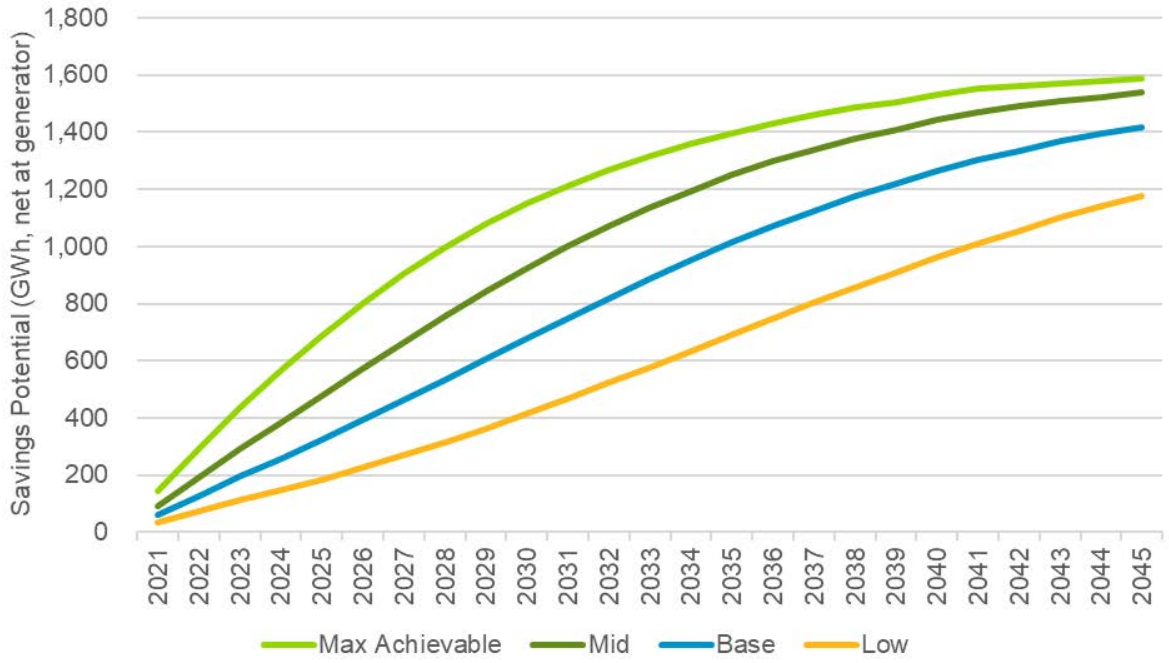
8.2 Energy Efficiency Potential Results by Sector

Figure 8-7 shows the magnitude of cumulative electricity market savings potential, net at generator, by scenario for the residential sector. The base case reaches 1,415 GWh in 2045. This represents 38% of economic potential in that year. In 2045, the low, mid and maximum achievable scenarios reach 1,175, 1,540 and 1,590 GWh, respectively.

Figure 8-7. EE Residential Market Potential, Cumulative Electricity Savings (GWh, net at generator)



Source: Navigant analysis

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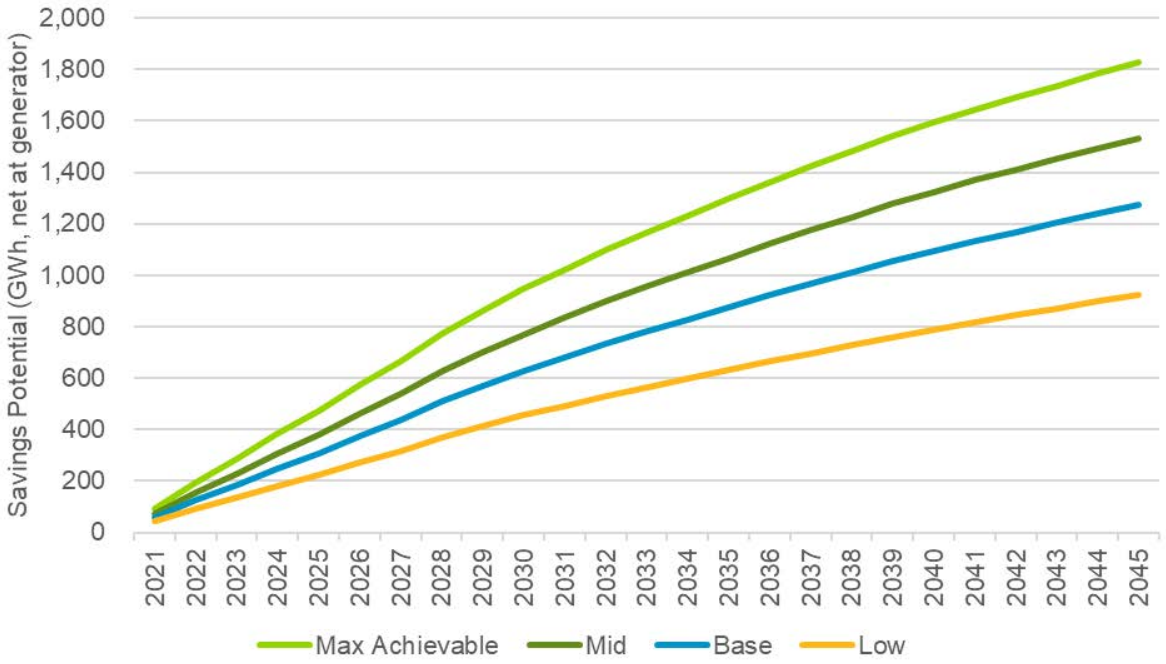
Figure 8-8 shows the magnitude of cumulative electricity market savings potential, net at generator, by scenario for the BNI sector. The base case reaches 1,275 GWh in 2045. This represents 32% of economic potential in that year. In 2045, the low, mid and maximum achievable scenarios reach 925, 1,530 and 1,825 GWh, respectively.

Figure 8-8. EE BNI Market Potential, Cumulative Electricity Savings (GWh, net at generator)



Source: Navigant analysis

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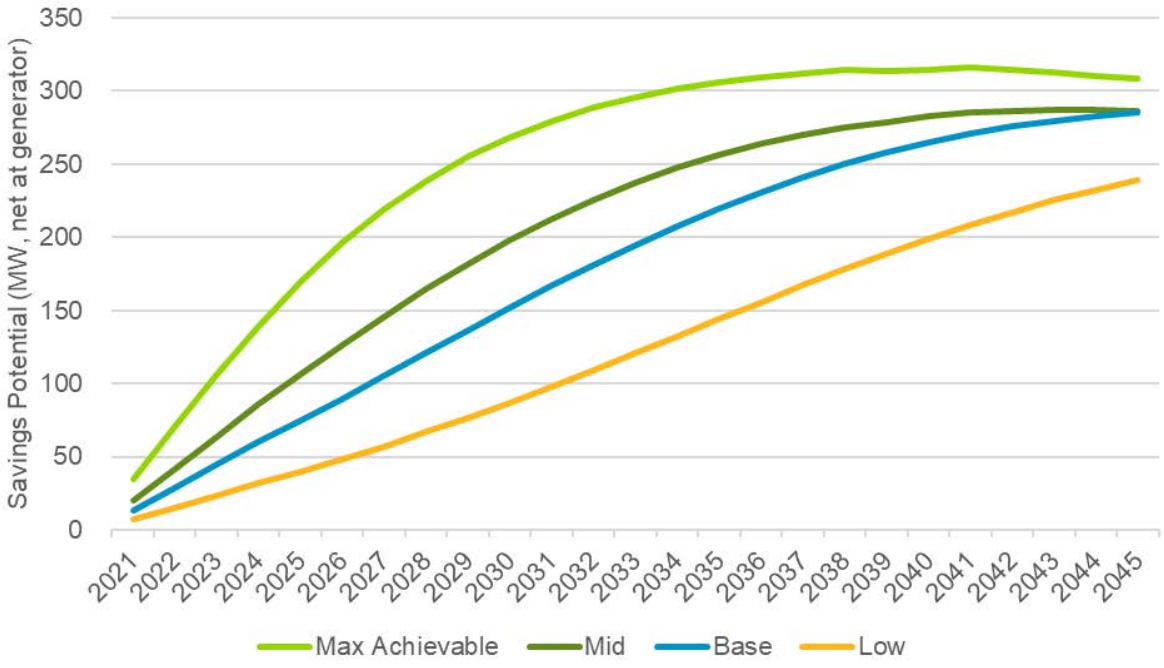
Figure 8-9 shows the magnitude of cumulative winter peak demand market savings potential, net at generator, by scenario for the residential sector. The base case reaches 285 MW in 2045. This represents 19% of economic potential in that year. In 2045, the low, mid and maximum achievable scenarios reach 240, 285 and 308 MW, respectively.

Figure 8-9. EE Residential Market Potential, Cumulative Winter Peak Demand Savings (MW, net at generator)



Source: Navigant analysis

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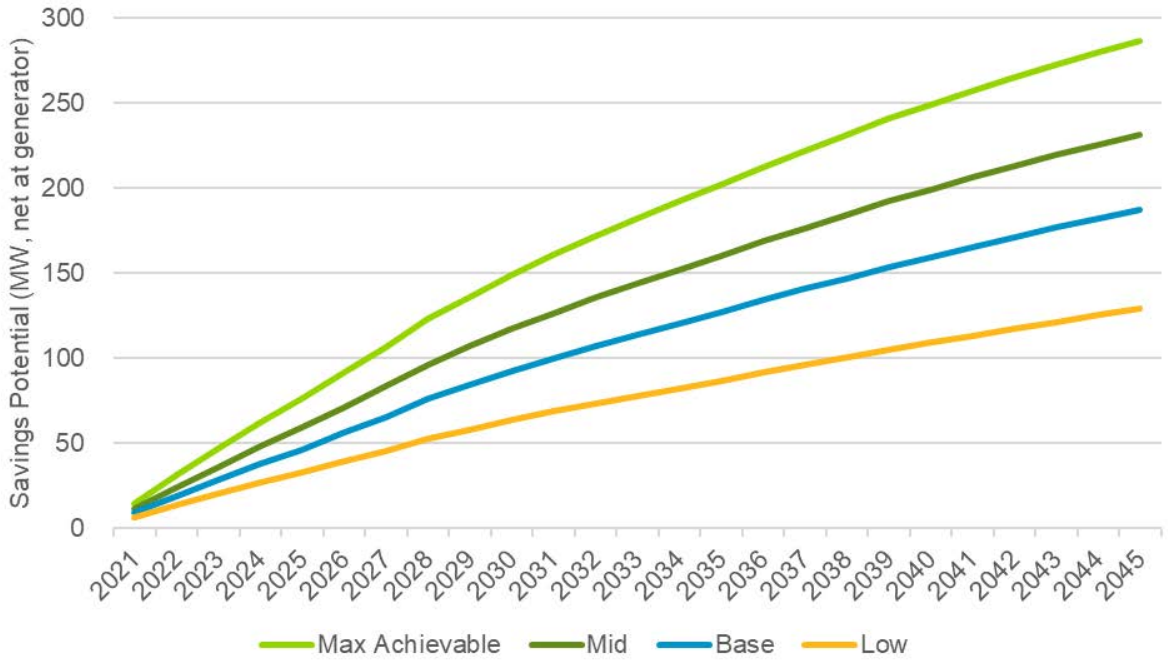
Figure 8-10 shows the magnitude of cumulative winter peak demand market savings potential, net at generator, by scenario for the BNI sector. The base case reaches 185 MW in 2045. This represents 30% of economic potential in that year. In 2045, The low, mid and maximum achievable scenarios reach 130, 230 and 285 MW respectively.

Figure 8-10. EE BNI Market Potential, Cumulative Winter Peak Demand Savings (MW, net at generator)



Source: Navigant analysis

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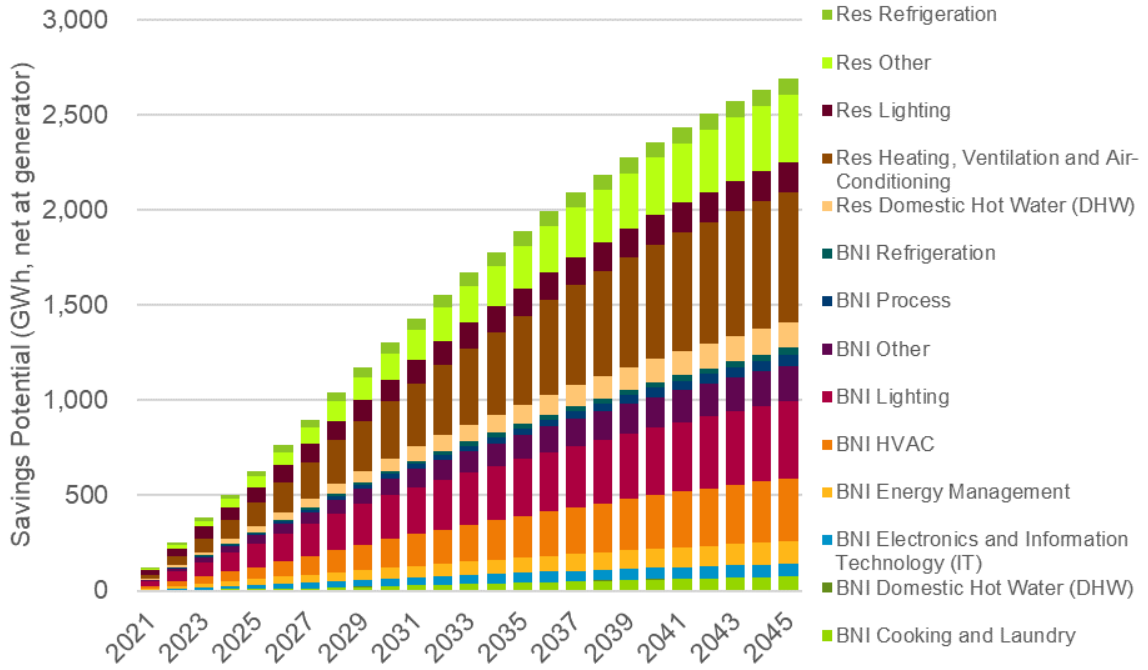
8.3 Energy Efficiency Potential Results by End Use

Figure 8-11 shows the electricity market savings potential, net at generator, across end uses. The dominant end uses are Res HVAC and BNI lighting. A wide variety of technologies add to the BNI lighting savings led by LED troffers and linear replacement lamps. Res HVAC is led by whole home retrofits.

Figure 8-11. EE Base Case Market Potential, Cumulative Electricity Savings by End Use (GWh, net at generator)



Source: Navigant analysis

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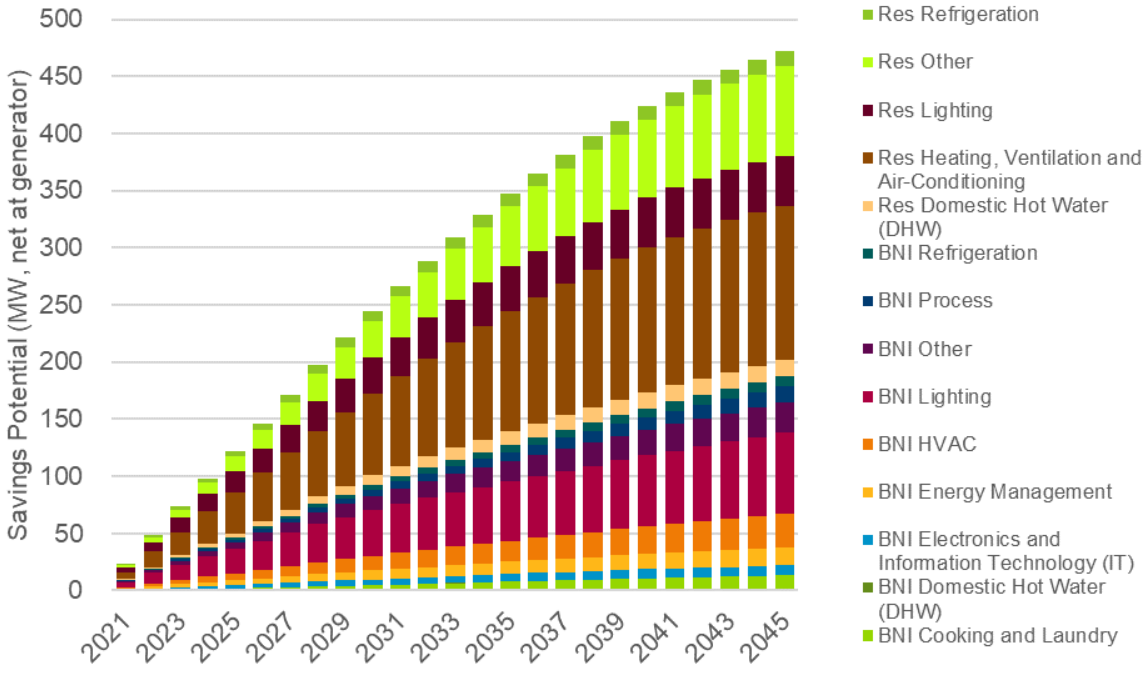
Figure 8-12 shows the winter peak demand market savings potential, net at generator, across end uses. The dominant end uses are BNI lighting and Res HVAC. A wide variety of technologies add to the BNI lighting savings led by LED troffers and linear replacement lamps. Res HVAC is led by whole home retrofits.

Figure 8-12. EE Base Case Market Potential, Cumulative Winter Peak Demand Savings by End Use (MW, net at generator)



Source: Navigant analysis

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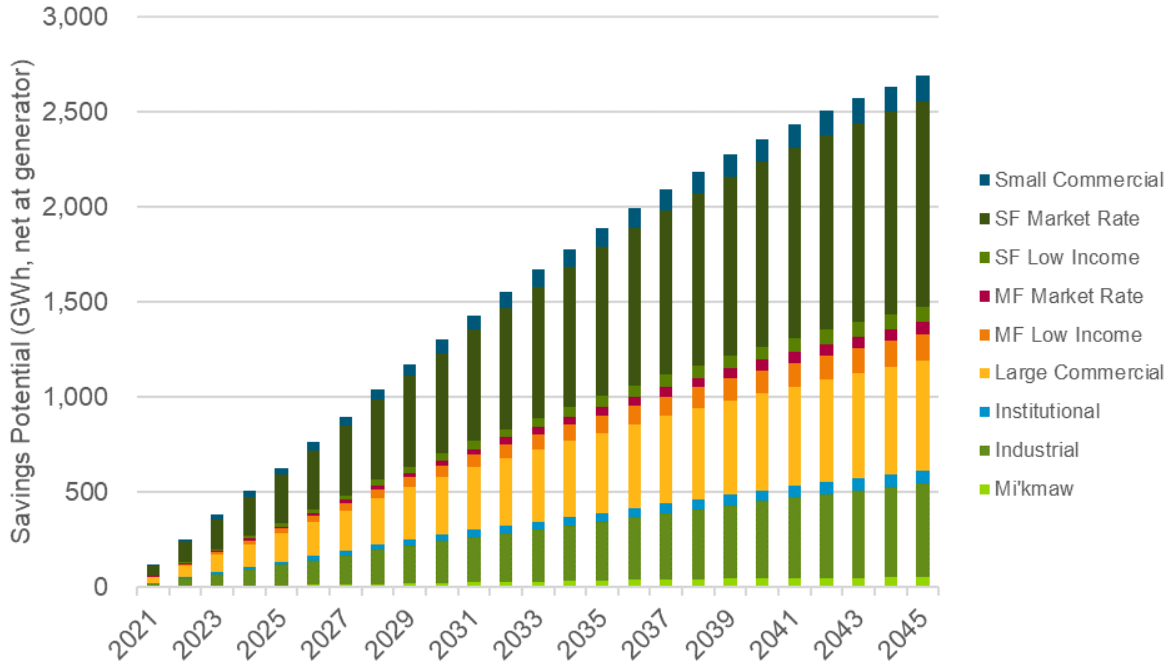
8.4 Energy Efficiency Potential Results by Customer Segment

Figure 8-13 shows the electricity market savings potential, net at generator, across customer segments. The dominant segment is residential single-family market rate, followed by industrial and large commercial. Other segments show less savings due to relatively small stocks. The segment cumulation increases proportionally through the study period, with no significant changes in which segment is dominant through time. Additional details and tabular data for customer segment level results are provided in Appendix F.

Figure 8-13. EE Base Case Market Potential, Cumulative Electricity Savings by Customer Segment (GWh, net at generator)



Source: Navigant analysis

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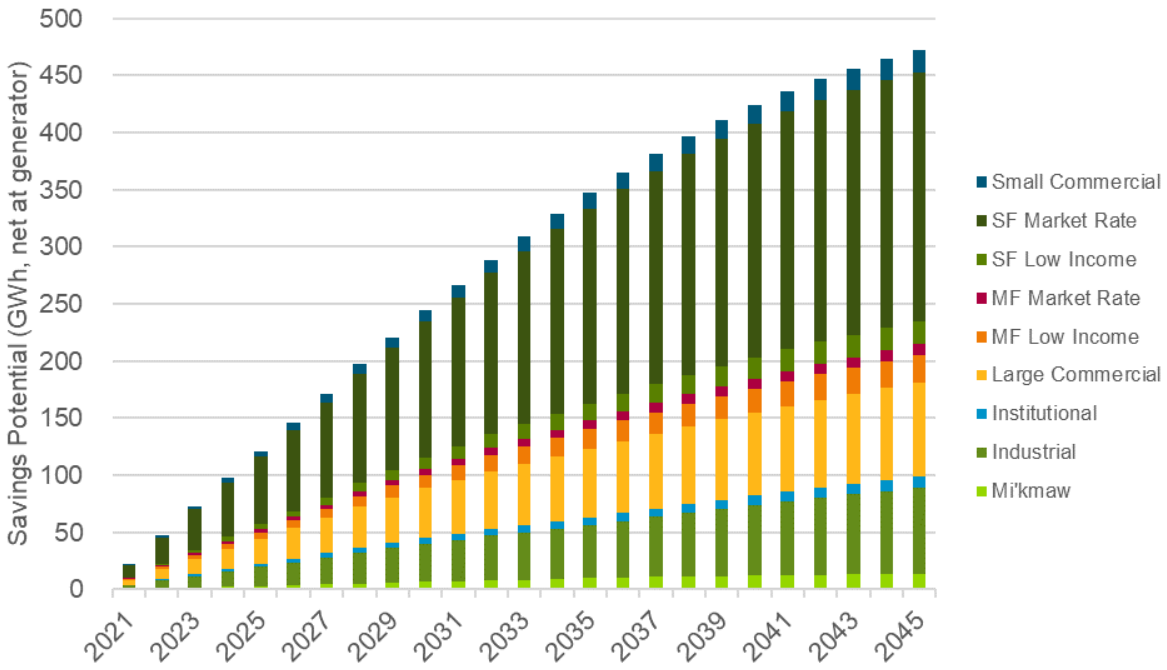
Figure 8-14 shows the winter peak demand market savings potential, net at generator, across customer segments. Similar to electricity, the dominant segments are residential single-family market rate, industrial, and large commercial. The segment cumulation increases proportionally through the study period, with no significant changes in which segment is dominant through time. Additional details and tabular data for customer segment level results are provided in Appendix F.

Figure 8-14. EE Base Case Market Potential, Cumulative Winter Peak Demand Savings by Customer Segment (MW, net at generator)



Source: Navigant analysis

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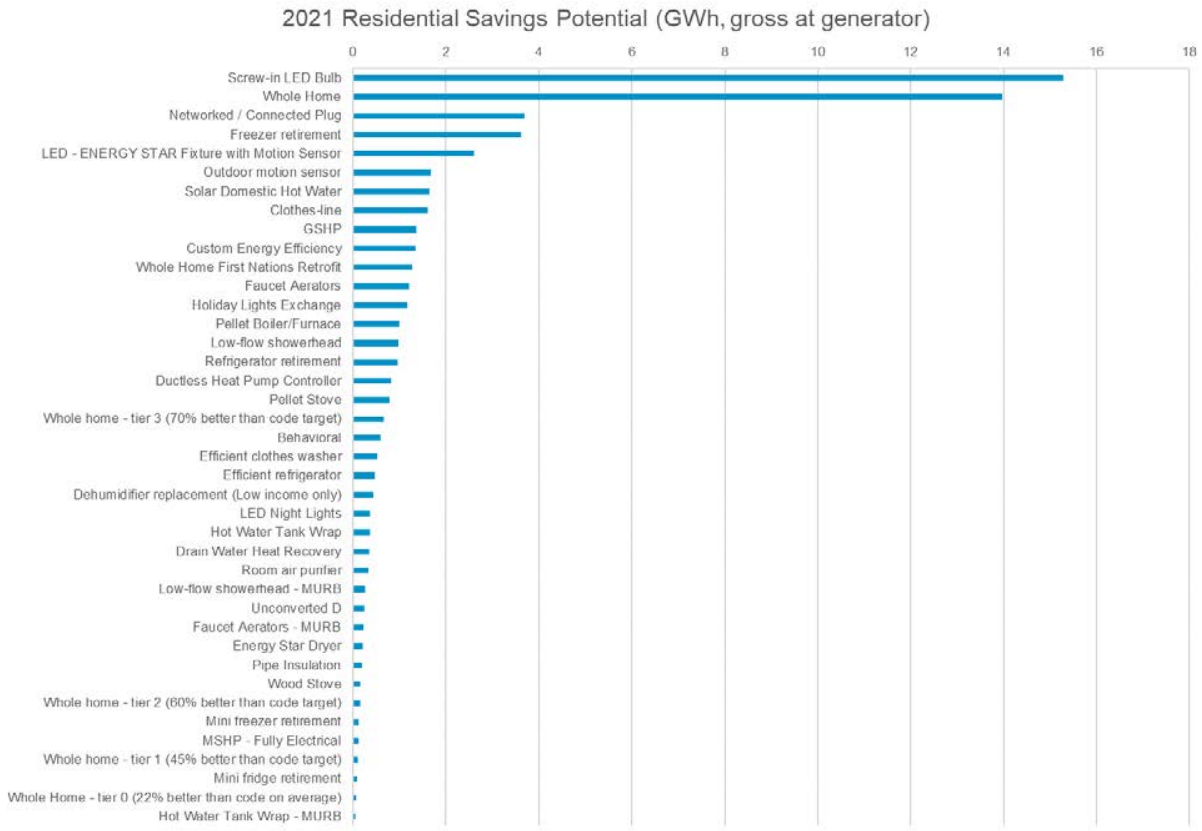
8.5 Energy Efficiency Potential Results by Measure

Figure 8-15 and Figure 8-16 show that many of the top ten electricity saving measures, net at generator, in 2021 come from the Res HVAC, Res Lighting, and BNI Lighting end uses. Residential screw-in LED Bulb ranks as the highest electricity-saving market potential measure for the residential sector while custom energy efficiency leads BNI. Savings drops sharply as the top 10 measures provide more than 50% of top 40 measure achievable savings in the residential sector. The BNI sector shows a more gradual decline in savings potential by measure, however, the top 20 measures still dominate total savings.

Figure 8-15. EE Base Case Market Potential, 2021 Top 40 Residential Measures for Electricity Savings (GWh, net at generator)



Source: Navigant analysis

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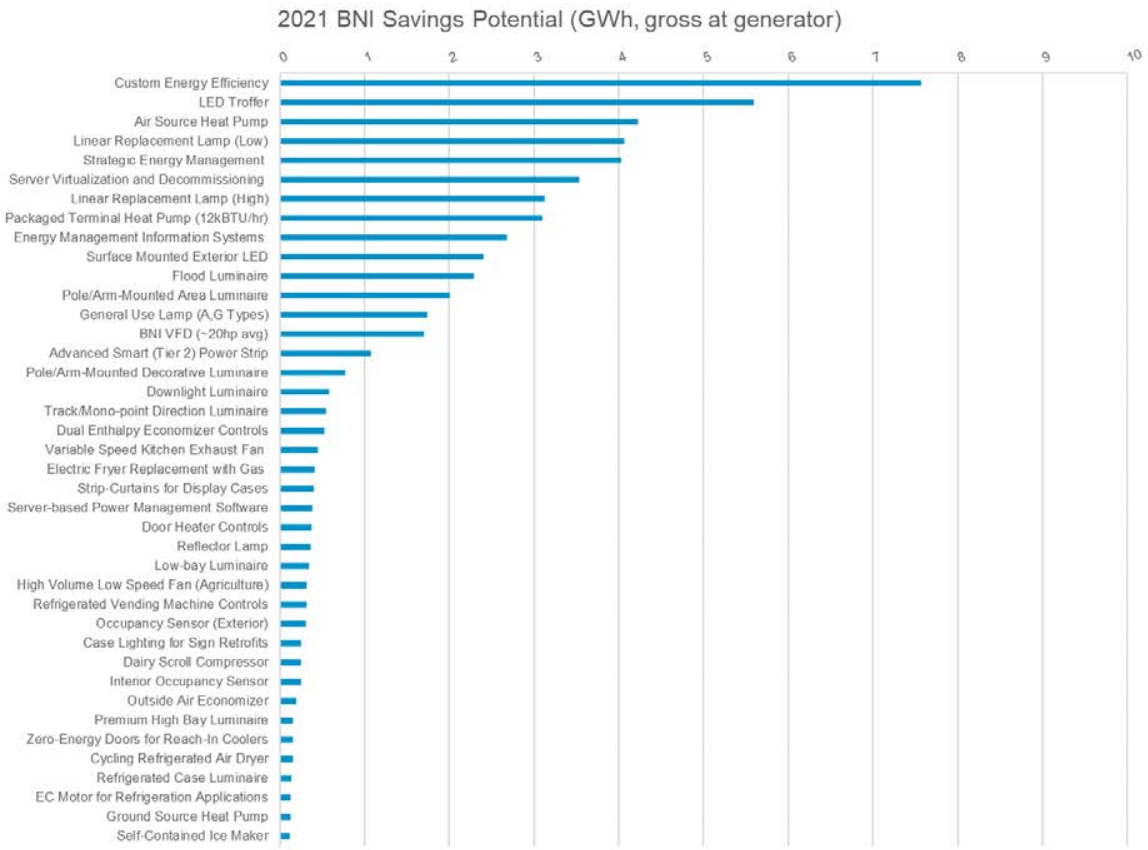
Figure 8-16. EE Market Potential, 2021 Top 40 BNI Measures for Electricity Savings (GWh, net at generator)



Source: Navigant analysis

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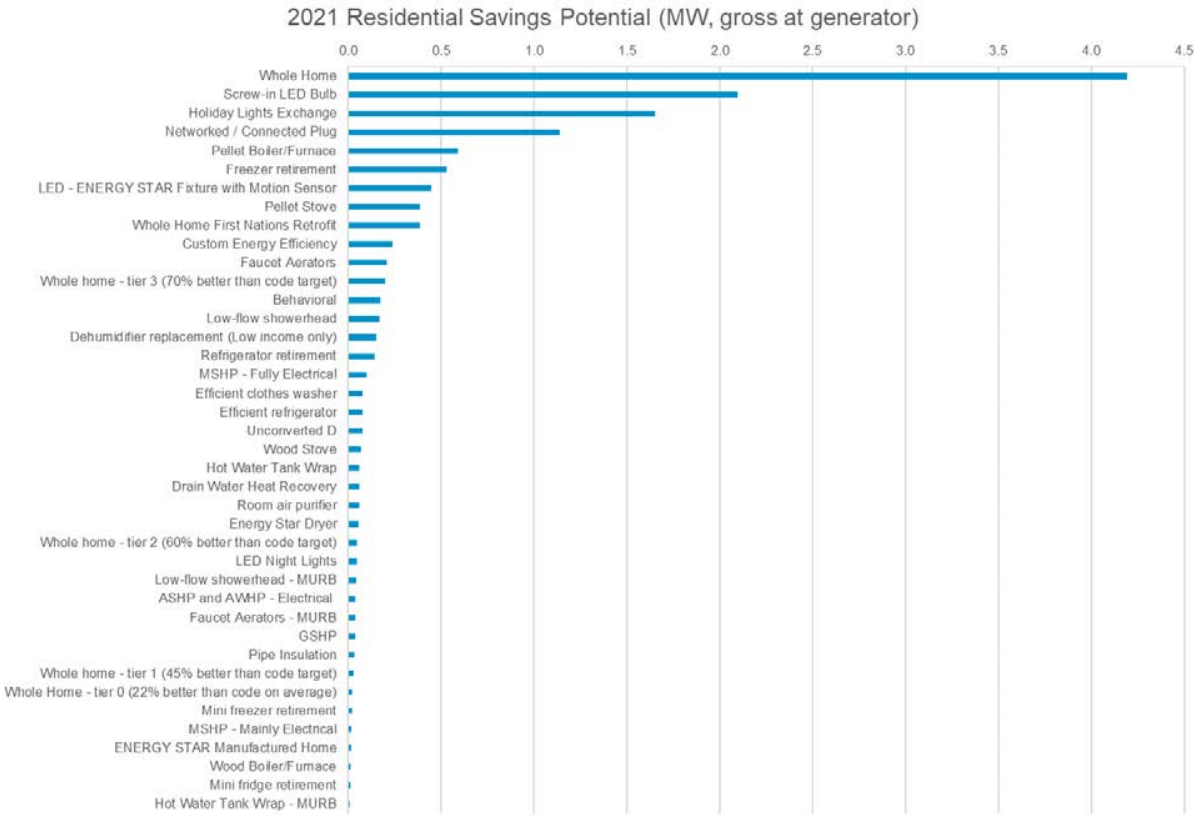
Figure 8-17 and Figure 8-18 show that many of the top ten winter peak demand saving measures, net at generator, in 2021 come from the Res HVAC, Res Lighting, and BNI Lighting end uses. Residential whole home ranks as the highest demand-saving market potential measure for the residential sector, far exceeding any other measure. In the residential sector, savings drops sharply as the top 10 measures provide more than 75% of top 40 measure achievable savings. Custom energy efficiency leads the BNI sector, however, the distribution of potential savings by measure is much more evenly distributed than residential.

Figure 8-17. EE Base Case Market Potential, 2021 Top 40 Residential Measures for Winter Peak Demand Savings (MW, net at generator)



Source: Navigant analysis

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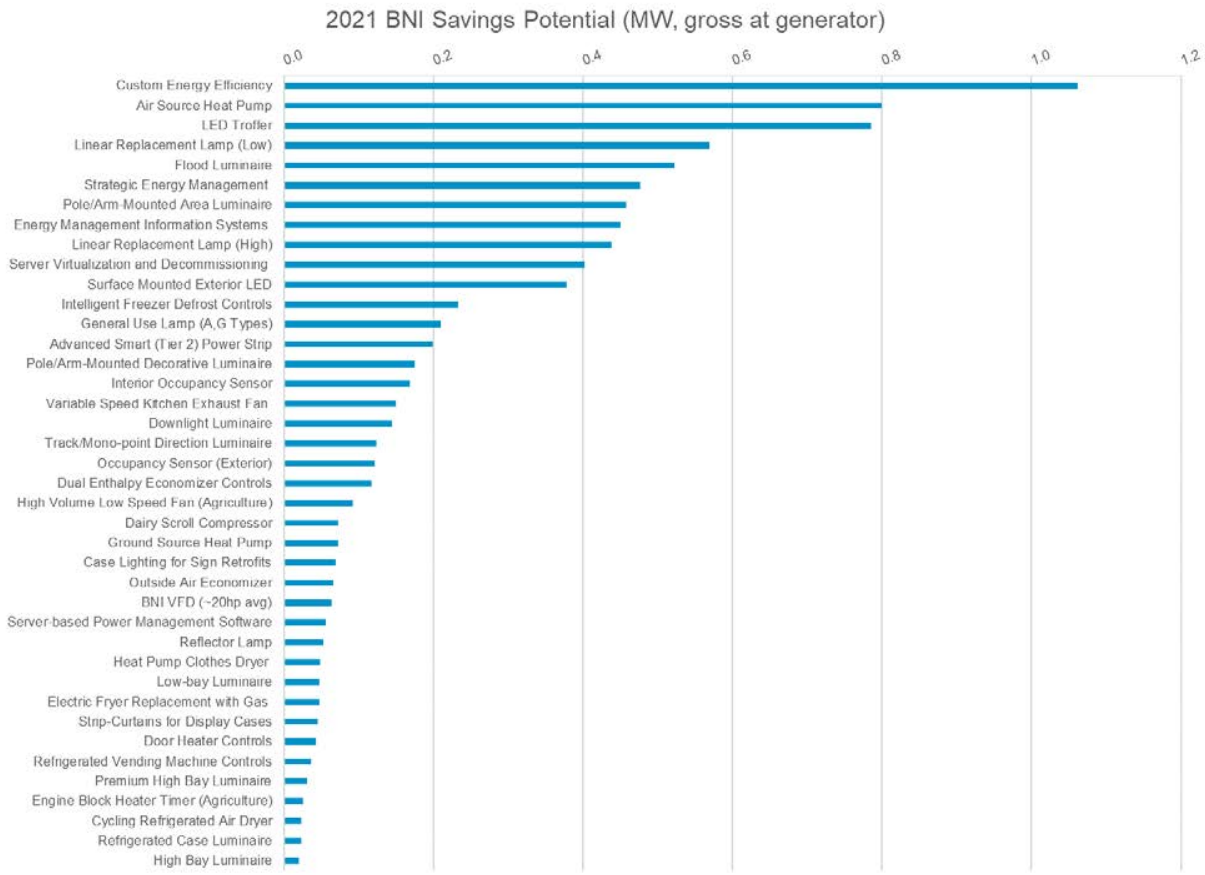
Figure 8-18. EE Base Case Market Potential, 2021 Top 40 BNI Measures for Winter Peak Demand Savings (MW, net at generator)



Source: Navigant analysis

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8.6 Cost Effectiveness Tests and Investment

The cost effectiveness approach is consistent with the methodology Navigant used for the economic potential presented in Section 4. Figure 8-19 shows the benefit-cost test ratios for the achievable base case, by sector and for the portfolio for each benefit-cost test. The benefit-cost test ratios are significantly greater than 1.0 for all benefit-cost test types at the sector and portfolio level across all analysis years, with the exception of the Rate Impact Measure (RIM) test, which has benefit-cost tests less than 1.0 for certain years and sectors.

Figure 8-19. EE Base Case Market Potential, Benefit-Cost Test Ratios for the Portfolio and by Sector

Sector	Year	Total Resource Cost Test	Program Administrator Cost Test	Participant Cost Test	Rate Impact Measure Test
BNI	2021	3.67	3.95	3.37	1.11
	2025	4.11	4.62	3.68	1.15
	2030	4.61	5.47	3.97	1.20
	2035	4.82	5.87	4.05	1.22
	2040	4.59	5.63	4.01	1.17
	2045	4.56	5.72	4.13	1.13
Residential	2021	3.87	5.43	4.50	0.85
	2025	3.78	5.31	4.50	0.84
	2030	3.73	5.46	4.51	0.84
	2035	3.59	6.53	4.33	0.84
	2040	3.35	5.83	4.30	0.78
	2045	3.18	5.12	4.33	0.72
Portfolio	2021	3.38	4.09	4.07	0.92
	2025	3.48	4.35	4.25	0.91
	2030	3.57	4.67	4.37	0.92
	2035	3.51	5.23	4.27	0.93
	2040	3.37	4.82	4.22	0.89
	2045	3.03	4.25	4.27	0.76

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Figure 8-20 presents the net benefits for the achievable base case, by sector and for the portfolio under each benefit-cost test. Coinciding with the benefit-cost test ratios, net benefits are positive in all cases, with the exception of the RIM test.

Figure 8-20. EE Base Case Market Potential, Cost Test Net Benefits for the Portfolio and by Sector (million $)

Sector	Year	Total Resource Cost Test	Program Administrator Cost Test	Participant Cost Test	Rate Impact Measure Test
BNI	2021	$56.82	$58.73	$58.57	$7.80
	2025	$69.61	$72.49	$69.67	$12.14
	2030	$81.19	$86.57	$77.75	$17.79
	2035	$77.42	$83.43	$72.43	$18.45
	2040	$83.84	$90.27	$82.83	$16.34
	2045	$79.29	$85.83	$82.81	$12.04
Residential	2021	$81.87	$90.09	$137.62	-$18.77
	2025	$110.82	$122.30	$204.16	-$28.37
	2030	$131.20	$146.37	$262.53	-$35.16
	2035	$123.45	$144.97	$264.42	-$31.76
	2040	$96.17	$113.55	$246.42	-$37.96
	2045	$72.14	$84.69	$226.34	-$40.71
Portfolio	2021	$132.70	$142.83	$196.20	-$16.96
	2025	$172.93	$187.28	$273.84	-$23.73
	2030	$203.55	$224.11	$340.28	-$26.21
	2035	$192.27	$219.79	$336.85	-$21.92
	2040	$171.85	$195.66	$329.25	-$29.78
	2045	$144.20	$163.29	$309.15	-$35.90

Source: Navigant analysis

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Figure 8-21 presents the modelled investment for the achievable base case, by sector and investment type. All investment values are presented here as nominal dollars. For the base case, total investment levels range between $40 million and $65 million annually throughout the 25-year study period, with a peak of $64 million in 2028.

To estimate portfolio fixed administrative costs through time, Navigant used approximately 50% of total administrative spending in the base case. The values for this investment type change year-over-year due to the changes in measure mix delivery and market conditions as modeled in this study. This investment type is fixed and not associated with a specific measure or program, therefore, it does not affect the measure level cost-effectiveness screening. Additionally, because this investment is an estimate of the minimum required fixed administrative to deliver programs, it is held constant between achievable scenarios. Investment details for each scenario are provided in Appendix F.

Figure 8-21. EE Base Case Investment, by Investment Type for the Portfolio (nominal million $)

Year	Incentives	Variable Program Administrative Costs	Fixed Program Administrative Costs	Portfolio Total
		nominal million dollars		
2021	$32.74	$5.84	$5.99	$44.57
2022	$36.30	$6.54	$6.73	$49.57
2023	$36.93	$6.73	$6.91	$50.57
2024	$39.08	$7.17	$7.36	$53.61
2025	$39.49	$7.44	$7.50	$54.44
2026	$43.44	$8.06	$8.20	$59.70
2027	$42.97	$8.27	$8.48	$59.73
2028	$46.24	$8.76	$8.98	$63.98
2029	$42.48	$8.51	$8.71	$59.70
2030	$43.99	$8.64	$8.84	$61.46
2031	$37.13	$8.68	$8.76	$54.58
2032	$37.23	$8.70	$8.88	$54.81
2033	$36.04	$8.58	$8.77	$53.39
2034	$37.21	$8.61	$8.74	$54.57
2035	$37.03	$8.51	$8.61	$54.15
2036	$37.85	$8.49	$8.59	$54.93
2037	$38.36	$8.42	$8.60	$55.38
2038	$37.92	$8.26	$8.47	$54.65
2039	$37.79	$8.12	$8.33	$54.24
2040	$37.69	$7.95	$8.16	$53.80
2041	$36.10	$7.67	$7.87	$51.64
2042	$35.76	$7.51	$7.71	$50.98
2043	$35.28	$7.34	$7.54	$50.16
2044	$34.84	$7.18	$7.38	$49.39
2045	$34.41	$7.03	$7.23	$48.68
Total	$954.30	$197.02	$201.33	$1,352.65

Source: Navigant analysis

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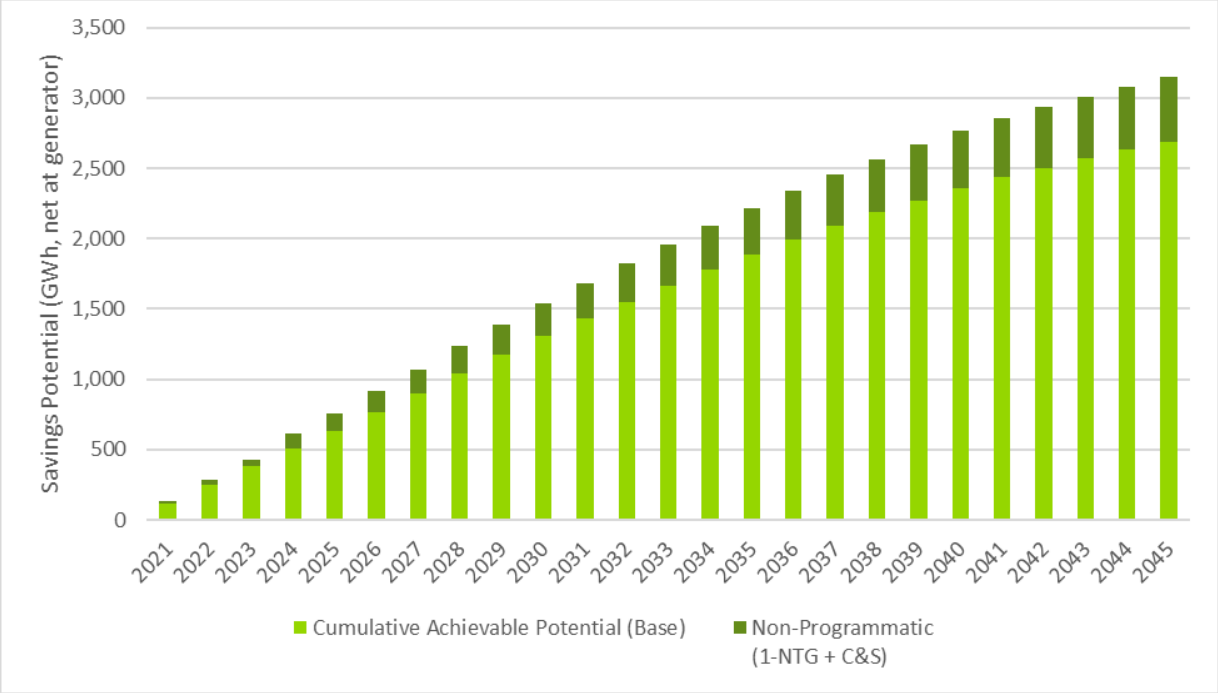
8.7 Non-Programmatic Savings

For this study, Navigant defines non-programmatic savings as reductions in savings potential due to codes and standards, and freeridership. It is important to note that savings potential for codes and standards do not represent total impacts due to C&S outside of DSM programs, just effects on program savings potential.

The technical and economic savings shown throughout this report are net of codes and standards savings, while the achievable potential scenarios are net of both codes and standards, and freeridership. Figure 8-22 shows the cumulative base case achievable potential stacked with cumulative non-programmatic savings. Therefore, the cumulative potential values shown below will be higher than those shown in Section 6. Non-programmatic savings yields 11% of total savings in 2021, and peaks at 17% in 2025. This increase is seen in 2024 and is caused by the inclusion of screw-in lighting standards changes. This corresponds to the decrease in residential achievable potential seen in 2024 in Section 6.

Figure 8-22. Cumulative Achievable Potential (Base Case) and Non-Programmatic Electricity Savings (GWh, net at generator)



Source: Navigant analysis

8.8 Hourly Loadshape Disaggregation

At the request of the DSMAG stakeholder group, Navigant developed 8760 profiles for base case achievable potential savings to align with NS Power's IRP end-use inputs. The results of this analysis are provided in Appendix G. This data has been summarized in the appendix at the sector level due to the volume of data.

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9. ENERGY EFFICIENCY MARKET POTENTIAL SENSITIVITY ANALYSIS RESULTS

In order to demonstrate the response of the base achievable forecast to incremental changes in inputs, Navigant conducted a parametric sensitivity analysis on the cumulative achievable energy savings potential at the end of the forecast horizon (2045) in the Base scenario. To determine the sensitivity of the results to seven input variables, Navigant varied each parameter by +/-25%, except for the price of CO_2 and the achievable potential B/C screening thresholds, both of which were only varied unidirectionally. CO_2 prices were varied from $0 to $100/metric tonne, and the achievable screening threshold was varied by -25%. It is worth noting that because the model has multiple non-linear components, the effects of varying a parameter is often asymmetrical. For each sensitivity, all other variables were held constant, allowing individual effects to be observed.

Residential achievable potential sensitivity is shown in Figure 9-1. Of the seven parameters tested, the residential cumulative potential by 2045 is the most sensitive to net-to-gross ratio, marketing effects, and incentive changes. Marketing effects influence the growth of customer awareness, and along with incentives are a primary pathway that program administrators use to influence the adoption of efficient measures. The stronger down-side response is suggestive of a more mature residential market – skewed by several large measures like screw-in LEDs. On the other hand, the response to varying incentive levels has the opposite effect because of the ability for incentives to push more nascent technologies like network connected plugs into a steeper part of the payback curve. This effect demonstrates the non-linearity of customer price response. The net-to-gross ratio influences measure TRC ratio, and therefore whether a measure is included in the achievable potential (passes the 0.7 TRC screening threshold). Additionally, net-to-gross ratio directly impacts the unit energy savings. This direct impact on savings values manifests in greater sensitivity than other model inputs, however, any reductions in net-to-gross ratio (as a result of an increase in freeridership) would be captured in the non-programmatic savings.

By contrast, the avoided costs and discount rates have comparably small impacts on the achievable potential with the same percentage-wise variation because these only influence the screening of the measure by acting indirectly through the TRC. Thus, it requires a change in the avoided costs of more than 25% to change the TRC benefit-cost ratio by 25% because of the diluting influence of incremental costs, net to gross ratios, and administrative costs – all of which effect the benefit/cost ratio as well. As can been seen by the larger sensitivity to carbon price than avoided costs, the $100/metric tonne of carbon adder equated to more than a 25% increase in the avoided costs as they impact analysis in the same way.

Incremental costs have a relatively large effect on potential because of their role in determining the market shares between measures in a competition group as well as the TRC screen. Relative to BNI, more measures switch between passing TRC screening or not when the incremental costs are changed (this is also true for avoided costs), generating a larger response.

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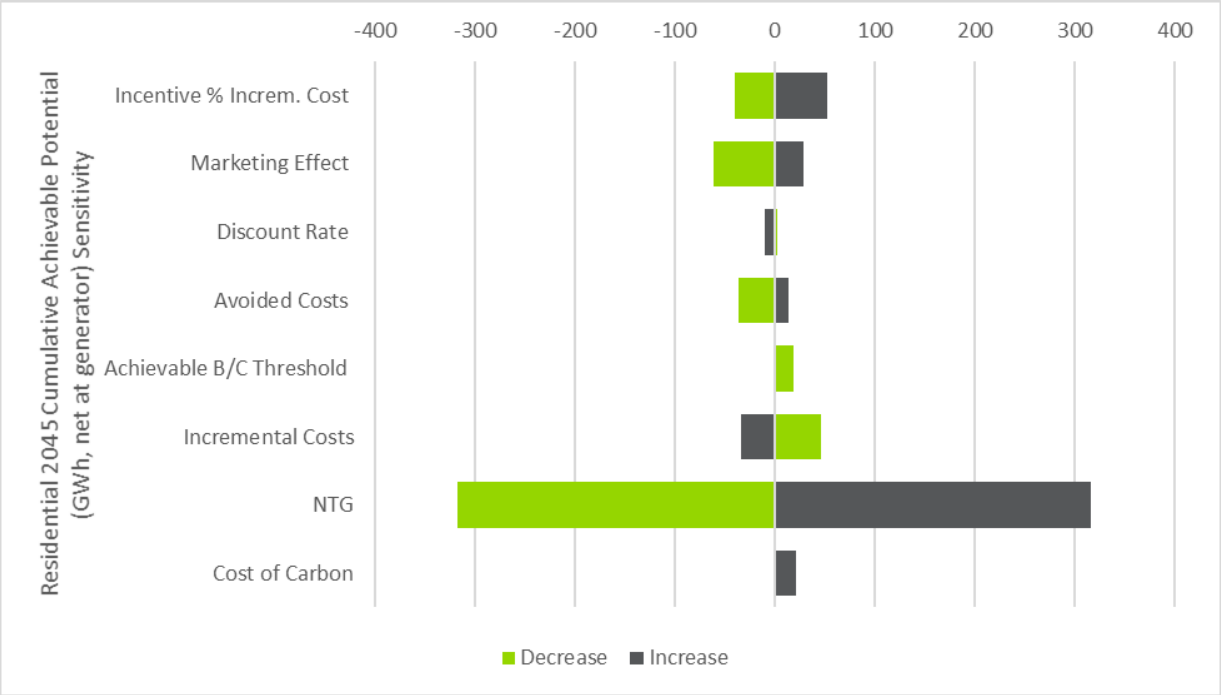
Figure 9-1. EE Residential 2045 Cumulative Achievable Potential Sensitivity (GWh, net at generator)



Source: Navigant analysis

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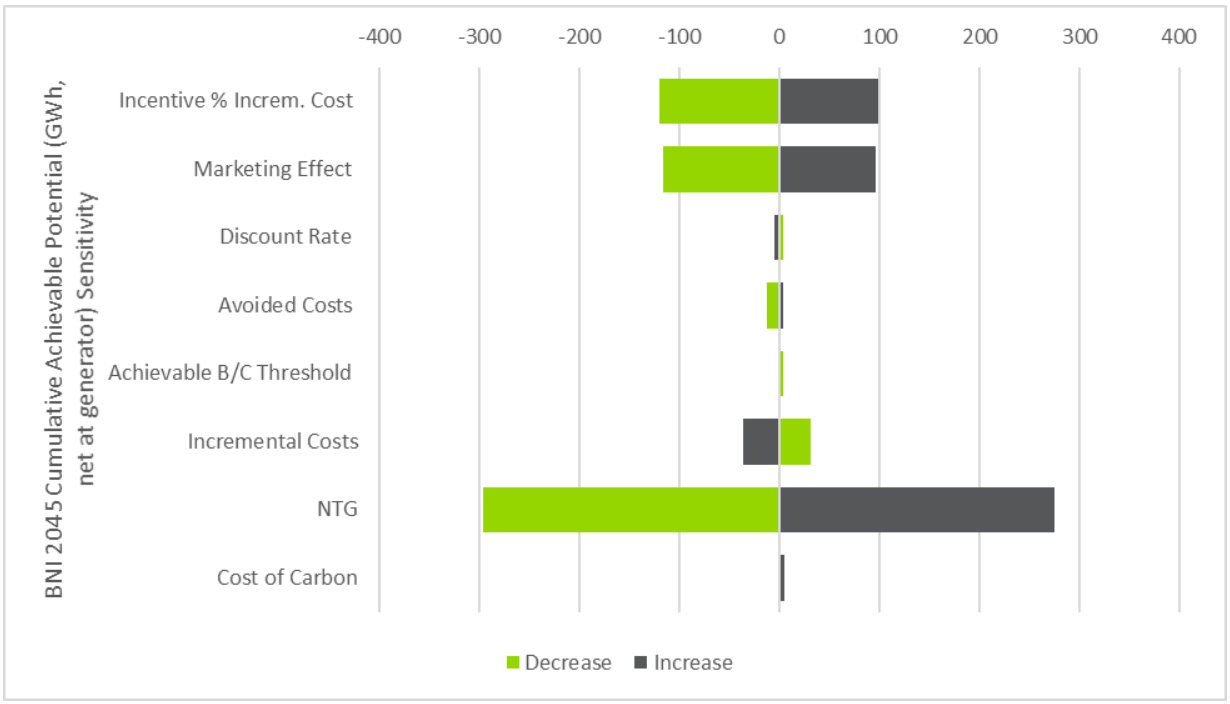
BNI sensitivities are shown in Figure 9-2. Overall the response of the cumulative BNI achievable potential to the chosen parameter variations is similar to residential, both in order of importance, and magnitude of the response. The most important difference is the larger sensitivity in BNI to both marketing and incentive changes. This is due more to the location of important BNI measures, such as LED troffers, and strategic energy management at steep-sloping areas in the payback curve where diminishing returns do not kick in, and the response can be symmetric.

Similarly, because awareness in BNI tends to be higher overall, but is not yet 100% for several key measures (particularly in lighting and HVAC), significant positive or negative feedback can be triggered through marketing, yielding a sharper response. The same effect observed in residential around avoided costs and discount rates is true for BNI – because these inputs work through the TRC and are influenced by other factors, they tend to be second-order effects when there are not large measures that are near a tipping point.

Figure 9-2. EE BNI 2045 Cumulative Achievable Potential Sensitivity (GWh, net at generator)



Source: Navigant analysis

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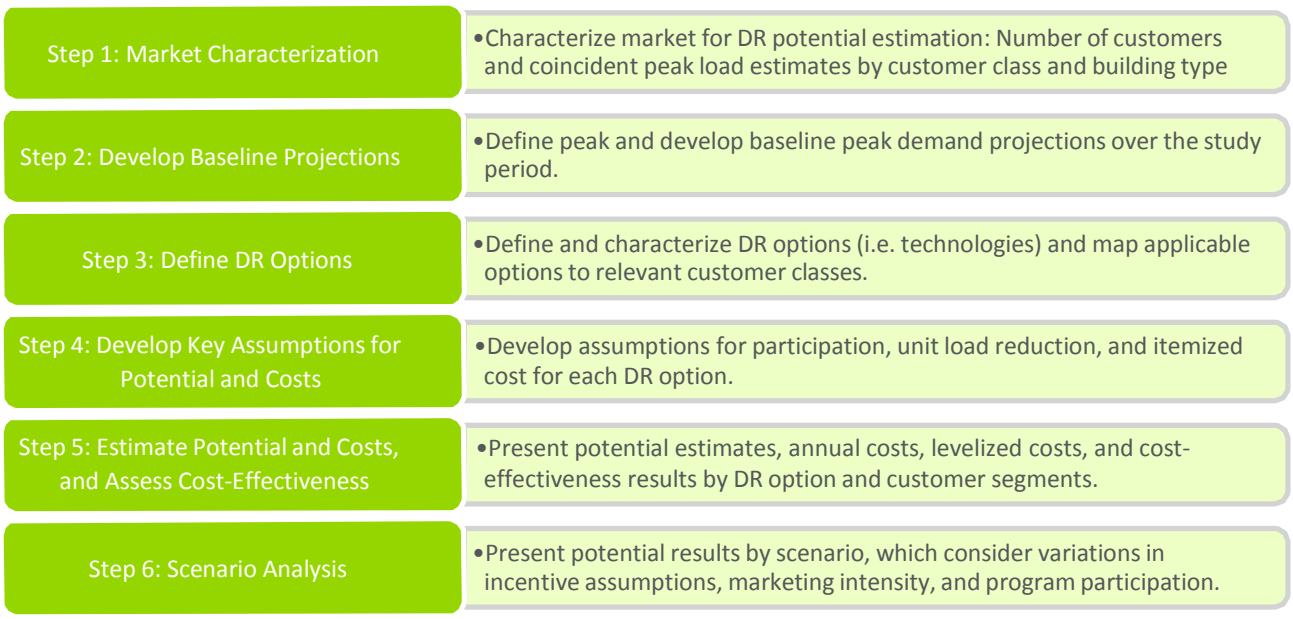
10. DEMAND RESPONSE METHODOLOGY

Navigant developed demand response potential and cost estimates using a bottom-up analysis. The analysis utilizes primary data from Nova Scotia Power and relevant secondary sources of information, as documented in the appendices and the input workbook that accompanies this report (see Appendix C). Navigant customized its DRSim™ model, which uses this data as inputs, for this study. The following subsections detail Navigant's DR potential and cost estimation methodology, as summarized in Figure 10-1. The methodology is as follows:

1. Characterize market for DR potential by quantifying the number of eligible customers
2. Estimate coincident winter peak load by customer class and building type over the study period (2021 – 2045)
3. Define and characterize DR options, and map applicable options to relevant customer classes and/or building types
4. Develop participation levels, unit load reductions, and cost assumptions for each DR option, by customer class and building type combination
5. Present potential estimates, annual costs, levelized costs and cost-effectiveness results by DR option, customer class and building type
6. Conduct scenario analysis and present DR potentials, annual costs and cost-effectiveness results by scenario

Figure 10-1. DR Potential Assessment Steps



Source: Navigant

10.1 Demand Response Market Characterization

Market characterization is the first step in the DR potential assessment process. The market characterization process for the DR assessment aimed to segment the market appropriately for the analysis. Specifically, Navigant aggregated data on key pieces of information, such as customer

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count and peak load, by customer segment and end-use to use as inputs into the model. Navigant based the segmentation on the examination of NS Power's rate schedules and the customer segments established in the energy efficiency potential study.

Figure 10-2 presents the different levels of market segmentation for DR potential assessment. The segmentation by customer size, according to demand values, is based on NS Power rate classes. Navigant also used Dun & Bradstreet (DnB) customer data that indicated the breakdown of BNI customers and sales by business type to disaggregate customer count and peak demand estimates.

Figure 10-2. Market Segmentation for DR Potential Assessment

Level	Description
Level 1: By Sector	• Residential • Commercial and Industrial (BNI) • Electric Vehicles (EV)
Level 2: By Customer Class [13]	• Residential • BNI » Small Commercial » Large Commercial » Small Industrial » Large Industrial » Interruptible Rider [14] • Electric Vehicles
Level 3: By Building Type [15]	• Residential » Residential LI » Residential • BNI » Manufacturing » Miscellaneous » Offices » Retail Trade » Services » Market Rate • Electric Vehicles

Source: Navigant

Level 1: Sector

Navigant segmented customers into residential and BNI sectors. Additionally, Electric vehicles (EVs) are considered in aggregate across all customer classes since the EV forecast did not specify the distribution of EVs across the various customer segments.

Level 2: Customer Class

Navigant further segmented the BNI customer class into five categories based on the demand values following NSP's rate schedules. These size categories are also referred to as the BNI customer class. The segmentation by size was necessary as the type of DR program offer varies by customer size.

[13] Mapping between customer classes and NS Power rate classes is provided in Figure 13-3.

[14] Customers on Interruptible Riders were called out separately to identify the potential associated with these customers.

[15] Mapping between building types and Dunn & Bradstreet (DnB) business types is provided in Figure 13-3.

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Navigant did not segment residential customers by demand since the variation of demand values across residential customers is low. Electric vehicle owners also were not segmented further. Mapping between NS Power rate classes to those used in the DR study are provided in Figure 10-3.

Figure 10-3. Mapping Between Nova Scotia Power Rate Class and DR Study Customer Class

Mapped Customer Class in DR Potential Study	Nova Scotia Power Rate Class
Residential	Residential
Small Commercial	Small General
	General
Large Commercial	Large General
Small Industrial	Small Industrial
Large Industrial	Medium Industrial
	Large Industrial
Interruptible	Interruptible Rider

Source: Navigant

Level 3: Customer Segment

Navigant further segmented BNI customers into segments or building types by mapping the DnB business types to the building types considered in the analysis. Mapping between NS Power building and business types is provided in Figure 10-4.

Figure 10-4. Mapping Between Nova Scotia Power Building Type and Business Type

Building Type (Used in analysis)	Business Type[16]
Offices	Finance, Insurance, And Real Estate
	Public Administration
Retail Trade	Retail Trade
Services	Services
Manufacturing	Manufacturing
	Agriculture, Forestry, And Fishing
	Construction
	Other Service Industries
	Transportation, Communications, Electric, Gas, And Sanitary Services
	Wholesale Trade
	Charitable Premises

Source: Navigant

10.2 Demand Response Baseline Projections

The next step after market segmentation was to develop baseline projections for the number of accounts and associated winter peak demand by customer class and segment over the potential analysis period. The baseline projections aimed to define and forecast customer data for the study period, similar to the market

[16] These business types were sourced from the DnB dataset provided by EfficiencyOne.

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characterization in the EE assessment. Navigant selected 2018 as the base year for the study, since it is the latest year for which full market data is available at the time of the analysis. The baseline projections for the number of accounts and peak demand were developed at the following levels:

- Number of accounts
  - By customer class and building type
- Winter peak demand projections
  - By customer class, building type and end use

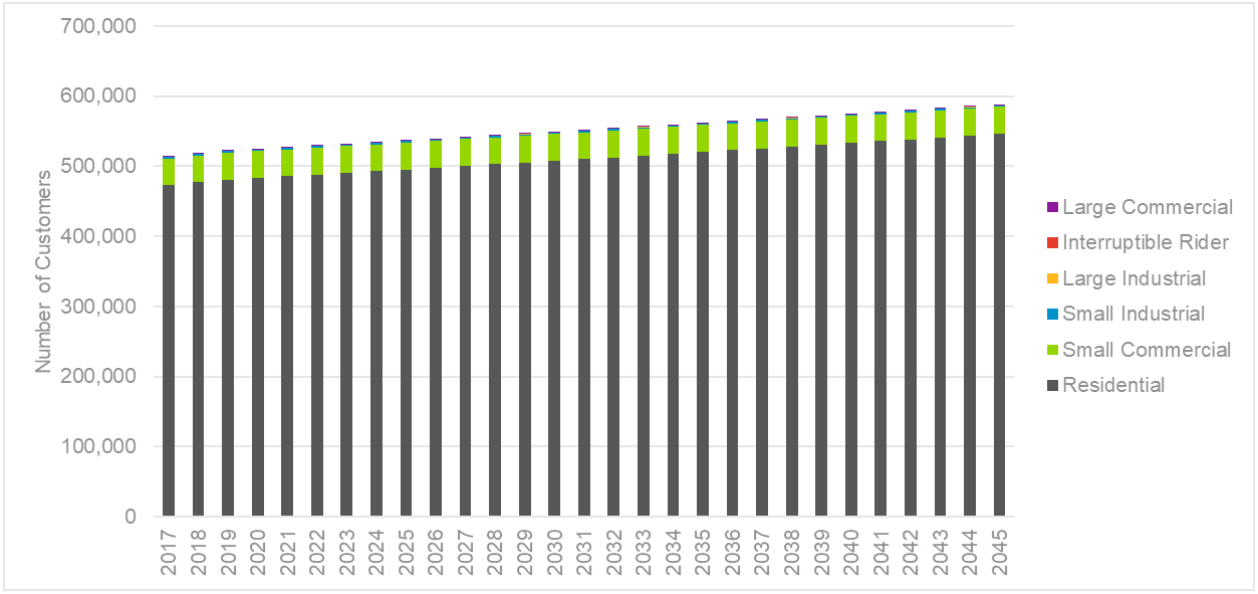
10.2.1 Customer Count Projections

The steps to generate customer count projections include:

- Separate out Interruptible Rider customers using BNI account counts by rate class
- Exclude Outdoor Recreational Lighting, Unmetered, GRLF, RTP, Shore Power
- Disaggregate customer counts 2020-2022 Plan Rate and Bill Impact Analysis customer counts using NS Power data on BNI account counts by business types
- Blend Municipal customers, assuming the same distribution as NS Power customers
- Disaggregate Residential accounts into Market Rate, Low Income, and Charitable Premises using NS Power data on Charitable Premises and Low-Income rates
- Blend Municipal customers, assuming the same distribution as NSP customers
- Disaggregate Residential accounts into Market Rate, Low Income, and Charitable Premises using NSP data on Charitable Premises and Low-Income rates

Figure 10-5 and Figure 10-6 summarize the account count projections by customer class.

Figure 10-5. Customer Count Forecast by Customer Class



Source: Navigant

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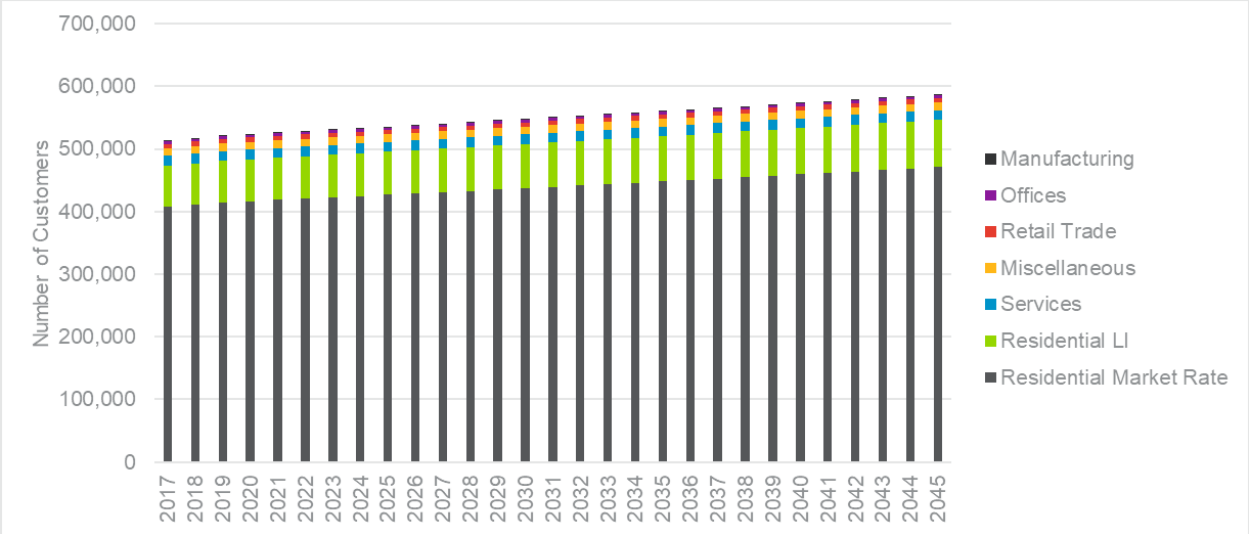
Figure 10-6. Customer Count Forecast by Building Type



Source: Navigant

10.2.2 Peak Period Definition and Peak Demand Projections

A key element of market characterization for the DR potential study is to develop disaggregated bottom-up peak demand projections by customer class, segment and end use, which serves as the foundation for the DR potential estimates. Figure 10-7 shows the stepwise approach used to develop baseline peak demand projections.

Figure 10-7. Baseline Peak Projection Steps

Define Peak Period	•Based on historical hourly system load data, the peak period was defined as 5-8pm for the months of December, January, and February
Calculate Coincident Peak Demand Factors	•Use the peak period and normalized 8760 loadshapes from a prior EfficiencyOne study conducted
Obtain End Use Shares	•Use NS Power End Use Model results to obtain end use shares for each building
Determine Energy Sales after DSM	•Subtract Navigant's EE potential study results from NS Power sales forecast before
Calculate Bottom-Up Peak Demand Projection	•Apply coincident peak demand factors and end use shares to forecasted retail energy sales to obtain demand projections for the peak period
Calibration	•Calibrate results to align with 3CP demand distribution.
Develop Separate Peak Demand Projections for EVs	•Use EV adoption forecast and estimated peak demand from charging to develop peak demand projections

Source: Navigant

The first step in this approach was to define the peak period. Based on analysis of hourly system load data, Navigant determined that 5-8 pm for the months of December, January, and February constitute the peak period. Navigant used this definition to develop coincident peak demand estimate by customer class, building

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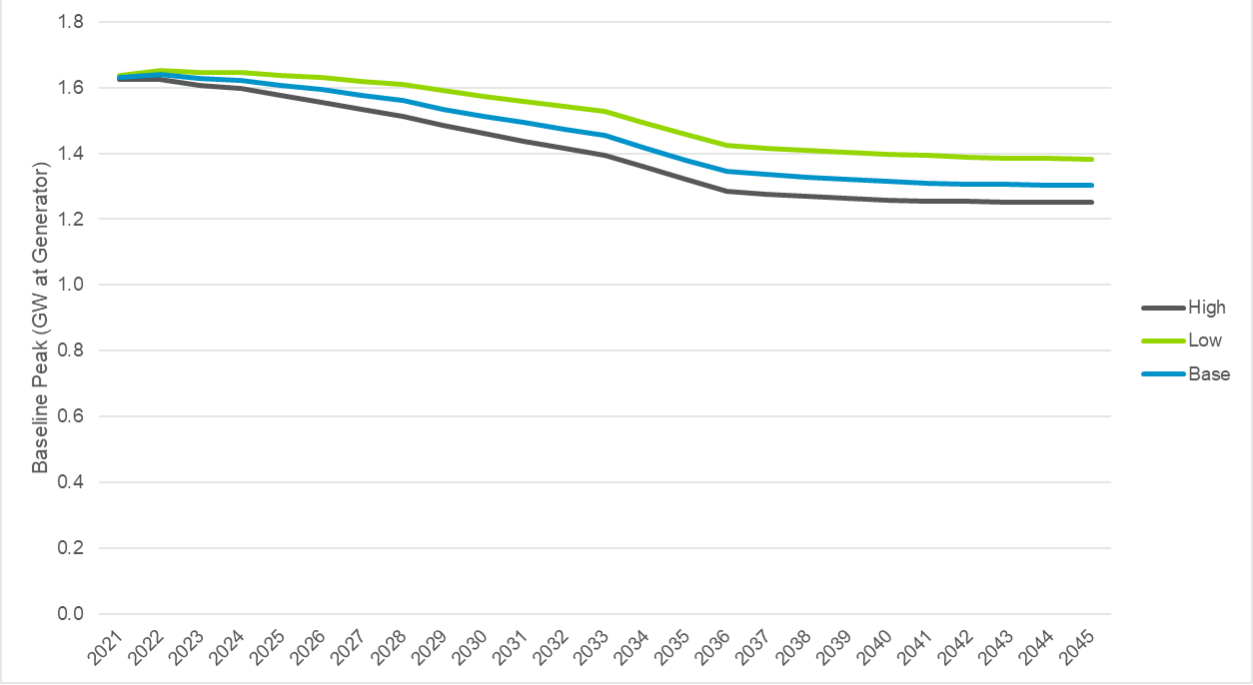
type and end use. The primary data sources for developing these estimates were 8760 system data, forecasted retail sales data, end use model results from NSP, energy efficiency potential results. Navigant used the data from these sources to develop coincident peak demand estimates by customer class and building type for the base year, and then Navigant projected these estimates for future years by scaling these values with the retail sales forecast. For coincident winter peak demand estimates for EVs, Navigant used per vehicle impacts from NSP's load forecast and vehicle adoption forecasts from the Navigant-developed Vehicle Adoption Simulation Tool (VAST).

Three different scenarios from the Energy Efficiency Potential Study were considered in the baseline winter peak projections: (1) low, (2) base, and (3) mid. These correspond to the scenarios low, base, and high, respectively, in the DR study.

Figure 10-8 shows the baseline peak projections across the various scenarios. Note that the scenario names refer to the level of energy efficiency savings assumed to occur, so the baseline peak demand for the high scenario (with highest energy savings among these three scenarios) is lower than that of the low and base scenarios. As energy efficiency savings increase in the future, peak demand is projected to decrease. It is important to note that the peak period is defined differently than in the EE study.[17]

Figure 10-8. Winter Baseline Peak Forecast by DR Scenario (GW at generator)



Source: Navigant analysis

[17] The baseline peak forecast represented here is different from the peak forecast by NS Power. The peak demand shown in the figure is the average peak demand over the 3-hr. peak period (5 p.m. to 8 p.m.) from December to February. This serves as the baseline peak demand for estimating load reduction impacts from DR programs. NS Power's peak forecast represents the single hour system peak demand. Therefore, the peak definition is different in the two cases. Moreover, the peak demand forecast shown in the graph represents the peak demand net of energy efficiency potential estimates from Navigant's analysis presented in this report, which is not incorporated in NS Power's peak demand forecast. The DR forecast also excludes Outdoor Recreational Lighting, Unmetered, GRLF, RTP, Shore Power, and Mining customers since these segments tend to be ineligible for DR programs.

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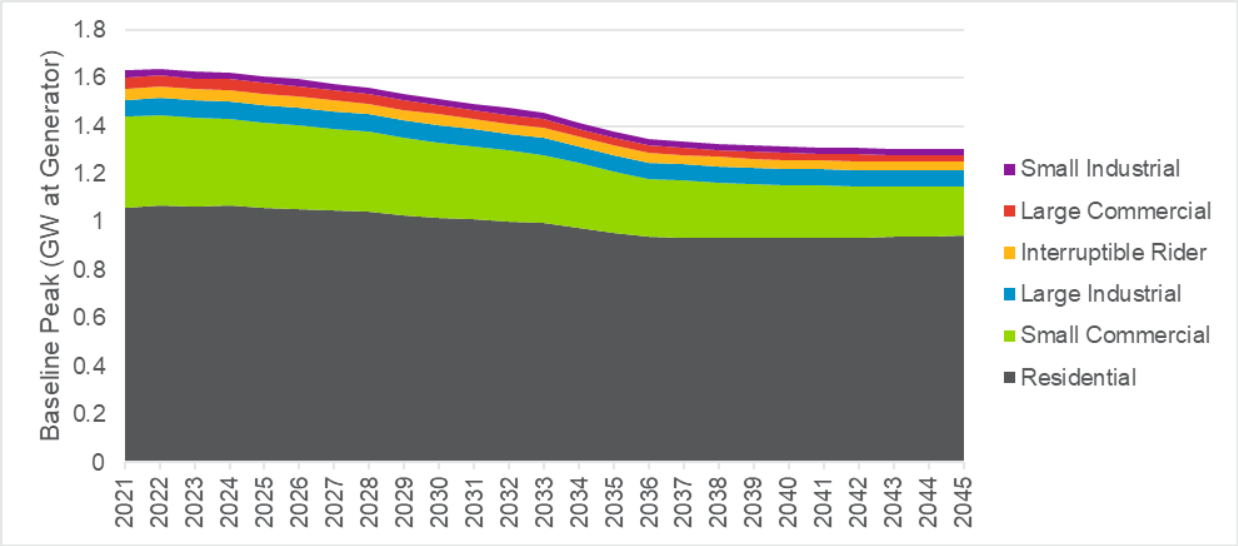
The following baseline peak figures are for the base scenario, but the same distribution can be assumed for the other two scenarios. Figure 10-9 shows the estimated peak demand over the forecast period, broken out by customer class. Residential makes up the largest segment, followed by small commercial. The remaining four customer classes – large commercial, small industrial, large industrial, and customers on Interruptible Rider - constitute around 10% to 15% of the total peak demand.

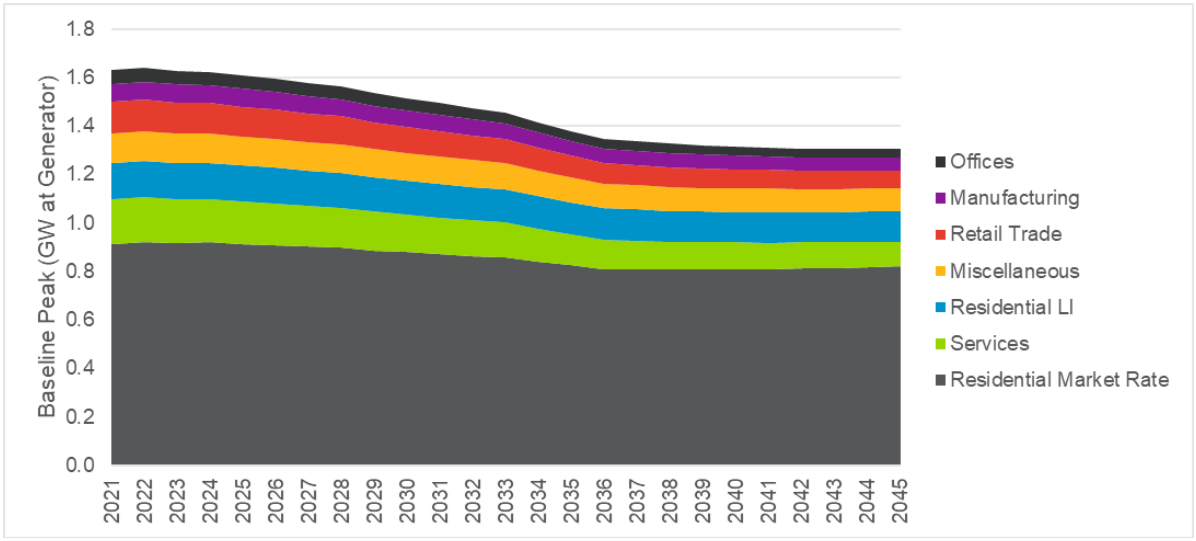
Figure 10-9. Winter Baseline Peak Forecast by Customer Class (GW at generator)



Source: Navigant analysis

Figure 10-10 shows the baseline peak forecast broken out by building type.

Figure 10-10. Winter Baseline Peak Forecast by Building Type (GW at generator)



Source: Navigant analysis

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10.2.3 Battery Adoption Projections

Due to a lack of information on battery adoption projections in Nova Scotia, Navigant developed high-level battery adoption forecasts using assumptions drawn from Navigant Research reports and industry expertise.[18]

In order to project battery adoption by customer class, Navigant first estimated the size of the battery to be 5 kW and 10% of the customer demand and the capacity to be two hours, since smaller capacities tend to be more economically feasible. Then, upfront costs and O&M costs based on Navigant Research data were used to calculate equipment costs borne by the customer. Capital costs are assumed to decline at 5% per year for the next 10 years. Annual customer bill savings were determined by obtaining demand and energy charges from NS Power tariffs and calculating the demand charge savings for BNI customers and energy arbitrage values for customers with a time-varying rate. This information was used to calculate the simple payback period for each customer class, which in conjunction with payback acceptance curve,[19] determines the long-run equilibrium level of customer adoption. A non-economic adoption adder of 2.5% was added to residential customers to capture other causes of natural adoption including resiliency. The adoption was then simulated to follow a Bass-diffusion curve with a 10-year ramp rate.

Figure 10-11 presents battery capacity forecasts for select years developed using the methodology outlined in this section. The accompanying input assumptions worksheet contains values for all years.

Figure 10-11. Battery Capacity Projections (MW at meter)

Customer Class	2021 MW at meter	2030 MW at meter	2040 MW at meter
Interruptible Rider	0.2	2.5	2.6
Large Commercial	0.2	2.3	2.4
Large Industrial	0.4	3.7	3.8
Residential	6.2	67.5	73.0
Small Commercial	0.9	9.0	9.2
Small Industrial	0.0	0.2	0.2
Grand Total	7.9	85.2	91.2

Source: Navigant analysis

10.2.4 Electric Vehicle Projections

The forecasts produced for this report are derived from Navigant's Vehicle Adoption Simulation Tool (VAST™). VAST™ integrates a provincial-level systems dynamics routine driven by technology attributes including the total cost of vehicle ownership, range, fueling characteristics, and customer behaviour, and a census-tract level socio-demographic component. The systems dynamics modeling yields the forecasts for the Plug-In Electric Vehicle (PEV)[20] population of a given geography, typically the size of a province or a country. Projections on new PEV sales are generated through an enhanced Bass Diffusion framework, combining a logit technology competition model that generates the long-run equilibrium market share for

[18] Battery projections are typically an input to the DR analysis but are not necessarily developed as part of the analysis. Due to a lack of information/data on battery projections in Nova Scotia, Navigant developed high-level battery projections using a relatively simple approach that estimates battery adoption based on simple payback analysis. Detailed modeling of battery projections was outside the scope of the DR study.

[19] Payback acceptance curves are based on Navigant studies on battery adoption for utilities in other jurisdictions.

[20] PEVs include Battery Electric Vehicles (BEV) and Plug-In Hybrid Electric Vehicles (PHEV), but not Hybrid Electric Vehicles (HEV).

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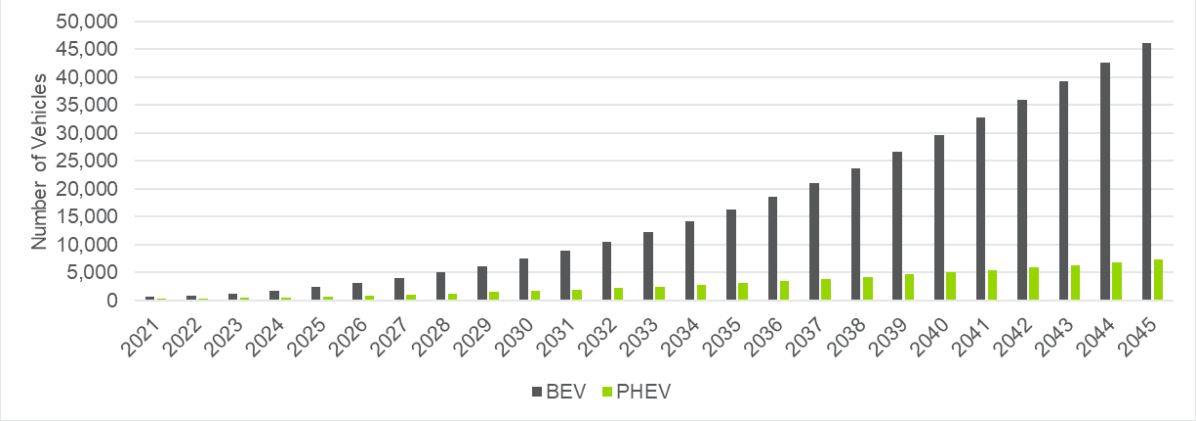
each powertrain, vehicle class, and ownership combination, with a Bass Diffusion model simulating the growth in technology awareness over time.

Nova Scotia is low on the adoption curve with only 130 PEVs on the road as of late 2018. In 2030, approximately 1% of all vehicles on the road are predicted to be PEVs. By 2045, the forecast shows 1,300,000 total vehicles in Nova Scotia, of which approximately 4% are PEVs, shown in Figure 10-12. Battery electric vehicles (BEVs) are expected to have higher market penetration than plug-in hybrid electric vehicles (PHEVs) with an 80/20 split in 2030.[21]

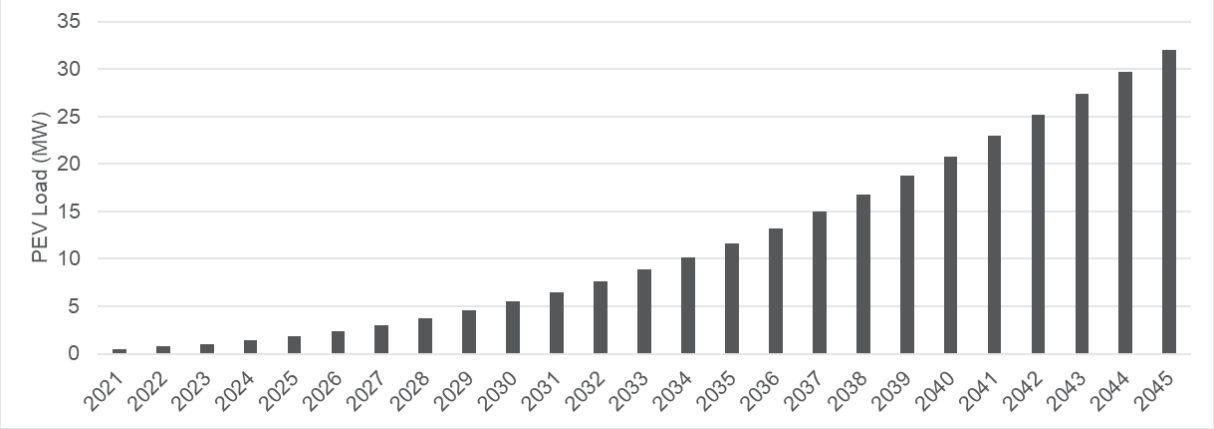
Figure 10-12. Vehicle Adoption Forecast from VAST™



Source: Navigant analysis

Load projections are estimated using a 0.6 kW/vehicle impact value from NSPI's 2019 Load Forecast report, which assumes that charging management programs will be in place. Figure 10-13 presents the forecasted load impacts from PEVs.

Figure 10-13. Demand Impacts from PEVs



Source: Navigant analysis, NSPI 2019 Load Forecast

[21] The decision to use EV forecasts using Navigant's VAST model was based on discussions with EfficiencyOne, and supported by Nova Scotia Power

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10.3 Characterization of Demand Response Options

Once the baseline peak demand projections were developed, the next key step in the DR potential assessment was to characterize the different types of DR options that could be utilized to curtail winter peak demand. Figure 10-14 summarizes the DR options included in the analysis. Figure 10-15 lists the sub-options that represent specific end uses and control technologies under the broad program types, referred to as DR options. The DR options are representative of the commonly deployed DR programs in the industry, including end use load curtailment through manual and automated methods, load shifting to behind-the-meter (BTM) batteries, control of EV charging, critical peak pricing (CPP), and behavioural demand response (BDR).

Figure 10-14. Summary of DR Options Considered in Study

DR Option	Brief Description	Eligible Customer Classes	End Use
DCL Direct Load Control	Control of electric loads by a thermostat and/or load control switch.	Residential Small Commercial Small Industrial	Electric Furnace[22] Heat Pump[23] HVAC[24] Hot Water
BNI Curtailment	Firm capacity reduction commitment. $/kW payment based on delivered capacity, administered through third party aggregators.	Large Commercial Large Industrial Interruptible	HVAC Lighting Water Heating Total Facility
BTM Battery Control	Use of batteries for load shifting and dispatching to the grid.	All classes	Batteries
EV Charging Control	Charging modulation to reduce EV demand during peak periods	EV	EV
Critical Peak Pricing (CPP)	A rate schedule with significantly higher peak prices to discourage consumption during peak times	All classes	Total Facility
Behavioral Demand Response (BDR)	Targeted notifications and incentives are provided to customers to encourage peak shaving	Residential	Total Facility

Source: Navigant

[22] Electric furnace and heat pump apply to residential. For small commercial and industrial, Navigant refers to the end use load type as HVAC.
[23] *Ibid.*
[24] *Ibid.*

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Figure 10-15. Summary of DR Sub-Options

DR Option	DR Sub-Option	End Use
DCL Direct Load Control	DLC-Thermostat-Electric Furnace	Electric Furnace
	DLC-Thermostat-Heat Pump	Heat Pump
	DLC-Thermostat-HVAC	HVAC
	DLC-Switch-Water Heating	Hot Water
BNI Curtailment	BNI Curtailment-Manual HVAC Control	HVAC
	BNI Curtailment- Auto-DR HVAC Control[25]	HVAC
	BNI Curtailment- Central Lighting Control	Lighting
	BNI Curtailment- Advanced Lighting Control	Lighting
	BNI Curtailment- Water Heating Control	Water Heating
	BNI Curtailment- Industrial	Total Facility
BTM Battery Control	BTM Battery Control	Batteries
EV Charging Control	EV Charging Control	EV
Critical Peak Pricing (CPP)	CPP with enabling technology	Total Facility
	CPP w/o enabling technology	
Behavioral Demand Response (BDR)	Behavioral Demand Response	Total Facility

Source: Navigant

The Direct load control (DLC) option is applicable to residential and small BNI. The sub-options included under this option target space heating and electric water heating. For residential customers, both heat pump and electric furnace heating controls using thermostats were considered, along with switch-based control for electric water heating. For small BNI customers, DR sub-options included similar control technology as residential.

The BNI Curtailment option represents demand reductions through control of a variety of end uses at customer facilities using a combination of manual and automated control mechanisms. This option applies to large BNI customers. BTM batteries are considered for all customer classes to shift facility load during peak demand periods. EV control includes reduction in EV load through charging interruptions during the peak demand period.

