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[Re: E1's Evidence]

Request IR-01:

Please restate Table 1 (page 6) and Table 12 (page 51) to express currency in real dollars versus nominal dollars.

Response IR-01:

Please refer to Table 1 below (EfficiencyOne's Evidence, page 6) restated in real dollars (2019).

Table 1:

2020-2022 Preferred DSM Resource Plan Investment and Savings - Investment Re-stated in Real Dollars (2019)

Year	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	First-Year Energy Savings (GWh)	Lifetime Energy Savings (GWh)	Weighted- Average Measure Life (years)	Peak Demand Savings (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
2020	41.1	195.6	140.2	1,967.9	14.0	38.7	1.9	4.7
2021	41.6	208.7	141.3	2,014.5	14.3	40.3	1.9	4.8
2022	41.3	218.4	140.2	2,013.9	14.4	41.1	2.0	5.0
Total	124.0	622.7	421.7	5,996.3	14.2	120.1	2.0	4.8

Currency is expressed in 2019 dollars. Columns may not add correctly, due to rounding.

^a Lifetime benefits are expressed as the net present value of the avoided costs, including energy, capacity, transmission and distribution, over the life of the program measures, using utility WACC.

^b TRC is a benefit/cost ratio comparing lifetime benefits to the sum of EfficiencyOne's and participants' costs.

^c PAC is a benefit/cost ratio comparing lifetime benefits to EfficiencyOne's costs.

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Please refer to Table 2 below (EfficiencyOne's Evidence, page 51) restated in real dollars.

Table 2:

2020-2022 Alternate DSM Resource Plan Investment and Savings - Investment Re-stated in Real Dollars (2019)

Year	Investment (\$ million)	Lifetime Benefits (\$ million)	First-Year Energy Savings (GWh)	Lifetime Energy Savings (GWh)	Weighted- Average Measure Life (years)	Peak Demand Savings (MW)	Total Resource Cost Test (TRC)	Program Administrator Cost Test (PAC)
2020	35.4	171.2	124.4	1,744.4	14.0	33.4	1.9	4.7
2021	35.8	182.1	125.4	1,786.1	14.2	34.5	1.9	4.9
2022	35.4	189.9	124.4	1,785.5	14.4	34.9	2.0	5.0
Total	106.6	543.3	374.2	5,316.0	14.2	102.7	2.0	4.9

Currency is expressed in 2019 dollars. Columns may not add correctly, due to rounding.

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[Re: E1's Evidence]

Request IR-02:

Reference: Page 16.

Any reduction in the level of investment will risk negatively impacting the DSM supply community and potentially resulting in permanent reduced capacity.

(a) What factual information does E1 rely upon to demonstrate the likelihood of that risk materializing?

(b) Please produce all studies, calculations, or other documents and evidence relied upon by E1 rely upon to quantify that risk?

(c) Is this submission regarding risk any different from the submission regarding risk to industry capacity made in respect of the 2016 – 2018 DSM Plan Application?

Response IR-02:

a) Please refer to EfficiencyOne's response to NSUARB-Pronko IR-03.

b) Please refer to EfficiencyOne's response to NSUARB-Pronko IR-03.

c) No. EfficiencyOne considers the same challenges and risks exist today with industry capacity as expressed in the 2016-2018 DSM Resource Plan.

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[E1's Evidence]

Request IR-03:

Reference: Page 18, lines 19-27.

(a) What weighting was applied to the listed aspects in producing E1's preferred DSM Resource Plan?

(b) If unable to weight, please indicate which aspects, if any, figured most prominently.

Response IR-03:

a) EfficiencyOne did not apply weighting to the listed aspects in developing the 2020-2022 Preferred DSM Resource Plan.

b) While EfficiencyOne considered the full list of aspects in developing the 2020-2022 DSM Resource Plan, the following figured more prominently to inform the Preferred Plan's key considerations:

- short-term and long-term energy avoidance and avoided energy and capacity investments;
- access to programs by all market sectors and rate classes by addressing barriers to participation and diversity of program delivery; and
- program delivery costs and rate impacts.

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[E1's Evidence]

Request IR-04:

(a) Please provide forecasted and actual spending by customer rate class, by year from 2015 through to 2018, forecasted investment for 2019 and a forecasted investment for 2020 – 2022 for both E1's Preferred Plan and Alternate Scenario.

(b) Please provide cost allocation tables, by rate class, for each year in E1's Preferred Plan and Alternate Scenario.