CPP applies to all customer classes and impact rate structures to shift usage away from peak hours in a year. The dynamic rate represented in this analysis is a Critical Peak Pricing (CPP) with a 6:1 critical peak to off-peak price ratio. The analysis considered impacts from CPP rates without any enabling technology and in combination with enabling technology (enabling technology refers to thermostats for residential and

[25] Automated Demand Response (Auto-DR) is a platform to automatically activate a pre-programmed load reduction strategy in response to a signal from a Demand Response Automation Server (DRAS). Load is curtailed by the customer's building management or Supervisory Control and Data Acquisition (SCADA) system after being triggered by a signal that is sent from NSP's control room to the vendor's operations center, and on to the customer's facility. Customer always retains the ability to override the curtailment sequence in the event a site cannot participate in a specific demand response dispatch. Auto-DR ensures higher reliability of response without manual intervention.

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small commercial and small industrial customers, and Auto-DR for the remaining customer classes). Industry experience suggests that the impact of the rate is enhanced when paired with enabling

technology. The study assumes an opt-in type of offer for CPP for the base scenario and requires customers to have a smart meter for them to be on the rate.[26] Hence the start year for the rate offer is 2022, after completion of smart meter deployment.

Behaviour DR (BDR) shares similar characteristics to the behavioural energy efficiency program offer, where customers are behaviourally motivated to reduce their energy use during peak demand periods through feedback on their performance and peer comparisons. BDR is assumed to be offered on an opt-in basis and requires smart meters.

10.4 Key Assumptions for Demand Response Potential and Cost-Effectiveness Assessment

The final step in Navigant's assumptions development process was to estimate programmatic inputs such as participation rates, unit load reductions and costs for the DR options (see Appendix C). These are key variables that feed the DR potential and cost calculations. These assumptions were based on similar DR potential studies and program performance data/information from DR programs in other jurisdictions, as well as professional judgement by Navigant. Figure 10-16 summarizes the key DR potential and cost estimation variables considered in this study. The DR analysis input assumptions, provided as Appendix C to the report, presents detailed documentation of the basis for these assumptions.

Figure 10-16. Key Variables for DR Potential and Cost Estimates

Key Variables	Description
Participation Rates	• Percentage of eligible customers enrolled in DR programs by DR Options, DR sub-options, customer class and building types • Participation ramp (rate at which the program ramps up to steady state participation over a specified period)
Unit Impacts	• kW reduction per device for DLC (residential and small BNI customers) • Percent of enrolled load by end use/total facility/battery for DLC (Large BNI customers), BNI Curtailment, BTM Batteries, and EV Control
Costs	• One-time fixed costs related to program development • One-time variable costs for customer recruitment and program marketing, equipment installation and enablement • Recurring fixed and variable costs such as annual program admin. costs, customer incentives, O&M, etc.
Global Parameters	Program Lifetime, Discount Rate, Inflation Rate, Line Losses, Avoided Costs [27]

Source: Navigant

[26] The DR analysis assumed "default with opt-out" type of offer under the High Scenario and the same opt-in type of offer for the low scenario. This is further discussed under the scenario descriptions later in this chapter.

[27] Generation and Energy avoided costs are from the 2014 Integrated Resource Plan for NS. The T&D costs were provided to EfficiencyOne by NS Power in 2018. An implicit assumption in this study is that the avoided costs developed for NSP's peak period definition is applicable to the peak definition used in this study. Navigant recognizes that this may not be the case, however it is out of scope of this study to redefine the avoided costs.

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Navigant calculated both technical and market potential associated with implementing DR programs for this study.

Technical potential refers to the theoretical maximum potential under 100% participation of the eligible load. Navigant calculated technical potential by multiplying the eligible load/customers by the unit impact for each sub-option. An important caveat is that, by definition, technical potential calculation does not consider participation overlaps. Technical potential across the various sub-options are not additive and should not be added together to obtain a "total" technical potential. Therefore, the technical potential estimates for each DR sub-option should be considered independently. The technical potential calculation is summarized through Equation 2.

Equation 2. DR Technical Potential

$$\begin{aligned} &Technical\ Potential_{DR\ Sub\ Option,End\ Use,Year} \\ &\quad = Eligible\ Load_{DR\ Sub\ Option,Segment,End\ Use,Year} \\ &\quad * Unit\ Impact_{DR\ Sub\ Option,Segment,Year} \end{aligned}$$

Navigant calculated achievable potential by multiplying achievable participation assumptions (subject to program participation hierarchy discussed below) by the technical potential estimates. Achievable potential also accounts for customer opt-out during DR events. The achievable technical potential calculation is summarized through Equation 3.

Equation 3. DR Achievable Potential

$$\begin{aligned} &Market\ Potential \\ &\quad = Technical\ Potential_{DR\ Sub\ Option,Segment,End\ Use,Year} \\ &\quad * Achievable\ Participation\ Rate_{DR\ Sub\ Option,Segment,Year} \\ &* (1 - Event\ Opt\ Out\ Rate)_{DR\ Sub\ Option,Year} \end{aligned}$$

In addition to the potential estimates, Navigant developed annual and levelized costs by DR options and sub-options and conducted cost-effectiveness assessment of these options and sub-options. Development of DR program annual and levelized costs involve itemization of the various cost components, such as one-time program development costs, DR-enablement costs, equipment costs, participant marketing and recruitment costs, annual program administration costs, O&M costs, and customer incentives.

10.4.1 Demand Response Base Case Assumptions

10.4.1.1 Participation and Hierarchy

Participation assumptions are based on review of similar programs offers and relevant secondary sources of information, such as publicly-available DR potential studies and evaluation reports from other jurisdictions and DR program databases such as the U.S. Federal Energy Regulatory Commission (FERC) National DR Program Survey database. [28] As mentioned previously, the accompanying Excel spreadsheet for DR assumptions provided to EfficiencyOne include detailed documentation of the participation assumptions (see Appendix C). The participation assumptions are developed by customer class and DR option, and represent steady-state participation levels after the program is fully ramped up. Based on standard industry assumptions, Navigant assumes a 5-year S-shaped ramp for the DR options. Therefore, these steady-state participation values are assumed to be reached after that ramp period.

[28] http://www.ferc.gov/industries/electric/indus-act/demand-response/dem-res-adv-metering.asp

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For achievable potential estimates, Navigant accounted for participation overlaps among different DR options offered to the same customer class through a participation hierarchy represented in Figure 10-17.

The participation hierarchy helps avoid double counting of potential through common load participation across multiple programs and is necessary to arrive at an aggregate potential estimate for an entire portfolio of DR programs. CPP is considered lower in the hierarchy than the incentive-based options[29]. The hierarchy order is based on the dispatchability of the options and the reliability around the load reductions, with the most reliable and dispatchable resource placed at the top and the least reliable resource at the bottom.

Figure 10-17. Program Hierarchy to Account for Participation Overlaps[30]

Level in Hierarchy	DR Option	Eligible Customers
1	BTM Battery Control	Customers with dispatchable batteries.
2	DLC (for Residential and Small BNI) or BNI Curtailment (Large BNI)	Customers without dispatchable batteries.
3	CPP	Customers without dispatchable batteries and not enrolled in DLC or BNI Curtailment.
4	Behavioural DR	Customers without dispatchable batteries and not enrolled in DLC or CPP

Source: Navigant

10.4.1.2 Unit Impact Assumptions

The unit impacts specify the amount of load that could be reduced during a DR event once customers are enrolled in a DR program. Unit impacts can be specified either directly as "kW reduction per participant" or as "% of enrolled load".

Only residential DLC impacts for space heating (both electric furnaces and heat pumps) are specified as kW reduction per device. All other unit impacts are specified as "% of enrolled load".

The model inputs data provided in Appendix C to the report presents the unit impact assumptions used for potential estimation and includes detailed documentation for the basis of these assumptions. For BNI Curtailment, unit impacts are developed by DR sub-option as the unit impact values are tied to the end uses and the type of control. For example, the load reductions associated with Manual HVAC control and Auto-DR HVAC control are different and are specified accordingly.[31]

[29] This assumption applies to the Base and Low scenarios. However, for the High scenario, where CPP is offered as a default rate with opt-out, it is placed at the top in the hierarchy.
[30] EV control is outside the hierarchy because it only applies to EVs.
[31] The unit impacts assume that DR events are called over a 3-hr. duration (based on 5-8 p.m. peak period determination). If NS Power would like to call events over a longer duration, it may be possible to recruit additional customers and stagger the dispatch in batches with 3-hr. dispatch duration for each batch. Moreover, if participants were to be dispatched in batches, the net load reduction would be uncertain given that the snapback effect from customers dispatched during the previous batch would nullify some of the load reductions from the batch being dispatched. The modeling framework used in this analysis does not incorporate these considerations.

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10.4.1.3 Program Costs and Related Assumptions for Cost-Effectiveness

Navigant developed detailed itemized cost assumptions for each DR option to assess annual program costs and calculate levelized costs for each option. These cost calculations feed into the cost-effectiveness assessment of DR options using the TRC test. The DR analysis input assumptions file presents detailed itemized cost assumptions used in this study and documents the basis for these assumptions.

The cost assumptions fall into the following broad categories:

- **One Time Fixed Costs**, specified in terms of $/DR option, which include the program start-up costs, including for example, the software and IT-infrastructure related costs, and associated labor time/costs (in terms of FTEs) incurred to set up the program.
- **One Time Variable Costs**, which include marketing and recruitment costs for new participants, and enabling technology costs associated with control and communications technologies to enable DR. The enabling technology cost is specified either in terms of "$/new participant" on a per site basis, or as "$/kW of enabled load reduction" on a participating load basis.[32]
- **Annual Fixed Costs,** specified in terms of $/year, which primarily includes FTE costs for annual program administration and ongoing IT related costs not included in the one-time fixed category above.
- **Annual Variable Costs,** which primarily includes customer incentives, specified either as a fixed annual incentive amount per participant ($/participant/yr.), or in terms of load reduction ($/kW reduction), depending on the program type. It also includes additional O&M costs that may be associated with servicing technology installed at customer premises.

Other than the itemized program costs, the key variables for cost-effectiveness calculations in the model are:

- **Discount rate** of 6.84%[33], used for Net Present Value (NPV) calculations.
- **Line loss** values between 4.5% and 14.7% depending on customer class, which is used to bring up the potential at customer meter to the generator for cost-effectiveness assessment.[34] [33]

For assessing the DR benefits, Navigant used the avoided wholesale capacity costs and avoided distribution transmission capacity costs from 2014 IRP, with 2018 estimate of transmission and distribution avoided costs from NSP. Figure 10-18 summarizes the benefits and costs considered in the cost-effectiveness assessment of DR options and sub-options.

Figure 10-18. Summary of Benefit-Cost Streams for TRC in DRSim™

Benefits	Costs	Transfer[34]
Wholesale Avoided Capacity Costs	Program Development Cost	Incentives
Avoided Transmission Capacity Costs	Program Administrative Cost	
Avoided Distribution Capacity Costs	Program Delivery Cost	
	Marketing & Recruitment Cost	
	Technology Enablement Cost	
	O&M Cost	
	Participant Cost	

[32] The enabling technology costs represents the incremental costs associated with controls and communications for making the device DR-enabled. These costs are not expected to decline meaningfully over time, and are modelled as being static.
[33] This is the 2019 NS Power WACC/AFUDC value from the WACC AFUDC Application.
[34] These are sourced from NS Power 2014 Cost of Service Study (COSS) - Exhibit 9A.

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The cost-effectiveness assessment takes a long-term perspective. Only DR options that had TRC benefit-to-cost ratios of 1.0 or greater were deemed cost-effective and included in the potential estimates. Chapter 11 presents cost-effectiveness results.

10.4.2 Descriptions of Scenarios and Related Assumptions

Navigant developed achievable potential estimates under three scenarios – base, high, and low. These scenarios represent variations in the following input assumptions:

- **Baseline peak demand projections**: The baseline peak demand projections for DR for the base, high, and low scenarios correspond to the base, mid, and low scenarios for the energy efficiency potential estimates respectively. The baseline peak demand projections are highest for the low scenario since the energy efficiency potential savings are lowest corresponding to that scenario. Similarly, the baseline peak demand projections for DR potential estimates are lowest under the high scenario (corresponding to the energy efficiency mid scenario). The base case baseline peak demand projections lie in between the low and high peak demand projections.

- **Saturation values for heat pumps:** A key input for estimating the DR potential for residential space heating are the saturation values for electric furnaces and heat pumps. The energy efficiency potential analysis provided variations in market adoption for heat pumps under the three scenarios (highest adoption of heat pumps under the high scenario for DR [35] and lowest adoption of heat pumps under the low scenario for DR [36]). These variations in market adoption from the energy efficiency potential analysis were fed into the saturation assumptions to calculate DR potential.

- **Programmatic assumptions:** In addition to these two input variations, the scenarios represent variations in the following programmatic assumptions, summarized in Figure 10-19. The high scenario drivers are higher incentives and higher marketing expenditures over the base scenario, which in turn result in higher enrollment in DR programs. Conversely, for the low participation scenario, enrollment in DR programs is lower than the base case due to lower levels of incentives and marketing expenditures. The percentage changes represented here are based on Navigant's industry insights from similar analysis in other jurisdictions. These percentages reflect that residential and small BNI customer participation in DR programs is more sensitive to variations in incentives and marketing spend than those for the larger BNI customers.

[35] The high scenario for DR corresponds to the mid scenario in the EE potential analysis.
[36] The low scenario for DR corresponds to the low scenario in the EE potential analysis.

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Figure 10-19. Summary of Changes in Programmatic Assumptions Across Scenarios

Scenario	Applicable Customer Class	% change in incentives over Base Case	% change in marketing costs over Base Case	% change in participation over Base Case
High	Residential	+50%	+50%	+15%
	Small Commercial, Small Industrial	+50%	+50%	+20%
	Large Commercial, Large Industrial, and Interruptible	+50%	No change	+10%
Low	Residential	-50%	-50%	-30%
	Small Commercial, Small Industrial	-50%	-50%	-40%
	Large Commercial, Large Industrial, and Interruptible	-50%	No change	-15%

Source: Navigant analysis

For CPP specifically, Navigant assumed that the CPP rate is offered as "default with opt-out" under the high scenario, while both base case and low scenario assume an opt-in type of offer for CPP. Consequently, under the high scenario, CPP is placed at the top of the participation hierarchy and other options apply to customers who opt-out of the CPP rate.[37] Additionally, under a default rate offer, the unit impacts for CPP are lower than unit impacts under opt-in type offer. This assumption is supported by findings from a database of pricing programs and pilots with different types of offers, developed by the Brattle Group.[38] Accordingly, the high scenario in this analysis assumes a lower unit impact for CPP than the base and low scenarios.

[37] Note that residential low-income segment customers are excluded from the CPP offer in all cases. CPP has a pretty steep critical peak to off-peak price ratio and unlikely to be offered to low-income customers for fear of penalization if these customers are not able to reduce demand during critical peak period.

[38] https://www.portlandgeneral.com/-/media/public/our-company/energy-strategy/documents/2016-02-01-demand-response-market-research.pdf

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11. DEMAND RESPONSE POTENTIAL AND COST-EFFECTIVENESS RESULTS

This chapter presents the DR potential and costs results based on the approach described in Section 10. Navigant presents detailed base case results at different levels of granularity by DR options, DR sub-options, customer classes, and building types. Under the base case, Navigant begins by providing a preview of the potential results before screening for cost-effectiveness using achievable participation rates. Next, Navigant presents cost-effectiveness results and the achievable potential associated with cost-effective options only at different levels of granularity. Under scenario analysis, Navigant indicates how the cost-effectiveness results change across scenarios and present potential and cost result comparisons across the scenarios.

Accordingly, this chapter presents the analysis results in the following order:

1. Base Case potential results for all DR options included in the analysis (before cost-effectiveness screening)
2. Base Case cost-effectiveness and levelized cost results for all DR options
3. Base Case potential results by DR options, DR sub-options, customer class and building type for cost-effective DR options only
4. Base Case annual cost results by cost-effective DR options
5. Scenario analysis results with comparison of cost-effectiveness and achievable potential results

In addition to these achievable potential results, Section 11.1 includes technical potential results from the analysis. Technical potential assumes 100% participation of eligible customers in DR options and represents the theoretical upper limit for potential. Since the technical potential assessment does not account for participation overlaps and a program hierarchy, the DR option potential estimates are not additive and therefore Section 11.1 presents standalone technical potential results for individual DR options.

Economic potential is not considered because the DR analysis operates differently from the EE analysis; it is not a system dynamics stock-turnover model but is rather based on programmatic assumptions specified in the input sheet. Economic potential in the EE analysis reflects whether a measure is economic in absence of a utility program or utility investment. However, DR measures would not exist without a utility program. Measures in DRSim are not competing for market share, so cost-effectiveness can only be considered at the program level.

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11.1 Demand Response Technical Potential Results

Navigant calculated the technical potential for implementing DR programs for this study. Technical potential refers to the theoretical maximum potential under 100% participation of the eligible load. Navigant calculated technical potential by multiplying the eligible load or eligible customers by the unit impact for each sub-option.

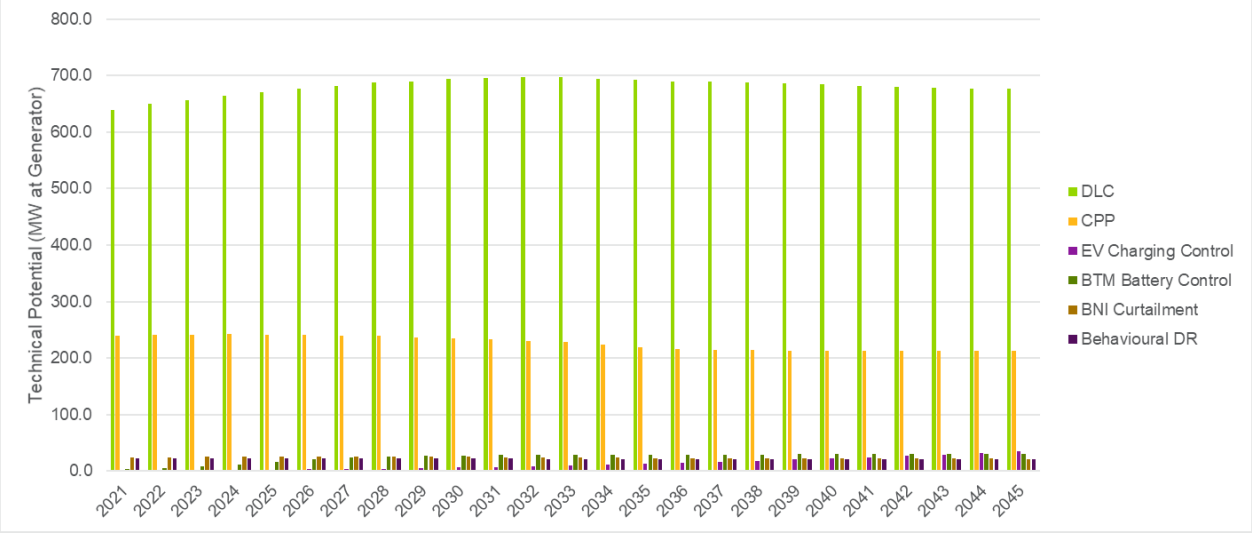
An important caveat is that, by definition, a technical potential calculation does not consider participation overlaps. **Technical potential across the various sub-options are not additive** and should not be added together to obtain a total technical potential. Therefore, the technical potential estimates for each DR sub-option should be considered independently. The technical potential calculation is summarized through Equation 4.

Equation 4. DR Technical Potential

$$Technical\ Potential_{DR\ Sub\ Option,End\ Use,Year} = Eligible\ Load_{DR\ Sub\ Option,Segment,End\ Use,Year} * Unit\ Impact_{DR\ Sub\ Option,Segment,Year}$$

Figure 11-1 shows technical potential results by DR Sub-Option. Savings for each customer class can be viewed in the "Technical Pot_Option" tab in the accompanying DR Results workbook (see Appendix D). There are two general trends for technical potential savings over time, depending on the customer class and DR option. For DR impacts based on % of load reduced, the savings trends will track the baseline peak forecast, and for DR impacts based on kW reduction per unit, the savings trends track the account forecast projections.

Figure 11-1. Technical Potential by DR Sub-Option



Source: Navigant analysis

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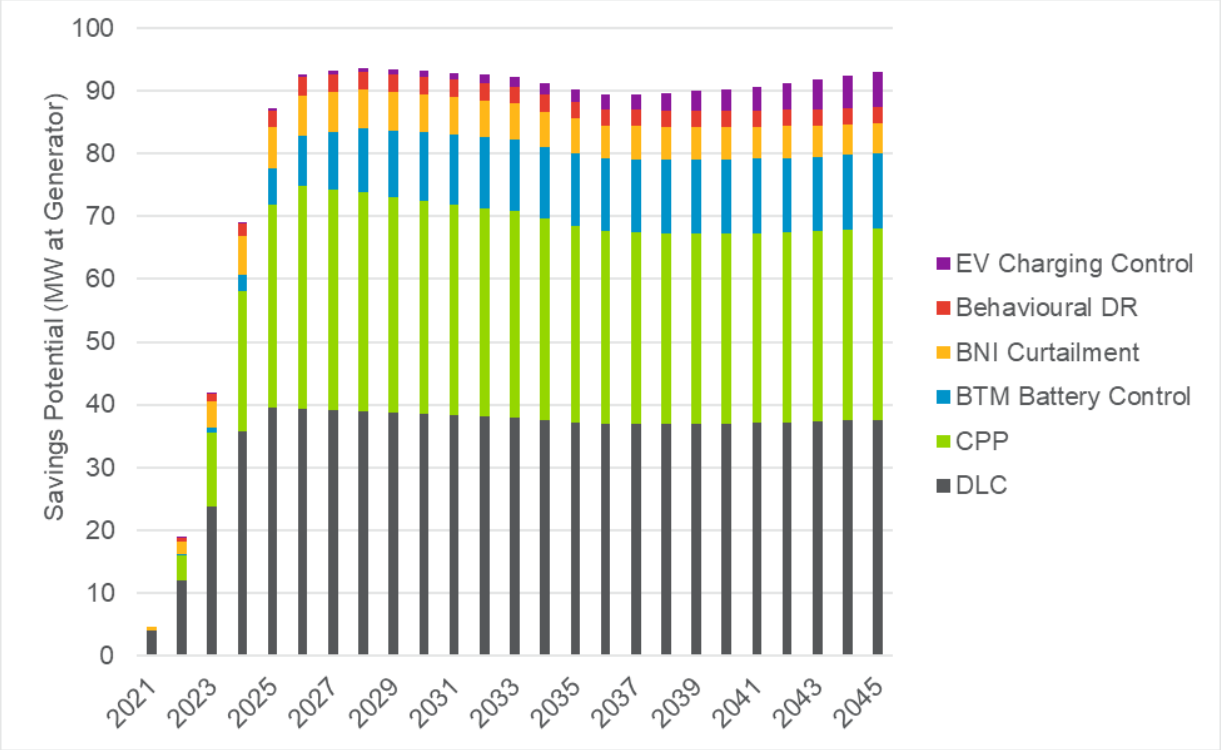
11.2 Demand Response Base Case Achievable Potential Results

This section presents achievable potential results for all DR options included in the analysis before screening for cost-effectiveness. The purpose is to provide the full spectrum of potential estimates for all DR options. Subsequent sections in this chapter will consider only the cost-effective DR options and provide a deeper dive into those potential results.

11.2.1 Achievable Potential Results by Demand Response Option

Figure 11-2 shows the MW breakdown of the DR achievable potential by DR option. Figure 11-3 shows the achievable potential as a percentage of Nova Scotia Power's peak demand. DR potential is estimated to increase to 93 MW by 2027 and settles to 92 MW by 2045. Under the base scenario, the achievable potential comprises more than 6% of Nova Scotia's peak demand in 2027 and reaches more than 7% by 2045 as the demand reduction impacts from the energy efficiency measures reduce the overall peak demand.

Figure 11-2. DR Achievable Potential by DR Option (MW at generator)



Source: Navigant analysis

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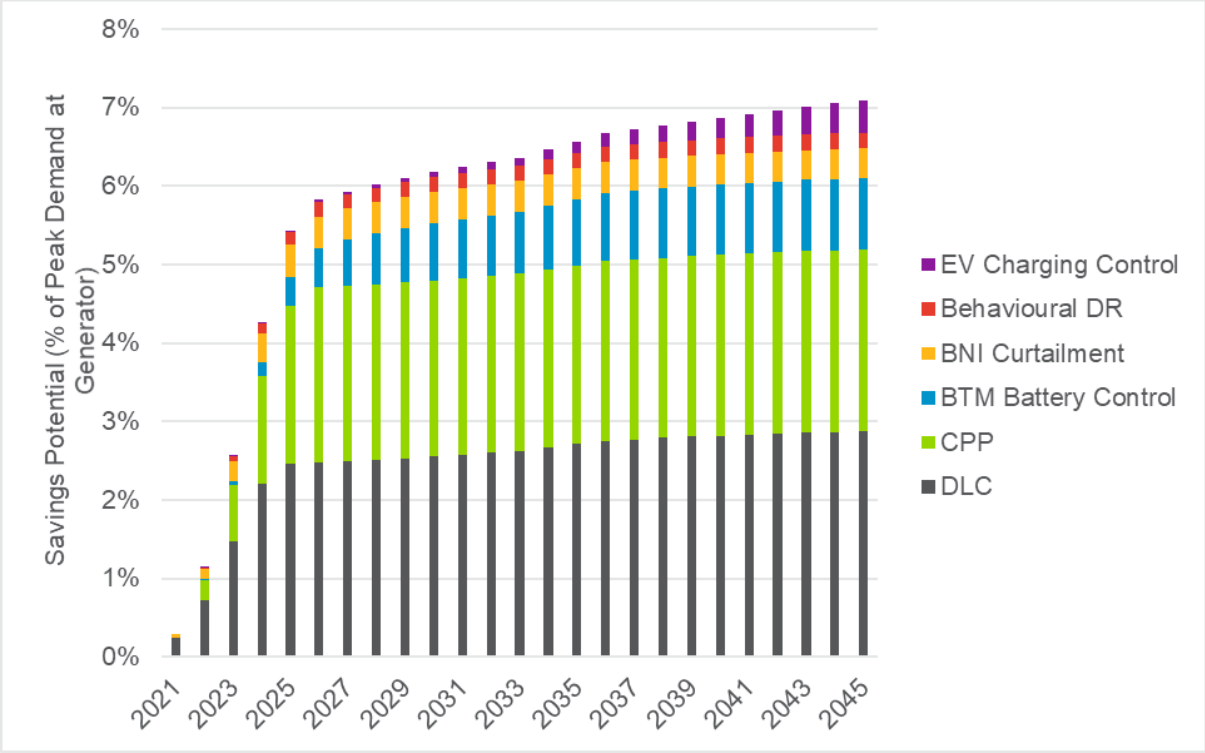
Figure 11-3. DR Achievable Potential by DR Option (% of Peak Demand)



Source: Navigant analysis

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11.3 Demand Response Base Case Cost-effectiveness Assessment Results

This section presents base case cost-effectiveness results by DR option based on the Total Resource Cost (TRC) test. Navigant also calculated the cost-effectiveness results based on the Program Administrator Cost (PAC) test.

11.3.1 Benefit-Cost Assessment by Demand Response Option

Figure 11-4 shows the TRC benefits, costs (in NPV 2020 dollars) and benefit-cost (BC) ratios calculated for each DR option, as well as the results from the PAC test. All DR options are cost-effective, other than Behavioral DR, BTM Battery Control, and EV Charging control. Benefit-cost ratios calculated using the PAC test tend to be lower because incentives are included as a cost, while the TRC considers incentives as a transfer payment. The benefit-cost ratios for CPP and BDR do not change across the cost tests because these DR options do not incur incentive costs.

Figure 11-4. DR Benefit-Cost Assessment by DR Option (TRC and PAC Test Benefit-Cost Ratios)

DR Option	Benefits (NPV 2020 million $)	Costs (NPV 2020 million $)	TRC Test Benefit-Cost Ratio	PAC Test Benefit Cost Ratio
CPP	65.05	25.23	2.58	2.58
DLC	81.47	66.60	1.22	1.06
BNI Curtailment	12.67	11.03	1.15	0.87
Behavioural DR	5.52	5.78	0.96	0.96
BTM Battery Control	19.17	22.91	0.84	0.73
EV Charging Control	3.05	11.08	0.28	0.26

Source: Navigant analysis

11.3.2 Demand Response Levelized Costs & Supply Curves

Figure 11-5 shows the levelized costs and the corresponding 2045 achievable potential for all DR options. The levelized costs consider the TRC costs and are calculated using the potential at generator. In terms of ascending order of levelized costs:

- CPP is the least cost option at $79/kW-yr., with 30 MW potential in 2045
- DLC follows at $173/kW-yr., with highest potential in 2045 at 38 MW
- BNI Curtailment ranks next at $185/kW-yr., with a much lower contribution than CPP (5 MW in 2045)
- BDR has the lowest potential among the DR options (2.6 MW in 2045), and costs around $221/kW-yr. This is not cost effective due to assumed low impacts.
- BTM charging control costs $247/kW-yr., and is not cost effective due to the high technology enablement costs
- EV charging control is significantly higher cost due to relatively high technology enablement costs and assumed low unit impacts from EVs during the peak period

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Figure 11-5. DR Base Achievable Scenario Levelized Costs vs. 2045 Potential (MW at generator)

DR Option	Levelized Costs ($/kW-yr.)	Achievable Potential (MW) (2045)	Cost-Effective Flag (DR Option)	Cumulative Cost-Effective Potential (MW) (2045)
CPP	$79.10	30.41	1	30.41
DLC	$173.03	37.58	1	67.99
BNI Curtailment	$184.92	4.89	1	72.89
Behavioural DR	$221.31	2.62	0	72.89
BTM Battery Control	$247.37	12.00	0	72.89
EV Charging Control	$755.88	5.44	0	72.89

Source: Navigant Analysis

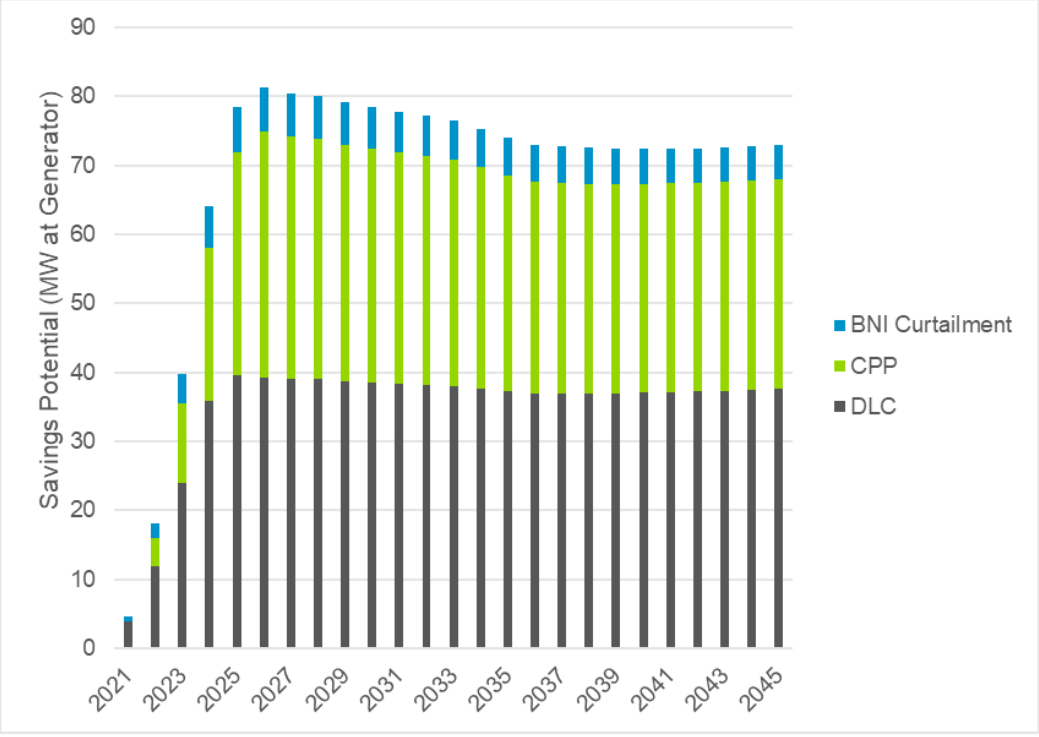
11.4 Cost-Effective Demand Response Achievable Potential Results

This section presents achievable potential results by DR options, sub-options, customer class, and building type for cost-effective DR options under the base case scenario.

11.4.1 Achievable Potential by DR Option for Cost-Effective DR Options

Figure 11-6 shows the MW breakdown of the DR achievable potential by cost-effective DR option.

Figure 11-6. DR Achievable Potential by DR Option for Cost-Effective DR Options (MW at generator)



Source: Navigant analysis

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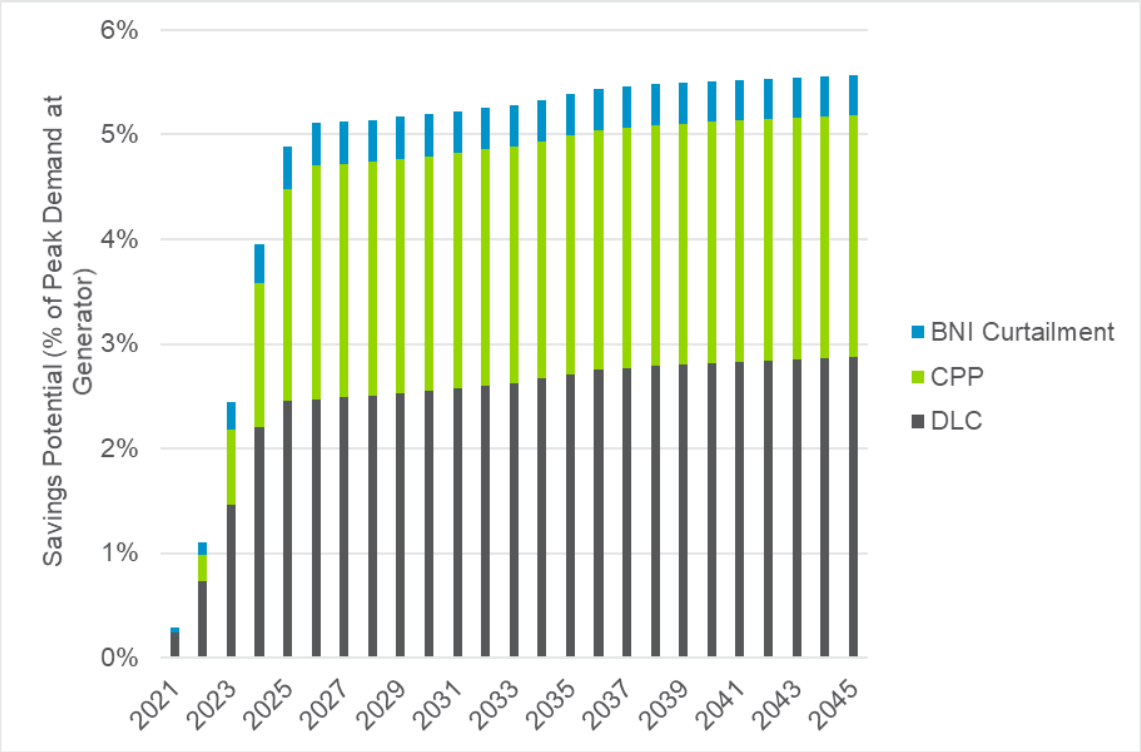
Figure 11-7 shows the achievable potential as a percentage of Nova Scotia Power's peak demand. The cost-effective DR potential under the base case is estimated to increase steadily to about 81 MW by 2026 and then declines and plateaus at about 72 MW from 2035 onward. The decline in potential is associated with the decrease in baseline peak demand for DR with progressively higher savings from energy efficient measures. Under the base scenario, the cost-effective achievable potential steadily increases to around 5% of peak demand in 2027 and remains steady thereafter in terms of percentage reduction in peak demand. DLC constitutes almost half of the total potential followed by CPP at 42%. BNI Curtailment share is significantly smaller at around 8%.

Figure 11-7. DR Achievable Potential by DR Option for Cost-Effective DR Options (Percent of Peak Load)



Source: Navigant analysis

11.4.2 Achievable Potential by DR Sub-Option for Cost-Effective DR Options

This section presents the breakdown of cost-effective potential by DR sub-option. Each sub-option is tied to a specific control technology and/or end use. Figure 11-8 shows the MW breakdown of the cost-effective DR achievable potential by DR sub-option. These results indicate the following:

- Of the total CPP potential, potential from customers with enabling technology is almost double the potential from customers without enabling technology (20 MW in 2045 from customers with enabling technology vis-à-vis 10 MW from customers without enabling technology in 2045). As discussed previously, dynamic rates, coupled with enabling technology such as thermostats for residential and small BNI customers and Auto-DR for large BNI customers can significantly increase DR impacts.

- Direct load control of water heaters makes up the second highest potential, with 18 MW in 2045 (25% of total potential). Residential direct load control of heat pumps and electric furnaces each comprise 18% and 7% of the total 2045 potential, respectively, or 13 MW and 5 MW.

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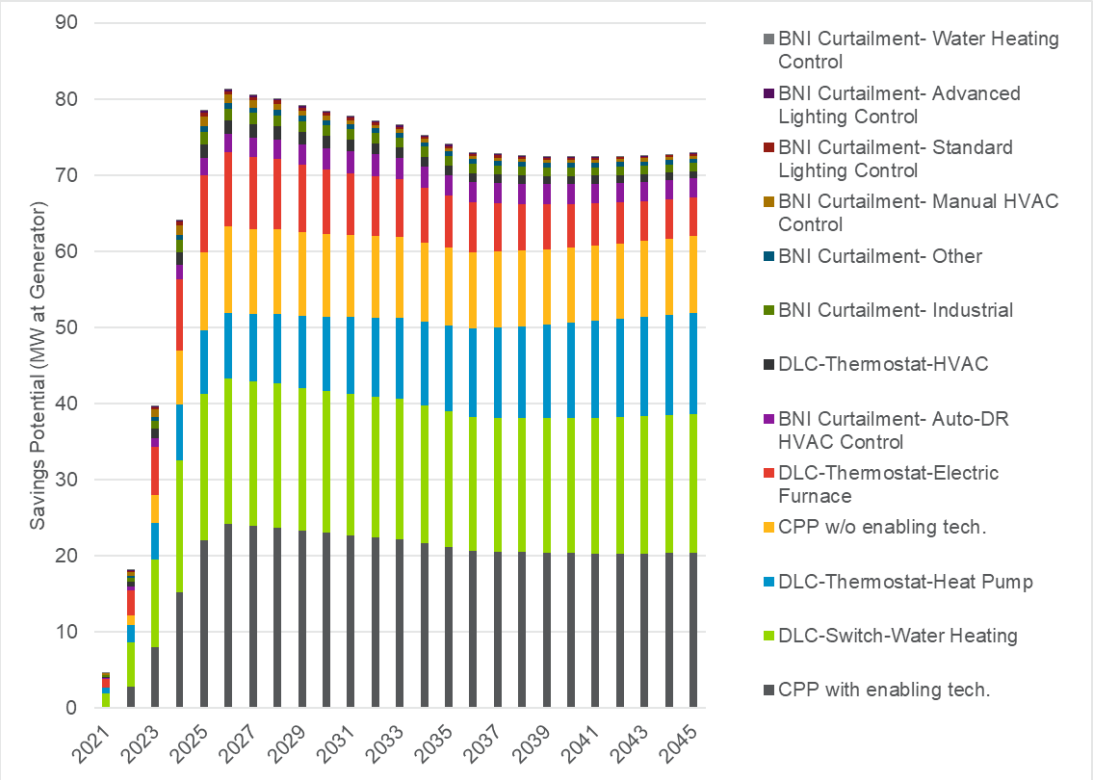
- Under the BNI curtailment program, reduction associated with Auto-DR HVAC control comprise 2% of the total cost-effective potential in 2045. Industrial BNI curtailment comprises 1%. All other BNI programs comprise 1% or less of the total potential in 2045.

Figure 11-8. DR Achievable Potential by DR Sub-Option for Cost-Effective DR Options (MW at generator)



Source: Navigant analysis

11.4.3 Achievable Potential by Customer Class for Cost-Effective DR Options

This section presents the breakdown of cost-effect potential by customer class. As discussed in the methodology section, the six customer classes in this study are residential, small industrial, small commercial, large industrial, large commercial, and customers on the interruptible rider.

Figure 11-9 shows the MW breakdown of the cost-effective DR achievable potential by customer class, and reveals:

- Potential from residential customers makes up 62 MW or 86% of the total 2045 potential and is associated with DLC and CPP.

- Potential from interruptible rider, small commercial, and large industrial customers each comprise about 2 to 3 MW or 3% to 5% of 2045 potential. Interruptible riders were modeled in same manner as other BNI customer classes.

- Potential from large commercial and small industrial customers comprise 1 MW and 0.3 MW respectively or together comprise about 2% of the 2045 potential.

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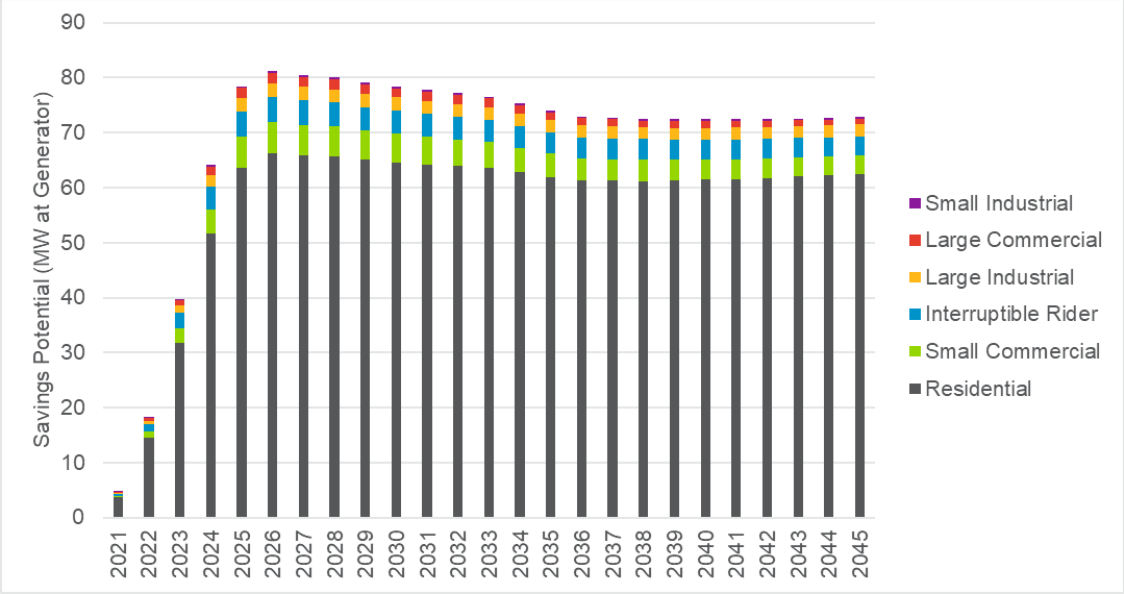
Figure 11-9. DR Achievable Potential by Customer Class for Cost-Effective DR Options (MW at generator)

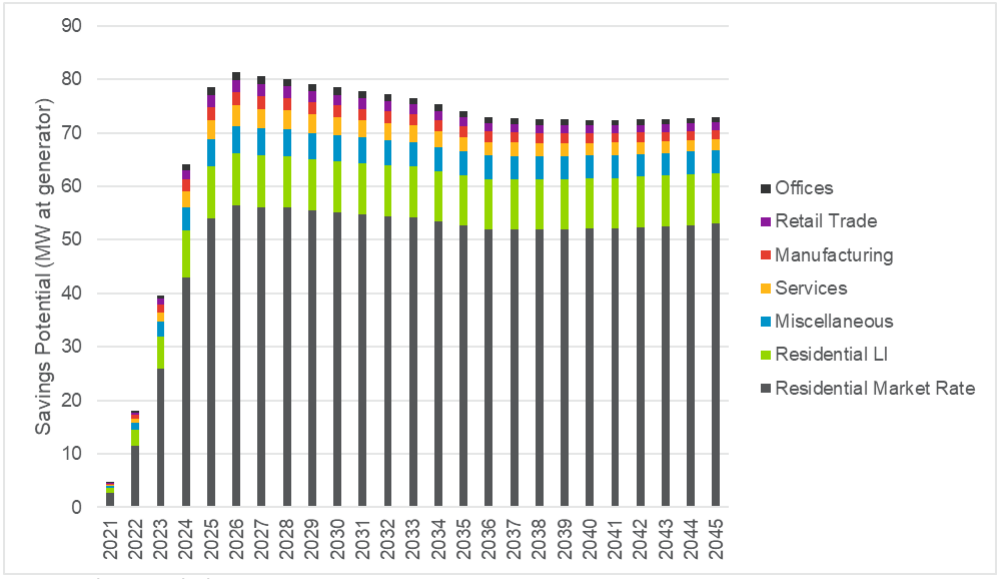


Source: Navigant analysis

11.4.4 Achievable Potential by Building Type for Cost-Effective Demand Response Options

This section presents the breakdown of cost-effective potential by building type or customer segment, shown in Figure 11-10. These results indicate that residential customers on market rate (all except low-income customers) comprise 73% (53 MW) of the total cost-effective achievable potential in 2045. This is followed by residential low-income at 13% of the total followed by the miscellaneous segment within BNI at 6% of the total 2045 potential. The contribution from other BNI segments range between 1% to 3% of the total potential.

Figure 11-10. DR Achievable Potential by Building Type for Cost-Effective DR Options (MW at generator)



Source: Navigant analysis

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11.5 Demand Response Investment Levels

Figure 11-11 summarizes the annual program investment for cost-effective DR options in the base case. Results indicate the following:

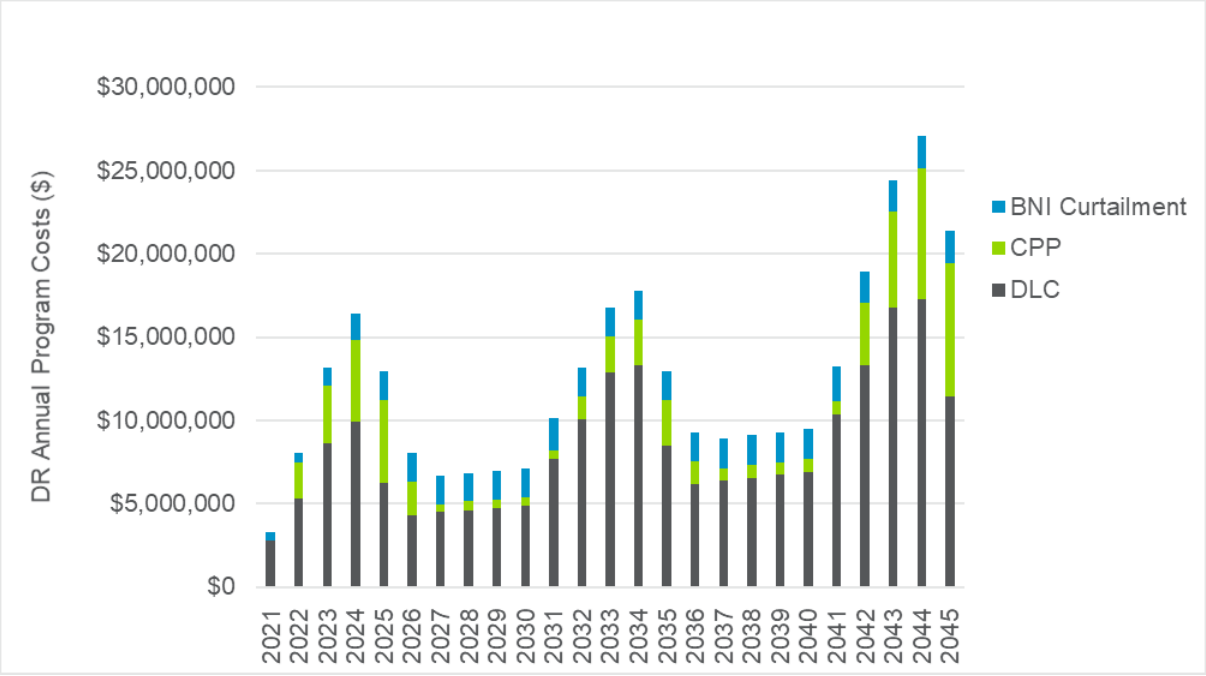
- The program investment for DLC increase steadily from 2021 to 2024 and then drop until 2026. The costs remain steady and then spike back up in 2031 because the DLC program has a life of 10 years, so technology enablement and program development costs are re-incurred at this time. From then on, costs fluctuate in accordance with program participation, which is tied to the saturation of the end-use devices (heat pumps, electric furnace, water heating), until it reaches 2041, when the program costs are re-incurred again. The two main cost components for DLC are the control equipment cost (thermostats and switches) and customer incentives for DR program participation.

- CPP program investment is relatively high during its initial ramp up between 2023 to 2026, and then drop in 2027-2028 when the program is fully ramped up. Beyond 2028, costs remain low and relatively stable. Enabling technology costs for customers that are offered the rate in conjunction with enabling technologies is a major cost component. Other significant costs are marketing and outreach to customers to enroll them in rates.

- The investment for BNI curtailment is tied directly to the potential estimates as majority of the program costs are rolled into an aggregator payment and represented as a delivery cost in terms of $/kW-yr.

- Behavioural program investment is fairly low and consistent once the program is fully ramped by 2026.

Figure 11-11. DR Annual Program Costs by DR Option for Cost-Effective DR Options ($)



Source: Navigant Analysis

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11.6 Demand Response Scenario Analysis Results

As described in methodology section, in addition to the base case, Navigant modeled potential results for low and high cases. For these cases, Navigant adjusted assumed participation levels, incentive amounts, marketing spending, and equipment saturation to determine the impacts on the DR achievable potential. The peak demand forecasts also varied by case as these were tied to the different demand reduction scenario impacts from the energy efficiency potential study.

11.6.1 Comparison of Cost Results Across Demand Response Scenarios

Figure 11-12 shows the cost-effectiveness results by DR option for the three scenarios. The net present value (NPV) of benefits and costs is shown in 2020 dollars. Ratios under 1.0 are considered not cost-effective. As is evident from the results, DLC and BNI Curtailment are not cost-effective under the high scenario. This is due to the assumption that CPP will be opt-out, meaning that it will be placed at the top of the hierarchy in the model and will capture the greatest number of customers. Since there are fewer participants in DLC and BNI, the fixed costs render these two options non-cost-effective. Only CPP and BDR are cost-effective in the high scenario. The selection of cost-effective DR options remains the same for base and low scenarios.

Figure 11-12. DR Cost-Effective Results by DR Options and by Scenarios

Case	DR Option	Benefits (NPV 2020 million $)	Costs (NPV 2020 million $)	TRC Test Benefit-Cost Ratio
Base	CPP	65.05	25.23	2.58
Base	DLC	81.47	66.60	1.22
Base	BNI Curtailment	12.67	11.03	1.15
Base	Behavioural DR	5.52	5.78	0.96
Base	BTM Battery Control	19.17	22.91	0.84
High	CPP	177.98	36.08	4.93
High	Behavioural DR	8.13	8.17	1.00
High	DLC	39.46	43.56	0.91
High	BNI Curtailment	9.47	10.21	0.93
High	BTM Battery Control	5.53	9.54	0.58
High	EV Charging Control	3.36	12.30	0.27
Low	CPP	49.53	14.85	3.34
Low	DLC	58.60	43.31	1.35
Low	BNI Curtailment	11.37	8.61	1.32
Low	Behavioural DR	4.49	4.81	0.93
Low	BTM Battery Control	13.49	15.38	0.88
Low	EV Charging Control	3.05	10.72	0.28

Source: Navigant Analysis

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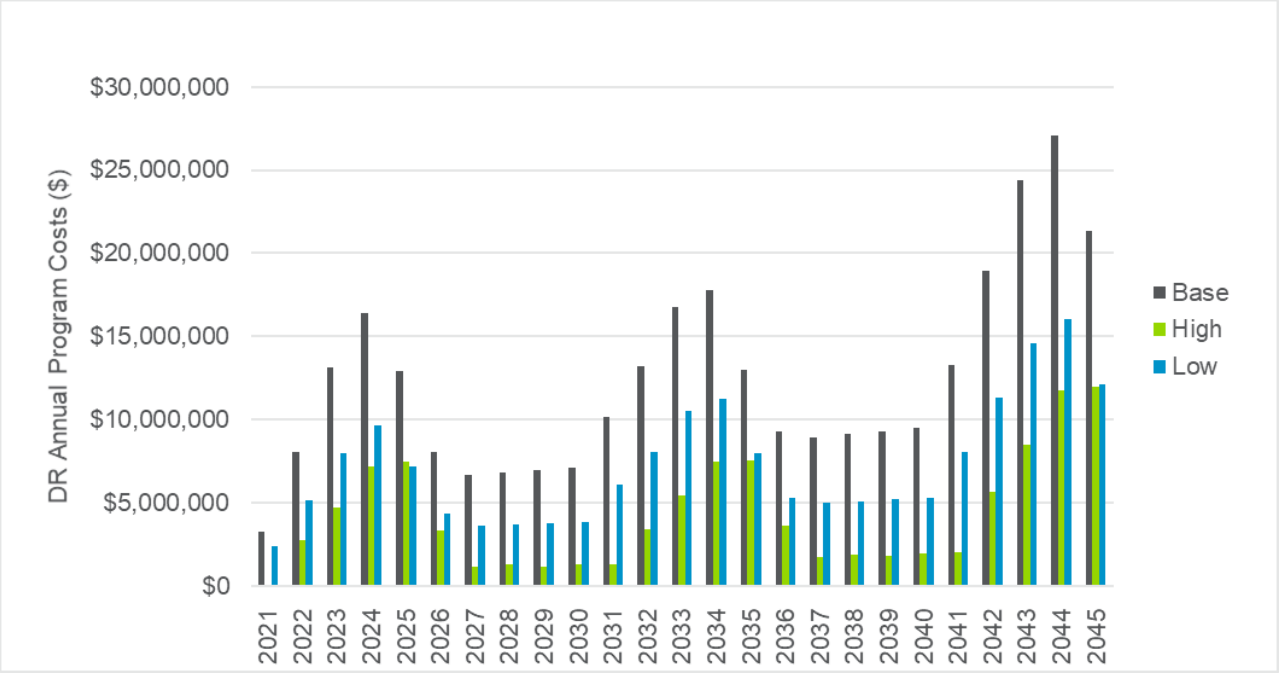
Figure 11-13 compares the annual cost results across the three scenarios. Due to DLC and BNI Curtailment becoming not cost-effective in the high scenario, annual program costs are lower in the high scenario than the base scenario. High scenario costs are only associated with CPP and behavioural DR. The low scenario costs are smaller than the base scenario costs due to lower participation levels and lower per participant incentives and marketing costs.

Figure 11-13. DR Annual Portfolio Costs by Scenarios for Cost-Effective DR Options[39]



Source: Navigant Analysis

Based on cost-effectiveness screening, the annual portfolio costs are expected to increase from:

- $3.3 million in 2021 to $21.4 million in 2045 for the base scenario
- $2.7 million in 2022 to $12.0 million in 2045 for the high scenario
- $2.4 million in 2021 to $12.1 million in 2045 for the low scenario

11.6.2 Comparison of Potential Results Across Scenarios

Figure 11-14 and Figure 11-15 show a comparison of the potential results across the three scenarios. The achievable potential under the high scenario is 18% greater than the base scenario potential, while the low potential is approximately 24% lower than the base case potential. The 2045 potential under the low, base, and high scenarios represent approximately 4.0%, 5.6%, and 6.9% of NSP's peak demand in 2045, respectively.

[39] DR options were screened at their respective scenario inputs using the Total Resource Cost Test.

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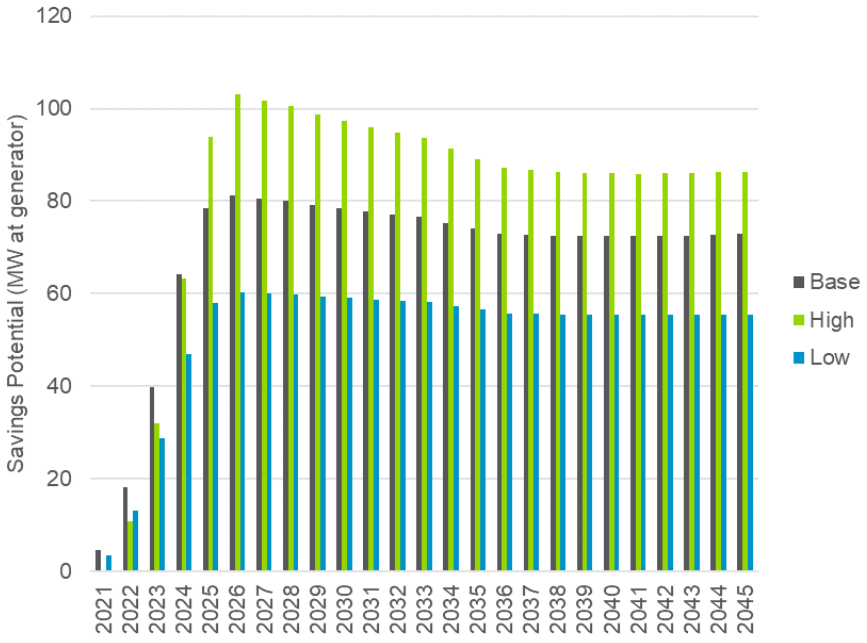
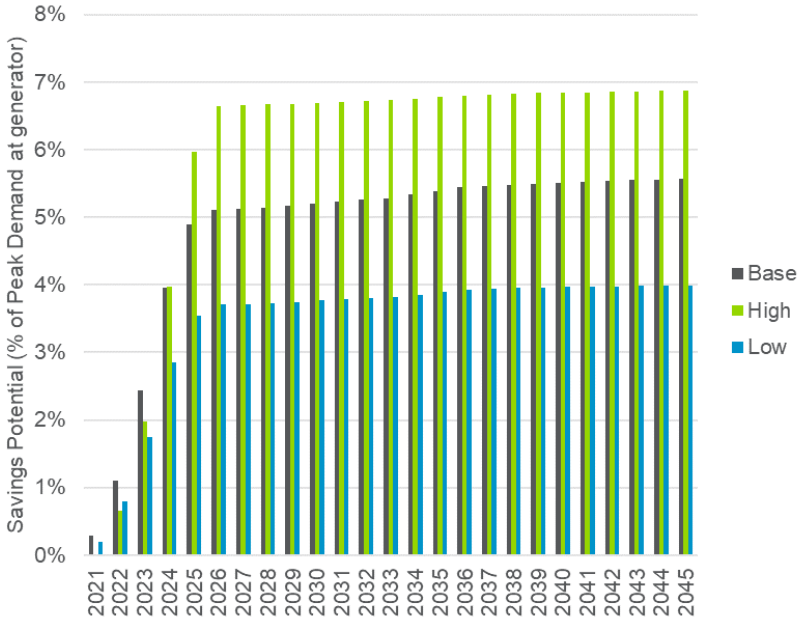
Figure 11-14. DR Achievable Potential by Scenario (MW at generator)



Source: Navigant Analysis

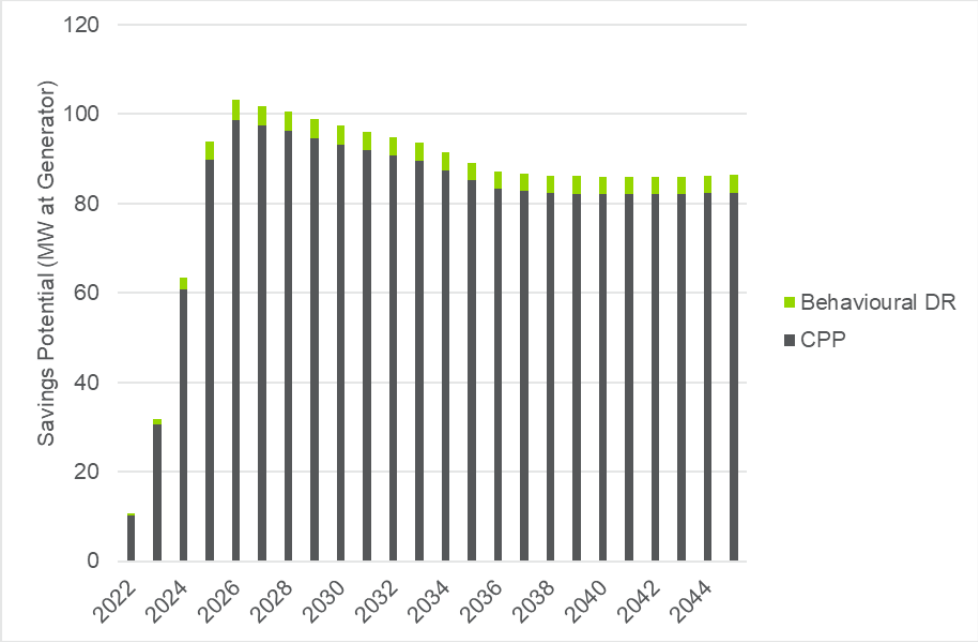
Figure 11-15. DR Achievable Potential by Scenario (Percent of Peak Demand)



Source: Navigant Analysis

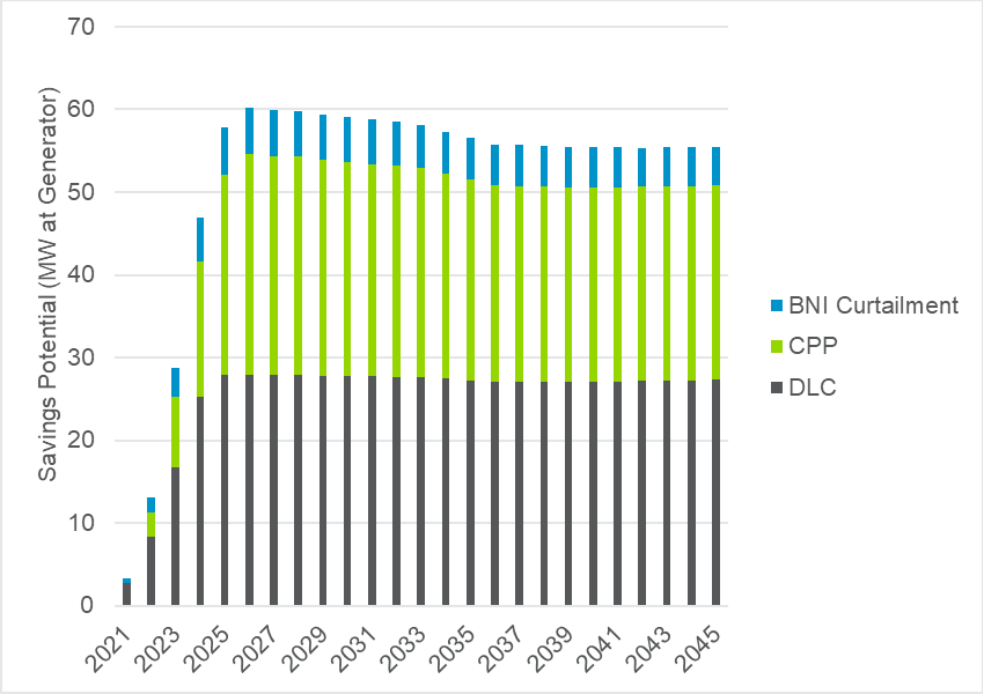
Figure 11-16 and Figure 11-17 present DR Achievable Potential for the High and Low scenarios by DR option. Default CPP in the high scenario accounts for more than 95% of the total potential. The trend for the low scenario is the same as that for base with lower contribution from all DR options.

Figure 11-16. DR Achievable Potential by DR Option, High Scenario, (MW at generator)



Source: Navigant Analysis

Figure 11-17. DR Achievable Potential by DR Option, Low Scenario, (MW at generator)



Source: Navigant analysis

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11.7 Demand Response Snapback Effects

The previous discussions on potential estimates only included demand reductions during the DR event period. For DLC programs, typically, where the end use load is being directly controlled either through a switch or a thermostat, a snapback effect is commonly observed after the DR event ends. This arises because customers may increase the thermostat set point temperature for electric space heating almost immediately after the event period to make up for the loss of heat in their homes during the DR event period. Impact evaluation of DLC programs typically include snapback estimates and provide insights on snapback effects from these studies.[40] Navigant's industry experience in this area indicates that for central furnaces and heat pumps, the snapback magnitude during evening peak hours may be the same or even greater than the DR evening peak demand reduction as customer demand increases during the evening hours.

There are differences in snapback estimates between different types of space heating equipment. For example, for heat pumps, the snapback may be much more pronounced than for central furnaces. For a two-stage heat pump, the compressor operates above a certain ambient temperature to supply electric heat. But below that temperature, the compressor is no longer able to supply heat and the remaining heat is supplied by a resistance heating element, referred to as heat strip. Snapback could potentially be exacerbated because when the heat pump is cycled off for a curtailment event, the electric heat strips may then be more likely called into operation after the curtailment event. This is because the temperature differential (current vs. desired) is now greater than it would be had the heat pump been operating normally during the time of the curtailment event and the heat strips come into action since the ambient temperature is too low for compressor operation. This could potentially lead to significantly higher electricity use during the post event period for customers with heat pump. This phenomenon is not firmly established and requires additional research. Evaluation of other DLC programs indicates that there is no net increase in electricity use for customers with heat pumps because even though the snapback may be quite pronounced immediately following the event, it is likely to last for a short period. Therefore, the average snapback magnitude over a post-event period that has the same duration as the event period is likely lower than the average event period impact, alleviating concerns related to net increase in electricity use for participants with space heating control. In situations where customers might use gas and other supplemental fuels for heating, snapback effect could be mitigated by some of the other fuel types being used for heating during the event period.

For water heating load control, some pilots/programs observed greater snapback impacts than event period impacts in the evening. Although counter-intuitive, a reasonable explanation is that even when hot water is not being used, water heaters will suffer from modest stand-by losses to maintain the water set-point temperature. These stand-by losses tend to be quite small, and not coincident across households. However, all that standby consumption isn't averted, but merely shifted to the snapback period when the hot water tank is re-activated. That is, the stand-by consumption that would otherwise have been spread evenly over the event duration is aggregated into a single hour following the event, resulting in a substantially high snapback effect. However, the snapback is observed to last over a very short period. Some impact studies report the snapback during the one hour, 10 to 15 minutes following the DR event, to be almost double the average DR event period impact. However, the average snapback magnitude over the same duration as the event is expected to be lower than the average impact during the event period, alleviating concerns related to net increase in electricity use due to snapback.

[40] The Navigant team for this study referred to impact evaluation studies conducted by Navigant to draw on insights related to snapback.

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12. CONCLUSION

This study has resulted in updated, expanded, and improved information on the Nova Scotia customer base and the potential for energy and demand reductions possible through energy efficiency and demand response programs and initiatives. While much energy efficiency (and demand response) potential remains, there are unique challenges in Nova Scotia in realizing this potential over the next 25 years.

12.1 Energy Efficiency

- **Near-term Electricity Savings:** The majority of near-term savings are from the Res HVAC, Res Lighting, and BNI Lighting end uses. Residential screw-in LED Bulb ranks as the highest electricity-saving market potential measure for the residential sector while custom energy efficiency leads BNI.
- **Near-term Winter Peak Demand Savings:** The majority of near-term winter peak demand saving measures come from the Res HVAC, Res Lighting, and BNI Lighting end uses. Residential whole home ranks as the highest demand-saving market potential measure for the residential sector. Custom energy efficiency leads the BNI sector.
- **Prior Energy Efficiency Success:** EfficiencyOne has effectively implemented energy efficiency programs in Nova Scotia for a decade, often exceeding goals in terms of the amount of savings achieved. As greater levels of energy efficiency are implemented in Nova Scotia and market saturation increases, it may become more challenging to harvest additional savings represented in the energy efficiency potential.
- **Significant Energy Efficiency Measure Saturation and low Net-to-Gross Ratios:** These reduce the available savings potential, particularly for efficient lighting.
- **Codes and Standards:** The challenge of continuing to capture savings from energy efficiency programs within an increasingly saturated market is exacerbated by tightening codes and standards, particularly as a result of federal lighting standards and the latest building energy codes.
- **Residential HVAC Fuel Switching:** The residential savings potential, specifically demand, is dominated by HVAC technologies. High technical and economic potential are attributed to HVAC fuel switching measures that completely remove the end-use load from a home. Although still a significant portion of potential, achievable results indicate that efficient electrification technologies, such as air source and mini-split heat pumps, are the primary drivers of future HVAC savings potential. Therefore, although fuel switching measures present a great technical opportunity for electricity and demand reduction, there are significant market barriers to customer adoption.
- **Changing Energy Efficiency Measure Costs:** Changes to the portfolio measure mix that occur due to market saturation and codes and standards changes drive incremental costs upward for many measures. More complex measures, such as advanced lighting design, luminaire level lighting controls (LLLCs) and networked/connected lighting controls, may require a more sophisticated workforce, additional training, as well as increased installation and configuration time, compared to static non-controllable lighting measures. This could result in increased incremental costs for these types of measures.

12.2 Demand Response

- **Critical Peak Pricing and Direct Load Control Dominate**: Over the 25-year period, more than 90% of the base case achievable potential savings are projected to be provided by the CPP and DLC sub-options. The remaining savings are estimated from BNI curtailment.

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- **Collaboration to Achieve Savings:** The assessment of demand response identifies several DR options for the province that can provide significant demand savings over the 25-year time horizon. To realize the potential savings will require coordination between NS Power and EfficiencyOne.

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APPENDIX A. Final Modelling Plan

Modelling Plan for Nova Scotia Energy Efficiency and Demand Response Potential Study

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EXECUTIVE SUMMARY

This document presents an overview of the modelling methodology and approach for two Nova Scotia studies currently under development by Navigant for EfficiencyOne (E1):

1. Energy Efficiency (EE) Potential Study for the 25-year period 2021 to 2045
2. Demand Response (DR) Potential Study for the 25-year period 2021 to 2045

The main objective of the studies is to identify and quantify electricity and/or demand savings and the associated costs from energy efficiency and demand response actions, disaggregated by sector, segment, and end use. The two studies will provide data and analysis to inform the development of Nova Scotia Power's (NSP) next Integrated Resource Plan (IRP).

The purpose of this Modelling Plan is to provide an overview and details of the proposed methodology and approach to each study, to ensure alignment of expectations between Navigant and EfficiencyOne, and to inform stakeholders regarding the methodology, activities, deliverables, and timelines related to the EE and DR studies being conducted.

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1. Overview of Modelling Approaches

On behalf of E1, Navigant will employ two separate Analytica-based models[1] to assess the potentials for EE and DR in Nova Scotia. The model inputs and outputs will be provided in Excel, to facilitate inspection by EfficiencyOne, regulatory intervenors and the Nova Scotia Utility and Review Board (UARB).

1.1 Energy Efficiency Potential

Navigant's Demand-Side Management Simulator (DSMSim$^{TM)}$ model, a transparent conservation and demand-side management potential tool, will be used to carry out the EE potential analysis. We have used this tool to conduct dozens of potential studies across North America and will customize the model to meet the requirements of this study. The DSMSim^{TM} model will estimate incremental and yearly total annual impacts of energy and peak demand savings for multiple scenarios, to be agreed upon with E1. Scenarios will be developed in conjunction with E1 and stakeholder feedback will be considered. Draft final scenarios will be communicated to stakeholders on 05/24/2019, as part of the scenarios/sensitivities and detailed assumptions package. Due to budget and timeline constraints, a maximum of five scenarios will be considered, one of which will be maximum achievable.

The DSMSim^{TM} model accepts detailed inputs, such as the densities and saturations of measures and customer awareness and willingness factors (that drive market adoption) to adopt measures. The DSMSim^{TM} model adheres to all the current best practices in the evaluation industry including those listed in Figure 1.

Figure 1. DSMSim^{TM} Model – Key Features

• Option to use cost test protocols outlined in the 2001 California Standard Practice Manual (CASPM) or the subsequent 2007 revision[2] to the CASPM; or the 2017 National Standard Practice Manual[3] by the National Efficiency Screening Project
• Allows analyst to define custom cost test definitions
• Rigorous treatment of early-retirement measures, including dual baselines and deferred replacement credits[4]

[1] For more information, see http://www.lumina.com/why-analytica.

[2] California Public Utilities Commission. 2007. "2007 SPM Clarification Memo." Note the SPM has additional provisions for demand response/reduction measures, which are included in Navigant's DSMSim model.

[3] National Efficiency Screening Project, 2017. "National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources, Edition 1 Spring 2017.

[4] For discussion of proper evaluation of early retirement measures, see Rachel Brailove, John Plunkett, and Jonathan Wallach. "Retrofit Economics 201: Correcting Commons Errors in Demand-Side Management Cost-Benefit Analysis." Resource Insight, Inc. Circa 1990.

- Ability to handle avoided costs, retail rates, and load shape profiles at multiple levels of granularity (monthly, seasonal, annual, on/off peak)
- Handles any number of measures, programs, sectors, program periods and savings types (electricity/demand, gas, water, emissions, etc.)
- Cost-effectiveness can be evaluated at annual, bi-annual, quarterly, or monthly intervals
- Results based on planned input assumptions (incentives, administrative costs, non-energy benefits, participation, etc.) can be compared against those derived from actual values after program implementation is finalized
- If hourly load shapes are available, the model generates daily load shape profiles by day type (peak day, weekday, weekend/holiday) for baseline consumption, efficient consumption, and the resulting efficient savings
- Treats recurring incentives and administrative costs, which are common in demand response programs
- Includes an option to assign program-level administrative costs to measures within the program, while ensuring the selected cost test ratio remains above 1.0 (or a designated threshold) for each measure
- Can easily switch between net and gross savings and cost-effectiveness results
- Provides cost-effectiveness metrics at the measure, program, sector, portfolio, end use or building type level, including combinations of these levels of granularity
- Powerful sensitivity and scenario analysis capability to identify key assumptions and largest leverage points
- Provides histograms of top-saving measures, scatter plots to view savings versus costs, and supply curves
- Input data is imported from an Excel spreadsheet for portability, version control, and scenario analysis
- All summary results and intermediate calculations are immediately available in tabular or graphical form and can be exported to Excel

As a starting point, the analysis will incorporate data from the 2020-2022 DSM Plan recently submitted to the UARB for approval, as well as inputs to the 2018 Potential Study Update. Navigant will address approximately 350 energy efficiency measures [about 100 in the residential sector, and 250 for the business, non-profit, and institutional (BNI) sector] across Efficiency Nova Scotia's (ENS) portfolio as a starting point for the potential study analysis, and target a program Total Resource Cost test threshold of 1.0. Economic potential will be screened with a measure passing at 1.0 total resource cost (TRC) test. Achievable potential measures will be included with benefit/cost of 0.7 TRC or greater. We also will further consider whether a measure should or should not be included in the achievable potential. As needed, we will update the DSM Plan measures, but expect this will be done only in instances where either new information is provided, or a new measure is added compared to the recent measure set developed.

1.2 Demand Response Potential

To determine the various levels of DR achievable potential, Navigant's Demand-Response Simulator (DRSim™) model will simulate the enablement and utilization of DR options, costs, and interactions given user-defined deployment trajectories. The model will estimate DR potential, leveraging data and insights from previous E1 DSM research efforts. Programs that will be considered for the analysis include direct load control, peak time rebates, interruptible/curtailable, and behind the meter batteries.

1.3 Introduction to DSMSim and DRSim Models

Navigant's Analytica-based Demand-side Management Simulator (DSMSim$^{TM)}$ model will be used to develop the energy efficiency potential analysis. Navigant's Analytica-based DRSim^{TM} model will be used to conduct the demand response potential analysis. To facilitate inspection by EfficiencyOne, regulatory intervenors and the UARB, the model inputs and outputs will be provided in Excel.

2. Approach to Potentials

2.1 Approach to Energy Efficiency Potential

The EE analysis will assess three potentials (1) technical, (2) economic, and (3) achievable. The achievable potential will analyze multiple savings scenarios, including maximum achievable. Scenarios will be developed in conjunction with E1 and stakeholder feedback will be considered. Draft final scenarios will be communicated to stakeholders on 05/24/2019, as part of the scenarios/sensitivities and detailed assumptions package. Due to budget and timeline constraints, a maximum of five scenarios will be considered, one of which will be maximum achievable. Navigant will undertake the following steps to develop our estimates of potential savings:

EE Potential Step 1: Develop base year, define customer segments, define end uses, model base year consumption, develop reference case, compile global assumptions

EE Potential Step 2: Develop disaggregated energy sales forecasts for Nova Scotia for the period 2021-2045 (25 years), with forecasts broken out by customer segments and end uses

EE Potential Step 3: Define and characterize energy efficiency and demand response measures, and screen measures for cost-effectiveness

EE Potential Step 4: Calculate potential savings for all measures, with technical, economic and achievable potential for 2021-2045 (25 years)

The specific activities involved with each step are detailed in the following sub-sections.

2.1.1 Steps 1 and 2: Develop Baseline Energy Use, End Use Saturation, and Sales Forecast

The market characterization (including determining baseline energy use and end use saturation), will be one of the most critical aspects of the potential study. Market characterization will be the starting point for the development of the base year calibration and the reference case forecast. The measure inputs will be used to populate and develop the base year calibration, the reference case forecast, and the DSMSim™ model. Figure 2 outlines the key input parameters used to develop the reference case forecasts.

Figure 2. Data Collection Granularity for Base Year / Reference Forecast

Load Forecast 1. Energy forecast 2. Demand forecast	Nova Scotia Power forecasts
Customer Accounts Forecast	Nova Scotia Power forecasts
Customer Demographics	Nova Scotia customer surveys and other primary and secondary sources
Measure-level inputs 3. Fuel Shares 4. Equipment Shares 5. Saturations/Densities 6. Energy/Demand Savings 7. Codes & Standards	• Nova Scotia end use surveys • Nova Scotia program evaluation reports • Statistics Canada and NRCan data • Past potential studies
Global Inputs 8. Inflation rates 9. Discount rates 10. Avoided energy and capacity costs 11. Retail rates 12. Line loss factors 13. Non-energy impacts	• Inflation rate forward target of 2% - Bank of Canada • 2019 Approved WACC/AFUDC rate for Discount Rate • "Base-DSM" Avoided Costs from 2014 IRP, with 2018 estimate of T&D avoided costs from NS Power • 2019 Retail Electricity Rates with 2.7% escalation – As in 2014 IRP • Line loss factors from 2017 evaluation of DSM programs • No Non-Energy Impacts to be included
Incentive Level Assumptions (Achievable Potential Inputs)	ENS recent past program experience and future plans

In the first step of the market assessment, Navigant will develop a set of energy sales forecasts for electric consumption and electric peak demand, disaggregated by sector (e.g., residential and BNI), and end use. The reference forecasts will span the 25-year study period, from 2021 to 2045. The reference case will act as the point of comparison (i.e., the reference) for the calculation of the technical, economic, and achievable savings potential over the study period. The reference case forecast effectively represents the *expected* level of electricity consumption and electricity demand over the study period absent any incremental DSM activities conducted.

To develop accurate and localized forecasts, potential studies typically differentiate energy use forecasts by structural sector (e.g., residential and BNI). Navigant will further disaggregate the energy use forecasts using customer segments and end uses.

Navigant will disaggregate the reference case energy forecasts using the customer segments and end uses listed in Figure 3. DSM potential will be disaggregated by sector, end use, and building-type, and if possible, by region. Sector, end use, building type, and region are described in the following table.

Figure 3. Potential Study Customer Segments

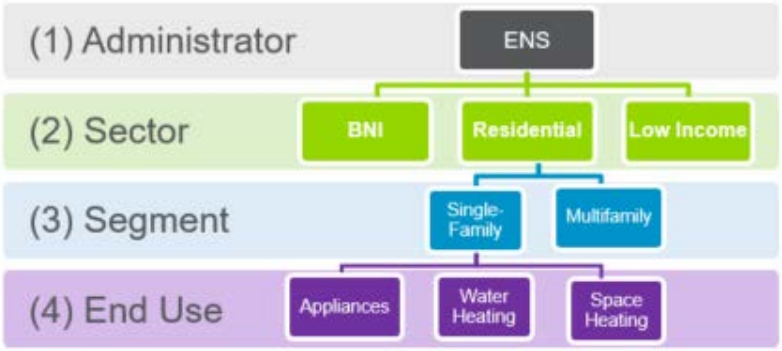
Category	Sub-Categories
Sector	a) Residential (with low-income treated as a subcomponent) b) Business, Non-Profit and Institutional (all non-Residential customers)
End Use	c) Cooking and Laundry d) Electronics and Information Technology (IT) e) Domestic Hot Water (DHW) f) Heating, Ventilation and Air-conditioning (HVAC) g) Lighting h) Refrigeration i) Process j) Energy Management k) Other
Building Type	l) SF Market Rate m) MF Market Rate n) SF Low Income o) MF Low Income p) First Nations q) Small Commercial r) Large Commercial s) Institutional **t)** Industrial
Region	u) Based on first three characters of postal codes

The first key output of the market characterization will be the development of the base year analysis. The base year will be calibrated against provincial (Nova Scotia Power) sales data for the most recent historical year for which sales data is available (2018 or 2017). The objective of the base year will be to establish a detailed profile of Nova Scotia electricity consumption for across all customer sectors and segments, and end uses.

We will develop the base year analysis based on a bottom-up assessment of electricity consumption. This bottom-up approach is illustrated by Figure 4. We will begin at the most granular level by analyzing end use equipment types (e.g., space heating, lighting, etc.) and the corresponding efficiencies (e.g., SEER, Efficacy, etc.), building those up to the end use level, and further up to the customer segment-level, the sector-level, and finally the administrator-level.

As illustrated by Figure 4, the energy sales forecast will be based on multiple levels (or dimensions); from the administrator level down to the equipment efficiency level. Navigant can report electricity consumption at any of the four levels of aggregations, and we will work with E1 to ensure the aggregated electricity consumption (at each level) is reasonable and well aligned with expectations.

Figure 4. Illustrative Breakdown of Energy Sales Forecast



Based on Navigant's experience conducting energy efficiency potential studies, we consider two of these levels of aggregation as the most critical:

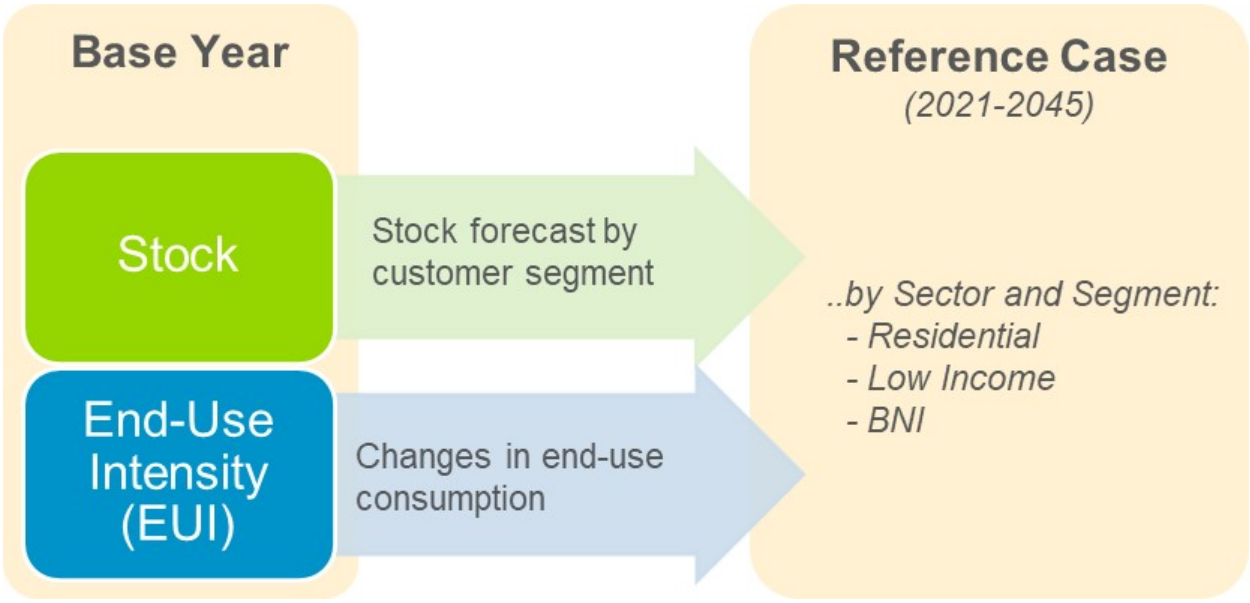
- Customer segments
- End Uses

The customer segment and end use levels are critical for all potential studies because these can introduce a high degree of complexity to the overall study and process. A potential study with many customer segments and end uses can add a significant amount of unwanted complexity if the granularity of the results does not align with project goals and programs to be implemented. However, if the customer segments and end uses are selected appropriately and are consistent with internal processes and target programs, detailed results can deliver significant value for program managers and DSM planners. Based on our experience, it is also critical that customer segments and end uses be well aligned with the availability and level of detail of the data resources available. For example, to characterize electricity consumption across a variety of BNI segments, fuel shares (e.g., electrically heated vs. gas heated buildings) and equipment shares (e.g., penetration of heat pumps, baseboard heating, etc.) should, in theory, be captured by an end use study. As part of this effort, Navigant will collaborate with E1 on the segmentation.

The next step in the base year calibration analysis involves the establishment of specific end uses for each customer sector. In general, Navigant's approach for determining appropriate end uses is based on the differences in specific activities or customer need that requires electricity, without specifying the equipment used to satisfy that need (e.g., space cooling and water heating versus central A/C and tankless water heaters).

The next step in the study is developing the reference case forecast. The significance of the reference case in the context of the potential study is that it will act as the point of comparison (i.e., the reference) for the calculation of the technical, economic, and achievable savings potential over the study period. The reference case forecast effectively represents the *expected* level of electricity demand over the period absent any incremental DSM activities offered by ENS moving forward. The reference case will use the base year analysis as the foundation for developing the forecast. This is illustrated by Figure 5.

Figure 5. Schematic of Reference Case Development



2.1.1.1 Stock Assumptions

Navigant will first develop stock growth rates based on the study's segmentation established for each customer sector. Navigant understands that as part of its load forecasting process, a utility develops a forecast of the number of residential and non-residential buildings (facilities). These forecasts will provide the foundation for estimating net building growth within the reference case forecast. Navigant will also develop forecasts of BNI floor area. Combined, these stock growth forecasts will be a direct input into the reference case forecast.

2.1.1.2 EUI Trends

The second step of building the reference case forecast will be to establish appropriate EUI

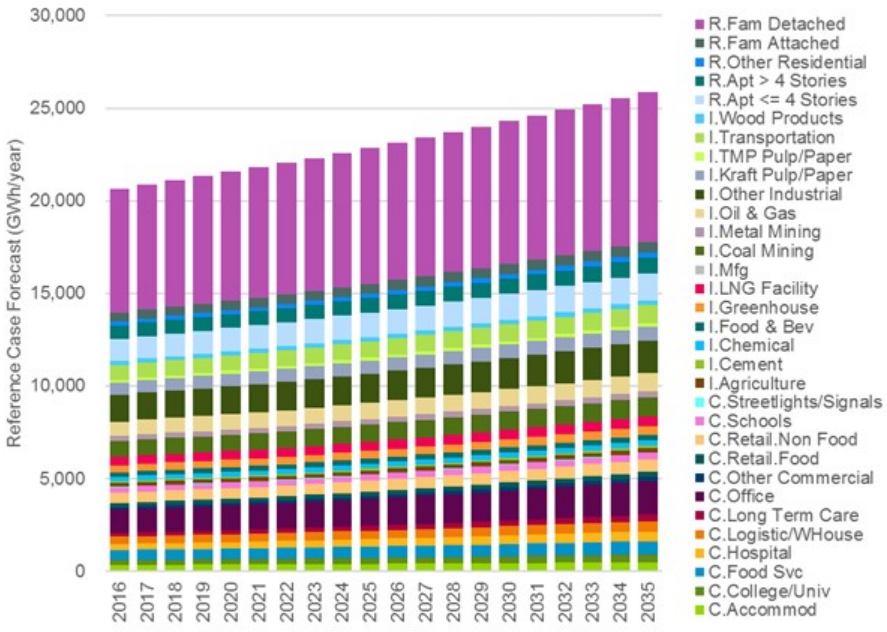
trends to be applied to each customer segment. EUI trends are intended to reflect natural changes in electricity consumption as a result of two factors: (1) natural conservation and (2) natural growth.

- Natural conservation is a well-established concept in DSM programs, and typically refers to actions taken by electricity customers—in absence of sponsored programs—to improve energy efficiency and reduce consumption.
- Natural growth refers to actions taken by electricity customers to increase consumption without the involvement of guided programs. An example of natural growth is home electronics, where customers may be increasing their electric consumption (e.g., through addition of more televisions, computers, etc.) and causing an increase in the electronics end use intensity.

For example, EUI trends in the residential sector will capture trends occurring in space heating, space cooling, water heating, appliances, lighting, etc. A critical component of the reference case forecast will be netting out "natural conservation" from building codes and appliance/equipment standards. Navigant will work with E1 and stakeholders to define the appropriate definition of natural conservation, including the impact of future codes and standards that are planned or announced. The impact of these future codes and standards can be (1) "netted out" from and not counted in the conservation potential, or (2) included in the conservation potential as a separate and unique source of savings. DSMSim™ can readily address either approach and we are flexible as to which approach should be incorporated into the reference forecast and conservation potential estimates.

The final step of the reference case forecast will be to apply the EUI trends and the stock growth rates to the base year results. The resulting forecast will be a detailed projection of electricity consumption by sector and segment. Figure 6 illustrates what the reference case forecast will look like. This figure shows a forecast of annual electricity consumption by each individual customer segment by year.

Figure 6. Illustrative Example of Reference Case Forecast of Electricity Consumption



Source: Navigant

In addition to developing the reference case forecast, Navigant will support E1 in the development of global assumptions for the potential study. These assumptions include:

- Inflation rate
- Discount rate
- Avoided energy and capacity costs
- Consumer price forecast
- Retail rates
- Line loss factors

2.1.2 Step 3: Define, Characterize and Screen Efficiency Measures

The next step in the potential estimation process is to define and characterize energy efficiency measures (EEMs). We use the terms “measures” and “technologies” to refer to any actions taken to increase efficiency or reduce demand, whether through changes in equipment, control strategies, or behaviour.

2.1.2.1 Define Efficiency Measures

Navigant's process for defining potential EEMs includes developing a comprehensive list of efficiency technologies and actions to be included under three main categories: (1) residential energy efficiency, (2) BNI energy efficiency, and (3) peak load reduction. To develop the list of measures, Navigant will draw upon existing measures used in the current ENS DSM programs and the ENS TRM, which was recently done for the 2018 ENS Potential Update and 2020-2022 DSM Plan analyses. We will also introduce "new" measures not previously offered by ENS and consider emerging measures that are expected to become commercially available in the near term. In addition, we will review recent program design and evaluation studies conducted by ENS to ensure all appropriate technologies are assessed, including any specific technologies requested by the ENS.

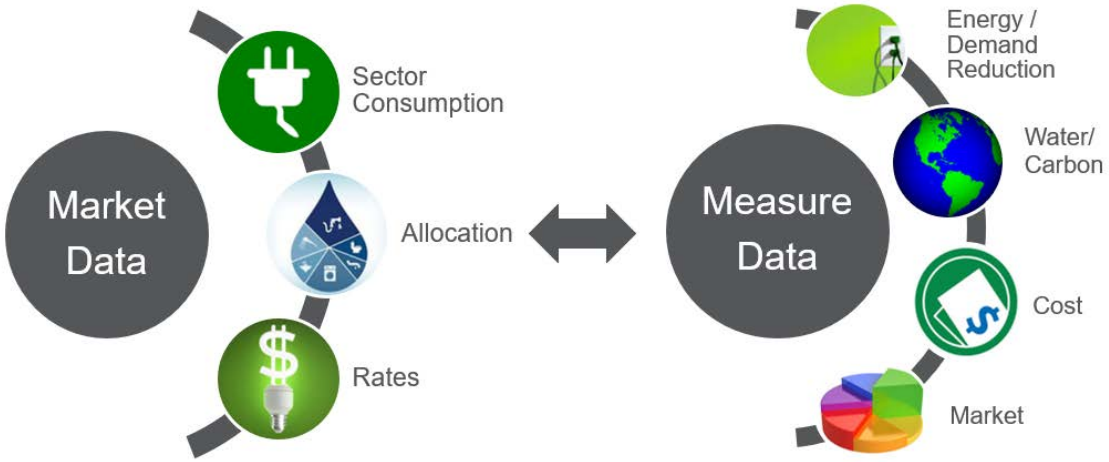
Navigant has fully characterized complete measure datasets during previous potential studies and the most recent ENS DSM Plan, and we can leverage this prior analysis to expedite the measure characterization step of this analysis, which is often the most time-consuming task in a potential study. Upon completion of the in-depth measures review and identification process, Navigant will develop a final list of "recommended" measures that will be presented to E1 and stakeholders for review and discussion, and highlight any which were not included in the 2018 ENS Potential Study Update or the 2020-2022 ENS DSM Plan.

2.1.2.2 Characterize Efficiency Measures

After Navigant and E1 have reached agreement on a final measures list, Navigant will proceed with measure characterization, as needed to supplement existing characterizations for measures in the territory. At a high level, measure characterization involves (1) identifying energy, demand, and other savings (e.g., operations and maintenance) of each measure, including changes over time; and (2) identifying costs associated with each measure, including changes over time (such as prices coming down because of greater volume sold and technology improvements). As appropriate, winter and on/off peak ratios will be determined to accurately calculate avoided cost benefits for each measure. Avoided costs from water and other fuel impacts (for any fuel-switching measures) will be included in the measure characterizations and cost-effectiveness testing.

Navigant's process for characterizing measures is illustrated in Figure 7. The figure illustrates the important links between general market characteristics and measure-level characteristics. Data regarding market characteristics (consumption, end use allocations, retail rates, etc.) are combined with measure-specific data characteristics (energy/demand reduction, water, costs, market maturity, etc.).

Figure 7. Link Between Market and Measure Characterization



Navigant largely will leverage measure characterization analyses that have been completed for prior studies to the maximum extent possible. When necessary, we will make limited updates to measure characterizations. As necessary, Navigant will vet and fully characterize each measure included in the potential study in terms of the measure's energy savings, costs, and applicability. Each characterized measure will have an estimate of typical savings and costs on a defined unit (e.g., per measure, per customer, per building, per square footage, or per 1000 square meters for the BNI sector), with explicit references to supporting documentation. Figure 8 depicts some ways Navigant will characterize each resource by estimating the following measure parameters.

Figure 8. Characterization Measure Parameters

Measure Replacement Methodology	Measure Description	Savings Estimations	Measure Costs	Measure Densities and Saturation
Each measure defined as retrofit/early retirement/dual baseline, replace on burnout (ROB), or new, to guide baseline definitions and incremental cost calculations	Technical definitions of the baseline (code or existing) and energy efficiency technology with characteristics such as efficiency. Definitions of baseline technologies will account for any anticipated changes to codes and standards.	Baseline, code, and efficient technology annual energy consumption used to calculate savings. The effect of future changes to codes and standards considered to develop a savings profile over the analysis period. We will use a single climate zone.	Incremental measure costs will be calculated based on the measure applicability and account for all material, labor, and operations and maintenance costs associated with the baseline, code, and/or efficient technology.	Densities will be defined as the number of each technology per unit (per home for residential and per sq. ft. for BNI sectors). Saturations are defined as the % penetration of the efficient technology.

2.1.3 Step 4: Develop Energy Efficiency Potential Estimates

Once the reference case forecasts and measure characterizations are complete, Navigant will develop estimates of the potential savings available for a 25-year period, from 2021-2045.

There are three general types of energy efficiency and renewable energy resource potential: (1) technical, (2) economic, and (3) achievable.

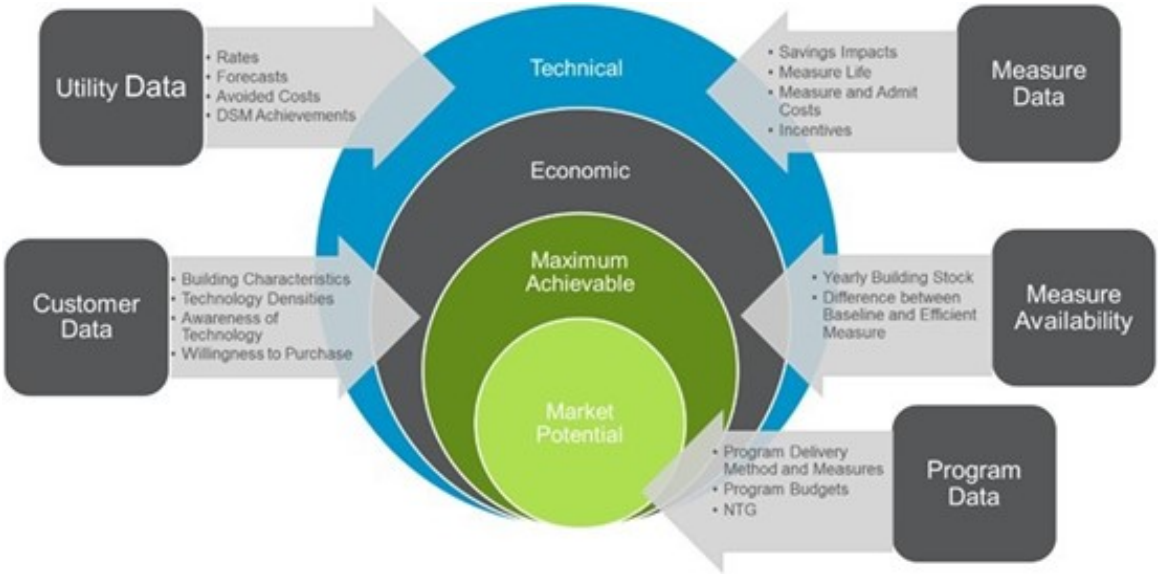
a) **Technical potential** represents what can be saved from available or emerging efficiency and renewable technologies and practices without regard to either the costs or the benefits of the measures.

b) **Economic potential** represents the fraction of the technical potential that is cost-effective under a set of technology costs and full avoided costs developed for the period of analysis.

c) **Achievable potential** represents the fraction of the economic potential that: (1) can be plausibly realized in the marketplace, given market constraints (e.g., equipment turnover rates) and the impacts of programs and policies that could be implemented; and (2) is cost-effective from the standpoint of direct utility bill savings only.

Navigant will develop potential estimates starting with technical potential, followed by economic, and then finally achievable potential. Figure 9 illustrates the key inputs and the layers of the potential modelling approach.

Figure 9. Approach to Market Potential Analysis



The analysis for technical and economic potential is modeled on the measure level only. This analysis allows for measures that can be installed, regardless of end user affinity to the measure or the cost of the measure (technical potential), to make it through the screening process. Then the next level provides a screening of the technology on the margin, only associated to the incentive/measure cost for the economic potential. Finally, the analysis can consider the program delivery which considers that overall measure/incentive cost (differs for

direct install and rebate programs, for example) and the program delivery or administrative cost (upstream versus downstream). The achievable potential analysis will be addressed and reported at the sector level (residential and BNI) by end use and building type.

The analysis will address the following aspects:

- Baseline market conditions (informed by the results of the Baseline Study currently being conducted by Navigant on behalf of EfficiencyOne)
- The full array of commercially-available technologies, including measures that aren't currently readily commercially-available but could be expected to be during the study period. At minimum, this will include EfficiencyOne's full current portfolio of measures. Measures will be developed in conjunction with E1 and stakeholder feedback will be further considered. Draft final measure assumptions will be communicated to stakeholders for review on 05/24/2019, as part of the scenarios/sensitivities and detailed assumptions package. Due to budget and timeline constraints, a maximum of five scenarios will be considered.
- Anticipated customer behaviour modelling, given specific incentive levels and the most relevant determinants of customer response, such as return or years to payback.
- The current and forecast detailed state of the Nova Scotia electricity system and its customers, such as:
    - Net system requirement
    - Firm peak demand
    - Expected timing of system peak demand
    - Number and type of customers
    - Sector-level energy and demand requirements
    - Net energy and system-peak demand savings, at the generator, of energy efficiency measures (after free-ridership, spillover, and interactive effects)
    - Demand reduction measures

2.1.3.1 Develop Technical Potential

Technical potential is defined as the energy savings that can be achieved assuming that all installed measures can immediately be replaced with the efficient measure/technology, wherever technically feasible, regardless of the cost, market acceptance, or whether a measure has failed and must be replaced.

As noted above, Navigant's modelling approach considers an energy-efficient measure to be any change made to a building, piece of equipment, process, or behaviour that could save energy. The savings can be defined in numerous ways, depending on which method is most appropriate for a given measure. Measures such as condensing water heaters are best characterised as some fixed amount of savings per water heater; savings for measures such as BNI automated building controls are typically characterised as a percentage of customer

segment consumption or per square foot; and, lastly, measures such as industrial ventilation heat recovery are well-suited for estimating energy savings as a percentage of end use consumption. The DSMSim™ model can appropriately handle savings characterizations for all three methods.

The calculation of technical potential in this study will differ depending on the assumed measure replacement type, since technical potential is calculated on a per-measure basis and includes estimates of savings per unit, measure density (e.g., quantity of measures per home), and total Nova Scotia building stock.

The potential study will estimate the incremental annual and cumulative technical potential of

energy and peak demand savings capable through EE, without consideration of any non-engineering constraints, and include all possible efficient measures, disregarding economic feasibility and market acceptance. Technical potential will also consider how any anticipated future codes and standards will affect the baseline. Savings resulting from codes and standards ("natural adoption") will be quantified separately from technical potential.

The model accounts for three replacement types, where technical potential from retrofit and replace-on-burnout measures are calculated differently from technical potential for new measures. The formulae used to calculate technical potential by replacement type are demonstrated below.

New Construction (NEW) Measures

Similar to replace-on-burnout measures, the cost of implementing new measures is incremental to the cost of a baseline (and less efficient) measure. However, new construction technical potential is driven by equipment installations in new building stock rather than by equipment in existing building stock.[5] New building stock is added to keep up with forecasted growth in total building stock and to replace existing stock that is demolished each year. Demolished (sometimes called replacement) stock is calculated as a percentage of existing stock in each year and can be specified to Nova Scotia market conditions. New building stock (the sum of growth in building stock and replacement of demolished stock) determines the incremental annual addition to technical potential, which is then added to totals from previous years to calculate the total potential in any given year. In cases where data is not available, Navigant will use similar data that we have already gathered from comparable studies.

The equations used to calculate technical potential for new construction measures are provided below.

Annual Incremental Technical Potential (AITP): $AITP_{YEAR}$ = New $Buildings_{YEAR}$ (e.g., buildings/year[6]) X Measure Density (e.g., widgets/building) X $Savings_{YEAR}$ (e.g., sq.mt./widget)

[5] In some cases, customer segment-level and end use-level consumption/sales are used as proxies for building stock. These consumption/sales figures are treated like building stock in that they are subject to demolition rates and stock-tracking dynamics.

[6] Units for new building stock and measure densities may vary by measure and customer segment (e.g., 1,000 square meters of building space, number of residential homes, customer-segment consumption/sales, etc.).

X Technical Suitability (dimensionless)

Total Technical Potential (TTP): $TTP_Y = TTP_Y = \sum_{YEAR=2029}^{YEAR=2020} AITP_{YEAR}$

Retrofit (RET) and Replace-On-Burnout (ROB) Measures

RET measures, commonly referred to as advancement or early-retirement measures, are replacements of existing equipment before the equipment fails. RET measures can also be efficient processes that are not currently in place and that are not required for operational purposes. RET measures incur the full cost of implementation rather than incremental costs to some other baseline technology or process because the customer could choose not to replace the measure and would, therefore, incur no costs. In contrast, replace-on-burnout measures, sometimes referred to as lost-opportunity measures, are replacements of existing equipment that have failed and must be replaced, or existing processes that must be renewed. Because the failure of the existing measure requires a capital investment by the customer, the cost of implementing ROB measures is always incremental to the cost of a baseline (and less efficient) measure.

RET and ROB measures have a different meaning for technical potential compared with NEW measures. In any given year, the entire building stock is used for the calculation of technical potential.[7] This method does not limit the calculated technical potential to any pre-assumed rate of adoption of retrofit measures. Existing building stock is reduced each year by the quantity of demolished building stock in that year and does not include new building stock that is added throughout the simulation. In cases where data is not available, Navigant will use similar data that we have already gathered from comparable studies.

For RET and ROB measures, annual potential is equal to total potential, thus offering an instantaneous view of technical potential. The equation used to calculate technical potential for retrofit measures is provided below.

Annual/Total Savings Potential *= Existing Building Stock* $_{YEAR}$ *(e.g., buildings*[8]*) X Measure Density (e.g., widgets/building) X Savings* $_{YEAR}$ *(e.g., sq.ft.*[3]*/widget) X Technical Suitability (dimensionless)*

Competition Groups

Navigant's modelling approach recognizes that some efficient technologies will compete against each other in the calculation of potential. The study defines competition as efficient measures competing for the same installation as opposed to competing for the same savings (e.g., window A/C vs. split-system A/C) or for the same budget (e.g., lighting vs. water heating). For instance, a consumer may install a condensing water heater or a tankless water heater; both of which belong to the same competition group, as only one of these would be installed. General characteristics of competing technologies used to define the competition groups proposed for

[7] In some cases, customer segment-level and end use-level consumption/sales are used as proxies for building stock. These consumption/sales figures are treated like building stock in that they are subject to demolition rates and stock-tracking dynamics.

[8] Units for building stock and measure densities may vary by measure and customer segment (e.g., 1,000 square meters of building space, number of residential homes, customer-segment consumption/sales, etc.).

this study include:

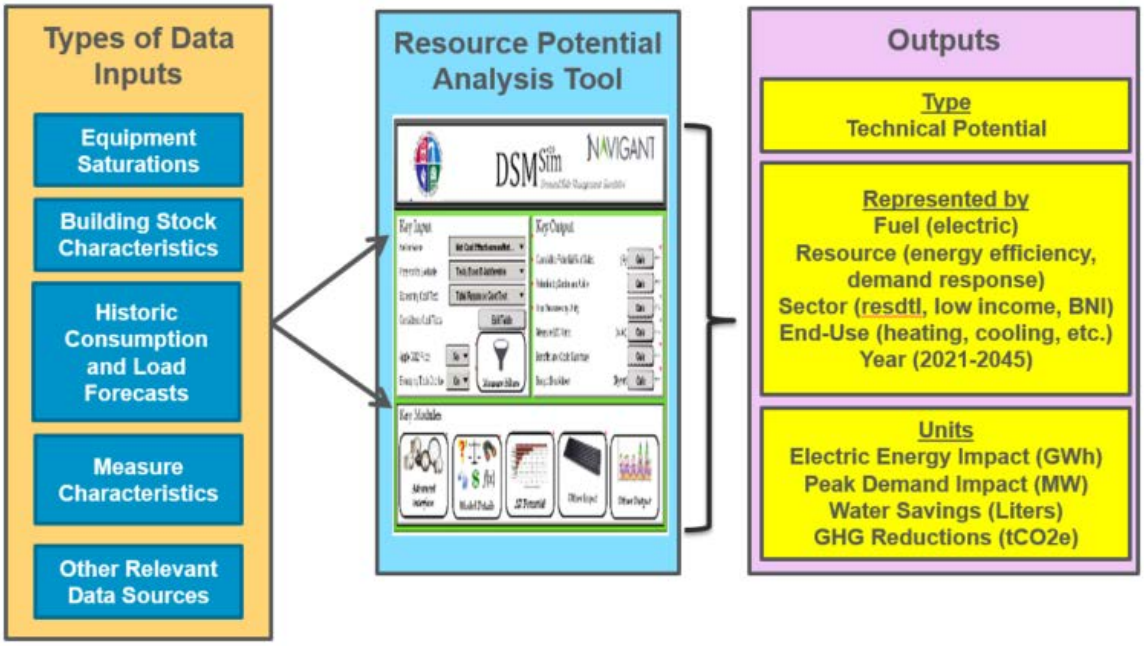
- Competing efficient technologies share the same baseline technology characteristics, including baseline technology densities, costs, and consumption
- The total (baseline plus efficient) maximum densities of competing efficient technologies are the same
- Installation of competing technologies is mutually exclusive (i.e., installing one precludes installation of the others for that application)
- Competing technologies share the same replacement type (RET, ROB, or NEW)

To address the overlapping nature of measures within a competition group, Navigant's analysis only selects one measure per competition group to include in the summation of technical potential across measures (i.e., at the end use, customer segment, sector, service territory, or total level). The measure with the largest savings potential in a given competition group is used for calculating total technical potential of the competition group. This approach ensures that double-counting is not present in the reported technical potential, though the technical potential for each individual measure is still calculated and reported.

Develop and Run the EE Technical Potential Model

The overall EE technical potential modelling framework is illustrated in Figure 10. The chart identifies the some of the key data inputs, the resource potential module, and the specific output types provided from the various modules. Figure 10 also summarizes the various dimensions of outputs produced from the potential model: type of potential (technical) reported at various levels (sector, end use, etc.) and in certain units (GWh, MW, etc.).

Figure 10. Navigant's Technical Potential Model Data Flow



2.1.3.2 Develop Economic Potential

Economic potential is a subset of technical potential and uses the same assumptions regarding immediate replacement as in technical potential, however, only includes those measures that have passed the cost-benefit (B/C) tests chosen for measure screening. For Nova Scotia, a measure with a total resource cost test (TRC) B/C ratio greater than or equal to 1.0 is a measure that provides monetary benefits greater than or equal to its costs. If a measure's B/C meets or exceeds the threshold, it is included in the economic potential. DSMSim™ can calculate the five standard cost tests for the cost-benefit analysis: Participant Cost Test, Program Administrator Cost Test, Ratepayer Impact Measure Test, Total Resource Cost Test, and Societal Cost Test. and use any of the tests for economic screening.

When the TRC test is used for measure screening, administrative costs are not included in the economic screening process at the *measure level* because, typically, the measure's cost-effectiveness *on the margin* is the objective of the test. Rather, administrative costs are typically included in economic potential calculations when aggregating multiple measures into an archetype program or portfolio. However, our team, and the DSMSim™ model, are flexible on this front. Specifically, DSMSim™ has the capability of including administrative costs in screening at the measure level, if desired.

Similar to technical potential, only one economic measure (meaning that its B/C ratio meets the threshold) from each competition group is included in the summation of economic potential across measures (e.g., at the end use, customer segment, sector, service territory or total level). If a competition group is composed of more than one measure that passes the TRC test, then

the economic measure that provides the greatest savings potential is included in the summation of economic potential. This approach ensures that double-counting is not present in the reported economic potential, though economic potential for each individual measure is still calculated and reported.

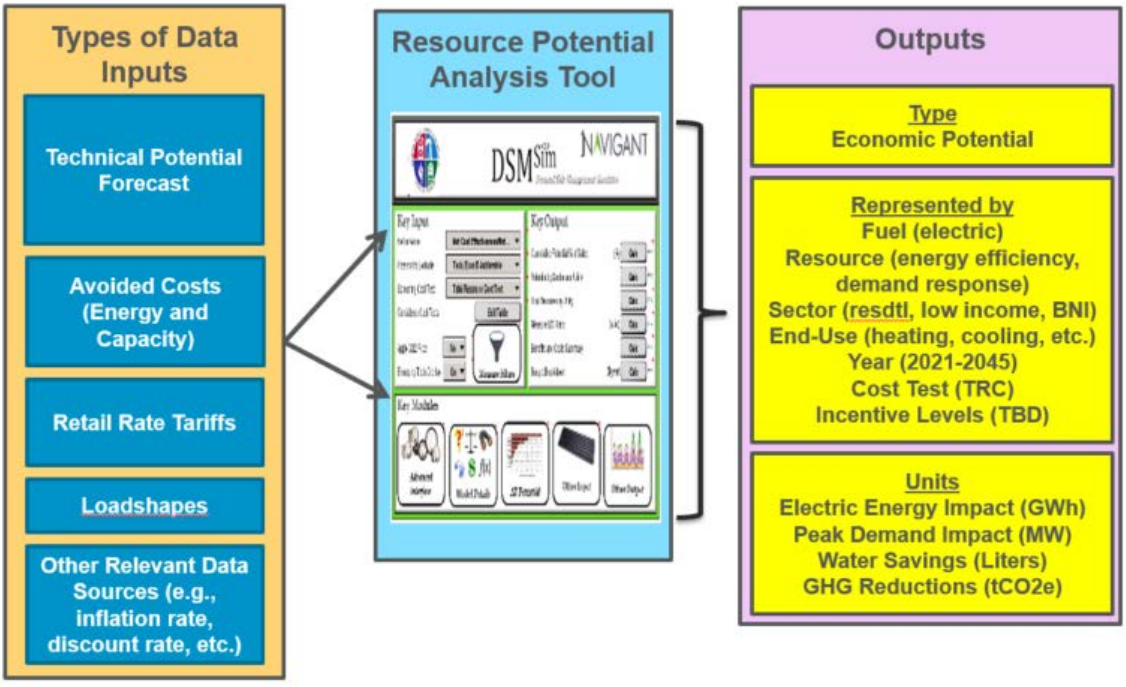
DSMSim™ has the flexibility to provide potential outputs by "binned" levelized cost groups as desired by E1. If required and based upon the cost of conserved energy for the various measures included in the economic potential, Navigant will work with E1 to identify the most appropriate bins for this grouping and the most appropriate application (e.g., for economic potential, achievable potential or both).

Develop and Run the Economic Potential Model

We will deploy our DSMSim™ model which provides estimates of economic potential for a defined service area. We will screen specific DSM measures using a TRC threshold level of 1.0. The overall economic potential modelling framework is illustrated in Figure 11.

We will primarily draw on the results of the technical potential to feed the economic potential analysis. Using our model, we will run cost-benefit screens for all measures considered in the technical potential analysis. To that end, we will draw upon the avoided costs for electricity. We will then develop the economic potential outputs in the manner outlined on the right-hand bar of Figure 11.

Figure 11. Navigant's Economic Potential Model Data Flow



2.1.3.3 Develop Achievable Potential

This section presents the approach to calculating achievable potential, which is fundamentally more complex than the calculation of technical or economic potential. The potential study will estimate the annual and cumulative achievable potential of energy and peak demand savings through EE by analyzing up to five scenarios with varying levels of incentives. Scenarios will be developed in conjunction with E1 and stakeholder feedback will be considered. Draft final scenarios will be communicated to stakeholders on 05/24/2019, as part of the scenarios/sensitivities and detailed assumptions package. Due to budget and timeline constraints, a maximum of five scenarios will be considered, one of which will be maximum achievable. To conduct the analysis at a sector level, Navigant will determine the achievable potential at the building type and end use level.

The critical first step in the process of accurately estimating achievable potential is to simulate market adoption of energy-efficient measures. Our approach to simulating the adoption of energy-efficient technologies for purposes of calculating achievable potential can be broken down into the following two strata:

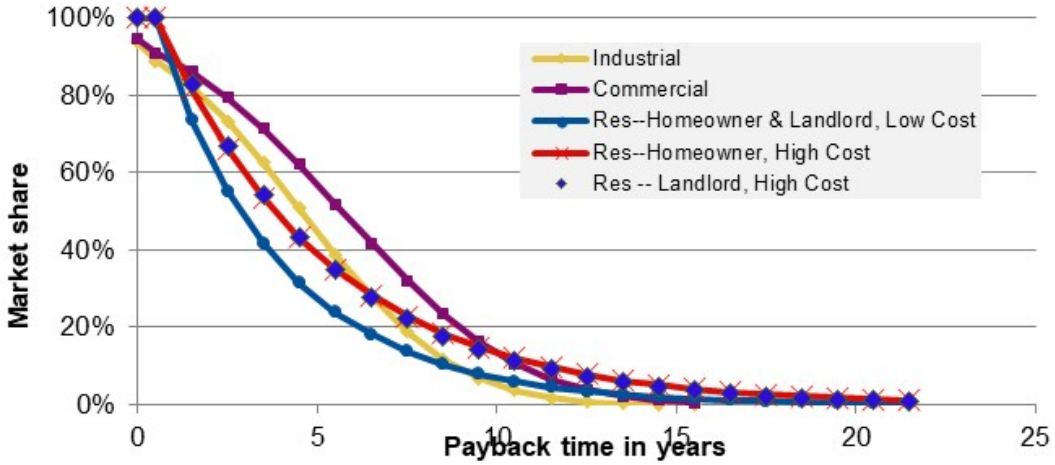
- Calculation of the *equilibrium market share*
- Calculation of the *dynamic approach to equilibrium* market share

Calculation of Dynamic Equilibrium Market Share

The equilibrium market share can be thought of as the percentage of individuals choosing to purchase a technology provided those individuals are fully aware of the technology and its relative merits (e.g., the energy- and cost-saving features of the technology). For energy-efficient technologies, a key differentiating factor between the base technology and the efficient technology is the energy and cost savings associated with the efficient technology. Of course, that additional efficiency often comes at a premium in initial cost. In efficiency potential studies, equilibrium market share is thus often calculated as a function of the payback time of the efficient technology relative to the inefficient technology. While such approaches certainly have limitations, they are nonetheless directionally reasonable and simple enough to permit estimation of market share for the dozens or even hundreds of technologies that are often considered in potential studies.

Navigant will develop equilibrium payback acceptance curves based on the results of the baseline study being conducted, which will query Nova Scotians about their awareness of and willingness to install efficiency measures. Based on the survey respondents, Navigant will develop payback acceptance curves, as illustrated in Figure 12. These surveys presented decision makers with numerous choices between technologies with low upfront costs but high annual energy costs, and measures with higher upfront costs but lower annual energy costs.

Figure 12. Example – Payback Acceptance Curves



Source: Navigant, 2015

Since the payback time of a technology can change over time; as technology costs and/or energy costs change over time, the equilibrium market share can also change over time. The equilibrium market share is, therefore, recalculated for every time-step within the market simulation to ensure the dynamics of technology adoption considers this effect. As such, the term "equilibrium market share" is a bit of an oversimplification and a misnomer, as it can itself change over time and is, therefore, never truly in equilibrium; it is used nonetheless to facilitate understanding of the approach.

Calculation of the Approach to Equilibrium Market Share

Two approaches are used for calculating the approach to equilibrium market share (i.e., how quickly a technology reaches final market saturation): one for new technologies or those being modeled as a retrofit (a.k.a. discretionary) measures, and one for technologies simulated as ROB (a.k.a. lost-opportunity) measures[9]. A high-level overview of each approach is provided in the following sections.

Retrofit and new technologies adoption approach uses an enhanced version of the classic Bass diffusion model[10,11] to simulate the S-shaped approach to equilibrium that is commonly observed for technology adoption. Figure 13 provides a stock/flow diagram illustrating the

[9] Each of these approaches can be better understood by visiting Navigant's technology diffusion simulator, available at: http://forio.com/simulate/navigantsimulations/technology-diffusion-simulation.

[10] Bass, Frank (1969). "A new product growth model for consumer durables". Management Science 15 (5): p215–227.

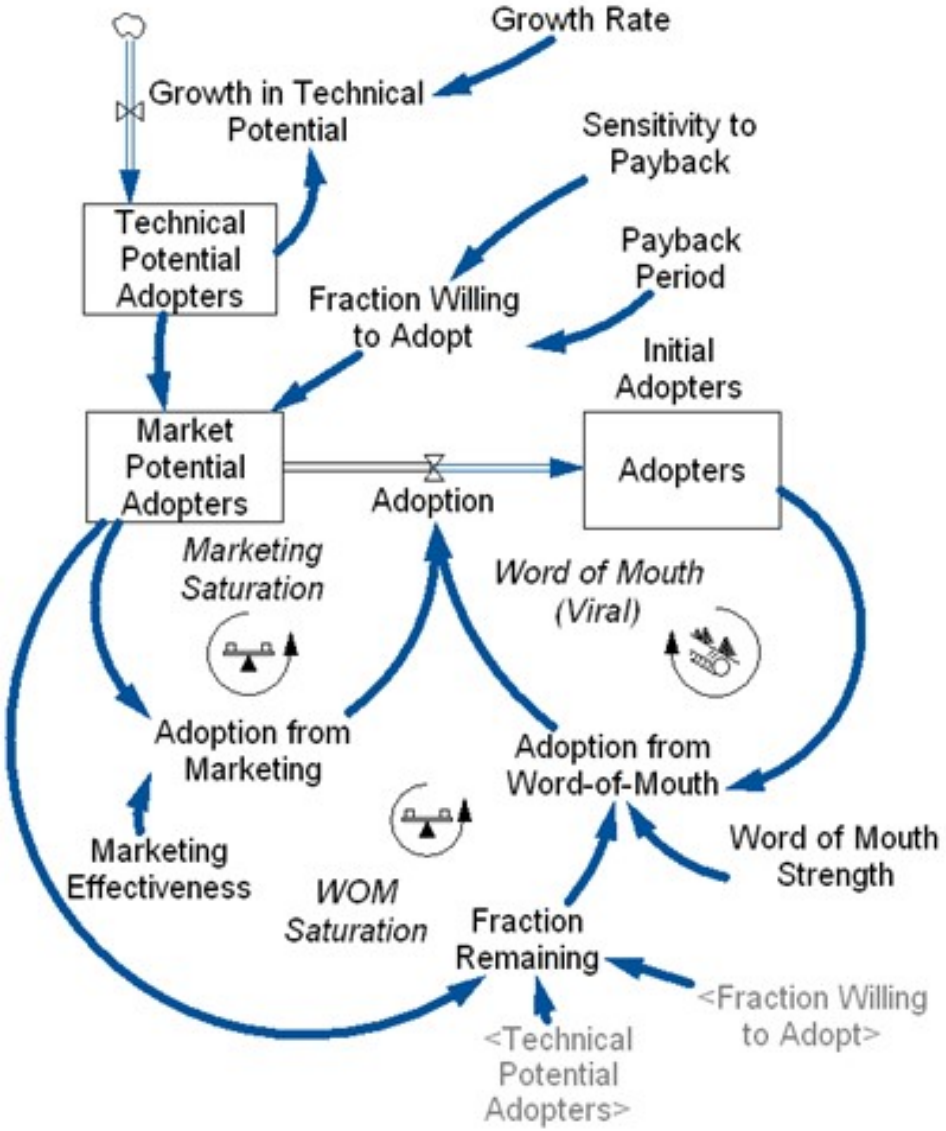
[11] See Sterman, John D. Business Dynamics: Systems Thinking and Modeling for a Complex World. Irwin McGraw-Hill. 2000. p. 332.

causal influences underlying the Bass model. In this model, market potential adopters flow to adopters by two primary mechanisms: adoption from external influences, such as program marketing/advertising, and adoption from internal influences, including word-of-mouth. The fraction of the population willing to adopt is estimated using the payback acceptance curves illustrated in Figure 13.

The marketing effectiveness and external influence parameters for this diffusion model are typically estimated upon the results of case studies where these parameters were estimated for dozens of technologies.[12] Recognition of the positive, or self-reinforcing, feedback generated by the word-of-mouth mechanism is evidenced by increasing discussion of the concepts such as social marketing as well as the term viral, which has been popularized and strengthened most recently by social networking sites such as Facebook and YouTube. However, the underlying positive feedback associated with this mechanism has been ever present and a part of the Bass diffusion model of product adoption since its inception in 1969.

[12] See Mahajan, V., Muller, E., and Wind, Y. (2000). New Product Diffusion Models. Springer. Chapter 12 for estimation of the Bass diffusion parameters for dozens of technologies. This model uses the median value of 0.365 for the word-of-mouth strength in the base case scenario. The Marketing Effectiveness parameter was assumed to be 0.04, representing a somewhat aggressive value that exceeds the most likely value of 0.021 (75th percentile value is 0.055) per Mahajan 2000.

Figure 13. Stock/Flow Diagram of Diffusion Model for New Products and Retrofits

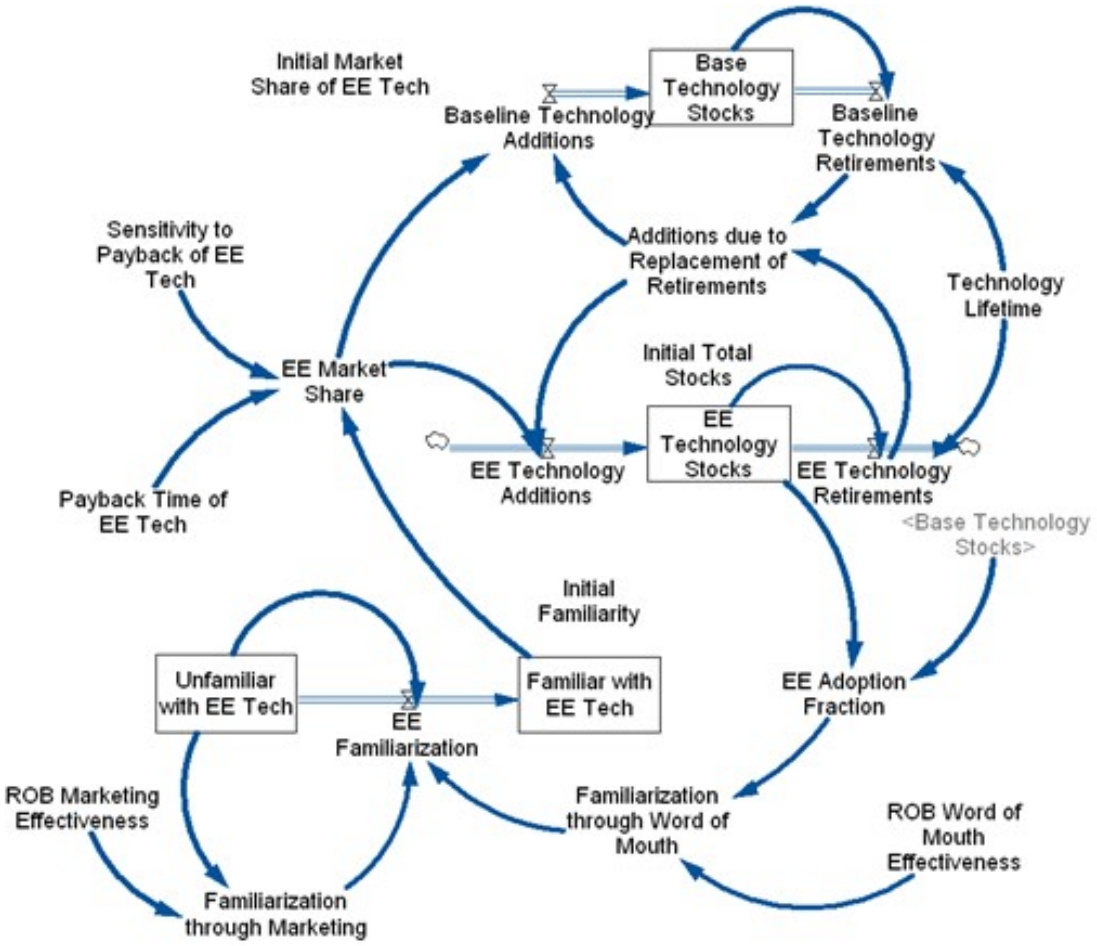


Source: Navigant, 2015

The dynamics of adoption for ROB technologies technology adoption approach is somewhat more complicated than for new/retrofit technologies since it requires simulating the turnover of long-lived technology stocks. In order to account for this, the DSMSim™ model tracks the stock of all technologies, both base and efficient, and explicitly calculates technology retirements and additions consistent with the lifetime of the technologies. Such an approach ensures that technology churn is considered in the estimation of market potential, since only a fraction of the total stock of technologies are replaced each year, which affects how quickly technologies can

be replaced. A model that endogenously generates growth in the familiarity of a technology, analogous to the Bass approach described above, is overlaid on the stock-tracking model to capture the dynamics associated with the diffusion of technology familiarity. A simplified version of the model employed in DSMSim™ is illustrated graphically in Figure 14.

Figure 14. Stock/Flow Diagram of Diffusion Model for Replace-on-Burnout Measures



Source: Navigant, 2015

Model Calibration

Calibration of a predictive model imposes unique challenges, as future data is not available to compare against model predictions. While engineering models, for example, can often be calibrated to a high degree of accuracy since simulated performance can be compared directly with performance of actual hardware, predictive models do not have this luxury. Demand-side management models, therefore, must rely on other techniques to provide both the developer and the recipient of model results with a level of comfort that simulated results are reasonable.

For this project, Navigant proposes to take a number of steps to ensure that the initial, base year used (2018 or 2017) forecast model results are reasonable and consider historic adoption, including:

1. Comparing forecast values, by sector and end use, against historic achieved savings (e.g., from program savings for 2018 or 2017). Although some studies indicate that demand-side management potential models are calibrated to ensure first-year simulated savings precisely equal prior-year reported savings, we have found that forcing such precise agreement has the potential to introduce errors into the modelling process by effectively masking the explanation for differences—particularly when the measures included may vary significantly. Additionally, there may be sound reasons for first-year simulated savings to differ from prior-year reported savings (e.g., savings estimates have changed). Thus, while Navigant endeavors to achieve agreement to a degree believed to be reasonable between past results and forecast first-year results, our approach does not force the model to do so—providing, the team believes, a degree of confidence that the model is internally consistent.
2. Identifying and ensuring an explanation existed for significant discrepancies between forecast savings and prior-year savings, recognizing that some ramp-up is expected, especially for new measures or archetype programs.
3. Calculating $/first-year kWh costs by sector and comparing these with past results.
4. Calculating the split (percentage) in spending between incentives and variable administrative costs predicted by the model to historic values.
5. Calculating total spending by sector and end use and comparing the resulting values to historical spending.
6. Calculating portfolio-level $/first-year kWh costs and comparing these with values Navigant researched through benchmarking of other jurisdictions.

Achievable Potential Scenarios and Incentive Levels

A key component of any potential study is determining the appropriate level at which to set measure incentives for a scenario. Navigant's DSMSim™ model offers several different strategies for setting incentive levels, each of which are accessible via DSMSim™ 's graphical user interface, as illustrated in Figure 15.

Figure 15. Model Incentive Options

Navigant will work with E1 to determine the incentive method desired for this study, as each has its advantages and disadvantages. Based on E1's guidance, as a starting point, we will employ one of the following incentive strategies for the achievable potential scenario. Scenarios will be developed in conjunction with E1 and stakeholder feedback will be considered. Draft final scenarios will be communicated to stakeholders on 05/24/2019, as part of the scenarios/sensitivities and detailed assumptions package. Due to budget and timeline constraints, a maximum of five scenarios will be considered, one of which will be maximum achievable. These strategies can be characterized as follows:

- ***Levelized Cost Threshold Approach:*** In this approach, incentive levels are set to achieve a specified threshold spending level (on a $/levelized kWh saving basis). This threshold incentive level would be adjusted iteratively to a point where overall spending results in the achieving the savings targets.
- ***Targeted Payback Approach:*** This approach instead sets incentive levels at a level that targets a specified payback period for each measure (e.g., 1.5 or 2 years). This approach will tend to result in a higher savings acquisition costs (resulting in lower savings for a given budget) than a levelized cost threshold approach. However, it does tend to result in what some may consider to be a more comprehensive portfolio (i.e., one that more proportionally allocates spending and savings across various end uses). The reason is that the lower cost measures (such as lighting), which already tend to have short payback times, receive lower incentives relative to incremental cost than in the levelized cost threshold approach, thereby permitting greater spending on non-lighting measures (e.g., HVAC and shell measures). For this reason, this approach is at times preferred by stakeholders.
- ***Percent of Incremental Cost Approach:*** This approach simply calculates the incremental cost of each measure and then provides an incentive that is a specified percentage of that incremental cost. This method, while common in the industry, tends to result in a somewhat less comprehensive portfolio than the targeted payback approach, while also providing lower total savings for a given budget than the levelized cost threshold approach. Thus, it does not tend to be Navigant's proposed option. However, since the results tend to be fairly similar to the targeted payback approach, and since the approach is simple and easy to communicate, it is sometime preferred by stakeholders.

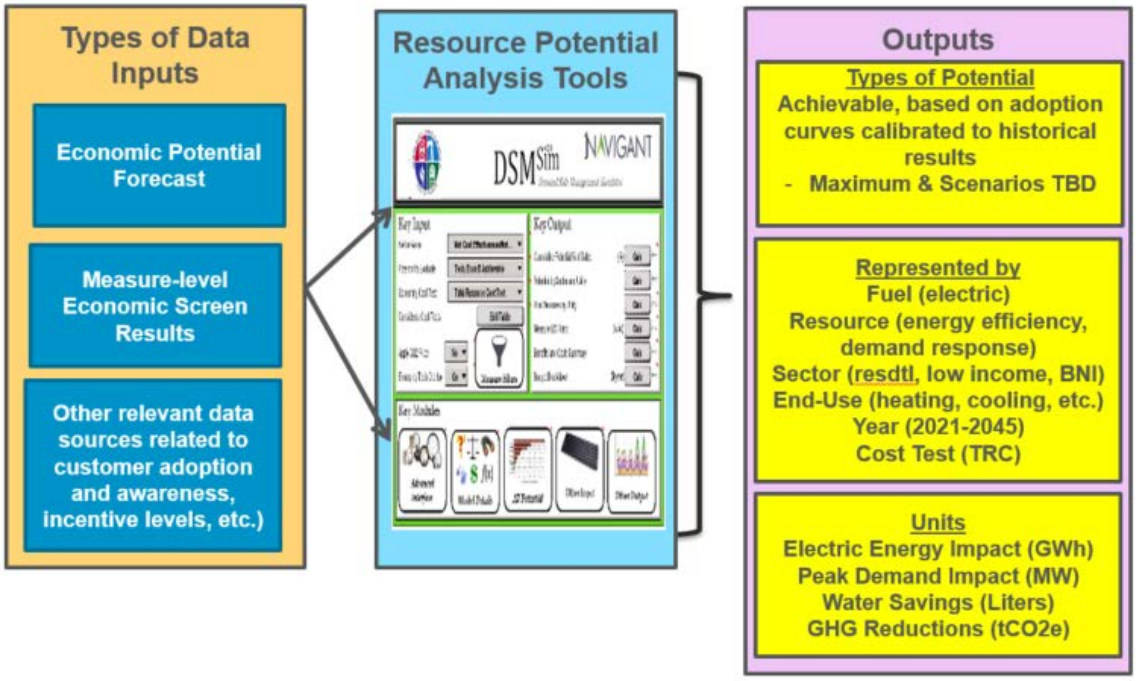
The achievable potential analysis results will reflect the portfolio of passing measures under the desired cost-benefit test. For the passing measures, we will determine the reasonably achievable winter peak demand (kW) and annual energy savings (kWh), and corresponding for 25 years, 2021 through 2045. Each achievable potential set of results will consider the market availability of each measure, customer awareness, the anticipated adoption rate at the specified incentive level, and any relevant market barriers.

Develop and Run the Achievable Potential Model

The overall achievable potential modelling framework is illustrated in Figure 16. We will draw on the results of the economic potential analysis to feed the achievable potential analysis. Using

our model, we develop estimates of achievable potential of all measures passing the economic screen. To that end, we draw upon the specified avoided costs. We will then develop the achievable potential outputs in the manner outlined on the right-hand bar of Figure 16.

Figure 16. Navigant's Achievable Potential Model Data Flow

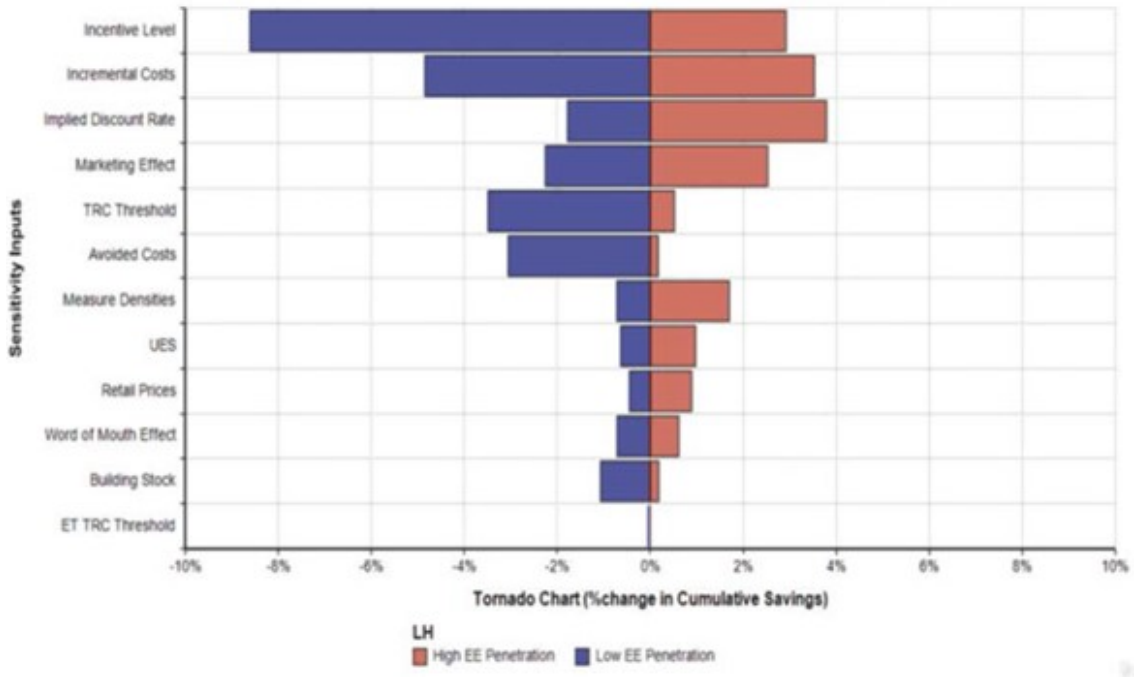


Sensitivity Analysis

Sensitivity analysis will allow E1 and stakeholders to gauge the level of influence a variety of factors can have on energy savings potential. Such understandings are critical to informing related policy decisions (as well as informing effective program design). Navigant may run sensitivity analysis on a variety of model variables, including discount rates. Draft final sensitivities will be communicated to stakeholders for review on 05/24/2019, as part of the scenarios/sensitivities and detailed assumptions package. Due to budget and timeline constraints, a maximum of five scenarios will be considered.

DSMSim™ has the ability the perform sensitivity analyses against twelve of the most influential factors impacting potential concurrently. Figure 17 demonstrates an example of this capability. Such analyses will be completed to provide E1 with an increased understanding of the relationships between key variables and potential. DSMSim™ can easily and quickly run different levels of sensitivity analyses to compare results with each case of results developed.

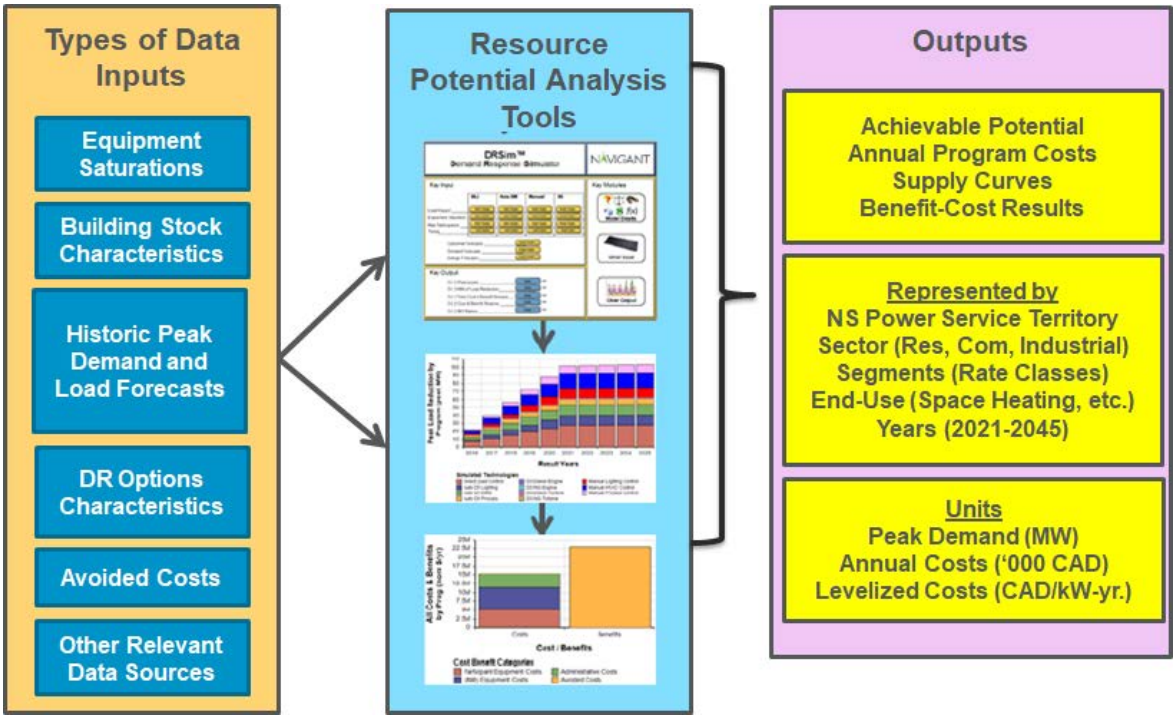
Figure 17. Tornado Chart Showing Model Sensitivities to Changes in Key Variables



2.2 Approach to Demand Response Potential

This section describes Navigant's approach to developing estimates of the DR potential. Over the course of conducting similar studies, Navigant has developed a series of steps that encompass our general approach for conducting the DR potential analysis. The overall data flow of the DR study is as shown in Figure 18.

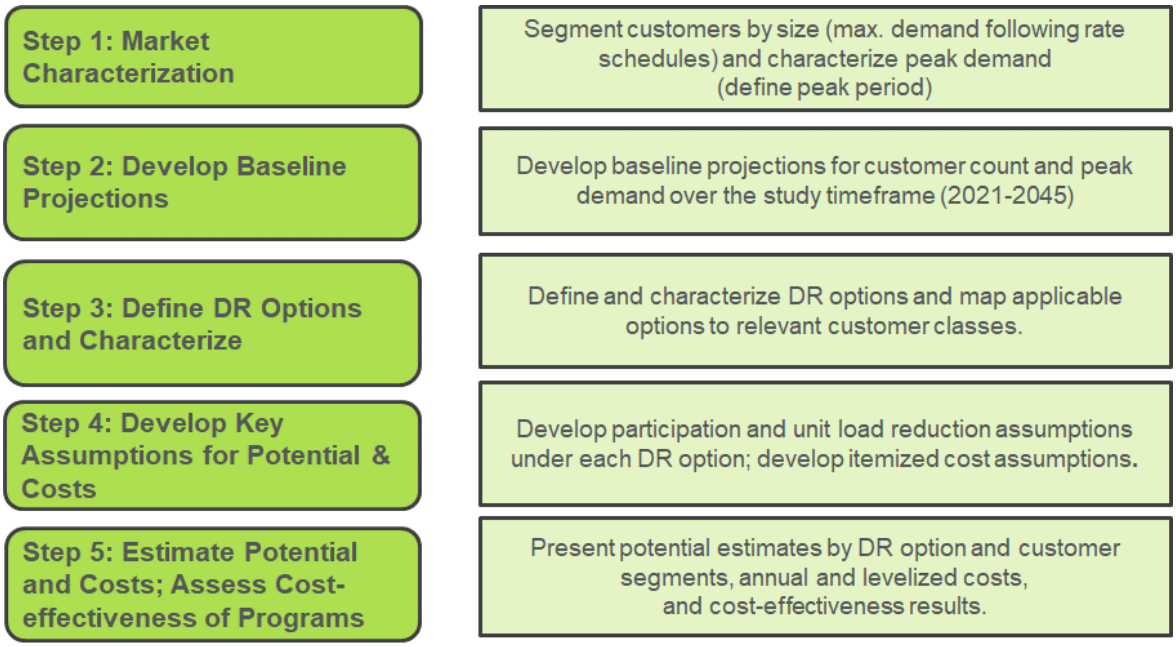
Figure 18. Demand Response Potential Study Data Flow



Navigant will develop DR potential and cost estimates using a bottom-up analysis. For the analysis, Navigant will utilize primary data from E1 and from the baseline study being conducted concurrent with this study, and supplement with secondary data where there are gaps. Navigant will customize its DRSim™ model, which uses this data as inputs, for this study. The following subsections detail Navigant's DR potential and cost estimation methodology, as summarized in Figure 19. Developing the potential and cost estimates included the following steps:

- Characterize market for DR potential by quantifying the number of eligible customers and estimating coincident winter peak load by customer class over the 25-year study period (2021 – 2045).
- Define and characterize DR options and map applicable options to relevant customer classes and/or building types.
- Develop participation levels, unit load reductions and cost assumptions for each DR option, by customer class and building type combination.
- Present potential estimates by DR option, customer class and building type; annual and levelized costs; and cost-effectiveness results.
- Conduct scenario analysis and present the range of DR potential, cost and cost-effectiveness results for each of the scenarios.

Figure 19. DR Potential Assessment Steps



The following sub-sections discuss each step in more detail.

2.2.1 Step 1: Develop Market Characterization

Market characterization is the first step in the DR potential assessment process. Figure 20 presents the different levels of market segmentation for DR potential assessment. The Level 2 segmentation follows Nova Scotia Power's rate schedules. The segmentation approach presented in Figure 20 is based on recent discussions between E1 and Navigant and represent mutually agreed upon segmentation approach. This segmentation approach is different from that followed in the energy efficiency potential assessment, where customers are not differentiated by rate class.

Figure 20. Market Segmentation Approach for DR Potential Assessment

Level	Description
Level 1 **By Sector**	1. Residential 2. Business, Non-profit and Institutional (BNI)
Level 2 **By Segment** **(following rate schedules)**[13]	3. Residential o Single and Multi-Family o Low Income 4. Commercial o Small General Demand o General Demand o Large General 5. Industrial o Small Industrial o Medium Industrial o Large Industrial
Level 3 **By End Use** **(for each segment)**	6. Residential: space heating, electric water heating, electric vehicles, batteries 7. BNI: HVAC, electric water heating, lighting, industrial processes, electric vehicles, batteries

Level 1: Sector

Navigant will segment customers between the residential and business, non-profit and institutional (BNI) sectors.

Level 2: Customer Segment

Single-family and multi-family dwelling customers are grouped into one category for the DR analysis since the applicable DR option does not vary by dwelling type. Low income customers are separated out as a different segment. First Nation customers are included in the single-family category based on recent discussions between E1 and Navigant. BNI customers are segmented by Nova Scotia Power's rate schedules, as represented in Figure 21. Small General and General Demand customers map to the Small Commercial segment in the EE analysis. Large General segment under Commercial maps to the Large Commercial in EE, and the three industrial rate classes are all grouped under industrial segment in the EE analysis.

Level 3: End Use

Navigant will develop a breakdown of the winter peak demand by end use for each segment as indicated in Figure 21.

[13] Customers under the Municipal rate will be blended across the residential and BNI customers and will not be considered separately. This is consistent with how these customers are treated in the EE analysis.

2.2.2 Step 2: Develop Baseline Projections

Once the market segments are defined, the next step is to select the base year, which is the latest year for which full customer count and load data is available, 2018 or 2017. The selection of the base year will be consistent with that used in the EE potential.

The baseline projection for DR potential assessment entails the following:

Customer count projections by segment for Nova Scotia (Levels 1 and 2 in Figure 20).

- **Winter peak demand projections** by segment for Nova Scotia (Levels 1, 2, and 3 in Figure 20).

Navigant will use a bottom-up approach for developing the winter peak demand projections by customer segment and end use and calibrate this to the winter peak demand projections available from Nova Scotia Power. Navigant's approach for disaggregating peak demand till the end use level enables a granular assessment of peak demand reduction potential by end use.

The disaggregated winter peak demand projections by revenue class, building type and end use will utilize the following data sources:

- **Retail sales data by revenue class** (which is in turn mapped to customer segments).
- **Baseline sales projections by segment and end use** (described in Steps 1 and 2 for the EE potential).
- **End Use load shapes**. Navigant will use available load research data by rate class, available from Nova Scotia Power, and end use shapes developed by Navigant in a prior 2013 DSM Potential study for Nova Scotia, and fill in gaps, if any, with publicly available information sources.[14]

Navigant will compare the bottom-up disaggregated winter peak demand projections with system peak demand projections from Nova Scotia Power and calibrate the bottom-up derived estimates to match the utility's demand projections.

2.2.3 Step 3: Define Demand Response Options and Characterize

Figure 21 presents Navigant's proposed list of DR options by market segment. This list is based on a universal set of DR options that is typically considered in a DR potential study and standard industry practice. Navigant has had initial discussions with E1 on the proposed list and received their approval. The list will be finalized based on feedback from stakeholders and further discussions with E1.

[14] For example, Open EI provides a publicly available database of end use load profiles for DOE reference building types. This dataset contains hourly load profile data for 16 BNI building types (based off the DOE BNI reference building models) and residential buildings (based off the Building America House Simulation Protocols). This dataset also uses the Residential Energy Consumption Survey (RECS) for statistical references of building types by location. Hourly load profiles are available for all TMY3 locations in the United States.

http://en.openei.org/doe-opendata/dataset/commercial-and-residential-hourly-load-profiles-for-all-tmy3-locations-in-the-united-states

Figure 21. Proposed List of DR Options by Customer Segment[15]

Direct Load Control (DLC) • Thermostat • Load Control Switch	Control of electric loads by a thermostat and/or load control switch.	Residential, Small General Demand	space heating, electric water heating.
C&I Curtailment • Manual • Auto-DR enabled	Firm capacity reduction commitment. $/kW payment based on contracted capacity, plus $/kWh payment based on energy reduction during an event.	General Demand, Large General, Industrial	Various load types including- heating, ventilation, lighting, water heating, refrigeration, industrial process loads.
Electric Vehicle Charging Control • Auto-DR enabled	Managed charging of electric vehicles for peak demand reduction.	All	Electric vehicles.
Behind the Meter (BTM) Battery Storage	Use of BTM batteries for load shifting and/or curtailment during peak demand periods.	All	BTM batteries.

[15] This is provided as an example of how Navigant proposes to position DR options by the different segments. It will be finalized based on feedback and discussions with E1.

Dynamic Pricing*	Offer time varying rates (e.g., critical peak pricing), or discounts on electricity use reduction during critical peak periods (Peak Time Rebate). Consider an opt-in type of offer.	All	All

2.2.4 Step 4: Develop Programmatic Assumptions

The purpose of this task is to develop a set of assumptions that will ultimately drive the activity of modelling DR potential. We refer to this process as developing the DR program design parameters.

The two key parameters that are needed for potential estimation are participation rates and unit impact assumptions[16] by DR option for applicable customer segments. Additional parameters for potential estimation include DR event participation rates, percentage of customers with enabling technology, and attrition rates of enrolled customers. In addition, we develop detailed bottom-up program cost assumptions that include items such as program development costs, equipment costs, marketing and program administration costs, product lifetimes, discount rate, etc.

Several important information sources are evaluated during the process of formulating the representative DR portfolio, including:

- First, the effort relies extensively assessing the market characteristics for each of the market segments that we are interested in pursuing. For each market segment, end use market and technology, we typically conduct a detailed review of the amount of baseline load with by customer segment and end use with an eye toward how much of that load might be affected by DR programs.
- Second, we expect to draw upon the experience and insights gleaned from previous DR potential studies conducted by Navigant.
- Third, the knowledge and experience from industry DR best practices plays a significant role in the program development process. We review information presented in well-established secondary sources, such as the FERC National DR Program Survey database[17], and publicly filed program evaluation reports and market assessment studies from other jurisdictions to assess participation, and impact assumptions in similar DR programs offered by utilities and ISOs/RTOs.

[16] Note that we use best available industry information on unit impacts which are provided at the end use level. This utilizes our peak demand projections by segment and end use and applies the unit impacts by end use across all customer segments to develop highly-granular potential estimates associated with each end use by customer segment.

[17] http://www.ferc.gov/industries/electric/indus-act/demand-response/dem-res-adv-metering.asp

- Fourth, we draw on the internal stakeholders to provide valuable insights and perspectives on the results. In the program development process, we will solicit input to help guide and shape the set of programs to be considered in the DR potential assessment.

Program Costs: we develop program costs for each DR program from two main perspectives:

- First are the costs associated with administering the DR programs. This includes staff/labor, marketing, program development, regulatory-related, and measurement/evaluation. Also considered are the costs for developing the DR program infrastructure, including any costs for Demand Response Management Systems (DRMS) and other associated DR program operational functions. Oftentimes, these administrative costs represent shared costs across different DR programs.
- Second are the costs associated with the incentives that will be offered to the customers. This includes any one-time incentives for DR enablement equipment as well as ongoing incentives (such as monthly payments) in exchange for customers offering their loads.

In some cases, customers may be able to use the same enabling equipment to participate in multiple DR programs. These economies of scale will be factored into the cost analysis. We will work closely with E1 as we develop the program costs to ensure agreement with our assumptions at every stage of the process. Navigant has extensive experience in developing costs, and therefore we will rely on expert judgment among our team members for vetting these assumptions. Along with program costs and annual budgets, we also calculate levelized costs for DR programs. We routinely use levelized costs and potential savings results to develop supply curves, in which savings are stacked up in ascending order of costs.

2.2.5 Step 5: Develop Demand Response Potential Estimates

The “Develop Model” task will be more of a “customize model” effort, as Navigant has already developed a suitable model that can serve as a starting point. DRSim™ simulates the roll-out of DR technologies, costs, and their interactions given user-defined deployment trajectories. The established model structure and user-friendly input/output capabilities will provide the starting point for modeling Nova Scotia’s DR potential.

Figure 22 lists key model inputs and outputs for the DR potential study.

Figure 22. Key Inputs and Outputs for DR Potential

- System load
- Customer count by market segment
- Load profiles by market segment
- Retail sales by rate schedule and by business type (if available)
- Participation forecasts by customer segment in different DR programs
- Per customer load impacts (either specified in terms of kW reduction per participant or in terms of percentage of enrolled load)
- Customer attrition, event participation assumptions
- Cost and benefit items
  - Technology costs, per-unit energy & load reductions, initial & maximum saturation levels
  - Various other cost components including program development costs, annual program administration costs, marketing and recruitment costs, O&M costs, and incentive levels.
  - Avoided energy and demand costs.
- Number of participants in DR programs by market segment
- Winter demand reductions and energy savings by DR program and by market segment for Nova Scotia.
- Annual program costs and levelized costs by program (by winter for Nova Scotia).
- Supply curve for DR options (by winter for Nova Scotia).

From our experience, technical and economic potentials for DR are somewhat perfunctory exercises that don't generally shed much light on what we are ultimately after, which is how much DR potential can be achieved. Accordingly, the DR analysis will develop two types of achievable potential estimates – maximum and realistic.

Maximum achievable potential represents an upper-boundary of achievable potential where maximum incentives are offered to customers and marketing and outreach efforts are taken to the highest level to ensure high levels of participation.

Realistic achievable potential represents likely customer adoption when taking into account real-world constraints (e.g., limited budgets, regulatory policies, and customer preferences). Estimates are typically tied to recent program experience and reported savings from past

programs and customers are offered incentives that are in line with existing industry practices.

We will use the potential savings and levelized cost data to construct supply curves which stack up savings in ascending order of costs.

3. Modelling Assumptions

Figure 23 lists many of the key input assumptions necessary for modelling the technical and economic potentials for the EE potential study.

Figure 23. Key Inputs for Energy Efficiency Technical and Economic Potential

Input	Options	Notes	Decision
General Setting and Global Input Options			
Technical Potential Type	Unconstrained/Constrained	Constrained potential, which is only applicable to ROB measures, would be limited by the rate at which measures turn over due to burnout.	Constrained
Competition Group Max for Technical	Max for each fuel/Max for Primary Fuel		Max for Primary Fuel
C&I Stock Basis	EUI, Sales, 1 ksqft	Node Calculate Sales From EUI	thousands of square meters
Apply Demolition Rates to Consumption	Yes/No	Affects sales-based stocks	Yes
Freeze New Stock	Yes/No	Holds new stock constant at first forecast year values	No
Measure and CE Options			
Screening Cost Test	TRC/PAC/SCT/RIM/PCT		TRC
Cost Benefit threshold	0-INF		1.0 at Program Level
CE Override by Measure	All Measures		YES
Reparticipation	0-100%	0.85 in 2018 ELRAM Model	Defer to best practices / previous study
Apply ET Risk Factors to CE?	Yes/No	Risk is modeled as a year over year vector derating savings/cost %	No
Allow Emerging Technologies	Yes/No		Yes
Apply ET Risk Factors to Consumption?	Yes/No		No
Net to Gross Methods	Gross screening--Gross aggregate C/E--Gross potential Gross screening--Gross aggregate C/E--Net potential Gross screening--Net aggregate C/E--Gross potential Gross screening--Net aggregate C/E--Net potential Net screening--Net aggregate C/E--Net potential		Net/Net/Net
Apply Dual Baseline	Yes/No	Impacts RET Measures Unit Energy Savings	Yes
Cost Test Method	2001/2007 CA SPM		2001 CA SPM
Allow Deferred Replacement	Yes/No		Yes
Cost Levelization Method	Levelize over measure life/Levelize over planning horizon		Measure Life
Apply Program Fixed Admin	Yes/No	If yes, need to provide fixed costs that do not scale with savings *for each program*	No - Variable Admin
Apply Admin Inflation	Yes/No		Yes
Apply Portfolio Admin	Yes/No	If yes, need to provide fixed costs that do not scale with savings for the portfolio as a whole, not applicable to individual programs.	No
Include Lost Revenue	By Cost Test/Impact Type	Does not override inclusion in cost-effectiveness testing: only for reporting	No
Apply O&M Inflation	Yes/No		Yes

Figure 24 lists many of the key input assumptions necessary for modelling the achievable potential scenarios for the EE potential study.

Figure 24. Key Inputs for Energy Efficiency Achievable Potential

Calibration and Achievable Potential Options			
Minimum Incentive Fraction	0-100%	% incremental costs. Overrides other incentive choices	10%
Selected Incentive Approach	Percent of Incremental Cost Max Utility Incentive Targeted Payback Targeted Participant Cost Percent of RIM NPV		Targeted Payback
Behavior Measure Incentive Fraction	0-100%	% incremental costs. Overrides other incentive choices. Only applicable for some measure characterization approaches, does not apply for planned rollout of behavior measures.	100%
Maximum Incentive Fraction	0-100%		100%
Apply Incentives to C&S measures	Yes/No		No
Initial Saturation Multiplier	0-INF	Calculates EE awareness from saturation	0.05
Logit Alpha	~2	Affects customer price response within a competition group	2
Incentive-Based Market Share sensitivity	0-100%	Applies to non-competition group recycling measures, where payback does not make sense	0.01
Cost Benefit threshold	0-INF		0.7 at Measure Level

NAVIGANT

in collaboration with:

NARRATIVE RESEARCH

Nova Scotia Residential Sector and BNI Sector Baseline Study

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TABLE OF CONTENTS

1. Purpose and Methodology 1
1.1 Background 1
1.2 Purpose 1
1.3 Methodology Overview 1
1.4 Residential Sector Online Survey Methodology 2
1.5 Business, Nonprofit and Institutional Sector Online Survey Methodology 2
1.6 Organization of the Report 2
2. Summary of Findings – Residential Sector 4
2.1 Residential Survey Responses by Region 4
2.2 Residential – Primary Place of Residence 5
2.3 Residential – Heating Source Types 5
2.4 Residential – Clothes Dryers 7
2.5 Residential – Washing Machines 8
2.6 Residential – Refrigerators and Freezers 8
2.7 Residential – Power Bars 9
2.8 Residential – Water Heaters 10
2.9 Residential – Shower Heads and Faucets 11
2.10 Residential – Mini-Split Heat Pumps 12
2.11 Residential – Thermostats 13
2.12 Residential – Lighting 14
2.13 Residential – Dimmers and Sensors 15
2.14 Residential – Cost Savings (Lower Cost Project) 16
2.15 Residential – Cost Savings (Higher Cost Project) 17
2.16 Residential Sector Demographics 17
3. Summary of Findings – BNI Sector 19
3.1 BNI Survey Responses by Region 19
3.2 BNI – Primary Business Location and Type 20
3.3 BNI – Heating Source Types 21
3.4 BNI – Power Bars 22
3.5 BNI – Computer Servers 23
3.6 BNI – Hot Water Heaters 24
3.7 BNI – Building Systems 24
3.8 BNI – HVAC 25
3.9 BNI – Lighting 25
3.10 BNI – Cost Savings (Lower Cost Project) 26
3.11 BNI – Cost Savings (Higher Cost Project) 27
4. Online Survey Findings 28
4.1 Online Survey Residential Sector Findings 28

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4.1.1 Basic Home Characteristics 28
4.1.2 Residential Lighting 29
4.1.3 Residential HVAC 29
4.1.4 Residential Water Heating and Water Conservation 30
4.1.5 Residential Appliances 31
4.2 Online Survey Business, Nonprofit and Institutional Sector Findings 32
4.2.1 BNI – General Building Information 32
4.2.2 Lighting 33
4.2.3 Controlling Energy Usage 34
Appendix B-1 – Residential Sector Online Survey Instrument 35
Appendix B-2 – Business, Nonprofit and Institutional Sector Online Survey Instrument 36
Appendix B-3 – Residential Sector Online Survey Results 37
Appendix B-4 – BNI Sector Online Survey Results 38

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List of Figures

Figure 1. Residential Sector – Survey Responses by Region 4
Figure 2. Residential Sector – Primary Place of Residence 5
Figure 3. Residential Sector – Heating Source Fuel Types – All Sources 6
Figure 4. Residential Sector – Primary Heating Source Fuel Type 7
Figure 5. Residential Sector – Clothes Dryers 7
Figure 6. Residential Sector – Washing Machines 8
Figure 7. Residential Sector – Refrigerators and Freezers 8
Figure 8. Residential Sector – Power Bars 9
Figure 9. Residential Sector – Water Heaters 10
Figure 10. Residential Sector – Shower Heads 11
Figure 11. Residential Sector – Faucets 11
Figure 12. Residential Sector – Mini-Split Heat Pumps 12
Figure 13. Residential Sector – Thermostats 13
Figure 14. Residential Sector – Lighting 14
Figure 15. Residential Sector – Dimmers and Sensors 15
Figure 16. Residential Sector – Cost Savings (Lower Cost Project) 16
Figure 17. Residential Sector – Cost Savings (Higher Cost Project) 17
Figure 18. Residential Sector – Home Ownership and Municipality of Residence 17
Figure 19. Residential Sector – Gender and Age of Participants 18
Figure 20. Residential Sector – Household Income Type 18
Figure 21. BNI Sector – Survey Responses by Region 19
Figure 22. BNI Sector – Primary Place of Business 20
Figure 23. BNI Sector – Primary Business Sector or Industry 20
Figure 24. BNI Sector – Heating Source Fuel Types – All Sources 21
Figure 25. BNI Sector – Primary Heating Source Fuel Type 22
Figure 26. BNI Sector – Power Bars 22
Figure 27. BNI Sector – Computer Servers 23
Figure 28. BNI Sector – Hot Water Heaters 24
Figure 29. BNI Sector – Building Systems 24
Figure 30. BNI Sector – HVAC 25
Figure 31. BNI Sector – LED Lighting 25
Figure 32. BNI Sector – Lighting Controls 26
Figure 33. BNI Sector – Cost Savings (Lower Cost Project) 26
Figure 34. BNI Sector – Cost Savings (Higher Cost Project) 27
Figure 35. Residential Dwelling Type Profile 28
Figure 36. Residential Lighting Characterization Profile 29
Figure 37. Residential Heating Equipment Profile 29
Figure 38. Residential Water Heating Profile 30
Figure 39. Residential Water Conservation Profile 30
Figure 40. Residential Appliances Profile 31
Figure 41. BNI General Buildings Profile 32
Figure 42. BNI Indoor Lighting Profile 33
Figure 43. BNI Controls Profile 34

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1. PURPOSE AND METHODOLOGY

1.1 Background

EfficiencyOne has indicated that Nova Scotia Power Inc. (NSPI) will be updating its Integrated Resource Plan (IRP) in 2019. Navigant understands that EfficiencyOne requires estimates of demand-side management (DSM) potential energy and winter peak demand savings for a 25-year period (2021 through 2045) to inform the development of this IRP.

Navigant is developing a 25-year DSM potential analysis to inform the IRP process. To inform and support the potential analysis, and to ensure that the assumptions for the current baseline of energy efficiency in Nova Scotia are current, Navigant, in collaboration with Narrative Research, conducted a market assessment of the current baseline of energy-consuming equipment and building stock within Nova Scotia.

1.2 Purpose

The purpose of conducting this study for EfficiencyOne is:

- to develop **Nova Scotia baseline information**, with saturations of various electricity-consuming equipment in Nova Scotia for residential and business, nonprofit and institutional buildings. This information will ensure that the starting point for the DSM potential estimation process is accurate and current.

- To develop Nova Scotia specific payback acceptance curves, based on responses to questions about willingness to purchase and install energy efficiency equipment, with varying incentive levels.

The primary objectives of this study were to:

Develop customer data by sector and end use that is specific to Nova Scotia.

Develop useful data to inform the Nova Scotia energy efficiency potential study.

1.3 Methodology Overview

This study consisted of a multi-phased data collection methodology. Specifically, there were two parallel studies conducted: (1) a general population (residential) online panel survey, and (2) a commercial panel online survey. These studies were intended to gather information from a sampling of residents and businesses/institutions within Nova Scotia. Given that both of these panel surveys do not represent a probability sampling approach, a margin of error cannot be ascribed to the research findings. Online panels are referred to as ‘samples of convenience’ and therefore results cannot be extrapolated to the entire provincial population of residents and businesses with any degree of statistical certainty. That being said, Narrative Research employed data weighting to the residential survey findings to ensure that the data is as statistically reliable as possible. The detailed methodologies for the two parallel surveys follow.

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1.4 Residential Sector Online Survey Methodology

The primary source of data used in determining the residential baseline was a 2019 online general population panel survey conducted by Narrative Research (formerly Corporate Research Associates) on behalf of Navigant, referred to as the Nova Scotia Energy Usage Baseline Study. On-site data also was collected by Sustainable Housing and was used to supplement and calibrate the self-reported data from the online study. To develop estimates for density (the number of equipment units, both efficient and baseline present in the home), and saturation (the percent of efficient equipment units in the home, relative to the total units), survey responses were calibrated to onsite field observations. The calibration process estimates adjustment coefficients based on the relative difference between the survey responses and the field observations for each sector and measure. These coefficients are applied to customer segment and measure level counts of baseline and efficient equipment. Relative precision is used as the statistical determinant of the appropriateness of this adjustment between the three different estimates of density and saturation for each measure: surveyed, onsite, and calibrated. A lower relative precision indicates a better estimate of the parameter of interest, given a sample size.

The online survey instrument was designed in close consultation with Narrative Research, Navigant Consulting, and EfficiencyOne. Data was collected using an online general population panel hosted by Dynata. The target for this study was 1,000 completed surveys (with 1,002 completes being obtained). The online panel consisted of Nova Scotian residents across a variety of housing types including single family attached and detached homes, condominiums, apartments and other multifamily dwellings of two, three or more units, mobile homes and trailers. The online panel consisted of Nova Scotian residents aged 18 and older and quotas were established regionally, as well as by age and gender. As mentioned, as this was completed using a general population panel that does not comprise all Nova Scotian adults, a margin of error cannot be attributed. The results of this survey were statistically weighted to represent the true distribution of key demographic characteristics of the population. Data collection took place from April 16 to April 24, 2019, with an average survey length of thirteen minutes.

1.5 Business, Nonprofit and Institutional Sector Online Survey Methodology

The online survey instrument was designed in close consultation with Narrative Research, Navigant Consulting, and EfficiencyOne. Data was collected using an online panel of businesses and institutions within Nova Scotia, hosted by Dynata. The target for this study was 200 completed surveys (with 200 completes being obtained). The online panel consisted of Nova Scotian businesses and institutions with one or more employees. To ensure that respondents were capable of answering the survey questions, Narrative Research worked with Dynata to identify decision makers/people familiar with their building systems and their power bill to complete the BNI survey. As mentioned, this was completed using an online panel that does not comprise all Nova Scotia businesses/institutions, and therefore a margin of error cannot be attributed. Data collection took place from April 30 to May 9, 2019, with an average survey length of nine minutes.

1.6 Organization of the Report

The remainder of the report includes the following sections:

Section 2 – Summary of Findings – Residential Sector

Section 3 – Summary of Findings – BNI Sector

Section 4 – Online Survey Findings

Appendix B-1 – Residential Sector Online Survey Instrument

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Appendix B-2 – BNI Sector Online Survey Instrument

Appendix B-3 – Residential Sector Online Survey Results

Appendix B-4 – BNI Sector Online Survey Results

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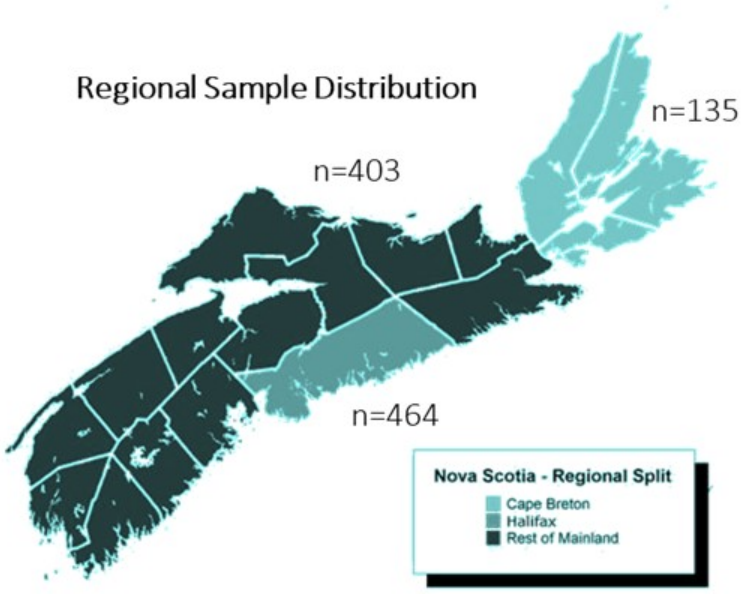
2. SUMMARY OF FINDINGS – RESIDENTIAL SECTOR

This section presents detailed findings from the residential sector online survey and onsite visits to assess baseline conditions in Nova Scotia dwelling units. **It is important to note that when applicable, this section presents the calibrated data as described in section 1.4 above.**

2.1 Residential Survey Responses by Region

Figure 1 shows the distribution of survey responses across the province, with 46.3% from the Halifax region, 40.2% from the rest of the mainland, and 13.5% from Cape Breton Island.

Figure 1. Residential Sector – Survey Responses by Region



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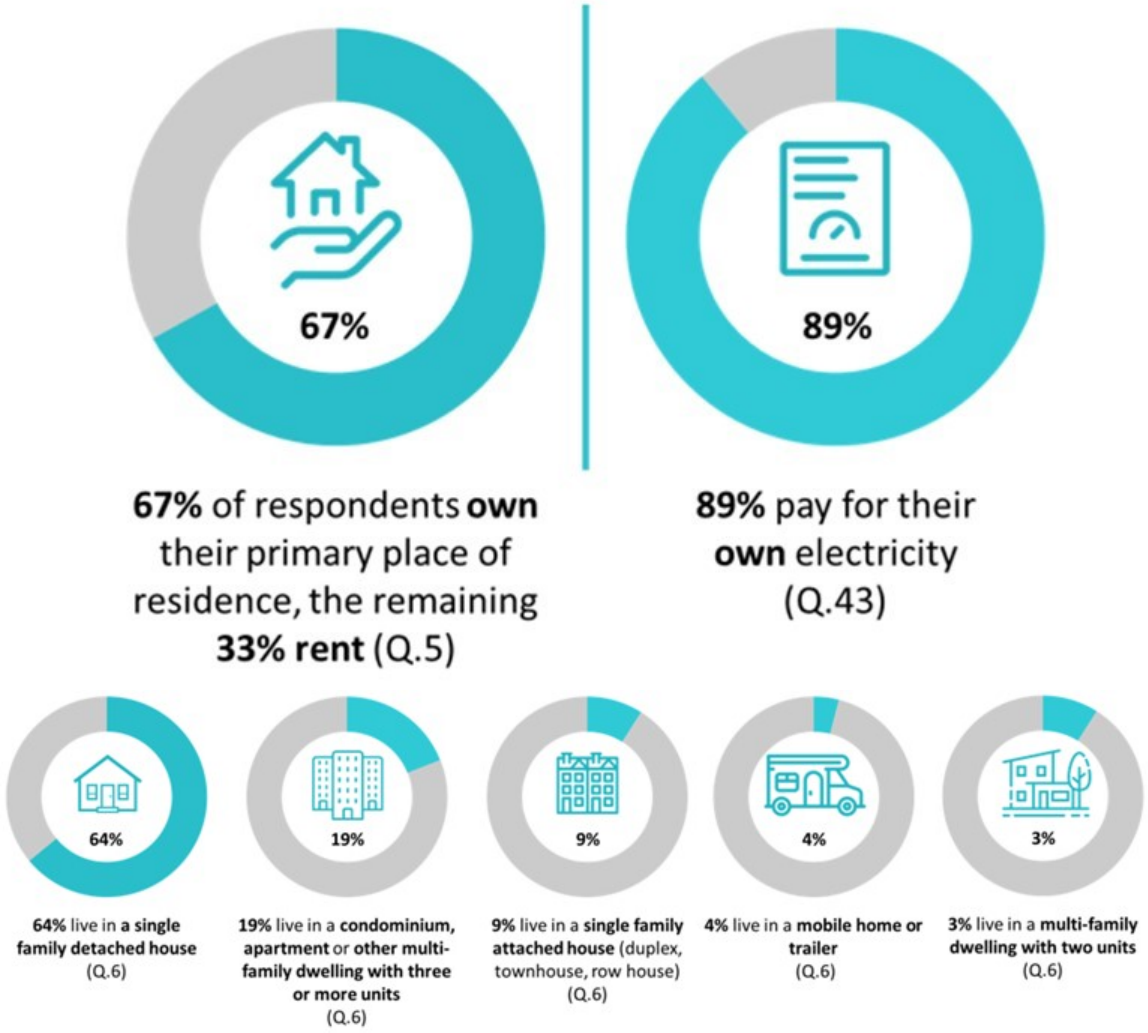
2.2 Residential – Primary Place of Residence

As shown in Figure 2, the majority of respondents own their home, and most commonly live in a single family detached dwelling. The vast majority of residents pay for their own electricity, as opposed to having a landlord pay, or having some other arrangement. Of note, 2% of respondents live in a First Nations community.

Figure 2. Residential Sector – Primary Place of Residence



Results do not sum to 100% as some respondents did not provide a response or provided 'other' response.

2.3 Residential – Heating Source Types

Electricity and oil are the most common forms of home heating in the province. Meanwhile, 26% use a heat pump as a main heat source. Survey respondents reported that 33% of all primary heating systems are electric and 62% of households have a secondary heating system installed. Of these, 26% use some form of electric heating as a backup source. Respondents reported 31% of primary heating systems are fuel oil. Figure 3 illustrates all sources (both primary, secondary and tertiary) of energy sources used to heat homes in Nova Scotia.

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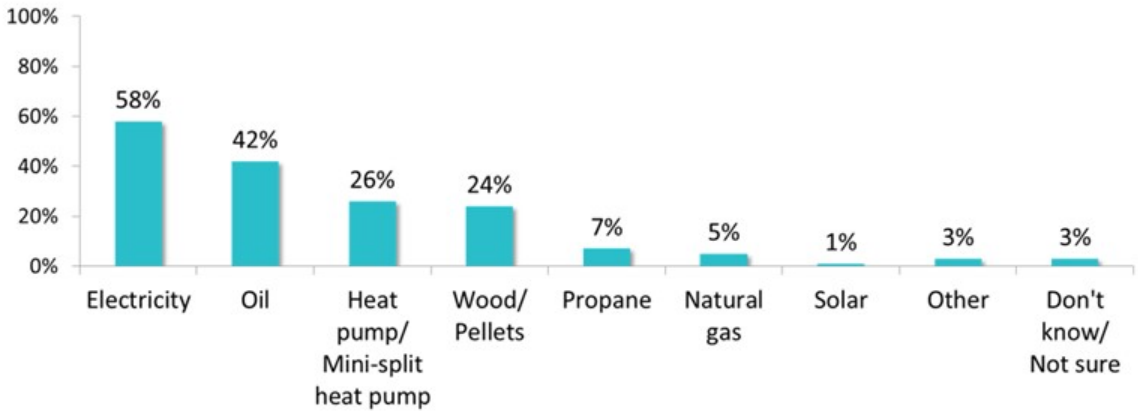
Figure 3. Residential Sector – Heating Source Fuel Types – All Sources



(Q.39+Q.40)

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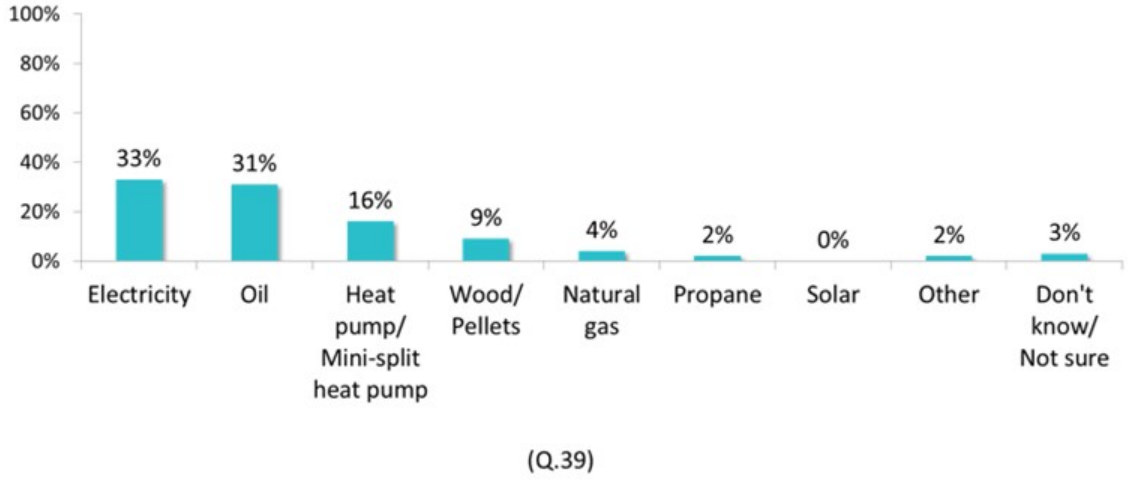
Figure 4 presents primary heating source types. Nova Scotia residences use electricity for heat (33%), followed by oil (31%), and then heat pump (16%), wood/pellets/chips (9%), natural gas (4%), propane (2%).

Figure 4. Residential Sector – Primary Heating Source Fuel Type

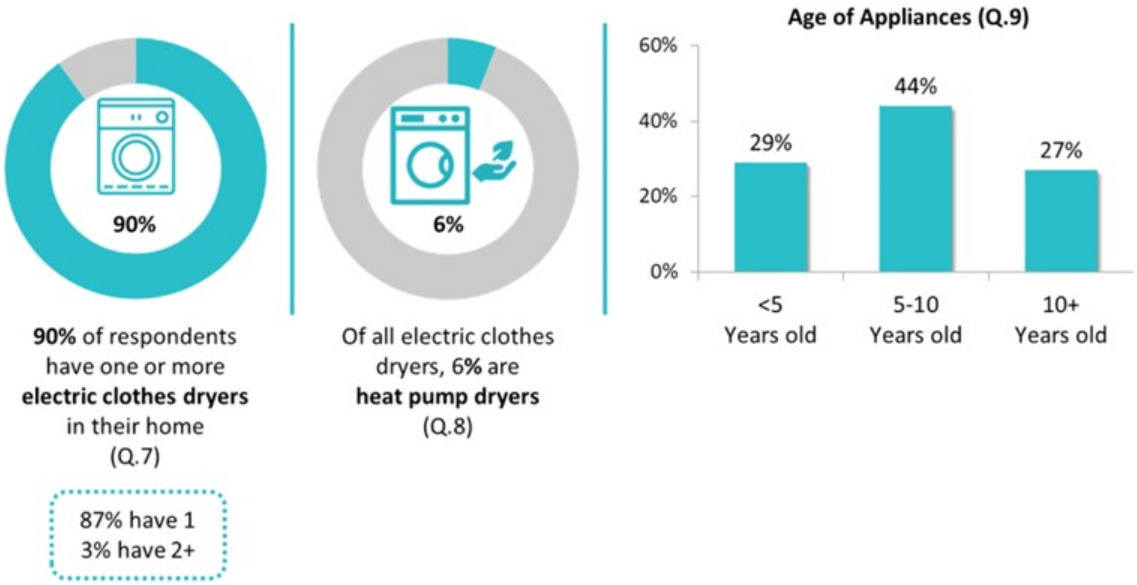


(Q.39)

2.4 Residential – Clothes Dryers

The vast majority of respondents have a clothes dryer in their home. The survey found the 71% of clothes dryers were five years old or older and thus very few homes reported having a heat pump clothes dryer. Figure 5 illustrates the number and age of electric clothes dryers of survey respondents.