Response IR-04:

a) Please refer to Table 1 below for the forecasted and actual spending by customer rate class, by year from 2015 through to 2018 and forecasted investment for 2019. Please refer to Table 2 below for a forecasted investment for 2020-2022 for both E1's Preferred Plan and Alternate Scenario.

Table 1:

DSM Expenditures (\$ million)									
Rate Class	2015		2016		2017		2018		2019 Plan
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	
Residential	21.0	16.6	16.6	16.8	17.5	14.8	15.9	15.3	17.0
Small General	2.4	1.1	1.3	1.0	1.1	0.9	1.0	2.2	1.0
General	10.1	8.8	8.7	8.2	10.1	9.0	10.3	10.8	9.2
Large General	1.9	0.9	1.8	1.0	1.1	1.3	1.5	1.4	1.4
Small Industrial	0.9	1.0	0.9	1.1	1.2	1.1	1.3	1.1	1.3
Medium Industrial	0.9	1.1	1.0	0.9	1.2	0.9	1.1	1.1	1.6
Large Industrial	0.8	1.7	2.1	1.1	1.7	1.3	1.7	1.2	1.6
Municipal	0.7	0.9	0.7	0.8	0.7	1.0	1.2	0.8	0.9
Unmetered	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	39.0	32.0	33.2	30.8	34.6	30.3	33.9	33.9	34.1

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1 Table 2:

DSM Expenditures (\$ million)						
Rate Class	2020 Preferred	2020 Alternate	2021 Preferred	2021 Alternate	2022 Preferred	2022 Alternate
Residential	19.1	16.4	19.7	16.8	19.3	16.4
Small General	1.1	1.0	1.2	1.0	1.2	1.0
General	12.5	10.7	13.0	11.1	13.6	11.6
Large General	2.4	2.1	2.5	2.2	2.6	2.3
Small Industrial	1.8	1.6	1.9	1.7	2.0	1.7
Medium Industrial	1.4	1.3	1.5	1.3	1.5	1.4
Large Industrial	1.9	1.7	2.0	1.8	2.1	1.8
Municipal	1.5	1.3	1.6	1.4	1.6	1.4
Unmetered	0.0	0.0	0.0	0.0	0.0	0.0
Total	41.9	36.1	43.3	37.3	43.9	37.6

2

3

4 b) Please refer to EfficiencyOne's response to Synapse IR-01.

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[Re: E1's Evidence]

Request IR-05:

Reference: Page 31 (PDF 43).

Demand reduction activities have a primary objective of reducing system coincident demand through the installation of passive measures (proactive). These measures do not rely on ongoing communication with the electricity utility. This differs from demand response activities which have the primary objective of reducing system coincident peak demand via utility signals to customers and/or associated equipment (reactive).

The Preferred Plan includes demand reduction rather than demand response activities to build experience in demand-focused DSM. EfficiencyOne expects that there could be future potential to build on these early efforts and expand into demand response initiatives.

(a) Does E1 consider NSPI's Interruptible Rider to be a "demand response" activity? If no, why not?

(b) Does E1 consider NSPI's Time-of-Day rate to be a demand response activity? If not, does it consider that rate to be a demand reduction activity?

(c) Does E1 consider NSPI's Time-of-Day rate to be effective in reducing system peak demand? Please explain why or why not.

(d) Does E1 consider that passive demand reduction activities are more effective than demand response activities? If so, please explain why and provide supporting information.

(e) Has E1 studied demand reduction and demand response activities of other

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1 **utilities? If so, which utilities? Please provide copies of the information**
2 **reviewed and the results of E1's analyses.**

3 **(f) How does “demand-focused DSM” differ from rates designed by NSPI to**
4 **give customers incentives to reduce demand at system peak times?**

5
6 Response IR-05:

7
8 a) EfficiencyOne considers interruptible rate structures, in general, as a Demand Response
9 activity. EfficiencyOne believes this understanding to be consistent with industry
10 perceptions. EfficiencyOne does not have detailed information of how NS Power
11 operates its interruptible rate structure (e.g., motivations for customer calls), and so
12 cannot make a specific determination with respect to NS Power's interruptible rate
13 structure.

14
15 b) On a technical basis, EfficiencyOne considers Time-of-Day rates as a potential demand
16 reducing activity, as opposed to a demand response activity, due to the proactive nature
17 of the rate-setting process. More dynamic time-of-use pricing designs, such as Critical
18 Peak Pricing or Real-Time Pricing, resemble demand response activities more than
19 demand reduction activities, due to their ability to be used in a reactive fashion to
20 alleviate periods of high system demand.