Figure 5. Residential Sector – Clothes Dryers



90% of respondents have one or more **electric clothes dryers** in their home (Q.7)

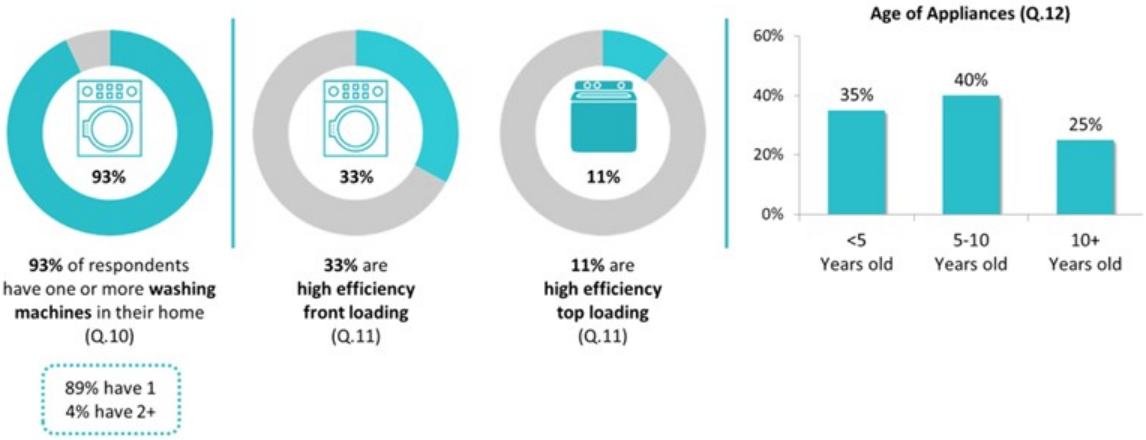
87% have 1
3% have 2+

Of all electric clothes dryers, 6% are **heat pump dryers** (Q.8)

2.5 Residential – Washing Machines

Figure 6 shows that like dryers, most respondents have a washing machine in their home, and one-third of washing machines are high-efficiency front loading. High efficiency top loading washing machines were found to be present 11% of the time. The survey found the 65% of clothes washers were five years old or older.

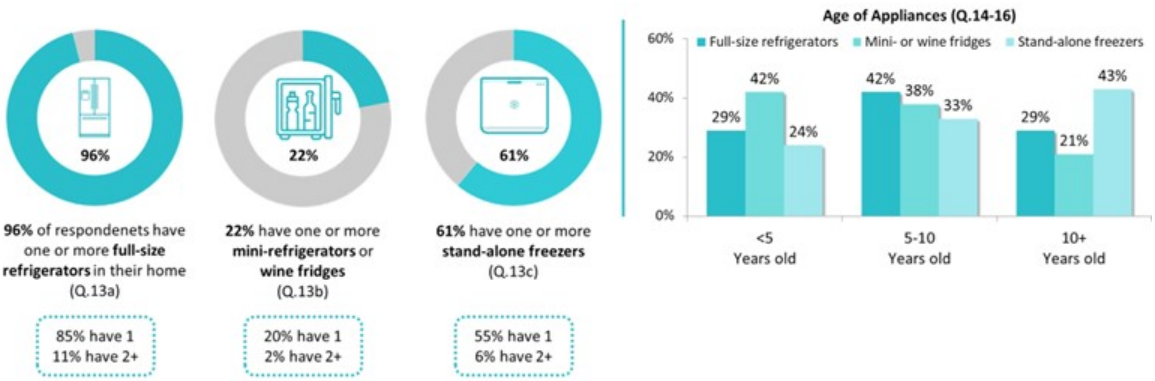
Figure 6. Residential Sector – Washing Machines



2.6 Residential – Refrigerators and Freezers

Virtually all respondents have a fridge in their home with 11% of respondents reporting owning a second full size refrigerator. A majority of respondents also have a stand-alone freezer and reported that stand-alone freezers tend to skew older in age. See Figure 7.

Figure 7. Residential Sector – Refrigerators and Freezers



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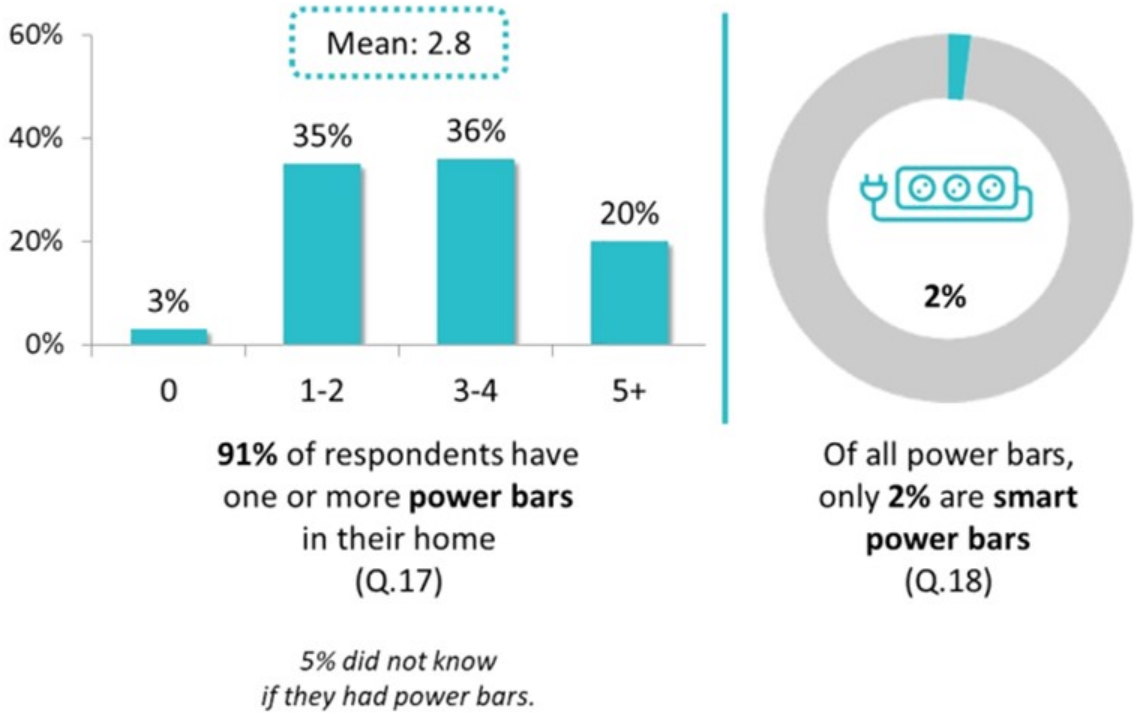
2.7 Residential – Power Bars

As indicated in Figure 8, on average, respondents have three power bars in their homes, and almost none of them are smart power bars; and 20% of residents have five or more power bars in their home. A smart power strip (also called a smart power bar) looks similar to a traditional power bar, however circuitry is designed to monitor and control power to each electrical outlet in the strip to improve energy efficiency and prevent household electronics from wasting power.

Figure 8. Residential Sector – Power Bars



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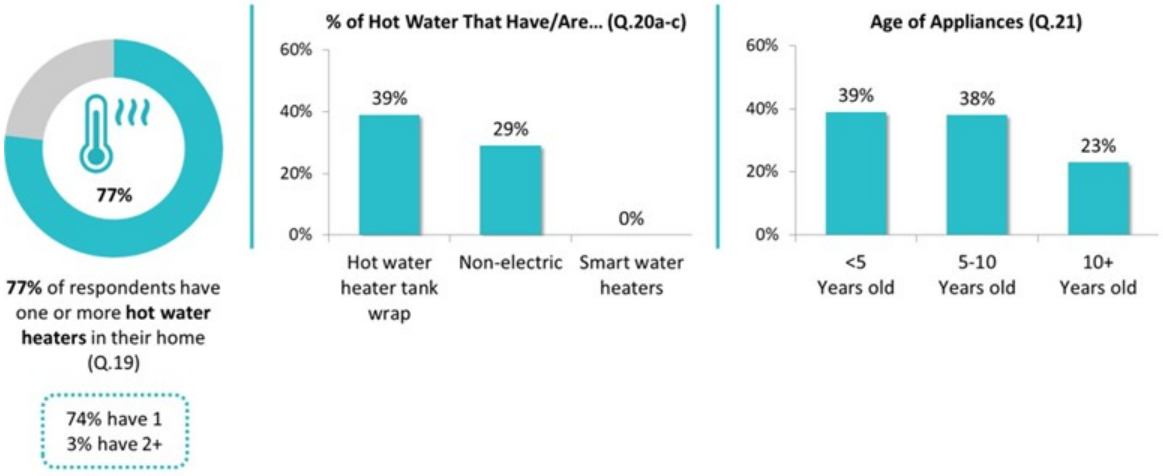
2.8 Residential – Water Heaters

Figure 9 details the majority of respondents (77%) have a water heater in their home, with 29% being non-electric water heaters, and four in ten have a tank wrap. It is likely that the 23% of respondents who indicated not having a hot water heater have this supplied by a central hot water system in a multi-tenant building (for example, a multifamily building with a central boiler that provides hot water to individual tenant units). While the majority of water heaters in the province are less than 10 years old the survey found that no homes had a heat pump water heater or smart water heater connected to the internet.

Figure 9. Residential Sector – Water Heaters



2.9 Residential – Shower Heads and Faucets

On average, respondents have two shower heads in their home (Figure 10) and report three faucets in their home, while a majority of faucets have a low flow aerator (Figure 11), just under one-half of shower heads are low-flow.

Figure 10. Residential Sector – Shower Heads

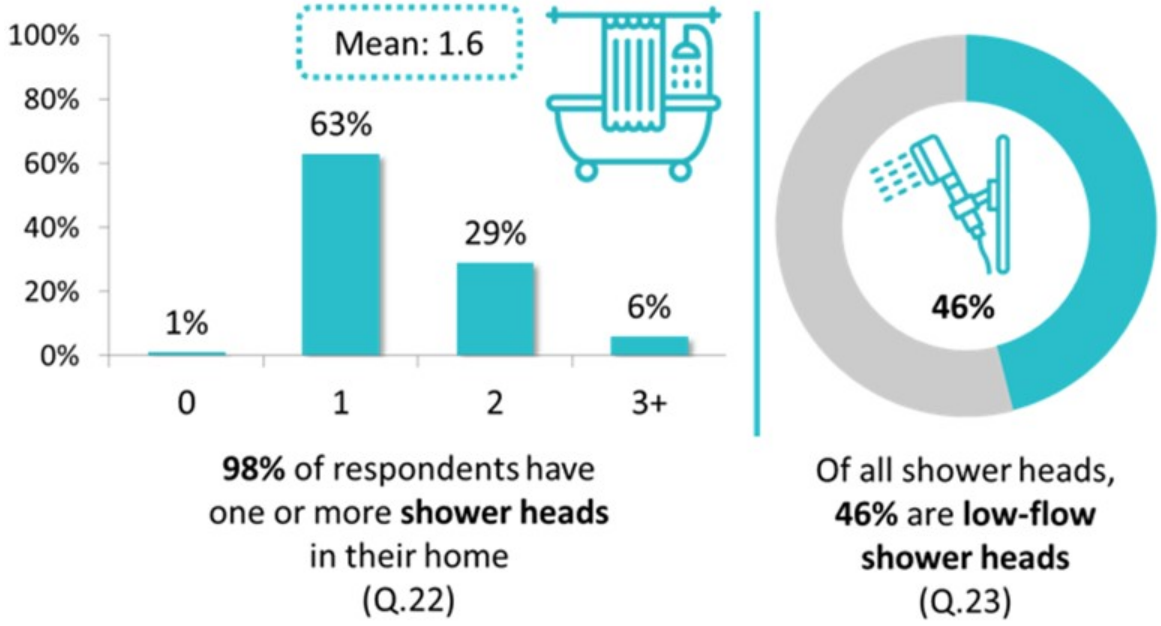
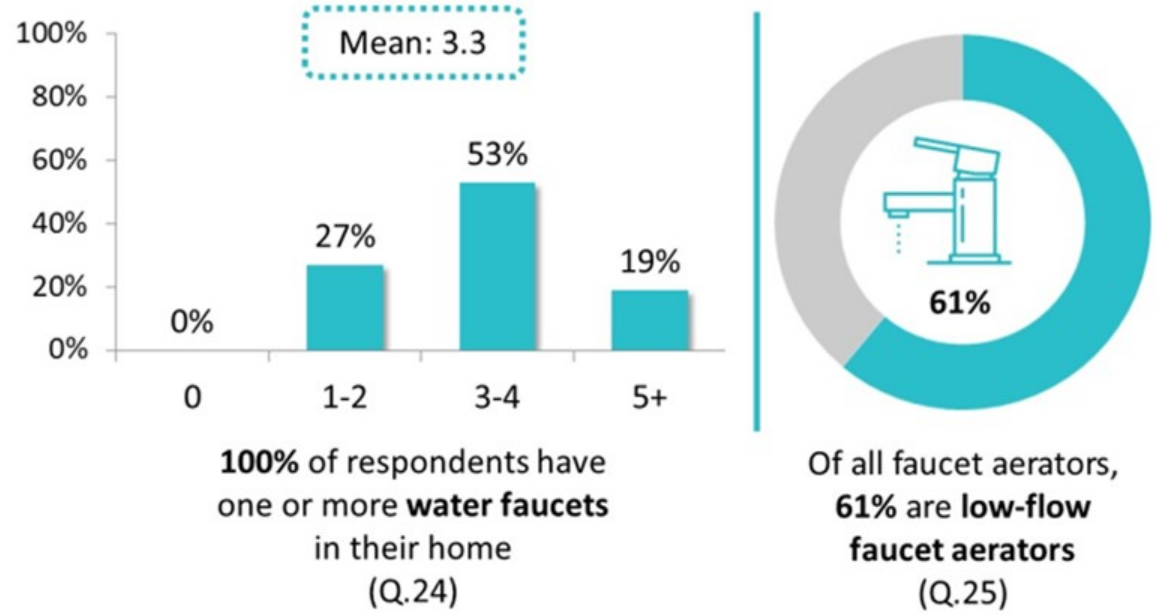


Figure 11. Residential Sector – Faucets



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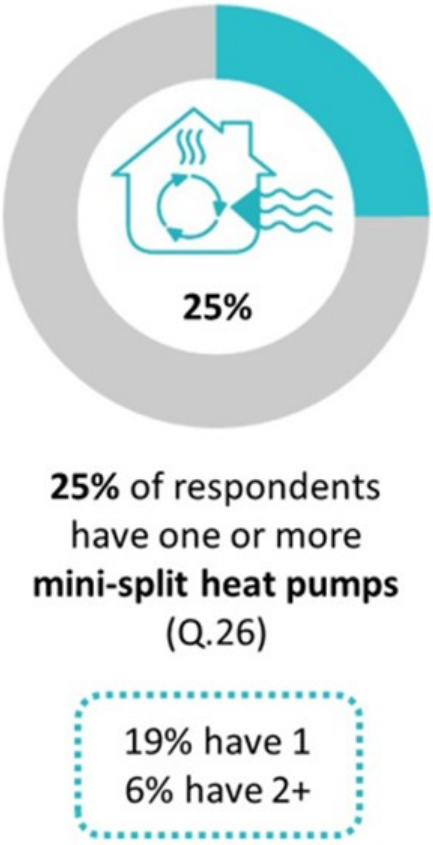
2.10 Residential – Mini-Split Heat Pumps

As reported in Figure 12, one-quarter of respondents have at least one mini-split heat pump.

Figure 12. Residential Sector – Mini-Split Heat Pumps



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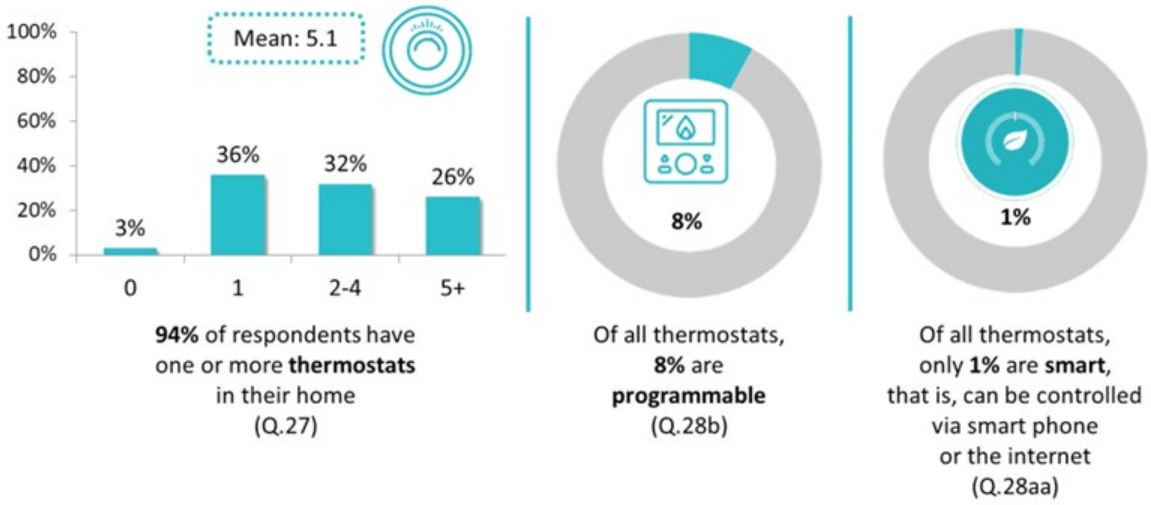
2.11 Residential – Thermostats

Figure 13 shows that on average, respondents have five thermostats in their home (calibrated results), and virtually none of these thermostats are smart or programmable. It is likely that respondents considered each thermostat for each unit controlled (for example, each strip of electric resistance heat has its own on/off control).

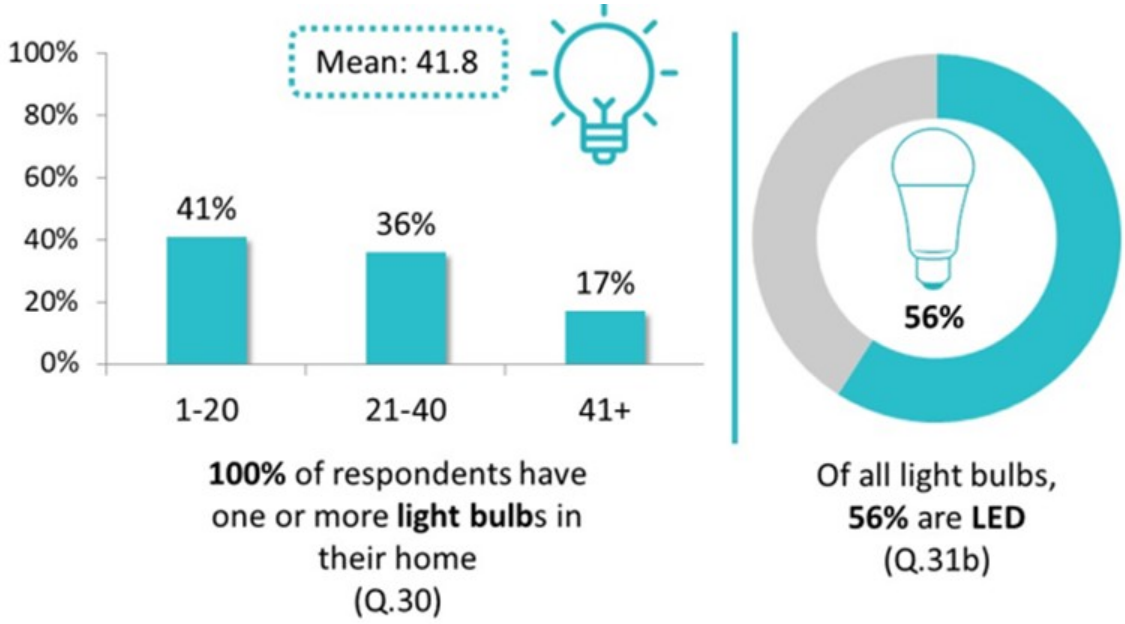
Figure 13. Residential Sector – Thermostats



2.12 Residential – Lighting

Figure 14 illustrates that survey respondents have 42 lightbulbs in their home on average (calibrated results), while more than one-half of lightbulbs in the province are LED. However, no bulbs were smart bulbs connected to the internet..

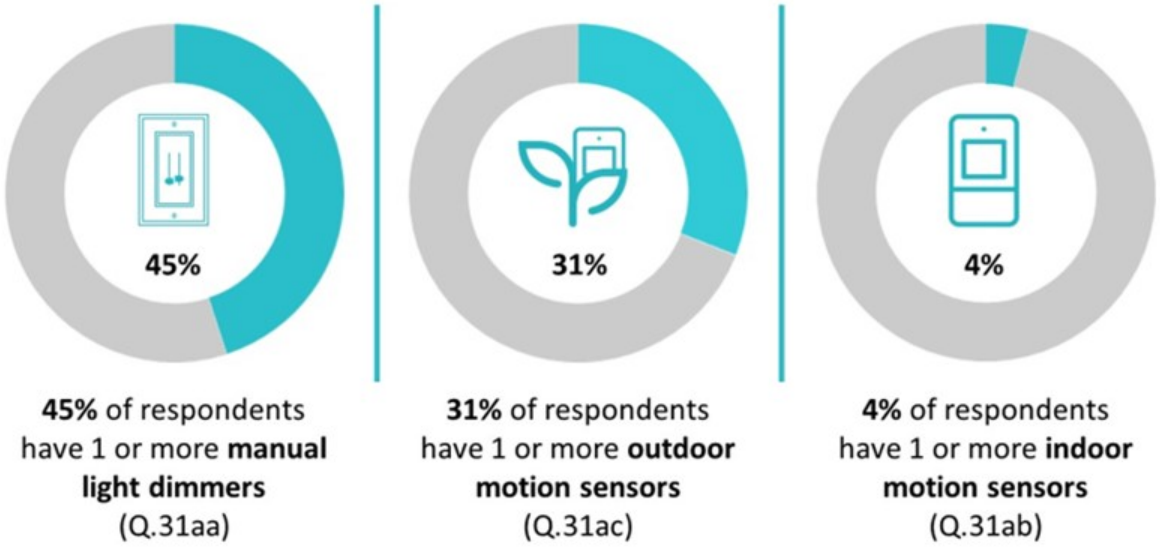
Figure 14. Residential Sector – Lighting



2.13 Residential – Dimmers and Sensors

As seen in Figure 15, nearly one-half of respondents have at least one manual light dimmer in their home, while a slightly smaller number have at least one outdoor motion sensor. Very few respondents have indoor motion sensors in their home.

Figure 15. Residential Sector – Dimmers and Sensors



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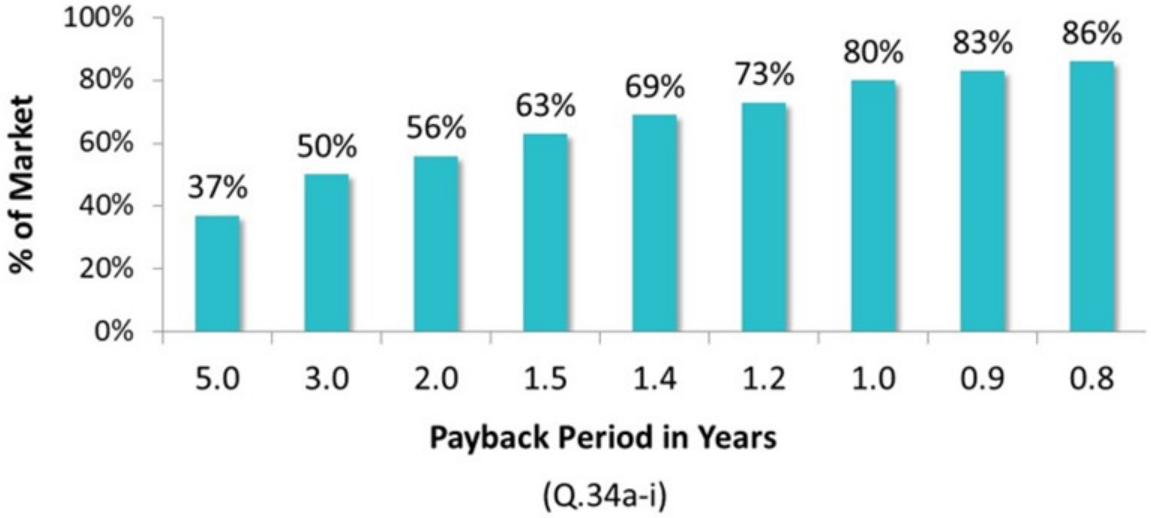
2.14 Residential – Cost Savings (Lower Cost Project)

Figure 16 shows responses when residential respondents were asked – if a project were to cost $75 after rebates, a majority of respondents would likely pursue it if it saved them $35 or more annually, or if it had a 2 year payback period.

Figure 16. Residential Sector – Cost Savings (Lower Cost Project)



The payback period in years has been converted from annual savings in dollars.

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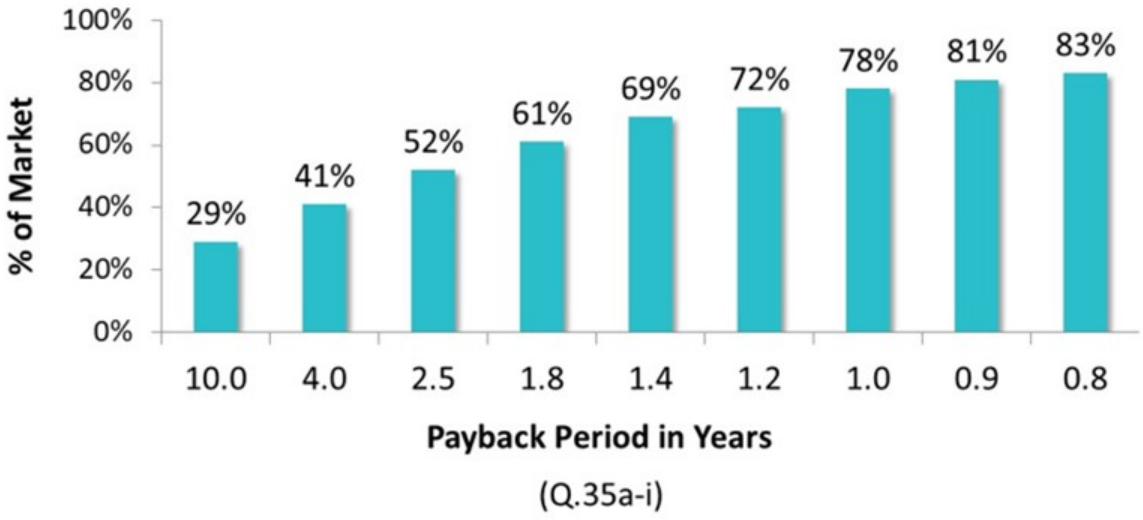
2.15 Residential – Cost Savings (Higher Cost Project)

Figure 17 shows responses when residential respondents were asked – if a project were to cost $1,000 after rebates, a majority of respondents would likely pursue it if it saved them $550 or more annually, or if it had an approximate 2 year payback period.

Figure 17. Residential Sector – Cost Savings (Higher Cost Project)



The payback period in years has been converted from annual savings in dollars.

2.16 Residential Sector Demographics

Residential survey participants participated from all three regional municipalities as shown in Figure 18.

Figure 18. Residential Sector – Home Ownership and Municipality of Residence

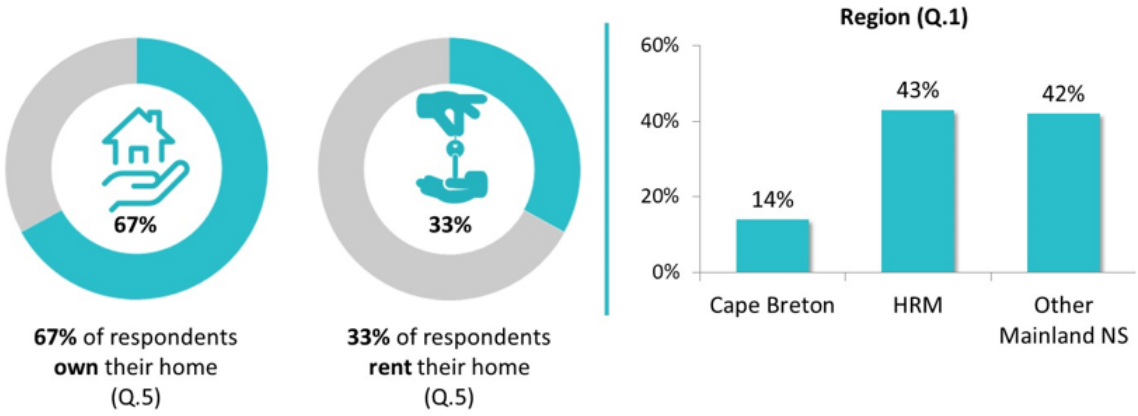


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Figure 19 shows an even distribution of male and female participants across all age groups with more respondents 55 years or older, followed by those 35 to 54 years of age, and then 18 to 34 years old.

Figure 19. Residential Sector – Gender and Age of Participants

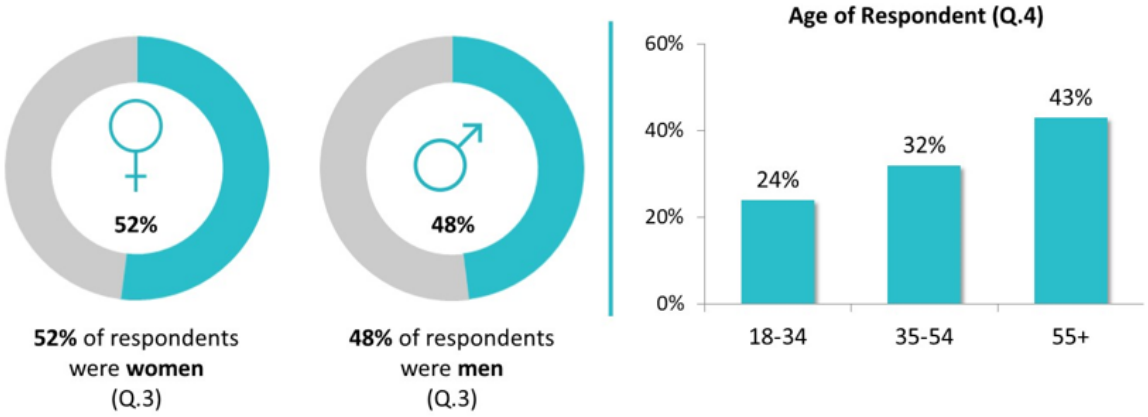
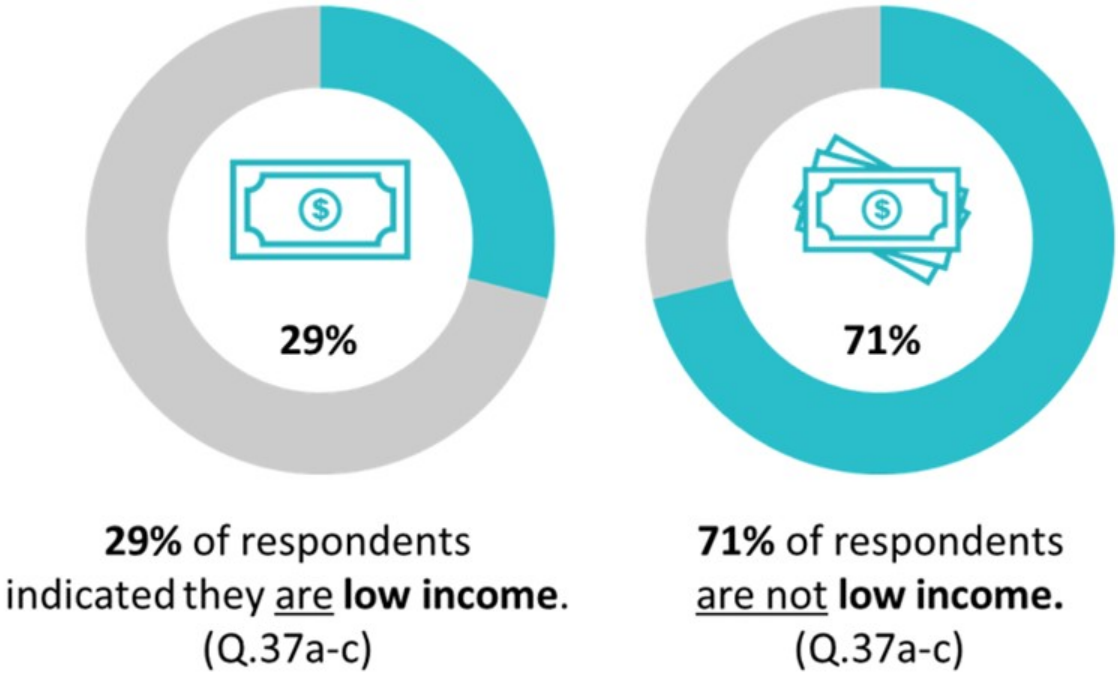


Figure 20 shows the distribution of households by income level, with 29 percent identified as low income based on Statistics Canada's low income cut-offs (LICO)measures.

Figure 20. Residential Sector – Household Income Type



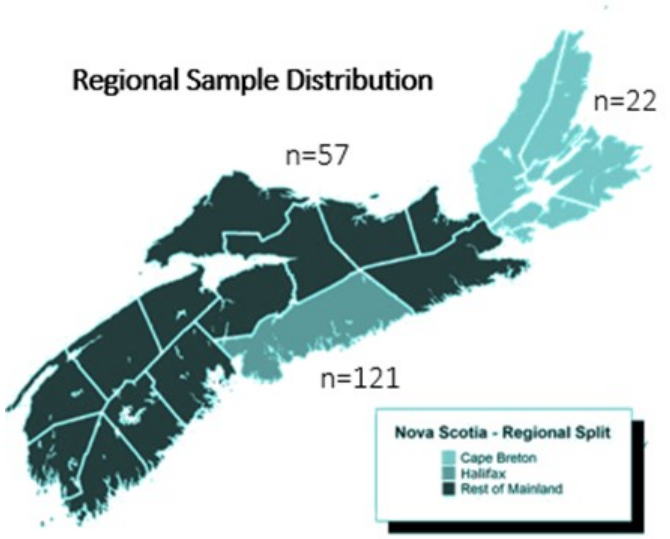
3. SUMMARY OF FINDINGS – BNI SECTOR

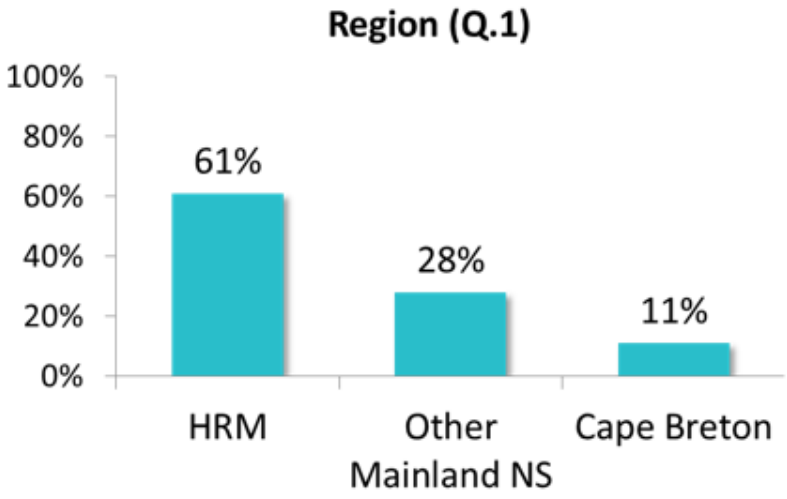
This section presents detailed findings from the business, nonprofit and institutional (BNI) sector online survey to assess baseline conditions in Nova Scotia facilities.

3.1 BNI Survey Responses by Region

Figure 21 shows the distribution of survey responses across the province, with 60.5% from the Halifax region, 28.5% from the rest of the mainland, and 11% from Cape Breton Island.

Figure 21. BNI Sector – Survey Responses by Region





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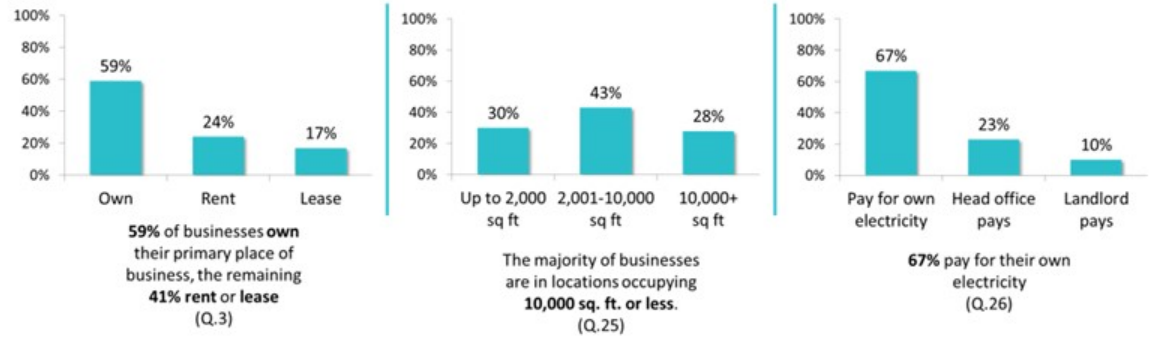
3.2 BNI – Primary Business Location and Type

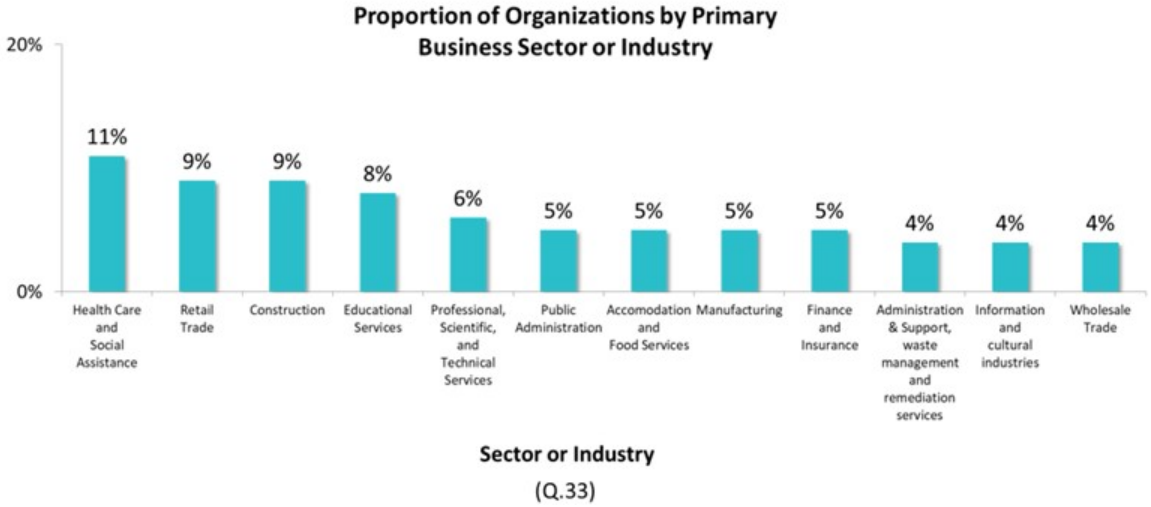
As shown in Figure 22, the majority of BNI respondents (59%) own their own primary place of business, occupy locations that are 10,000 square feet or less (73%), and pay for their own electricity (67%).

Figure 22. BNI Sector – Primary Place of Business



As shown in Figure 23, a variety of different primary sectors and industries are mentioned by respondents, with the most common being health care and social assistance, retail trade, construction, and educational services.

Figure 23. BNI Sector – Primary Business Sector or Industry



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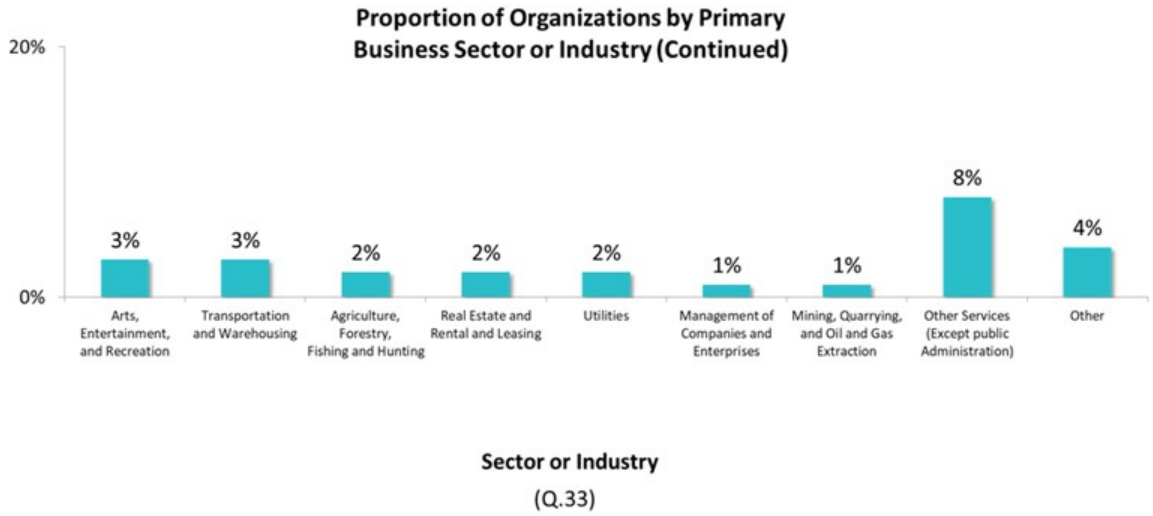

3.3 BNI – Heating Source Types

Figure 24 presents a combination of both primary and secondary heating source types. The majority of Nova Scotian business respondents have electric heating systems (67%), followed by oil (38%), and then heat pump at 27%. Natural gas and propane both are at 13%, followed by wood/pellets (7%) and solar (2%).

Figure 24. BNI Sector – Heating Source Fuel Types – All Sources

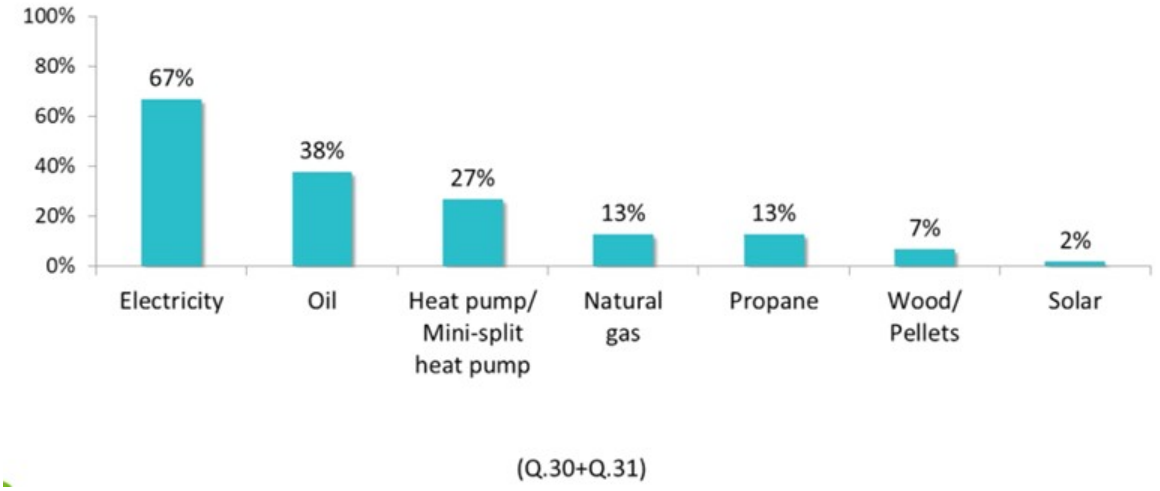

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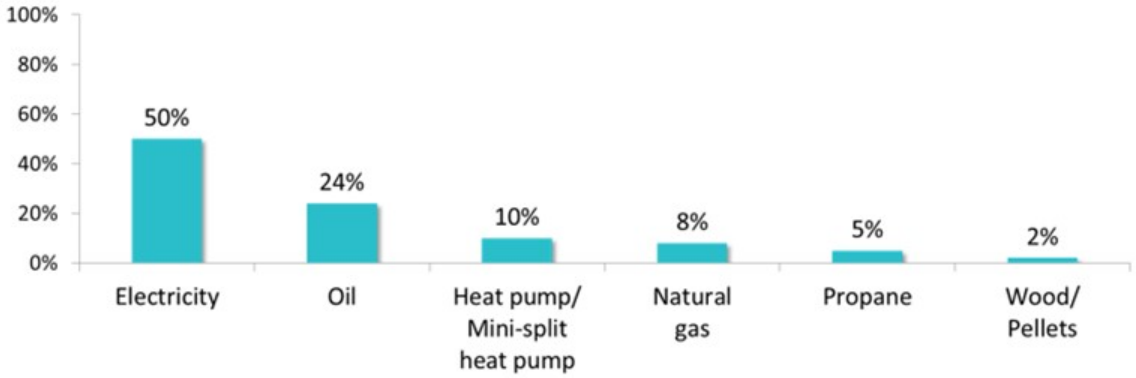
Figure 25 presents primary heating source types. The majority of Nova Scotian business respondents use electricity for heat (50%), followed by oil (24%), and then heat pump (10%), natural gas (8%), propane (5%), followed by wood/pellets/chips (2%).

Figure 25. BNI Sector – Primary Heating Source Fuel Type

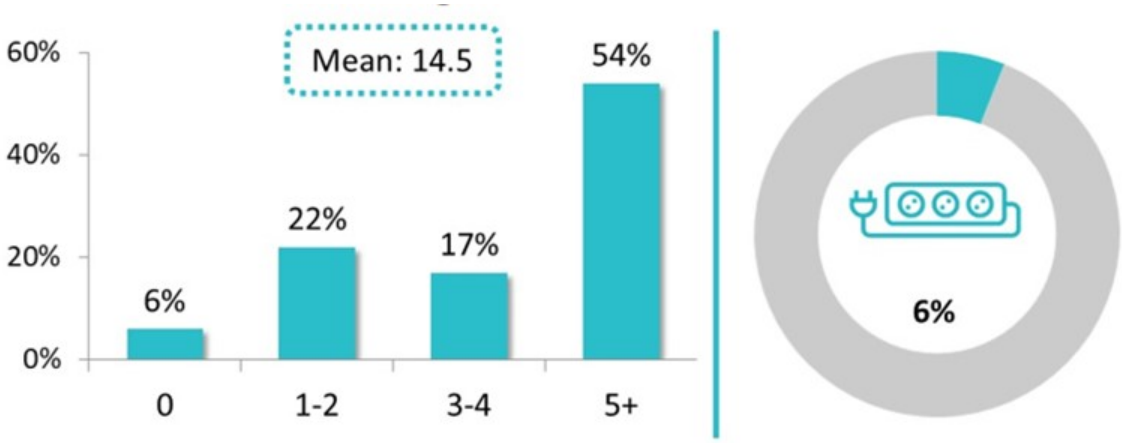


(Q.30)

3.4 BNI – Power Bars

As shown in Figure 26, on average, business respondents have almost 15 power bars, and the vast majority are not smart power bars (6%).

Figure 26. BNI Sector – Power Bars



94% of businesses have one or more **power bars** at their business (Q.4)

Of all power bars, only **6%** are **smart power bars** (Q.4+5)

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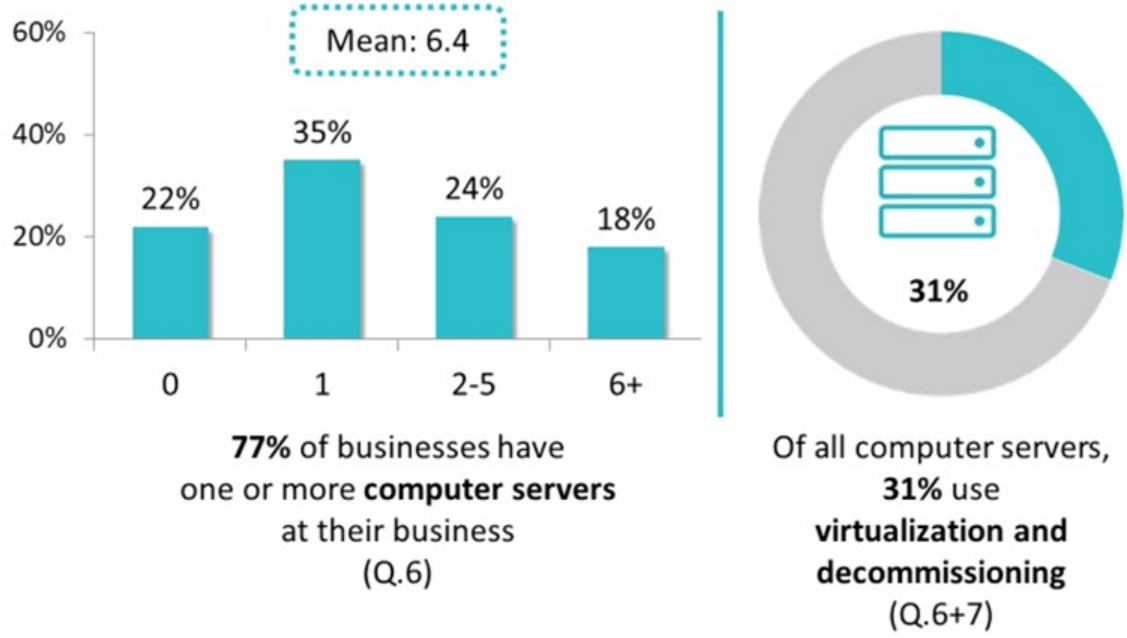
3.5 BNI – Computer Servers

As shown in Figure 27, on average, business respondents have more than six servers onsite, and approximately one-third of servers use virtualization and decommissioning.

Figure 27. BNI Sector – Computer Servers



77% of businesses have one or more **computer servers** at their business (Q.6)

Of all computer servers, **31%** use **virtualization and decommissioning** (Q.6+7)

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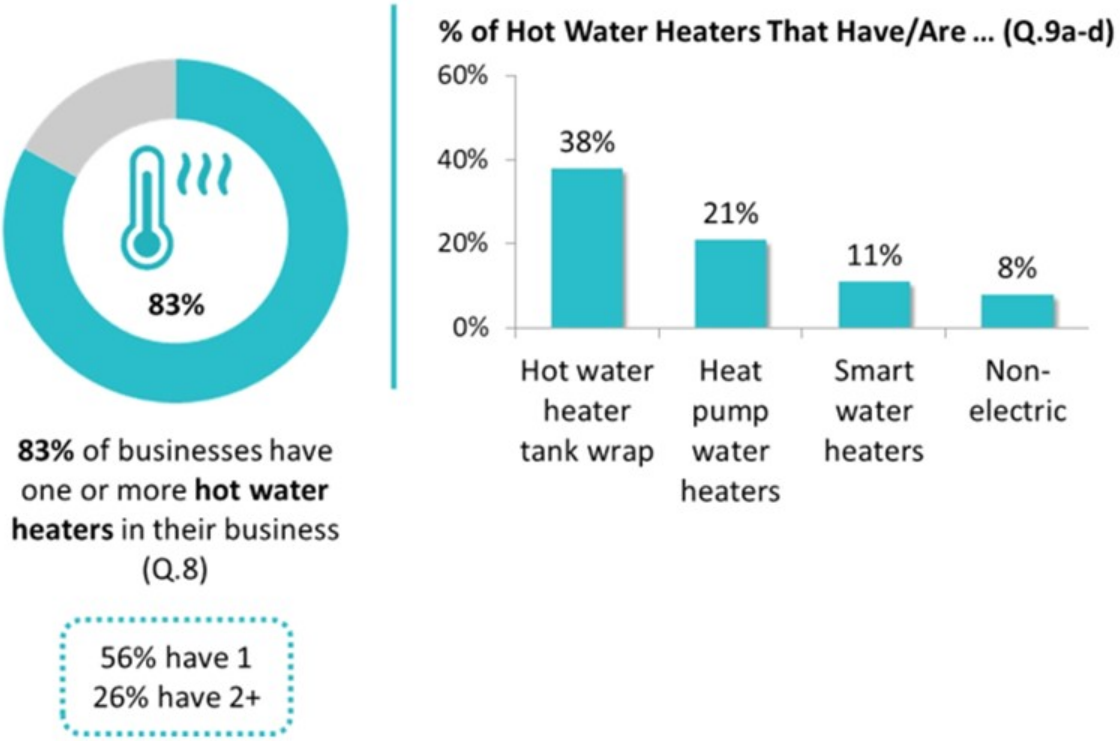
3.6 BNI – Hot Water Heaters

As shown in Figure 28, most businesses (83%) have one or more hot water heaters, with approximately 40% of water heaters having a tank wrap. 21% are heat pump water heaters, and 11% are smart water heaters. 8% use a fuel other than electricity to heat water.

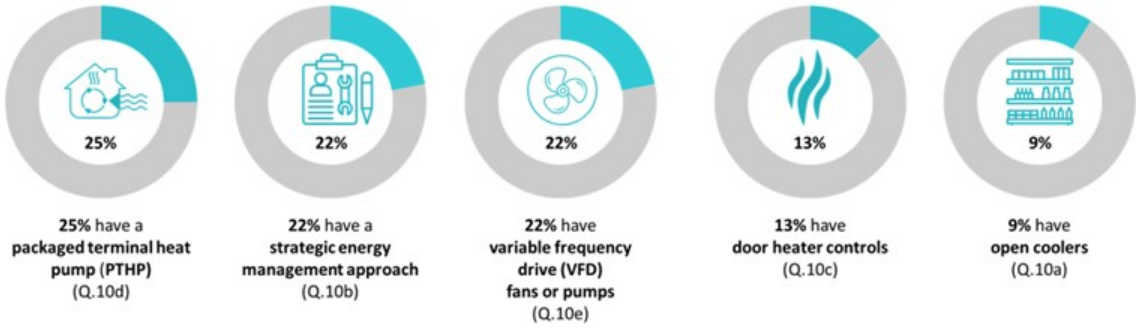
Figure 28. BNI Sector – Hot Water Heaters



3.7 BNI – Building Systems

Figure 29 presents the incidence of the application of different building systems. 25% of BNI respondents have one or more packaged terminal heat pumps, with a similar portion claiming having a strategic energy management approach. Variable frequency drive fans or pumps are present for 22% of respondents. Respondents indicated 13% of refrigeration units (e.g. coolers, freezers) have door heater controls and 9% are open coolers.

Figure 29. BNI Sector – Building Systems



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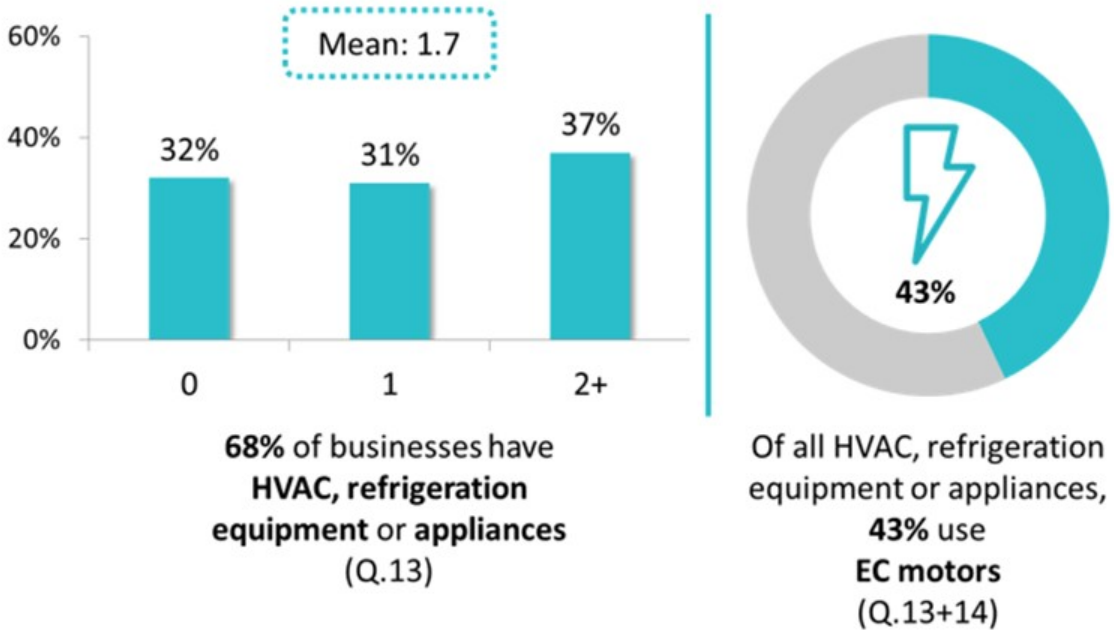
3.8 BNI – HVAC

Figure 30 shows on average, BNI respondents have multiple types of HVAC units, refrigeration equipment or appliances, and 43% of these units use electrically commutated motors. It is likely that respondents who did not indicate having any units have these supplied by the facility at large for their floor area (for example, a central unit for a multi-tenant building which provides HVAC to terminal units in individual tenant spaces).

Figure 30. BNI Sector – HVAC



3.9 BNI – Lighting

Figure 31 presents data on the use of different types of LED lighting. Track/mono-point directional LED lighting (i.e. track lighting) is the most popular type of lighting among business respondents (88%), followed by downlight LED luminaires (77%), LED exterior floodlights (74%), pole mounted LED exterior area lights (71%), general service LED lights (70%), and linear lighting LEDs 60%).

Figure 31. BNI Sector – LED Lighting

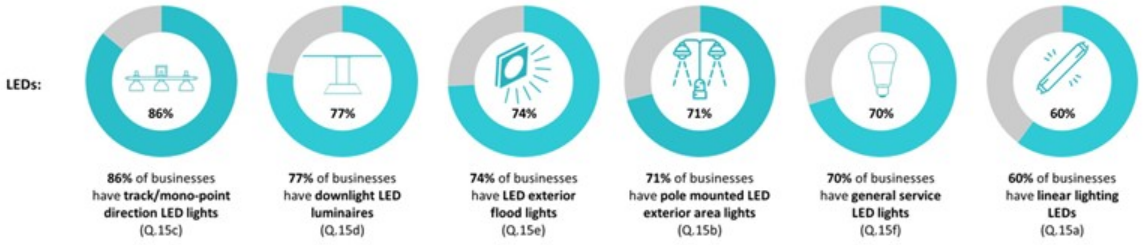


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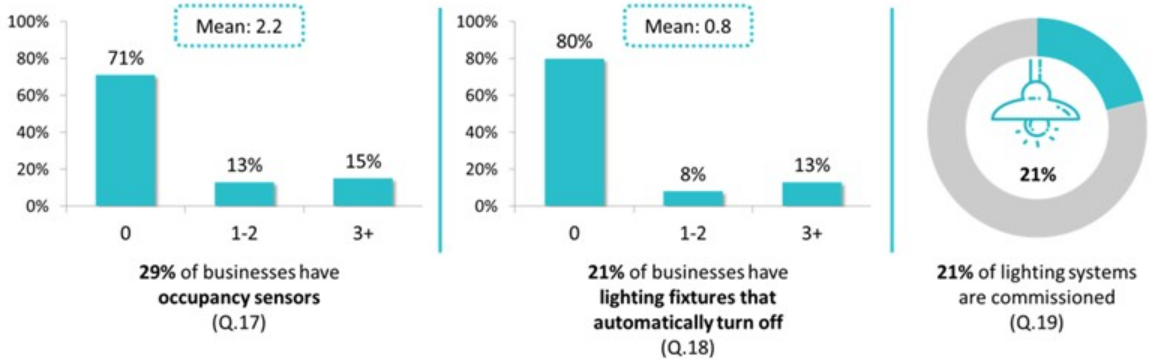
Figure 32 shows the average number of occupancy sensors that BNI respondents report having is about two, and the majority of business respondents do not have automatic light fixtures. 21% of BNI respondents have had lighting systems commissioned.

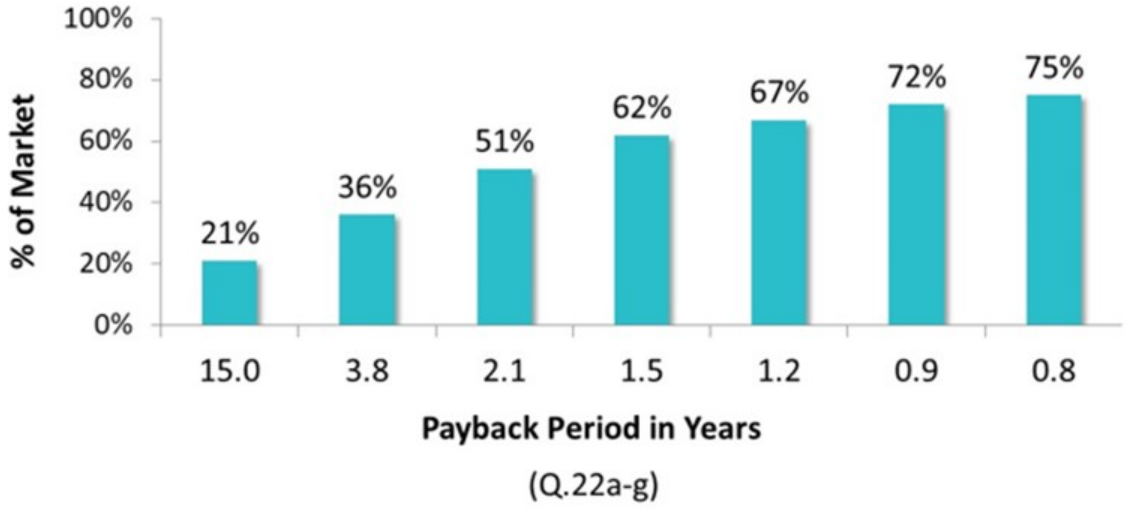
Figure 32. BNI Sector – Lighting Controls



3.10 BNI – Cost Savings (Lower Cost Project)

Figure 33 shows responses when businesses were asked – if a project were to cost $7,500 after rebates, that a majority of BNI respondents would likely pursue it if it saved them $5,000 or more annually, or had a 1.5 year payback period.

Figure 33. BNI Sector – Cost Savings (Lower Cost Project)



The payback period in years has been converted from annual savings in dollars.

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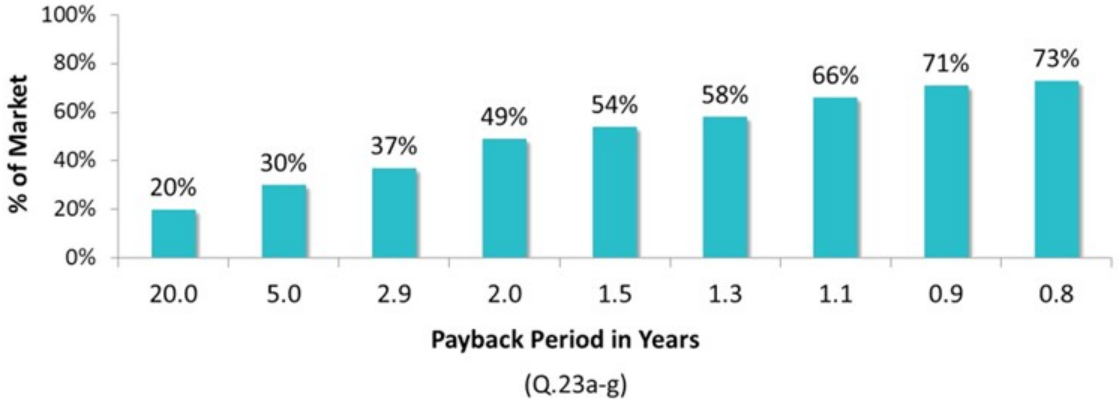
3.11 BNI – Cost Savings (Higher Cost Project)

Figure 34 shows responses when businesses were asked – if a project were to cost $100,000 after rebates, a majority of BNI respondents would likely pursue it if it saved them $65,000 or more annually, or had a 1.5 year payback period.

Figure 34. BNI Sector – Cost Savings (Higher Cost Project)



The payback period in years has been converted from annual savings in dollars.

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4. ONLINE SURVEY FINDINGS

This section presents online survey findings for the residential and BNI sector surveys.

4.1 Online Survey Residential Sector Findings

4.1.1 Basic Home Characteristics

This section summarizes the basic home characteristics of residential dwellings in Nova Scotia. **It is important to note that all data presented in this section is self-reported data gathered utilizing the residential sector online survey. No calibrated data is shown in the following tables.** Figure 35 summarizes the findings for basic home characteristics.

Figure 35. Residential Dwelling Type Profile

Characteristic	Market Characterization
Dwelling Type	Approximately 73% of all dwellings are single-family (detached, 64% and attached, 9%) homes. Approximately 19% of Nova Scotia residents live in a condominium, apartment or other multi-family dwelling with three units or more. Approximately 4% of Nova Scotia residents live in a mobile home or trailer. Approximately 3% of Nova Scotia residents live in a multi-family dwelling with two units.
Dwelling Ownership	The majority (67%) of all residents in Nova Scotia own their homes while the remaining 33% rent.
Dwelling Age	50% of homes in Nova Scotia were reported to be 35 years old or less, while 44% were reported to be 36 years old or older. 6% of respondents did not know the age of their home.
Household Income	29% of respondents indicated they are low income (low income cut-offs based on Statistics Canada measures). 71% of respondents are not low income.
Utility Bill Payment	89% of residents surveyed pay their own electricity bill.
Location	Halifax Regional Municipality – 43.4% Elsewhere in Mainland Nova Scotia – 42.1% Cape Breton Island – 14.5%

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4.1.2 Residential Lighting

A summary of the distribution of all lighting types for both interior and exterior lamps is shown in Figure 36. There was an average of 42 lamps installed per household, after on-site corrections were applied. The survey sought to identify a variety of different lamp types ranging from general service bulbs, linear fluorescent bulbs, specialty lighting, LED lighting and Smart or connected lighting. Additional information on manual dimming and both indoor and outdoor motion detectors was also collected.

Figure 36. Residential Lighting Characterization Profile

Measure / Characteristic	Market Share
General Service Bulbs	80% of light bulbs were general service bulbs.
Specialty Bulbs	Specialty bulbs accounted for an additional 13% of lighting..
Linear Fluorescent Bulbs	Respondents reported more than 7% of bulbs were linear fluorescent lights.
LEDs	Of all types of bulbs surveyed 59% were LED bulbs, and 2% of these bulbs were smart or connected to the internet.
Manual Dinning Controls	41% of residents surveyed had at least one manual dimmer in the home.
Indoor & Outdoor Motion Detection	5% of respondents had one or more indoor motion detectors; 31% had at least one outdoor motion detecting light.

4.1.3 Residential HVAC

Figure 37 summarizes the online survey findings for residential HVAC equipment.

Figure 37. Residential Heating Equipment Profile

Measure / Characteristic	Online Survey Findings
Electric Heating - Primary	33% of all primary heating systems are electric.
Electric Heating - Backup	62% of households have a secondary heating system installed. Of these, 26% use some form of electric heating as a backup source.
Fuel Oil Heating	31% of primary heating systems are fuel oil.
Programmable Thermostats	27% of residents surveyed reported having at least one programmable thermostat. Of those programmable thermostats 3% were connected to the internet.
Mini-Split Heat Pumps	Approximately 25% of all customers surveyed had at least one mini-split heat pump, 19% having a single unit and 6% having two or more units.

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4.1.4 Residential Water Heating and Water Conservation

Figure 38 presents details on the water heating equipment present in the surveyed homes.

Figure 38. Residential Water Heating Profile

Measure / Characteristics	Online Survey Findings
Electric Water Heating	71% of surveyed primary water heaters were electric resistance. 39% of water heaters were reported to be 5 years old or newer, while 38% were between 5 years and 10 years old, and 23% ten years old or older. 46% of all water heaters were reported to have a tank wrap.
Non-Electric Water Heating	Approximately 29% of water heaters surveyed had fuel types other than electric resistance.
Heat Pump and Smart Water Heating	Of the 1002 households surveyed online, 0 reported owning a heat pump water heater and 3% claimed to have a smart water heater.

A summary of shower heads and faucets is shown in Figure 39.

Figure 39. Residential Water Conservation Profile

Measure / Characteristic	Online Survey Findings
Shower Heads	92% of residential homes have one or two shower heads with 6% having more than two shower heads. 2% of respondents did not recall how many shower heads were present in the home. Of those shower heads, 64% of respondents reported that they had a low flow shower head(s) installed.
Faucets	Roughly a quarter of homes surveyed had either two or four faucets (25% each). 30% reported having three faucets and 19% reported five or more faucets. Of those faucets, 35% had at least one faucet aerator installed.

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4.1.5 Residential Appliances

Figure 40 summarizes the findings for all refrigerators, freezers and mini or wine refrigerators.

Figure 40. Residential Appliances Profile

Measure / Characteristic	Online Survey Findings
Residential Refrigerators	85% of all homes surveyed report having one full size refrigerator while 11% of respondents reported owning a second full sized refrigerator.
	29% of refrigerators are less than 5 years old. 42% at least 5 years but less than 10 years old, and 29% are 10 years or older.
Residential Freezers	55% of homes surveyed reported having one or more stand-alone freezer (not attached to their refrigerator). 36% of homes surveyed had no stand-alone freezers, 6% had two or more and 3% of respondents did not know how many freezers were in the home.
	24% of stand-alone freezers are less than 5 years old. 33% are at least 5 years but less than 10 years old, and 43% are 10 years or older.
Residential Mini Refrigerators or Wine Fridges	75% of homes reported having no mini refrigerator or wine fridge. 20% of homes reported having one such refrigerator and 2% reported having two or more.
	42% of mini refrigerator or wine fridges are less than 5 years old. 38% are at least 5 years but less than 10 years old, and 21% are 10 years or older.
Residential Clothes Washers	The majority (89%) of households surveyed have a single clothes washer, while 7% had no clothes washer, and 4% had two or more.
	Nearly 60% of residential respondents reported that their clothes washer was not a high efficiency machine. 27% of respondents had front loading high efficiency clothes washers, and 14% had high efficiency top loading clothes washers. 35% of clothes washers were reported to be 5 years old or newer, while 40% were between 5 years and 10 years old, and 25% 10 years old or older.
Residential Clothes Dryers	The majority (87%) of households surveyed have a single clothes dryer, while 8% had no clothes dryer and 3% had two or more.
	67% of residential respondents reported that their clothes dryer was not a heat pump dryer, while 17% indicated that they did own a heat pump clothes dryer. 29% of clothes dryers were reported to be 5 years old or newer, while 44% were between 5 years and 10 years old, and 27% ten years old or older.
Power Bars	96% of homes have at least one power bar – 1 (13%), 2 (22%), 3 (24%), 4 (12%) and 5 or more (20%). 6% of residential respondents reported that they had a smart power bar or one that turns off automatically when the room is empty.

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4.2 Business, Nonprofit and Institutional Sector Findings

The following sections present the results for BNI building characteristics.

4.2.1 BNI – General Building Information

A summary of general building information is listed in Figure 41.

Figure 41. BNI General Buildings Profile

Characteristic	Online Survey Findings
Facility Ownership	The majority (59%) of businesses own their facility, while 24% rent and 17% lease.
Utility Bill Payment	67% of facilities surveyed pay their own electricity bill, 23% pay through a head office or other department, and the landlord pays for 10% of those surveyed.
Building Size	18% of all BNI facilities are 1,000 sq. ft. or less. 12% of facilities are between 1,001 and 2,000 sq. ft. 21% of facilities are between 2,001 and 5,000 sq. ft. 22% of facilities are between 5,001 and 10,000 sq. ft. 14% of facilities are between 10,001 and 25000 sq. ft. 14% of facilities are 25,001 sq. ft. or greater.
Business Type	11% of BNI facilities are health care and social assistance. 9% of BNI facilities are retail trade. 9% of BNI facilities are construction. 8% of BNI facilities are educational services. 8% of BNI facilities are other services (except public administration). 6% of BNI facilities are professional, scientific, and technical services. 5% of BNI facilities are public administration. 5% of BNI facilities are accommodation and food services. 5% of BNI facilities are manufacturing. 5% of BNI facilities are finance and insurance. 4% of BNI facilities are administration and support, waste management and remediation services. 4% of BNI facilities are information and cultural industries. 4% of BNI facilities are wholesale trade. 3% of BNI facilities are arts, entertainment, and recreation. 3% of BNI facilities are transportation and warehousing. 2% of BNI facilities are agriculture, forestry, fishing and hunting. 2% of BNI facilities are real estate and rental and leasing. 2% of BNI facilities are utilities. 1% of BNI facilities are management of companies and enterprises. 1% of BNI facilities are mining, and oil and gas extraction. 4% of BNI facilities are other.

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Location	Halifax Regional Municipality – 60.5% Elsewhere in Mainland Nova Scotia – 28.5% Cape Breton Island – 11%

4.2.2 Lighting

Figure 42 lists findings for the BNI lighting profile in Nova Scotia.

Figure 42. BNI Indoor Lighting Profile

Measure / Characteristic	Online Survey Findings
Interior Fixture Types	LEDs comprise a significant portion of lighting systems, with Track/mono-point direction LED lights the most popular type of lighting among business respondents, followed by downlight LED luminaires, LED exterior floodlights, pole mounted LED exterior area lights, general service LED lights, and linear lighting LEDs..
Control Types	29% of facilities have occupancy sensors to control lighting. 21% have fixtures that can turn off automatically. 21% of lighting systems have been commissioned.

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4.2.3 Controlling Energy Usage

Figure 43 lists findings for controlling energy usage in BNI facilities..

Figure 43. BNI Controls Profile

Measure / Characteristic	Online Survey Findings
Power Bars	94% of respondents have at least one power bar, with an average of 15 power bars installed; the vast majority are not smart power bars, which comprise 6%.
Computer Servers	77% of respondents have a computer server onsite, with an average of 6 servers onsite; 31% of servers use virtualization and decommissioning.
Strategic Energy Management (SEM)	22% of respondents indicated they employ a Strategic Energy Management approach to addressing facility energy usage.
Variable Frequency Drive (VFD)	22% of respondents indicated fans and pumps have a Variable Frequency Drive .
Door Heater Control	13% of respondents indicated refrigeration units had door heater controls installed.
Electrically Commutated Motor (ECM)	43% of respondents indicated HVAC equipment, refrigeration equipment, or appliances had an ECM installed.

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APPENDIX B-1 – RESIDENTIAL SECTOR ONLINE SURVEY INSTRUMENT

Appendix B-1 includes the online survey instrument used to query Nova Scotians about the energy-related characteristics of their residential dwelling units.

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APPENDIX B-2 – BUSINESS, NONPROFIT AND INSTITUTIONAL SECTOR ONLINE SURVEY INSTRUMENT

Appendix B-2 includes the online survey instrument used to query Nova Scotia businesses, nonprofits and institutions about the energy-related characteristics of their facilities.

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APPENDIX B-3 – RESIDENTIAL SECTOR ONLINE SURVEY RESULTS

Appendix B-3 includes the tabulated results of the online survey for the residential sector.

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APPENDIX B-4 – BNI SECTOR ONLINE SURVEY RESULTS

Appendix B-4 includes the tabulated results of the online survey for the BNI sector.

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Quota of n=1,000 Nova Scotia residents 18 or older

ALL QUESTIONS ARE MANDATORY

ALL PROGRAMMING NOTES ARE PRESENTED IN BOLD CAPS

FOR ALL NUMERIC RESPONSES, RANGES ARE NOT ACCEPTED

NOTE: QUESTION NUMBERING VARIES BASED ON CHANGES TO THE SURVEY INSTRUMENT, QUESTION NUMBERING DISPLAYED CORRESPONDS WITH TABULAR RESULTS

efficiency NOVA SCOTIA is conducting a study to help understand Nova Scotia specific energy usage. Your responses will help Efficiency Nova Scotia improve energy-related programs that assist customers in saving energy and money, and ultimately benefit the environment.

All responses will be kept strictly anonymous and will be analyzed as a whole, not individually. No attempt will be made to identify you. We appreciate your feedback!

As you go through the survey, if you do not have a particular equipment type, please enter '0' in the quantity box.

Section A: Background/Ownership

To begin…

1. Do you reside in… **CODE ONE ONLY**

   1 Cape Breton Island
   2 Halifax Regional Municipality (HRM)
   3 Elsewhere on Mainland Nova Scotia outside HRM
   4 None of the above **THANK & TERMINATE**

2. What are the first three digits of your postal code? **[RECORD FIRST THREE DIGITS, MUST BE WITHIN NS]**

   98 Don't know/not sure

3. Are you…? **ALLOW ONE RESPONSE**

1 Male
2 Female
3 Gender diverse
8 Prefer not to answer

4. Are you: **CODE ONE ONLY**

0 Under 18 **THANK AND TERMINATE**
1 18-24
2 25-34
3 35-44
4 45-54
5 55-64
6 65 or older
7 I prefer not to answer **THANK AND TERMINATE**

5. Do you currently own or rent your primary place of residence in Nova Scotia?
PRESENT IN ORDER – ALLOW ONE RESPONSE

1 Own (even if it is still being paid for)
2 Rent (even if no cash rent is paid)
7 Other **THANK & TERMINATE**
8 Don't know/Not sure **THANK & TERMINATE**

6. Which one of the following best describes your primary place of residence in Nova Scotia? **CODE ONE ONLY**

01 Single family detached house
02 Single family attached house such as a duplex, townhouse, or row house
03 Mobile home or trailer
04 Multi-family dwelling with two units
05 Condominium, apartment or other multi-family dwelling with three or more units
97 Other (please specify: _____)
98 Don't know /Not sure

Please note that in the remaining questions, home refers to your primary place of residence in Nova Scotia.

Section B: Appliances

Thinking of the appliances in your home…

7. How many **electric clothes dryers** do you have in your home?

   RECORD NUMBER_____

   98 Don't know

8. **[ONLY POSE IF '1' OR MORE IN Q.7**] Of this/these [**INSERT NUMBER FROM Q.7]** clothes dryer(s), how many are *heat pump dryers*? **[ONLY ALLOW NUMBER EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.7]**

   RECORD NUMBER_____

   98 Don't know

9. **[ONLY POSE IF '1' OR MORE IN Q.7**] Of this/these [**INSERT NUMBER FROM Q.7]** clothes dryer(s), how many are **[TOTAL FOR A TO C MUST EQUAL OR BE LESS THAN WHAT WAS ENTERED IN Q.7]**

   a. Less than 5 years old
   b. At least 5 years but less than 10 years old
   c. Ten years or older

   RECORD NUMBER_____

   98 Don't know

10. How many **clothes washers** do you have in your home?

    RECORD NUMBER_____

    98 Don't know

11. **[ONLY POSE IF '1' OR MORE IN Q.10]** Of this/these [**INSERT NUMBER FROM Q.10]** clothes washer(s), how many are: **[FOR EACH A TO C ONLY ALLOW NUMBER EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.10; SUM OF 'A' AND 'B' CANNOT EXCEED NUMBER ENTERED IN Q.10]**

	RECORD NUMBER	*Don't know*
a) *Front-loading?*	_____	○8
b) *Top-loading with an agitator in the tub?*	_____	○8
c) *Top loading without an agitator in the tub?*	_____	○8

12. **[ONLY POSE IF '1' OR MORE IN Q.10]** Of this/these [**INSERT NUMBER FROM Q.10]** clothes washer(s), how many are **[TOTAL FOR A TO C MUST EQUAL OR BE LESS THAN WHAT WAS ENTERED IN Q.10]**

a. Less than 5 years old
b. At least 5 years but less than 10 years old
c. Ten years or older

RECORD NUMBER_____

98 Don't know

13. How many of the following do you have in your home…

	RECORD NUMBER	*Don't know*
a) *Full-size refrigerators (Note: these do not include mini fridges or wine fridges)?*	_____	○8
b) *Mini refrigerators or wine fridges?*	_____	○8
c) *Stand-alone freezers, that is, freezers that are not attached to refrigerators?*	_____	○8

14. **[ONLY POSE IF '1' OR MORE IN Q.13A**] Of this/these [**INSERT NUMBER FROM Q.7]** full-size refrigerator(s), how many are **[TOTAL FOR A TO C MUST EQUAL OR BE LESS THAN WHAT WAS ENTERED IN Q.13A]**

a. Less than 5 years old
b. At least 5 years but less than 10 years old
c. Ten years or older

RECORD NUMBER_____

98 Don't know

15. **[ONLY POSE IF '1' OR MORE IN Q.13B**] Of this/these [**INSERT NUMBER FROM Q.13B]** mini or wine refrigerator(s), how many are **[TOTAL FOR A TO C MUST EQUAL OR BE LESS THAN WHAT WAS ENTERED IN Q.13B]**

a. Less than 5 years old
b. At least 5 years but less than 10 years old
c. Ten years or older

RECORD NUMBER_____

98 Don't know

16. **[ONLY POSE IF '1' OR MORE IN Q.13C**] Of this/these [**INSERT NUMBER FROM Q.13C]** stand-alone freezers(s), how many are **[TOTAL FOR A TO C MUST EQUAL OR BE LESS THAN WHAT WAS ENTERED IN Q.13C]**

a. Less than 5 years old
b. At least 5 years but less than 10 years old
c. Ten years or older

RECORD NUMBER_____

98 Don't know

Section C: Consumer Electronics

17. How many **power bars** do you have in your home? A power bar is a block of electrical sockets that attaches to the end of a flexible cable allowing multiple electrical devices to be powered from a single electrical socket. **DISPLAY POWER STRIP IMAGE**

RECORD NUMBER_____

98 Don't know

18. **[POSE ONLY IF 1 OR MORE IN Q.17]** Of this/these [**INSERT NUMBER FROM Q.17]** power bar(s), how many are smart power bars, that is, can be controlled via smart phone or computer or turn off automatically when you leave the room? **DO NOT ALLOW NUMBER ENTERED TO EXCEED NUMBER ENTERED IN 17**

RECORD NUMBER:_____

98 Don't Know

Section D: Domestic Hot Water

19. How many **hot water heaters** do you have in your home?
RECORD NUMBER_____

98 Don't know

20. [**ONLY POSE IF 1 OR MORE IN Q.19**] Of this/these [**INSERT NUMBER FROM Q.19]** hot water heater(s), how many: **[FOR EACH A TO C ONLY ALLOW NUMBER EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.19]**

	RECORD NUMBER	*Don't know*
a) Have a large metal duct for exhaust gas?	_____	○8
b) Are smart water heaters, that is, they can be controlled over the internet via a smart phone or computer?	_____	○8
c) Have a hot water heater tank wrap, that is, have insulation overtop of the metal exterior of the tank?	_____	○8

20d. **[DO NOT POSE IF Q20A=TOTAL ENTERED IN Q19]** Of this/these remaining **[INSERT NUMBER Q19 TOTAL MINUS Q20A TOTAL]** hot water heaters, how many are heat pump water heaters?

RECORD NUMBER:_____
98 Don't know/Not sure

21. **[ONLY POSE IF '1' OR MORE IN Q.19**] Of this/these [**INSERT NUMBER FROM Q.19]** hot water heater(s), how many are **[TOTAL FOR A TO C MUST EQUAL OR BE LESS THAN WHAT WAS ENTERED IN Q.19]**

a. Less than 5 years old
b. At least 5 years but less than 10 years old
c. Ten years or older

RECORD NUMBER_____

98 Don't know

22. How many **shower heads** do you have in your home?

RECORD NUMBER_____

98 Don't know

23. **[POSE ONLY IF 1 OR MORE IN Q.22]** Of this/these **[INSERT NUMBER FROM Q.22]** shower head(s), how many are low-flow, that is, they use less water to reduce your water usage? **[ONLY ALLOW NUMBER EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.22]**

RECORD NUMBER_____
98 Don't know

24. How many **water faucets** do you have in your home?

RECORD NUMBER_____

98 Don't know

25. **[POSE ONLY IF 1 OR MORE IN Q.24]** Of this/these [**INSERT NUMBER FROM Q.24**] faucet(s), how many have low-flow faucet aerators? Faucet aerators attach to the tip of the faucets to prevent splashing, conserve water, and reduce energy costs. **[ONLY ALLOW NUMBER EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.24]**

RECORD NUMBER_____

98 Don't know

Section E: Heat pumps

26. How many **mini-split heat pumps** do you have at your home? Please count only the **exterior condensing units** at your home. For example, if you have multiple indoor blowers connected to a single exterior unit, then this would be counted as one.

GRAPHIC WILL HAVE ARROW POINTING TO INTERIOR AND EXTERIOR UNITS

RECORD NUMBER_____

98 Don't know

Section F: Whole Home

27. How many **thermostats** does your home have to change the indoor temperature?

RECORD NUMBER_____

98 Don't know

28. **[POSE ONLY IF 1 OR MORE IN Q.27]** Of this/these **[INSERT NUMBER FROM Q.27]** thermostat(s), how many are: **[ONLY ALLOW NUMBER FOR EACH EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.21]**

	RECORD NUMBER	***Don't know***
b) programmable, that is, you can set schedules to control the temperature?	_____	○8

28aa. **[POSE ONLY IF 1 OR MORE IN Q 28B]** Of this/these **[INSERT NUMBER FROM Q.28B]** *programmable* thermostat(s), how many are

	RECORD NUMBER	***Don't know***
a) smart thermostats you can control via a cell phone or the internet?	_____	○8

29. How many, if any, of the following does your home have?

	RECORD NUMBER	*Don't know*
a) Dehumidifier	_____	○8
b) Clothes line	_____	○8
c) Wood stove	_____	○8

Section G: Lighting

30. Please walk around your home and count all light bulbs, including those in closets, attics, garages, outdoor lights, etc. Please take note of how many bulbs are LED, how many screw into traditional light sockets, how many have a special screw-in base, how many are linear fluorescents (i.e., tube lights), and how many are smart lights.

Next, please indicate the total number of lightbulbs you have:

RECORD NUMBER_____
98 Don't know/Not sure

31. Next, please indicate…. **DO NOT ALLOW NUMBERS ENTERED IN 'B' OR 'D' EXCEED VALUE ENTERED IN 30. DO NOT ALLOW THE SUM OF C+D TO EXCEED Q30**

	RECORD NUMBER	*Don't know*
b) How many are LED bulbs?	_____	○8
c) How many have a base sized like a normal light bulb, that is, they screw into your regular light sockets? **INSERT IMAGE**	_____	○8
d) How many have a specialty base? For example, a candelabra or are pin based?	_____	○8
e) How many are smart lights, that is, they can be controlled over the internet via a smart phone or computer?	_____	○8
f) How many are linear fluorescents (i.e., tube lights) **INSERT IMAGE**	_____	○8

31a. How many of the following are in your home?

	RECORD NUMBER	*Don't know*
a) Manual light dimmers **DISPLAY IMAGE**	_____	○8
b) Indoor motion sensors that activate/turnoff lights	_____	○8
c) Outdoor motion sensors that activate/turn off lights **DISPLAY IMAGE**	_____	○8

Section H: Willingness/Awareness

RANDOMIZE ORDER OF 32-35 & 33-34

32. Before today, how familiar were you with: **ROTATE LIST; RANDOMLY POSE ONLY ONE OF THESE ITEMS**

	0 - Completely Unfamiliar	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10 – Completely familiar**
a. Heat Pump Water Heaters											
b. ENERGY STAR Mini Split Heat Pumps											
c. Heat Pump Clothes Dryers											
d. Energy Efficient Clothes Washers											

35. Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new **[INSERT RANDOM SELECTION OF ITEM FROM Q.32].** Would you generally pursue an energy efficiency project where the cost to you after utility rebates is **$1,000** if the project saved $[**INSERT RANDOM AMOUNT FROM TABLE BELOW**] per year?

IF 'YES,' DECREASE AND ASK UNTIL 'NO' OR NONE REMAINING. IF 'NO,' INCREASE AND ASK UNTIL 'YES,' OR NONE REMAINING

	Yes	*No*	*Don't know*
a) $100	O1	O2	O8
b) $250	O1	O2	O8
c) $400	O1	O2	O8
d) $550	O1	O2	O8
e) $700	O1	O2	O8
f) $850	O1	O2	O8
g) $1000	O1	O2	O8
h) $1,150	O1	O2	O8
i) $1,300	O1	O2	O8

33. Before today, how familiar were you with: **ROTATE LIST; RANDOMLY POSE ONLY ONE OF THESE ITEMS**

	0- Completely Unfamiliar	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10 – Completely Familiar**
a. Networked/Connected – Indoor LED lights (i.e., smart lightbulbs)											
b. LED Screw-in General Service Lights (i.e., LED lights that screw into your existing sockets)											
c. Smart Power Bars											
d. Dimmer Switches											
e. Programmable or Smart thermostats											
f. Occupancy Sensors											
g. Low flow Showerheads											
h. Low-Flow Faucet Aerators											
i. Outdoor Motion Sensors											

34. Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be **[INSERT RANDOM SELECTION OF ITEM FROM Q.33]**. Would you generally pursue an energy efficiency project where the cost to you after utility rebates is **$75** if the project saved $[**INSERT RANDOM AMOUNT FROM TABLE BELOW**] per year?

IF 'YES,' DECREASE AND ASK UNTIL 'NO' OR NONE REMAINING. IF 'NO,' INCREASE AND ASK UNTIL 'YES,' OR NONE REMAINING

	Yes	*No*	*Don't know*
a) $15	O1	O2	O8
b) $25	O1	O2	O8
c) $35	O1	O2	O8
d) $45	O1	O2	O8
e) $55	O1	O2	O8
f) $65	O1	O2	O8
g) $75	O1	O2	O8
h) $85	O1	O2	O8
i) $95	O1	O2	O8

Section I: Demographics

And now, some questions to help us classify our results. Please remember that all information is confidential and anonymous – this information will not be identified in any way with your responses.

36. Including yourself, how many household members live in your home?

a. Number of adults 18 or older **[RECORD NUMBER]**

b. Number of children under age of 18 **[RECORD NUMBER]**

37a. [**POSE IF TOTAL IN Q36 A AND B=1]** Was your household income before taxes last year below $21,822?

1 Yes
2 No
3 Prefer not to say
98 Don't know/Not sure

37b. [**POSE IF TOTAL IN Q36 A AND B=2 TO 4]** Was your household income before taxes last year below $40,548?

1 Yes
2 No
3 Prefer not to say
98 Don't know/Not sure

37c. [**POSE IF TOTAL IN Q36 A AND B=5 or more]** Was your household income before taxes last year below $57,747?