21
22 c) EfficiencyOne is aware of the current Time-of-Use rates offered to certain Residential
23 customers but has not quantitatively analyzed the effectiveness of NS Power's residential
24 Time-of-Day rate structure in reducing coincident peak demand. EfficiencyOne generally
25 accepts that well-designed Time-of-Day rate structures have the potential to reduce
26 coincident peak demand and save the utility and customers money. For this to take place,
27 customers must be empowered with information and support to best take advantage of the
28 rate structure.

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d) No, EfficiencyOne believes the sound design of either activity type provides a greater influence on its effectiveness than its categorization as either passive demand reduction or active demand response.

e) Yes, EfficiencyOne has studied – and continues to study - demand reduction and demand response activities of other utilities. To date, this research has consisted of general knowledge and principles, as well as an informal jurisdictional scan focused in Canada (New Brunswick, Prince Edward Island (PEI), and Quebec), as well as the Northeast United States.

One program EfficiencyOne has studied is Summerside PEI's Heat for Less Now Program. Heat for Less Now is a smart grid program for active or passive control of thermal energy storage systems, primarily Electric Thermal Storage systems and electric water heaters. Participants have their eligible equipment controlled to automatically charge during off-peak periods. In return, participants receive a discounted block of energy corresponding to the amount of thermal storage they have installed.

EfficiencyOne has found demand response and demand reduction to be a well-established method of reducing peak load. Demand response offers the benefits of being a flexible resource, allowing the deferral or avoidance of infrastructure upgrades (non-wire alternatives), balancing the grid, diversifying resources, and providing a tool for customer engagement and increased customer satisfaction. Expanded time-varying rates and adoption of Advanced Metering Infrastructure will increase opportunities for demand reduction and demand response in Nova Scotia. The on-going 2019 Potential Study being conducted by Navigant Consulting is also expected to provide insights into the opportunities and potential for demand response in Nova Scotia.

Table 1 below provides a list of key source documents EfficiencyOne has utilized in demand response and demand reduction research.

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Table 1: Source Documents for Demand Response and Demand Reduction Research

2018 Utility Demand Response Market Snapshot. Smart Electric Power Alliance, Navigant Consulting, Peak Load Management Alliance. 2018.

<https://sepapower.org/resource/2018-demand-response-market-snapshot/>

Best Practices in Utility Demand Response Programs: With Application to Hydro-Quebec's 2017-2026 Supply Plan. Synapse. 2017.

<http://www.synapse-energy.com/sites/default/files/Utility-DR-17-010.pdf>

Capturing Wind With Thermal Energy Storage – Summerside's Smart Grid Approach. IEEE Power and Energy Technology Systems Journal. 2017.

<https://ieeexplore.ieee.org/document/8064615>

PowerShift Atlantic Final Report for Clean Energy Fund (CEF). PowerShift Atlantic. 2015.

http://www.powershiftatlantic.com/images/NB_Power_PSA_EN_Outreach_Report.pdf

Putting More Energy into Peak Savings: Integrating Demand Response and Energy Efficiency Programs in the Northeast and Mid-Atlantic. American Council for an Energy-Efficient Economy (ACEEE). 2016.

https://aceee.org/files/proceedings/2016/data/papers/6_968.pdf

Rate Design Matters: The Intersection of Residential Rate Design and Energy Efficiency. American Council for an Energy-Efficient Economy (ACEEE). 2017.

<https://aceee.org/research-report/u1703>

f) EfficiencyOne does not believe NS Power offers rates that provide this incentive directly (i.e., encourage customers to reduce consumption during actual system peak). Rate structures that provide this direct incentive include Critical Peak Pricing and Critical Peak Rebate structures. These rate structures may be defined as:

Critical peak pricing (CPP) - when utilities observe or anticipate high wholesale market prices or power system emergency conditions, they may call critical events during a specified time period (e.g., 3 p.m.—6 p.m. on a hot summer weekday), the price for electricity during these time periods is substantially raised. Two variants of this type of rate design exist: one where the time and duration of the price increase are predetermined when events are called and another where the time and duration of the price increase may vary based on the electric grid's need to have loads reduced; and

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Critical peak rebates (CPR) - when utilities observe or anticipate high wholesale market prices or power system emergency conditions, they may call critical events during pre-specified time periods (e.g., 3 p.m.—6 p.m. summer weekday afternoons), the price for electricity during these time periods remains the same but the customer is refunded at a single, predetermined value for any reduction in consumption relative to what the utility deemed the customer was expected to consume.¹

EfficiencyOne acknowledges that NS Power's Time-of-Use rate structure, offered to certain residential customers, indirectly provides this incentive, via incentivizing customers to shift consumption away from *probable* system peak periods.

Key differences between DSM and rate structures, in general, include:

- Rates tend to be quite general, often limited to one rate structure for a given rate-class. DSM, due to its deeper interaction with the individual customer, is able to better consider individual customer circumstances to implement measures or projects that make sense economically for both the utility and the customer, rather than relying on one fixed incentive structure.
- Rates do not provide any education or guidance to the customer on how best to take advantage of the structure, and may frustrate customers, as opposed to encouraging demand reduction.
- Customers may be not be cognizant of the level of financial incentive available from a rate structure, as calculating that incentive level can be a quite involved and detailed mathematical process. The consequence of this is potentially reduced levels of action from customers.

¹ https://www.smartgrid.gov/recovery_act/time_based_rate_programs.html

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[E1's Evidence]

Request IR-06:

Reference: Pages 31-32 and 33 (PDF 42-43 and 45).

E1 states:

**The Preferred Plan . . . is expected to reduce demand by 20.7 MW over the
term of the 2020-2022 DSM Plan.**

and

**. . . [T]he Preferred Plan . . . will result in a demand reduction of 120.1 MW
over the term of the 2020-2022 DSM plan.**

(a) Please explain the difference between the two numbers (20.7 and 120.1).

Response IR-06:

a) The value of 20.7 MW represents the cumulative annual peak demand reduction
attributable specifically to the demand reduction activities within the Preferred Plan
(i.e. those activities that have the primary goal of reducing annual peak demand),
consisting of:

- Thermal storage systems;
- Domestic hot water timers; and
- Demand-focused Custom projects.

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- 1 The value of 120.1 MW represents the cumulative annual peak demand reduction
- 2 attributable to all programs within the Preferred Plan, regardless of their primary goal
- 3 of either energy or demand savings.

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[E1's Evidence]

Request IR-07:

Reference: Pages 32 and 33 (PDF 43 and 44).

E1 states:

**. . . [A]mongst electrically heated households in Nova Scotia, space and
water heating are the two largest electricity end-uses and are typically
active loads during system peak in Nova Scotia**

and

**[T]he prominence of space heating as a large end-use of electricity for many
BNi customers (and its temperature-dependent load, which generally is
high during system peak periods**

**(a) What days and hours does E1 consider to be the “system peak periods” of NS Power?
What criteria does (or would) E1 use to identify the system peak periods?**

Response IR-07:

a) EfficiencyOne relies upon the following definition of system peak periods:

- Non-holiday weekdays from December through February, between 1700-1900
hours**

**No other formal criteria are used by EfficiencyOne to further identify system peak periods,
although EfficiencyOne understands that hours with lower ambient air temperatures have**

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- 1 a higher likelihood of becoming NS Power's annual coincident peak, during the winter
- 2 season, all else being equal.

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1 **[E1's Evidence]**

2 **Request IR-08:**

3
4 **Reference: Page 44.**

5
6 **Applying the HST rebate to the Preferred Plan is in the best interests of**
7 **ratepayers...**

8
9 **a) What, if any consideration was given to the interest of ratepayers as expressed in**
10 **comments leading up to the development of the Plan with respect to the disposition**
11 **of the HST credit?**

12
13 **b) Please confirm that the expressed request of the Industrial Group was that the HST**
14 **rebate be credited to customers via an on-bill credit as soon as possible?**

15
16 **Response IR-08:**

17
18 **a) There was no consensus agreement on the disposition of the HST refund based upon**
19 **comments EfficiencyOne received from stakeholders. Please refer to EfficiencyOne's**
20 **response to NSUARB-Pronko IR-08.**

21
22 **b) EfficiencyOne confirms that it received the following comment from the Industrial Group**
23 **on December 21, 2018, "The Industrial Group would like to see the \$15 million refund in**
24 **relation to HST be returned immediately to customers in the form of an on-bill credit**
25 **within the first quarter of 2019, and not applied to the next three year DSM Plan."**

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Request IR-09:

Please provide a copy of the Cost Allocation Model relied upon to allocate the HST amounts.

Response IR-09:

Please refer to EfficiencyOne's response to SBA IR-09 part b).