1 Yes
2 No
3 Prefer not to say
98 Don't know/Not sure

38. Do you live within a First Nations Community?

1 Yes
2 No
3 Prefer not to say
98 Don't know/Not sure

39. What is the ***main*** source of energy used to heat your principal place of residence? **RANDOMIZE PRESENTATION, KEEPING "OTHER" AND "DON'T KNOW" LAST – CODE ONE ONLY**

01 Oil
02 Electricity
03 Heat pump/Mini-split heat pump
04 Wood/pellets
05 Propane
06 Natural gas
07 Solar
98 Don't know/No answer
99 Other [**SPECIFY**: _____]

40. **[DO NOT POSE IF "DON'T KNOW/NOT SURE" IN Q.39]** What other types of heating, if any, do you currently have for your principal place of residence? Please select all that apply. **PRESENT IN SAME ORDER AS Q.34 –ALLOW MULTIPLE RESPONSES – DO NOT DISPLAY ANY ITEMS ALREADY SELECTED IN Q 41**

01 Oil
02 Electricity
03 Heat pump/Mini-split heat pump
04 Wood/pellets
05 Propane
06 Natural gas
07 Solar
99 Other [**SPECIFY**: _____]
97 None – no other type of heating is used in my home
98 Don't know/Not sure

41. **[POSE IF 'ELECTRICITY' IN Q 39 OR 40]** What type of electric heating does your residence use? **CODE ONE ONLY**

1 Electric Baseboards *(e.g., small electric heaters, places throughout your building, typically under windows)*
2 Electric resistance Furnace *(i.e., a central furnace which uses an electric heating element and distributes heat through forced-air)*
3 Electric resistance Boiler *(i.e., a central furnace which uses an electric heating element and distributes heat through hot water, to your floor or radiators)*
4 Central Air-Source Heat Pump *(i.e., a central heat pump system that heats all or most of the building, through distributed hot water or hot air)*
5 Ductless/Mini-Split Heat Pump *(i.e., a heat pump system that has an indoor unit placed on a wall, that typically only heats a small area of the building)*
6 Ground-Source Heat Pump *(i.e., a central heat pump that collects heat from tubes in the ground outside of your building)*
7 Other *(Please Specify:_____)*
98 Don't Know/Not Sure

42. **[POSE ONLY IF 'OWNED' IN Q.5]** And approximately how many years old is your home?

Number of years: _____ years
98 Don't know/Not sure

43. Does your household pay for its own electricity or does someone else pay for it?

1 Household pays for it
2 Someone else pays for it
4 Don't know/Not sure

That concludes the survey. Thank you for your assistance and input. It is greatly appreciated!

Quota of n=200 Nova Scotia Businesses

SOFT QUOTAS ON REGION

ALL PROGRAMMING NOTES ARE PRESENTED IN BOLD CAPS

FOR ALL NUMERIC RESPONSES, RANGES ARE NOT ACCEPTED

ALL QUESTIONS ARE MANDATORY

NOTE: QUESTION NUMBERING VARIES BASED ON CHANGES TO THE SURVEY INSTRUMENT, QUESTION NUMBERING DISPLAYED CORRESPONDS WITH TABULAR RESULTS

efficiency NOVA SCOTIA is conducting a study to help understand Nova Scotia specific energy usage. Your responses will help Efficiency Nova Scotia improve energy-related programs that assist Nova Scotians in saving energy and money, and ultimately benefit the environment.

All responses will be kept strictly anonymous and will be analyzed as a whole, not individually. No attempt will be made to identify you. We appreciate your feedback!

As you go through the survey, if you do not have a particular equipment type, please enter '0' in the quantity box.

Section A: Background/Characteristics

To begin…

1. Please indicate in which of the following areas your business is located. If your business has multiple locations, please indicate the location at which you work specifically. **CODE ONE ONLY**

   1 Cape Breton Island
   2 Halifax Regional Municipality (HRM)
   3 Elsewhere on Mainland Nova Scotia outside HRM
   4 None of the above **THANK & TERMINATE**

2. What are the first three digits of your business' postal code? **RECORD FIRST THREE DIGITS**

   98 Don't Know/Not sure

For the remainder of the survey, please think about the business location where you personally work.

3. Do you currently own, lease, or rent the premises at your business' Nova Scotia location where you work?
PRESENT IN ORDER – ALLOW ONE RESPONSE

1 Own
2 Lease
3 Rent
8 Don't know/Not sure

Section B: Electronics

Thinking about your business' electronics…

4. How many **electrical power bars** do you have at your business' Nova Scotia location where you work? A power bar is a block of electrical sockets that attaches to the end of a flexible cable allowing multiple electrical devices to be powered from a single electrical socket.

RECORD NUMBER_____

98 Don't know/Not sure

5. **[POSE ONLY IF 1 OR MORE IN Q.4]** Of this/these **[INSERT NUMBER FROM Q.4]** power bar(s), how many… **[ONLY ALLOW NUMBER FOR EACH EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.4]**

	RECORD NUMBER	*Don't know*
b) Are smart power bars, that is, can be controlled via smart phone or computer or turn off automatically when you leave the room?	_____	○8

6. How many **computer servers** does your business have onsite at your business' Nova Scotia location where you work? There may be many servers on a single rack, but we want to know the number of individual servers.
RECORD NUMBER_____

98 Don't know/Not sure

7. **[POSE ONLY IF 1 OR MORE IN Q6]** Of this/these **[INSERT NUMBER FROM Q.6]** server(s), how many use server virtualization and decommissioning? Server virtualization is a way of reducing the number of physical computer servers by running multiple, independent operating systems on a single server.

[ONLY ALLOW NUMBER EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.6]
RECORD NUMBER_____

98 Don't know/Not sure

Section C: Hot Water Heaters

8. How many **hot water heaters** do you have for your business' Nova Scotia location where you work? **RECORD NUMBER**

98 Don't know/Not sure

9. **[POSE IF 1 OR MORE IN Q.8]** Of this/these hot water heater(s), [**INSERT NUMBER FROM Q.8**] hot water heater(s), how many: [**FOR EACH A TO E ONLY ALLOW NUMBER EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.8]**

	RECORD NUMBER	***Don't know***
a) Have a large duct for exhaust gas?	_____	○8
b) Are smart water heaters, that is, they can be controlled over the internet via a smart phone or computer?	_____	○8
c) Have a hot water heater tank wrap, that is, have insulation overtop of the metal exterior of the tank?	_____	○8

9d. **[DO NOT POSE IF Q9A=TOTAL ENTERED IN Q8]** Of this/these remaining **[INSERT NUMBER Q8 TOTAL MINUS Q9A TOTAL]** hot water heaters, how many are heat pump water heaters?

RECORD NUMBER:_____

98 Don't know/Not sure

Section D: HVAC & Refrigeration

Thinking about your building for your business' Nova Scotia location where you work …

10. Does your building … **ALLOW ONE RESPONSE FOR EACH – ROTATE ORDER**

	Yes	*No*	*Don't know*	*Not Applicable*
a) Have open coolers, that is, coolers that do not have covers or doors?	○1	○2	○8	○9
b) Have strategic energy management or organized management approach? This is the process of monitoring, controlling, and conserving energy within and organization in a systematic way..	○1	○2	○8	○9
c) Have Door heater controls such as anti-sweat heaters (ASH)? These are electric resistance heaters that are installed in the frames and doors of refrigerated cases to reduce condensation and prevent fogging. These are particularly common in grocery and convenience stores.	○1	○2	○8	○9
d) Have a packaged terminal heat pump (PTHP)? A PTHP provides heating and cooling room by room often for applications common in hotels and motels.	○1	○2	○8	○9
e) In your heating, cooling and ventilation systems, is the speed of any fans or pumps automatically controlled by a variable frequency drive (VFD)?	○1	○2	○8	○9

11. **[ONLY DISPLAY ITEMS RESPONDENT ANSWERED 'YES' TO IN Q10]** How many of each does your business have? **ROTATE ORDER**

	RECORD NUMBER	*Don't know*
a) Open coolers, that is, coolers that do not have covers or doors?	_____	○8
b) Door heater controls such as anti-sweat heaters (ASH)? These are electric resistance heaters that are installed in the frames and doors of refrigerated cases to reduce condensation and prevent fogging. These are particularly common in grocery and convenience stores.	_____	○8
c) Packaged terminal heat pumps (PTHP)? A PTHP provides heating and cooling room by room often for applications common in hotels and motels.	_____	○8
d) Systems with variable frequency drive (VFD)? In your heating, cooling and ventilation systems, VFD automatically controls the speed of any fans or pumps.	_____	○8

13. Approximately, how many motors does your business' HVAC, refrigeration equipment or appliances have?

RECORD NUMBER:_____
98 Don't know/Not sure

14. **[POSE IF 1 OR MORE IN Q.13]** Of this/these motors, how many of your HVAC, refrigeration equipment, or appliances use EC Motors? *EC Motors refer to an electronically commutated motor that uses electronic controls to vary its speed. They may be known as brushless DC motors.* **[ALLOW NUMBER EQUAL TO OR LESS THAN WHAT WAS ENTERED IN Q.13]**

RECORD NUMBER:_____
98 Don't know/Not sure

Section F: Lighting

Now thinking about lighting…

15. Please walk around your business' location and count all light bulbs, including those in closets, and parking garages. Next please indicate how many…

	Number of LED Bulbs	***Number of Non-LED Bulbs***	***Don't know***
f) Parking garage lights (Please count these lights separately from the other categories listed below)	___	___	○8
a) Linear lighting (e.g. fluorescent or LED tubes)	___	___	○8
b) *Pole mounted area lights which is exterior lighting generally used to provide illumination to areas for vehicle and pedestrian use, with light fixtures mounted to poles*	___	___	○8
c) Track/Mono-point direction lights, which is a lighting system in which the lights are fitted on tracks, allowing variable positioning	___	___	○8
d) Downlight luminaire which is a small spotlight set in a ceiling and directed downwards	___	___	○8
f) Flood lights, which are outdoor fixture mounted on a building, structure, or ground. They are typically used to illuminate or highlight outdoor objects and features).	____	___	○8
e) General service lights (i.e. have a base sized like a normal light bulb and screw into regular light sockets)	___	___	○8

16. **[SHOW ITEMS FROM Q.15 WHERE 1 OR MORE LEDS ARE ENTERED]** Of these LED light bulbs, how many are connected to the internet (i.e., smart lightbulbs)? Smart LED light lightbulbs allow users to control the lights colour and brightness, among other functions, via the internet or a central control system such as an Energy Management System. **RECORD NUMBER FOR EACH – EACH NUMBER ENTERED CANNOT EXCEED CORRESPONDING NUMBER ENTERED IN Q.15 PROMPT RESPONDENT WITH NUMBER OF LIGHTS ENTERED PREVIOUSLY**

	Number of Smart LED Bulbs	***Don't know***
a) Linear lighting (i.e., Tube lamps)	___	○8
b) *Pole mounted area lights which is exterior lighting generally used to provide illumination to areas for vehicle and pedestrian use, with light fixtures mounted to poles*	___	○8
c) Track/Mono-point direction lights, which is a lighting system in which the lights are fitted on tracks, allowing variable positioning	___	○8
d) Downlight luminaire which is a small spotlight set in a ceiling and directed downwards	___	○8
e) Flood lights, which are outdoor fixture mounted on a building, structure, or ground. They are typically used to illuminate or highlight outdoor objects and features).	___	○8
f) General service lights (i.e. have a base sized like a normal light bulb and screw into regular light sockets)	___	○8
g) Parking garage lights	___	○8

17. Approximately, how many occupancy sensors does your business' building/facility have? Occupancy sensors are motion detectors that will turn off lights when people are not present. **RECORD NUMBER_____**

98 Don't know/Not sure

18. How many rooms in your business' Nova Scotia location where you work have lighting fixtures that automatically turn off if there is sufficient sunlight coming into the building (i.e., daylighting controls)?
RECORD NUMBER_____

98 Don't know/Not sure

19. Were any of your lighting systems commissioned? Lighting Commissioning involves a professional installing, calibrating and testing the lighting system controls to ensure they operate correctly.

1 Yes
2 No
8 Don't know/Not sure

Section G: Willingness and Awareness

RANDOMIZE ORDER FOR 20-23 & 21-22

Moving on…

20. Before today, how familiar were you with: **ROTATE LIST – ALLOW ONE RESPONSE PER ITEM**
RANDOMLY POSE ONLY ONE OF THESE ITEMS

	0- Completely Unfamiliar	1	2	3	4	5	6	7	8	9	10 – Completely familiar
a. IT load optimization strategy (Server refresh and virtualization) (A *way of reducing the number of physical computer servers by running multiple, independent operating systems on a single server*)											
b. Heat pump water heater											
c. Open to closed cooler conversion (*doors or covers on coolers)*											
d. Door heater control (*These are electric resistance heaters that are installed in the frames and doors of refrigerated cases to reduce condensation and prevent fogging.*)											

e. Packaged Terminal heat pump (*A PTHP provides heating and cooling room by room often for applications such as hotels, motels, apartment buildings, offices, among others)*											
f. EC Motor for Refrigeration applications (*An electronically commutated motor (EC Motor) is a motor that uses electronic controls to vary its speed. There are three types of EC motors: constant cfm, constant rpm, and constant torque*)											
g. Strategic energy management program (*This involves processes that empower an organization to implement energy management actions and consistently achieve energy performance improvements)*											

23. Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) **[INSERT RANDOM SELECTION OF ITEM FROM Q20].** Would you generally pursue an energy efficiency project where the cost to you after utility rebates is **$100,000** if the project saved $[**INSERT RANDOM AMOUNT FROM TABLE BELOW**] per year?

IF 'YES,' DECREASE AND ASK UNTIL 'NO' OR NONE REMAINING. IF 'NO,' INCREASE AND ASK UNTIL 'YES,' OR NONE REMAINING

	Yes	*No*	*Don't know*
a) $5,000	○1	○2	○8
b) $20,000	○1	○2	○8
c) $35,000	○1	○2	○8
d) $50,000	○1	○2	○8
e) $65,000	○1	○2	○8
f) $80,000	○1	○2	○8
g) $95,000	○1	○2	○8
h) $110,000	○1	○2	○8
i) $125,000	○1	○2	○8

21. Before today, how familiar were you with: **ROTATE LIST – ALLOW ONE RESPONSE PER ITEM RANDOMLY POSE ONLY ONE OF THESE ITEMS**

	0- Completely Unfamiliar	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10 – Completely familiar**
a. Networked/Connected Lighting System											
b. LED linear replacement lamp (i.e., LED Tube lamps)											
c. Smart power bar (*power bar that can be controlled via smart phone or computer or turn off automatically when you leave the room*)											
d. LED Pole/Arm-mounted luminaire (E*xterior lighting generally used to provide illumination to areas for vehicle and pedestrian use, with light fixtures mounted to poles)*											
e. LED Parking garage light											
f. Daylight dimming control											
g. LED Track light (*A lighting system in which the lights are fitted on tracks, allowing variable positioning)*											

h. Solid State (LED) Recessed Downlight (*Small spotlight set in a ceiling and directed downwards*)											
i. LED Flood light (*which are downward lights with non-LED bulbs*)											
j. General service light (*have a base sized like a normal light bulb and screw into regular light sockets*)											

22. Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed. An example might be installing or implementing a(n) **[INSERT RANDOM SELECTION OF ITEM FROM Q.21]** Would you generally pursue an energy efficiency project where the cost to your business after utility rebates is **$7,500** if the project saved $[**INSERT RANDOM AMOUNT FROM TABLE BELOW**] per year?

IF 'YES,' DECREASE AND ASK UNTIL 'NO' OR NONE REMAINING. IF 'NO,' INCREASE AND ASK UNTIL 'YES,' OR NONE REMAINING

	Yes	*No*	*Don't know*
a) $500	O1	O2	O8
b) $2,000	O1	O2	O8
c) $3,500	O1	O2	O8
d) $5,000	O1	O2	O8
e) $6,500	O1	O2	O8
f) $8,000	O1	O2	O8
g) $9,500	O1	O2	O8

Section E: Demographics/Characteristics

And now, some questions to help us classify our results. Please remember that all information is confidential and anonymous – this information will not be identified in any way with your responses.

24. How many full-time equivalent employees, including yourself, are currently working at your business location within Nova Scotia?

RECORD NUMBER_____

98 Don't know/Not sure

25. Approximately, what is the square footage of your company's business property at the location where you work? Would you say…? **ALLOW ONE RESPONSE**

1 1,000 square feet or less
2 More than 1,000 square feet up to 2,000 square feet
3 More than 2,000 square feet up to 5,000 square feet
4 More than 5,000 square feet, up to 10,000 square feet
5 More than 10,000 square feet, up to 25,000 square feet, or is it
6 More than 25,000 square feet
98 Don't know/Not sure

26. Does your company pay for its own electricity at your business' Nova Scotia location where you work, or does someone else, such as a landlord pay for it? **ALLOW ONE RESPONSE**

1 Yes, pay for own
2 Head office or other department pays
3 No, landlord pays
98 Don't know/Not sure
99 Other (Please specify:_____)

26a. **[POSE IF CODES 1 OR 2 IN Q.26]** Please select the electric utility provider that provides electricity at your business' Nova Scotia location where you work. **ALLOW ONE RESPONSE**

1 Nova Scotia Power Incorporated
2 Antigonish Electric Utility
3 Berwick Electric Light Commission
4 Canso Electric Light Commission
5 Lunenburg Electric Utility
6 Mahone Bay Electric Utility
7 Riverport Electric Light Commission
98 Don't know/Not sure

27. **[POSE IF CODE 1 IN Q.26a]** Please select your business' rate code from the drop-down selection below. Your rate code can be found on your Nova Scotia Power bill. **INSERT IMAGE OF POWER BILL; ALLOW ONE RESPONSE**

1	2
2	3
3	4M
4	4B
5	5
6	6
7	10M
8	10B
9	11M
10	11B
11	11MTO
12	12M
13	12MTO
14	21M
15	21MTO
16	22M
17	22MTO
18	23M
19	23MTO
20	25M
21	25MTO
22	999
98	Don't know/Not sure

27.2 **[POSE IF CODES 2-7 IN Q26a]** Please select your business' rate code from the drop-down selection below. Your rate code can be commonly found on your electricity bill. **ALLOW ONE RESPONSE**

1	Residential	
2	General	
3	General, Transformer owned	**ONLY SHOW IF CODE 4**
4	Small General	**DO NOT SHOW IF CODE 2**
5	Large General	**DO NOT SHOW IF CODE 3, 4, 6**
6	Small Industrial	**ONLY SHOW IF CODE 4**
7	Small Industrial, Cust-owned Transf	**ONLY POSE IF CODE 4**
8	Industrial	**DO NOT SHOW IF CODE 2, 5, 6, OR 7**
9	Industrial, Cust-owned Transf	**ONLY POSE IF CODE 4**
98	Don't know/Not sure	

28. **[ASK IF 98 IN Q 27]** Approximately, how much does your business spend on electricity each month?

RECORD NUMBER _____

98 Don't Know/Not sure

29. **[ASK IF 98 IN Q 28]** Would you classify your business as….

1 Large business
2 Small business
3 Large commercial
4 Small Commercial
5 Industrial
6 Institutional
98 Don't know/Not sure

30. What is the main source of energy used to heat your business' Nova Scotia location where you work? **RANDOMIZE PRESENTATION, KEEPING "OTHER" AND "DON'T KNOW" LAST – CODE ONE ONLY**

1 Oil
2 Electricity
3 Heat pump/Mini-split heat pump
4 Wood/pellets/chips
5 Propane
6 Natural gas
7 Solar
98 Don't know/Not sure
99 Other (Please specify:_____)

31. **[DO NOT POSE IF "DON'T KNOW/NOT SURE" IN Q.30]** What other types of heating, if any, do you currently have for your business' Nova Scotia location where you work? Please select all that apply. **PRESENT IN SAME ORDER AS Q.30 –ALLOW MULTIPLE RESPONSES – DO NOT DISPLAY ANY ITEMS ALREADY SELECTED IN Q30**

1 Oil
2 Electricity
3 Heat pump/Mini-split heat pump
4 Wood/pellets/chips
5 Propane
6 Natural gas
7 Solar
99 Other (Please specify: _____)
97 None – no other type of heating is used
98 Don't know/Not sure

32. **[POSE IF 'ELECTRICITY' IN Q 30 OR 31]** What type of electric heating does your business' location use? **CODE ONE ONLY**

1 Electric Baseboards (e.g., small electric heaters, places throughout your building, typically under windows)
2 Electric resistance Furnace (i.e., a central furnace which uses an electric heating element and distributes heat through forced-air)
3 Electric resistance Boiler (i.e., a central furnace which uses an electric heating element and distributes heat through hot water, to your floor or radiators)
4 Central Air-Source Heat Pump (i.e., a central heat pump system that heats all or most of the building, through distributed hot water or hot air)
5 Ductless/Mini-Split Heat Pump (i.e., a heat pump system that has an indoor unit placed on a wall, that typically only heats a small area of the building)
6 Ground-Source Heat Pump (i.e., a central heat pump that collects heat from tubes in the ground outside of your building)
7 Other (Please Specify:_____)
98 Don't Know/Not Sure

33. In what specific business sector or industry is your organization currently involved as its primary activity? **ALLOW ONE RESPONSE**

1 Agriculture, forestry, fishing and hunting
2 Mining, quarrying, and oil and gas extraction
3 Utilities
4 Construction
5 Manufacturing
6 Wholesale trade
7 Retail trade
8 Transportation and warehousing
9 Information and cultural industries
10 Finance and insurance
11 Real estate and rental and leasing
12 Professional, scientific and technical services **(SPECIFY:_____)**
13 Management of companies and enterprises
14 Administrative and support, waste management and remediation services
15 Educational services
16 Health care and social assistance
17 Arts, entertainment and recreation
18 Accommodation and food services
19 Other services (except public administration)
20 Public administration
98 Don't know/Not sure
99 Other **(SPECIFY: _____)**

That concludes the survey. Thank you for your assistance and cooperation. It is greatly appreciated!

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2019 Electricity Usage Surveys - Residential

TABLE 1:

To begin...Do you reside in...

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Halifax Regional Municipality (HRM)	43	100	0	0	44	43	53	45	36	29	48	38	55	38	45	39	42	44	48	42	55	41	34	22
Elsewhere on Mainland Nova Scotia outside HRM	42	0	0	100	42	42	35	41	47	53	38	45	37	43	43	49	44	40	36	44	36	45	50	49
Cape Breton Island	14	0	100	0	14	15	12	13	17	18	14	17	9	20	13	12	13	15	16	14	9	14	16	29
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

TABLE 3:

Are you...?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Male	48	48	47	48	100	0	49	48	47	46	50	48	47	47	48	48	52	44	57	45	48	54	45	49
Female	52	52	53	52	0	100	50	52	53	53	50	52	52	53	52	52	48	55	42	55	52	46	55	51
Gender diverse	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Prefer not to answer	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

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2019 Electricity Usage Surveys - Residential

TABLE 4:

Are you:

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
18-24	9	12	3	9	10	9	39	0	0	14	8	5	18	7	11	6	8	11	12	9	10	1	1	6
25-34	15	17	17	11	15	14	61	0	0	18	14	10	23	11	16	11	13	16	15	15	12	14	6	9
35-44	14	16	13	13	14	14	0	44	0	15	15	14	14	13	15	14	14	14	15	14	16	15	12	10
45-54	18	18	17	18	18	18	0	56	0	15	20	19	16	19	20	17	19	17	15	19	23	25	14	17
55-64	19	17	21	21	19	19	0	0	44	18	19	22	13	24	17	20	20	18	22	18	16	23	21	30
65 or older	24	19	28	28	23	25	0	0	56	22	24	28	15	26	21	31	25	23	21	25	22	22	47	28
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

TABLE 5:

Do you currently own or rent your primary place of residence in Nova Scotia?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Own (even if it is still being paid for)	67	59	80	71	68	67	43	69	79	54	74	100	0	75	66	85	71	64	73	66	100	100	100	100
Rent (even if no cash rent is paid)	33	41	20	29	32	33	57	31	21	46	26	0	100	25	34	15	29	36	27	34	0	0	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

2019 Electricity Usage Surveys - Residential

TABLE 6:

Which one of the following best describes your primary place of residence in Nova Scotia?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Single family detached house	64	50	79	72	66	62	47	65	72	53	69	83	23	77	61	75	69	59	67	63	71	83	87	93
Condominium, apartment or other multi-family dwelling with three or more units	19	31	4	13	18	21	30	16	16	25	18	4	52	9	19	10	16	22	14	21	10	3	1	0
Single family attached house such as a duplex, townhouse, or row house	9	13	6	5	9	9	13	10	6	10	8	7	13	8	11	8	8	10	12	8	9	9	7	4
Mobile home or trailer	4	2	4	5	3	5	3	5	3	7	3	4	2	3	4	5	3	4	4	4	8	5	4	1
Multi-family dwelling with two units	3	2	7	3	4	3	6	3	2	4	3	1	7	2	4	2	2	4	2	3	2	1	1	2
Other	1	0	0	1	1	0	0	1	0	1	0	0	1	1	0	0	1	0	1	1	0	0	0	1
Don't know/Not sure	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

TABLE 7:

How many electric clothes dryers do you have in your home?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	8	10	6	8	8	8	10	8	8	13	6	3	19	6	8	3	6	11	5	9	1	2	3	7
1	87	82	92	90	87	87	81	88	90	79	91	95	71	91	87	94	90	85	90	86	96	96	96	92
2 or more	3	6	1	2	4	3	7	3	2	7	2	2	7	3	4	3	4	3	5	3	3	2	0	1
Don't know	1	2	1	0	1	1	2	1	0	1	1	0	3	0	1	1	0	1	0	1	0	0	1	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	1.0	1.1	1.0	.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Responses of 'Don't know' were excluded from calculation of the mean.

2019 Electricity Usage Surveys - Residential

TABLE 8:

[IF Q7 '1' OR MORE] Of this/these [Q7 RESPONSE] clothes dryer(s), how many are heat pump dryers?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	67	68	63	68	65	69	43	67	80	60	71	73	54	70	65	69	72	63	67	67	62	77	80	73
1	13	13	16	12	17	9	31	10	5	20	12	11	19	11	15	14	14	12	25	10	14	9	7	10
2 or more	1	2	0	0	1	1	3	0	0	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1
Don't know	19	17	21	20	16	21	23	22	14	18	17	16	25	18	18	17	13	24	7	22	22	13	13	16
WEIGHTED SAMPLE SIZE (#)	**907**	**382**	**136**	**389**	**434**	**471**	**214**	**296**	**398**	**224**	**592**	**649**	**258**	**396**	**522**	**249**	**426**	**481**	**209**	**698**	**165**	**166**	**137**	**145**
UNWEIGHTED SAMPLE SIZE (#)	**907**	**409**	**127**	**371**	**407**	**498**	**175**	**303**	**429**	**208**	**607**	**659**	**248**	**403**	**523**	**258**	**429**	**478**	**206**	**701**	**166**	**167**	**145**	**143**
MEAN	.2	.2	.2	.1	.2	.1	.5	.1	.1	.3	.2	.1	.3	.2	.2	.2	.2	.2	.3	.1	.2	.1	.1	.2

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 7+8 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Q7. How many electric clothes dryers do you have in your home?
Q8. [IF Q7 '1' OR MORE] Of this/these [Q7 RESPONSE] clothes dryer(s), how many are heat pump dryers?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Proportion heat pump dryers	17	18	20	15	21	13	43	12	7	24	15	14	24	15	20	18	17	17	28	13	20	12	8	14
WEIGHTED SAMPLE SIZE (#)	**737**	**319**	**108**	**311**	**363**	**374**	**165**	**229**	**342**	**183**	**491**	**545**	**192**	**323**	**427**	**208**	**370**	**367**	**194**	**543**	**129**	**144**	**119**	**122**
UNWEIGHTED SAMPLE SIZE (#)	**734**	**338**	**101**	**295**	**345**	**388**	**132**	**233**	**369**	**167**	**502**	**552**	**182**	**326**	**424**	**218**	**374**	**360**	**191**	**543**	**130**	**145**	**127**	**120**

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2019 Electricity Usage Surveys - Residential

TABLE 9 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q7 '1' OR MORE] Of this/these [Q7 RESPONSE] clothes dryer(s), how many are…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Less than 5 years old	29	28	29	29	32	26	39	31	22	25	31	27	33	25	31	34	31	26	32	28	38	24	18	24
At least 5 years but less than 10 years old	44	46	45	42	44	44	43	47	42	50	42	43	48	43	46	40	41	47	42	45	37	45	47	44
10 years or older	27	26	26	29	24	30	18	22	36	26	27	30	19	31	22	26	28	26	26	27	25	31	35	32
WEIGHTED SAMPLE SIZE (#)	**831**	**342**	**130**	**359**	**403**	**425**	**174**	**279**	**378**	**200**	**554**	**626**	**204**	**377**	**478**	**232**	**396**	**434**	**199**	**632**	**163**	**160**	**134**	**139**
UNWEIGHTED SAMPLE SIZE (#)	**836**	**369**	**122**	**345**	**385**	**449**	**141**	**287**	**408**	**189**	**567**	**639**	**197**	**384**	**484**	**243**	**403**	**433**	**197**	**639**	**164**	**163**	**143**	**137**

This table excludes responses of 'Don't know'.

TABLE 10:

How many clothes washers do you have in your home?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	7	9	2	5	6	7	8	7	5	12	4	1	18	3	7	1	4	9	4	7	1	2	1	0
1	89	84	98	91	89	89	85	88	92	79	93	97	73	93	88	96	92	86	93	88	96	96	98	98
2 or more	4	6	0	3	4	4	6	3	3	8	2	2	8	4	5	3	4	4	3	4	2	2	1	2
Don't know	1	1	0	0	0	1	1	1	0	0	1	0	2	0	1	0	0	1	0	1	0	0	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Responses of 'Don't know' were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Residential

TABLE 11 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q10 '1' OR MORE] Of this/these [Q10 RESPONSE] clothes washer(s), how many are…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Top-loading with an agitator in the tub	60	56	62	63	55	63	60	60	60	72	55	55	69	61	57	53	57	62	54	61	34	64	59	65
Front loading	27	33	23	21	29	25	27	26	26	16	31	30	20	22	30	32	28	25	31	25	48	24	26	22
Top loading without an agitator in the tub	14	11	14	16	16	12	13	14	14	11	14	15	11	17	13	15	15	13	15	13	18	12	15	13
WEIGHTED SAMPLE SIZE (#)	**917**	**384**	**140**	**393**	**438**	**477**	**214**	**296**	**408**	**224**	**603**	**663**	**254**	**405**	**525**	**251**	**436**	**481**	**211**	**706**	**164**	**165**	**141**	**154**
UNWEIGHTED SAMPLE SIZE (#)	**918**	**412**	**130**	**376**	**413**	**503**	**176**	**304**	**438**	**208**	**616**	**672**	**246**	**410**	**527**	**261**	**438**	**480**	**208**	**710**	**166**	**166**	**149**	**152**

This table excludes responses of 'Don't know'.

TABLE 12 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q10 '1' OR MORE] Of this/these [Q10 RESPONSE] clothes washer(s), how many are…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Less than 5 years old	35	33	37	37	39	31	49	34	29	29	37	34	38	32	38	39	39	32	42	33	45	31	23	32
At least 5 years but less than 10 years old	40	41	40	39	38	42	33	44	41	46	38	39	44	41	40	39	36	44	37	41	33	40	47	39
10 years or older	25	26	23	24	23	27	18	22	30	25	25	27	18	26	22	22	26	24	21	26	22	29	31	29
WEIGHTED SAMPLE SIZE (#)	**858**	**354**	**137**	**367**	**416**	**440**	**182**	**282**	**394**	**206**	**573**	**649**	**209**	**393**	**493**	**240**	**414**	**444**	**205**	**653**	**164**	**165**	**139**	**150**
UNWEIGHTED SAMPLE SIZE (#)	**862**	**382**	**127**	**353**	**398**	**462**	**149**	**289**	**424**	**194**	**582**	**659**	**203**	**398**	**496**	**251**	**418**	**444**	**202**	**660**	**165**	**166**	**148**	**147**

This table excludes responses of 'Don't know'.

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2019 Electricity Usage Surveys - Residential

TABLE 13a:

How many of the following do you have in your home…

Full-size refrigerators (Note: these do not include mini fridges or wine fridges)?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	1	1	0	1	1	1	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0	1	0	0
1	85	85	90	84	84	86	86	89	82	86	85	84	88	84	87	83	87	84	87	85	81	83	84	84
2 or more	11	11	8	13	12	11	9	8	15	9	12	13	7	14	9	15	11	11	11	11	16	14	15	13
Don't know	3	3	2	3	3	3	4	2	3	4	2	2	4	2	3	1	2	4	2	3	3	3	1	3
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 14 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q13a '1' OR MORE] Of this/these [Q13a RESPONSE] full-size refrigerator(s), how many are…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Less than 5 years old	29	30	26	28	29	28	36	29	25	30	29	26	37	25	33	34	31	26	36	26	35	24	19	23
At least 5 years but less than 10 years old	42	40	47	42	46	39	46	40	42	44	42	42	41	41	43	41	42	42	40	43	35	44	45	46
10 years or older	29	30	26	30	26	33	18	31	33	26	28	32	22	34	24	25	27	31	25	31	30	33	36	31
WEIGHTED SAMPLE SIZE (#)	**881**	**379**	**136**	**366**	**422**	**457**	**188**	**292**	**400**	**221**	**576**	**634**	**247**	**387**	**509**	**242**	**415**	**466**	**214**	**667**	**160**	**156**	**140**	**145**
UNWEIGHTED SAMPLE SIZE (#)	**890**	**406**	**128**	**356**	**408**	**480**	**159**	**300**	**431**	**213**	**588**	**646**	**244**	**392**	**517**	**252**	**424**	**466**	**210**	**680**	**163**	**160**	**147**	**141**

This table excludes responses of 'Don't know'.

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2019 Electricity Usage Surveys - Residential

TABLE 13b:

How many of the following do you have in your home…

Mini refrigerators or wine fridges?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	75	73	80	75	71	78	75	71	78	77	73	72	81	73	72	71	72	77	71	76	65	68	75	78
1	20	20	16	22	24	17	16	23	20	17	22	24	13	22	22	25	23	17	25	19	29	26	24	17
2 or more	2	3	3	1	2	3	3	4	1	2	3	2	3	2	3	3	2	3	2	3	3	2	1	3
Don't know	3	3	2	2	3	2	7	2	1	4	2	2	3	2	4	1	2	3	3	3	4	4	0	2
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.3	.3	.2	.3	.3	.3	.3	.3	.2	.3	.3	.3	.2	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.4

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 15 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q13b '1' OR MORE] Of this/these [Q13b RESPONSE] mini or wine refrigerator(s), how many are…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Less than 5 years old	42	44	40	40	43	39	50	50	29	50	40	40	47	38	46	49	41	42	41	42	49	29	32	49
At least 5 years but less than 10 years old	38	37	45	36	35	42	39	32	43	33	39	36	43	40	33	35	39	37	42	36	29	42	28	43
10 years or older	21	19	15	24	22	20	11	18	27	18	22	24	9	22	22	16	20	21	18	22	22	29	40	8
WEIGHTED SAMPLE SIZE (#)	**214**	**94**	**24**	**95**	**117**	**96**	**40**	**83**	**91**	**47**	**149**	**168**	**46**	**97**	**134**	**70**	**113**	**101**	**56**	**158**	**53**	**47**	**34**	**29**
UNWEIGHTED SAMPLE SIZE (#)	**220**	**102**	**25**	**93**	**120**	**99**	**34**	**86**	**100**	**42**	**157**	**175**	**45**	**98**	**136**	**76**	**112**	**108**	**58**	**162**	**56**	**49**	**35**	**29**

This table excludes responses of 'Don't know'.

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2019 Electricity Usage Surveys - Residential

TABLE 13c:

How many of the following do you have in your home…

Stand-alone freezers, that is, freezers that are not attached to refrigerators?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	36	45	32	28	35	37	54	35	26	42	33	27	55	27	37	23	34	38	32	37	32	26	22	24
1	55	47	61	62	55	55	36	57	65	48	58	63	39	65	53	66	57	53	62	53	56	64	71	64
2 or more	6	4	5	8	6	6	2	7	7	5	6	8	2	6	6	10	7	5	4	7	8	8	7	10
Don't know	3	4	2	2	3	2	8	1	2	4	2	3	4	2	4	2	2	3	2	3	4	3	1	3
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.7	.6	.7	.8	.7	.7	.4	.7	.8	.6	.7	.8	.5	.8	.7	.9	.7	.7	.7	.7	.7	.8	.8	.9

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 16 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q13c '1' OR MORE] Of this/these [Q13a RESPONSE] stand-alone freezer(s), how many are…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Less than 5 years old	24	21	20	27	29	19	36	25	20	27	23	21	34	23	26	26	26	23	27	23	29	16	20	20
At least 5 years but less than 10 years old	33	32	39	32	29	37	40	32	32	36	32	32	37	31	33	35	32	34	38	31	31	37	32	29
10 years or older	43	47	41	41	42	44	24	43	49	37	45	47	29	46	41	38	43	43	35	46	40	48	48	51
WEIGHTED SAMPLE SIZE (#)	**596**	**219**	**90**	**287**	**286**	**308**	**88**	**201**	**307**	**136**	**401**	**465**	**131**	**291**	**335**	**189**	**285**	**311**	**141**	**455**	**105**	**119**	**109**	**112**
UNWEIGHTED SAMPLE SIZE (#)	**615**	**242**	**87**	**286**	**285**	**328**	**78**	**211**	**326**	**137**	**414**	**478**	**137**	**295**	**348**	**196**	**293**	**322**	**143**	**472**	**106**	**124**	**117**	**108**

This table excludes responses of 'Don't know'.

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2019 Electricity Usage Surveys - Residential

TABLE 17:

How many power bars do you have in your home? A power bar is a block of electrical sockets that attaches to the end of a flexible cable allowing multiple electrical devices to be powered from a single electrical socket.

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	3	2	3	3	3	3	3	4	2	4	3	3	3	2	3	3	3	3	2	3	3	3	2	3
1	13	13	12	13	11	15	15	9	14	16	11	11	15	12	11	9	12	13	11	13	9	9	15	13
2	22	21	25	23	20	25	25	19	23	31	18	21	26	24	22	21	22	23	19	23	17	19	24	26
3	24	28	16	23	24	24	20	27	24	17	27	25	22	22	25	26	26	22	25	24	28	24	24	22
4	12	10	17	13	13	11	11	12	13	10	13	13	10	11	13	14	12	12	11	12	16	14	10	12
5 or more	20	22	19	19	24	17	22	21	19	18	23	21	20	23	22	20	21	20	26	19	18	22	21	21
Don't know	5	4	9	6	6	5	4	8	4	4	6	6	4	6	5	7	4	7	5	5	8	9	4	4
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	3.4	3.4	3.2	3.3	3.5	3.2	3.5	3.5	3.2	3.2	3.5	3.4	3.2	3.5	3.5	3.4	3.4	3.3	3.8	3.2	3.4	3.3	3.2	3.7

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 18:

[IF Q17 '1' OR MORE] Of this/these [Q17 RESPONSE] power bar(s), how many are smart power bars, that is, can be controlled via smart phone or computer or turn off automatically when you leave the room?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	86	85	87	86	83	88	86	81	89	83	87	86	86	87	82	85	84	87	82	87	81	84	92	86
1	5	6	3	4	6	4	6	8	3	5	5	5	4	4	6	5	6	4	6	5	7	7	3	4
2	3	3	0	3	3	3	3	3	2	4	2	2	4	2	4	4	3	2	3	3	3	3	1	2
3	2	2	1	3	4	1	2	2	2	2	2	2	3	1	3	1	3	1	4	2	3	1	1	2
4	1	0	2	0	0	1	0	1	1	2	0	0	1	0	1	1	1	0	1	0	0	1	0	1
5 or more	0	1	1	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	1	0	1	1	0	1
Don't know	4	4	6	3	3	4	3	4	4	4	4	4	3	4	4	3	2	5	2	4	4	4	4	4
WEIGHTED SAMPLE SIZE (#)	**919**	**407**	**128**	**384**	**435**	**481**	**225**	**287**	**408**	**241**	**586**	**612**	**308**	**391**	**529**	**231**	**423**	**497**	**205**	**714**	**148**	**149**	**134**	**146**
UNWEIGHTED SAMPLE SIZE (#)	**921**	**435**	**121**	**365**	**412**	**505**	**188**	**292**	**441**	**230**	**598**	**622**	**299**	**394**	**531**	**241**	**428**	**493**	**205**	**716**	**151**	**152**	**140**	**144**
MEAN	.2	.2	.2	.2	.3	.2	.2	.3	.2	.3	.2	.2	.2	.2	.3	.2	.3	.2	.4	.2	.3	.3	.1	.2

Responses of 'Don't know' were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Residential

TABLE 17+18 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

How many power bars do you have in your home? A power bar is a block of electrical sockets that attaches to the end of a flexible cable allowing multiple electrical devices to be powered from a single electrical socket.
[IF Q17 '1' OR MORE] Of this/these [Q17 RESPONSE] power bar(s), how many are smart power bars, that is, can be controlled via smart phone or computer or turn off automatically when you leave the room?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Proportion smart power bars	6	7	6	6	8	5	6	7	6	10	5	6	7	5	8	6	8	5	9	5	8	7	2	6
WEIGHTED SAMPLE SIZE (#)	**886**	**392**	**120**	**374**	**422**	**460**	**218**	**274**	**393**	**232**	**564**	**587**	**299**	**375**	**507**	**223**	**414**	**472**	**200**	**685**	**142**	**143**	**129**	**140**
UNWEIGHTED SAMPLE SIZE (#)	**885**	**417**	**114**	**354**	**398**	**483**	**182**	**278**	**425**	**222**	**574**	**595**	**290**	**376**	**507**	**232**	**418**	**467**	**199**	**686**	**144**	**145**	**135**	**138**

TABLE 19:

How many hot water heaters do you have in your home?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	17	24	18	9	18	15	15	15	19	19	17	11	28	18	11	10	16	18	17	17	11	10	16	9
1	74	64	78	84	74	75	63	78	77	70	76	84	54	75	79	85	78	71	76	74	80	87	83	87
2 or more	3	3	1	3	5	1	7	2	2	5	3	3	3	3	4	3	4	2	6	2	6	3	1	1
Don't know	6	9	2	4	3	9	14	6	2	6	5	2	15	5	6	2	3	9	2	7	3	1	0	3
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.9	.8	.8	.9	.9	.9	.9	.9	.8	.9	.9	.9	.7	.8	.9	.9	.9	.8	.9	.8	1.0	.9	.8	.9

Responses of 'Don't know' were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Residential

TABLE 20 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q19 '1' OR MORE] Of this/these [Q19 RESPONSE] hot water heater(s), how many...

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Have a hot water heater tank wrap	46	44	46	47	50	41	45	41	49	46	46	46	43	42	49	55	44	47	51	43	43	50	46	47
Have a large duct for exhaust gas	29	39	23	23	29	29	55	25	22	28	31	26	43	31	30	22	30	28	32	28	34	24	21	21
Are smart water heaters	3	3	2	2	2	3	5	4	1	4	2	1	9	3	3	3	3	3	3	2	1	0	2	0
Are heat pump water heaters	0	0	2	0	1	0	2	0	0	2	0	0	2	1	0	0	1	0	1	0	0	0	1	0
WEIGHTED SAMPLE SIZE (#)	**535**	**196**	**85**	**254**	**295**	**239**	**92**	**176**	**266**	**130**	**361**	**431**	**104**	**222**	**338**	**183**	**271**	**264**	**144**	**391**	**101**	**114**	**98**	**97**
UNWEIGHTED SAMPLE SIZE (#)	**533**	**212**	**79**	**242**	**284**	**248**	**68**	**178**	**287**	**124**	**360**	**433**	**100**	**221**	**342**	**185**	**274**	**259**	**137**	**396**	**100**	**115**	**101**	**97**

This table excludes responses of 'Don't know'.

TABLE 21 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q19 '1' OR MORE] Of this/these [Q19 RESPONSE] hot water heater(s), how many are…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Less than 5 years old	39	37	40	40	40	37	44	41	34	44	38	39	39	35	43	41	40	37	41	38	44	40	32	37
At least 5 years but less than 10 years old	38	41	42	35	39	37	33	38	40	35	39	37	40	41	37	35	37	39	41	37	33	39	37	40
10 years or older	23	23	18	25	21	25	23	20	26	21	24	24	20	24	20	24	22	24	18	25	23	21	31	23
WEIGHTED SAMPLE SIZE (#)	**711**	**267**	**109**	**334**	**346**	**363**	**139**	**242**	**330**	**175**	**467**	**564**	**147**	**312**	**432**	**221**	**339**	**372**	**170**	**541**	**141**	**145**	**116**	**132**
UNWEIGHTED SAMPLE SIZE (#)	**712**	**282**	**102**	**328**	**327**	**383**	**113**	**248**	**351**	**167**	**472**	**568**	**144**	**314**	**439**	**226**	**340**	**372**	**165**	**547**	**139**	**147**	**122**	**130**

This table excludes responses of 'Don't know'.

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2019 Electricity Usage Surveys - Residential

TABLE 22:

How many shower heads do you have in your home?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	1	0	1	2	1	2	1	1	2	2	1	1	2	2	1	0	1	2	0	2	1	1	0	3
1	63	53	71	70	61	64	67	62	61	75	57	57	75	66	60	50	60	65	56	65	28	53	72	72
2	29	37	24	22	29	28	22	30	32	18	33	33	21	26	30	38	33	26	37	26	48	40	23	23
3 or more	6	10	2	4	8	5	8	7	5	2	9	8	2	6	8	11	6	6	6	6	22	5	5	2
Don't know	1	1	1	1	1	0	2	0	0	1	0	1	1	0	1	1	1	1	0	1	2	1	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	1.4	1.6	1.3	1.3	1.5	1.4	1.4	1.4	1.4	1.2	1.5	1.5	1.2	1.4	1.5	1.6	1.5	1.4	1.5	1.4	2.0	1.5	1.3	1.2

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 23:

[IF Q22 '1' OR MORE] Of this/these [Q22 RESPONSE] shower head(s), how many are low-flow, that is, they use less water to reduce your water usage?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	26	25	24	29	27	26	41	23	21	27	26	24	31	30	24	22	24	28	23	27	24	22	24	27
1	40	34	47	43	40	40	23	44	46	48	37	42	35	41	41	41	44	37	42	39	27	41	50	51
2	15	19	13	12	17	14	9	15	20	10	17	18	10	14	16	21	19	13	27	12	27	23	12	11
3 or more	2	3	2	2	3	2	2	3	2	0	4	3	0	1	3	5	2	2	2	2	9	3	1	0
Don't know	16	19	15	14	14	18	24	16	12	15	16	13	23	14	16	11	12	20	6	19	12	11	13	10
WEIGHTED SAMPLE SIZE (#)	**981**	**431**	**141**	**410**	**469**	**508**	**236**	**322**	**423**	**251**	**630**	**659**	**322**	**413**	**559**	**256**	**448**	**534**	**220**	**762**	**163**	**166**	**141**	**150**
UNWEIGHTED SAMPLE SIZE (#)	**982**	**459**	**132**	**391**	**444**	**534**	**197**	**330**	**455**	**237**	**642**	**668**	**314**	**419**	**561**	**266**	**452**	**530**	**217**	**765**	**166**	**168**	**149**	**147**
MEAN	.9	1.0	.9	.8	.9	.9	.6	1.0	1.0	.8	1.0	1.0	.7	.8	1.0	1.1	1.0	.9	1.1	.9	1.2	1.1	.9	.8

Responses of 'Don't know' were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Residential

TABLE 22+23 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Q22. How many shower heads do you have in your home?
Q23. [IF Q22 '1' OR MORE] Of this/these [Q22 RESPONSE] shower head(s), how many are low-flow, that is, they use less water to reduce your water usage?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Proportion low-flow	64	63	70	64	64	65	44	67	72	64	64	67	58	61	65	68	68	61	71	62	63	70	68	66
WEIGHTED SAMPLE SIZE (#)	**822**	**351**	**119**	**352**	**403**	**416**	**179**	**270**	**373**	**214**	**528**	**575**	**247**	**355**	**470**	**229**	**394**	**428**	**207**	**615**	**144**	**147**	**123**	**135**
UNWEIGHTED SAMPLE SIZE (#)	**828**	**378**	**113**	**337**	**387**	**438**	**148**	**277**	**403**	**202**	**540**	**584**	**244**	**360**	**475**	**236**	**402**	**426**	**203**	**625**	**146**	**151**	**128**	**133**

TABLE 24:

How many water faucets do you have in your home?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	2	3	1	3	1	4	1	1	4	1	2	2	1	2	1	2	1	2	2	4	1	2	0
2	25	22	27	27	25	24	39	26	16	36	20	16	42	23	24	14	24	25	19	26	10	14	17	18
3	30	28	29	33	31	30	25	29	34	36	27	29	33	29	28	30	29	32	33	30	20	30	34	35
4	23	24	26	22	20	26	17	24	26	14	28	27	15	29	23	30	23	23	27	22	26	26	30	28
5 or more	19	22	15	16	20	18	12	18	23	7	23	25	6	18	21	24	22	16	18	19	38	28	17	17
Don't know	1	2	0	1	1	1	3	1	0	1	1	1	2	0	1	1	1	2	1	1	2	0	0	1
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	3.5	3.6	3.4	3.4	3.5	3.5	3.0	3.4	3.8	2.9	3.7	3.8	2.9	3.5	3.5	3.8	3.5	3.4	3.6	3.4	4.1	3.8	3.5	3.7

Responses of 'Don't know' were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Residential

TABLE 25:

[IF Q24 '1' OR MORE] Of this/these [Q24 RESPONSE] faucet(s), how many have low-flow faucet aerators? Faucet aerators attach to the tip of the faucets to prevent splashing, conserve water, and reduce energy costs.

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	40	38	37	43	37	43	48	38	37	45	39	38	45	41	40	35	37	42	39	40	38	33	42	37
1	14	13	14	15	15	13	15	13	15	16	14	15	12	15	14	14	15	14	12	15	11	14	17	19
2	13	13	14	13	16	11	6	15	15	15	13	14	11	14	13	12	17	10	17	12	10	12	13	21
3	9	9	9	9	9	9	5	10	10	8	8	9	8	9	9	12	11	6	9	8	11	14	9	4
4	5	5	7	4	5	5	3	4	7	2	6	6	2	5	5	6	6	4	10	3	6	7	8	6
5 or more	3	4	1	2	5	1	1	3	3	0	4	4	0	3	3	4	4	1	5	2	6	5	3	2
Don't know	16	17	17	15	14	18	21	17	13	14	16	13	22	13	17	17	9	22	7	19	18	14	9	10
WEIGHTED SAMPLE SIZE (#)	**987**	**426**	**145**	**417**	**472**	**512**	**235**	**319**	**433**	**256**	**633**	**666**	**321**	**421**	**564**	**255**	**451**	**537**	**218**	**769**	**164**	**168**	**142**	**154**
UNWEIGHTED SAMPLE SIZE (#)	**987**	**455**	**135**	**397**	**446**	**538**	**195**	**326**	**466**	**240**	**645**	**675**	**312**	**426**	**565**	**264**	**454**	**533**	**216**	**771**	**166**	**169**	**150**	**151**
MEAN	1.2	1.3	1.3	1.1	1.4	1.0	.8	1.3	1.4	.9	1.3	1.4	.9	1.2	1.2	1.5	1.4	1.0	1.6	1.1	1.5	1.6	1.3	1.2

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 24+25 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Q24. How many water faucets do you have in your home?
Q25. [IF Q24 '1' OR MORE] Of this/these [Q24 RESPONSE] faucet(s), how many have low-flow faucet aerators? Faucet aerators attach to the tip of the faucets to prevent splashing, conserve water, and reduce energy costs.

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Proportion low-flow	35	36	37	33	40	30	26	37	37	32	35	36	30	35	33	39	40	29	44	31	36	42	35	33
WEIGHTED SAMPLE SIZE (#)	**822**	**348**	**121**	**353**	**405**	**415**	**185**	**264**	**373**	**220**	**526**	**572**	**250**	**366**	**464**	**210**	**406**	**416**	**204**	**618**	**133**	**144**	**127**	**138**
UNWEIGHTED SAMPLE SIZE (#)	**823**	**374**	**113**	**336**	**383**	**438**	**150**	**269**	**404**	**209**	**535**	**580**	**243**	**368**	**467**	**222**	**409**	**414**	**200**	**623**	**135**	**145**	**133**	**135**

2019 Electricity Usage Surveys - Residential

TABLE 26:

How many mini-split heat pumps do you have at your home? Please count only the exterior condensing units at your home. For example, if you have multiple indoor blowers connected to a single exterior unit, then this would be counted as one.

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	67	67	70	66	64	69	61	69	69	71	66	66	69	76	65	12	66	68	58	70	53	67	63	81
1	19	17	17	22	21	18	20	18	20	16	21	22	14	13	21	64	24	16	27	17	32	22	25	11
2	5	4	7	5	6	5	2	5	7	3	6	7	1	6	5	19	5	5	9	4	9	8	9	4
3 or more	1	1	1	0	1	0	1	1	0	0	1	1	0	0	1	2	1	0	2	0	3	0	0	1
Don't know	8	10	5	6	7	8	16	7	3	10	6	4	16	5	8	3	4	11	4	9	4	3	3	3
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.3	.3	.4	.4	.4	.3	.3	.3	.4	.3	.4	.4	.2	.3	.4	1.1	.4	.3	.5	.3	.6	.4	.4	.2

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 27:

How many thermostats does your home have to change the indoor temperature?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	3	2	2	5	3	3	4	4	2	5	2	3	3	2	3	1	4	2	5	2	1	3	4	3
1	36	39	37	33	33	39	37	34	37	47	31	29	51	48	23	24	36	37	35	37	18	20	31	47
2	17	15	24	16	18	16	19	14	18	19	17	16	19	24	14	16	17	17	16	17	11	8	26	23
3	9	9	8	9	11	8	12	6	10	7	10	10	7	13	9	12	9	9	11	9	12	10	11	7
4	6	6	4	7	6	6	3	9	6	4	7	6	6	5	7	7	7	6	6	7	13	7	1	4
5 or more	26	26	22	28	28	25	19	30	27	15	31	33	11	8	41	38	26	26	27	26	42	51	26	15
Don't know	2	3	2	2	2	3	6	2	1	2	2	2	4	1	3	2	1	3	1	3	3	1	1	1
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	3.4	3.4	3.1	3.4	3.5	3.2	2.7	3.6	3.5	2.5	3.8	3.9	2.2	2.1	4.5	4.3	3.4	3.3	3.6	3.3	4.6	5.4	3.4	2.5

Responses of 'Don't know' were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Residential

TABLE 28B:

[IF Q27 '1' OR MORE] Of this/these [Q27 RESPONSE] thermostat(s), how many are…

Programmable, that is, you can set schedules to control the temperature?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	56	52	62	57	52	59	56	53	58	68	52	51	66	52	55	39	52	59	47	58	41	62	47	54
1	22	23	25	19	22	21	19	21	24	17	23	24	18	28	19	27	25	19	24	21	21	12	33	32
2	8	9	6	7	9	7	9	8	7	8	8	8	7	9	8	12	9	7	13	6	9	7	8	10
3	3	3	2	4	5	1	5	2	2	1	4	4	1	3	4	5	5	1	4	3	4	6	3	2
4	2	3	1	1	2	2	0	3	1	0	2	3	0	2	2	3	2	2	2	2	7	3	1	1
5 or more	5	6	2	5	6	4	5	6	5	3	6	7	1	2	8	9	4	6	8	4	11	8	5	1
Don't know	5	5	2	6	4	6	5	6	3	3	3	4	8	4	4	5	2	7	3	5	7	3	4	1
WEIGHTED SAMPLE SIZE (#)	**948**	**416**	**139**	**394**	**455**	**490**	**218**	**307**	**424**	**243**	**616**	**641**	**307**	**411**	**541**	**248**	**429**	**519**	**208**	**740**	**161**	**161**	**136**	**150**
UNWEIGHTED SAMPLE SIZE (#)	**952**	**447**	**128**	**377**	**433**	**516**	**185**	**312**	**455**	**228**	**632**	**650**	**302**	**416**	**543**	**256**	**433**	**519**	**207**	**745**	**163**	**162**	**144**	**148**
MEAN	.9	1.0	.6	1.0	1.1	.8	.9	1.0	.9	.6	1.1	1.2	.5	.7	1.2	1.6	1.0	.9	1.3	.8	1.7	1.3	1.0	.7

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 28aa:

[IF Q28B '1' OR MORE] Of this/these [Q28B RESPONSE] programmable thermostat(s), how many are…

Smart thermostats you can control via a cell phone or the internet?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	82	76	83	89	83	81	76	79	87	76	83	83	77	85	77	79	80	84	77	84	75	83	89	89
1	10	13	10	5	13	6	17	9	6	15	8	8	13	7	13	10	13	6	15	8	11	10	6	6
2	4	5	3	3	1	7	5	6	2	8	4	4	5	4	5	5	4	4	6	4	7	1	2	1
3	1	1	0	1	0	1	1	1	0	1	1	0	2	0	1	1	1	0	0	1	1	0	0	0
4	0	1	0	0	1	0	0	1	1	0	1	1	0	0	0	1	0	1	1	0	1	1	0	0
5 or more	1	1	1	0	1	1	2	1	0	0	1	1	0	1	1	1	1	1	1	1	2	2	0	1
Don't know	2	3	2	2	1	4	0	2	4	1	3	3	2	2	3	3	1	4	1	3	3	3	2	3
WEIGHTED SAMPLE SIZE (#)	**373**	**178**	**50**	**144**	**200**	**172**	**83**	**124**	**165**	**71**	**272**	**290**	**83**	**178**	**219**	**140**	**195**	**177**	**104**	**268**	**85**	**58**	**67**	**68**
UNWEIGHTED SAMPLE SIZE (#)	**374**	**187**	**49**	**138**	**193**	**180**	**68**	**128**	**178**	**66**	**277**	**296**	**78**	**176**	**218**	**148**	**197**	**177**	**98**	**276**	**88**	**55**	**71**	**69**
MEAN	.3	.4	.2	.1	.3	.3	.4	.4	.1	.3	.3	.3	.3	.2	.3	.3	.3	.2	.4	.2	.4	.3	.1	.1

Responses of 'Don't know' were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Residential

TABLE 27+28B+28aa (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Q27. How many thermostats does your home have to change the indoor temperature?
Q28B. [IF Q27 '1' OR MORE] Of this/these [Q27 RESPONSE] thermostat(s), how many are…
Q28aa. [IF Q28B '1' OR MORE] Of this/these [Q28B RESPONSE] programmable thermostat(s), how many are…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Proportion programmable	27	29	20	26	30	24	30	27	25	24	27	28	20	34	25	35	28	26	35	24	37	22	29	25
Proportion smart	3	5	3	1	3	3	5	4	1	4	3	3	4	5	3	4	4	3	5	2	5	2	2	2
WEIGHTED SAMPLE SIZE (#)	**893**	**390**	**135**	**368**	**437**	**454**	**206**	**284**	**403**	**236**	**587**	**611**	**282**	**389**	**512**	**231**	**416**	**477**	**201**	**692**	**148**	**156**	**129**	**147**
UNWEIGHTED SAMPLE SIZE (#)	**897**	**422**	**125**	**350**	**417**	**477**	**175**	**290**	**432**	**219**	**602**	**617**	**280**	**391**	**513**	**237**	**419**	**478**	**199**	**698**	**151**	**155**	**136**	**144**

TABLE 29A:

How many, if any, of the following does your home have?

Dehumidifier

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	51	54	43	50	50	51	55	51	48	60	48	42	68	42	51	45	47	54	44	53	49	42	28	46
1	41	40	48	41	42	41	35	41	45	32	45	50	24	49	41	47	45	39	48	39	43	51	63	46
2 or more	5	4	7	5	5	5	3	5	5	3	6	6	2	5	4	7	6	4	6	4	6	6	8	6
Don't know	3	3	2	4	4	3	6	3	2	5	2	2	6	3	3	2	3	3	2	4	2	2	1	2
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.5	.5	.6	.6	.5	.5	.5	.5	.6	.4	.6	.6	.3	.6	.5	.7	.6	.5	.6	.5	.6	.6	.8	.7

Responses of 'Don't know' were excluded from calculation of the mean.

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TABLE 29B:

How many, if any, of the following does your home have?

Clothes line

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	42	51	45	32	44	41	50	41	38	42	43	33	60	35	43	37	36	47	38	43	53	33	22	24
1	53	44	49	63	51	54	45	53	57	49	53	61	36	59	52	59	59	47	56	52	44	64	71	67
2 or more	3	2	4	3	2	4	2	4	3	5	2	4	2	4	3	3	4	3	4	3	3	2	5	5
Don't know	2	3	2	2	3	1	3	2	2	4	2	2	3	2	3	2	2	2	2	2	1	2	1	4
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.6	.5	.6	.7	.6	.6	.5	.6	.7	.7	.6	.7	.4	.7	.6	.7	.7	.5	.7	.6	.5	.7	.8	.8

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 29C:

How many, if any, of the following does your home have?

Wood stove

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	74	84	75	64	71	77	74	77	73	75	75	67	89	78	73	71	70	78	71	75	78	61	60	69
1	23	12	22	34	26	20	21	21	24	21	22	30	8	20	23	26	27	19	25	22	19	36	37	26
2 or more	1	1	1	1	1	1	2	0	1	1	1	1	0	0	1	1	1	1	2	1	0	1	2	3
Don't know	2	3	2	1	2	2	4	1	2	3	2	2	3	2	3	2	2	2	2	2	3	2	1	2
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.3	.1	.2	.4	.3	.2	.3	.2	.3	.2	.2	.3	.1	.2	.3	.3	.3	.2	.3	.2	.2	.4	.4	.3

Responses of 'Don't know' were excluded from calculation of the mean.

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TABLE 30:

Please walk around your home and count all light bulbs, including those in closets, attics, garages, outdoor lights, etc. Please take note of how many bulbs are LED, how many screw into traditional light sockets, how many have a special screw-in base, how many are linear fluorescents (i.e., tube lights), and how many are smart lights.

Next, please indicate the total number of lightbulbs you have:

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1-10	12	14	14	10	14	11	21	12	7	24	8	6	26	10	13	7	11	14	12	12	6	5	2	9
11-20	29	27	29	30	28	29	37	29	24	40	25	23	41	28	30	21	25	32	26	29	22	21	24	22
21-30	23	23	26	22	21	25	23	20	25	18	25	26	17	26	23	24	26	20	30	21	24	25	25	29
31-40	13	13	14	13	13	13	4	16	16	8	15	17	5	15	12	17	13	12	13	13	13	17	20	20
41-50	7	6	8	7	7	7	3	7	9	2	9	9	2	6	7	11	8	6	4	8	12	9	8	9
51 or more	10	10	5	11	11	9	4	9	14	4	13	14	1	9	10	16	13	7	13	9	19	17	15	8
Don't know	6	6	4	7	5	7	8	7	5	4	6	5	9	6	4	4	5	8	2	7	4	5	5	3
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	26.0	25.6	24.5	27.0	26.2	25.8	19.0	26.0	29.9	19.0	28.9	30.5	16.5	27.1	25.9	31.7	28.1	24.2	26.8	25.8	32.3	32.1	31.4	28.6

Responses of 'Don't know' or above 85 were excluded from calculation of the mean.

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TABLE 31B:

[IF Q30 NOT 'Don't know'] Next, please indicate…

How many are LED bulbs?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	10	8	9	11	10	9	14	8	8	14	8	7	15	11	7	6	5	13	6	11	6	4	8	11
1-10	35	36	31	35	37	33	46	31	31	42	32	27	51	33	35	29	33	36	33	35	21	27	26	33
11-20	25	23	26	26	25	25	21	27	25	26	24	28	18	23	28	27	28	22	29	24	25	30	32	23
21-30	14	14	15	14	14	14	6	14	18	6	17	17	8	19	12	16	15	13	18	13	17	16	16	19
31-40	6	8	4	4	5	6	1	10	5	3	6	8	1	6	5	6	7	5	4	6	10	5	9	8
41-50	4	3	2	5	4	3	1	3	5	1	5	5	1	3	4	8	5	2	5	3	8	7	5	0
51 or more	3	3	3	3	4	3	0	4	4	2	3	4	0	3	4	7	4	2	5	3	7	8	2	1
Don't know	5	5	9	3	2	7	10	2	3	6	4	4	5	3	5	2	3	6	2	5	6	3	3	5
WEIGHTED SAMPLE SIZE (#)	**939**	**408**	**139**	**392**	**452**	**484**	**223**	**303**	**413**	**251**	**603**	**639**	**300**	**397**	**547**	**248**	**433**	**505**	**215**	**723**	**160**	**160**	**135**	**151**
UNWEIGHTED SAMPLE SIZE (#)	**936**	**435**	**128**	**373**	**425**	**508**	**186**	**308**	**442**	**237**	**611**	**643**	**293**	**399**	**547**	**256**	**436**	**500**	**212**	**724**	**161**	**159**	**142**	**148**
MEAN	15.8	16.0	15.7	15.5	15.5	16.0	9.6	17.7	17.4	11.2	17.4	18.9	9.0	16.0	16.2	20.0	17.8	14.0	17.5	15.2	22.6	21.2	17.4	15.1

Responses of 'Don't know' or above 85 were excluded from calculation of the mean.

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TABLE 31C:

[IF Q30 NOT 'Don't know'] How many have a base sized like a normal light bulb, that is, they screw into your regular light sockets?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	4	5	1	5	6	3	3	3	5	5	4	4	4	3	5	3	3	5	4	4	5	5	5	3
1-10	25	30	28	20	26	25	37	23	21	38	20	18	42	23	26	18	23	28	26	25	17	13	15	20
11-20	28	25	33	29	29	27	34	29	24	28	29	25	34	28	29	23	28	28	28	28	23	29	30	21
21-30	19	16	21	21	17	20	12	17	23	11	21	23	10	24	16	21	19	18	21	18	22	17	20	32
31-40	10	12	6	10	9	11	5	13	11	5	12	13	4	11	9	11	12	9	7	11	11	13	21	11
41-50	4	3	4	6	5	4	1	3	7	4	4	6	0	5	4	9	5	4	5	4	8	6	5	6
51 or more	4	4	2	3	4	3	0	4	5	1	5	5	1	3	4	7	5	2	4	3	8	9	2	1
Don't know	6	5	5	6	4	7	9	6	4	8	4	6	4	3	7	7	5	6	5	6	6	8	2	5
WEIGHTED SAMPLE SIZE (#)	**939**	**408**	**139**	**392**	**452**	**484**	**223**	**303**	**413**	**251**	**603**	**639**	**300**	**397**	**547**	**248**	**433**	**505**	**215**	**723**	**160**	**160**	**135**	**151**
UNWEIGHTED SAMPLE SIZE (#)	**936**	**435**	**128**	**373**	**425**	**508**	**186**	**308**	**442**	**237**	**611**	**643**	**293**	**399**	**547**	**256**	**436**	**500**	**212**	**724**	**161**	**159**	**142**	**148**
MEAN	19.2	18.4	18.7	20.2	18.7	19.7	13.2	20.3	21.5	14.5	21.1	22.4	12.7	20.1	18.8	23.9	20.6	18.0	19.2	19.2	23.8	24.2	22.2	20.9

Responses of 'Don't know' or above 85 were excluded from calculation of the mean.

TABLE 31D:

[IF Q30 NOT 'Don't know'] How many have a specialty base? For example, a candelabra or are pin based?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	49	51	50	48	48	50	50	52	47	49	50	43	62	50	49	44	48	51	52	48	44	42	46	42
1-10	33	32	31	35	33	33	28	33	36	33	32	36	27	35	31	37	34	33	30	34	31	38	40	38
11-20	7	7	4	8	7	6	7	6	6	5	8	9	1	6	7	7	9	4	7	7	10	10	9	9
21-30	1	1	1	1	1	1	0	0	2	0	1	1	0	1	1	2	1	1	2	1	2	0	2	1
31-40	0	0	0	1	1	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0
41-50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
51 or more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't know	9	9	14	8	9	10	14	8	8	13	8	9	10	8	11	10	8	11	9	10	11	9	4	10
WEIGHTED SAMPLE SIZE (#)	**939**	**408**	**139**	**392**	**452**	**484**	**223**	**303**	**413**	**251**	**603**	**639**	**300**	**397**	**547**	**248**	**433**	**505**	**215**	**723**	**160**	**160**	**135**	**151**
UNWEIGHTED SAMPLE SIZE (#)	**936**	**435**	**128**	**373**	**425**	**508**	**186**	**308**	**442**	**237**	**611**	**643**	**293**	**399**	**547**	**256**	**436**	**500**	**212**	**724**	**161**	**159**	**142**	**148**
MEAN	3.1	3.1	2.6	3.3	3.5	2.8	2.5	2.9	3.6	2.2	3.6	3.9	1.4	3.1	3.3	3.4	3.6	2.7	3.2	3.1	4.4	4.0	3.7	3.6

Responses of 'Don't know' or above 85 were excluded from calculation of the mean.

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TABLE 31E:

[IF Q31B NOT 'Don't know'] How many are smart lights, that is, they can be controlled over the internet via a smart phone or computer?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	86	84	87	89	84	89	82	82	92	87	86	86	87	87	83	82	87	86	81	88	76	84	94	91
1-10	9	12	6	7	13	6	17	13	3	8	10	9	10	8	13	14	11	8	16	7	15	12	5	4
11-20	1	0	0	1	1	0	0	2	0	1	0	1	0	1	0	0	0	1	0	1	1	2	0	0
21-30	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0
31-40	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41-50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 or more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't know	4	3	5	3	3	4	1	4	4	2	3	4	2	4	3	4	2	5	2	4	8	1	1	4
WEIGHTED SAMPLE SIZE (#)	**896**	**390**	**126**	**380**	**443**	**450**	**200**	**297**	**399**	**237**	**577**	**611**	**285**	**385**	**518**	**242**	**419**	**477**	**212**	**684**	**150**	**156**	**131**	**143**
UNWEIGHTED SAMPLE SIZE (#)	**895**	**417**	**118**	**360**	**417**	**475**	**167**	**301**	**427**	**226**	**585**	**618**	**277**	**387**	**521**	**250**	**423**	**472**	**208**	**687**	**153**	**155**	**138**	**141**
MEAN	.5	.5	.8	.4	.6	.4	.4	.9	.2	.5	.5	.5	.4	.5	.6	.6	.5	.5	.8	.4	.6	1.0	.3	.3

Responses of 'Don't know' or above 85 were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Residential

TABLE 31F:

[IF Q31B LESS THAN Q30] How many are linear fluorescents (i.e., tube lights)?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	51	58	53	44	48	55	63	58	40	50	52	44	69	45	54	48	48	54	56	50	51	46	35	42
1-10	44	38	39	51	45	43	31	37	55	45	43	51	28	50	41	49	47	41	35	46	43	51	59	52
11-20	2	2	3	2	3	1	1	2	3	1	2	3	1	3	2	2	2	3	4	2	2	3	3	4
21-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31-40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
41-50	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	1	0	2	0	0	0	2	0
51 or more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't know	2	2	6	1	3	1	4	3	1	4	1	2	2	2	3	1	3	2	3	2	4	1	1	3
WEIGHTED SAMPLE SIZE (#)	**723**	**303**	**109**	**311**	**350**	**370**	**184**	**215**	**324**	**192**	**472**	**499**	**223**	**320**	**414**	**187**	**330**	**393**	**160**	**563**	**108**	**126**	**108**	**134**
UNWEIGHTED SAMPLE SIZE (#)	**712**	**324**	**96**	**292**	**323**	**386**	**151**	**216**	**345**	**177**	**474**	**497**	**215**	**319**	**413**	**194**	**328**	**384**	**157**	**555**	**107**	**126**	**113**	**128**
MEAN	1.8	1.3	1.3	2.4	2.2	1.3	1.7	1.2	2.2	1.2	1.9	2.2	.7	1.9	1.5	1.8	2.1	1.5	2.2	1.6	2.1	1.9	3.2	2.1

Responses of 'Don't know' or above 85 were excluded from calculation of the mean.

TABLE 31B-F (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q30 NOT 'Don't know'] Next, please indicate…

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Q31C. Proportion with a normal base	72	70	72	73	69	75	69	77	69	76	71	71	77	73	71	73	71	73	70	73	69	71	69	75
Q31B. Proportion LED	59	61	64	56	59	60	50	67	58	57	59	60	55	59	61	60	63	55	63	58	65	65	56	52
Q31D. Proportion with specialty base	11	12	9	11	13	10	12	10	12	10	12	12	7	11	12	11	12	10	12	11	13	12	12	11
Q31F. Proportion linear fluorescent	5	4	3	7	6	4	8	3	5	5	5	6	3	6	4	4	5	5	6	5	4	4	8	6
Q31E. Proportion smart lights	2	2	4	1	2	2	2	4	1	3	2	2	2	2	2	2	2	2	3	2	2	3	1	1
WEIGHTED SAMPLE SIZE (#)	**756**	**330**	**103**	**323**	**377**	**377**	**171**	**250**	**336**	**197**	**496**	**513**	**243**	**337**	**430**	**197**	**369**	**387**	**180**	**576**	**116**	**133**	**119**	**122**
UNWEIGHTED SAMPLE SIZE (#)	**758**	**357**	**97**	**304**	**358**	**398**	**142**	**253**	**363**	**190**	**503**	**520**	**238**	**338**	**433**	**206**	**372**	**386**	**177**	**581**	**119**	**134**	**126**	**119**

2019 Electricity Usage Surveys - Residential

TABLE 31aa:

How many of the following are in your home?

Manual light dimmers

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	54	49	59	58	48	60	61	57	49	65	52	46	71	54	52	46	52	56	43	58	36	46	51	48
1	18	19	18	18	21	17	11	17	24	16	19	22	11	21	18	25	19	18	21	18	20	23	25	24
2	11	14	7	10	13	10	9	11	13	9	12	14	6	12	12	13	13	10	15	10	13	19	13	13
3	3	4	2	3	5	2	4	3	3	2	4	4	1	2	3	7	4	3	5	3	6	4	4	3
4	3	2	5	3	3	3	2	3	4	2	4	4	1	4	4	2	3	3	5	2	4	1	4	7
5 or more	6	8	3	4	5	6	6	5	6	3	7	7	4	5	6	5	6	6	8	5	15	5	3	3
Don't know	4	4	6	4	5	3	8	4	2	4	3	3	5	3	4	1	4	4	3	4	5	3	1	3
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	1.1	1.3	.8	.9	1.2	.9	1.1	1.0	1.1	.6	1.2	1.3	.6	1.0	1.2	1.3	1.2	1.0	1.5	.9	2.0	1.1	1.0	1.1

Responses of 'Don't know' or above 15 were excluded from calculation of the mean.

TABLE 31ab:

How many of the following are in your home?

Indoor motion sensors that activate/turn off lights

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	92	90	92	93	92	92	87	92	94	89	94	92	92	92	90	92	90	93	91	92	89	93	92	95
1	3	5	4	2	3	3	4	4	3	4	3	4	3	4	4	5	4	3	4	3	4	3	5	2
2	1	2	0	1	1	1	2	1	1	1	1	1	1	0	2	2	1	1	2	1	1	1	1	0
3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	1	0	1	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5 or more	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Don't know	3	3	4	3	4	3	6	3	1	4	2	3	4	3	3	1	4	3	2	4	4	3	1	2
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.1	.1	.0	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.0

Responses of 'Don't know' or above 5 were excluded from calculation of the mean.

2019 Electricity Usage Surveys - Residential

TABLE 31ac:

How many of the following are in your home?

Outdoor motion sensors that activate/turn off lights

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	66	68	64	64	62	69	72	67	62	72	65	59	81	62	63	56	59	72	64	66	60	58	53	59
1	19	16	22	22	22	17	16	19	21	17	20	23	12	22	21	26	23	17	20	19	21	25	24	25
2	9	9	6	9	8	9	4	10	11	4	10	12	2	11	9	13	10	7	11	8	12	11	16	10
3	1	1	2	1	2	0	0	0	2	0	1	2	0	2	1	1	1	1	1	1	1	3	2	2
4	1	1	0	1	1	0	0	1	1	1	1	1	0	1	1	1	1	0	1	1	0	0	2	1
5 or more	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	2	2	0	1	1	3	1	2	0
Don't know	3	4	4	3	3	3	7	3	2	4	2	3	5	3	3	1	4	3	3	4	3	2	0	3
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	.5	.5	.5	.5	.6	.4	.3	.5	.6	.4	.5	.6	.2	.6	.6	.7	.7	.4	.5	.5	.7	.7	.8	.6

Responses of 'Don't know' were excluded from calculation of the mean.

TABLE 32_1:

Before today, how familiar were you with:

Heat Pump Water Heaters

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	10	13	7	8	11	9	12	8	11	10	10	10	11	10	13	22	16	5	50	0	17	6	5	11
9	3	4	3	1	3	3	4	1	3	1	3	2	3	3	2	3	2	3	14	0	3	0	7	0
8	3	1	6	3	3	2	4	2	2	7	1	2	4	5	2	0	4	1	13	0	0	0	3	6
7	5	3	5	6	8	2	8	4	3	0	7	4	6	5	5	3	6	3	23	0	2	4	2	8
6	7	7	6	8	6	8	4	11	7	10	6	7	7	7	9	6	5	10	0	9	13	2	9	10
5	12	10	3	16	12	12	20	7	11	9	12	12	12	8	12	9	11	12	0	15	12	17	13	2
4	7	8	16	3	3	10	8	8	5	7	7	6	8	6	8	5	6	8	0	9	2	10	6	6
3	4	4	9	2	2	5	3	2	5	3	4	4	3	3	3	1	0	7	0	4	2	5	6	0
2	6	8	3	6	4	8	6	7	5	6	6	7	4	5	7	9	3	9	0	8	11	8	5	6
1	5	5	5	5	6	3	3	4	6	7	4	4	5	5	5	1	3	6	0	6	4	1	3	13
0 - Completely unfamiliar	39	37	36	42	40	38	27	46	42	40	40	41	36	43	34	43	43	36	0	49	34	47	40	39
WEIGHTED SAMPLE SIZE (#)	**252**	**107**	**34**	**111**	**122**	**129**	**68**	**81**	**103**	**64**	**159**	**163**	**89**	**111**	**141**	**69**	**121**	**131**	**51**	**201**	**38**	**50**	**40**	**30**
UNWEIGHTED SAMPLE SIZE (#)	**250**	**115**	**32**	**103**	**111**	**138**	**55**	**84**	**111**	**58**	**163**	**165**	**85**	**113**	**137**	**72**	**120**	**130**	**48**	**202**	**39**	**46**	**43**	**31**
TOP 3 (8-10)	16	18	17	13	17	15	21	11	16	19	14	14	18	19	17	24	22	9	77	0	20	6	15	17
MID 4 (4-7)	31	28	31	33	30	32	40	30	26	26	31	29	34	26	34	22	28	33	23	33	29	33	31	25
BOTTOM 4 (0-3)	54	53	52	54	53	54	39	59	59	56	55	57	48	55	49	53	50	57	0	67	51	61	54	58
MEAN	3.4	3.6	3.4	3.2	3.5	3.3	4.3	2.9	3.2	3.3	3.3	3.2	3.7	3.4	3.7	3.8	3.7	3.1	8.9	2.0	3.9	2.6	3.3	3.3

This question was randomly posed to approximately one in four respondents.

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2019 Electricity Usage Surveys - Residential

TABLE 32_2:

Before today, how familiar were you with:

ENERGY STAR Mini Split Heat Pumps

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	10	8	9	13	12	9	5	11	13	12	10	15	1	6	11	25	18	5	41	0	16	27	8	4
9	4	6	0	3	5	2	5	6	1	4	4	4	2	3	4	5	8	1	14	0	2	2	4	7
8	7	7	4	7	12	2	10	1	8	6	6	8	3	6	6	14	13	2	26	0	8	5	18	8
7	5	2	9	6	7	2	2	4	7	6	5	6	2	6	4	5	6	4	19	0	9	2	4	11
6	5	2	2	9	6	4	7	5	3	2	7	5	4	5	7	10	10	1	0	7	9	5	4	4
5	12	13	8	13	12	12	9	13	14	10	12	14	7	17	10	15	13	12	0	16	15	14	13	15
4	5	8	5	3	4	6	8	3	5	3	6	5	6	5	5	5	6	4	0	7	9	2	4	5
3	8	3	20	8	3	12	14	8	4	7	8	5	14	11	6	2	4	10	0	10	1	6	9	1
2	2	2	2	2	3	2	1	2	3	1	2	2	3	3	3	4	1	3	0	3	2	0	0	4
1	6	6	5	6	4	8	6	6	5	4	7	4	9	6	5	0	3	8	0	8	0	7	7	6
0 - Completely unfamiliar	37	42	37	32	32	41	33	40	37	46	34	31	48	33	40	16	19	50	0	49	28	31	30	36
WEIGHTED SAMPLE SIZE (#)	**255**	**106**	**42**	**107**	**123**	**132**	**67**	**74**	**113**	**59**	**168**	**173**	**82**	**102**	**154**	**58**	**106**	**149**	**65**	**191**	**45**	**42**	**29**	**45**
UNWEIGHTED SAMPLE SIZE (#)	**252**	**112**	**41**	**99**	**113**	**138**	**60**	**73**	**119**	**57**	**164**	**176**	**76**	**99**	**153**	**63**	**104**	**148**	**63**	**189**	**47**	**45**	**29**	**42**
TOP 3 (8-10)	20	21	13	23	29	13	20	18	22	22	20	28	6	15	21	44	38	8	81	0	27	34	30	19
MID 4 (4-7)	27	25	24	30	29	24	25	25	29	21	30	30	20	33	26	34	35	22	19	30	42	22	25	34
BOTTOM 4 (0-3)	53	54	64	47	42	63	54	57	49	57	50	42	75	52	53	22	27	70	0	70	32	43	46	47
MEAN	3.7	3.4	3.2	4.1	4.4	2.9	3.6	3.4	3.8	3.4	3.8	4.4	2.1	3.5	3.6	6.1	5.5	2.3	8.8	1.9	4.8	4.8	4.2	3.7

This question was randomly posed to approximately one in four respondents.

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2019 Electricity Usage Surveys - Residential

TABLE 32_3:

Before today, how familiar were you with:

Heat Pump Clothes Dryers

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	3	6	0	1	5	1	10	1	2	0	4	1	8	5	3	1	3	3	36	0	2	0	0	1
9	2	1	3	2	1	2	3	2	1	4	0	2	0	1	2	4	3	0	18	0	6	0	0	4
8	1	2	0	1	2	1	5	1	0	5	0	1	2	0	2	1	3	0	14	0	0	2	0	2
7	3	3	3	2	4	2	4	4	1	0	4	3	2	3	3	3	4	1	32	0	3	3	0	6
6	2	2	0	2	4	0	1	2	2	4	1	1	5	1	2	0	2	2	0	2	0	0	0	3
5	4	5	7	1	3	4	4	6	2	8	3	4	4	6	2	1	3	5	0	4	5	0	4	7
4	3	3	6	2	4	2	7	5	0	4	2	4	1	2	4	0	4	2	0	3	3	6	0	2
3	3	2	0	6	3	3	6	3	2	8	1	2	7	1	4	2	1	6	0	4	1	4	0	2
2	4	5	0	4	4	3	6	2	4	5	3	3	5	3	5	3	2	5	0	4	4	0	3	5
1	6	5	9	7	6	7	2	7	7	6	7	6	7	7	7	9	5	8	0	7	7	5	7	4
0 - Completely unfamiliar	69	65	73	74	63	74	52	67	78	56	74	74	57	70	66	76	70	69	0	76	70	81	86	65
WEIGHTED SAMPLE SIZE (#)	**248**	**115**	**35**	**98**	**111**	**137**	**45**	**94**	**108**	**67**	**158**	**174**	**73**	**119**	**134**	**63**	**123**	**124**	**22**	**226**	**40**	**40**	**39**	**42**
UNWEIGHTED SAMPLE SIZE (#)	**256**	**121**	**34**	**101**	**112**	**144**	**42**	**93**	**121**	**66**	**166**	**181**	**75**	**124**	**140**	**65**	**128**	**128**	**20**	**236**	**40**	**42**	**42**	**45**
TOP 3 (8-10)	6	10	3	3	8	4	18	3	3	9	4	4	10	6	8	6	9	3	68	0	7	2	0	7
MID 4 (4-7)	12	15	15	7	15	9	16	17	5	16	10	11	13	13	10	4	13	10	32	10	10	9	4	17
BOTTOM 4 (0-3)	82	76	82	90	77	87	65	80	92	75	86	85	77	81	82	90	78	87	0	90	83	90	96	76
MEAN	1.4	1.9	1.1	1.0	1.9	1.1	2.8	1.4	.8	2.0	1.2	1.1	2.1	1.4	1.5	1.0	1.7	1.2	8.6	.7	1.4	.7	.3	1.8

This question was randomly posed to approximately one in four respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 32_4:

Before today, how familiar were you with:

Energy Efficient Clothes Washers

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	13	13	20	10	10	16	8	13	15	12	14	14	10	11	16	11	21	7	38	0	11	7	15	27
9	4	7	3	2	3	5	3	6	4	3	5	5	3	4	3	6	5	4	13	0	2	8	9	5
8	7	9	6	7	9	6	1	10	9	4	6	8	7	12	6	7	14	2	22	0	6	4	10	11
7	9	12	20	3	10	8	11	11	6	6	11	10	8	10	8	11	11	8	27	0	15	8	9	9
6	12	10	6	16	9	15	4	16	14	9	12	14	8	9	14	22	7	15	0	18	18	21	3	10
5	19	20	13	19	20	16	23	11	21	20	19	22	13	19	19	22	18	19	0	28	28	17	29	11
4	8	8	6	9	11	6	16	6	6	11	9	7	11	5	10	5	4	11	0	13	8	10	4	6
3	9	9	0	12	8	10	12	14	4	13	8	6	14	10	7	7	8	10	0	14	0	7	10	8
2	3	4	3	2	5	2	4	3	3	3	2	4	2	4	4	0	1	4	0	5	5	4	2	3
1	3	1	6	4	3	3	6	1	3	1	2	2	4	1	2	1	0	5	0	4	2	2	3	3
0 - Completely unfamiliar	13	8	17	16	12	13	13	10	14	19	10	8	20	14	10	7	10	14	0	19	4	12	7	8
WEIGHTED SAMPLE SIZE (#)	**247**	**107**	**33**	**107**	**121**	**124**	**62**	**76**	**109**	**71**	**154**	**162**	**85**	**91**	**143**	**67**	**104**	**144**	**83**	**164**	**44**	**37**	**34**	**38**
UNWEIGHTED SAMPLE SIZE (#)	**244**	**116**	**28**	**100**	**114**	**128**	**45**	**83**	**116**	**65**	**158**	**159**	**85**	**92**	**143**	**68**	**106**	**138**	**87**	**157**	**43**	**37**	**36**	**35**
TOP 3 (8-10)	24	29	29	19	22	27	12	29	28	19	26	27	20	27	25	25	40	13	73	0	19	19	34	42
MID 4 (4-7)	48	49	44	48	51	45	54	43	48	45	52	53	39	43	51	60	40	54	27	58	70	56	44	36
BOTTOM 4 (0-3)	28	22	26	34	27	27	34	27	24	35	22	20	41	29	24	16	20	33	0	42	11	25	22	22
MEAN	5.2	5.7	5.5	4.7	5.1	5.4	4.5	5.6	5.4	4.6	5.6	5.7	4.4	5.2	5.4	5.9	6.2	4.5	8.6	3.5	5.8	5.1	5.9	6.3

This question was randomly posed to approximately one in four respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 35A:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[100] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	29	30	29	29	29	30	34	33	23	26	30	29	29	23	29	25	29	29	39	26	38	30	26	23
No	71	70	71	71	71	70	66	67	77	74	70	71	71	77	71	75	71	71	61	74	62	70	74	77
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

TABLE 35B:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[250] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	41	43	46	37	45	37	43	46	36	35	44	44	35	37	39	43	44	38	55	36	52	42	46	40
No	59	57	54	63	55	63	57	54	64	65	56	56	65	63	61	57	56	62	45	64	48	58	54	60
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

2019 Electricity Usage Surveys - Residential

TABLE 35C:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[400] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	52	55	61	45	55	49	55	54	49	42	57	57	41	49	52	55	56	49	68	47	65	52	61	54
No	48	45	39	55	45	51	45	46	51	58	43	43	59	51	48	45	44	51	32	53	35	48	39	46
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

TABLE 35D:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[550] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	61	62	71	56	65	56	70	61	55	56	65	67	50	62	61	69	64	59	77	56	75	63	65	64
No	39	38	29	44	35	44	30	39	45	44	35	33	50	38	39	31	36	41	23	44	25	37	35	36
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

2019 Electricity Usage Surveys - Residential

TABLE 35E:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[700] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	69	70	78	65	73	64	81	70	59	63	73	73	61	67	69	77	71	67	83	64	85	69	69	70
No	31	30	22	35	27	36	19	30	41	37	27	27	39	33	31	23	29	33	17	36	15	31	31	30
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

TABLE 35F:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[850] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	72	74	81	67	75	68	84	74	63	66	76	77	62	70	73	82	74	71	85	68	87	74	75	74
No	28	26	19	33	25	32	16	26	37	34	24	23	38	30	27	18	26	29	15	32	13	26	25	26
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

2019 Electricity Usage Surveys - Residential

TABLE 35G:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[1000] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	78	78	87	75	82	74	89	81	70	71	82	85	65	78	79	88	79	77	86	76	93	84	82	83
No	22	22	13	25	18	26	11	19	30	29	18	15	35	22	21	12	21	23	14	24	7	16	18	17
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

TABLE 35H:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[1150] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	81	83	89	77	84	78	91	84	73	72	86	88	69	82	82	89	84	79	88	79	94	85	88	84
No	19	17	11	23	16	22	9	16	27	28	14	12	31	18	18	11	16	21	12	21	6	15	12	16
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 35I:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing new [ITEM SEEN IN Q32].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $1,000 if the project saved $[1300] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	83	84	90	79	85	81	92	86	74	74	88	89	71	85	84	89	85	81	89	81	95	87	88	86
No	17	16	10	21	15	19	8	14	26	26	12	11	29	15	16	11	15	19	11	19	5	13	12	14
WEIGHTED SAMPLE SIZE (#)	**501**	**222**	**73**	**207**	**261**	**238**	**140**	**160**	**202**	**142**	**330**	**336**	**165**	**208**	**297**	**138**	**236**	**266**	**125**	**376**	**91**	**86**	**62**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**493**	**235**	**66**	**192**	**243**	**248**	**111**	**162**	**220**	**129**	**334**	**336**	**157**	**206**	**289**	**145**	**233**	**260**	**123**	**370**	**96**	**84**	**62**	**80**

This table excludes those who responded 'Don't know' to any of Q35a-i.

TABLE 33_1:

Before today, how familiar were you with:

Networked/Connected – Indoor LED lights (i.e., smart light bulbs)

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	7	6	22	2	9	5	0	13	9	5	6	8	6	3	9	6	28	0	18	4	10	17	0	7
9	3	4	0	5	1	6	6	2	3	4	3	5	0	5	3	10	13	0	0	4	4	6	7	0
8	5	5	9	3	5	5	4	5	6	12	3	4	7	5	3	6	19	0	7	4	7	0	11	0
7	11	7	17	14	11	11	23	11	4	10	11	12	9	15	12	2	41	0	3	13	18	7	17	7
6	7	8	0	7	8	5	6	15	2	13	4	3	13	16	4	2	0	9	7	6	0	0	0	12
5	13	12	11	15	17	9	21	6	13	4	17	17	6	5	17	20	0	18	13	13	26	15	0	28
4	9	10	10	6	11	6	6	7	12	7	10	9	7	6	8	9	0	12	12	8	8	18	10	0
3	4	5	0	5	5	3	8	0	4	0	5	5	2	5	3	12	0	5	7	3	3	0	11	11
2	8	8	0	13	10	7	7	2	13	9	8	6	12	9	8	8	0	11	4	10	7	0	6	14
1	6	5	5	8	10	1	0	0	14	6	6	8	2	7	7	6	0	8	5	6	6	13	5	12
0 - Completely unfamiliar	26	30	26	22	13	43	20	40	22	29	27	22	35	24	26	19	0	36	22	28	9	23	33	7
WEIGHTED SAMPLE SIZE (#)	**108**	**52**	**19**	**37**	**59**	**49**	**30**	**31**	**47**	**28**	**76**	**69**	**38**	**37**	**71**	**30**	**29**	**79**	**24**	**84**	**20**	**16**	**11**	**16**
UNWEIGHTED SAMPLE SIZE (#)	**105**	**52**	**16**	**37**	**56**	**49**	**24**	**31**	**50**	**28**	**73**	**69**	**36**	**39**	**69**	**30**	**28**	**77**	**22**	**83**	**21**	**14**	**11**	**15**
TOP 3 (8-10)	16	15	30	10	16	16	10	20	17	22	12	17	13	13	15	21	59	0	26	13	22	22	18	7
MID 4 (4-7)	39	38	38	42	47	31	55	38	30	34	42	41	36	42	41	34	41	39	36	40	52	41	27	48
BOTTOM 4 (0-3)	45	48	32	48	38	53	35	43	53	44	46	42	50	45	44	45	0	61	39	47	26	37	56	45
MEAN	4.0	3.7	5.0	3.8	4.4	3.4	4.5	4.1	3.6	4.1	3.7	4.2	3.5	4.0	4.0	4.2	8.3	2.4	4.6	3.8	5.2	4.3	3.6	4.1

This question was randomly posed to approximately one in nine respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 33_2:

Before today, how familiar were you with:

LED Screw-in General Service Lights (i.e., LED light that screw into your existing sockets)

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	39	37	31	43	43	36	41	27	48	47	39	39	40	47	42	44	59	0	47	37	31	37	39	47
9	12	10	0	16	11	13	0	9	19	3	11	11	13	14	9	12	18	0	24	9	15	6	22	0
8	8	8	19	7	7	9	0	13	7	10	9	7	11	7	8	15	12	0	8	8	8	7	12	0
7	8	13	20	0	9	6	6	12	5	11	8	10	0	9	8	4	11	0	9	7	4	10	7	28
6	7	6	18	6	4	10	11	6	7	13	7	8	5	3	8	8	0	22	0	9	14	4	5	7
5	10	8	0	14	13	7	16	15	4	3	11	12	6	2	9	17	0	30	12	10	15	10	15	0
4	8	8	0	9	10	6	6	11	6	8	4	6	14	15	5	0	0	23	0	10	3	9	0	18
3	2	4	0	1	4	1	9	2	0	0	4	3	0	0	4	0	0	7	0	3	7	4	0	0
2	2	3	0	1	0	4	7	2	0	0	3	0	8	1	0	0	0	6	0	2	0	0	0	0
1	1	2	0	0	0	1	0	0	2	0	1	1	0	0	1	0	0	2	0	1	0	4	0	0
0 - Completely unfamiliar	3	2	12	3	0	6	5	2	4	4	4	3	3	2	6	0	0	10	0	4	3	9	0	0
WEIGHTED SAMPLE SIZE (#)	**101**	**44**	**8**	**48**	**47**	**54**	**19**	**36**	**45**	**21**	**68**	**74**	**26**	**47**	**55**	**31**	**67**	**34**	**20**	**80**	**26**	**18**	**16**	**11**
UNWEIGHTED SAMPLE SIZE (#)	**102**	**48**	**8**	**46**	**45**	**57**	**14**	**38**	**50**	**20**	**70**	**74**	**28**	**47**	**56**	**33**	**68**	**34**	**21**	**81**	**23**	**19**	**16**	**11**
TOP 3 (8-10)	59	54	50	65	60	58	41	50	73	61	60	57	65	68	59	71	89	0	79	54	54	50	72	47
MID 4 (4-7)	33	36	38	29	36	30	39	44	21	35	29	36	24	29	29	29	11	75	21	36	36	33	28	53
BOTTOM 4 (0-3)	8	10	12	6	4	13	21	6	6	4	11	8	11	3	12	0	0	25	0	11	10	18	0	0
MEAN	7.5	7.4	7.1	7.7	7.8	7.2	6.6	7.1	8.2	7.9	7.5	7.5	7.4	8.0	7.4	8.3	9.2	4.1	8.7	7.2	7.3	6.7	8.4	7.8

This question was randomly posed to approximately one in nine respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 33_3:

Before today, how familiar were you with:

Smart Power Bars

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	9	9	15	5	11	8	9	13	7	10	10	9	8	6	11	10	37	0	19	7	12	0	9	12
9	6	2	13	5	6	6	0	4	9	8	5	7	4	4	8	13	24	0	17	3	4	0	16	6
8	3	5	0	4	1	6	0	3	5	10	1	4	2	4	4	0	14	0	4	3	8	4	0	4
7	6	2	8	8	6	4	0	17	2	7	5	6	6	10	6	0	25	0	16	4	5	0	0	13
6	4	2	3	6	7	1	0	10	2	0	6	5	3	4	4	3	0	5	6	3	12	8	0	0
5	12	16	8	11	17	8	13	3	17	18	10	9	19	10	11	10	0	16	5	13	6	19	11	0
4	2	5	0	0	3	0	0	4	1	0	2	1	4	3	2	2	0	2	0	2	0	0	0	3
3	9	7	7	11	7	10	4	13	8	10	9	9	8	7	6	17	0	11	5	9	14	0	14	8
2	7	12	4	4	4	8	16	9	1	8	5	7	6	6	9	3	0	9	10	6	12	10	0	9
1	8	10	4	8	7	10	12	0	11	0	11	9	6	5	12	9	0	11	0	10	8	28	3	0
0 - Completely unfamiliar	35	29	38	38	31	40	46	25	37	29	37	36	34	41	27	32	0	46	18	39	18	32	47	45
WEIGHTED SAMPLE SIZE (#)	**93**	**32**	**24**	**38**	**46**	**45**	**19**	**27**	**48**	**26**	**60**	**65**	**28**	**47**	**46**	**25**	**23**	**71**	**17**	**76**	**14**	**15**	**17**	**17**
UNWEIGHTED SAMPLE SIZE (#)	**101**	**40**	**23**	**38**	**45**	**54**	**19**	**30**	**52**	**24**	**67**	**71**	**30**	**50**	**51**	**28**	**25**	**76**	**19**	**82**	**17**	**16**	**18**	**18**
TOP 3 (8-10)	18	16	28	14	18	19	9	20	20	28	15	20	15	14	22	23	75	0	40	13	24	4	25	22
MID 4 (4-7)	24	26	19	25	33	13	13	33	22	25	22	20	32	27	24	15	25	23	28	23	24	27	11	16
BOTTOM 4 (0-3)	58	59	53	61	49	68	78	47	57	47	62	60	54	59	54	61	0	77	32	64	52	69	64	62
MEAN	3.5	3.3	4.1	3.2	3.9	3.1	2.1	4.5	3.4	4.4	3.2	3.5	3.5	3.3	3.9	3.6	8.7	1.8	5.8	3.0	4.4	2.2	3.3	3.5

This question was randomly posed to approximately one in nine respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 33_4:

Before today, how familiar were you with:

Dimmer Switches

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	36	41	37	32	33	40	31	37	39	32	40	39	32	37	38	32	59	0	53	31	36	44	35	48
9	12	9	20	12	12	11	2	16	13	17	11	17	3	9	15	16	19	0	22	8	12	19	18	16
8	5	6	0	6	5	6	11	3	4	3	6	5	6	6	5	8	9	0	6	5	5	3	6	8
7	9	12	5	6	11	6	4	12	8	8	10	9	8	14	5	6	14	0	7	9	8	14	3	10
6	6	2	11	9	8	5	0	10	7	8	5	7	6	12	3	5	0	17	0	9	0	3	6	6
5	11	5	0	19	14	7	11	12	9	5	12	9	13	7	14	14	0	28	2	14	18	5	14	4
4	6	10	0	3	3	9	11	4	4	10	1	3	10	5	7	0	0	15	0	7	8	0	0	4
3	2	2	5	2	2	3	2	1	3	4	2	2	4	1	3	3	0	6	0	3	5	0	0	3
2	3	2	0	5	2	5	0	0	8	4	3	4	2	5	1	5	0	9	0	5	8	0	10	0
1	1	0	0	2	0	2	0	0	2	0	1	1	0	0	2	0	0	2	0	1	0	6	0	0
0 - Completely unfamiliar	9	11	23	3	11	6	27	4	2	9	8	5	15	4	9	12	0	22	11	8	0	6	9	0
WEIGHTED SAMPLE SIZE (#)	**124**	**52**	**14**	**59**	**65**	**60**	**28**	**47**	**50**	**29**	**80**	**77**	**47**	**57**	**72**	**24**	**77**	**47**	**32**	**92**	**15**	**19**	**19**	**19**
UNWEIGHTED SAMPLE SIZE (#)	**125**	**57**	**13**	**55**	**62**	**63**	**22**	**47**	**56**	**28**	**81**	**80**	**45**	**59**	**72**	**25**	**82**	**43**	**31**	**94**	**15**	**20**	**20**	**19**
TOP 3 (8-10)	53	57	57	50	50	57	44	57	56	52	57	61	41	51	58	56	86	0	81	44	53	66	58	72
MID 4 (4-7)	31	28	15	38	36	27	26	38	28	32	28	27	38	38	28	24	14	60	9	39	35	22	23	24
BOTTOM 4 (0-3)	15	15	28	12	14	16	30	6	16	17	15	12	21	11	14	20	0	40	11	17	13	12	19	3
MEAN	7.0	7.1	6.6	7.0	6.9	7.1	5.5	7.7	7.2	6.9	7.3	7.6	6.1	7.3	7.1	6.8	9.2	3.4	8.3	6.6	7.2	7.8	7.0	8.4

This question was randomly posed to approximately one in nine respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 33_5:

Before today, how familiar were you with:

Programmable or Smart thermostats

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	14	12	16	14	19	9	7	5	22	21	11	15	11	15	14	20	38	0	39	7	10	6	31	14
9	4	12	0	0	3	5	3	3	6	4	3	6	0	7	2	2	12	0	13	2	3	10	0	13
8	7	12	6	4	4	10	13	5	6	3	9	7	9	7	9	12	21	0	14	6	3	12	3	4
7	10	9	9	11	16	5	7	12	10	4	15	9	13	8	10	2	28	0	4	11	10	7	20	0
6	14	14	17	14	17	12	7	28	10	7	20	16	10	9	23	21	0	22	5	17	26	19	10	12
5	16	25	16	8	9	19	11	29	9	12	18	17	11	15	13	9	0	24	9	17	15	12	4	34
4	6	6	6	5	2	9	9	2	6	4	6	5	7	10	2	9	0	9	8	5	13	8	0	0
3	4	3	0	7	2	6	8	5	2	8	3	3	7	2	5	2	0	7	0	6	0	4	0	4
2	6	0	18	6	11	2	20	0	2	11	3	1	16	7	5	0	0	9	0	7	0	0	0	6
1	6	2	6	9	6	6	0	2	11	8	6	9	0	5	9	8	0	9	5	6	6	7	18	6
0 - Completely unfamiliar	13	5	6	21	9	16	13	7	16	19	6	12	15	15	7	14	0	20	3	15	14	16	13	6
WEIGHTED SAMPLE SIZE (#)	**106**	**40**	**18**	**49**	**49**	**57**	**26**	**30**	**50**	**29**	**66**	**74**	**33**	**43**	**58**	**28**	**37**	**69**	**23**	**83**	**20**	**16**	**17**	**18**
UNWEIGHTED SAMPLE SIZE (#)	**101**	**40**	**15**	**46**	**44**	**56**	**20**	**31**	**50**	**26**	**65**	**75**	**26**	**43**	**54**	**28**	**38**	**63**	**22**	**79**	**21**	**17**	**17**	**17**
TOP 3 (8-10)	25	36	22	18	27	24	23	14	33	28	23	28	20	29	25	34	72	0	65	14	16	28	34	32
MID 4 (4-7)	46	54	49	38	45	46	36	72	35	27	59	48	42	42	49	41	28	55	27	51	64	45	34	46
BOTTOM 4 (0-3)	29	11	29	44	28	30	41	14	31	45	18	25	38	29	26	24	0	45	8	35	20	27	32	22
MEAN	5.2	6.3	5.2	4.4	5.6	4.9	4.6	5.5	5.4	4.7	5.7	5.4	4.8	5.2	5.5	5.5	8.6	3.4	7.6	4.6	5.1	5.1	5.8	5.7

This question was randomly posed to approximately one in nine respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 33_6:

Before today, how familiar were you with:

Occupancy Sensors

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	5	5	6	4	7	1	0	4	7	7	4	5	4	7	4	10	36	0	17	1	5	0	6	4
9	1	1	5	0	1	1	0	2	2	0	1	2	0	0	2	3	10	0	0	2	0	0	4	4
8	2	4	0	0	1	3	0	4	1	0	3	2	1	3	0	0	16	0	0	3	0	11	0	0
7	5	4	0	7	9	0	0	10	3	0	7	5	4	6	5	3	39	0	2	6	10	7	0	5
6	5	5	5	5	7	2	5	7	3	4	4	5	4	2	8	8	0	6	6	4	11	4	6	0
5	15	12	31	13	10	20	3	14	21	14	16	21	3	25	11	8	0	17	13	16	13	15	29	23
4	8	12	8	4	9	7	18	2	9	0	12	8	9	10	9	8	0	9	20	5	15	0	5	11
3	8	5	19	8	5	11	6	10	7	7	8	5	14	8	8	6	0	9	17	5	5	0	8	6
2	8	3	0	17	12	4	22	9	2	21	5	8	9	3	13	11	0	10	3	10	0	25	0	11
1	6	12	8	0	4	9	11	5	6	0	8	5	9	4	7	5	0	7	0	8	0	8	9	5
0 - Completely unfamiliar	37	37	18	42	34	40	36	33	40	46	32	34	42	31	34	38	0	42	21	41	41	30	33	31
WEIGHTED SAMPLE SIZE (#)	**116**	**54**	**14**	**48**	**62**	**54**	**23**	**42**	**51**	**27**	**76**	**79**	**37**	**55**	**65**	**27**	**15**	**101**	**25**	**91**	**20**	**16**	**18**	**21**
UNWEIGHTED SAMPLE SIZE (#)	**118**	**58**	**14**	**46**	**60**	**58**	**21**	**42**	**55**	**23**	**81**	**80**	**38**	**54**	**64**	**30**	**16**	**102**	**26**	**92**	**20**	**16**	**20**	**20**
TOP 3 (8-10)	8	10	11	4	9	6	0	10	10	7	8	9	6	10	6	13	61	0	17	5	5	11	9	7
MID 4 (4-7)	33	33	43	30	36	30	26	33	36	18	39	39	20	44	32	27	39	32	41	31	49	26	40	39
BOTTOM 4 (0-3)	59	56	46	67	55	64	74	57	54	74	53	52	74	46	62	60	0	68	41	64	46	63	50	54
MEAN	2.9	2.9	3.9	2.6	3.3	2.5	1.9	3.3	3.0	2.3	3.2	3.2	2.3	3.5	2.8	3.1	8.4	2.1	4.3	2.5	3.2	2.9	3.3	3.1

This question was randomly posed to approximately one in nine respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 33_7:

Before today, how familiar were you with:

Low flow Showerheads

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	30	27	24	36	31	29	14	45	29	34	23	30	29	31	30	29	49	0	54	25	22	38	20	33
9	5	4	6	7	6	4	0	7	7	2	8	6	2	4	5	7	9	0	7	5	0	15	11	0
8	13	12	0	19	14	11	12	7	17	14	14	13	11	10	17	23	21	0	18	12	26	15	17	5
7	13	12	6	16	16	9	16	13	10	6	17	14	10	15	10	15	21	0	9	13	6	14	18	20
6	7	6	12	6	4	10	10	5	6	4	9	8	2	10	5	14	0	17	6	7	8	5	15	11
5	8	11	9	5	9	8	10	2	11	6	11	9	8	6	11	9	0	21	0	10	12	5	8	11
4	9	12	15	3	6	12	6	6	12	11	8	6	15	9	9	4	0	22	0	11	8	5	11	5
3	3	2	12	0	4	2	7	4	0	7	2	3	4	7	2	0	0	7	0	4	0	0	0	10
2	2	4	0	0	0	3	2	0	2	0	1	1	2	0	1	0	0	4	6	1	9	0	0	0
1	2	0	12	0	4	0	7	0	0	7	0	3	0	0	3	0	0	5	0	2	0	0	0	0
0 - Completely unfamiliar	9	11	5	9	7	11	16	10	4	8	8	6	17	9	7	0	0	23	0	11	9	4	0	5
WEIGHTED SAMPLE SIZE (#)	**111**	**49**	**18**	**45**	**55**	**57**	**30**	**31**	**50**	**31**	**67**	**81**	**30**	**49**	**61**	**29**	**67**	**44**	**19**	**92**	**13**	**23**	**16**	**22**
UNWEIGHTED SAMPLE SIZE (#)	**109**	**52**	**16**	**41**	**48**	**61**	**26**	**31**	**52**	**29**	**67**	**77**	**32**	**46**	**62**	**30**	**65**	**44**	**21**	**88**	**14**	**20**	**19**	**18**
TOP 3 (8-10)	48	42	29	62	51	45	26	60	54	51	45	50	42	45	52	59	79	0	79	41	48	68	48	38
MID 4 (4-7)	36	41	43	29	34	38	42	26	40	28	45	37	34	40	35	41	21	60	14	41	34	28	52	47
BOTTOM 4 (0-3)	16	17	28	9	14	17	32	14	7	22	10	13	23	15	13	0	0	40	6	18	18	4	0	15
MEAN	6.7	6.3	5.5	7.5	7.0	6.4	5.1	7.4	7.1	6.5	6.8	7.0	5.9	6.7	6.8	7.8	8.9	3.3	8.6	6.3	6.3	8.0	7.3	6.8

This question was randomly posed to approximately one in nine respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 33_8:

Before today, how familiar were you with:

Low-Flow Faucet Aerators

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	20	21	0	25	18	20	11	12	31	10	23	23	14	18	26	32	39	0	34	14	25	28	25	10
9	4	2	0	8	4	5	0	4	8	8	3	6	2	6	4	2	9	0	12	2	0	8	0	11
8	10	9	16	8	18	5	13	4	13	12	11	7	15	7	3	9	19	0	25	4	0	0	21	11
7	16	20	8	14	23	12	32	12	9	11	17	13	22	22	9	7	32	0	8	19	15	8	9	23
6	5	3	17	2	2	6	0	11	2	0	6	7	0	0	6	12	0	9	8	3	15	5	0	9
5	13	19	0	10	9	15	22	19	3	24	9	7	24	11	19	15	0	26	5	16	9	13	6	0
4	4	5	0	4	7	2	0	3	8	0	7	6	0	2	5	2	0	8	6	3	4	9	7	5
3	5	3	27	0	2	7	0	7	7	0	7	6	3	10	5	0	0	10	0	7	11	3	9	6
2	3	2	7	2	8	0	0	2	6	6	3	4	1	5	3	0	0	6	3	3	0	5	0	11
1	2	1	5	3	0	4	2	6	0	0	3	4	0	4	2	5	0	5	0	3	8	0	12	0
0 - Completely unfamiliar	18	13	20	23	8	24	20	21	14	30	11	17	19	17	17	15	0	36	0	25	14	21	12	15
WEIGHTED SAMPLE SIZE (#)	**111**	**53**	**14**	**44**	**42**	**69**	**29**	**37**	**45**	**32**	**64**	**72**	**39**	**39**	**56**	**29**	**55**	**56**	**29**	**82**	**17**	**22**	**12**	**17**
UNWEIGHTED SAMPLE SIZE (#)	**108**	**53**	**15**	**40**	**38**	**70**	**24**	**38**	**46**	**33**	**61**	**71**	**37**	**40**	**55**	**29**	**51**	**57**	**28**	**80**	**16**	**21**	**12**	**17**
TOP 3 (8-10)	34	32	16	41	40	30	24	19	52	30	37	36	30	31	34	43	68	0	71	20	25	36	46	32
MID 4 (4-7)	38	48	25	30	42	35	54	45	22	35	39	33	47	34	39	37	32	43	27	42	43	36	22	36
BOTTOM 4 (0-3)	29	20	59	29	18	35	22	36	27	35	24	31	23	35	27	20	0	57	3	38	32	29	33	32
MEAN	5.6	5.9	3.9	5.7	6.3	5.1	5.5	4.7	6.4	4.8	6.0	5.6	5.6	5.5	5.7	6.3	8.6	2.6	8.0	4.7	5.4	5.6	5.7	5.6

This question was randomly posed to approximately one in nine respondents.

NAVIGANT

2019 Electricity Usage Surveys - Residential

TABLE 33_9:

Before today, how familiar were you with:

Outdoor Motion Sensors

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
10 - Completely familiar	30	23	19	42	29	31	28	32	30	34	29	34	25	27	33	32	47	0	41	27	29	43	26	32
9	8	10	7	6	3	11	3	4	15	10	6	10	4	10	6	11	12	0	9	7	6	3	15	22
8	16	10	31	18	30	6	28	13	8	17	17	15	18	19	14	18	25	0	37	10	18	15	3	19
7	10	8	18	10	16	6	5	13	12	9	11	13	5	11	10	9	16	0	3	12	10	17	28	0
6	5	6	6	4	5	6	2	10	3	4	5	5	6	6	6	8	0	15	6	5	5	0	7	12
5	12	17	13	7	9	15	11	8	18	11	15	12	13	14	10	9	0	34	0	16	21	7	7	10
4	4	6	7	1	1	7	6	6	1	5	3	3	6	6	5	0	0	12	0	5	6	0	3	5
3	3	4	0	1	0	4	2	2	4	0	3	0	6	1	2	6	0	7	0	3	0	0	0	0
2	4	6	0	2	3	4	3	0	7	0	6	4	4	0	4	6	0	10	0	5	0	11	0	0
1	3	5	0	2	4	2	0	9	0	6	2	0	8	4	4	0	0	8	0	4	0	0	0	0
0 - Completely unfamiliar	5	6	0	6	0	7	11	3	2	4	4	4	6	1	6	2	0	14	3	6	6	3	10	0
WEIGHTED SAMPLE SIZE (#)	**132**	**61**	**16**	**55**	**54**	**76**	**39**	**45**	**47**	**39**	**83**	**80**	**52**	**50**	**90**	**33**	**84**	**48**	**30**	**102**	**23**	**25**	**15**	**17**
UNWEIGHTED SAMPLE SIZE (#)	**133**	**64**	**15**	**54**	**52**	**80**	**32**	**45**	**56**	**35**	**86**	**84**	**49**	**50**	**90**	**35**	**85**	**48**	**28**	**105**	**22**	**27**	**17**	**18**
TOP 3 (8-10)	54	43	56	66	62	48	60	49	53	61	51	58	47	56	53	61	84	0	87	44	53	62	45	73
MID 4 (4-7)	32	37	44	23	31	33	24	37	34	30	34	34	29	38	31	25	16	61	10	38	41	24	45	27
BOTTOM 4 (0-3)	14	20	0	11	7	18	16	14	13	10	15	8	24	6	15	14	0	39	3	18	6	14	10	0
MEAN	7.0	6.3	7.5	7.6	7.6	6.6	6.7	6.9	7.2	7.3	6.9	7.5	6.2	7.3	6.9	7.4	8.9	3.6	8.5	6.5	7.1	7.6	7.1	8.1

This question was randomly posed to approximately one in nine respondents.

2019 Electricity Usage Surveys - Residential

TABLE 34A:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[15] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	37	33	48	37	38	35	39	36	36	44	35	34	42	32	35	28	42	32	46	33	33	37	26	37
No	63	67	52	63	62	65	61	64	64	56	65	66	58	68	65	72	58	68	54	67	67	63	74	63
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

TABLE 34B:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[25] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	50	47	61	48	52	46	49	53	48	51	50	50	50	47	49	42	55	45	59	46	46	53	47	52
No	50	53	39	52	48	54	51	47	52	49	50	50	50	53	51	58	45	55	41	54	54	47	53	48
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

2019 Electricity Usage Surveys - Residential

TABLE 34C:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[35] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	56	55	61	55	59	53	56	61	53	57	57	57	55	55	54	49	61	52	67	52	54	60	57	56
No	44	45	39	45	41	47	44	39	47	43	43	43	45	45	46	51	39	48	33	48	46	40	43	44
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

TABLE 34D:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[45] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	63	65	63	60	65	60	67	65	57	62	65	63	62	60	63	59	66	60	72	59	63	67	59	60
No	37	35	37	40	35	40	33	35	43	38	35	37	38	40	37	41	34	40	28	41	37	33	41	40
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

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2019 Electricity Usage Surveys - Residential

TABLE 34E:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[55] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	69	70	70	66	71	66	71	72	64	63	73	69	67	65	70	69	72	66	81	64	76	73	63	63
No	31	30	30	34	29	34	29	28	36	37	27	31	33	35	30	31	28	34	19	36	24	27	37	37
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

TABLE 34F:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[65] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	73	74	80	70	74	72	78	77	67	67	77	74	70	70	76	74	77	70	83	70	80	80	65	71
No	27	26	20	30	26	28	22	23	33	33	23	26	30	30	24	26	23	30	17	30	20	20	35	29
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

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2019 Electricity Usage Surveys - Residential

TABLE 34G:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[75] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	80	82	87	77	81	80	85	83	75	76	84	82	77	78	83	83	85	77	87	78	87	86	78	77
No	20	18	13	23	19	20	15	17	25	24	16	18	23	22	17	17	15	23	13	22	13	14	22	23
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

TABLE 34H:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[85] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	83	84	89	80	83	83	87	86	78	77	86	85	79	81	85	88	88	79	91	80	90	87	86	78
No	17	16	11	20	17	17	13	14	22	23	14	15	21	19	15	12	12	21	9	20	10	13	14	22
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

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2019 Electricity Usage Surveys - Residential

TABLE 34I:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your home, but changes the amount of energy consumed. An example might be [ITEM SEEN IN Q33].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $75 if the project saved $[95] per year?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	86	88	90	83	86	86	90	88	81	82	88	88	82	84	88	92	89	83	93	84	92	90	91	80
No	14	12	10	17	14	14	10	12	19	18	12	12	18	16	12	8	11	17	7	16	8	10	9	20
WEIGHTED SAMPLE SIZE (#)	**511**	**220**	**75**	**215**	**268**	**241**	**147**	**160**	**204**	**134**	**338**	**343**	**167**	**215**	**300**	**144**	**245**	**266**	**139**	**371**	**98**	**91**	**58**	**82**
UNWEIGHTED SAMPLE SIZE (#)	**504**	**234**	**68**	**202**	**244**	**258**	**118**	**164**	**222**	**122**	**342**	**346**	**158**	**215**	**294**	**149**	**243**	**261**	**133**	**371**	**102**	**90**	**59**	**80**

This table excludes those who responded 'Don't know' to any of Q34a-i.

TABLE 36A:

Including yourself, how many household members live in your home?

Number of adults 18 or older

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
1	26	26	25	27	24	28	24	25	28	36	23	20	40	24	26	15	25	28	28	26	18	17	16	29
2	55	54	55	57	56	55	53	52	60	46	59	63	40	52	57	67	57	54	54	56	65	65	67	58
3	13	16	13	11	15	12	16	16	10	12	13	13	12	17	11	14	14	13	13	13	13	12	14	11
4 or more	5	4	7	5	6	4	7	7	3	5	5	4	7	7	6	4	5	5	6	5	4	7	3	3
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	2.0	2.0	2.0	2.0	2.1	1.9	2.1	2.1	1.9	1.9	2.0	2.0	1.9	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	1.9

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2019 Electricity Usage Surveys - Residential

TABLE 36B:

Including yourself, how many household members live in your home?

Number of children under age of 18

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
None (0)	76	75	74	78	75	76	63	60	95	78	74	74	79	77	72	76	75	76	70	77	61	77	83	78
1	12	14	12	11	14	10	21	17	4	12	13	11	15	12	15	12	12	13	17	11	18	8	8	9
2	9	8	9	9	9	9	12	16	1	6	11	11	4	8	9	9	10	8	11	8	12	12	8	11
3	2	3	4	2	2	3	3	5	0	2	3	4	0	2	3	3	3	2	2	3	8	3	1	2
4 or more	1	0	1	1	0	1	1	1	0	2	0	0	2	1	1	0	0	1	1	1	1	0	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**
MEAN	1.7	1.6	1.8	1.7	1.5	1.8	1.6	1.8	1.3	1.7	1.7	1.7	1.5	1.7	1.6	1.6	1.7	1.6	1.6	1.7	1.8	1.7	1.6	1.7

TABLE 37A:

[IF Q36A AND Q36B TOTAL 1] Was your household income before taxes last year below $21,822?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	31	24	35	39	29	33	29	37	30	100	0	25	38	29	32	28	27	35	34	31	7	41	25	23
No	59	67	56	52	62	57	69	57	57	0	100	67	52	57	63	66	63	56	49	62	78	59	70	67
Prefer not to say	7	8	6	6	7	6	2	6	8	0	0	6	7	9	5	6	6	7	10	6	14	0	0	5
Don't know/Not sure	3	2	4	3	1	4	0	0	5	0	0	3	3	5	0	0	3	2	6	1	0	0	6	4
WEIGHTED SAMPLE SIZE (#)	**230**	**104**	**31**	**95**	**93**	**136**	**47**	**65**	**118**	**72**	**136**	**114**	**115**	**90**	**125**	**32**	**96**	**133**	**54**	**176**	**24**	**25**	**19**	**41**
UNWEIGHTED SAMPLE SIZE (#)	**226**	**109**	**28**	**89**	**86**	**140**	**41**	**62**	**123**	**71**	**133**	**110**	**116**	**92**	**120**	**31**	**97**	**129**	**51**	**175**	**25**	**20**	**18**	**41**

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2019 Electricity Usage Surveys - Residential

TABLE 37B:

[IF Q36A AND Q36B TOTAL 2-4] Was your household income before taxes last year below $40,548?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	24	15	32	30	24	24	36	19	21	100	0	21	34	27	24	15	25	23	20	25	14	16	15	37
No	65	71	63	59	68	63	53	74	66	0	100	70	51	62	68	75	65	65	72	63	80	77	68	56
Prefer not to say	8	10	5	7	5	11	5	7	11	0	0	7	10	8	7	10	8	8	6	8	5	6	15	4
Don't know/Not sure	3	3	1	4	3	3	7	1	2	0	0	2	6	4	1	0	2	4	1	3	1	1	2	3
WEIGHTED SAMPLE SIZE (#)	**719**	**309**	**101**	**308**	**361**	**355**	**178**	**227**	**313**	**173**	**467**	**525**	**193**	**305**	**412**	**215**	**331**	**388**	**153**	**566**	**128**	**138**	**118**	**110**
UNWEIGHTED SAMPLE SIZE (#)	**724**	**336**	**94**	**294**	**344**	**377**	**146**	**237**	**341**	**158**	**485**	**539**	**185**	**309**	**419**	**225**	**333**	**391**	**153**	**571**	**130**	**144**	**127**	**107**

TABLE 37C:

[IF Q36A AND Q36B TOTAL 5 OR MORE] Was your household income before taxes last year below $57,747?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	29	14	32	46	19	35	31	29	24	100	0	17	48	34	26	38	39	20	27	30	0	17	39	26
No	66	81	60	54	77	61	69	67	39	0	100	76	52	62	68	53	61	72	66	67	92	68	61	74
Prefer not to say	2	0	8	0	5	0	0	0	37	0	0	3	0	0	3	9	0	4	7	0	0	15	0	0
Don't know/Not sure	2	5	0	0	0	4	0	3	0	0	0	4	0	4	3	0	0	4	0	3	8	0	0	0
WEIGHTED SAMPLE SIZE (#)	**54**	**22**	**13**	**19**	**22**	**30**	**17**	**33**	**3**	**16**	**36**	**32**	**21**	**28**	**35**	**11**	**27**	**27**	**14**	**40**	**15**	**7**	**5**	**4**
UNWEIGHTED SAMPLE SIZE (#)	**52**	**19**	**13**	**20**	**20**	**31**	**15**	**34**	**3**	**17**	**33**	**32**	**20**	**27**	**34**	**12**	**28**	**24**	**14**	**38**	**14**	**6**	**5**	**5**

2019 Electricity Usage Surveys - Residential

TABLE 38:

Do you live within a First Nations Community?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Yes	2	2	4	1	2	2	5	1	1	6	1	3	1	2	3	2	3	1	5	1	5	1	0	2
No	96	95	95	97	95	97	91	97	98	91	98	97	95	96	95	97	96	96	93	97	93	98	100	96
Prefer not to say	1	1	0	1	1	0	1	1	0	1	0	0	1	0	1	1	1	1	1	1	0	1	0	0
Don't know/Not sure	1	1	1	1	1	1	4	1	0	3	0	0	2	1	1	0	0	2	0	1	1	0	0	1
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

TABLE 39:

What is the main source of energy used to heat your principal place of residence?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Electricity	33	39	27	29	34	32	49	34	24	32	36	28	44	8	58	19	31	35	33	34	44	39	13	13
Oil	31	29	46	28	30	32	18	31	38	34	29	34	24	74	13	12	34	29	29	32	16	22	44	57
Heat pump/Mini-split heat pump	16	14	12	19	15	17	8	16	20	11	18	21	7	9	16	61	17	15	19	15	25	20	29	12
Wood/pellets	9	2	9	16	9	9	11	11	6	11	8	12	3	9	9	3	9	9	8	9	7	15	11	13
Natural gas	4	8	1	0	4	3	3	2	5	2	4	1	8	0	1	3	4	3	5	3	5	0	0	1
Propane	2	1	1	2	2	1	2	3	0	3	1	2	2	0	2	0	2	1	3	1	1	2	1	3
Solar	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	2	1	4	2	2	2	2	1	3	3	2	2	3	1	1	1	2	2	3	2	1	1	2	3
Don't know/Not sure	3	5	0	3	3	4	7	2	3	4	2	0	9	0	0	0	2	5	1	4	2	0	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

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2019 Electricity Usage Surveys - Residential

TABLE 40:

[IF Q39 NOT 'Don't know/Not sure'] What other types of heating, if any, do you currently have for your principal place of residence? Please select all that apply.

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Electricity	26	21	25	30	24	27	17	29	27	25	26	30	16	22	43	41	28	23	28	25	30	31	27	31
Wood/pellets	16	9	19	22	17	15	12	15	19	13	16	21	5	14	15	26	19	14	20	15	15	24	28	19
Oil	12	8	12	15	12	11	14	11	11	12	11	13	8	26	8	19	11	12	12	11	11	9	16	17
Heat pump/Mini-split heat pump	10	10	10	11	12	9	11	9	11	7	12	12	6	11	11	39	11	9	16	9	19	10	13	7
Propane	6	7	9	3	7	6	7	5	6	5	7	6	5	5	7	7	7	5	9	5	13	8	0	3
Natural gas	2	3	1	0	3	0	5	1	0	3	1	1	2	1	2	2	2	1	4	1	6	0	0	0
Solar	1	1	1	1	2	1	2	1	1	1	2	1	1	2	2	2	1	2	3	1	2	1	2	1
Other	1	2	1	0	1	2	1	2	0	2	1	1	0	1	1	1	1	1	1	1	2	2	2	1
None – no other type of heating is used in my home	38	43	37	32	36	39	41	35	38	40	37	30	55	37	29	3	34	41	28	40	26	28	31	34
Don't know/Not sure	3	6	2	0	1	5	7	2	1	5	2	1	8	1	3	1	1	5	2	3	2	1	0	1
WEIGHTED SAMPLE SIZE (#)	**968**	**412**	**145**	**411**	**463**	**502**	**225**	**321**	**422**	**251**	**628**	**669**	**299**	**423**	**572**	**258**	**447**	**521**	**218**	**750**	**164**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**970**	**439**	**135**	**396**	**439**	**528**	**189**	**329**	**452**	**235**	**640**	**679**	**291**	**428**	**573**	**268**	**452**	**518**	**215**	**755**	**167**	**170**	**150**	**153**

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2019 Electricity Usage Surveys - Residential

TABLE 39+40:

What is the main source of energy used to heat your principal place of residence?

[IF Q39 NOT 'Don't know/Not sure'] What other types of heating, if any, do you currently have for your principal place of residence? Please select all that apply.

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Electricity	58	59	51	58	57	58	65	62	50	57	61	57	59	30	100	60	58	57	60	57	73	69	41	43
Oil	42	36	57	43	42	43	31	42	49	45	40	47	32	100	22	32	45	40	41	42	27	31	60	74
Heat pump/Mini-split heat pump	26	23	22	30	26	26	18	25	31	18	30	33	12	19	27	100	28	24	35	23	44	30	42	18
Wood/pellets	24	11	28	37	26	23	22	25	25	24	24	33	8	23	24	29	28	22	27	24	22	39	38	31
Propane	7	8	11	5	9	6	8	8	6	7	8	8	6	5	8	8	9	6	12	6	14	10	2	6
Natural gas	5	11	2	0	7	3	8	3	5	5	5	3	10	1	3	4	6	4	9	4	11	0	0	1
Solar	1	1	1	1	2	1	2	1	1	1	2	1	1	2	2	2	1	1	3	1	2	1	2	1
Other	3	3	4	2	2	3	3	3	3	4	2	3	3	2	1	1	3	3	4	3	2	3	3	3
Don't know/Not sure	3	5	0	3	3	4	7	2	3	4	2	0	9	0	0	0	2	5	1	4	2	0	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

TABLE 41:

[IF Q39 OR Q40 'Electricity] What type of electric heating does your residence use?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Electric Baseboards (e.g., small electric heaters, places throughout your building, typically under windows)	66	65	68	66	65	66	60	72	63	62	68	67	63	48	66	56	62	69	52	70	60	78	69	61
Ductless/Mini-Split Heat Pump (i.e., a heat pump system that has an indoor unit placed on a wall, that typically only heats a small area of the building)	6	6	1	8	7	5	6	6	7	6	7	8	2	7	6	20	9	4	14	4	11	7	10	4
Electric Resistance Boiler (i.e., a central furnace which uses an electric heating element and distributes heat through hot water, to your floor or radiators)	5	7	7	3	5	6	7	3	5	7	4	4	7	4	5	7	4	6	6	5	9	1	2	3
Electric Resistance Furnace (i.e., a central furnace which uses an electric heating element and distributes heat through forced-air)	4	7	2	2	4	4	9	3	1	4	4	3	6	9	4	0	5	3	8	3	4	0	3	3
Central Air-Source Heat Pump (i.e., a central heat pump system that heats all or most of the building, through distributed hot water or hot air)	4	4	4	4	5	3	3	3	5	3	4	4	4	3	4	9	6	2	5	3	6	2	1	4
Ground-Source Heat Pump (i.e., a central heat pump that collects heat from tubes in the ground outside of your building)	0	1	0	0	0	1	2	0	0	0	0	0	1	1	0	0	0	1	0	1	1	0	0	0
Other	7	4	9	10	7	8	2	7	11	10	6	9	5	14	7	6	10	6	12	6	5	7	12	15
Don't know/Not sure	7	7	9	8	7	8	11	6	7	9	6	5	13	13	7	2	4	10	4	9	4	4	2	8

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2019 Electricity Usage Surveys - Residential

TABLE 41:

[IF Q39 OR Q40 'Electricity] What type of electric heating does your residence use?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
WEIGHTED SAMPLE SIZE (#)	**577**	**256**	**74**	**247**	**274**	**300**	**157**	**203**	**217**	**148**	**388**	**384**	**193**	**126**	**572**	**155**	**263**	**314**	**133**	**445**	**122**	**116**	**58**	**67**
UNWEIGHTED SAMPLE SIZE (#)	**579**	**270**	**69**	**240**	**260**	**316**	**134**	**206**	**239**	**142**	**392**	**395**	**184**	**134**	**573**	**163**	**272**	**307**	**131**	**448**	**120**	**118**	**67**	**68**

TABLE 42:

[IF Q5 'Owned'] And approximately how many years old is your home?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
20 years or less	25	36	13	20	25	25	35	29	19	14	29	25	0	14	32	33	22	27	27	24	100	0	0	0
21-35 years	25	27	20	25	28	22	24	30	22	23	27	25	0	17	31	24	27	23	20	27	0	100	0	0
36-50 years	21	19	19	24	20	23	9	16	28	17	21	21	0	27	15	27	22	20	19	22	0	0	100	0
51 or more years	23	13	40	25	23	23	23	19	26	36	20	23	0	36	17	13	23	23	28	22	0	0	0	100
Don't know/Not sure	6	4	8	6	4	8	8	6	4	9	4	6	0	7	6	3	5	6	5	6	0	0	0	0
WEIGHTED SAMPLE SIZE (#)	**672**	**255**	**116**	**302**	**323**	**349**	**104**	**226**	**342**	**142**	**470**	**672**	**0**	**318**	**380**	**218**	**323**	**350**	**160**	**512**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**681**	**275**	**110**	**296**	**315**	**365**	**88**	**232**	**361**	**135**	**480**	**681**	**0**	**327**	**391**	**224**	**327**	**354**	**162**	**519**	**169**	**170**	**150**	**153**
MEAN	42.5	32.9	53.9	46.4	41.6	43.4	37.3	38.3	46.6	55.1	38.5	42.5	.	53.7	36.0	34.9	44.1	40.9	46.1	41.3	12.2	28.9	43.8	88.3

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2019 Electricity Usage Surveys - Residential

TABLE 43:

Does your household pay for its own electricity or does someone else pay for it?

	OVERALL %	REGION			GENDER		AGE			LOW INCOME		HOME		HEATING TYPE(S)			INEXPENSIVE UPGRADES		EXPENSIVE UPGRADES		AGE OF HOME			
		HRM	Cape Breton	Other Mainland NS	Male	Female	18-34	35-54	55+	Yes	No	Own	Rent	Oil	Electricity	Heat pump	Familiar (7-10)	Unfamiliar (0-6)	Familiar (7-10)	Unfamiliar (0-6)	0-20 yrs	21-35 yrs	36-50 yrs	51+ yrs
Household pays for it	89	89	91	87	87	91	78	91	93	84	92	98	71	94	88	93	91	87	91	88	96	100	98	98
Someone else pays for it	10	10	8	11	12	9	19	8	6	14	7	2	26	6	11	7	8	11	8	10	4	0	2	2
Don't know/Not sure	1	1	1	2	1	1	3	1	0	1	1	0	4	0	1	0	1	1	0	1	0	0	0	0
WEIGHTED SAMPLE SIZE (#)	**1002**	**435**	**145**	**422**	**477**	**521**	**242**	**326**	**434**	**261**	**639**	**672**	**330**	**423**	**572**	**258**	**454**	**548**	**220**	**782**	**167**	**169**	**142**	**156**
UNWEIGHTED SAMPLE SIZE (#)	**1002**	**464**	**135**	**403**	**450**	**548**	**202**	**333**	**467**	**246**	**651**	**681**	**321**	**428**	**573**	**268**	**458**	**544**	**218**	**784**	**169**	**170**	**150**	**153**

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2019 Electricity Usage Surveys - Business

TABLE 1:

Please indicate in which of the following areas your business is located. If your business has multiple locations, please indicate the location at which you work specifically.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Halifax Regional Municipality (HRM)	61	100	0	0	64	59	49	47	84	47	65	75	48	64	58
Elsewhere on Mainland Nova Scotia outside HRM	28	0	0	100	25	28	38	40	9	38	27	13	38	25	29
Cape Breton Island	11	0	100	0	11	13	13	13	7	16	8	13	14	11	13
SAMPLE SIZE (#)	**200**	**121**	**22**	**57**	**110**	**78**	**53**	**53**	**45**	**45**	**63**	**40**	**63**	**111**	**45**

This and all subsequent questions were optional.

TABLE 3:

For the remainder of the survey, please think about the business location where you personally work. Do you currently own, lease, or rent the premises at your business' Nova Scotia location where you work?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Own	59	60	55	56	100	0	57	55	60	56	61	62	61	60	75
Lease	17	16	32	12	0	41	11	22	21	11	19	22	12	15	9
Rent	24	23	14	32	0	59	32	22	19	33	19	16	27	26	16
SAMPLE SIZE (#)	**188**	**116**	**22**	**50**	**110**	**78**	**53**	**49**	**43**	**45**	**62**	**37**	**59**	**109**	**44**

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2019 Electricity Usage Surveys - Business

TABLE 4:

How many electrical power bars do you have at your business' Nova Scotia location where you work? A power bar is a block of electrical sockets that attaches to the end of a flexible cable allowing multiple electrical devices to be powered from a single electrical socket.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	6	2	14	11	4	7	6	6	0	5	2	6	6	2	5
1	10	9	0	20	10	12	19	6	3	19	7	3	13	5	14
2	12	13	14	9	13	12	17	10	8	17	17	6	8	14	14
3	10	10	19	7	14	6	19	8	5	21	7	3	8	13	11
4	7	6	10	9	9	4	9	4	13	12	2	9	11	10	5
5	7	8	0	9	5	10	15	8	3	12	12	0	8	9	9
6-10	20	18	24	22	17	22	9	40	5	12	26	14	25	21	23
11 or more	27	34	19	15	27	25	6	17	63	2	28	60	23	26	20
SAMPLE SIZE (#)	**172**	**105**	**21**	**46**	**99**	**67**	**47**	**48**	**38**	**42**	**58**	**35**	**53**	**96**	**44**
MEAN	14.5	18.7	11.5	6.7	14.2	12.4	5.8	8.0	29.3	3.9	13.3	33.1	11.7	14.7	11.7

Responses of greater than 225 were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Business

TABLE 5:

[IF Q4 1 OR MORE] Of this/these [Q4 RESPONSE] power bar(s), how many are smart power bars, that is, can be controlled via smart phone or computer or turn off automatically when you leave the room?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	83	83	67	93	82	84	86	91	71	90	79	76	76	80	83
1	3	4	0	2	1	6	0	4	3	0	4	3	6	4	2
2	4	4	6	5	6	2	9	2	3	5	7	3	6	5	7
3	2	1	17	0	2	3	0	2	3	3	4	0	4	2	0
4	1	0	6	0	1	0	2	0	0	3	0	0	0	1	0
5	2	3	0	0	3	0	0	0	8	0	5	0	0	2	2
6-10	2	3	0	0	2	2	0	0	8	0	2	6	4	2	2
11 or more	2	3	6	0	2	3	2	0	5	0	0	12	4	3	2
SAMPLE SIZE (#)	**162**	**103**	**18**	**41**	**95**	**62**	**44**	**45**	**38**	**40**	**57**	**33**	**50**	**94**	**42**
MEAN	.8	.8	2.5	.1	.8	.9	.3	.2	2.7	.3	.7	2.5	1.3	.9	.5

Responses of greater than 30 were excluded from calculation of the mean.

TABLE 4+5 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Q4. How many electrical power bars do you have at your business' Nova Scotia location where you work? A power bar is a block of electrical sockets that attaches to the end of a flexible cable allowing multiple electrical devices to be powered from a single electrical socket.
Q5. [IF Q4 1 OR MORE] Of this/these [Q4 RESPONSE] power bar(s), how many are smart power bars, that is, can be controlled via smart phone or computer or turn off automatically when you leave the room?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion smart	6	4	19	2	6	6	7	2	10	7	5	8	12	6	5
SAMPLE SIZE (#)	**158**	**99**	**18**	**41**	**93**	**60**	**43**	**45**	**36**	**40**	**57**	**29**	**49**	**90**	**41**

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2019 Electricity Usage Surveys - Business

TABLE 6:

How many computer servers does your business have onsite at your business' Nova Scotia location where you work? There may be many servers on a single rack, but we want to know the number of individual servers.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	22	22	10	26	22	23	32	11	14	32	16	9	25	14	20
1	35	31	40	43	38	33	43	46	27	32	42	32	38	40	29
2	12	13	10	13	12	14	11	13	11	20	11	3	9	12	17
3	6	6	0	9	8	5	2	11	5	5	11	0	5	5	7
4	2	3	5	0	2	3	2	4	3	2	2	6	4	2	5
5	4	4	5	2	1	8	4	0	8	2	2	9	4	2	0
6 or more	18	21	30	7	18	14	6	15	32	7	18	41	15	24	22
SAMPLE SIZE (#)	**161**	**95**	**20**	**46**	**93**	**64**	**47**	**46**	**37**	**41**	**57**	**34**	**55**	**92**	**41**
MEAN	6.4	8.5	4.5	2.9	6.8	5.3	1.4	5.7	13.7	2.9	6.5	13.1	5.0	7.6	7.4

Responses of greater than 100 were excluded from calculation of the mean.

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TABLE 7:

[IF Q6 1 OR MORE] Of this/these [Q6 RESPONSE] server(s), how many use server virtualization and decommissioning? Server virtualization is a way of reducing the number of physical computer servers by running multiple, independent operating systems on a single server.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	55	51	39	71	49	61	69	63	28	64	44	45	59	56	39
1	21	16	33	24	25	16	9	29	28	21	29	13	20	16	27
2	6	9	0	3	5	8	13	2	0	7	10	0	0	6	12
3	4	1	17	3	5	2	6	0	3	7	2	6	7	3	3
4	1	1	0	0	0	2	0	0	3	0	2	0	0	1	0
5	3	4	6	0	4	2	0	2	9	0	2	10	2	3	6
6 or more	10	16	6	0	11	8	3	2	28	0	10	26	12	15	12
SAMPLE SIZE (#)	**126**	**74**	**18**	**34**	**73**	**49**	**32**	**41**	**32**	**28**	**48**	**31**	**41**	**79**	**33**
MEAN	2.5	3.7	1.7	.4	3.2	1.5	.7	1.2	6.9	.6	2.9	5.2	2.4	3.1	2.2

Responses of greater than 65 were excluded from calculation of the mean.

TABLE 6+7 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Q6. How many computer servers does your business have onsite at your business' Nova Scotia location where you work? There may be many servers on a single rack, but we want to know the number of individual servers.
Q7. [IF Q6 1 OR MORE] Of this/these [Q6 RESPONSE] server(s), how many use server virtualization and decommissioning? Server virtualization is a way of reducing the number of physical computer servers by running multiple, independent operating systems on a single server.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion using virtualization	31	35	33	10	35	28	36	19	50	14	32	43	36	38	34
SAMPLE SIZE (#)	**122**	**70**	**18**	**34**	**71**	**48**	**32**	**41**	**28**	**28**	**46**	**29**	**41**	**75**	**32**

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2019 Electricity Usage Surveys - Business

TABLE 8:

How many hot water heaters do you have for your business' Nova Scotia location where you work?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	17	19	24	10	12	26	22	13	10	19	16	11	9	12	9
1	56	53	43	68	61	49	69	65	35	74	57	31	62	59	68
2	15	15	19	14	14	16	4	21	30	2	20	31	19	18	14
3 or more	11	13	14	8	13	9	6	2	25	5	7	26	10	11	9
SAMPLE SIZE (#)	**175**	**104**	**21**	**50**	**101**	**69**	**51**	**48**	**40**	**43**	**61**	**35**	**58**	**100**	**44**
MEAN	1.3	1.3	1.4	1.2	1.4	1.1	1.0	1.1	1.8	1.0	1.2	2.0	1.4	1.4	1.2

Responses of greater than 6 were excluded from calculation of the mean.

TABLE 9A-D (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

[IF Q8 '1' OR MORE] Of this/these [Q8 RESPONSE] how water heater(s), how many...

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Have a hot water heater tank wrap	38	47	13	33	39	40	53	31	38	64	51	27	45	46	29
Are heat pump water heaters	21	33	13	6	24	19	13	15	38	7	23	34	25	22	35
Are smart water heaters	11	14	27	2	13	8	6	5	21	4	9	18	11	8	16
Have a large duct for exhaust gas	8	14	0	2	10	6	6	5	15	0	9	16	12	12	12
SAMPLE SIZE (#)	**90**	**48**	**8**	**34**	**58**	**30**	**25**	**29**	**22**	**25**	**30**	**19**	**35**	**50**	**26**

This table excludes responses of 'Don't know'.

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2019 Electricity Usage Surveys - Business

TABLE 10A:

Thinking about your building for your business' Nova Scotia location where you work... Does your building...

Have open coolers, that is, coolers that do not have covers or doors?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	9	12	10	4	10	8	6	10	14	9	10	17	11	11	20
No	61	58	75	61	69	51	63	56	64	61	66	72	53	66	61
Not applicable	30	30	15	35	22	41	31	35	21	30	25	11	35	23	18
SAMPLE SIZE (#)	**182**	**108**	**20**	**54**	**102**	**74**	**52**	**52**	**42**	**44**	**61**	**36**	**62**	**104**	**44**

TABLE 10B:

Thinking about your building for your business' Nova Scotia location where you work... Does your building...

Have strategic energy management or organized management approach? This is the process of monitoring, controlling, and conserving energy within and organization in a systematic way.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	22	30	26	6	21	25	10	18	47	7	27	43	19	28	27
No	53	45	58	69	57	46	66	60	34	68	53	51	58	54	58
Not applicable	24	25	16	25	22	29	24	22	18	25	20	6	24	18	16
SAMPLE SIZE (#)	**174**	**104**	**19**	**51**	**101**	**69**	**50**	**50**	**38**	**44**	**59**	**35**	**59**	**101**	**45**

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2019 Electricity Usage Surveys - Business

TABLE 10C:

Thinking about your building for your business' Nova Scotia location where you work... Does your building...

Have Door heater controls such as anti-sweat heaters (ASH)? These are electric resistance heaters that are installed in the frames and doors of refrigerated cases to reduce condensation and prevent fogging. These are particularly common in grocery and convenience stores.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	13	17	15	2	14	10	8	12	23	11	14	22	12	14	22
No	64	57	70	76	66	59	66	70	56	67	66	69	63	67	62
Not applicable	24	26	15	22	20	31	26	18	21	22	20	8	25	19	16
SAMPLE SIZE (#)	**176**	**106**	**20**	**50**	**101**	**71**	**50**	**50**	**39**	**45**	**59**	**36**	**60**	**101**	**45**

TABLE 10D:

Thinking about your building for your business' Nova Scotia location where you work... Does your building...

Have a packaged terminal heat pump (PTHP)? A PTHP provides heating and cooling room by room often for applications common in hotels and motels.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	25	27	48	10	28	21	18	27	37	14	34	32	27	28	52
No	53	50	33	67	54	47	59	57	45	61	49	59	50	57	32
Not applicable	23	24	19	22	18	31	24	16	18	25	17	9	23	15	16
SAMPLE SIZE (#)	**175**	**105**	**21**	**49**	**101**	**70**	**51**	**49**	**38**	**44**	**59**	**34**	**60**	**100**	**44**

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2019 Electricity Usage Surveys - Business

TABLE 10E:

Thinking about your building for your business' Nova Scotia location where you work... Does your building...

In your heating, cooling and ventilation systems, is the speed of any fans or pumps automatically controlled by a variable frequency drive (VFD)?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	22	28	20	12	23	19	10	22	38	11	34	25	21	22	33
No	53	47	55	64	57	48	60	60	38	60	52	63	50	60	49
Not applicable	25	26	25	24	20	33	30	18	24	29	14	13	29	17	18
SAMPLE SIZE (#)	**168**	**98**	**20**	**50**	**99**	**67**	**50**	**45**	**37**	**45**	**56**	**32**	**58**	**98**	**45**

TABLE 11A:

[IF Q10A 'Yes', OR CODED AS ZERO IF Q10A 'No'] How many of each does your business have?

Open coolers, that is, coolers that do not have covers or doors?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	90	89	88	94	90	93	94	88	84	93	91	84	85	89	82
1	5	7	6	0	6	2	3	6	6	7	7	3	5	5	9
2	3	4	6	0	4	2	3	3	6	0	2	10	8	5	9
3 or more	2	0	0	6	0	2	0	3	3	0	0	3	3	1	0
SAMPLE SIZE (#)	**125**	**73**	**17**	**35**	**79**	**42**	**36**	**33**	**32**	**30**	**45**	**31**	**39**	**79**	**34**
MEAN	.3	.2	.2	.6	.1	.4	.1	.5	.4	.1	.1	.6	.4	.3	.3

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TABLE 11B:

[IF Q10C 'Yes', OR CODED AS ZERO IF Q10C 'No'] How many of each does your business have?

Door heater controls such as anti-sweat heaters (ASH)? These are electric resistance heaters that are installed in the frames and doors of refrigerated cases to reduce condensation and prevent fogging. These are particularly common in grocery and convenience stores.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	89	84	88	97	88	91	92	88	77	91	87	81	89	88	82
1	8	11	6	3	9	6	6	10	13	9	11	6	5	8	13
2	2	4	0	0	4	0	3	2	3	0	2	6	5	3	5
3 or more	2	1	6	0	0	2	0	0	6	0	0	6	2	3	0
SAMPLE SIZE (#)	**131**	**76**	**16**	**39**	**80**	**47**	**36**	**41**	**31**	**34**	**46**	**32**	**44**	**80**	**38**
MEAN	.2	.2	.5	.0	.2	.2	.1	.1	.5	.1	.2	.5	.3	.3	.2

TABLE 11C:

[IF Q10D 'Yes', OR CODED AS ZERO IF Q10D 'No'] How many of each does your business have?

Packaged terminal heat pumps (PTHP)? A PTHP provides heating and cooling room by room often for applications common in hotels and motels.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	76	77	50	87	73	80	82	73	67	87	69	73	77	75	44
1	14	17	13	8	16	11	10	15	20	13	17	13	12	12	25
2	6	6	19	0	7	4	5	7	10	0	10	7	5	8	22
3 or more	4	0	19	5	4	4	3	5	3	0	4	7	7	5	8
SAMPLE SIZE (#)	**131**	**77**	**16**	**38**	**81**	**46**	**39**	**41**	**30**	**31**	**48**	**30**	**43**	**83**	**36**
MEAN	.4	.3	1.2	.3	.5	.3	.4	.4	.5	.1	.4	.6	.6	.5	1.1

Responses of greater than 6 were excluded from calculation of the mean.

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TABLE 11D:

[IF Q10E 'Yes', OR CODED AS ZERO IF Q10E 'No'] How many of each does your business have?

Systems with variable frequency drive (VFD)? In your heating, cooling and ventilation systems, VFD automatically controls the speed of any fans or pumps.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	78	71	73	92	77	79	86	78	58	94	67	77	79	76	67
1	14	19	13	5	16	12	11	17	23	6	23	8	13	15	19
2	5	6	7	3	5	5	0	6	12	0	8	4	3	5	8
3 or more	3	4	7	0	3	5	3	0	8	0	2	12	5	4	6
SAMPLE SIZE (#)	**121**	**69**	**15**	**37**	**77**	**43**	**35**	**36**	**26**	**31**	**48**	**26**	**39**	**79**	**36**
MEAN	.4	.5	.6	.1	.4	.3	.3	.3	.8	.1	.4	.7	.4	.4	.6

Responses of greater than 6 were excluded from calculation of the mean.

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TABLE 13:

Approximately, how many motors does your business' HVAC, refrigeration equipment or appliances have?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	32	26	42	39	31	33	39	30	9	38	23	9	40	20	27
1	31	34	32	25	28	36	34	33	26	41	38	25	26	31	37
2	16	17	0	23	17	16	18	19	24	15	19	19	10	22	10
3 or more	21	24	26	14	24	16	9	19	41	5	19	47	24	26	27
SAMPLE SIZE (#)	**152**	**89**	**19**	**44**	**87**	**64**	**44**	**43**	**34**	**39**	**52**	**32**	**50**	**89**	**41**
MEAN	1.7	1.9	1.5	1.4	1.9	1.3	1.2	1.5	3.0	.9	1.5	3.5	1.7	2.2	2.2

Responses of greater than 10 were excluded from calculation of the mean.

TABLE 14:

[IF Q13 1 OR MORE] Of this/these motors, how many of your HVAC, refrigeration equipment, or appliances use EC Motors? EC Motors refer to an electronically commutated motor that uses electronic controls to vary its speed. They may be known as brushless DC motors.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	53	48	27	74	53	51	59	60	32	75	50	38	43	56	50
1	23	23	45	15	22	26	26	23	19	21	33	21	23	21	27
2	11	14	0	7	10	12	7	13	16	4	8	14	10	7	3
3 or more	13	15	27	4	15	12	7	3	32	0	10	28	23	15	20
SAMPLE SIZE (#)	**104**	**66**	**11**	**27**	**60**	**43**	**27**	**30**	**31**	**24**	**40**	**29**	**30**	**71**	**30**
MEAN	1.1	1.2	1.8	.5	1.2	1.0	.8	.6	2.0	.3	.9	1.9	1.6	1.1	1.4

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2019 Electricity Usage Surveys - Business

TABLE 13+14 (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Q13. Approximately, how many motors does your business' HVAC, refrigeration equipment or appliances have?
Q14. [IF Q13 1 OR MORE] Of this/these motors, how many of your HVAC, refrigeration equipment, or appliances use EC Motors? EC Motors refer to an electronically commutated motor that uses electronic controls to vary its speed. They may be known as brushless DC motors.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion using EC motors	43	46	71	23	42	52	42	29	60	19	46	49	55	42	46
SAMPLE SIZE (#)	**103**	**65**	**11**	**27**	**60**	**42**	**27**	**30**	**31**	**24**	**39**	**29**	**30**	**71**	**30**

TABLE 15A/16A (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Linear lighting (e.g. fluorescent or LED tubes) [Proportions are shown as a percentage of total bulbs (LED + non-LED)]

Q15A_1. Number of Non-LED Bulbs
Q15A_2. Number of LED Bulbs
Q16A. [IF Q15A_LED 1 OR MORE] Of these LED light bulbs, how many are connected to the internet (i.e., smart lightbulbs)?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion LED	60	61	68	50	55	68	43	54	78	36	51	79	41	71	63
Proportion Internet connected	8	8	16	1	3	15	2	0	15	8	1	7	2	8	3
SAMPLE SIZE (#)	**86**	**54**	**10**	**22**	**46**	**37**	**20**	**29**	**23**	**17**	**33**	**21**	**27**	**51**	**24**

Responses of greater than 1,000 bulbs were excluded from this table.

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2019 Electricity Usage Surveys - Business

TABLE 15B/16B (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Pole mounted area lights which is exterior lighting generally used to provide illumination to areas for vehicle and pedestrian use, with light fixtures mounted to poles [Proportions are shown as a percentage of total bulbs (LED + non-LED)]

Q15B_1. Number of Non-LED Bulbs
Q15B_2. Number of LED Bulbs..

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion LED	71	73	71	44	60	77	33	47	82	29	72	74	78	69	54
Proportion Internet connected	17	20	2	4	5	33	8	2	5	7	4	21	8	19	7
SAMPLE SIZE (#)	**51**	**32**	**7**	**12**	**34**	**14**	**11**	**19**	**14**	**7**	**22**	**14**	**15**	**35**	**22**

TABLE 15C/16C (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Track/Mono-point direction lights, which is a lighting system in which the lights are fitted on tracks, allowing variable positioning [Proportions are shown as a percentage of total bulbs (LED + non-LED)]

Q15C_1. Number of Non-LED Bulbs
Q15C_2. Number of LED Bulbs
Q16C. [IF Q15C_LED 1 OR MORE] Of these LED light bulbs, how many are connected to the internet (i.e., smart lightbulbs)?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion LED	86	86	100	92	96	57	97	62	85	86	88	86	74	88	80
Proportion Internet connected	6	4	56	29	4	11	4	31	5	17	12	2	37	5	21
SAMPLE SIZE (#)	**38**	**27**	**4**	**7**	**25**	**12**	**13**	**8**	**15**	**9**	**15**	**11**	**11**	**32**	**11**

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2019 Electricity Usage Surveys - Business

TABLE 15D/16D (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Downlight luminaire which is a small spotlight set in a ceiling and directed downwards [Proportions are shown as a percentage of total bulbs (LED + non-LED)]

Q15D_1. Number of Non-LED Bulbs
Q15D_2. Number of LED Bulbs
Q16D. [IF Q15D_LED 1 OR MORE] Of these LED light bulbs, how many are connected to the internet (i.e., smart lightbulbs)?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion LED	77	84	91	57	74	77	86	73	84	82	45	91	90	84	34
Proportion Internet connected	5	6	12	0	9	3	10	4	4	15	12	3	6	5	10
SAMPLE SIZE (#)	**39**	**21**	**5**	**13**	**22**	**15**	**11**	**12**	**11**	**8**	**13**	**12**	**10**	**25**	**19**

TABLE 15E/16E (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Flood lights, which areoutdoor fixture mounted on a building, structure, or ground. They are typically used to illuminate or highlight outdoor objects and features). [Proportions are shown as a percentage of total bulbs (LED + non-LED)]

Q15E_1. Number of Non-LED Bulbs
Q15E_2. Number of LED Bulbs
Q16E. [IF Q15E_LED 1 OR MORE] Of these LED light bulbs, how many are connected to the internet (i.e., smart lightbulbs)?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion LED	74	77	88	47	72	78	73	36	81	82	80	76	55	86	84
Proportion Internet connected	15	14	14	18	9	25	6	8	22	10	22	16	26	10	17
SAMPLE SIZE (#)	**59**	**33**	**7**	**19**	**37**	**18**	**14**	**19**	**16**	**12**	**20**	**14**	**19**	**40**	**19**

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TABLE 15F/16F (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

General service lights (i.e. have a base sized like a normal light bulb and screw into regular light sockets) [Proportions are shown as a percentage of total bulbs (LED + non-LED)]

Q15F_1. Number of Non-LED Bulbs
Q15F_2. Number of LED Bulbs
Q16F. [IF Q15F_LED 1 OR MORE] Of these LED light bulbs, how many are connected to the internet (i.e., smart lightbulbs)?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion LED	70	71	68	64	80	54	58	57	86	66	68	78	39	69	77
Proportion Internet connected	12	13	12	6	4	25	4	17	2	5	15	5	11	11	9
SAMPLE SIZE (#)	**82**	**51**	**9**	**22**	**52**	**29**	**33**	**22**	**17**	**24**	**29**	**14**	**25**	**53**	**25**

Responses of greater than 1,000 bulbs were excluded from this table.

TABLE 15G/16G (Responses shown as a proportion of the total number of specific items, and not of the number of respondents):

Parking garage lights [Proportions are shown as a percentage of total bulbs (LED + non-LED)]

Q15G_1. Number of Non-LED Bulbs
Q15G_2. Number of LED Bulbs
Q16G. [IF Q15G_LED 1 OR MORE] Of these LED light bulbs, how many are connected to the internet (i.e., smart lightbulbs)?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Proportion LED	75	77	53	55	57	85	69	58	76	71	66	79	56	81	56
Proportion Internet connected	4	3	28	7	6	2	2	7	1	4	10	1	11	5	14
SAMPLE SIZE (#)	**52**	**38**	**3**	**11**	**32**	**19**	**13**	**12**	**19**	**11**	**18**	**18**	**14**	**36**	**13**

Responses of greater than 1,000 bulbs were excluded from this table.

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2019 Electricity Usage Surveys - Business

TABLE 17:

Approximately, how many occupancy sensors does your business' building/facility have? Occupancy sensors are motion detectors that will turn off lights when people are not present.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	71	69	78	73	68	74	82	82	50	78	67	63	76	69	63
1	6	5	0	12	6	7	4	4	8	13	8	3	4	7	12
2	7	4	11	12	11	3	10	10	5	8	12	0	4	9	9
3 or more	15	22	11	4	15	16	4	4	38	3	13	34	17	15	16
SAMPLE SIZE (#)	**170**	**101**	**18**	**51**	**95**	**69**	**51**	**49**	**40**	**40**	**60**	**35**	**54**	**99**	**43**
MEAN	2.2	3.2	1.1	.5	2.4	1.9	.4	.7	5.1	.4	2.0	5.7	1.0	2.3	2.1

Responses of greater than 50 were excluded from calculation of the mean.

TABLE 18:

How many rooms in your business' Nova Scotia location where you work have lighting fixtures that automatically turn off if there is sufficient sunlight coming into the building (i.e., daylighting controls)?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
None (0)	80	73	89	90	78	81	82	89	63	80	80	69	77	76	65
1	3	2	6	4	5	0	6	2	0	10	2	0	2	4	7
2	5	8	0	0	5	4	6	4	3	5	5	3	5	5	7
3 or more	13	17	6	6	12	14	6	6	34	5	13	28	16	14	21
SAMPLE SIZE (#)	**174**	**104**	**18**	**52**	**98**	**69**	**51**	**53**	**38**	**40**	**60**	**36**	**57**	**97**	**43**
MEAN	.8	1.2	.5	.3	1.0	.7	.4	.4	2.5	.4	.6	2.3	1.1	1.1	1.4

Responses of greater than 50 were excluded from calculation of the mean.

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2019 Electricity Usage Surveys - Business

TABLE 19:

Were any of your lighting systems commissioned? Lighting Commissioning involves a professional installing, calibrating and testing the lighting system controls to ensure they operate correctly.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	21	26	22	9	19	20	10	20	32	3	29	34	21	23	28
No	79	74	78	91	81	80	90	80	68	97	71	66	79	77	72
SAMPLE SIZE (#)	**160**	**95**	**18**	**47**	**93**	**64**	**49**	**44**	**38**	**39**	**58**	**32**	**52**	**91**	**43**

TABLE 20_1:

Before today, how familiar were you with:

IT load optimization strategy (Server refresh and virtualization) (A way of reducing the number of physical computer servers by running multiple, independent operating systems on a single server)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	4	6	0	0	6	0	0	9	0	14	0	0	13	0	14
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	4	0	0	10	6	0	0	0	0	0	11	0	0	6	0
6	4	6	0	0	6	0	0	0	17	0	0	14	0	6	14
5	7	13	0	0	6	11	0	0	17	0	0	29	0	12	14
4	4	0	0	10	0	11	0	9	0	0	0	0	13	6	0
3	4	0	0	10	6	0	0	0	0	14	0	0	0	6	14
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	4	6	0	0	6	0	0	0	17	0	11	0	0	6	0
0 - Completely unfamiliar	70	69	100	70	67	78	100	82	50	71	78	57	75	59	43
SAMPLE SIZE (#)	**27**	**16**	**1**	**10**	**18**	**9**	**6**	**11**	**6**	**7**	**9**	**7**	**8**	**17**	**7**
TOP 3 (8-10)	4	6	0	0	6	0	0	9	0	14	0	0	13	0	14
MID 4 (4-7)	19	19	0	20	17	22	0	9	33	0	11	43	13	29	29
BOTTOM 4 (0-3)	78	75	100	80	78	78	100	82	67	86	89	57	75	71	57
MEAN	1.5	1.6	.0	1.4	1.7	1.0	.0	1.2	2.0	1.7	.9	2.3	1.6	1.8	3.3

This question was randomly posed to approximately one in seven respondents.

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TABLE 20_2:

Before today, how familiar were you with:

Heat pump water heater

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	15	29	0	0	25	8	14	29	0	0	43	0	33	14	25
7	4	7	0	0	8	0	0	14	0	0	14	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	15	14	20	13	8	17	29	0	0	13	0	25	17	21	0
4	4	0	20	0	0	8	0	14	0	0	14	0	0	7	0
3	7	7	20	0	0	17	0	0	0	0	0	25	0	14	0
2	7	0	0	25	0	17	0	14	0	25	0	0	17	14	0
1	7	7	20	0	8	0	14	0	0	13	0	0	0	7	25
0 - Completely unfamiliar	41	36	20	63	50	33	43	29	100	50	29	50	33	21	50
SAMPLE SIZE (#)	**27**	**14**	**5**	**8**	**12**	**12**	**7**	**7**	**3**	**8**	**7**	**4**	**6**	**14**	**4**
TOP 3 (8-10)	15	29	0	0	25	8	14	29	0	0	43	0	33	14	25
MID 4 (4-7)	22	21	40	13	17	25	29	29	0	13	29	25	17	29	0
BOTTOM 4 (0-3)	63	50	60	88	58	67	57	43	100	88	29	75	50	57	75
MEAN	2.8	3.8	2.6	1.1	3.1	2.7	2.7	4.1	.0	1.3	5.0	2.0	3.8	3.3	2.3

This question was randomly posed to approximately one in seven respondents.

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2019 Electricity Usage Surveys - Business

TABLE 20_3:

Before today, how familiar were you with:

Open to closed cooler conversion (doors or covers on coolers)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	3	5	0	0	5	0	0	0	11	0	0	14	9	5	11
9	3	5	0	0	5	0	0	0	0	0	0	0	9	0	0
8	10	14	0	0	5	20	0	0	22	14	25	0	9	15	22
7	10	14	0	0	15	0	0	25	11	14	13	14	0	10	22
6	3	5	0	0	0	10	0	0	11	0	13	0	0	5	0
5	6	5	0	13	10	0	0	0	0	14	0	0	18	5	11
4	6	5	0	13	5	10	17	0	0	0	13	0	9	5	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	6	0	50	13	5	10	17	25	0	14	13	0	0	5	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 - Completely unfamiliar	52	48	50	63	50	50	67	50	44	43	25	71	45	50	33
SAMPLE SIZE (#)	**31**	**21**	**2**	**8**	**20**	**10**	**6**	**4**	**9**	**7**	**8**	**7**	**11**	**20**	**9**
TOP 3 (8-10)	16	24	0	0	15	20	0	0	33	14	25	14	27	20	33
MID 4 (4-7)	26	29	0	25	30	20	17	25	22	29	38	14	27	25	33
BOTTOM 4 (0-3)	58	48	100	75	55	60	83	75	44	57	38	71	45	55	33
MEAN	3.0	3.8	1.0	1.4	3.2	2.8	1.0	2.3	4.3	3.1	4.4	2.4	3.7	3.3	5.0

This question was randomly posed to approximately one in seven respondents.

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2019 Electricity Usage Surveys - Business

TABLE 20_4:

Before today, how familiar were you with:

Door heater control (These are electric resistance heaters that are installed in the frames and doors of refrigerated cases to reduce condensation and prevent fogging.)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	4	0	33	0	0	10	17	0	0	33	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	9	17	0	0	17	0	0	0	17	0	17	20	0	18	40
5	9	8	0	13	17	0	17	0	17	0	17	20	11	18	0
4	4	8	0	0	0	10	0	17	0	0	0	20	0	9	0
3	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0
2	13	8	33	13	8	20	17	17	17	0	33	0	0	18	20
1	4	8	0	0	0	10	0	0	17	0	0	20	0	9	0
0 - Completely unfamiliar	52	42	33	75	58	50	50	67	33	67	33	20	89	27	40
SAMPLE SIZE (#)	**23**	**12**	**3**	**8**	**12**	**10**	**6**	**6**	**6**	**3**	**6**	**5**	**9**	**11**	**5**
TOP 3 (8-10)	4	0	33	0	0	10	17	0	0	33	0	0	0	0	0
MID 4 (4-7)	22	33	0	13	33	10	17	17	33	0	33	60	11	45	40
BOTTOM 4 (0-3)	74	67	67	88	67	80	67	83	67	67	67	40	89	55	60
MEAN	1.9	2.3	3.3	.9	2.0	1.7	2.5	1.0	2.3	2.7	2.5	3.2	.6	2.8	2.8

This question was randomly posed to approximately one in seven respondents.

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2019 Electricity Usage Surveys - Business

TABLE 20_5:

Before today, how familiar were you with:

Packaged Terminal heat pump (A PTHP provides heating and cooling room by room often for applications such as hotels, motels, apartment buildings, offices, among others)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	8	7	0	11	7	13	11	20	0	17	14	0	0	8	33
9	4	0	50	0	7	0	11	0	0	0	0	20	13	0	0
8	8	7	50	0	7	13	0	0	17	0	14	20	13	17	17
7	4	7	0	0	0	13	0	0	17	0	14	0	0	8	0
6	8	7	0	11	0	25	22	0	0	17	0	0	25	8	0
5	4	7	0	0	7	0	0	0	17	0	14	0	0	8	0
4	4	7	0	0	7	0	0	0	0	0	0	0	0	0	0
3	8	14	0	0	13	0	11	0	17	17	0	20	0	8	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	4	0	0	11	7	0	11	0	0	17	0	0	13	0	0
0 - Completely unfamiliar	48	43	0	67	47	38	33	80	33	33	43	40	38	42	50
SAMPLE SIZE (#)	**25**	**14**	**2**	**9**	**15**	**8**	**9**	**5**	**6**	**6**	**7**	**5**	**8**	**12**	**6**
TOP 3 (8-10)	20	14	100	11	20	25	22	20	17	17	29	40	25	25	50
MID 4 (4-7)	20	29	0	11	13	38	22	0	33	17	29	0	25	25	0
BOTTOM 4 (0-3)	60	57	0	78	67	38	56	80	50	67	43	60	50	50	50
MEAN	3.2	3.3	8.5	1.9	2.9	4.6	3.9	2.0	3.8	3.3	4.3	4.0	3.8	3.9	4.7

This question was randomly posed to approximately one in seven respondents.

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2019 Electricity Usage Surveys - Business

TABLE 20_6:

Before today, how familiar were you with:

EC Motor for Refrigeration applications (An electronically commutated motor (EC Motor) is a motor that uses electronic controls to vary its speed. There are three types of EC motors: constant cfm, constant rpm, and constant torque)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	8	17	0	0	20	0	25	0	25	0	8	20	17	8	13
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	8	0	25	11	10	0	0	8	0	0	8	0	0	8	13
5	8	17	0	0	0	17	0	8	25	0	8	20	0	8	13
4	4	0	25	0	10	0	25	0	0	33	0	0	0	8	0
3	4	0	25	0	0	8	0	8	0	0	8	0	17	8	0
2	16	17	0	22	20	17	0	33	0	0	33	0	17	15	13
1	4	8	0	0	0	8	0	0	25	0	0	20	0	8	0
0 - Completely unfamiliar	48	42	25	67	40	50	50	42	25	67	33	40	50	38	50
SAMPLE SIZE (#)	**25**	**12**	**4**	**9**	**10**	**12**	**4**	**12**	**4**	**3**	**12**	**5**	**6**	**13**	**8**
TOP 3 (8-10)	8	17	0	0	20	0	25	0	25	0	8	20	17	8	13
MID 4 (4-7)	20	17	50	11	20	17	25	17	25	33	17	20	0	23	25
BOTTOM 4 (0-3)	72	67	50	89	60	83	50	83	50	67	75	60	83	69	63
MEAN	2.3	2.9	3.3	1.1	3.4	1.5	3.5	1.8	4.0	1.3	2.7	3.2	2.5	2.5	2.9

This question was randomly posed to approximately one in seven respondents.

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2019 Electricity Usage Surveys - Business

TABLE 20_7:

Before today, how familiar were you with:

Strategic energy management program (This involves processes that empower an organization to implement energy management actions and consistently achieve energy performance improvements)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	3	3	0	0	5	0	7	0	0	9	0	0	0	4	17
8	5	7	0	0	10	0	7	0	9	9	0	14	7	4	0
7	13	10	50	0	14	13	7	25	9	18	7	29	20	8	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	18	17	0	40	14	25	20	0	36	18	7	29	20	17	0
4	8	10	0	0	5	13	7	13	0	0	21	0	13	13	17
3	3	3	0	0	0	6	7	0	0	0	7	0	0	4	17
2	5	7	0	0	5	6	0	0	18	0	14	0	0	8	0
1	10	10	0	20	5	6	0	13	9	0	7	14	7	8	0
0 - Completely unfamiliar	36	33	50	40	43	31	47	50	18	45	36	14	33	33	17
SAMPLE SIZE (#)	**39**	**30**	**4**	**5**	**21**	**16**	**15**	**8**	**11**	**11**	**14**	**7**	**15**	**24**	**6**
TOP 3 (8-10)	8	10	0	0	14	0	13	0	9	18	0	14	7	8	17
MID 4 (4-7)	38	37	50	40	33	50	33	38	45	36	36	57	53	37	50
BOTTOM 4 (0-3)	54	53	50	60	52	50	53	63	45	45	64	29	40	54	33
MEAN	3.0	3.1	3.5	2.2	3.2	3.0	3.1	2.4	3.6	3.7	2.3	4.7	3.5	3.0	5.0

This question was randomly posed to approximately one in seven respondents.

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2019 Electricity Usage Surveys - Business

TABLE 23A:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[5,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	20	24	21	9	15	24	17	9	37	12	21	34	17	22	20
No	80	76	79	91	85	76	83	91	63	88	79	66	83	78	80
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

TABLE 23B:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[20,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	30	34	26	20	26	33	30	20	45	23	30	47	23	33	32
No	70	66	74	80	74	67	70	80	55	77	70	53	77	67	68
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 23C:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[35,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	37	41	37	27	33	41	34	34	50	33	39	53	32	41	34
No	63	59	63	73	67	59	66	66	50	67	61	47	68	59	66
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

TABLE 23D:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[50,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	49	52	53	41	45	52	40	55	61	42	51	63	49	53	51
No	51	48	47	59	55	48	60	45	39	58	49	38	51	47	49
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

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2019 Electricity Usage Surveys - Business

TABLE 23E:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[65,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	54	55	53	52	52	56	47	57	66	49	56	66	51	60	59
No	46	45	47	48	48	44	53	43	34	51	44	34	49	40	41
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

TABLE 23F:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[80,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	58	61	58	52	58	57	47	59	74	49	61	75	53	66	68
No	42	39	42	48	42	43	53	41	26	51	39	25	47	34	32
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

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TABLE 23G:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[95,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	66	67	68	64	68	62	55	64	87	58	68	84	57	75	78
No	34	33	32	36	32	38	45	36	13	42	32	16	43	25	22
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

TABLE 23H:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[110,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	71	72	68	70	73	67	64	70	89	58	81	88	64	79	88
No	29	28	32	30	27	33	36	30	11	42	19	13	36	21	12
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

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TABLE 23I:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed and MAY result in some inconvenience (for example, obtaining project estimates, selecting and overseeing a contractor for the installation). An example might be installing or implementing a(n) [ITEM SEEN IN Q20].

Would you generally pursue an energy efficiency project where the cost to you after utility rebates is $100,000 if the project saved $[125,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	73	73	79	73	75	70	66	75	92	63	84	88	70	83	90
No	27	27	21	27	25	30	34	25	8	37	16	13	30	17	10
SAMPLE SIZE (#)	**162**	**99**	**19**	**44**	**97**	**63**	**47**	**44**	**38**	**43**	**57**	**32**	**53**	**96**	**41**

TABLE 21_1:

Before today, how familiar were you with:

Networked/Connected lighting system

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_2:

Before today, how familiar were you with:

LED linear replacement lamp (i.e., LED tube lamps)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_3:

Before today, how familiar were you with:

Smart power bar (power bar that can be controlled via smart phone or computer or turn off automatically when you leave the room)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_4:

Before today, how familiar were you with:

LED Pole/Arm-mounted luminaire (Exterior lighting generally used to provide illumination to areas for vehicle and pedestrian use, with light fixtures mounted to poles)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_5:

Before today, how familiar were you with:

LED parking garage light

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_6:

Before today, how familiar were you with:

Daylight dimming control

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_7:

Before today, how familiar were you with:

LED track light (A lighting system in which the lights are fitted on tracks, allowing variable positioning)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_8:

Before today, how familiar were you with:

Solid State (LED) recessed downlight (Small spotlight set in a ceiling and directed downwards)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_9:

Before today, how familiar were you with:

LED flood light (which are downward lights with non-LED bulbs)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 21_10:

Before today, how familiar were you with:

General service light (have a base sized like a normal light bulb and screw into regular light sockets)

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
10 - Completely familiar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
7	24	27	33	0	27	25	33	0	33	33	50	0	13	25	33
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	5	7	0	0	0	13	0	0	11	0	0	13	13	0	0
4	10	0	33	33	9	13	33	20	0	33	13	0	13	8	0
3	5	7	0	0	0	13	0	20	0	0	0	13	0	8	0
2	5	7	0	0	0	13	0	0	11	0	0	13	0	8	0
1	24	20	33	33	27	13	33	20	0	33	13	13	25	33	67
0 - Completely unfamiliar	24	27	0	33	36	0	0	40	33	0	25	38	25	8	0
SAMPLE SIZE (#)	**21**	**15**	**3**	**3**	**11**	**8**	**3**	**5**	**9**	**3**	**8**	**8**	**8**	**12**	**3**
TOP 3 (8-10)	5	7	0	0	0	13	0	0	11	0	0	13	13	8	0
MID 4 (4-7)	38	33	67	33	36	50	67	20	44	67	63	13	38	33	33
BOTTOM 4 (0-3)	57	60	33	67	64	38	33	80	44	33	38	75	50	58	67
MEAN	3.1	3.3	4.0	1.7	2.5	4.6	4.0	1.6	4.0	4.0	4.1	2.4	3.3	3.5	3.0

This question was randomly posed to approximately one in ten respondents.

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 22A:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed. An example might be installing or implementing a(n) [ITEM SEEN IN Q21].

Would you generally pursue an energy efficiency project where the cost to your business after utility rebates is $7,500 if the project saved $[500] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	21	27	20	11	18	25	13	16	36	10	25	26	25	22	24
No	79	73	80	89	82	75	88	84	64	90	75	74	75	78	76
SAMPLE SIZE (#)	**164**	**97**	**20**	**47**	**98**	**63**	**48**	**43**	**39**	**41**	**55**	**35**	**52**	**98**	**42**

TABLE 22B:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed. An example might be installing or implementing a(n) [ITEM SEEN IN Q21].

Would you generally pursue an energy efficiency project where the cost to your business after utility rebates is $7,500 if the project saved $[2,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	36	41	40	23	33	40	23	37	51	24	38	46	29	39	38
No	64	59	60	77	67	60	77	63	49	76	62	54	71	61	62
SAMPLE SIZE (#)	**164**	**97**	**20**	**47**	**98**	**63**	**48**	**43**	**39**	**41**	**55**	**35**	**52**	**98**	**42**

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2019 Electricity Usage Surveys - Business

TABLE 22C:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed. An example might be installing or implementing a(n) [ITEM SEEN IN Q21].

Would you generally pursue an energy efficiency project where the cost to your business after utility rebates is $7,500 if the project saved $[3,500] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	51	56	50	43	50	52	38	51	69	41	55	57	40	59	57
No	49	44	50	57	50	48	63	49	31	59	45	43	60	41	43
SAMPLE SIZE (#)	**164**	**97**	**20**	**47**	**98**	**63**	**48**	**43**	**39**	**41**	**55**	**35**	**52**	**98**	**42**

TABLE 22D:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed. An example might be installing or implementing a(n) [ITEM SEEN IN Q21].

Would you generally pursue an energy efficiency project where the cost to your business after utility rebates is $7,500 if the project saved $[5,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	62	63	60	60	62	60	52	60	79	46	69	69	50	69	71
No	38	37	40	40	38	40	48	40	21	54	31	31	50	31	29
SAMPLE SIZE (#)	**164**	**97**	**20**	**47**	**98**	**63**	**48**	**43**	**39**	**41**	**55**	**35**	**52**	**98**	**42**

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2019 Electricity Usage Surveys - Business

TABLE 22E:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed. An example might be installing or implementing a(n) [ITEM SEEN IN Q21].

Would you generally pursue an energy efficiency project where the cost to your business after utility rebates is $7,500 if the project saved $[6,500] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	67	68	60	68	69	63	58	65	82	54	78	71	54	74	83
No	33	32	40	32	31	37	42	35	18	46	22	29	46	26	17
SAMPLE SIZE (#)	**164**	**97**	**20**	**47**	**98**	**63**	**48**	**43**	**39**	**41**	**55**	**35**	**52**	**98**	**42**

TABLE 22F:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed. An example might be installing or implementing a(n) [ITEM SEEN IN Q21].

Would you generally pursue an energy efficiency project where the cost to your business after utility rebates is $7,500 if the project saved $[8,000] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	72	71	70	74	74	68	69	70	85	61	87	71	62	80	88
No	28	29	30	26	26	32	31	30	15	39	13	29	38	20	12
SAMPLE SIZE (#)	**164**	**97**	**20**	**47**	**98**	**63**	**48**	**43**	**39**	**41**	**55**	**35**	**52**	**98**	**42**

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2019 Electricity Usage Surveys - Business

TABLE 22G:

Suppose an energy efficiency project has NO impact on the QUALITY of lighting, heating, and cooling in your business, but changes the amount of energy consumed. An example might be installing or implementing a(n) [ITEM SEEN IN Q21].