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Request IR-10:

- (a) Please provide a table comparing the annual budget, incremental energy savings and incremental demand savings, by year, for the E1 Preferred Plan, Alternate Scenario, IRP mid-level DSM potential, and IRP low case for DSM potential.**
- (b) With respect to affordability, what, if any consideration does E1 give to other rate pressures faced by customers?**
- (c) Is E1 aware of the anticipated Base Cost of Fuel increase faced by customers in 2020-2022?**
- (d) Does E1 agree that overall rate impacts are valid considerations for the Board in approving the level of spending on DSM programs?**

Response IR-10:

- a) Please see Table 1 below for a summary of annual budget, incremental energy savings and incremental demand savings, by year, for the E1 Preferred Plan, Alternate Scenario, 2014 potential study mid-level DSM potential, and 2014 potential study low case. The 2014 DSM potential study was an input to the 2014 IRP.

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Table 1: Summary of Budget, energy, and demand savings by year for the Preferred Plan, Alternate Scenario, and low and mid potential study cases

Metric		2020	2021	2022
Preferred	First Year Net Savings Energy Savings (GWh)	140.2	141.3	140.2
	First Year Net Savings Coinc. Demand Savings (MW)	38.7	40.3	41.1
	Spending (\$M)	41.9	43.3	43.9
Alternate	First Year Net Savings Energy Savings (GWh)	124.4	125.4	124.4
	First Year Net Savings Coinc. Demand Savings (MW)	33.4	34.5	34.9
	Spending (\$M)	36.1	37.3	37.6
2014 DSM Potential Study - Mid	First Year Net Savings Energy Savings (GWh)	166.2	162.2	159.6
	First Year Net Savings Coinc. Demand Savings (MW)	36.6	36.1	35.7
	Spending (\$M)	86.7	81.7	79.1
2014 DSM Potential Study - Low ¹	First Year Net Savings Energy Savings (GWh)	98.7	98.1	98.7
	First Year Net Savings Coinc. Demand Savings (MW)	22.5	22.1	21.9
	Spending (\$M)	37.8	38.5	39.8

- b) EfficiencyOne's consideration focused on the affordability of DSM as opposed to other rate pressures that may be faced by customers.
- c) EfficiencyOne is not fully aware of the anticipated Base Cost of Fuel increase faced by customers in 2020-2022.
- d) Yes, in general, however EfficiencyOne believes that DSM is only one contribution to an overall rate impact that the Nova Scotia Utility and Review Board considers in approving the level of spending on DSM programs. EfficiencyOne believes the 2020-2022 Preferred

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1 DSM Plan is an investment for the utility, with an annual return on investment of 19.4
2 percent over the portfolio-average measure life, and that it will produce over \$475 million
3 in customer bill savings, which may ease the burden of non-DSM rate impacts for
4 customers.

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Request IR-11:

Reference: Appendix A, page 94.

Dependent on approved cost allocation methodology, EfficiencyOne will undertake reasonable efforts to avoid program changes that will result in substantial changes to any customer rate class on an annual basis.

(a) Please explain how the reasonable efforts are “dependent on approved cost allocation methodology”?

(b) How does E1 objectively define “substantial changes” to a customer rate class?

(c) Please explain the means and methods by which E1 will avoid such substantial changes to the Large Industrial and Medium Industrial customer rate classes.

Response IR-11:

a) Please refer to EfficiencyOne’s response to Synapse IR-01. Until such time that NS Power advises EfficiencyOne that there is a substantive difference between DSM spending and collections by rate class, EfficiencyOne will continue to execute on the approved DSM plans and report according to quarterly and annual requirements.

b) EfficiencyOne reports on results in the Quarterly and Annual Progress reports at the program level and provides explanations of substantive changes, defined as variance in energy savings or investment of 25 percent or more at a program level.

c) EfficiencyOne will continue to track energy savings and investment at the program level by rate class and report these results in Quarterly and Annual Progress reports.

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Request IR-12:

Reference: Appendix B.

Why is the allocation of costs based on 2017 expenditures and 2017 energy and system peak demand savings?

Response IR-12:

Navigant's ProCESS model, used for development of the Plan, models measure uptake within Sectors, but not within rate classes. The Rate and Bill Impact Analysis requires expenses and savings to be allocated to rate classes, so EfficiencyOne allocated the Plan expenses and savings for each program component to rate classes according to the most recent information available about the rate class distribution within each program component. At the time the analysis was prepared, final 2018 figures were not yet available, so 2017 data were used.

- Plan expenses, within each program component, were allocated based on the 2017 rate class distribution of expenses.
- Plan energy savings, within each program component, were allocated based on the 2017 rate class distribution of energy savings.
- Plan demand savings, within each program component, were allocated based on the 2017 rate class distribution of demand savings.

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Request IR-13:

Reference: Appendix E - Evidence of Glenn Reed, pages 10-11, Figures 1-4 (PDF 349-350).

(a) Please provide the calculations of the percentages.

**(b) Please provide a copy of or link to the regulatory decisions that approved the budgets,
sales and revenues underlying these results.**

Response IR-13:

The following response has been provided by Glenn Reed.

a) Please refer to Attachment 1 of this IR response, filed electronically.

b) Please refer to Attachment 1 of this IR response, filed electronically.

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Request IR-14:

Please provide a redline version of Appendix G, the Supply Agreement 2020 – 2022 as compared to the Supply Agreement 2016 – 2018.

Response IR-14:

Please refer to Attachment 1 of this IR response for the redline document which compares and highlights the 2016-2018 approved DSM Supply Agreement to Appendix “G” to the 2020-2022 DSM Plan Application.



**Supply Agreement for
Electricity Efficiency and Conservation Activities**

Between

Nova Scotia Power Incorporated

and

EfficiencyOne

Effective Date – January 1, 2016**20**

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2 **List of Schedules**

3

4	Schedule "A":	Electricity Efficiency and Conservation Activities
5	Schedule "B":	Compensation
6	Schedule "C":	Performance Requirements
7	Schedule "D":	Confidentiality Agreement
8	Schedule "E":	Approved EECA Plan

1 **THIS AGREEMENT** made as of the ____ day of ____, 201~~5~~⁹ and effective as of the 1st day
2 of January, 20~~16~~²⁰ (the “**Effective Date**”).

3 BETWEEN:

4 **NOVA SCOTIA POWER INCORPORATED,**
5 a body corporate, organized under the laws
6 of the Province of Nova Scotia

7
8 (hereinafter called “**NSPI**”)

9 - and -

10 **EFFICIENCYONE,**
11 a body corporate, organized under the laws of
12 Canada

13
14 (hereinafter called “**EfficiencyOne**”)

15 **WHEREAS:**

- 16 A. EfficiencyOne and NSPI are both public utilities pursuant to the Act; and
- 17 B. Pursuant to the Act, EfficiencyOne has the exclusive right to supply NSPI with
18 reasonably available, cost-effective Electricity Efficiency and Conservation Activities as
19 the Franchise Holder; and
- 20 C. Pursuant to the Act, NSPI is obligated to undertake cost-effective Electricity Efficiency
21 and Conservation Activities that are reasonably available in an effort to reduce costs for
22 its customers; and
- 23 D. Pursuant to the Act, NSPI shall meet its obligations by entering into an agreement with
24 the Franchise Holder for the supply of cost-effective Electricity Efficiency and
25 Conservation Activities.

26 **NOW THEREFORE** witnesses that in consideration of the premises and the mutual covenants
27 and obligations herein and other good and valuable consideration, the sufficiency and receipt of
28 which are hereby acknowledged, the parties agree as follows:

29 **1. INTERPRETATION**

30 1.1 The following terms shall be interpreted as follows in this Agreement:

- 31 (a) “**Act**” shall mean the *Public Utilities Act*, R.S.N.S. 1989, c.380, as amended from
32 time to time.
- 33 (b) “**Agreement**” means this agreement between NSPI and EfficiencyOne including
34 all Schedules attached hereto.
- 35 (c) “**Business Day**” means Monday to Friday, except federal, provincial, and civic
36 holidays within the Province of Nova Scotia.