Would you generally pursue an energy efficiency project where the cost to your business after utility rebates is $7,500 if the project saved $[9,500] per year?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes	75	76	75	74	78	72	71	73	90	66	88	80	69	84	90
No	25	24	25	26	22	28	29	27	10	34	13	20	31	16	10
SAMPLE SIZE (#)	**166**	**99**	**20**	**47**	**99**	**64**	**48**	**44**	**40**	**41**	**56**	**35**	**52**	**100**	**42**

TABLE 24:

How many full-time equivalent employees, including yourself, are currently working at your business location within Nova Scotia?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
1	13	12	18	11	16	10	36	0	0	32	5	3	12	13	11
2-5	15	12	24	18	13	19	43	0	0	35	7	6	19	16	8
6-15	22	17	6	38	23	19	21	42	0	8	36	9	27	21	38
16-75	27	26	35	27	23	32	0	58	22	16	33	35	27	24	24
More than 75	23	33	18	7	25	19	0	0	78	8	18	47	15	26	19
SAMPLE SIZE (#)	**151**	**89**	**17**	**45**	**83**	**62**	**53**	**53**	**45**	**37**	**55**	**34**	**52**	**90**	**37**
MEAN	155	187	54	131	147	90	3	19	508	20	162	192	142	110	51
MEDIAN	14	25	18	8	12	18	2	18	125	2	17	70	10	13	10

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2019 Electricity Usage Surveys - Business

TABLE 25:

Approximately, what is the square footage of your company's business property at the location where you work? Would you say…?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
1,000 square feet or less	18	15	12	28	16	22	45	2	3	60	0	0	24	16	8
More than 1,000 square feet up to 2,000 square feet	12	8	29	15	13	12	16	14	5	40	0	0	20	14	13
More than 2,000 square feet up to 5,000 square feet	21	20	24	23	22	21	16	42	5	0	49	0	22	20	25
More than 5,000 square feet, up to 10,000 square feet	22	25	6	21	22	21	14	23	31	0	51	0	8	23	35
More than 10,000 square feet, up to 25,000 square feet	14	15	18	8	12	16	5	12	23	0	0	50	12	13	13
More than 25,000 square feet	14	17	12	5	15	9	5	7	33	0	0	50	12	14	8
SAMPLE SIZE (#)	**148**	**92**	**17**	**39**	**86**	**58**	**44**	**43**	**39**	**45**	**63**	**40**	**49**	**93**	**40**

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TABLE 26:

Does your company pay for its own electricity at your business' Nova Scotia location where you work, or does someone else, such as a landlord pay for it?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Yes, pay for own	67	64	60	76	76	56	71	71	61	77	65	58	74	69	73
Head office or other department pays	23	28	25	12	20	23	12	20	34	5	25	36	19	25	20
No, landlord pays	10	8	15	10	4	20	18	6	5	16	10	6	7	7	7
Other	1	0	0	2	0	2	0	2	0	2	0	0	0	0	0
SAMPLE SIZE (#)	**168**	**98**	**20**	**50**	**101**	**61**	**51**	**49**	**38**	**44**	**60**	**36**	**58**	**102**	**44**

TABLE 26A:

[IF CODES 1 OR 2 IN Q26] Please select the electric utility provider that provides electricity at your business' Nova Scotia location where you work.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Nova Scotia Power Incorporated	97	98	100	93	96	98	93	96	100	94	96	97	96	96	95
Antigonish Electric Utility	2	2	0	2	2	2	2	4	0	3	2	3	4	2	5
Berwick Electric Light Commission	1	0	0	2	1	0	2	0	0	0	2	0	0	1	0
Lunenburg Electric Utility	1	0	0	2	1	0	2	0	0	3	0	0	0	1	0
SAMPLE SIZE (#)	**149**	**89**	**17**	**43**	**96**	**48**	**42**	**45**	**35**	**36**	**54**	**33**	**54**	**94**	**41**

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2019 Electricity Usage Surveys - Business

TABLE 27:

[IF Q26A 'Nova Scotia Power Incorporated'] Please select your business' rate code from the drop-down selection below. Your rate code can be found on your Nova Scotia Power bill.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
2	9	10	13	5	9	9	22	2	3	30	4	0	14	11	6
3	5	6	7	3	2	11	3	2	3	13	4	3	10	5	0
4M	7	5	13	11	8	7	6	7	9	10	12	3	4	11	6
4B	6	6	7	5	5	9	0	12	3	3	8	6	8	7	3
5	5	4	13	5	2	9	3	10	6	3	6	10	8	6	6
6	1	2	0	0	1	2	3	2	0	0	2	0	2	1	3
10M	7	7	13	3	6	9	6	5	9	0	4	16	4	5	11
10B	4	5	0	3	6	0	8	0	6	7	6	0	0	6	6
11M	2	2	0	3	2	2	3	2	3	3	2	3	0	2	0
11B	1	1	0	0	1	0	0	0	3	0	2	0	0	0	0
12M	1	0	7	0	1	0	0	2	0	0	2	0	0	0	3
12MTO	1	1	0	0	1	0	0	0	0	0	2	0	0	1	3
21M	1	2	0	0	2	0	0	0	6	0	0	3	2	2	3
22M	1	0	0	3	0	0	0	0	3	0	0	0	2	0	0
23M	1	1	0	0	1	0	0	0	3	0	0	3	2	1	0
999	1	0	0	3	0	2	0	2	0	0	2	0	0	1	3
Don't know/Not sure	47	46	27	58	51	39	47	52	41	30	43	52	44	40	50
SAMPLE SIZE (#)	**135**	**82**	**15**	**38**	**86**	**44**	**36**	**42**	**32**	**30**	**49**	**31**	**50**	**83**	**36**

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2019 Electricity Usage Surveys - Business

TABLE 27_2:

[IF Q26A NOT 'Nova Scotia Power Incorporated'] Please select your business' rate code from the drop-down selection below. Your rate code can be commonly found on your electricity bill.

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
General	67	100	0	0	67	0	50	100	0	50	0	100	100	50	100
Residential	33	0	0	100	33	0	50	0	0	50	0	0	0	50	0
SAMPLE SIZE (#)	**3**	**2**	**0**	**1**	**3**	**0**	**2**	**1**	**0**	**2**	**0**	**1**	**2**	**2**	**2**

TABLE 28:

[IF Q27 'Don't know/Not sure'] Approximately, how much does your business spend on electricity each month?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
$1 - $500	13	16	0	9	9	24	41	0	8	44	10	0	14	15	11
$501 - $1,000	6	8	0	5	7	6	12	9	0	22	5	0	5	6	6
$1,001 - $10,000	5	5	0	5	7	0	12	5	0	11	5	6	5	3	0
$10,000 or more	3	3	0	5	5	0	0	0	15	0	0	13	5	6	0
Don't know/Not sure	73	68	100	77	73	71	35	86	77	22	81	81	73	70	83
SAMPLE SIZE (#)	**64**	**38**	**4**	**22**	**44**	**17**	**17**	**22**	**13**	**9**	**21**	**16**	**22**	**33**	**18**
MEAN	$3,907.94	$2,540.42	.	$7,190.00	$5,425.00	$267.00	$1,309.55	$1,566.67	$15,776.67	$1,775.00	$1,045.00	$16,333.33	$6,050.83	$5,166.00	$393.33

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2019 Electricity Usage Surveys - Business

TABLE 29:

[IF Q28 'Don't know/Not sure'] Would you classify your business as….

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Large business	28	38	50	7	25	30	17	13	50	0	6	75	0	35	15
Small business	28	25	50	29	32	20	67	31	20	50	53	0	40	20	38
Large commercial	8	13	0	0	11	0	0	0	20	0	6	8	7	10	0
Small Commercial	3	4	0	0	0	10	0	6	0	0	6	0	0	0	8
Industrial	18	8	0	36	18	20	17	13	0	0	6	8	27	20	23
Institutional	18	13	0	29	14	20	0	38	10	50	24	8	27	15	15
SAMPLE SIZE (#)	**40**	**24**	**2**	**14**	**28**	**10**	**6**	**16**	**10**	**2**	**17**	**12**	**15**	**20**	**13**

TABLE 30:

What is the main source of energy used to heat your business' Nova Scotia location where you work?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Electricity	50	57	47	35	47	56	52	40	54	41	53	56	25	74	36
Oil	24	15	37	38	23	23	28	27	18	39	12	18	63	10	4
Heat pump/Mini-split heat pump	10	9	11	13	15	3	8	17	5	15	14	6	6	7	38
Natural gas	8	12	0	2	7	10	4	6	15	2	10	15	0	5	9
Propane	5	4	5	8	4	8	2	8	8	0	8	6	2	4	11
Wood/pellets/chips	2	2	0	4	4	0	6	2	0	2	3	0	3	1	2
SAMPLE SIZE (#)	**165**	**98**	**19**	**48**	**96**	**62**	**50**	**48**	**39**	**41**	**59**	**34**	**63**	**111**	**45**

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2019 Electricity Usage Surveys - Business

TABLE 31:

What other types of heating, if any, do you currently have for your business' Nova Scotia location where you work?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Electricity	19	17	18	25	22	16	17	20	21	29	16	18	23	28	30
Heat pump/Mini-split heat pump	19	19	24	16	21	16	17	20	18	5	29	18	9	20	64
Oil	15	17	12	14	16	16	13	15	15	16	15	18	40	17	16
Propane	8	7	6	11	9	5	9	7	9	5	7	18	5	10	11
Natural gas	6	9	6	0	10	0	2	4	12	3	9	9	7	7	9
Wood/pellets/chips	5	5	0	7	8	0	11	0	3	8	4	6	4	7	9
Solar	3	5	0	0	3	2	0	0	9	0	2	9	2	3	5
Other	1	1	0	0	0	2	0	0	3	0	2	0	0	1	0
None - no other type of heating is used	42	43	41	39	34	51	48	39	44	39	33	47	37	31	7
SAMPLE SIZE (#)	**149**	**88**	**17**	**44**	**90**	**55**	**46**	**46**	**34**	**38**	**55**	**34**	**57**	**103**	**44**

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2019 Electricity Usage Surveys - Business

TABLE 30+31:

What other types of heating, if any, do you currently have for your business' Nova Scotia location where you work?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Electricity	67	72	63	58	68	71	68	58	72	68	68	74	46	100	64
Oil	38	31	47	50	38	37	40	42	31	54	25	35	100	26	20
Heat pump/Mini-split heat pump	27	27	32	27	34	18	24	35	21	20	41	24	14	26	100
Natural gas	13	20	5	2	17	10	6	10	26	5	19	24	6	11	18
Propane	13	10	11	19	13	13	10	15	15	5	15	24	6	13	22
Wood/pellets/chips	7	6	0	10	11	0	16	2	3	10	7	6	6	7	11
Solar	2	4	0	0	3	2	0	0	8	0	2	9	2	3	4
Other	1	1	0	0	0	2	0	0	3	0	2	0	0	1	0
SAMPLE SIZE (#)	**165**	**98**	**19**	**48**	**96**	**62**	**50**	**48**	**39**	**41**	**59**	**34**	**63**	**111**	**45**

TABLE 32:

[IF Q30 OR Q31 'Electricity'] What type of electric heating does your business' location use?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Electric Baseboards (e.g., small electric heaters, places throughout your building, typically under windows)	60	54	80	67	62	58	59	69	78	67	53	65	63	60	48
Central Air-Source Heat Pump (i.e., a central heat pump system that heats all or most of the building, through distributed hot water or hot air)	11	11	10	11	10	14	3	15	17	4	15	17	7	11	22
Electric Resistance Furnace (i.e., a central furnace which uses an electric heating element and distributes heat through forced-air)	10	11	0	11	7	14	9	0	4	7	9	9	11	10	4
Ductless/Mini-Split Heat Pump (i.e., a heat pump system that has an indoor unit placed on a wall, that typically only heats a small area of the building)	8	8	10	7	10	6	16	4	0	11	12	4	4	8	15

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TABLE 32:

[IF Q30 OR Q31 'Electricity'] What type of electric heating does your business' location use?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Electric Resistance Boiler (i.e., a central furnace which uses an electric heating element and distributes heat through hot water, to your floor or radiators)	6	8	0	4	8	3	3	8	0	0	12	4	7	6	11
Other	4	7	0	0	3	6	9	4	0	11	0	0	7	4	0
SAMPLE SIZE (#)	**98**	**61**	**10**	**27**	**60**	**36**	**32**	**26**	**23**	**27**	**34**	**23**	**27**	**98**	**27**

TABLE 33:

In what specific business sector or industry is your organization currently involved as its primary activity?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Health care and social assistance	11	8	20	14	6	17	14	10	2	20	8	5	8	10	5
Retail trade	9	7	20	10	7	13	10	10	11	5	8	13	10	9	2
Construction	9	12	0	6	12	6	16	6	4	14	8	5	12	10	7
Other services (except public administration)	8	6	5	12	6	10	8	8	2	5	7	5	5	6	5
Educational services	8	6	10	10	7	8	10	10	4	7	15	0	10	4	14
Professional, scientific and technical services	6	7	5	4	5	8	8	4	7	14	5	5	5	6	12
Public administration	5	6	5	4	7	1	0	2	16	2	2	13	8	5	2
Accommodation and food services	5	4	10	8	10	0	6	6	4	2	3	13	7	6	7
Manufacturing	5	5	0	8	6	6	4	4	7	2	3	5	3	6	7
Finance and insurance	5	5	5	4	5	4	4	6	4	5	7	3	5	7	2
Administrative and support, waste management and remediation services	4	4	0	4	4	4	4	4	2	7	2	3	5	5	2
Information and cultural industries	4	5	5	0	3	6	2	0	7	0	5	8	3	5	0
Wholesale trade	4	4	10	2	5	3	2	2	7	5	7	3	2	3	7
Arts, entertainment and recreation	3	4	0	2	2	4	2	4	4	0	5	3	2	4	5
Transportation and warehousing	3	2	5	4	3	3	2	4	2	0	3	3	2	3	5
Agriculture, forestry, fishing and hunting	2	1	0	6	4	0	6	2	0	2	3	3	2	2	2
Real estate and rental and leasing	2	3	0	0	2	1	0	4	0	2	3	0	0	1	2

NAVIGANT

2019 Electricity Usage Surveys - Business

TABLE 33:

In what specific business sector or industry is your organization currently involved as its primary activity?

	OVERALL %	REGION			BUSINESS PREMISES		FT EMPLOYEES			SQUARE FOOTAGE			HEATING TYPE(S)		
		HRM	Cape Breton	Other mainland NS	Own	Lease/Rent	1-7	8-40	41+	Up to 2,000	2,001 - 10,000	More than 10,000	Oil	Electricity	Heat pump
Utilities	2	3	0	0	3	0	0	2	4	2	0	5	2	1	5
Management of companies and enterprises	1	1	0	2	2	0	2	2	0	5	0	0	3	2	0
Mining, quarrying, and oil and gas extraction	1	2	0	0	1	1	0	0	4	0	2	3	2	2	0
Other	4	5	0	2	4	4	2	6	7	2	5	3	3	4	7
SAMPLE SIZE (#)	**183**	**112**	**20**	**51**	**104**	**71**	**51**	**48**	**45**	**44**	**61**	**38**	**59**	**108**	**42**

Appendix C: Demand Response Model Inputs

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Appendix D: Demand Response Model Outputs

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Appendix E: Energy Efficiency Model Inputs

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Appendix F: Energy Efficiency Model Outputs

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Appendix G: EE Base Case Achievable 8760 Loadshape Disaggregation

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Year	Heat	WaterHt	Cooking	Misc	Lighting	TV	Dryer	Refrig	Freezer	Dish	Washer	EV	Total
2022	844.1	113.6	97.1	65.0	54.8	33.8	63.7	23.4	12.7	2.4	3.1	2.4	1,316.1
2032	839.1	170.9	126.1	91.7	46.3	42.0	83.2	26.8	14.9	3.0	4.2	88.6	1,536.8
						Percentages							
2022	64.1%	8.6%	7.4%	4.9%	4.2%	2.6%	4.8%	1.8%	1.0%	0.2%	0.2%	0.2%	
2032	54.6%	11.1%	8.2%	6.0%	3.0%	2.7%	5.4%	1.7%	1.0%	0.2%	0.3%	5.8%	

Please note that all values are in MW.

Year	Heat	Misc	Light	Vent	Refrig	Office	EWHeat	Cooking	Total
2022	158.8	98.0	137.4	28.4	48.5	24.7	6.2	9.7	511.8
2032	364.5	107.8	102.5	23.1	47.4	24.3	5.9	9.7	685.1
				Percentages					
2022	31.0%	19.2%	26.9%	5.5%	9.5%	4.8%	1.2%	1.9%	
2032	53.2%	15.7%	15.0%	3.4%	6.9%	3.5%	0.9%	1.4%	

Please note that all values are in MW.

Request IR-29:

Peak Demand (Section 10 Coincident Peak Demand Research, pp 88-94)

(a) Please provide more details about the use of interval data to understand peak loads at the class level.

(b) Please indicate specifically how many more years of data collection will be needed before the results can be applied to the forecast.

(c) What are the current levels of AMI coverage for the customer classes?

(d) Please specify by name the rate classes shown in Figures 63 and 64.

(e) What were the loss levels (absolute and percentage) on the 2021 peak day by hour as shown in Figure 63?

(f) What are the monthly loss levels as shown in Figure 64?

(g) Please quantify and explain the differences in Figure 65 between the Residential coincidental peak load with and without DSM?

(h) Please relate this to the DSM values in Figure 36 and the demand response values in Figure 54.

(i) What is the schedule for using the smart meter data in future forecasts to test the accuracy of the model?

Response IR-29:

(a) The Load Research analysis presented in Section 10 is based on the premise that the hourly load shape per class (weighted average across the load research meters) represents a "typical customer" for that class. Once a typical shape for the class has been obtained, the load shape of the entire class can be calculated (i.e., the theoretical sum of all the meters within the class). This is done by adjusting the sum of all the hourly load research within a month to the monthly total of billed sales for the class.

(b) The SAE model used in the 2022 load forecast uses 10 years of hourly system generation data and monthly billing data to predict peak demand. Since load research has only achieved a reliable sample size in 2018, the SAE-like approach using load research sample (significantly smaller than billing data) puts, in principle, a target date of 2028 to train the model with enough data, when a trend will be picked up by the historic time series. However, there exists a degraded sample of load research data prior to 2017, and therefore, when included, the 10-year window has been reached this year. Due to the unreliable nature of the pre 2018 data, it is advisable to wait until NS Power has a full (near 100 percent) sample of the AMI population, to test these findings vs actual hourly data. These analyses are expected to be carried out throughout 2023, with aims to present preliminary results in the 2024 Load Forecast Report.

(c) In the load research sample, the Residential rate classes have a total of 272 meters, the Commercial class has 182 meters, and the Industrial class has 117 meters. The rest of the classes are fully sampled. The AMI coverage by class as of April 1 2022 is set out in the table below.:

Customer Class	Percentage of Total Customers With AMI
Commercial	84
Domestic	89
Industrial	78

(d) The names of the classes are:

a. 02: Domestic Non-All-Electric
b. 03: Domestic All-Electric
c. 06: Domestic Time-of-Day
d. 10: Small General
e. 11: General Demand
f. 21: Small Industrial
g. 22: Medium Industrial
h. "rest" is the sum of all the fully sampled (100 percent) classes

(e) The hourly difference between the system generation numbers (blue line), and the sum of all scaled load research classes, for 2021 peak day, is set out in the table below. The validation of these numbers as being representative of losses is still being analysed:

Date	Time	Losses (MW)	% Losses
2021-03-02	7:00:00	219.93	14.00%
2021-03-02	8:00:00	238.00	14.42%
2021-03-02	9:00:00	152.74	9.04%
2021-03-02	10:00:00	187.60	10.98%
2021-03-02	11:00:00	184.36	10.56%
2021-03-02	12:00:00	131.41	7.44%
2021-03-02	13:00:00	126.73	7.00%
2021-03-02	14:00:00	157.26	8.72%
2021-03-02	15:00:00	172.66	9.44%
2021-03-02	16:00:00	187.75	10.18%

2021-03-02	17:00:00	192.04	10.16%
2021-03-02	18:00:00	188.86	9.71%
2021-03-02	19:00:00	209.62	10.65%
2021-03-02	20:00:00	187.04	9.62%
2021-03-02	21:00:00	218.66	11.59%
2021-03-02	22:00:00	213.97	11.90%
2021-03-02	23:00:00	187.85	11.04%
2021-03-03	0:00:00	169.87	10.18%
2021-03-03	1:00:00	158.05	9.59%
2021-03-03	2:00:00	174.18	10.64%
2021-03-03	3:00:00	154.38	9.66%
2021-03-03	4:00:00	159.94	10.08%
2021-03-03	5:00:00	150.34	9.42%
2021-03-03	6:00:00	179.52	10.91%
2021-03-03	7:00:00	216.01	12.24%

(f) The monthly difference between the system generation numbers (blue line), and the sum of all scaled load research classes, for the year 2021, is set out in the table below. The validation of these numbers as being representative of losses is still in the process of being analysed.

Month	Losses (GWh)	% Losses
1	112.40	10.07%
2	88.31	8.61%
3	107.08	9.98%
4	1.07	0.12%
5	35.90	4.39%
6	57.73	7.52%
7	45.03	5.63%
8	72.33	8.63%
9	44.85	5.86%
10	51.34	6.37%
11	110.08	11.94%
12	146.50	13.15%

(g) DSM was not used for LRS modeling at all. The DSM throughout the Load Forecast is already a best estimate that is extracted out of Efficiency One annual numbers. The purpose of this experiment was to compare top-down (current) and bottom-up class peak estimation

(experiment), therefore, to compare apples to apples DSM can be removed from both models.

(h) As mentioned in the previous item (g) DSM was not included in this analysis. DSM information does not provide the necessary granularity (hourly), and LRS, without a proper AMI test, is by itself uncertain. Since the drivers for capacity planning is peak demand at time of system peak, perhaps the bottom-up LRS hourly approach can be used to estimate NO-DSM peaks and load factors, each hour of the 8760 available on a year. Only when system peak amounts are needed, the peak Demand estimates provided by Efficiency One can be used to adjust the numbers post-modelling.

(i) The NSUARB recently approved an extension to June 30, 2023 for completion of remaining AMI meter upgrades. The LRS model will be tested with AMI data throughout 2023, with results and proposed implementation to be addressed in the 2024 Load Forecast Report.

Request IR-30:

Sensitivity Analysis (Section 11 and Appendix D)

(a) Please provide in electronic format the data and calculations used to create Figures 66, and 67.

(b) Please explain the reasons that these specific weather and economic variables were selected for the sensitivity analysis.

(c) Please provide the actual statistical distributions used for those variables and the how they were determined.

(d) What other variables were considered but not chosen? Please discuss and explain.

Response IR-30:

(a) Please refer to Attachment 1, tabs "Figure 66," and "Figure 67".

(b) Ideally, all factors that are inputs in the regression models would be modeled. In practice, certain inputs are easier to model, particularly ones with a long history and available reliable information. Weather and economic indicators are two obvious starting points, as they have large historical data sets, and their trends are understood. These variables are the same ones in each rate class highlighted in Appendix B of the Report.

(c) All the variables used in the Monte Carlo simulation exhibit a normal distribution behavior. Generally mean values will be the deterministic forecast values used in the SAE models. In case of weather, they are weather normal and in the case of economics, they are the year to year growth rates. Please refer to Synapse IR-41 Attachment 2 for the inputs used.

(d) Inputs for DSM and end uses are more difficult to model, as they have more limited data sets and present challenges in the probabilistic approach being used. These are being studied for inclusion in future models.

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Year	Actual_Sales	p10	p50	p90
2012	10,475	NA	NA	NA
2013	11,194	NA	NA	NA
2014	11,037	NA	NA	NA
2015	11,099	NA	NA	NA
2016	10,809	NA	NA	NA
2017	10,873	NA	NA	NA
2018	11,249	NA	NA	NA
2019	11,077	NA	NA	NA
2020	10,723	NA	NA	NA
2021	10,902	NA	NA	NA
2022	11,141	10,957	11,141	11,320
2023	NA	10,974	11,172	11,370
2024	NA	11,045	11,249	11,454
2025	NA	11,055	11,264	11,478
2026	NA	11,074	11,296	11,518
2027	NA	11,083	11,312	11,546
2028	NA	11,119	11,359	11,606
2029	NA	11,102	11,355	11,615
2030	NA	11,095	11,362	11,641
2031	NA	11,116	11,407	11,703
2032	NA	11,204	11,511	11,830

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Year	Actual_Peak	p10	p50	p90
2012	1,881.7	NA	NA	NA
2013	2,032.7	NA	NA	NA
2014	2,118.2	NA	NA	NA
2015	2,015.0	NA	NA	NA
2016	2,111.0	NA	NA	NA
2017	2,017.6	NA	NA	NA
2018	2,072.5	NA	NA	NA
2019	2,060.3	NA	NA	NA
2020	2,050.3	NA	NA	NA
2021	1,968.4	NA	NA	NA
2022	2,205.6	2,059.7	2,205.6	2,388.4
2023	NA	2,075.6	2,223.4	2,409.4
2024	NA	2,104.7	2,253.9	2,440.2
2025	NA	2,144.3	2,295.3	2,483.6
2026	NA	2,183.8	2,335.6	2,526.9
2027	NA	2,220.0	2,373.6	2,566.7
2028	NA	2,256.7	2,411.6	2,607.7
2029	NA	2,295.2	2,452.2	2,653.8
2030	NA	2,330.5	2,491.2	2,695.7
2031	NA	2,375.7	2,538.7	2,746.8
2032	NA	2,427.1	2,592.8	2,803.2

Request IR-31:

Sensitivity Analysis (Section 11, 2020 IRP Comparison, pp 97-98)

(a) Please confirm that the reference to Figure 69 should be to Figure 68.

(b) For overall consistency with the forecast period please provide values for 2032 in Figure 68.

Response IR-31:

(a) Confirmed. Line 9 on page 96 should refer to Figure 67, and line 12 on page 97 should refer to Figure 68.

(b) Please refer to the updated table provided below:

Item	2022 NSR Energy (GWh)	2022 Firm Peak (MW)	2031 NSR Energy (GWh)	2031 Firm Peak (MW)	2032 NSR Energy (GWh)	2032 Firm Peak (MW)
2021 Load Forecast	11,005	2,062	10,875	2,057		
2022 Load Forecast	11,144	2,021	11,414	2,289	11,519	2,342
IRP High Electrification	11,392	2,115	11,590	2,718	11,686	2,760
IRP Mid Electrification	11,332	2,085	11,363	2,375	11,414	2,395
IRP Low Electrification	11,302	2,078	10,809	2,094	10,811	2,099

Request IR-32:

Appendix A: Forecast

(a) Please provide in electronic format the specific calculations used to create the values in Tables A1, and A2.

(b) Please explain the historical changes in the Interruptible Contribution to Peak values and the future year values used in the forecast.

Response IR-32:

(a) Please refer to 2022 Load Forecast Report Attachment 4 10-Year Forecast Classes (filed electronically), tab "Sector Summary" for the calculations used to create tables A1. Table A2 is derived from the information on the tab "Demand Annual Profile" tab.

(b) The table below shows a breakdown of interruptible peak forecasts compared to actuals. The forecast is expected to increase slowly from 144-152 MW as sales in the interruptible class increase.

	Actual Interruptible Peak	Forecast for following year	1 Year Difference vs Forecast	PHP Forecast	PHP Actual	1 Year Difference without PHP variance
2012	141	138	-3			
2013	136	138	2			
2014	83	138	55	[redacted]		
2015	141	139	-2			
2016	98	144	46			
2017	67	156	89			
2018	80	156	76			
2019	111	163	52			
2020	96	152	56			
2021	94	158	64			

Request IR-33:

Appendix B: Residential Model (pp 1-7)

(a) Please provide in electronic spreadsheet format the data and the statistical model parameters and the full data and results used to produce the residential model coefficients and statistics tables.

(b) Please provide in electronic format the detailed end-use intensity data and its derivation.

(c) Please provide in electronic spreadsheet format the source and calculations of the values in the tables on pages 5, 6 and 7.

(d) Please provide the data and calculations associated with electric space heat and electric hot water usage.

(e) For the XHeat variable please provide the underlying factors (penetration, usage, etc.) driving the increase of % for HP Heat.

(f) For the XCool variable please provide the underlying factors (penetration, usage, etc.) driving the increase of % for HP Cool.

(g) Has NSPI collaborated with E1 in developing common assumptions for the end-use components? If so, please describe the results of that collaboration.

Response IR-33:

(a) Please refer to 2022 Load Forecast Report Attachment 5 Residential Model, filed electronically, and 2022 Load Forecast Report Attachment 4 10-Year Forecast Classes, filed electronically.

(b) Please refer to 2022 Load Forecast Report Attachment 1 Residential Intensities, filed electronically.

(c) Please refer to Attachment 1.

(d) Please refer to (b) above.

(e) The HP Heat share forecast is approximately 35 percent in 2022 and approximately 66 percent in 2032; this measure is the main driver for HP Heat growth in intensity. Please refer to 2022 Load Forecast Report Attachment 1 Residential Intensities, filed electronically, tab “Intensities” and “Shares” for details and calculations.

(f) The HP Cool share forecast in 2022 is approximately 46 percent, and in 2032 is forecast to be approximately 81 percent; this measure change is the main driver for the growth in HP Intensity. Please refer to 2022 Load Forecast Report Attachment 1 Residential Intensities, filed electronically, tab “Intensities” and “Shares” for details and calculations.

(g) No collaboration was undertaken in 2021.

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	Heating Indices (kWh / HH)					Cooling Indices (kWh / HH)					Other Indices (kWh / HH)											Other Regression Variables										Regression Sales Results Out of Monthly Model (kWh / HH)
Year	ResIndices_EFurn	ResIndices_HPHeat	ResIndices_SecHt	ResIndices_FurnFan	AContrib2Sales_HeatUse	ResIndices_CAC	ResIndices_HPCool	ResIndices_GHPCool	ResIndices_RAC	AContrib2Sales_CoolUse	ResIndices_EWHeat	ResIndices_ECook	ResIndices_Ref1	ResIndices_Ref2	ResIndices_Ezy	ResIndices_Dish	ResIndices_CWash	ResIndices_CDry	ResIndices_TV	ResIndices_Light	ResIndices_PV	ResIndices_Misc	AContrib2Sales_OtherUse	AContrib2Sales_AvgESavings	AContrib2Sales_May15	AContrib2Sales_Apr15	AContrib2Sales_Aug	AContrib2Sales_Jan	AContrib2Sales_Sep	AContrib2Sales_Oct	AContrib2Sales_Feb18	AContrib2Sales_Dec17	AContrib2Sales_ARMA	AContrib2Sales_Covid_Jan	AContrib2Sales_AnnualAvgUse
####	2,798.23	235.45	376.37	85.54	0.97	20.64	24.35	0.00	46.25	1.49	1,278.11	533.58	482.47	55.34	222.65	59.04	56.18	744.01	537.60	970.74	0.00	1,008.35	0.97	321.83	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	15.15	0.00	9,328.18
####	2,764.91	375.97	387.22	84.48	1.08	20.92	39.25	0.00	49.05	1.30	1,299.93	532.90	473.80	54.38	220.39	57.25	53.85	744.29	535.99	958.74	0.00	1,053.17	0.97	471.61	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	14.39	0.00	9,731.13
####	2,691.28	485.63	392.49	82.19	1.05	20.84	51.83	0.00	49.97	0.83	1,321.65	532.14	462.52	53.09	215.45	55.75	52.02	744.46	534.38	946.88	0.00	1,097.99	0.96	627.22	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	6.83	0.00	9,597.07
####	2,628.02	572.80	399.17	80.26	1.10	20.79	70.31	0.00	51.80	1.37	1,337.35	531.60	452.08	51.89	211.80	54.16	49.31	743.48	532.76	935.18	0.00	1,140.73	0.96	771.16	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	-38.88	0.00	9,921.70
####	2,573.36	664.66	413.10	77.80	1.03	21.15	89.22	0.00	53.78	1.40	1,358.15	531.05	445.92	51.40	209.63	53.92	48.44	745.63	518.53	868.86	0.00	1,202.72	0.96	901.45	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	-41.80	0.00	9,502.02
####	2,528.90	760.03	428.83	75.73	1.03	22.04	108.74	0.00	54.55	0.99	1,378.88	530.50	439.84	50.96	207.59	53.69	47.58	749.32	500.99	815.28	0.00	1,220.95	0.96	1,013.07	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	-12.05	0.00	9,393.86
####	2,463.61	846.17	441.12	73.10	1.05	22.70	127.22	0.00	54.81	1.94	1,411.24	529.98	433.61	50.49	205.50	53.45	46.66	752.95	482.73	767.25	0.00	1,239.18	0.97	1,105.30	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	6.88	0.00	9,770.21
####	2,402.08	931.30	477.86	70.66	1.10	23.40	145.83	0.00	56.21	1.48	1,443.50	529.45	427.28	49.99	203.40	53.21	46.60	756.52	465.57	713.56	0.00	1,257.41	0.97	1,186.91	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	11.92	0.00	9,843.03
####	2,318.19	1,016.07	485.07	74.04	1.01	24.11	157.43	0.00	56.51	1.49	1,468.29	529.45	421.10	49.50	201.38	52.98	46.54	757.17	459.49	659.87	0.00	1,275.64	0.97	1,250.22	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	11.09	259.63	9,704.07
####	2,259.81	1,118.82	488.32	72.70	0.96	24.83	171.58	0.00	56.80	1.30	1,505.75	529.37	414.72	49.01	199.41	52.73	46.48	757.75	447.10	606.18	0.00	1,293.87	0.97	1,304.73	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	28.96	346.18	9,589.20
####	2,192.86	1,213.68	491.93	71.34	1.04	25.54	184.75	0.00	57.06	1.38	1,537.21	529.34	408.24	48.49	197.48	52.48	46.44	758.24	437.65	552.49	0.00	1,312.10	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	-10.45	207.71	9,745.56
####	2,113.51	1,309.95	499.60	70.31	1.03	25.97	198.12	0.00	57.26	1.40	1,568.83	529.31	401.74	47.96	195.50	52.22	46.42	758.65	429.43	498.81	0.00	1,330.33	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,662.27
####	2,034.74	1,408.01	508.22	69.35	1.03	26.52	211.78	0.00	57.43	1.42	1,600.54	529.28	395.78	47.47	193.45	51.95	46.46	758.99	423.81	445.12	0.00	1,348.56	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,691.22
####	1,949.46	1,506.42	522.07	68.45	1.02	27.07	225.54	0.00	57.64	1.43	1,630.11	529.24	390.06	47.00	191.35	51.68	46.49	759.31	417.52	391.43	0.00	1,366.80	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,661.61
####	1,832.41	1,605.21	540.11	67.52	1.02	27.62	239.44	0.00	57.88	1.45	1,654.96	529.21	384.65	46.56	189.21	51.41	46.54	759.55	412.55	384.47	0.00	1,370.87	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,675.97
####	1,712.82	1,704.77	559.22	66.76	1.02	28.17	253.48	0.00	58.15	1.47	1,680.36	529.17	379.53	46.14	187.06	51.11	46.61	759.69	409.27	379.36	0.00	1,375.24	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,694.79
####	1,594.70	1,804.93	578.68	66.02	1.02	28.71	267.63	0.00	58.46	1.48	1,706.55	529.13	374.69	45.75	185.08	50.91	46.72	760.03	408.21	376.39	0.00	1,382.48	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,717.19
####	1,476.06	1,905.00	598.53	65.31	1.01	29.26	281.80	0.00	58.80	1.50	1,732.64	529.07	370.12	45.38	183.18	50.78	46.86	760.48	408.44	373.87	0.00	1,390.24	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,750.17
####	1,356.58	2,004.53	618.56	64.58	1.01	29.81	295.97	0.00	58.94	1.51	1,747.24	529.00	365.88	45.04	181.37	50.71	47.05	761.09	411.00	368.46	0.00	1,401.93	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,773.23
####	1,236.86	2,104.49	639.07	63.78	1.01	30.36	310.19	0.00	59.29	1.52	1,762.83	528.92	361.99	44.73	179.64	50.72	47.25	761.84	414.08	363.60	0.00	1,412.35	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,799.75
####	1,117.96	2,203.83	659.79	62.91	1.01	30.91	324.33	0.00	59.69	1.53	1,779.35	528.82	358.46	44.46	177.99	50.79	47.46	762.74	418.19	359.53	0.00	1,423.21	0.97	1,382.24	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	112.51	9,868.73

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

Year	Res.Indices Heating	Res.Indices Cooling	Res.Indices Others	XHeat	XCool	XOther	AvgEESavings	15-Apr	15-Apr	Aug	Jan	Sep	Oct	AContrib2Sales.Feb18	AContrib2Sales.Dec17	ARMA	Covid	XHeatNew	XCoolNew	XOtherNew	AvgEESavingsNew	15 May New	15 Apr New	Aug New	Jan New	Sep New	Oct New	Feb18 New	Dec17 New	ARMA new	Covid New	Total (kWh)
2012	3,495.6	91.2	5,948.1	3,398.6	136.0	5,791.5	321.82996	0	0	1	1	1	1	0	0	15.15372	0	3,412.22	81.73	5,710.44	(164.78)	-	-	61.80	73.23	88.71	52.28	-	-	15.15	-	9,330.77
2013	3,612.6	109.2	5,984.7	3,885.7	141.8	5,779.4	471.60814	0	0	1	1	1	1	0	0	14.38569	0	3,901.20	85.21	5,698.50	(241.46)	-	-	61.80	73.23	88.71	52.28	-	-	14.39	-	9,733.84
2014	3,651.6	122.6	6,016.3	3,843.3	101.5	5,799.6	627.22017	0	0	1	1	1	1	0	0	6.83003	0	3,858.71	61.02	5,718.37	(321.14)	-	-	61.80	73.23	88.71	52.28	-	-	6.83	-	9,599.79
2015	3,680.3	142.9	6,040.3	4,041.1	195.8	5,813.9	771.15603	1	1	1	1	1	1	0	0	-38.87721	0	4,057.23	117.67	5,732.55	(394.83)	85.60	89.13	61.80	73.23	88.71	52.28	-	-	(38.88)	-	9,924.49
2016	3,728.9	164.2	6,034.3	3,850.0	229.3	5,810.3	901.44657	0	0	1	1	1	1	0	0	-41.80223	0	3,865.36	137.80	5,728.97	(461.54)	-	-	61.80	73.23	88.71	52.28	-	-	(41.80)	-	9,504.80
2017	3,793.5	185.3	5,995.6	3,897.7	176.3	5,774.9	1013.06984	0	0	1	1	1	1	0	1	-12.04525	0	3,913.29	105.95	5,694.03	(518.69)	-	-	61.80	73.23	88.71	52.28	-	(61.85)	(12.05)	-	9,396.69
2018	3,824.0	204.7	5,973.0	4,032.7	397.5	5,771.2	1105.29868	0	0	1	1	1	1	1	0	6.87922	0	4,048.84	238.89	5,690.36	(565.91)	-	-	61.80	73.23	88.71	52.28	77.95	-	6.88	-	9,773.02
2019	3,881.9	225.4	5,946.5	4,282.6	333.2	5,746.1	1186.90991	0	0	1	1	1	1	0	0	11.91663	0	4,299.76	200.26	5,665.65	(607.70)	-	-	61.80	73.23	88.71	52.28	-	-	11.92	-	9,845.89
2020	3,893.4	238.1	5,921.4	3,928.3	353.7	5,723.8	1250.22134	0	0	1	1	1	1	0	0	11.09328	259.63272	3,944.01	212.57	5,643.68	(640.11)	-	-	61.80	73.23	88.71	52.28	-	-	11.09	259.63	9,706.88
2021	3,939.7	253.2	5,902.4	3,768.8	330.3	5,706.4	1304.72601	0	0	1	1	1	1	0	0	28.95619	346.17696	3,783.86	198.52	5,626.52	(668.02)	-	-	61.80	73.23	88.71	52.28	-	-	28.96	346.18	9,592.03
2022	3,969.8	267.4	5,880.2	4,118.5	369.6	5,705.6	1382.23877	0	0	1	1	1	1	0	0	-10.44887	207.70618	4,134.99	222.16	5,625.76	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	(10.45)	207.71	9,748.47
2023	3,993.4	281.4	5,859.2	4,127.1	393.9	5,683.5	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,143.62	236.74	5,603.97	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,665.14
2024	4,020.3	295.7	5,841.4	4,151.5	419.0	5,672.8	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,168.07	251.82	5,593.35	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,694.05
2025	4,046.4	310.3	5,821.0	4,140.5	445.1	5,638.0	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,157.08	267.52	5,559.05	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,664.46
2026	4,045.3	324.9	5,830.0	4,127.0	471.8	5,650.1	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,143.51	283.53	5,570.97	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,678.82
2027	4,043.6	339.8	5,843.5	4,113.4	498.9	5,666.5	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,129.86	299.82	5,587.15	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,697.64
2028	4,044.3	354.8	5,865.9	4,122.4	525.9	5,704.1	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,138.88	316.10	5,624.24	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,760.02
2029	4,044.9	369.9	5,891.1	4,090.0	553.2	5,713.3	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,106.36	332.50	5,633.34	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,753.01
2030	4,044.3	384.7	5,908.8	4,078.7	580.3	5,731.7	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,095.06	348.78	5,651.44	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,776.09
2031	4,044.2	399.8	5,928.0	4,069.2	607.8	5,751.5	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,085.47	365.27	5,671.01	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,802.57
2032	4,044.5	414.9	5,951.0	4,082.1	635.2	5,791.7	1382.23877	0	0	1	1	1	1	0	0	0	112.50751	4,098.43	381.75	5,710.61	(707.71)	-	-	61.80	73.23	88.71	52.28	-	-	-	112.51	9,871.60

Regression Coefficients

	MStructRes.WtXHeat	MStructRes.WtXCool	MStructRes.WtXOther	MSales.AvgEESavingsProfiled	MBin.May15	MBin.Apr15	MBin.Aug	MBin.Jan	MBin.Sep	MBin.Oct	MBin.Feb18	MBin.Dec17	Mbin.Covid2020Stepped	SMA(1)
Variable														
Coefficient	1.004	0.601	0.986	-0.512	85.604	89.133	61.795	73.225	88.709	52.28	77.954	-61.852	57.696	0.45
StdErr	0.022	0.171	0.022	0.116	22.728	22.428	12.248	7.022	15.212	9.562	20.555	20.651	14.613	0.097
T-Stat	46.18	3.522	44.668	-4.414	3.766	3.974	5.045	10.428	5.832	5.468	3.793	-2.995	3.948	4.651
P-Value	0	0.0006	0	0	0.0003	0.0001	0	0	0	0	0.0003	0.0034	0.0001	0

		Customer count and housing						New housing usage					NSPI and other Programs					Before future DSM
Year	SAE model Regression Sales (kWh / HH)	Historical Customer Count	Incremental New Housing Single Family	Cumlative New Housing Single Family	New Housing Multi Unit	Cumulative New Housing Multi Unit	Forecasted Customer Count	New Usage Single Family	New Usage Multi Family	Structural Change Index		Forecast without HP and without DSM (GWh)	RTR (GWh)	Electric Veahicles (GWh)	End-Use Plug (Estimated Work from Home)	Solar PV (GWh)	Total Programs (GWh)	Total SAE + adjsutments outside model
2012	9,330.8	447,613.0					447,613.0					4,176.6						4,176.6
2013	9,733.8	450,977.0					450,977.0					4,389.7						4,389.7
2014	9,599.8	453,877.0					453,877.0					4,357.1						4,357.1
2015	9,924.5	456,655.0					456,655.0					4,532.1						4,532.1
2016	9,504.8	459,875.0					459,875.0					4,371.0						4,371.0
2017	9,396.7	463,739.0					463,739.0					4,357.6						4,357.6
2018	9,773.0	468,049.0					468,049.0					4,574.3						4,574.3
2019	9,845.9	472,369.0					472,369.0					4,650.9						4,650.9
2020	9,706.9	477,035.0		-		-	477,035.0					4,630.5						4,630.5
2021	9,592.0	482,771.0		-		-	482,771.0					4,630.8			4			4,630.8
2022	9,748.5	482,771.0	2,478.7	2,478.7	3,271.9	3,271.9	488,521.7	16000	4860	1	55.6	4,761.8			12	(31)	(18.9)	4,742.9
2023	9,665.1	482,771.0	1,558.8	4,037.6	2,384.1	5,656.0	492,464.6	16000	4860	0.998400848	92.1	4,758.0	(1.7)		26	(41)	(16.8)	4,741.2
2024	9,694.1	482,771.0	1,439.5	5,477.1	2,222.0	7,878.0	496,126.1	16000	4860	0.997174798	125.9	4,805.6	(3.5)		48	(51)	(7.1)	4,798.4
2025	9,664.5	482,771.0	1,249.3	6,726.3	1,958.3	9,836.3	499,333.6	16000	4860	0.995737064	155.4	4,820.5	(3.5)		76	(62)	10.1	4,830.6
2026	9,678.8	482,771.0	1,058.1	7,784.4	1,672.0	11,508.3	502,063.7	16000	4860	0.993928702	180.5	4,852.0	(3.5)		110	(74)	32.2	4,884.2
2027	9,697.6	482,771.0	899.2	8,683.6	1,436.3	12,944.6	504,399.2	16000	4860	0.992034311	201.8	4,882.0	(3.5)		153	(88)	60.8	4,942.8
2028	9,760.0	482,771.0	821.8	9,505.4	1,292.2	14,236.8	506,513.2	16000	4860	0.990199891	221.3	4,931.0	(3.5)		204	(104)	95.6	5,026.6
2029	9,753.0	482,771.0	768.3	10,273.7	1,192.0	15,428.8	508,473.5	16000	4860	0.98840834	239.4	4,945.1	(3.5)		259	(123)	133.1	5,078.2
2030	9,776.1	482,771.0	721.2	10,994.9	1,102.6	16,531.4	510,297.3	16000	4860	0.986404917	256.3	4,972.4	(3.5)		320	(143)	173.2	5,145.6
2031	9,802.6	482,771.0	674.4	11,669.3	1,013.3	17,544.7	511,985.0	16000	4860	0.984650842	272.0	5,000.2	(3.5)		403	(160)	239.6	5,239.8
2032	9,871.6	482,771.0	627.7	12,297.0	923.6	18,468.3	513,536.4	16000	4860	0.983084964	286.5	5,047.4	(3.5)		510	(176)	330.2	5,377.5

Residential load post regression

	Existing Customer Average Use from Regression Model	New Customer Load	EV's	Solar	RTR	Residential Sales (before DSM)	DSM	Residential Sales (with DSM)
2022	9,748	56	12	(31)	-	4,743	-25	4,717
2032	9,872	287	510	(176)	(3)	5,378	-349	5,029
Change to load	1.3%	4.9%	10.5%	-3.1%	-0.1%	13.4%	-6.8%	6.6%

Residential Average Use - Regression (includes coefficients)

	Xheat	Xcool	Xother	EESavings	Binaries	ARMA	Covid	Total Average Use
2022	4,135	222	5,626	(708)	276	(10)	208	9,748
2032	4,098	382	5,711	(708)	276	-	113	9,872
Change to load	-0.4%	1.6%	0.9%	0.0%	0.0%	0.1%	-1.0%	1.3%

Residential Intensities - Inputs to Regression

Xheat Inputs

	Efurn	HP Heat	Secondary Heat	Furnace Fans	HeatUse Variable	Coefficient	Total Xheat
2022	2,193	1,214	492	71	1.04	1.004	4,135
2032	1,118	2,204	660	63	1.01	1.004	4,098
Change to load	-26.0%	23.9%	4.1%	-0.2%	-2.7%	0.0%	-0.9%

Xcool Inputs

	Central AC	HP Cool	Room AC	CoolUse Variable	Coefficient	Total Xcool
2022	26	185	57	1.4	0.601	222
2032	31	324	60	1.5	0.601	382
Change to load	2.4%	62.8%	1.2%	10.7%	0.0%	71.8%

Xother Inputs

	EWHeat	ECook	Ref/Frz	Washer/Dryer	TV	Light	Misc	OtherUse Variable	Coeff	Total Xother
2022	1,537	529	654	805	438	552	1,365	0.97	0.986	5,626
2032	1,779	529	581	810	418	360	1,474	0.97	0.986	5,711
Change to load	4.3%	0.0%	-1.3%	0.1%	-0.3%	-3.4%	1.9%	0.3%	0.0%	1.5%

Request IR-34:

Appendix B: Small General Service Model (pp 8-13)

(a) Please provide in electronic spreadsheet format the data and the statistical model parameters and the full results used to produce the commercial model coefficients and statistics tables.

(b) Please provide in electronic spreadsheet format the calculation of the XHeat, XCool and XOther variables.

(c) Please provide in electronic spreadsheet format the calculations used to produce the commercial sales forecast.

(d) For the XHeat variable please provide the underlying factors (penetration, usage, etc.) driving the increase of 19.1% for Heating Intensity.

(e) Please provide in electronic spreadsheet format the source and calculations of the values in the tables on pages 12-13.

Response IR-34:

(a) Please refer to 2022 Load Forecast Report Attachment 6 Small General Model, filed electronically, for details.

(b) The calculation of the xHeat, xCool, and xOther values was completed in Metrix ND, the forecasting software used by NS Power. The methodology used to calculate these variables is outlined in Appendix B, Forecast Model Details in the Load Forecast report. The inputs to xHeat, xCool, and xOther are shown in 2022 Load Forecast Report Attachment 2 Small

General Intensities, filed electronically. The components of the calculation are provided in Attachment 1.

(c) All calculations are completed within Metrix ND. Input values, coefficients and outputs can be found in 2022 Load Forecast Report Attachment 6 Small General Model, filed electronically.

(d) This increase is driven by growth in heat pumps in this sector (like Residential) as shown in the increased heat share in 2022 Load Forecast Report Attachment 2 Small General Intensities on the Shares tab (column B), filed electronically.

(e) Please refer to Attachment 1.

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	Heating Indices (kWh / HH)		Cooling Indices (kWh / HH)		Other Indices (kWh / HH)									Other Regression Variables							Regression Sales Results Out of Monthly Model (kWh / HH)
Year	SmlGenIndices.Heating	AContrib2Sales.SmlGenHeatUse	SmlGenIndices.Cooling	AContrib2Sales.SmlGenCoolUse	SmlGenIndices.Vent	SmlGenIndices.EWHeat	SmlGenIndices.Cooking	SmlGenIndices.Refrig	SmlGenIndices.Light	SmlGenIndices.Office	SmlGenIndices.Misc	SmlGenIndices.PV	AContrib2Sales.SmlGenOtherUse	AContrib2Sales.Mar	AContrib2Sales.Sep	AContrib2Sales.Dec	AContrib2Sales.Aft13	AContrib2Sales.May20	AContrib2Sales.Jun20	AContrib2Sales.SmlGenARMA	AContrib2Sales.AnnualAvgUse
2012	44,847.57	1.029	38,396.15	1.579	14,956.32	1,773.63	2,230.51	26,929.89	69,759.25	14,936.04	35,076.87	0.00	12.368	1.00	1.00	1.00	0.00	0.00	0.00	0.00	**10,212.05**
2013	46,709.80	1.136	38,192.07	1.368	14,931.51	1,796.55	2,215.96	25,918.20	69,483.97	13,562.54	35,474.40	0.00	12.224	1.00	1.00	1.00	12.00	0.00	0.00	-109.66	**10,809.61**
2014	46,957.57	1.110	37,940.05	0.872	14,627.79	1,802.95	2,195.98	25,784.24	69,208.69	13,027.38	35,769.64	0.00	12.193	1.00	1.00	1.00	12.00	0.00	0.00	-170.94	**10,555.72**
2015	46,947.85	1.162	37,737.88	1.451	14,347.55	1,809.45	2,171.80	25,621.95	68,933.42	12,535.06	36,277.82	0.00	12.229	1.00	1.00	1.00	12.00	0.00	0.00	56.11	**10,997.97**
2016	46,923.96	1.109	37,565.17	1.504	14,085.67	1,815.43	2,153.93	25,487.80	68,658.14	12,070.38	36,861.16	0.00	12.423	1.00	1.00	1.00	12.00	0.00	0.00	76.59	**10,973.76**
2017	48,099.04	1.118	37,488.46	1.036	13,838.99	1,817.81	2,139.97	25,414.52	68,382.86	11,677.08	37,279.01	0.00	12.583	1.00	1.00	1.00	12.00	0.00	0.00	0.66	**10,986.29**
2018	49,234.15	1.163	37,241.06	2.143	13,613.15	1,835.10	2,120.07	25,197.39	67,832.30	11,319.07	37,531.53	0.00	12.794	1.00	1.00	1.00	12.00	0.00	0.00	42.19	**11,464.73**
2019	50,332.10	1.236	37,018.29	1.670	13,401.53	1,851.77	2,104.33	25,028.65	65,236.23	10,999.44	37,905.37	0.00	13.028	1.00	1.00	1.00	12.00	0.00	0.00	41.50	**11,661.90**
2020	51,163.80	1.117	36,815.78	1.627	13,163.83	1,868.81	2,088.44	24,752.91	62,217.72	10,725.79	38,303.19	0.00	12.798	1.00	1.00	1.00	12.00	1.00	1.00	-17.97	**10,737.66**
2021	52,406.94	1.088	36,611.21	1.498	12,938.90	1,902.44	2,067.98	24,369.76	59,463.70	10,476.13	38,857.24	0.00	13.252	1.00	1.00	1.00	12.00	0.00	0.00	-29.42	**11,090.51**
2022	53,566.40	1.207	36,432.00	1.643	12,723.78	1,938.26	2,050.71	24,067.67	57,217.67	10,263.22	38,978.97	0.00	13.622	1.00	1.00	1.00	12.00	0.00	0.00	104.18	**11,729.72**
2023	54,708.23	1.218	36,226.80	1.681	12,525.06	1,975.64	2,040.40	23,841.87	55,138.89	10,089.26	39,194.09	0.00	13.790	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,710.14**
2024	55,832.36	1.225	36,039.18	1.707	12,341.24	2,013.58	2,032.03	23,658.98	53,275.82	9,946.73	39,435.63	0.00	13.883	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,754.55**
2025	56,932.98	1.221	35,876.03	1.736	12,162.48	2,049.68	2,018.48	23,427.12	51,646.64	9,820.31	39,596.85	0.00	13.918	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,737.17**
2026	57,872.71	1.225	35,732.39	1.766	11,751.33	2,079.39	2,004.02	23,209.91	50,241.44	9,707.39	39,702.28	0.00	14.013	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,763.70**
2027	58,797.20	1.229	35,604.30	1.795	11,368.35	2,108.94	1,989.77	23,008.62	49,024.18	9,625.18	39,845.11	0.00	14.109	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,805.65**
2028	59,715.37	1.240	35,493.19	1.823	11,011.95	2,138.79	1,977.57	22,831.64	47,617.44	9,570.95	39,977.54	0.00	14.238	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,875.55**
2029	60,610.23	1.238	35,396.39	1.848	10,680.13	2,167.78	1,965.24	22,665.57	46,286.41	9,532.63	40,105.75	0.00	14.284	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,866.95**
2030	61,483.43	1.242	35,291.87	1.873	10,355.35	2,196.73	1,955.22	22,486.72	44,042.10	9,499.15	40,227.61	0.00	14.371	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,850.37**
2031	62,455.60	1.246	35,200.16	1.897	10,051.78	2,226.06	1,944.49	22,327.36	42,026.92	9,490.23	40,329.79	0.00	14.455	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,852.62**
2032	63,396.65	1.257	35,120.16	1.918	9,769.48	2,255.38	1,934.18	22,183.29	40,241.61	9,495.29	40,431.89	0.00	14.574	1.00	1.00	1.00	12.00	0.00	0.00	0.00	**11,904.14**

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Year	SmlGenIndices Heating	SmlGenIndices Cooling	SmlGenIndices Others	XHeat	XCool	XOther	Mar	Sept	Dec	Aft 13	May 20	Jun 20	ARMA	XHeatNew	XCoolNew	XOtherNew	Mar New	Sept New	Dec New	Aft 13 New	May 20 New	Jun 20 New	ARMA new	Total (kWh)
2012	44,847.6	38,396.2	165,662.5	3,230.4	2,122.0	10,244.6	1	1	1	0	0	0	0	2,564.91	252.51	7,335.11	95.88	86.92	(120.13)	-	-	-	-	10,215.22
2013	46,709.8	38,192.1	163,383.1	3,714.4	1,828.6	9,986.0	1	1	1	12	0	0	-109.66	2,949.20	217.61	7,149.96	95.88	86.92	(120.13)	543.90	-	-	(109.66)	10,813.69
2014	46,957.6	37,940.1	162,416.7	3,648.6	1,157.9	9,901.7	1	1	1	12	0	0	-170.94	2,896.99	137.79	7,089.64	95.88	86.92	(120.13)	543.90	-	-	(170.94)	10,560.06
2015	46,947.9	37,737.9	161,697.1	3,818.7	1,916.5	9,887.0	1	1	1	12	0	0	56.11	3,032.08	228.07	7,079.07	95.88	86.92	(120.13)	543.90	-	-	56.11	11,001.90
2016	46,924.0	37,565.2	161,132.5	3,642.7	1,977.4	10,008.7	1	1	1	12	0	0	76.59	2,892.31	235.31	7,166.26	95.88	86.92	(120.13)	543.90	-	-	76.59	10,977.05
2017	48,099.0	37,488.5	160,550.2	3,764.2	1,359.3	10,101.0	1	1	1	12	0	0	0.66	2,988.80	161.76	7,232.33	95.88	86.92	(120.13)	543.90	-	-	0.66	10,990.13
2018	49,234.2	37,241.1	159,448.6	4,008.2	2,793.3	10,199.9	1	1	1	12	0	0	42.19	3,182.47	332.40	7,303.15	95.88	86.92	(120.13)	543.90	-	-	42.19	11,466.79
2019	50,332.1	37,018.3	156,527.3	4,354.7	2,163.7	10,196.2	1	1	1	12	0	0	41.5	3,457.66	257.48	7,300.47	95.88	86.92	(120.13)	543.90	-	-	41.50	11,663.69
2020	51,163.8	36,815.8	153,120.7	4,000.5	2,096.5	9,798.2	1	1	1	12	1	1	-17.97	3,176.40	249.48	7,015.51	95.88	86.92	(120.13)	543.90	(150.44)	(139.16)	(17.97)	10,740.39
2021	52,406.9	36,611.2	150,076.2	3,991.3	1,919.5	9,944.0	1	1	1	12	0	0	-29.42	3,169.10	228.42	7,119.94	95.88	86.92	(120.13)	543.90	-	-	(29.42)	11,094.62
2022	53,566.4	36,432.0	147,240.3	4,525.8	2,095.0	10,028.5	1	1	1	12	0	0	104.18	3,593.51	249.31	7,180.43	95.88	86.92	(120.13)	543.90	-	-	104.18	11,734.00
2023	54,708.2	36,226.8	144,805.2	4,664.4	2,131.4	9,984.3	1	1	1	12	0	0	0	3,703.55	253.64	7,148.77	95.88	86.92	(120.13)	543.90	-	-	-	11,712.54
2024	55,832.4	36,039.2	142,704.0	4,787.6	2,153.2	9,905.8	1	1	1	12	0	0	0	3,801.37	256.23	7,092.55	95.88	86.92	(120.13)	543.90	-	-	-	11,756.73
2025	56,933.0	35,876.0	140,721.6	4,866.1	2,179.8	9,792.8	1	1	1	12	0	0	0	3,863.65	259.40	7,011.65	95.88	86.92	(120.13)	543.90	-	-	-	11,741.28
2026	57,872.7	35,732.4	138,695.8	4,962.6	2,208.6	9,717.7	1	1	1	12	0	0	0	3,940.29	262.83	6,957.89	95.88	86.92	(120.13)	543.90	-	-	-	11,767.58
2027	58,797.2	35,604.3	136,970.2	5,058.3	2,236.8	9,662.6	1	1	1	12	0	0	0	4,016.31	266.18	6,918.39	95.88	86.92	(120.13)	543.90	-	-	-	11,807.46
2028	59,715.4	35,493.2	135,125.9	5,183.3	2,264.6	9,619.6	1	1	1	12	0	0	0	4,115.54	269.49	6,887.64	95.88	86.92	(120.13)	543.90	-	-	-	11,879.25
2029	60,610.2	35,396.4	133,403.5	5,252.5	2,289.4	9,527.7	1	1	1	12	0	0	0	4,170.47	272.44	6,821.82	95.88	86.92	(120.13)	543.90	-	-	-	11,871.31
2030	61,483.4	35,291.9	130,762.9	5,345.4	2,313.6	9,396.0	1	1	1	12	0	0	0	4,244.22	275.31	6,727.51	95.88	86.92	(120.13)	543.90	-	-	-	11,853.63
2031	62,455.6	35,200.2	128,396.6	5,447.4	2,337.1	9,279.9	1	1	1	12	0	0	0	4,325.22	278.12	6,644.38	95.88	86.92	(120.13)	543.90	-	-	-	11,854.30
2032	63,396.7	35,120.2	126,311.1	5,578.3	2,357.6	9,204.3	1	1	1	12	0	0	0	4,429.15	280.56	6,590.27	95.88	86.92	(120.13)	543.90	-	-	-	11,906.55

Regression Coefficients

Variable	MStructSmlGen.WtxHeat	MStructSmlGen.WtxCool	MStructSmlGen.WtXOther	MBin.Mar	MBin.Sep	MBin.Dec	MBin.Aft 13	MBin.May20	MBin.Jun 20	SMA(1)
Coefficient	0.794	0.119	0.716	95.882	86.922	-120.126	45.325	-150.437	-139.161	0.592
StdErr	0.034	0.025	0.018	21.984	23.158	20.715	10.234	35.6	35.249	0.089
T-Stat	23.376	4.84	39.959	4.361	3.753	-5.799	4.429	-4.226	-3.948	6.684
P-Value	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%	0.00%	0.01%	0.01%	0.00%

Year	SAE model Regression Sales (kWh / HH)	Forecasted Customer Count	Forecast without HP and without DSM (GWh)	NSPI and other Programs All Small General Programs (GWh)	Solar PV (GWh)	Total Programs (GWh)	**Before future DSM Total SAE + adjsutments outside model**	DSM (GWh)	**After DSM Final Sales**
2012	10,215.2	23,594.1	241.0				**241.0**		**241.0**
2013	10,813.7	23,774.4	257.1				**257.1**		**257.1**
2014	10,560.1	23,946.9	252.9				**252.9**		**252.9**
2015	11,001.9	24,406.8	268.5				**268.5**		**268.5**
2016	10,977.1	24,755.2	271.7				**271.7**		**271.7**
2017	10,990.1	25,089.8	275.7				**275.7**		**275.7**
2018	11,466.8	25,360.8	290.8				**290.8**		**290.8**
2019	11,663.7	25,535.1	297.8				**297.8**		**297.8**
2020	10,740.4	25,733.5	276.4				**276.4**		**276.4**
2021	11,094.6	25,932.9	287.7				**287.7**		**287.7**
2022	11,734.0	26,525.6	311.3	6.0	(3.9)	2.1	**313.4**	2.4	**311.0**
2023	11,712.5	27,029.7	316.6	11.0	(5.1)	5.9	**322.4**	4.1	**318.3**
2024	11,756.7	27,288.4	320.8	13.7	(6.4)	7.2	**328.1**	6.8	**321.2**
2025	11,741.3	27,532.4	323.3	17.0	(7.8)	9.3	**332.5**	9.6	**322.9**
2026	11,767.6	27,797.8	327.1	19.5	(9.3)	10.2	**337.4**	11.8	**325.5**
2027	11,807.5	28,101.7	331.8	20.9	(11.1)	9.8	**341.6**	14.0	**327.6**
2028	11,879.2	28,405.5	337.4	21.4	(13.1)	8.3	**345.7**	16.5	**329.2**
2029	11,871.3	28,711.9	340.8	21.6	(15.3)	6.3	**347.1**	18.6	**328.6**
2030	11,853.6	29,019.9	344.0	21.6	(17.9)	3.7	**347.7**	20.6	**327.1**
2031	11,854.3	29,322.2	347.6	21.6	(20.0)	1.6	**349.2**	22.4	**326.8**
2032	11,906.6	29,620.5	352.7	21.6	(22.0)	(0.4)	**352.3**	24.3	**328.0**

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Small Gen load post regression

	Average Use from Regression Model (kWh/customer)	Customer Forecast	Load from Regression Model (GWh)	NSPI C&I Programs (GWh)	Solar (GWh)	Small Gen Sales before DSM (GWh)	DSM (GWh)	Small Gen Sales with DSM (GWh)
2022	11,734	26,526	311	6	(4)	313	-2	311
2032	11,907	29,621	353	22	(22)	352	-24	328
Change to load			13.2%	5.0%	-5.8%	12.4%	-7.0%	5.5%

Small Gen Average Use - Regression (includes coefficients)

	Xheat	Xcool	Xother	Binaries	ARMA	Total Average Use
2022	3,594	249	7,180	607	104	11,734
2032	4,429	281	6,590	607	-	11,907
Change to load	7.1%	0.3%	-5.0%	0.0%	-0.9%	1.5%

Small Gen Intensities - Inputs to Regression

Xheat Inputs

	Heating	HeatUse Variable	Coefficient	Scaling Factor	Total Xheat
2022	53,566	1.21	0.794	0.070	3,594
2032	63,397	1.26	0.794	0.070	4,429
Change to load	19.1%	4.1%	0.0%	0.0%	23.3%

Xcool Inputs

	Cooling	CoolUse Variable	Coefficient	Scaling Factor	Total Xcool
2022	36,432	1.64	0.119	0.035	249
2032	35,120	1.92	0.119	0.035	281
Change to load	-4.2%	16.7%	0.0%	0.0%	12.5%

Xother Inputs

	Vent	EWHeat	Cooking	Refrig	Light	Office	Misc	OtherUse Variable	Coeff	Scaling Factor	Total Xother
2022	12,724	1,938	2,051	24,068	57,218	10,263	38,979	13.62	0.716	0.005	7,180
2032	9,769	2,255	1,934	22,183	40,242	9,495	40,432	14.57	0.716	0.005	6,590
Change to load	-2.1%	0.2%	-0.1%	-1.4%	-12.3%	-0.6%	1.1%	7.0%	0.0%	0.0%	-8.2%

Request IR-35:

Appendix B: General Service Model (pp 14-18)

(a) Please provide in electronic spreadsheet format the data and the statistical model parameters and the full results used to produce the commercial model coefficients and statistics tables.

(b) Please provide in electronic spreadsheet format the detailed end-use intensity data and cite its derivation.

(c) Please provide in electronic spreadsheet format the calculation of the XHeat, XCool and XOther variables.

(d) For the XCool variable please provide the underlying factors (penetration, usage, etc.) driving the increase of 20.4% for the CoolUse Variable.

(e) Please provide in electronic spreadsheet format the source and calculations of the values in the tables on pages 17-18.

Response IR-35:

(a) Please refer to 2022 Load Forecast Report Attachment 7General Model, filed electronically, for details.

(b) Please refer to 2022 Load Forecast Report Attachment 3 General Intensities, filed electronically, for details.

(c) All calculations are completed within Metrix ND, the forecasting software used by NS Power. Input values, coefficients and outputs can be found in 2022 Load Forecast Report

Attachment 7 General Model, filed electronically. The components of the calculations are provided in Attachment 1.

(d) Overall cooling intensity declines in the forecast with increases in efficiency (as seen in 2022 Load Forecast Report Attachment 3 General Intensities (filed electronically), Annual Indices tab, column C. The increase is driven by the economic component of the Cool Use variable, non-manufacturing GDP, which increases throughout the forecast period.

(e) Please refer to Attachment 1.

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	Heating Indices (kWh / HH)		Cooling Indices (kWh / HH)		Other Indices (kWh / HH)									Other Regression Variables				Regression Sales Results Out of Monthly Model (kWh / HH)
Year	GenIndices.Heating	AContrib2Sales.GenHeatUse	GenIndices.Cooling	AContrib2Sales.GenCoolUse	GenIndices.Vent	GenIndices.EWHeat	GenIndices.Cooking	GenIndices.Refrig	GenIndices.Light	GenIndices.Office	GenIndices.Misc	GenIndices.PV	AContrib2Sales.GenOtherUse	AContrib2Sales.Feb18	AContrib2Sales.May20	AContrib2Sales.Jun20	AContrib2Sales.GenSalesARMA	AContrib2Sales.GenMetrixSales
2012	607,216.75	1.05	331,292.31	1.61	138,207.92	18,291.94	20,611.65	248,852.98	694,735.43	138,020.54	324,137.36	0.00	12.59	0.00	0.00	0.00	0.00	2,465,785.10
2013	604,692.95	1.16	329,531.46	1.40	137,978.73	18,158.85	20,477.14	239,504.17	678,542.46	125,328.38	327,810.87	0.00	12.48	0.00	0.00	0.00	-12,853.30	2,425,576.19
2014	588,387.96	1.14	327,356.95	0.90	135,172.08	17,865.67	20,292.55	238,266.30	652,609.60	120,383.11	330,539.16	0.00	12.56	0.00	0.00	0.00	28,377.37	2,399,234.28
2015	574,644.61	1.20	325,612.51	1.50	132,582.41	17,554.44	20,069.14	236,766.62	632,039.53	115,833.69	335,235.07	0.00	12.64	0.00	0.00	0.00	24,949.04	2,411,437.85
2016	562,042.69	1.15	324,122.37	1.56	130,162.51	17,270.71	19,904.00	235,526.99	616,147.62	111,539.66	340,625.65	0.00	12.85	0.00	0.00	0.00	18,949.33	2,385,132.54
2017	548,336.76	1.16	323,460.47	1.08	127,883.00	16,984.10	19,774.97	234,849.81	603,405.04	107,905.23	344,486.91	0.00	13.07	0.00	0.00	0.00	-3,975.56	2,349,653.12
2018	536,311.77	1.21	321,325.87	2.23	125,796.03	16,687.56	19,591.05	232,843.40	583,141.62	104,596.96	346,820.32	0.00	13.32	1.00	0.00	0.00	9,418.40	2,447,710.98
2019	524,550.49	1.29	319,403.74	1.74	123,840.49	16,419.86	19,445.64	231,284.05	560,823.67	101,643.33	350,274.91	0.00	13.60	0.00	0.00	0.00	-15,825.97	2,395,106.28
2020	513,047.13	1.17	317,656.40	1.71	121,643.98	16,163.80	19,298.80	228,735.99	534,874.17	99,114.56	353,951.10	0.00	13.46	0.00	1.00	1.00	-6,995.78	2,234,337.22
2021	501,796.05	1.14	315,891.30	1.57	119,565.40	15,906.14	19,109.74	225,195.44	511,198.36	96,807.55	359,070.92	0.00	13.91	0.00	0.00	0.00	-4,850.43	2,297,091.90
2022	493,867.13	1.26	314,345.06	1.72	117,577.60	15,697.40	18,950.18	222,403.92	491,889.62	94,840.09	360,195.83	0.00	14.27	0.00	0.00	0.00	-24,108.50	2,328,757.63
2023	487,409.50	1.28	312,574.56	1.77	115,741.26	15,525.80	18,854.90	220,317.27	474,018.76	93,232.53	362,183.66	0.00	14.50	0.00	0.00	0.00	0.00	2,353,397.45
2024	495,263.21	1.29	310,955.72	1.80	114,042.63	15,371.80	18,777.50	218,627.24	458,002.28	91,915.44	364,415.74	0.00	14.63	0.00	0.00	0.00	0.00	2,352,474.40
2025	504,229.97	1.29	309,548.04	1.83	112,390.71	15,201.51	18,652.31	216,484.67	443,996.53	90,747.25	365,905.52	0.00	14.69	0.00	0.00	0.00	0.00	2,341,268.18
2026	514,208.51	1.29	308,308.66	1.87	108,591.38	15,010.44	18,518.70	214,477.49	431,916.26	89,703.75	366,879.77	0.00	14.82	0.00	0.00	0.00	0.00	2,342,328.18
2027	525,118.76	1.30	307,203.47	1.90	105,052.32	14,832.17	18,387.03	212,617.45	421,451.74	88,944.14	368,199.61	0.00	14.96	0.00	0.00	0.00	0.00	2,350,350.80
2028	536,891.31	1.32	306,244.73	1.94	101,758.94	14,667.59	18,274.32	210,981.96	409,358.21	88,442.96	369,423.38	0.00	15.15	0.00	0.00	0.00	0.00	2,364,456.42
2029	549,465.20	1.32	305,409.53	1.97	98,692.68	14,510.10	18,160.37	209,447.41	397,915.62	88,088.85	370,608.16	0.00	15.25	0.00	0.00	0.00	0.00	2,365,995.24
2030	562,795.22	1.33	304,507.68	2.01	95,691.46	14,365.73	18,067.71	207,794.67	378,621.71	87,779.46	371,734.18	0.00	15.40	0.00	0.00	0.00	0.00	2,363,212.49
2031	577,155.55	1.34	303,716.42	2.04	92,886.22	14,226.63	17,968.62	206,322.07	361,297.59	87,697.09	372,678.44	0.00	15.54	0.00	0.00	0.00	0.00	2,364,139.22
2032	591,467.79	1.36	303,026.16	2.07	90,277.53	14,092.30	17,873.29	204,990.73	345,949.61	87,743.82	373,621.91	0.00	15.73	0.00	0.00	0.00	0.00	2,375,580.78

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

Year	GenIndices Heating	GenIndices Cooling	GenIndices Others	XHeat	XCool	XOther	Feb 18	May 20	Jun 20	ARMA	XHeatNew	XCoolNew	XOtherNew	Feb 18 New	May 20 New	Jun 20 New	ARMA new	Total (kWh)
2012	607,216.8	331,292.3	1,582,857.8	636,096.0	196,777.2	1,793,217.1	0	0	0	0	407,737.52	63,952.58	1,994,057.41	-	-	-	-	2,465,747.51
2013	604,693.0	329,531.5	1,547,800.6	701,135.4	170,162.0	1,738,885.3	0	0	0	-12853.3	449,427.81	55,302.66	1,933,640.40	-	-	-	(12,853.30)	2,425,517.57
2014	588,388.0	327,357.0	1,515,128.5	671,774.3	109,019.6	1,712,939.9	0	0	0	28377.37	430,607.33	35,431.36	1,904,789.12	-	-	-	28,377.37	2,399,205.17
2015	574,644.6	325,612.5	1,490,080.9	690,228.6	180,695.7	1,695,378.9	0	0	0	24949.04	442,436.55	58,726.09	1,885,261.32	-	-	-	24,949.04	2,411,373.00
2016	562,042.7	324,122.4	1,471,177.1	644,612.4	186,664.9	1,701,682.5	0	0	0	18949.33	413,196.54	60,666.09	1,892,270.94	-	-	-	18,949.33	2,385,082.89
2017	548,336.8	323,460.5	1,455,289.1	636,372.2	128,923.3	1,712,041.2	0	0	0	-3975.56	407,914.60	41,900.07	1,903,789.81	-	-	-	(3,975.56)	2,349,628.92
2018	536,311.8	321,325.9	1,429,476.9	649,366.3	265,379.2	1,713,519.3	1	0	0	9418.4	416,243.79	86,248.24	1,905,433.46	30,290.28	-	-	9,418.40	2,447,634.18
2019	524,550.5	319,403.7	1,403,732.0	676,764.6	205,929.9	1,717,745.9	0	0	0	-15825.97	433,806.08	66,927.23	1,910,133.49	-	-	-	(15,825.97)	2,395,040.83
2020	513,047.1	317,656.4	1,373,782.4	602,235.2	201,263.3	1,664,052.9	0	1	1	-6995.78	386,032.79	65,410.57	1,850,426.79	-	########	########	(6,995.78)	2,235,858.53
2021	501,796.1	315,891.3	1,346,853.6	573,046.1	183,772.4	1,686,033.8	0	0	0	-4850.43	367,322.53	59,726.04	1,874,869.62	-	-	-	(4,850.43)	2,297,067.76
2022	493,867.1	314,345.1	1,321,554.6	624,480.2	200,032.9	1,697,407.0	0	0	0	-24108.5	400,291.79	65,010.70	1,887,516.61	-	-	-	(24,108.50)	2,328,710.60
2023	487,409.5	312,574.6	1,299,874.2	624,171.7	204,687.7	1,696,702.0	0	0	0	0	400,094.08	66,523.51	1,886,732.60	-	-	-	-	2,353,350.19
2024	495,263.2	310,955.7	1,281,152.6	639,285.8	206,972.3	1,686,484.3	0	0	0	0	409,782.17	67,265.98	1,875,370.59	-	-	-	-	2,352,418.73
2025	504,230.0	309,548.0	1,263,378.5	649,342.3	209,841.2	1,669,763.5	0	0	0	0	416,228.42	68,198.40	1,856,777.04	-	-	-	-	2,341,203.86
2026	514,208.5	308,308.7	1,245,097.8	665,822.9	213,045.0	1,660,271.0	0	0	0	0	426,792.47	69,239.62	1,846,221.40	-	-	-	-	2,342,253.49
2027	525,118.8	307,203.5	1,229,484.5	684,445.0	216,489.2	1,655,738.6	0	0	0	0	438,729.27	70,358.98	1,841,181.33	-	-	-	-	2,350,269.59
2028	536,891.3	306,244.7	1,212,907.4	708,132.8	219,813.4	1,653,787.2	0	0	0	0	453,913.12	71,439.36	1,839,011.34	-	-	-	-	2,364,363.82
2029	549,465.2	305,409.5	1,197,423.2	725,997.4	223,106.8	1,643,903.0	0	0	0	0	465,364.32	72,509.72	1,828,020.16	-	-	-	-	2,365,894.20
2030	562,795.2	304,507.7	1,174,054.9	748,860.9	226,233.6	1,627,295.1	0	0	0	0	480,019.87	73,525.93	1,809,552.11	-	-	-	-	2,363,097.91
2031	577,155.6	303,716.4	1,153,076.7	773,376.9	229,245.2	1,613,106.0	0	0	0	0	495,734.59	74,504.67	1,793,773.93	-	-	-	-	2,364,013.19
2032	591,467.8	303,026.2	1,134,549.2	802,166.4	232,156.1	1,605,935.2	0	0	0	0	514,188.64	75,450.74	1,785,799.95	-	-	-	-	2,375,439.33

Regression Coefficients

Variable	MStructGen. WtXHeat	MStructGen.W tXCool	MStructGen. WtXOther	MBin.Feb 18	MBin.May 20	Mbin.Jun2 0	SMA(1)
Coefficient	0.641	0.325	1.112	30290.28	-31446.78	-27569.06	0.46
StdErr	0.035	0.048	0.018	7014.26	7153.494	7155.916	0.093
T-Stat	18.178	6.807	60.612	4.318	-4.396	-3.853	4.915
P-Value	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%

			NSPI and other Programs				Before future DSM		After DSM	
Year	SAE model Regression Sales (kWh / HH)	Forecast without HP and without DSM (GWh)	All General Demand Programs (GWh)	Canso (assuming Gen takes all commercial load)	Solar PV (GWh)	Total Programs (GWh)	**Total SAE + adjsutments outside model**	DSM (GWh)	**Final Sales**
2012	2,465,747.5	2,465.7					**2,465.7**		**2,465.7**
2013	2,425,517.6	2,425.5					**2,425.5**		**2,425.5**
2014	2,399,205.2	2,399.2					**2,399.2**		**2,399.2**
2015	2,411,373.0	2,411.4					**2,411.4**		**2,411.4**
2016	2,385,082.9	2,385.1					**2,385.1**		**2,385.1**
2017	2,349,628.9	2,349.6					**2,349.6**		**2,349.6**
2018	2,447,634.2	2,447.6					**2,447.6**		**2,447.6**
2019	2,395,040.8	2,395.0					**2,395.0**		**2,395.0**
2020	2,235,858.5	2,235.9					**2,235.9**		**2,235.9**
2021	2,297,067.8	2,297.1					**2,297.1**		**2,297.1**
2022	2,328,710.6	2,328.7	17.9		(3.9)	14.0	**2,342.7**	16.7	**2,326.0**
2023	2,353,350.2	2,353.4	33.1		(5.1)	27.9	**2,381.3**	36.8	**2,344.5**
2024	2,352,418.7	2,352.4	51.2		(6.4)	44.8	**2,397.2**	64.0	**2,333.3**
2025	2,341,203.9	2,341.2	60.8		(7.8)	53.1	**2,394.3**	83.7	**2,310.6**
2026	2,342,253.5	2,342.3	67.7		(9.3)	58.4	**2,400.7**	99.3	**2,301.4**
2027	2,350,269.6	2,350.3	70.7		(11.1)	59.7	**2,410.0**	114.7	**2,295.2**
2028	2,364,363.8	2,364.4	72.4		(13.1)	59.3	**2,423.7**	132.1	**2,291.6**
2029	2,365,894.2	2,365.9	73.3		(15.3)	58.0	**2,423.9**	146.5	**2,277.3**
2030	2,363,097.9	2,363.1	73.3		(17.9)	55.4	**2,418.5**	160.6	**2,257.8**
2031	2,364,013.2	2,364.0	73.3		(20.0)	53.3	**2,417.3**	173.9	**2,243.4**
2032	2,375,439.3	2,375.4	73.3		(22.0)	51.3	**2,426.7**	186.8	**2,239.9**

Gen Demand load post regression

	Load from Regre	NSPI C&I Pr	Solar	Gen Demar	DSM	Gen Demand Sales (with DSM)
2022	2,329	18	(4)	2,343	-17	2,326
2032	2,375	73	(22)	2,427	-187	2,240
Change to l	2.0%	2.4%	-0.8%	3.6%	-7.3%	-3.7%

Gen Demand - Regression (includes coefficients)

	Xheat	Xcool	Xother	Binaries	ARMA	Total Sales
2022	400,292	65,011	1,887,517	-	(24,109)	2,328,711
2032	514,189	75,451	1,785,800	-	-	2,375,439
Change to l	4.9%	0.4%	-4.4%	0.0%	1.0%	2.0%

Gen Demand Intensities - Inputs to Regression

Xheat Inputs

	Heating	HeatUse Va	Coefficient	Total Xheat
2022	493,867	1.26	0.641	400,292
2032	591,468	1.36	0.641	514,189
Change to l	21.2%	7.3%	0.0%	28.5%

Xcool Inputs

	Cooling	CoolUse Va	Coefficient	Scaling Fact	Total Xcool
2022	314,345	1.72	0.325	0.370	65,011
2032	303,026	2.07	0.325	0.370	75,451
Change to l	-4.3%	20.4%	0.0%	0.0%	16.1%

Xother Inputs

	Vent	EWHeat	Cooking	Refrig	Light	Office	Misc	OtherUse \	Coeff	Scaling Factor	Total Xother
2021	117,578	15,697	18,950	222,404	491,890	94,840	360,196	14.27	1.112	0.090	1,887,517
2031	90,278	14,092	17,873	204,991	345,950	87,744	373,622	15.73	1.112	0.090	1,785,800
Change to l	-2.3%	-0.1%	-0.1%	-1.5%	-12.2%	-0.6%	1.1%	10.2%	0.0%	0.0%	-5.4%

Request IR-36:

Appendix B: Small Industrial Model (pp 19-21)

(a) Please provide in electronic spreadsheet format the data and the statistical model parameters and the full results used to produce the model coefficients and statistics tables.

(b) Please explain why "ManGDP" was chosen as the long-term driver for this forecast, whether any other variables were considered, and why they were rejected.

Response IR-36:

(a) All calculations for the Small Industrial forecast are completed within Metrix ND, the forecasting software used by NS Power. Please refer to 2022 Load Forecast Report Attachment 8 Small Industrial Model inputs, coefficients, and outputs (filed electronically).

(b) Starting in 2015, NS Power started testing different economic indicators (and combinations) in the industrial forecast to increase model fit and predictability. For the 2022 forecast period ManGDP was found to be a satisfactory predictor in the Small Industrial class based on model statistics (Appendix B).

Request IR-37:

Appendix B: Medium Industrial Model (pp 22-24)

(a) Please provide in electronic spreadsheet format the data and the statistical model parameters and the full results used to produce the model coefficients and statistics tables.

(b) Please explain why Manufacturing Employment was chosen as the long-term driver for this forecast, whether any other variables were considered, and why they were rejected.

Response IR-37:

(a) All calculations for the Medium Industrial forecast are completed within Metrix ND, the forecasting software used by NS Power. Please refer to 2022 Load Forecast Report Attachment 9 Medium Industrial Model, filed electronically, for the inputs, coefficients, and outputs.

(b) In 2015, NS Power started testing different economic indicators (and combinations) in the Industrial forecast to increase model fit and predictability. For the 2022 forecast period, Manufacturing Employment (ManEmp) was found to be a satisfactory predictor in the Medium Industrial class based on model statistics (Appendix B).

Request IR-38:

Appendix B: Combined Model for Commercial and Industrial DSM Coefficient (pp 25-26)

(a) Please provide in electronic spreadsheet format the data and the statistical model parameters and the full results used to produce the model coefficients and statistics tables.

(b) Please describe the method and data used to weigh the X variable.

(c) Please explain why the X variables from the General Service model were used to represent both commercial and industrial customers?

(d) Were other alternatives considered? If so, please indicate why this approach was preferred.

Response IR-38:

(a) Please refer to Synapse IR-16 (b).

(b-d) The General Service model was used as it constitutes the bulk of the Commercial class (77 percent of the commercial class in 2021, 62 percent if Small and Medium Industrial are also included). No other alternatives were considered.

Request IR-39:

Appendix B: Peak Forecast (pp 27-31)

(a) Please provide in electronic spreadsheet format the data and the statistical model parameters and the full results used to produce the model coefficients and statistics tables.

(b) Please provide the customer load values used to construct the aggregate HeatVar, CoolVar, and BaseVar values both for the model development and the forecast as represented in the equation on line 5 of page 29.

(c) Please provide the details of the large customer class's energy and coincident load factors. Please provide also the historical coincident peak load factors associated with this load.

Response IR-39:

(a) Please refer to the 2022 Load Forecast Report Attachment 10: Peak Model Inputs filed electronically. All calculations in the peak forecast are completed within Metrix ND, the forecasting software used by NS Power.

(b) Please refer to Attachment 1 for the input load components HeatVar, CoolVar, and BaseVar.