- (d) **"Consequential Losses"** means consequential, special, incidental, multiple, exemplary or punitive damages including lost profits, whether such claim of lost profits is categorized as indirect, direct or consequential damages or under any alternative theory of recovery.
- (e) **"Contract Documents"** means without limitation, the following documents, including any amendments thereto agreed in writing by the parties:
- (i) this Agreement; and
 - (ii) all Schedules to the Agreement.
- (f) **"Contract Price"** has the meaning ascribed to it in Section 4.1.
- (g) **"EECA Plan"** means the plan prepared by EfficiencyOne and approved by the UARB and attached hereto as Schedule "E".
- (h) **"Electricity Efficiency and Conservation Activities"** or **"EECA"** means the electricity efficiency and conservation activities as identified in Schedule "A" attached hereto.
- (i) **"Event of Default"** has the meaning ascribed to it in Section 20.4.
- (j) **"Environmental Laws"** means all applicable federal, provincial, regional, municipal or local laws with respect to environmental matters contained in the statutes, regulations, rules, standards, requirements, ordinances, policies, guidelines, orders, approvals, notices, permits or directives having the force of law, in effect as at the date hereof and as may be brought into effect at future date.
- (k) **"Force Majeure Event"** means any event or circumstance not reasonably within the control of the Party affected which wholly or partly prevents the performance by that Party of its obligations under this Agreement, provided that such Party is in good faith unable to perform such obligations by any commercially reasonable substitute. A Force Majeure Event includes acts of God, war, riot, fire, explosion, flood, hurricane, epidemics, acts of governmental authorities, acts of terrorism. Notwithstanding anything else contained herein, a Force Majeure Event excludes (a) any event or circumstance causing direct or indirect delay in, or failure to perform any of a Party's obligations under this Agreement, attributable to a lack of reasonable diligence on the part of a Party or on the part of any vendor or subcontractor of a Party, including any event or circumstance which a Party or any vendor or subcontractor, acting diligently, could reasonably have been expected to foresee, avoid or overcome in the performance of its obligations; and (b) any event or circumstance caused by the breach of a Party's obligations or the fault or negligence of a Party or the fault or negligence of any vendor or subcontractor, or by violation of applicable laws or regulations by a Party or any of a Party's vendors or subcontractors. For certainty, adverse weather of any kind other than events specified above shall not be considered a Force Majeure Event.
- (l) **"Franchise"** has the meaning ascribed to it in the Act.
- (m) **"Franchise Holder"** has the meaning ascribed to it in the Act.

- (n) **"Governmental Authority"** means any federal, provincial, regional, municipal or local government or authority or other political subdivision thereof and entity or person exercising executive, legislative, judicial, regulatory or administrative functions of, or pertaining to, government.
- (o) **"Hazardous Substances"** means any substance or material that is prohibited, controlled or regulated by any Governmental Authority pursuant to Environmental Laws, including any contaminants, pollutants, petroleum or other hydrocarbons and their derivatives and by-products, dangerous substances or goods, including asbestos, liquid wastes, special wastes, toxic substances, hazardous or toxic chemicals, hazardous wastes, hazardous materials or hazardous substances as defined in or pursuant to any Environmental Law, or any substance or material not inherently hazardous but which would, in sufficient quantities, be hazardous.
- (p) **"Indemnified Costs"** means all liabilities, claims, actions, causes of action, judgments, orders, damages, costs (including those incurred in connection with any investigation of site conditions or any clean-up, environmental remediation, removal or restoration work), expenses (including all reasonable consultant, expert and legal fees and expenses), fines, penalties, losses, or any resulting damages, harm or injuries to the person or property of any third parties or to any natural resources and for which the indemnified party is liable and has incurred losses. Without limiting the foregoing, Indemnified Costs shall include:
- (i) the costs of defending and/or counterclaiming or claiming over and against third parties in such manner as the indemnified party in its sole discretion may determine;
 - (ii) the costs relating to any governmental investigation, proceeding or claim; and
 - (iii) any costs, liabilities or damages arising out of a settlement of a claim by the indemnified party, with or without the consent of the indemnifying party.
- (q) **"Law"** means the common law, the law of equity and all federal or provincial statutes or municipal by-laws and all regulations, orders, directives, permits and licenses thereunder, which apply to or otherwise affect NSPI or EfficiencyOne with respect to the supply of the EECA, or the property of NSPI or EfficiencyOne, real or personal, or any part thereof, including the Act and all environmental, occupational, health and safety laws.
- (r) **"Liens Indemnities"** has the meaning ascribed to it in Section 18.1.
- (s) **"Liens and Claims"** has the meaning ascribed to it in Section 18.1.
- (t) **"Minister"** has the meaning ascribed to it in the Act.
- (u) **"Party"** means either EfficiencyOne or NSPI. **"Parties"** means EfficiencyOne and NSPI.
- (v) **"Personal Information"** shall mean the information provided by NSPI to EfficiencyOne pursuant to Section 79K of the Act.

- (w) **"Release"** or **"Released"** means a releasing, adding, spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, migrating, dispersing, dispensing, disposing or dumping.
- (x) **"Significant Changes"** means any proposed change to the EECA Plan for which the UARB orders or directs EfficiencyOne to obtain the approval of the UARB prior to the implementation of such proposed change.
- (y) **"Subcontractor"** means any contractor, supplier or consultant hired by EfficiencyOne in accordance with this Agreement to perform any portion of the EECA.
- (z) **"Term"** has the meaning ascribed to it in Section 2.1.
- (aa) **"UARB"** means the Nova Scotia Utility and Review Board.
- (bb) **"CASL"** means An Act to promote the efficiency and adaptability of the Canadian economy by regulating certain activities that discourage reliance on electronic means of carrying out commercial activities, and to amend the Canadian Radio-television and Telecommunications Commission Act, the Competition Act, the Personal Information Protection and Electronic Documents Act and the Telecommunications Act, S.C. 2010, c. 23, as amended from time to time.