(c) Please refer to the table below for the coincident peak load factors used in calculating the peak contributions for the large customer rate classes. The values used are the historical coincident load factors for 2022. The large customer class energy values used to create the peak forecast can be found on the "Energy Annual Profile" tab in 2022 Load Forecast

Report Attachment 4 10-Year Forecast Classes PCONFIDENTIAL ELECTRONIC ONLY"

Large classes	**Load Factor (Percent)**
Large General	88.4
Large Industrial	88.0
L. I. Interruptible	94.1
GR & LF	105.4
Shore Power	0.00
Municipal	71.89

Year	Month	ResEndUse.ResHeat	NResEndUse.SmlGenHeat	NResEndUse.GenHeat	mVars.HeatLoad	mVars.Days	mVars.Heat_AvgMW	mPkDayWthr.PkHDD	mPkDayWthr.PkHDDIdx	mVars.Heat_Var
2012	1	276,874.6	9,535.5	67,246.4	361,976.8	31.0	486.5	29.6	1.2	563.7
2012	2	258,386.1	10,848.1	72,500.6	337,682.5	29.0	485.2	25.2	1.0	478.5
2012	3	243,521.0	10,116.7	67,787.2	318,204.8	31.0	427.7	23.2	0.9	388.4
2012	4	173,519.3	9,330.0	58,924.2	226,758.0	30.0	314.9	17.4	0.7	214.5
2012	5	114,009.8	6,626.7	41,133.6	148,976.2	31.0	200.2	11.9	0.5	93.3
2012	6	51,018.3	4,267.9	24,902.7	66,660.9	30.0	92.6	6.5	0.3	23.6
2012	7	7,674.1	1,854.2	9,802.5	10,027.6	31.0	13.5	-	-	-
2012	8	2,881.5	286.0	1,626.3	3,764.6	31.0	5.1	-	-	-
2012	9	28,318.8	215.5	3,005.6	36,990.2	30.0	51.4	-	-	-
2012	10	91,912.6	1,377.8	13,132.2	120,031.9	31.0	161.3	15.3	0.6	96.6
2012	11	164,843.9	3,938.5	30,861.2	215,214.0	30.0	298.9	22.8	0.9	266.7
2012	12	236,906.8	6,820.1	50,139.9	309,226.5	31.0	415.6	23.2	0.9	377.4
2013	1	286,015.7	9,571.7	66,308.0	370,546.7	31.0	498.1	30.5	1.2	594.5
2013	2	258,140.1	11,273.5	70,780.3	334,387.5	28.0	497.6	36.8	1.4	716.7
2013	3	251,631.1	10,234.9	65,416.5	325,893.6	31.0	438.0	28.4	1.1	486.9
2013	4	179,435.3	9,709.9	58,182.0	232,383.2	30.0	322.8	18.0	0.7	227.4
2013	5	117,973.4	6,881.6	40,636.7	152,766.2	31.0	205.3	10.7	0.4	86.0
2013	6	52,841.1	4,426.5	24,621.1	68,412.4	30.0	95.0	-	-	-
2013	7	7,956.7	1,922.9	9,697.2	10,300.5	31.0	13.8	-	-	-
2013	8	2,990.5	297.2	1,609.9	3,871.3	31.0	5.2	-	-	-
2013	9	29,400.4	224.1	2,981.7	38,058.4	30.0	52.9	-	-	-
2013	10	95,447.2	1,431.0	13,041.1	123,553.0	31.0	166.1	17.9	0.7	116.3
2013	11	171,274.2	4,092.1	30,681.8	221,680.0	30.0	307.9	20.8	0.8	250.7
2013	12	246,132.7	7,104.9	49,901.7	318,584.7	31.0	428.2	31.6	1.2	529.6
2014	1	290,788.0	9,934.7	65,518.8	373,545.5	31.0	502.1	37.3	1.5	733.0
2014	2	262,529.9	11,369.0	69,014.9	337,281.5	28.0	501.9	33.4	1.3	656.1
2014	3	255,823.1	10,330.2	63,860.3	328,694.7	31.0	441.8	33.0	1.3	570.6
2014	4	182,362.0	9,800.9	56,855.2	234,379.0	30.0	325.5	19.5	0.8	248.4
2014	5	119,869.9	6,959.5	39,760.3	154,092.0	31.0	207.1	14.8	0.6	120.0
2014	6	53,645.5	4,475.2	24,115.0	68,975.5	30.0	95.8	2.4	0.1	9.0
2014	7	8,074.6	1,939.9	9,507.6	10,384.0	31.0	14.0	-	-	-
2014	8	3,034.0	299.0	1,580.2	3,901.4	31.0	5.2	-	-	-
2014	9	29,821.7	226.2	2,925.3	38,348.2	30.0	53.3	-	-	-
2014	10	96,812.2	1,446.5	12,790.1	124,487.7	31.0	167.3	10.3	0.4	67.5
2014	11	173,737.0	4,144.6	30,081.2	223,366.3	30.0	310.2	21.0	0.8	255.0
2014	12	249,740.8	7,200.3	48,908.0	321,064.3	31.0	431.5	28.1	1.1	474.6
2015	1	294,224.7	10,120.3	64,272.6	375,918.9	31.0	505.3	33.5	1.3	662.5
2015	2	265,625.9	11,552.4	67,823.1	339,408.2	28.0	505.1	30.1	1.2	595.0
2015	3	258,857.1	10,512.3	62,727.6	330,790.0	31.0	444.6	28.2	1.1	490.7
2015	4	184,639.4	9,979.4	55,838.6	235,994.5	30.0	327.8	20.9	0.8	268.1
2015	5	121,414.0	7,093.9	39,050.9	155,206.5	31.0	208.6	13.6	0.5	111.0
2015	6	54,352.9	4,561.5	23,684.1	69,488.9	30.0	96.5	10.9	0.4	41.2
2015	7	8,185.7	1,982.5	9,336.2	10,465.6	31.0	14.1	-	-	-
2015	8	3,074.8	306.3	1,551.2	3,932.0	31.0	5.3	-	-	-
2015	9	30,212.9	231.8	2,874.9	38,643.9	30.0	53.7	-	-	-
2015	10	98,086.2	1,483.2	12,579.1	125,478.1	31.0	168.7	16.4	0.6	108.3

Year	Month	ResEndUse.ResHeat	NResEndUse.SmlGenHeat	NResEndUse.GenHeat	mVars.HeatLoad	mVars.Days	mVars.Heat_AvgMW	mPkDayWthr.PkHDD	mPkDayWthr.PkHDDIdx	mVars.Heat_Var
2015	11	175,972.3	4,252.4	29,609.4	225,141.6	30.0	312.7	21.3	0.8	260.7
2015	12	252,852.5	7,389.6	48,180.5	323,563.2	31.0	434.9	27.2	1.1	463.0
2016	1	299,413.8	10,371.3	63,405.3	380,580.8	31.0	511.5	26.9	1.1	538.6
2016	2	279,292.9	11,855.9	67,726.6	355,081.6	29.0	510.2	28.7	1.1	573.1
2016	3	263,323.4	11,099.5	63,446.2	334,865.1	31.0	450.1	28.3	1.1	498.5
2016	4	187,844.2	10,249.6	55,252.7	238,940.0	30.0	331.9	23.5	0.9	305.2
2016	5	123,405.9	7,288.7	38,647.9	157,038.4	31.0	211.1	9.9	0.4	81.8
2016	6	55,236.3	4,685.1	23,448.7	70,310.1	30.0	97.7	6.3	0.3	24.1
2016	7	8,318.6	2,035.0	9,250.1	10,591.4	31.0	14.2	-	-	-
2016	8	3,127.1	314.3	1,538.8	3,982.1	31.0	5.4	-	-	-
2016	9	30,767.1	238.1	2,855.3	39,183.1	30.0	54.4	-	-	-
2016	10	99,985.1	1,524.0	12,501.7	127,350.1	31.0	171.2	11.5	0.5	77.0
2016	11	179,504.7	4,376.2	29,447.5	228,667.5	30.0	317.6	16.3	0.6	202.6
2016	12	258,267.1	7,609.2	47,950.2	329,018.6	31.0	442.2	32.4	1.3	560.8
2017	1	307,254.0	10,706.2	63,078.8	388,630.9	31.0	522.4	30.0	1.2	613.3
2017	2	277,605.5	12,467.0	66,621.8	351,201.6	28.0	522.6	28.5	1.1	583.0
2017	3	270,700.4	11,359.4	61,721.3	342,524.1	31.0	460.4	30.7	1.2	553.2
2017	4	193,157.9	10,810.6	54,994.7	244,483.6	30.0	339.6	19.2	0.8	255.2
2017	5	126,980.0	7,686.4	38,483.9	160,761.8	31.0	216.1	12.9	0.5	109.1
2017	6	56,879.3	4,955.9	23,348.7	72,028.3	30.0	100.0	-	-	-
2017	7	8,569.2	2,154.6	9,211.6	10,854.0	31.0	14.6	-	-	-
2017	8	3,221.9	332.4	1,532.5	4,080.8	31.0	5.5	-	-	-
2017	9	31,699.4	251.2	2,841.7	40,149.3	30.0	55.8	-	-	-
2017	10	102,942.2	1,606.8	12,436.5	130,397.9	31.0	175.3	10.3	0.4	70.7
2017	11	184,809.6	4,607.0	29,278.1	234,100.0	30.0	325.1	20.1	0.8	255.8
2017	12	265,911.3	7,999.2	47,656.3	336,822.3	31.0	452.7	31.3	1.2	554.6
2018	1	313,420.5	11,248.1	62,732.3	395,128.8	31.0	531.1	30.3	1.2	629.8
2018	2	283,105.5	13,089.2	66,328.6	356,961.6	28.0	531.2	29.2	1.1	607.1
2018	3	276,169.1	11,928.8	61,420.2	348,257.8	31.0	468.1	25.0	1.0	458.0
2018	4	197,064.6	11,359.4	54,724.7	248,575.4	30.0	345.2	16.2	0.6	218.9
2018	5	129,644.5	8,076.1	38,295.0	163,569.6	31.0	219.9	11.6	0.5	99.8
2018	6	58,078.3	5,209.9	23,247.9	73,294.5	30.0	101.8	10.1	0.4	40.2
2018	7	8,750.4	2,261.2	9,172.8	11,044.3	31.0	14.8	-	-	-
2018	8	3,289.1	349.2	1,525.9	4,152.3	31.0	5.6	-	-	-
2018	9	32,343.4	264.2	2,833.9	40,843.2	30.0	56.7	-	-	-
2018	10	105,054.8	1,693.2	12,409.9	132,699.8	31.0	178.4	14.4	0.6	100.5
2018	11	188,502.4	4,859.1	29,236.0	238,178.3	30.0	330.8	28.7	1.1	371.6
2018	12	271,064.5	8,448.4	47,625.7	342,594.1	31.0	460.5	27.1	1.1	488.4
2019	1	321,602.9	11,889.3	62,746.0	404,124.4	31.0	543.2	27.7	1.1	588.9
2019	2	290,456.7	13,822.2	66,407.8	365,102.8	28.0	543.3	33.1	1.3	703.9
2019	3	283,112.2	12,581.8	61,541.9	355,988.5	31.0	478.5	28.4	1.1	531.9
2019	4	201,983.7	11,964.8	54,871.1	254,103.7	30.0	352.9	11.8	0.5	163.0
2019	5	132,804.5	8,509.5	38,436.1	167,138.2	31.0	224.7	13.4	0.5	117.8
2019	6	59,490.9	5,484.4	23,340.5	74,898.6	30.0	104.0	7.9	0.3	32.2
2019	7	8,957.7	2,385.5	9,216.0	11,282.9	31.0	15.2	-	-	-
2019	8	3,367.2	368.9	1,533.3	4,238.3	31.0	5.7	-	-	-

Year	Month	ResEndUse.ResHeat	NResEndUse.SmlGenHeat	NResEndUse.GenHeat	mVars.HeatLoad	mVars.Days	mVars.Heat_AvgMW	mPkDayWthr.PkHDD	mPkDayWthr.PkHDDIdx	mVars.Heat_Var
2019	9	33,091.8	276.6	2,826.0	41,627.1	30.0	57.8	-	-	-
2019	10	107,406.7	1,766.3	12,332.1	135,043.2	31.0	181.5	15.0	0.6	106.6
2019	11	192,681.1	5,040.1	28,938.1	242,089.9	30.0	336.2	18.7	0.7	246.1
2019	12	276,928.6	8,709.0	46,931.5	347,730.3	31.0	467.4	25.9	1.0	473.8
2020	1	324,865.9	12,206.4	61,561.9	406,117.4	31.0	545.9	31.0	1.2	662.3
2020	2	303,136.8	14,087.1	65,533.3	378,743.4	29.0	544.2	32.6	1.3	694.3
2020	3	285,849.0	13,096.6	61,188.7	356,922.9	31.0	479.7	22.6	0.9	424.3
2020	4	203,956.5	12,025.2	53,103.3	254,513.5	30.0	353.5	16.8	0.7	232.4
2020	5	134,098.1	8,516.7	37,011.4	167,261.1	31.0	224.8	15.0	0.6	132.0
2020	6	60,065.3	5,463.6	22,380.2	74,867.6	30.0	104.0	-	-	-
2020	7	9,047.3	2,363.7	8,793.6	11,268.6	31.0	15.2	-	-	-
2020	8	3,402.0	363.3	1,456.9	4,239.5	31.0	5.7	-	-	-
2020	9	33,456.4	276.1	2,713.7	41,719.6	30.0	57.9	4.7	0.2	10.7
2020	10	108,639.7	1,768.3	11,900.6	135,557.5	31.0	182.2	15.4	0.6	109.8
2020	11	195,095.8	5,082.9	28,086.8	243,574.2	30.0	338.3	15.4	0.6	203.9
2020	12	280,657.3	8,855.5	45,842.7	350,588.4	31.0	471.2	24.2	1.0	446.3
2021	1	332,232.6	12,482.8	60,498.2	413,125.4	31.0	555.3	22.1	0.9	480.3
2021	2	300,262.8	14,579.8	64,138.6	373,582.3	28.0	555.9	29.7	1.2	646.2
2021	3	292,943.8	13,323.6	59,548.2	364,687.5	31.0	490.2	29.4	1.2	564.0
2021	4	209,134.2	12,700.4	53,185.2	260,538.4	30.0	361.9	14.8	0.6	209.6
2021	5	137,715.5	9,067.0	37,321.7	171,661.1	31.0	230.7	14.3	0.6	129.1
2021	6	61,730.8	5,862.7	22,709.4	77,001.8	30.0	107.0	-	-	-
2021	7	9,304.6	2,557.1	8,985.0	11,615.4	31.0	15.6	-	-	-
2021	8	3,496.3	396.2	1,499.4	4,365.5	31.0	5.9	-	-	-
2021	9	34,417.2	299.6	2,781.8	42,970.0	30.0	59.7	-	-	-
2021	10	111,732.7	1,918.0	12,178.3	139,539.7	31.0	187.6	8.5	0.3	62.4
2021	11	200,564.4	5,500.3	28,682.5	250,510.7	30.0	347.9	18.1	0.7	246.5
2021	12	288,862.9	9,573.3	46,702.8	360,758.2	31.0	484.9	23.5	0.9	446.0
2022	1	338,161.0	13,586.2	61,634.3	421,698.7	31.0	566.8	31.7	1.2	703.2
2022	2	305,031.6	15,810.2	65,456.3	380,574.1	28.0	566.3	31.6	1.2	701.1
2022	3	297,491.7	14,420.1	60,624.1	371,241.8	31.0	499.0	25.3	1.0	494.7
2022	4	212,330.0	13,727.2	54,021.8	265,043.5	30.0	368.1	16.4	0.6	235.6
2022	5	139,737.1	9,767.8	37,811.4	174,455.9	31.0	234.5	13.6	0.5	125.0
2022	6	62,616.5	6,301.9	22,951.8	78,191.5	30.0	108.6	4.9	0.2	20.7
2022	7	9,432.8	2,741.6	9,057.0	11,782.3	31.0	15.8	-	-	-
2022	8	3,545.4	424.5	1,507.0	4,429.5	31.0	6.0	-	-	-
2022	9	34,878.5	321.3	2,796.2	43,579.7	30.0	60.5	-	-	-
2022	10	113,215.5	2,058.2	12,239.0	141,501.8	31.0	190.2	10.8	0.4	80.3
2022	11	203,096.3	5,902.9	28,818.7	253,892.8	30.0	352.6	20.2	0.8	278.5
2022	12	292,227.3	10,261.3	46,914.5	365,321.5	31.0	491.0	27.6	1.1	530.8
2023	1	341,704.0	14,436.3	61,963.3	426,682.3	31.0	573.5	31.6	1.2	708.2
2023	2	308,149.6	16,777.2	65,901.2	384,955.1	28.0	572.9	31.5	1.2	705.8
2023	3	300,335.5	15,287.9	61,008.4	375,277.2	31.0	504.4	25.3	1.0	500.1
2023	4	214,302.8	14,540.0	54,339.7	267,836.9	30.0	372.0	16.4	0.6	238.1
2023	5	140,904.3	10,336.3	38,014.9	176,142.4	31.0	236.8	13.6	0.5	126.2
2023	6	63,099.0	6,662.2	23,064.0	78,896.7	30.0	109.6	4.9	0.2	20.9

Year	Month	ResEndUse.ResHeat	NResEndUse.SmlGenHeat	NResEndUse.GenHeat	mVars.HeatLoad	mVars.Days	mVars.Heat_AvgMW	mPkDayWthr.PkHDD	mPkDayWthr.PkHDDIdx	mVars.Heat_Var
2023	7	9,501.5	2,895.5	9,096.6	11,883.0	31.0	16.0	-	-	-
2023	8	3,568.7	447.1	1,512.3	4,463.1	31.0	6.0	-	-	-
2023	9	35,071.4	337.3	2,799.0	43,861.3	30.0	60.9	-	-	-
2023	10	113,856.9	2,157.3	12,239.4	142,392.3	31.0	191.4	10.8	0.4	80.8
2023	11	204,190.4	6,175.4	28,789.7	255,365.0	30.0	354.7	20.2	0.8	280.1
2023	12	293,435.9	10,714.0	46,814.1	366,975.9	31.0	493.3	27.6	1.1	533.2
2024	1	343,811.0	15,042.7	62,423.4	431,208.3	31.0	579.6	31.4	1.2	712.5
2024	2	320,869.3	17,491.0	68,259.4	402,432.5	29.0	578.2	31.3	1.2	709.2
2024	3	302,611.9	16,346.8	63,906.7	379,531.8	31.0	510.1	25.3	1.0	505.7
2024	4	215,964.3	15,067.4	55,612.3	270,857.8	30.0	376.2	16.4	0.6	240.7
2024	5	142,023.7	10,695.6	38,872.6	178,122.2	31.0	239.4	13.6	0.5	127.6
2024	6	63,613.8	6,883.9	23,566.0	79,782.1	30.0	110.8	4.9	0.2	21.1
2024	7	9,581.3	2,987.6	9,288.0	12,016.4	31.0	16.2	-	-	-
2024	8	3,599.4	461.3	1,543.1	4,514.4	31.0	6.1	-	-	-
2024	9	35,372.6	348.2	2,856.9	44,364.9	30.0	61.6	-	-	-
2024	10	114,831.7	2,227.3	12,493.5	144,027.2	31.0	193.6	10.8	0.4	81.8
2024	11	205,933.9	6,376.7	29,389.8	258,298.1	30.0	358.8	20.2	0.8	283.4
2024	12	295,935.3	11,065.2	47,794.2	371,193.5	31.0	498.9	27.6	1.1	539.3
2025	1	346,718.2	15,537.0	63,782.3	436,293.5	31.0	586.4	31.3	1.2	717.8
2025	2	313,099.6	18,001.2	69,128.3	394,006.2	28.0	586.3	31.2	1.2	716.0
2025	3	305,244.1	16,385.1	63,960.4	384,137.2	31.0	516.3	25.3	1.0	511.9
2025	4	217,870.1	15,566.6	56,941.5	274,192.3	30.0	380.8	16.4	0.6	243.7
2025	5	143,295.3	11,054.3	39,815.6	180,346.6	31.0	242.4	13.6	0.5	129.2
2025	6	64,191.8	7,117.5	24,145.7	80,793.1	30.0	112.2	4.9	0.2	21.4
2025	7	9,669.7	3,090.2	9,519.5	12,171.0	31.0	16.4	-	-	-
2025	8	3,632.8	477.3	1,582.2	4,572.8	31.0	6.2	-	-	-
2025	9	35,701.1	360.4	2,930.5	44,942.5	30.0	62.4	-	-	-
2025	10	115,901.5	2,305.7	12,818.3	145,914.0	31.0	196.1	10.8	0.4	82.8
2025	11	207,858.7	6,602.9	30,160.6	261,702.2	30.0	363.5	20.2	0.8	287.1
2025	12	298,710.3	11,460.4	49,060.1	376,115.1	31.0	505.5	27.6	1.1	546.5
2026	1	347,697.6	16,089.9	65,528.5	439,914.5	31.0	591.3	31.2	1.2	720.8
2026	2	313,947.0	18,594.1	71,107.4	397,241.9	28.0	591.1	31.1	1.2	719.0
2026	3	306,034.5	16,925.4	65,793.3	387,258.7	31.0	520.5	25.3	1.0	516.0
2026	4	218,408.7	16,080.5	58,574.5	276,396.7	30.0	383.9	16.4	0.6	245.7
2026	5	143,632.9	11,419.6	40,958.5	181,781.1	31.0	244.3	13.6	0.5	130.3
2026	6	64,335.5	7,353.1	24,839.4	81,428.8	30.0	113.1	4.9	0.2	21.6
2026	7	9,690.2	3,192.6	9,793.2	12,265.7	31.0	16.5	-	-	-
2026	8	3,640.2	493.2	1,627.7	4,608.2	31.0	6.2	-	-	-
2026	9	35,771.7	372.5	3,015.5	45,289.7	30.0	62.9	-	-	-
2026	10	116,122.6	2,383.3	13,191.1	147,036.9	31.0	197.6	10.8	0.4	83.5
2026	11	208,240.2	6,826.0	31,040.8	263,708.6	30.0	366.3	20.2	0.8	289.3
2026	12	299,236.8	11,849.6	50,497.4	378,987.4	31.0	509.4	27.6	1.1	550.7
2027	1	348,314.2	16,638.0	67,490.6	443,433.1	31.0	596.0	31.0	1.2	723.7
2027	2	314,481.2	19,221.6	73,308.9	400,407.9	28.0	595.9	31.0	1.2	721.9
2027	3	306,533.1	17,499.4	67,838.1	390,334.0	31.0	524.6	25.3	1.0	520.1
2027	4	218,748.9	16,628.5	60,401.4	278,583.8	30.0	386.9	16.4	0.6	247.6

Year	Month	ResEndUse.ResHeat	NResEndUse.SmlGenHeat	NResEndUse.GenHeat	mVars.HeatLoad	mVars.Days	mVars.Heat_AvgMW	mPkDayWthr.PkHDD	mPkDayWthr.PkHDDIdx	mVars.Heat_Var
2027	5	143,846.2	11,810.7	42,240.6	183,214.3	31.0	246.3	13.6	0.5	131.3
2027	6	64,426.4	7,606.1	25,619.6	82,068.4	30.0	114.0	4.9	0.2	21.7
2027	7	9,703.2	3,303.0	10,101.9	12,361.7	31.0	16.6	-	-	-
2027	8	3,644.7	510.2	1,679.2	4,643.9	31.0	6.2	-	-	-
2027	9	35,812.3	385.3	3,110.6	45,635.9	30.0	63.4	-	-	-
2027	10	116,242.4	2,465.1	13,606.6	148,147.5	31.0	199.1	10.8	0.4	84.1
2027	11	208,433.8	7,059.6	32,017.3	265,676.7	30.0	369.0	20.2	0.8	291.4
2027	12	299,485.0	12,253.8	52,083.6	381,782.3	31.0	513.2	27.6	1.1	554.7
2028	1	348,856.3	17,203.2	69,637.9	447,091.7	31.0	600.9	30.9	1.2	727.1
2028	2	325,522.7	19,927.3	76,477.4	417,241.6	29.0	599.5	30.8	1.2	723.7
2028	3	306,949.3	18,632.9	71,632.2	393,486.2	31.0	528.9	25.3	1.0	524.3
2028	4	219,024.2	17,182.9	62,361.3	280,809.2	30.0	390.0	16.4	0.6	249.6
2028	5	144,013.0	12,203.3	43,609.3	184,661.9	31.0	248.2	13.6	0.5	132.3
2028	6	64,494.8	7,858.1	26,448.7	82,709.8	30.0	114.9	4.9	0.2	21.9
2028	7	9,712.5	3,412.1	10,428.3	12,457.2	31.0	16.7	-	-	-
2028	8	3,648.2	527.1	1,733.4	4,679.7	31.0	6.3	-	-	-
2028	9	35,845.9	398.0	3,211.0	45,987.8	30.0	63.9	-	-	-
2028	10	116,350.2	2,546.2	14,045.7	149,289.0	31.0	200.7	10.8	0.4	84.7
2028	11	208,624.5	7,291.8	33,050.5	267,721.6	30.0	371.8	20.2	0.8	293.7
2028	12	299,755.2	12,656.6	53,764.3	384,717.8	31.0	517.1	27.6	1.1	559.0
2029	1	349,226.9	17,766.9	71,911.1	450,709.1	31.0	605.8	30.8	1.2	730.5
2029	2	315,269.7	20,505.7	78,213.0	406,938.9	28.0	605.6	30.7	1.2	728.5
2029	3	307,267.2	18,666.0	72,372.8	396,663.0	31.0	533.2	25.3	1.0	528.6
2029	4	219,248.1	17,734.8	64,436.2	283,073.8	30.0	393.2	16.4	0.6	251.6
2029	5	144,158.5	12,594.9	45,060.2	186,149.8	31.0	250.2	13.6	0.5	133.4
2029	6	64,559.2	8,110.1	27,328.6	83,375.6	30.0	115.8	4.9	0.2	22.1
2029	7	9,722.1	3,521.4	10,775.3	12,557.4	31.0	16.9	-	-	-
2029	8	3,651.7	543.9	1,791.0	4,717.3	31.0	6.3	-	-	-
2029	9	35,880.5	410.7	3,317.8	46,357.2	30.0	64.4	-	-	-
2029	10	116,460.8	2,627.8	14,513.0	150,487.3	31.0	202.3	10.8	0.4	85.4
2029	11	208,820.5	7,525.6	34,150.1	269,869.3	30.0	374.8	20.2	0.8	296.0
2029	12	300,033.1	13,062.6	55,553.2	387,802.0	31.0	521.2	27.6	1.1	563.5
2030	1	349,518.6	18,335.8	74,326.4	454,409.8	31.0	610.8	30.7	1.2	734.1
2030	2	315,529.6	21,151.9	80,882.0	410,278.6	28.0	610.5	30.6	1.2	732.2
2030	3	307,517.0	19,254.5	74,842.6	399,916.5	31.0	537.5	25.3	1.0	532.9
2030	4	219,423.9	18,294.3	66,635.2	285,394.5	30.0	396.4	16.4	0.6	253.7
2030	5	144,272.3	12,992.4	46,598.1	187,674.9	31.0	252.3	13.6	0.5	134.5
2030	6	64,609.4	8,366.2	28,261.3	84,058.2	30.0	116.8	4.9	0.2	22.3
2030	7	9,729.5	3,632.7	11,143.0	12,660.1	31.0	17.0	-	-	-
2030	8	3,654.4	561.1	1,852.2	4,755.8	31.0	6.4	-	-	-
2030	9	35,906.1	423.7	3,430.9	46,734.4	30.0	64.9	-	-	-
2030	10	116,541.4	2,710.5	15,007.2	151,708.2	31.0	203.9	10.8	0.4	86.1
2030	11	208,959.8	7,761.9	35,312.3	272,052.3	30.0	377.9	20.2	0.8	298.4
2030	12	300,226.0	13,472.1	57,442.1	390,930.0	31.0	525.4	27.6	1.1	568.0
2031	1	349,866.6	18,912.7	76,886.5	458,398.6	31.0	616.1	30.6	1.2	738.4
2031	2	315,835.9	21,843.0	83,730.1	413,870.4	28.0	615.9	30.6	1.2	736.4

Year	Month	ResEndUse.ResHeat	NResEndUse.SmlGenHeat	NResEndUse.GenHeat	mVars.HeatLoad	mVars.Days	mVars.Heat_AvgMW	mPkDayWthr.PkHDD	mPkDayWthr.PkHDDIdx	mVars.Heat_Var
2031	3	307,808.1	19,882.6	77,475.7	403,408.4	31.0	542.2	25.3	1.0	537.6
2031	4	219,626.2	18,890.0	68,977.8	287,879.8	30.0	399.8	16.4	0.6	255.9
2031	5	144,401.9	13,414.8	48,234.9	189,304.9	31.0	254.4	13.6	0.5	135.6
2031	6	64,665.8	8,637.7	29,253.2	84,786.3	30.0	117.8	4.9	0.2	22.5
2031	7	9,737.8	3,750.4	11,533.8	12,769.5	31.0	17.2	-	-	-
2031	8	3,657.5	579.3	1,917.1	4,796.9	31.0	6.5	-	-	-
2031	9	35,935.9	437.3	3,551.0	47,137.2	30.0	65.5	-	-	-
2031	10	116,636.9	2,797.9	15,532.3	153,014.1	31.0	205.7	10.8	0.4	86.9
2031	11	209,129.2	8,011.9	36,547.2	274,391.6	30.0	381.1	20.2	0.8	301.0
2031	12	300,466.4	13,905.3	59,449.9	394,287.4	31.0	530.0	27.6	1.1	572.9
2032	1	350,250.51	19,518.2	79,551.71	462,430.4	31.0	621.55	30.54	1.2	742.88
2032	2	326,804.38	22,595.54	87,488.66	431,536.22	29.0	620.02	30.47	1.19	739.36
2032	3	308,139.52	21,125.42	81,941.87	406,947.73	31.0	546.97	25.33	0.99	542.26
2032	4	219,860.67	19,479.19	71,333.26	290,402.67	30.0	403.34	16.35	0.64	258.1
2032	5	144,554.58	13,832.53	49,881.05	190,961.91	31.0	256.67	13.62	0.53	136.82
2032	6	64,733.61	8,906.25	30,251.04	85,527.65	30.0	118.79	4.87	0.19	22.64
2032	7	9,747.92	3,866.79	11,927.05	12,881.02	31.0	17.31	0	0	0
2032	8	3,661.22	597.2	1,982.36	4,838.68	31.0	6.5	0	0	0
2032	9	35,971.79	450.87	3,671.82	47,547.10	30.0	66.04	0	0	0
2032	10	116,750.97	2,884.34	16,060.64	154,342.01	31.0	207.45	10.79	0.42	87.61
2032	11	209,329.46	8,259.11	37,789.62	276,767.90	30.0	384.4	20.18	0.79	303.61
2032	12	300,748.14	14,333.79	61,469.62	397,694.91	31.0	534.54	27.62	1.08	577.84

Year	Month	ResEndUse.ResCool	NResEndUse.SmlGenCool	NResEndUse.GenCool	mVars.CoolLoad	mVars.Days	mVars.Cool_AvgMW	mPkDayWthr.PkCDD	mPkDayWthr.PkCDDIdx	mVars.Cool_Var
2012	1	-	-	-	-	31.0	-	-	-	-
2012	2	-	-	-	-	29.0	-	-	-	-
2012	3	64.3	4.4	55.2	187.4	31.0	0.3	-	-	-
2012	4	-	6.1	57.5	-	30.0	-	-	-	-
2012	5	113.2	7.7	97.1	329.7	31.0	0.4	-	-	-
2012	6	1,748.6	130.6	1,599.8	5,092.7	30.0	7.1	-	-	-
2012	7	12,296.9	1,011.2	12,098.6	35,817.0	31.0	48.1	9.8	1.1	53.9
2012	8	15,176.6	2,211.0	23,967.0	44,186.5	31.0	59.4	6.0	0.7	40.7
2012	9	3,945.2	1,712.8	16,904.1	11,479.2	30.0	15.9	2.0	0.2	3.6
2012	10	91.7	381.0	3,591.7	266.7	31.0	0.4	-	-	-
2012	11	-	8.7	81.6	-	30.0	-	-	-	-
2012	12	-	-	-	-	31.0	-	-	-	-
2013	1	-	-	-	-	31.0	-	-	-	-
2013	2	-	-	-	-	28.0	-	-	-	-
2013	3	77.0	4.4	54.4	198.5	31.0	0.3	-	-	-
2013	4	-	6.0	56.7	-	30.0	-	-	-	-
2013	5	135.6	7.7	95.8	349.5	31.0	0.5	-	-	-
2013	6	2,097.7	129.4	1,580.6	5,402.6	30.0	7.5	11.6	1.3	10.0
2013	7	14,767.6	1,001.7	11,959.8	38,023.4	31.0	51.1	13.1	1.5	76.5
2013	8	18,243.9	2,194.8	23,709.9	46,967.4	31.0	63.1	7.5	0.9	54.1
2013	9	4,744.1	1,700.4	16,736.8	12,212.4	30.0	17.0	2.2	0.3	4.3
2013	10	110.3	377.9	3,559.7	283.9	31.0	0.4	-	-	-
2013	11	-	8.6	81.0	-	30.0	-	-	-	-
2013	12	-	-	-	-	31.0	-	-	-	-
2014	1	-	-	-	-	31.0	-	-	-	-
2014	2	-	-	-	-	28.0	-	-	-	-
2014	3	86.9	4.4	54.3	208.1	31.0	0.3	-	-	-
2014	4	-	6.0	56.5	-	30.0	-	-	-	-
2014	5	153.1	7.7	95.8	366.9	31.0	0.5	-	-	-
2014	6	2,365.7	129.3	1,581.9	5,673.1	30.0	7.9	-	-	-
2014	7	16,648.2	998.9	11,983.3	39,943.8	31.0	53.7	2.0	0.2	12.3
2014	8	20,561.1	2,182.3	23,759.3	49,324.6	31.0	66.3	7.2	0.8	54.6
2014	9	5,345.7	1,695.8	16,769.3	12,822.7	30.0	17.8	3.1	0.4	6.3
2014	10	124.3	377.4	3,565.2	298.1	31.0	0.4	-	-	-
2014	11	-	8.6	81.1	-	30.0	-	-	-	-
2014	12	-	-	-	-	31.0	-	-	-	-
2015	1	-	-	-	-	31.0	-	-	-	-
2015	2	-	-	-	-	28.0	-	-	-	-
2015	3	101.7	4.4	54.3	223.0	31.0	0.3	-	-	-
2015	4	-	6.1	56.5	-	30.0	-	-	-	-
2015	5	179.3	7.8	95.8	393.4	31.0	0.5	-	-	-
2015	6	2,771.0	131.2	1,582.1	6,083.1	30.0	8.5	-	-	-
2015	7	19,510.8	1,016.4	11,979.8	42,833.8	31.0	57.6	4.9	0.6	32.2
2015	8	24,090.0	2,225.1	23,759.0	52,910.5	31.0	71.1	5.1	0.6	41.5
2015	9	6,260.9	1,728.3	16,776.5	13,758.1	30.0	19.1	6.5	0.7	14.2
2015	10	145.6	384.9	3,568.9	320.0	31.0	0.4	-	-	-

Year	Month	ResEndUse.ResCool	NResEndUse.SmlGenCool	NResEndUse.GenCool	mVars.CoolLoad	mVars.Days	mVars.Cool_AvgMW	mPkDayWthr.PkCDD	mPkDayWthr.PkCDDIdx	mVars.Cool_Var
2015	11	-	8.8	81.2	-	30.0	-	-	-	-
2015	12	-	-	-	-	31.0	-	-	-	-
2016	1	-	-	-	-	31.0	-	-	-	-
2016	2	-	-	-	-	29.0	-	-	-	-
2016	3	117.3	4.5	54.7	239.6	31.0	0.3	-	-	-
2016	4	-	6.2	56.9	-	30.0	-	-	-	-
2016	5	206.6	8.0	96.6	422.6	31.0	0.6	-	-	-
2016	6	3,192.6	134.2	1,595.2	6,536.3	30.0	9.1	-	-	-
2016	7	22,479.3	1,039.2	12,091.8	46,050.4	31.0	61.9	6.1	0.7	43.2
2016	8	27,775.8	2,274.5	23,993.4	56,919.9	31.0	76.5	6.3	0.7	55.1
2016	9	7,228.4	1,768.0	16,949.7	14,815.6	30.0	20.6	7.6	0.9	17.9
2016	10	168.2	393.8	3,608.0	344.9	31.0	0.5	-	-	-
2016	11	-	9.0	82.2	-	30.0	-	-	-	-
2016	12	-	-	-	-	31.0	-	-	-	-
2017	1	-	-	-	-	31.0	-	-	-	-
2017	2	-	-	-	-	28.0	-	-	-	-
2017	3	133.8	4.6	55.7	258.4	31.0	0.4	-	-	-
2017	4	-	6.4	57.9	-	30.0	-	-	-	-
2017	5	235.9	8.2	98.3	456.1	31.0	0.6	-	-	-
2017	6	3,648.8	138.3	1,624.9	7,058.2	30.0	9.8	12.1	1.4	13.6
2017	7	25,700.7	1,071.4	12,318.7	49,739.8	31.0	66.9	10.5	1.2	80.2
2017	8	31,761.8	2,341.6	24,438.5	61,469.1	31.0	82.6	8.8	1.0	83.1
2017	9	8,265.7	1,816.3	17,259.5	15,995.5	30.0	22.2	2.1	0.2	5.3
2017	10	192.2	404.3	3,672.9	372.1	31.0	0.5	-	-	-
2017	11	-	9.3	83.6	-	30.0	-	-	-	-
2017	12	-	-	-	-	31.0	-	-	-	-
2018	1	-	-	-	-	31.0	-	-	-	-
2018	2	-	-	-	-	28.0	-	-	-	-
2018	3	149.6	4.7	56.3	275.7	31.0	0.4	-	-	-
2018	4	-	6.5	58.6	-	30.0	-	-	-	-
2018	5	263.9	8.4	99.5	486.8	31.0	0.7	-	-	-
2018	6	4,082.8	141.1	1,643.4	7,533.8	30.0	10.5	-	-	-
2018	7	28,759.7	1,091.3	12,456.7	53,083.4	31.0	71.4	6.9	0.8	56.3
2018	8	35,532.2	2,388.7	24,723.6	65,620.6	31.0	88.2	9.0	1.0	90.7
2018	9	9,242.0	1,853.2	17,471.3	17,078.1	30.0	23.7	9.3	1.1	25.2
2018	10	215.0	413.3	3,720.9	397.5	31.0	0.5	-	-	-
2018	11	-	9.5	84.8	-	30.0	-	-	-	-
2018	12	-	-	-	-	31.0	-	-	-	-
2019	1	-	-	-	-	31.0	-	-	-	-
2019	2	-	-	-	-	28.0	-	-	-	-
2019	3	166.4	4.8	57.3	294.8	31.0	0.4	-	-	-
2019	4	-	6.7	59.7	-	30.0	-	-	-	-
2019	5	293.3	8.6	101.5	520.7	31.0	0.7	-	-	-
2019	6	4,536.3	144.5	1,677.9	8,060.9	30.0	11.2	-	-	-
2019	7	31,934.6	1,120.3	12,728.1	56,801.2	31.0	76.4	8.8	1.0	76.8
2019	8	39,457.1	2,447.9	25,204.0	70,080.1	31.0	94.2	10.5	1.2	113.0

Year	Month	ResEndUse.ResCool	NResEndUse.SmlGenCool	NResEndUse.GenCool	mVars.CoolLoad	mVars.Days	mVars.Cool_AvgMW	mPkDayWthr.PkCDD	mPkDayWthr.PkCDDIdx	mVars.Cool_Var
2019	9	10,256.7	1,890.2	17,758.2	18,194.0	30.0	25.3	3.9	0.5	11.3
2019	10	238.4	419.8	3,767.6	422.5	31.0	0.6	-	-	-
2019	11	-	9.6	85.5	-	30.0	-	-	-	-
2019	12	-	-	-	-	31.0	-	-	-	-
2020	1	-	-	-	-	31.0	-	-	-	-
2020	2	-	-	-	-	29.0	-	-	-	-
2020	3	176.9	4.8	56.5	303.4	31.0	0.4	-	-	-
2020	4	-	6.6	58.8	-	30.0	-	-	-	-
2020	5	311.8	8.3	99.0	533.7	31.0	0.7	-	-	-
2020	6	4,822.1	140.2	1,629.1	8,242.7	30.0	11.5	6.6	0.8	8.6
2020	7	33,957.9	1,080.9	12,294.3	57,957.0	31.0	77.9	11.4	1.3	101.5
2020	8	41,970.4	2,366.4	24,410.8	71,712.7	31.0	96.4	9.1	1.0	100.2
2020	9	10,917.6	1,840.6	17,270.6	18,677.9	30.0	25.9	-	-	-
2020	10	253.9	410.4	3,683.3	434.9	31.0	0.6	-	-	-
2020	11	-	9.4	84.1	-	30.0	-	-	-	-
2020	12	-	-	-	-	31.0	-	-	-	-
2021	1	-	-	-	-	31.0	-	-	-	-
2021	2	-	-	-	-	28.0	-	-	-	-
2021	3	190.5	4.9	57.4	319.3	31.0	0.4	-	-	-
2021	4	-	6.7	59.8	-	30.0	-	-	-	-
2021	5	336.6	8.7	102.0	565.4	31.0	0.8	-	-	-
2021	6	5,209.4	147.1	1,690.6	8,764.5	30.0	12.2	12.4	1.4	17.3
2021	7	36,710.7	1,143.3	12,855.9	61,859.1	31.0	83.1	4.3	0.5	40.9
2021	8	45,341.5	2,502.6	25,520.3	76,434.4	31.0	102.7	10.5	1.2	123.3
2021	9	11,805.8	1,941.0	18,027.7	19,898.1	30.0	27.6	3.7	0.4	11.7
2021	10	274.5	432.5	3,837.2	462.9	31.0	0.6	-	-	-
2021	11	-	9.9	87.4	-	30.0	-	-	-	-
2021	12	-	-	-	-	31.0	-	-	-	-
2022	1	-	-	-	-	31.0	-	-	-	-
2022	2	-	-	-	-	28.0	-	-	-	-
2022	3	206.7	5.1	59.0	339.3	31.0	0.5	-	-	-
2022	4	-	7.1	61.4	-	30.0	-	-	-	-
2022	5	364.9	9.1	104.3	599.3	31.0	0.8	-	-	-
2022	6	5,645.5	153.5	1,723.8	9,277.5	30.0	12.9	0.3	0.0	0.4
2022	7	39,762.1	1,190.4	13,069.4	65,373.6	31.0	87.9	6.9	0.8	68.9
2022	8	49,122.4	2,609.9	25,935.6	80,797.5	31.0	108.6	4.1	0.5	51.1
2022	9	12,782.3	2,026.7	18,322.1	21,026.4	30.0	29.2	2.5	0.3	8.3
2022	10	297.1	451.9	3,899.7	489.1	31.0	0.7	-	-	-
2022	11	-	10.4	88.8	-	30.0	-	-	-	-
2022	12	-	-	-	-	31.0	-	-	-	-
2023	1	-	-	-	-	31.0	-	-	-	-
2023	2	-	-	-	-	28.0	-	-	-	-
2023	3	222.3	5.3	59.8	357.0	31.0	0.5	-	-	-
2023	4	-	7.3	62.2	-	30.0	-	-	-	-
2023	5	392.0	9.4	105.6	629.8	31.0	0.9	-	-	-
2023	6	6,061.4	157.8	1,744.5	9,742.3	30.0	13.5	0.3	0.0	0.4

Year	Month	ResEndUse.ResCool	NResEndUse.SmlGenCool	NResEndUse.GenCool	mVars.CoolLoad	mVars.Days	mVars.Cool_AvgMW	mPkDayWthr.PkCDD	mPkDayWthr.PkCDDIdx	mVars.Cool_Var
2023	7	42,673.5	1,222.7	13,219.2	68,613.4	31.0	92.2	6.9	0.8	72.3
2023	8	52,682.4	2,674.9	26,205.8	84,703.8	31.0	113.9	4.1	0.5	53.6
2023	9	13,694.4	2,072.7	18,493.4	22,017.5	30.0	30.6	2.5	0.3	8.7
2023	10	318.4	461.3	3,932.1	511.9	31.0	0.7	-	-	-
2023	11	-	10.6	89.4	-	30.0	-	-	-	-
2023	12	-	-	-	-	31.0	-	-	-	-
2024	1	-	-	-	-	31.0	-	-	-	-
2024	2	-	-	-	-	29.0	-	-	-	-
2024	3	237.9	5.3	59.9	373.0	31.0	0.5	-	-	-
2024	4	-	7.4	62.4	-	30.0	-	-	-	-
2024	5	419.6	9.4	105.7	657.7	31.0	0.9	-	-	-
2024	6	6,490.6	158.9	1,744.1	10,172.9	30.0	14.1	0.3	0.0	0.4
2024	7	45,705.8	1,229.5	13,206.1	71,633.4	31.0	96.3	6.9	0.8	75.5
2024	8	56,438.4	2,690.6	26,181.7	88,455.7	31.0	118.9	4.1	0.5	56.0
2024	9	14,670.4	2,085.5	18,479.4	22,993.2	30.0	31.9	2.5	0.3	9.1
2024	10	341.1	464.2	3,929.4	534.6	31.0	0.7	-	-	-
2024	11	-	10.6	89.4	-	30.0	-	-	-	-
2024	12	-	-	-	-	31.0	-	-	-	-
2025	1	-	-	-	-	31.0	-	-	-	-
2025	2	-	-	-	-	28.0	-	-	-	-
2025	3	254.2	5.4	60.0	389.5	31.0	0.5	-	-	-
2025	4	-	7.4	62.4	-	30.0	-	-	-	-
2025	5	448.5	9.5	105.9	687.2	31.0	0.9	-	-	-
2025	6	6,937.5	160.5	1,747.7	10,630.2	30.0	14.8	0.3	0.0	0.5
2025	7	48,859.5	1,241.8	13,238.3	74,870.0	31.0	100.6	6.9	0.8	78.9
2025	8	60,334.5	2,717.9	26,250.7	92,462.9	31.0	124.3	4.1	0.5	58.5
2025	9	15,683.5	2,107.1	18,531.4	24,037.5	30.0	33.4	2.5	0.3	9.5
2025	10	364.6	469.1	3,941.3	558.9	31.0	0.8	-	-	-
2025	11	-	10.7	89.7	-	30.0	-	-	-	-
2025	12	-	-	-	-	31.0	-	-	-	-
2026	1	-	-	-	-	31.0	-	-	-	-
2026	2	-	-	-	-	28.0	-	-	-	-
2026	3	271.1	5.5	60.3	407.1	31.0	0.6	-	-	-
2026	4	-	7.5	62.7	-	30.0	-	-	-	-
2026	5	478.1	9.6	106.4	718.0	31.0	1.0	-	-	-
2026	6	7,394.2	162.4	1,756.0	11,107.0	30.0	15.4	0.3	0.0	0.5
2026	7	52,070.0	1,257.0	13,301.4	78,223.2	31.0	105.1	6.9	0.8	82.4
2026	8	64,294.3	2,751.8	26,377.6	96,602.9	31.0	129.8	4.1	0.5	61.1
2026	9	16,711.7	2,133.7	18,622.4	25,113.5	30.0	34.9	2.5	0.3	9.9
2026	10	388.5	475.1	3,961.0	583.9	31.0	0.8	-	-	-
2026	11	-	10.9	90.1	-	30.0	-	-	-	-
2026	12	-	-	-	-	31.0	-	-	-	-
2027	1	-	-	-	-	31.0	-	-	-	-
2027	2	-	-	-	-	28.0	-	-	-	-
2027	3	288.0	5.5	60.6	425.0	31.0	0.6	-	-	-
2027	4	-	7.6	63.1	-	30.0	-	-	-	-

Year	Month	ResEndUse.ResCool	NResEndUse.SmlGenCool	NResEndUse.GenCool	mVars.CoolLoad	mVars.Days	mVars.Cool_AvgMW	mPkDayWthr.PkCDD	mPkDayWthr.PkCDDIdx	mVars.Cool_Var
2027	5	507.9	9.8	107.0	749.6	31.0	1.0	-	-	-
2027	6	7,855.5	164.8	1,767.3	11,595.1	30.0	16.1	0.3	0.0	0.5
2027	7	55,314.1	1,275.5	13,388.6	81,659.4	31.0	109.8	6.9	0.8	86.1
2027	8	68,293.1	2,792.0	26,550.2	100,837.2	31.0	135.5	4.1	0.5	63.8
2027	9	17,749.2	2,164.7	18,743.7	26,211.8	30.0	36.4	2.5	0.3	10.4
2027	10	412.6	482.0	3,986.7	609.4	31.0	0.8	-	-	-
2027	11	-	11.0	90.7	-	30.0	-	-	-	-
2027	12	-	-	-	-	31.0	-	-	-	-
2028	1	-	-	-	-	31.0	-	-	-	-
2028	2	-	-	-	-	29.0	-	-	-	-
2028	3	305.0	5.6	61.1	443.0	31.0	0.6	-	-	-
2028	4	-	7.8	63.5	-	30.0	-	-	-	-
2028	5	537.8	9.9	107.7	781.2	31.0	1.1	-	-	-
2028	6	8,316.5	167.1	1,778.9	12,083.3	30.0	16.8	0.3	0.0	0.5
2028	7	58,554.7	1,293.3	13,475.6	85,089.9	31.0	114.4	6.9	0.8	89.7
2028	8	72,293.1	2,830.8	26,722.5	105,071.7	31.0	141.2	4.1	0.5	66.5
2028	9	18,788.6	2,194.7	18,865.3	27,312.1	30.0	37.9	2.5	0.3	10.8
2028	10	436.8	488.7	4,012.5	635.0	31.0	0.9	-	-	-
2028	11	-	11.2	91.3	-	30.0	-	-	-	-
2028	12	-	-	-	-	31.0	-	-	-	-
2029	1	-	-	-	-	31.0	-	-	-	-
2029	2	-	-	-	-	28.0	-	-	-	-
2029	3	322.1	5.7	61.5	461.1	31.0	0.6	-	-	-
2029	4	-	7.9	64.0	-	30.0	-	-	-	-
2029	5	567.8	10.1	108.5	813.1	31.0	1.1	-	-	-
2029	6	8,781.2	169.4	1,791.1	12,576.5	30.0	17.5	0.3	0.0	0.5
2029	7	61,825.9	1,311.4	13,568.1	88,561.7	31.0	119.0	6.9	0.8	93.3
2029	8	76,331.0	2,870.4	26,906.0	109,357.4	31.0	147.0	4.1	0.5	69.2
2029	9	19,837.8	2,225.5	18,994.9	28,425.8	30.0	39.5	2.5	0.3	11.2
2029	10	461.1	495.5	4,040.1	660.9	31.0	0.9	-	-	-
2029	11	-	11.3	91.9	-	30.0	-	-	-	-
2029	12	-	-	-	-	31.0	-	-	-	-
2030	1	-	-	-	-	31.0	-	-	-	-
2030	2	-	-	-	-	28.0	-	-	-	-
2030	3	339.0	5.8	61.9	479.1	31.0	0.6	-	-	-
2030	4	-	8.0	64.4	-	30.0	-	-	-	-
2030	5	597.7	10.2	109.2	844.8	31.0	1.1	-	-	-
2030	6	9,243.4	171.8	1,803.0	13,066.7	30.0	18.2	0.3	0.0	0.6
2030	7	65,079.3	1,329.7	13,658.5	92,012.0	31.0	123.7	6.9	0.8	97.0
2030	8	80,345.6	2,910.4	27,084.7	113,614.5	31.0	152.7	4.1	0.5	71.9
2030	9	20,880.6	2,256.4	19,120.7	29,531.4	30.0	41.0	2.5	0.3	11.7
2030	10	485.4	502.4	4,066.8	686.6	31.0	0.9	-	-	-
2030	11	-	11.5	92.5	-	30.0	-	-	-	-
2030	12	-	-	-	-	31.0	-	-	-	-
2031	1	-	-	-	-	31.0	-	-	-	-
2031	2	-	-	-	-	28.0	-	-	-	-

Year	Month	ResEndUse.ResCool	NResEndUse.SmlGenCool	NResEndUse.GenCool	mVars.CoolLoad	mVars.Days	mVars.Cool_AvgMW	mPkDayWthr.PkCDD	mPkDayWthr.PkCDDIdx	mVars.Cool_Var
2031	3	356.2	5.9	62.3	497.3	31.0	0.7	-	-	-
2031	4	-	8.1	64.8	-	30.0	-	-	-	-
2031	5	628.0	10.3	109.9	877.0	31.0	1.2	-	-	-
2031	6	9,711.7	174.2	1,815.1	13,563.2	30.0	18.8	0.3	0.0	0.6
2031	7	68,374.5	1,347.8	13,749.6	95,505.4	31.0	128.4	6.9	0.8	100.6
2031	8	84,413.0	2,950.1	27,265.0	117,925.8	31.0	158.5	4.1	0.5	74.6
2031	9	21,937.5	2,287.0	19,247.7	30,651.5	30.0	42.6	2.5	0.3	12.1
2031	10	509.9	509.2	4,093.7	712.6	31.0	1.0	-	-	-
2031	11	-	11.7	93.1	-	30.0	-	-	-	-
2031	12	-	-	-	-	31.0	-	-	-	-
2032	1	-	-	-	-	31.0	-	-	-	-
2032	2	-	-	-	-	29.0	-	-	-	-
2032	3	373.4	5.9	62.7	515.5	31.0	0.7	-	-	-
2032	4	-	8.2	65.3	-	30.0	-	-	-	-
2032	5	658.3	10.5	110.7	909.1	31.0	1.2	-	-	-
2032	6	10,179.8	176.5	1,827.4	14,059.9	30.0	19.5	0.3	0.0	0.6
2032	7	71,669.3	1,365.9	13,842.5	99,001.4	31.0	133.1	6.9	0.8	104.3
2032	8	88,479.0	2,989.5	27,448.9	122,239.4	31.0	164.3	4.1	0.5	77.4
2032	9	22,993.7	2,317.5	19,377.3	31,771.9	30.0	44.1	2.5	0.3	12.6
2032	10	534.5	515.9	4,121.2	738.6	31.0	1.0	-	-	-
2032	11	-	11.8	93.7	-	30.0	-	-	-	-
2032	12	-	-	-	-	31.0	-	-	-	-

Year	Month	ResEndUse.ResOther	NResEndUse.SmlGenOther	NResEndUse.GenOther	Sales.SmlInd	Sales.MedInd	Sales.Unm	mVars.OthrUse	mVars.Days	mVars.Other_AvgMW
2012	1	257,832.8	16,033.1	176,635.0	25,749.3	42,341.3	9,324.7	519,595.8	31.0	698.4
2012	2	206,476.7	13,009.6	155,205.2	22,173.7	41,432.3	9,171.2	451,521.0	28.0	648.7
2012	3	222,360.0	16,318.7	166,769.0	23,005.4	39,478.9	9,205.1	480,293.7	31.0	645.6
2012	4	204,887.3	11,655.8	151,192.3	20,654.0	40,726.0	9,243.4	453,437.8	30.0	629.8
2012	5	202,056.7	12,527.7	158,481.0	21,303.7	40,185.8	9,215.1	456,452.1	31.0	613.5
2012	6	197,748.4	12,094.2	153,601.1	19,830.8	41,409.0	9,315.7	445,913.6	30.0	619.3
2012	7	195,955.8	14,139.1	170,361.1	22,662.5	42,099.8	9,389.4	453,500.6	31.0	609.5
2012	8	226,717.1	14,782.3	170,291.0	20,151.5	42,732.2	9,394.8	482,266.2	31.0	648.2
2012	9	235,348.5	16,110.7	157,601.6	21,132.3	42,292.7	9,398.6	487,517.1	30.0	677.1
2012	10	232,139.8	16,591.2	176,293.5	17,254.3	40,191.2	9,286.9	481,945.2	31.0	647.8
2012	11	208,695.6	16,792.5	175,736.1	19,890.7	40,808.0	9,214.3	455,657.0	30.0	632.9
2012	12	223,216.3	14,372.8	181,015.8	19,733.7	40,913.8	9,322.1	473,214.8	31.0	636.0
2013	1	249,994.6	17,554.1	167,421.8	25,564.4	41,806.6	8,823.8	502,514.1	31.0	675.4
2013	2	202,393.5	13,044.8	142,898.8	21,992.7	40,805.8	8,667.6	435,609.6	29.0	648.2
2013	3	224,693.7	17,036.0	160,887.2	22,828.4	38,760.7	8,711.7	474,244.0	31.0	637.4
2013	4	201,823.1	11,419.8	142,184.6	20,480.8	39,916.0	8,750.1	439,581.1	30.0	610.5
2013	5	202,937.5	13,119.8	150,625.4	21,134.5	39,284.0	8,720.7	448,437.1	31.0	602.7
2013	6	197,267.3	12,333.6	149,327.0	19,665.5	40,415.4	8,825.2	439,715.4	30.0	610.7
2013	7	193,361.6	14,664.5	163,599.3	22,501.1	41,014.5	8,901.8	443,024.8	31.0	595.5
2013	8	229,734.7	15,703.4	165,902.6	19,986.6	41,682.6	8,906.1	480,123.4	31.0	645.3
2013	9	235,666.8	16,665.0	156,899.8	20,963.9	41,278.7	8,906.5	485,897.3	30.0	674.9
2013	10	231,960.2	17,939.0	176,965.1	17,082.4	39,213.0	8,793.1	482,083.1	31.0	648.0
2013	11	203,445.4	17,357.4	173,521.9	19,715.3	39,865.4	8,718.3	447,081.5	30.0	621.0
2013	12	220,330.6	15,245.9	170,108.7	19,554.8	40,006.9	8,828.4	458,629.9	31.0	616.4
2014	1	252,193.4	17,359.5	171,711.3	25,382.0	40,935.3	8,806.2	509,083.6	31.0	684.3
2014	2	202,218.0	12,874.5	150,216.1	21,806.8	39,970.2	8,654.5	441,372.4	28.0	656.8
2014	3	223,899.7	16,967.2	159,625.1	22,639.0	37,960.8	8,700.3	471,048.4	31.0	633.1
2014	4	200,230.0	11,721.3	144,947.6	20,288.0	39,151.8	8,740.4	439,780.5	30.0	610.8
2014	5	200,069.0	13,116.6	150,373.8	20,938.1	38,555.4	8,712.7	444,153.0	31.0	597.0
2014	6	196,088.1	12,084.8	148,640.8	19,465.6	39,722.5	8,817.3	436,483.0	30.0	606.2
2014	7	193,290.4	14,194.4	162,521.3	22,297.7	40,357.3	8,893.3	440,379.0	31.0	591.9
2014	8	226,959.7	15,441.9	170,482.7	19,807.4	41,005.5	8,896.7	480,783.8	31.0	646.2
2014	9	236,704.4	17,198.1	157,450.2	20,808.9	40,581.8	8,899.9	487,256.1	30.0	676.7
2014	10	227,323.7	16,998.3	171,358.9	16,951.4	38,496.2	8,789.9	470,248.4	31.0	632.1
2014	11	200,581.4	16,836.1	168,359.8	19,608.6	39,128.8	8,716.7	437,917.4	30.0	608.2
2014	12	219,915.1	15,409.9	176,372.1	19,472.2	39,250.4	8,825.6	464,030.2	31.0	623.7
2015	1	250,631.9	17,565.6	169,774.7	25,323.6	40,159.0	8,801.7	504,955.2	31.0	678.7
2015	2	196,103.8	13,584.7	142,657.6	21,772.5	39,174.1	8,652.2	427,538.0	28.0	636.2
2015	3	210,358.8	17,896.1	158,641.4	22,628.9	37,144.8	8,696.2	456,610.6	31.0	613.7
2015	4	233,386.1	11,754.9	143,072.8	20,301.9	38,316.0	10,929.3	472,286.4	30.0	656.0
2015	5	246,668.6	13,781.9	148,026.4	20,976.3	37,699.8	8,709.2	488,103.9	31.0	656.1
2015	6	193,892.7	12,468.7	145,427.1	19,527.9	38,847.0	8,812.6	430,486.8	30.0	597.9
2015	7	191,430.3	16,182.2	168,812.6	22,384.1	39,461.9	8,886.9	445,869.9	31.0	599.3
2015	8	224,645.4	16,707.9	169,279.6	19,889.7	40,228.1	8,892.7	477,807.1	31.0	642.2
2015	9	234,792.3	17,551.0	150,574.9	20,887.0	39,922.2	8,895.8	478,306.5	30.0	664.3
2015	10	227,887.0	17,415.1	171,676.0	17,025.4	37,954.4	8,787.5	471,195.1	31.0	633.3

Year	Month	ResEndUse.ResOther	NResEndUse.SmlGenOther	NResEndUse.GenOther	Sales.SmlInd	Sales.MedInd	Sales.Unm	mVars.OthrUse	mVars.Days	mVars.Other_AvgMW
2015	11	202,384.0	18,190.6	169,835.9	19,678.4	38,704.9	6,911.4	440,487.7	30.0	611.8
2015	12	215,369.8	15,905.3	171,578.8	19,537.9	38,944.4	8,823.8	455,019.3	31.0	611.6
2016	1	247,936.6	18,316.0	169,214.9	25,385.1	38,204.8	8,805.5	500,472.6	31.0	672.7
2016	2	196,613.7	13,880.3	147,560.4	21,829.9	37,337.7	8,649.2	429,664.9	28.0	617.3
2016	3	213,280.6	17,272.8	162,390.1	22,682.1	35,426.2	8,694.4	462,687.1	31.0	621.9
2016	4	191,029.4	14,392.3	149,519.4	20,351.0	36,715.3	8,735.0	435,212.0	30.0	604.5
2016	5	204,530.8	15,012.3	148,034.4	21,021.2	36,217.0	8,707.3	445,715.5	31.0	599.1
2016	6	198,270.5	13,102.8	143,406.1	19,568.7	37,482.0	8,814.0	432,089.8	30.0	600.1
2016	7	188,984.9	15,581.1	165,360.3	22,420.8	38,214.8	8,891.1	438,025.3	31.0	588.7
2016	8	220,822.2	16,511.5	162,845.3	19,927.8	38,992.9	6,962.2	464,183.8	31.0	623.9
2016	9	229,123.4	17,188.5	151,150.2	20,926.6	38,698.9	6,963.6	469,859.1	30.0	652.6
2016	10	227,332.9	19,050.9	171,261.6	17,066.6	36,743.0	6,851.9	468,792.7	31.0	630.1
2016	11	203,887.1	17,611.6	165,628.1	19,721.0	37,505.4	6,777.0	435,882.3	30.0	605.4
2016	12	210,337.9	16,476.8	174,410.9	19,582.1	37,756.8	6,890.9	450,263.3	31.0	605.2
2017	1	242,954.7	18,229.4	165,129.0	25,430.8	38,795.2	6,866.4	489,813.4	31.0	658.4
2017	2	188,551.5	13,511.7	139,375.8	21,877.1	37,940.0	6,715.1	413,463.9	29.0	615.3
2017	3	211,155.2	18,447.4	156,468.5	22,730.8	36,040.5	6,756.9	452,791.8	31.0	608.6
2017	4	197,180.5	11,754.3	146,003.5	20,401.2	37,341.4	6,800.3	434,025.1	30.0	602.8
2017	5	198,166.9	14,678.5	151,253.8	21,072.9	36,855.1	6,770.3	441,072.3	31.0	592.8
2017	6	195,092.1	13,424.4	148,644.9	19,621.9	38,132.0	6,875.9	433,300.5	30.0	601.8
2017	7	192,533.8	15,943.9	162,958.1	22,475.5	38,876.7	6,950.2	438,170.7	31.0	588.9
2017	8	225,640.7	16,973.2	163,421.0	19,991.8	39,664.5	6,956.1	470,725.9	31.0	632.7
2017	9	228,605.0	18,868.8	156,644.9	20,999.9	39,380.4	6,953.0	477,441.1	30.0	663.1
2017	10	227,435.4	19,180.4	172,599.0	17,149.1	37,434.3	6,830.6	471,113.4	31.0	633.2
2017	11	204,652.4	18,879.8	164,788.6	19,812.8	38,206.4	6,751.1	437,778.8	30.0	608.0
2017	12	183,266.0	17,154.3	172,013.9	19,683.1	38,467.6	6,860.5	422,189.8	31.0	567.5
2018	1	249,472.9	19,529.7	168,754.8	25,541.1	39,515.8	6,831.5	501,917.6	31.0	674.6
2018	2	226,917.7	14,450.1	171,145.8	21,996.6	38,670.4	6,676.8	485,419.1	28.0	722.4
2018	3	212,241.6	19,315.9	161,621.5	22,859.6	36,780.6	6,717.4	460,731.7	31.0	619.3
2018	4	201,575.2	12,835.5	144,217.8	20,539.3	38,091.3	6,760.2	438,657.5	30.0	609.3
2018	5	204,058.6	14,985.9	146,797.1	21,220.2	37,614.7	6,727.9	443,735.5	31.0	596.4
2018	6	196,842.1	13,373.9	147,922.6	19,778.5	38,901.5	6,831.2	435,224.9	30.0	604.5
2018	7	188,609.3	16,771.6	166,749.7	22,641.3	39,656.0	6,906.6	439,699.0	31.0	591.0
2018	8	223,470.9	17,352.1	166,864.7	20,169.1	40,386.8	6,900.7	473,180.1	31.0	636.0
2018	9	228,832.1	18,380.6	156,337.1	21,188.7	40,045.6	6,899.8	477,770.5	30.0	663.6
2018	10	224,304.6	19,602.2	172,744.4	17,349.4	38,042.5	6,789.1	469,241.9	31.0	630.7
2018	11	197,006.3	19,192.8	170,039.8	20,024.6	38,757.6	6,714.2	436,248.8	30.0	605.9
2018	12	215,060.5	16,258.8	171,677.1	19,906.4	38,961.8	6,822.4	453,231.4	31.0	609.2
2019	1	245,400.5	19,766.4	166,120.5	25,775.9	39,952.9	6,800.6	495,930.5	31.0	666.6
2019	2	196,973.1	15,050.2	140,810.9	22,243.0	39,050.5	6,648.7	426,360.4	28.0	634.5
2019	3	212,519.3	19,390.5	158,134.7	23,117.4	37,103.8	6,693.2	458,139.9	31.0	615.8
2019	4	206,548.1	12,841.1	147,784.7	20,808.6	38,357.5	6,729.8	447,852.0	30.0	622.0
2019	5	195,300.0	14,444.8	151,763.9	21,501.1	37,823.8	6,693.0	440,021.0	31.0	591.4
2019	6	196,480.7	13,471.2	147,496.6	20,070.9	39,053.6	6,785.6	435,073.5	30.0	604.3
2019	7	198,043.4	15,716.8	163,258.6	22,945.2	39,751.0	6,849.2	444,822.2	31.0	597.9
2019	8	217,914.4	17,308.6	161,874.3	20,433.8	40,473.0	6,860.7	462,924.9	31.0	622.2

Year	Month	ResEndUse.ResOther	NResEndUse.SmlGenOther	NResEndUse.GenOther	Sales.SmlInd	Sales.MedInd	Sales.Unm	mVars.OthrUse	mVars.Days	mVars.Other_AvgMW
2019	9	229,026.1	18,489.0	148,641.7	21,414.2	40,123.0	6,859.1	470,831.5	30.0	653.9
2019	10	227,247.4	19,674.2	169,360.0	17,535.8	38,111.1	6,747.6	469,141.3	31.0	630.6
2019	11	191,080.4	19,216.2	164,347.0	20,171.8	38,817.4	6,670.7	424,967.9	30.0	590.2
2019	12	208,099.9	17,781.1	173,761.3	20,014.5	39,012.7	6,773.7	450,281.8	31.0	605.2
2020	1	246,332.7	19,720.2	166,813.1	25,844.8	39,995.0	6,741.0	497,963.7	31.0	669.3
2020	2	197,206.4	14,575.9	145,844.3	22,272.7	39,083.8	6,578.3	429,575.0	28.0	617.2
2020	3	219,463.1	18,964.1	161,086.8	23,108.0	37,128.2	6,616.9	469,513.2	31.0	631.1
2020	4	193,240.9	11,708.5	134,650.9	20,760.0	38,373.1	6,658.3	420,028.6	30.0	583.4
2020	5	215,346.3	10,576.5	114,453.3	21,413.3	37,830.6	6,629.2	418,499.5	31.0	562.5
2020	6	185,174.6	9,199.2	113,350.3	19,943.9	39,051.6	6,735.0	384,844.8	30.0	534.5
2020	7	220,276.1	15,553.0	153,935.9	22,779.0	39,740.2	6,807.3	457,403.4	31.0	614.8
2020	8	255,569.2	16,361.1	156,247.8	20,281.5	40,504.6	6,794.6	493,776.2	31.0	663.7
2020	9	251,472.7	18,385.6	149,351.8	21,275.7	40,197.1	6,793.6	493,553.8	30.0	685.5
2020	10	228,447.6	18,671.9	158,618.9	17,411.0	38,227.6	6,681.1	458,721.9	31.0	616.6
2020	11	209,126.8	18,398.0	163,579.7	20,060.9	38,976.4	6,604.9	441,531.4	30.0	613.2
2020	12	226,637.1	16,236.9	163,890.0	19,917.3	39,214.1	6,707.3	457,369.7	31.0	614.7
2021	1	255,197.5	18,981.0	165,619.8	25,761.4	40,238.9	6,674.1	504,560.8	31.0	678.2
2021	2	198,920.0	13,863.1	142,020.7	22,203.1	39,370.1	6,534.5	428,310.4	29.0	637.4
2021	3	219,946.4	18,499.3	154,402.7	23,052.1	37,457.0	6,578.9	460,998.0	31.0	619.6
2021	4	217,436.1	13,344.6	150,074.6	20,718.0	38,744.3	6,619.8	461,485.2	30.0	641.0
2021	5	227,115.5	14,248.7	146,479.3	21,385.0	38,244.3	6,590.2	466,387.9	31.0	626.9
2021	6	204,608.2	12,781.3	141,773.5	19,929.4	39,507.7	6,696.7	436,880.4	30.0	606.8
2021	7	208,237.8	15,785.4	159,087.3	22,778.4	40,238.8	6,769.6	450,979.3	31.0	606.2
2021	8	244,314.6	17,214.4	161,265.0	20,296.6	40,957.2	6,771.7	488,776.1	31.0	657.0
2021	9	248,496.7	18,139.2	144,139.8	21,306.6	40,603.7	6,764.1	485,855.2	30.0	674.8
2021	10	241,006.4	19,888.6	170,474.6	17,457.8	38,588.3	6,654.0	484,440.2	31.0	651.1
2021	11	216,254.3	19,812.2	165,133.0	20,123.4	39,291.2	6,579.6	451,527.4	30.0	627.1
2021	12	226,124.7	17,763.1	169,960.9	19,995.7	39,483.0	6,687.8	464,396.0	31.0	624.2
2022	1	257,285.3	19,794.3	162,651.3	25,855.6	40,461.9	6,665.0	504,396.1	31.0	678.0
2022	2	201,102.3	13,267.9	134,590.2	22,313.1	39,547.2	6,510.3	423,055.0	28.0	629.6
2022	3	217,791.9	20,007.1	161,858.2	23,177.9	37,588.1	6,554.2	468,203.2	31.0	629.3
2022	4	205,483.9	12,639.4	141,108.7	20,859.6	38,829.5	6,595.8	440,620.9	30.0	612.0
2022	5	212,060.5	14,762.4	144,507.9	21,542.5	38,283.6	6,565.6	450,461.7	31.0	605.5
2022	6	204,553.5	12,522.6	138,091.9	20,102.7	39,501.0	6,669.3	433,365.1	30.0	601.9
2022	7	204,867.0	17,382.2	164,321.2	22,967.4	40,186.2	6,743.9	454,565.2	31.0	611.0
2022	8	232,097.7	17,934.5	161,676.2	20,490.7	40,900.1	6,749.2	477,766.1	31.0	642.2
2022	9	236,913.1	20,637.2	152,473.9	21,505.8	40,542.0	6,751.6	485,344.5	30.0	674.1
2022	10	230,617.6	21,504.5	169,372.4	17,662.0	38,522.0	6,641.8	474,490.8	31.0	637.8
2022	11	201,691.3	20,854.2	163,697.7	20,332.7	39,220.3	6,568.8	436,389.1	30.0	606.1
2022	12	217,264.3	18,554.7	168,972.5	20,210.0	39,407.5	6,679.6	455,170.2	31.0	611.8
2023	1	254,213.3	19,914.6	165,443.4	26,074.9	40,381.8	6,658.6	504,108.0	31.0	677.6
2023	2	192,568.1	14,429.2	139,706.6	22,537.5	39,462.5	6,505.3	421,082.0	28.0	626.6
2023	3	214,128.0	19,763.3	158,790.8	23,407.4	37,498.9	6,550.5	461,424.0	31.0	620.2
2023	4	201,676.4	13,172.4	143,219.3	21,094.1	38,735.7	6,593.4	439,906.5	30.0	611.0
2023	5	208,167.5	14,319.2	150,414.4	21,782.1	38,185.2	6,564.6	452,423.1	31.0	608.1
2023	6	200,611.2	13,797.6	146,299.9	20,347.3	39,398.0	6,669.6	439,273.7	30.0	610.1

Year	Month	ResEndUse.ResOther	NResEndUse.SmlGenOther	NResEndUse.GenOther	Sales.SmlInd	Sales.MedInd	Sales.Unm	mVars.OthrUse	mVars.Days	mVars.Other_AvgMW
2023	7	200,690.6	16,475.6	163,580.5	23,217.1	40,078.6	6,745.6	448,900.6	31.0	603.4
2023	8	227,829.9	17,755.7	162,520.6	20,730.8	40,812.5	6,750.9	474,324.8	31.0	637.5
2023	9	237,065.1	19,667.5	148,667.7	21,736.1	40,474.4	6,753.3	480,953.4	30.0	668.0
2023	10	230,648.3	20,843.2	167,450.7	17,882.6	38,474.5	6,643.5	472,004.0	31.0	634.4
2023	11	201,454.6	21,282.3	167,542.1	20,543.7	39,192.8	6,570.6	440,476.5	30.0	611.8
2023	12	216,849.1	18,529.1	172,724.5	20,411.3	39,400.0	6,681.4	458,583.4	31.0	616.4
2024	1	254,336.5	20,089.1	165,866.8	26,266.5	40,394.3	6,660.5	503,682.5	31.0	677.0
2024	2	200,624.2	15,436.5	145,192.7	22,719.4	39,495.0	6,507.3	434,162.2	28.0	623.8
2024	3	214,396.5	19,338.4	156,177.9	23,579.7	37,551.4	6,552.6	460,860.4	31.0	619.4
2024	4	201,953.0	13,047.1	141,692.8	21,256.7	38,808.2	6,595.5	439,209.2	30.0	610.0
2024	5	208,610.7	14,196.0	148,769.9	21,934.9	38,277.7	6,566.8	451,702.8	31.0	607.1
2024	6	201,213.6	13,651.7	144,578.4	20,490.5	39,510.6	6,672.0	438,619.1	30.0	609.2
2024	7	201,215.3	16,349.8	161,753.0	23,350.6	40,211.2	6,748.0	447,976.4	31.0	602.1
2024	8	228,473.6	17,703.9	160,895.6	20,864.4	40,950.5	6,753.1	473,585.5	31.0	636.5
2024	9	237,800.5	19,682.3	147,218.4	21,869.8	40,617.8	6,755.2	480,398.9	30.0	667.2
2024	10	231,230.4	20,915.8	166,090.4	18,016.5	38,623.2	6,645.1	471,246.7	31.0	633.4
2024	11	201,794.5	21,380.1	166,278.6	20,677.6	39,346.9	6,571.9	439,551.9	30.0	610.5
2024	12	217,310.9	18,601.2	171,424.3	20,545.3	39,559.5	6,682.5	457,724.8	31.0	615.2
2025	1	254,912.2	20,140.6	164,687.5	26,400.7	40,559.2	6,661.3	503,105.4	31.0	676.2
2025	2	193,066.0	14,372.2	137,323.6	22,853.6	39,665.3	6,507.8	420,011.4	29.0	625.0
2025	3	214,844.8	19,826.8	156,261.8	23,714.0	37,727.1	6,552.8	460,309.9	31.0	618.7
2025	4	202,392.8	12,917.3	140,194.5	21,391.1	38,989.3	6,595.6	438,736.3	30.0	609.4
2025	5	209,207.8	14,089.8	147,319.9	22,069.5	38,464.2	6,566.6	451,412.9	31.0	606.7
2025	6	201,948.9	13,544.5	143,203.6	20,625.1	39,702.4	6,671.6	438,573.5	30.0	609.1
2025	7	201,858.0	16,296.6	160,496.9	23,485.4	40,408.4	6,747.4	447,870.5	31.0	602.0
2025	8	229,173.5	17,722.3	159,828.7	20,999.5	41,146.5	6,752.2	473,582.3	31.0	636.5
2025	9	238,589.9	19,770.4	146,317.2	22,005.4	40,812.6	6,754.1	480,583.6	30.0	667.5
2025	10	231,892.2	21,074.1	165,387.1	18,152.4	38,816.8	6,643.9	471,294.1	31.0	633.5
2025	11	202,239.6	21,567.4	165,705.6	20,813.9	39,539.3	6,570.5	439,456.6	30.0	610.4
2025	12	217,891.0	18,763.2	170,866.8	20,682.0	39,750.8	6,680.9	457,750.3	31.0	615.3
2026	1	257,196.0	20,221.4	164,053.2	26,537.7	40,749.2	6,659.5	504,818.6	31.0	678.5
2026	2	194,844.3	14,354.3	136,353.0	22,991.1	39,854.2	6,505.8	421,309.4	28.0	627.0
2026	3	216,752.2	19,876.9	155,306.7	23,851.9	37,914.7	6,550.7	461,677.3	31.0	620.5
2026	4	204,097.2	12,818.3	138,956.7	21,529.3	39,175.7	6,593.3	439,907.8	30.0	611.0
2026	5	210,904.8	14,012.3	146,106.5	22,208.1	38,649.4	6,564.2	452,551.1	31.0	608.3
2026	6	203,521.7	13,461.7	142,011.4	20,764.2	39,886.5	6,668.9	439,619.0	30.0	610.6
2026	7	203,270.2	16,266.4	159,416.9	23,624.8	40,591.3	6,744.6	448,729.8	31.0	603.1
2026	8	230,665.1	17,760.2	158,924.6	21,137.7	41,324.4	6,749.5	474,535.1	31.0	637.8
2026	9	240,211.2	19,873.3	145,543.1	22,142.4	40,985.5	6,751.4	481,731.2	30.0	669.1
2026	10	233,554.5	21,245.5	164,831.3	18,288.2	38,984.7	6,641.3	472,446.2	31.0	635.0
2026	11	203,798.9	21,765.7	165,263.0	20,948.5	39,702.1	6,568.0	440,545.7	30.0	611.9
2026	12	219,672.3	18,931.0	170,413.5	20,815.4	39,908.6	6,678.4	459,015.5	31.0	617.0
2027	1	259,410.8	20,393.2	163,870.3	26,670.0	40,902.0	6,657.1	506,913.1	31.0	681.3
2027	2	196,600.0	14,384.0	135,781.8	23,122.2	40,001.9	6,503.5	422,997.3	28.0	629.5
2027	3	218,640.8	19,987.9	154,819.9	23,981.7	38,057.5	6,548.5	463,502.2	31.0	623.0
2027	4	205,793.0	12,768.6	138,147.4	21,658.0	39,313.5	6,591.1	441,537.2	30.0	613.3

Year	Month	ResEndUse.ResOther	NResEndUse.SmlGenOther	NResEndUse.GenOther	Sales.SmlInd	Sales.MedInd	Sales.Unm	mVars.OthrUse	mVars.Days	mVars.Other_AvgMW
2027	5	212,596.5	13,989.0	145,355.4	22,335.6	38,782.2	6,562.1	454,179.0	31.0	610.5
2027	6	205,092.2	13,432.7	141,277.5	20,890.5	40,014.2	6,666.9	441,150.0	30.0	612.7
2027	7	204,688.8	16,299.5	158,852.6	23,749.9	40,714.0	6,742.7	450,112.7	31.0	605.0
2027	8	232,128.2	17,860.3	158,519.2	21,260.0	41,445.7	6,747.7	475,949.2	31.0	639.7
2027	9	241,789.7	20,035.9	145,223.9	22,261.9	41,105.5	6,749.6	483,284.4	30.0	671.2
2027	10	235,188.9	21,475.8	164,754.0	18,404.9	39,103.3	6,639.5	474,004.7	31.0	637.1
2027	11	205,351.2	22,017.3	165,267.4	21,062.4	39,819.4	6,566.2	442,019.7	30.0	613.9
2027	12	221,437.5	19,144.6	170,391.6	20,926.4	40,024.5	6,676.7	460,641.5	31.0	619.1
2028	1	261,752.0	20,558.8	163,611.1	26,778.2	41,016.5	6,655.5	508,977.9	31.0	684.1
2028	2	206,606.1	15,476.7	141,688.0	23,227.6	40,115.1	6,501.9	438,301.0	28.0	629.7
2028	3	220,659.7	19,531.0	152,599.5	24,084.3	38,169.3	6,547.0	465,247.8	31.0	625.3
2028	4	207,605.3	12,693.4	137,150.7	21,757.8	39,423.9	6,589.7	443,051.1	30.0	615.4
2028	5	214,394.1	13,936.6	144,394.7	22,432.5	38,891.2	6,560.7	455,647.7	31.0	612.4
2028	6	206,751.2	13,372.2	140,318.5	20,984.6	40,121.9	6,665.6	442,485.0	30.0	614.6
2028	7	206,194.0	16,295.7	158,040.8	23,841.2	40,820.3	6,741.5	451,262.9	31.0	606.5
2028	8	233,688.6	17,924.4	157,887.2	21,349.3	41,551.0	6,746.5	477,150.5	31.0	641.3
2028	9	243,479.3	20,164.3	144,700.9	22,349.1	41,209.7	6,748.5	484,655.3	30.0	673.1
2028	10	236,972.1	21,672.1	164,485.5	18,490.1	39,206.5	6,638.5	475,420.7	31.0	639.0
2028	11	207,084.1	22,237.2	165,098.2	21,145.6	39,921.5	6,565.3	443,399.6	30.0	615.8
2028	12	223,413.3	19,327.5	170,197.1	21,007.6	40,125.5	6,675.8	462,205.3	31.0	621.2
2029	1	264,047.9	20,719.0	163,434.9	26,857.4	41,116.6	6,654.7	511,026.3	31.0	686.9
2029	2	200,362.8	14,413.3	134,466.4	23,304.7	40,214.1	6,501.2	426,311.9	29.0	634.4
2029	3	222,690.3	20,173.4	153,644.2	24,159.4	38,267.2	6,546.3	467,051.9	31.0	627.8
2029	4	209,450.1	12,622.5	136,220.0	21,830.9	39,520.8	6,589.1	444,650.4	30.0	617.6
2029	5	216,244.8	13,889.3	143,512.7	22,503.6	38,987.1	6,560.2	457,234.8	31.0	614.6
2029	6	208,479.8	13,317.7	139,439.7	21,053.7	40,216.7	6,665.2	443,960.3	30.0	616.6
2029	7	207,790.3	16,299.4	157,329.3	23,908.3	40,914.0	6,741.2	452,587.6	31.0	608.3
2029	8	235,332.3	17,996.7	157,367.2	21,415.9	41,645.1	6,746.0	478,522.6	31.0	643.2
2029	9	245,246.3	20,301.4	144,292.7	22,415.3	41,304.2	6,747.9	486,191.8	30.0	675.3
2029	10	238,842.1	21,878.4	164,353.5	18,555.8	39,301.3	6,637.7	477,019.0	31.0	641.2
2029	11	208,909.9	22,468.3	165,067.8	21,210.8	40,016.7	6,564.4	444,967.9	30.0	618.0
2029	12	225,485.1	19,522.7	170,145.3	21,072.4	40,221.1	6,674.8	463,968.3	31.0	623.6
2030	1	265,886.8	20,762.3	162,219.6	26,921.7	41,212.5	6,653.5	511,427.3	31.0	687.4
2030	2	201,862.7	14,322.2	132,880.7	23,368.6	40,310.4	6,499.8	426,529.1	28.0	634.7
2030	3	224,329.7	20,150.5	152,044.3	24,222.8	38,363.9	6,544.8	467,281.1	31.0	628.1
2030	4	210,966.3	12,436.6	134,244.8	21,893.8	39,617.8	6,587.5	444,778.1	30.0	617.8
2030	5	217,787.8	13,723.7	141,555.2	22,566.1	39,084.5	6,558.5	457,335.9	31.0	614.7
2030	6	209,944.1	13,148.7	137,517.4	21,115.7	40,314.5	6,663.3	444,033.8	30.0	616.7
2030	7	209,184.3	16,185.9	155,545.9	23,969.8	41,012.2	6,739.1	452,537.6	31.0	608.3
2030	8	236,781.4	17,951.6	155,785.3	21,477.6	41,742.6	6,744.0	478,520.5	31.0	643.2
2030	9	246,767.0	20,324.6	142,865.3	22,477.2	41,401.0	6,745.8	486,333.4	30.0	675.5
2030	10	240,404.2	21,966.5	163,175.0	18,617.9	39,397.4	6,635.6	477,115.5	31.0	641.3
2030	11	210,387.0	22,583.4	164,021.6	21,273.1	40,112.2	6,562.3	445,025.3	30.0	618.1
2030	12	227,119.2	19,596.2	169,036.5	21,134.9	40,315.9	6,672.7	464,085.7	31.0	623.8
2031	1	267,750.1	20,868.2	161,290.8	26,984.4	41,306.7	6,651.4	512,118.7	31.0	688.3
2031	2	203,388.8	14,247.6	131,498.7	23,431.5	40,403.8	6,497.7	427,006.7	28.0	635.4

Year	Month	ResEndUse.ResOther	NResEndUse.SmlGenOther	NResEndUse.GenOther	Sales.SmlInd	Sales.MedInd	Sales.Unm	mVars.OthrUse	mVars.Days	mVars.Other_AvgMW
2031	3	225,991.7	20,148.0	150,676.6	24,285.9	38,456.7	6,542.7	467,786.6	31.0	628.8
2031	4	212,497.6	12,261.2	132,462.3	21,957.1	39,710.0	6,585.3	445,160.6	30.0	618.3
2031	5	219,340.3	13,570.0	139,799.0	22,629.6	39,175.9	6,556.3	457,689.1	31.0	615.2
2031	6	211,411.9	12,989.8	135,784.0	21,179.4	40,405.3	6,661.2	444,339.8	30.0	617.1
2031	7	210,575.0	16,084.7	153,963.6	24,033.7	41,102.3	6,737.0	452,715.3	31.0	608.5
2031	8	238,221.7	17,923.8	154,421.9	21,541.9	41,831.9	6,741.9	478,742.3	31.0	643.5
2031	9	248,281.9	20,367.9	141,662.8	22,541.9	41,489.4	6,743.8	486,695.6	30.0	676.0
2031	10	241,973.3	22,080.6	162,246.6	18,683.0	39,485.0	6,633.7	477,455.4	31.0	641.7
2031	11	211,885.9	22,725.1	163,224.4	21,338.6	40,198.9	6,560.4	445,334.8	30.0	618.5
2031	12	228,784.3	19,697.6	168,185.3	21,200.8	40,401.8	6,670.9	464,474.8	31.0	624.3
2032	1	269,741.3	20,958.3	160,514.8	27,050.7	41,391.7	6,649.6	513,196.4	31.0	689.8
2032	2	213,410.2	15,343.4	137,018.2	23,498.2	40,488.0	6,496.1	441,606.4	28.0	634.5
2032	3	227,792.7	19,544.2	147,736.0	24,353.0	38,540.0	6,541.1	468,692.6	31.0	630.0
2032	4	214,162.5	12,107.6	130,917.1	22,024.6	39,792.5	6,583.8	445,931.9	30.0	619.4
2032	5	221,030.0	13,438.7	138,289.7	22,697.4	39,257.6	6,554.9	458,445.0	31.0	616.2
2032	6	213,012.2	12,852.8	134,291.1	21,247.6	40,486.1	6,659.9	445,036.7	30.0	618.1
2032	7	212,099.8	16,005.6	152,633.3	24,102.3	41,182.3	6,735.7	453,296.2	31.0	609.3
2032	8	239,785.4	17,917.6	153,311.4	21,610.8	41,911.8	6,740.6	479,357.6	31.0	644.3
2032	9	249,914.5	20,431.2	140,704.3	22,611.0	41,569.2	6,742.6	487,436.7	30.0	677.0
2032	10	243,672.5	22,215.0	161,572.9	18,752.3	39,564.8	6,632.4	478,196.8	31.0	642.7
2032	11	213,520.7	22,886.4	162,674.6	21,408.1	40,278.6	6,559.1	446,043.4	30.0	619.5
2032	12	230,593.3	19,820.1	167,589.5	21,270.5	40,481.5	6,669.6	465,281.2	31.0	625.4

Request IR-40:

Appendix C: Forecast Comparison and Accuracy

(a) Is the data in this appendix weather normalized? If so, please provide the raw data and the normalization factors used.

Response IR-40:

(a) No.

Request IR-41:

Appendix D: Forecast Sensitivity Analysis

(a) Please provide the model outputs in electronic form.

(b) Please provide the full set of Oracle input data in electronic format so that it can be replicated.

(c) Please provide the historical data and forecasts used to develop the probability distributions for each variable used in the Monte Carlo analysis.

(d) Please provide the source data and calculations for Figure D8.

Response IR-41:

(a) Please refer to Attachment 1.

(b) Please refer to Attachment 2, filed electronically.

(c) Please refer to Attachment 2, filed electronically.

(d) Please refer to partially confidential Attachment 3.

Sensitivity: 2023 Peak

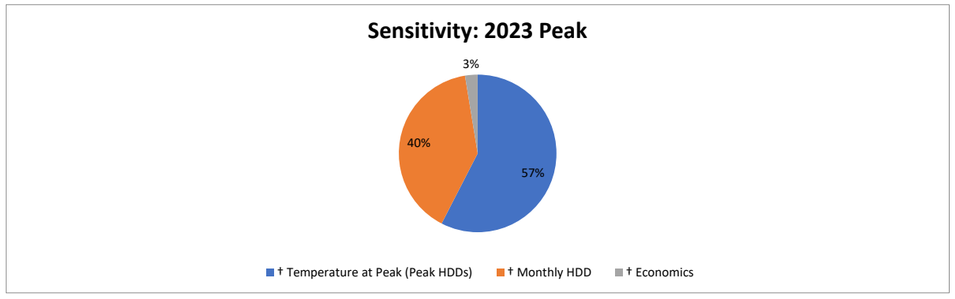
Assumptions	Contributic	RankCorrelation
† Temperature at Peak (Peak HDDs)	0.575585	0.628869
† Monthly HDD	0.398649	0.52336
† Economics	0.025766	0.133055

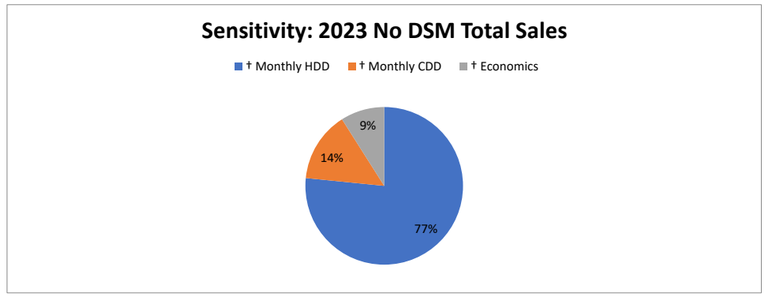
Sensitivity: 2023 No DSM Total Sales

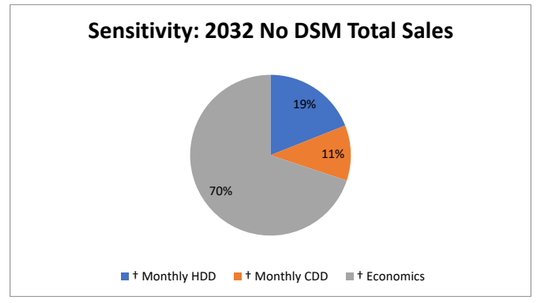
Assumptions	Contributic	RankCorrelation
† Monthly HDD	0.765787	0.85017
† Monthly CDD	0.144234	0.368965
† Economics	0.089979	0.291422

Sensitivity: 2032 No DSM Total Sales

Assumptions	Contributic	RankCorrelation
† Monthly HDD	0.189772	0.422265
† Monthly CDD	0.111254	0.323315
† Economics	0.698974	0.810399







2022 LFR Synapse IR-41 Attachment 2 has been filed electronically.

REDACTED (CONFIDENTIAL INFORMATION REMOVED)

Item	2023 Energy (GWh	2023 Peak (MW)	2032 Energy (GWh)	2032 Peak (MW)
Included in Forecast				
DSM (base case)	-248	-62	-1488	-285
Solar PV	-36	0	-205	0
[redacted]				
EV (current forecast)	26	5	510	89/131 (no mitigation)
Other Possible Scenarios				
EV (high case)	3	1	534	108/228 (no mitigation)
EV (low case)	3	1	146	30/62 (no mitigation)
Battery (5% share by 2031)	0	0	0	-127
Weather/Economics P10/P90	+/-198	+/-164	+/-313	+/-188

Request IR-42:

Nova Scotia Power Electrification Support Overview by E3

(a) Please provide the full report produced by E3 on this issue.

(b) Please provide any supplemental materials produced by E3 in developing these results.

Response IR-42:

(a) Please refer to Appendix E of the Report.

(b) Please refer to Attachment 1 for the EV data and Attachment 2, both filed electronically, for the space heating data provided by E3.

2022 LFR Synapse IR-42 Attachment 1 has been filed electronically.

2022 LFR Synapse IR-42 Attachment 2 has been filed electronically.

Request IR-43:

General Modeling Improvements – The Board Decision of October 27, 2021 makes several recommendations (p 5-6):

i) ***The intervenors recommended that NS Power re-evaluate the use of a low design temperate (sic) in future forecasts, to which NS Power agreed. The Board, therefore, directs NS Power to evaluate peak causing conditions and a peak forecast based on historic peak temperatures (such as a 1-in-2) in its future load forecasts, as well as add trends in peak weather in the 2022 Load Forecast Report.***

ii) ***NS Power agreed with the CA's recommendation on weather normalizing and presenting a more accurate approach to estimating the impact of incremental cold on loads. Therefore, the Board directs NS Power to evaluate improvements to the weather normalization estimate and examine the impact of incremental cold on loads in the temperate ranges where peak loads occur. These updates to the forecast are to be provided in future load forecast reports, preferably in the 2022 Report, but if not possible then in the 2023 Report.***

iii) ***The SBA suggested that NS Power include forecast accuracy for the system peak in addition to the energy and firm peak presented in the Load Forecast Report. NS Power is directed to incorporate this into future load forecast reports.***

iv) ***The CA stated that it is more common to use load-weighted averages of temperatures from multiple weather stations in a load forecast, and cited NS Power's planning reserve margin study that used weather station data from three different areas of the province. NS Power agreed to add more weather station data to future load forecasts, but stated that Halifax is the major load centre of the province, followed by Sydney and the remainder of the load is dispersed throughout the more rural areas of the province. NS Power suggested that increasing the data may increase the complexity of the model without improving accuracy. However, given the ranges in weather event occurrences throughout the province, the Board***

directs NS Power to incorporate more weather station data into future load forecasts using a load weighted approach.

v) NS Power's rebuttal was agreeable with many of the recommendations by intervenors. However, in response to intervenors' request for more information on the Smart Grid Nova Scotia and Water Heating Demand Response projects, NS Power stated that the results are preliminary, although they also stated that the results are incorporated into the load forecast when possible.

vi) ***The Company also indicated that it provides semi-annual reporting to the Board and stakeholders on the Smart Grid and the Demand Response projects, therefore, further reporting is not necessary. However, the Board directs NS Power to report the results from the Smart Grid and Water Heating Demand Response projects, as it relates to the impacts that these pilot projects have on load, in the 2022 Load Forecast.***

(a) Please indicate how this forecast responds, or does not respond, to each of these recommendations.

(b) Please indicate how future reports will incorporate these recommendations.

Response IR-43:

(a) (i) Please refer to sections 4.2 and 10 of the Report.

(ii) This will be addressed in the 2023 load forecast.

(iii) The information is included in Appendix C.

(iv) Please refer to section 4.2 for the energy model. The peak model will be addressed in the 2023 load forecast.

(v-vi) Available information on these projects has been included in sections 4.4 and 10 of the Report.

(b) Peak weather normalization will be updated in the 2023 load forecast, as will the analysis of a weighted weather input to the peak forecast. Any available updates from the Smart Grid or Water Heating Demand Response will also be incorporated in the 2023 load forecast.