1.2 Unless otherwise specified in this Agreement or unless the context otherwise requires:

- (a) words of any gender include each other gender;
- (b) using the singular or plural number also include the plural or singular number, respectively;
- (c) the insertion of headings in this Agreement is for convenience only and shall not be construed so as to affect the interpretation or construction of this Agreement;
- (d) the terms "hereof," "herein," "hereto," "hereunder" and words of similar or like import refer to this entire Agreement and not to any particular Section, Schedule or other subdivision of this Agreement;
- (e) references to a particular "Section" or "Schedule" are, unless otherwise noted, references to that Section of, or Schedule to this Agreement;
- (f) the words "include," "includes" and "including" shall be deemed to be followed by "without limitation" or "but not limited to";
- (g) references to any applicable law, legislation or regulation shall be construed as a reference to such law, legislation or regulation as each may be in effect from time to time;
- (h) references to any agreement or document (including this Agreement) shall (i) include all Schedules, appendices, and other attachments thereto, and (ii) be construed at the particular time as a reference to such agreement or document as amended, modified or supplemented and in effect from time to time and shall include a reference to any document which amends, modifies or supplements it, or is entered into, made or given pursuant to or in accordance with its terms;

- (i) references to (i) days shall refer to calendar days unless Business Day is specified, (ii) weeks and months shall refer to calendar weeks and months, respectively, and (iii) years shall refer to calendar years;
- (j) in computing any period of time prescribed or allowed under this Agreement, the day of the act, event or default from which the designated period of time begins to run shall be included. If the last day of the period so computed is not a Business Day, then the period shall run until the close of business on the next Business Day;
- (k) the Contract Documents are complementary, and what is required by any one shall be as binding as if required by all;
- (l) words and abbreviations which have well known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings; and
- (m) as both Parties were actively involved in preparing the terms and conditions of this Agreement and as they both had access to and relied upon counsel in this process, there shall be no presumption that any one or the other Party prepared this Agreement and no provision of this Agreement shall be construed against either Party based upon the process of preparation of proposals and drafts of the Agreement.

1.3 If there is a conflict within the Agreement, the order of precedence of documents, from highest to lowest, shall be:

- (a) Sections 1 to 27;
- (b) Schedule "A" – Electricity Efficiency and Conservation Activities; and
- (c) all other Schedules.

2. TERM & RESERVATION OF RIGHTS

2.1 The term of this Agreement shall be three (3) years from the Effective Date and shall automatically terminate on December 31, 2018~~22~~ unless terminated earlier in accordance with the terms of this Agreement and the Act (the "Term").

2.2 During the Term, NSPI shall purchase from EfficiencyOne and EfficiencyOne shall supply to NSPI, the EECA in accordance with the terms and conditions of this Agreement and the Act.

2.3 Notwithstanding anything contained herein, and subject to any requirement for review or approval by the UARB, nothing contained in this Agreement shall in any way effect the rights of NSPI pursuant to Section 79I(3) of the Act.

3. ELECTRICITY EFFICIENCY and CONSERVATION ACTIVITIES

3.1 For the Term of this Agreement, EfficiencyOne will,

- (a) provide the EECA in accordance with this Agreement;

- (b) provide sufficient resources to enable EfficiencyOne to perform its obligations on time and in accordance with this Agreement;
- (c) carry out the EECA in a professional, expeditious and economical manner, in accordance with the Act;
- (d) manage the EECA in an efficient manner; and
- (e) perform and supply the EECA in a safe and environmentally sound manner and in compliance with applicable Law.

3.2 The Parties acknowledge and agree that EfficiencyOne shall be solely responsible for the delivery of the EECA Plan. For greater certainty and notwithstanding the attachment of the EECA Plan as Schedule "E" – Approved EECA Plan, NSPI shall have no liability with respect to the EECA Plan saving and excepting any liability which may arise as a result of NSPI's failure to comply with the Act.

4. PRICE & PAYMENT

4.1 NSPI agrees to pay EfficiencyOne for EECA as set out in Schedule "B" – Compensation (the "**Contract Price**").

4.2 The Contract Price shall constitute full compensation for the EECA, and no additional compensation shall be payable to EfficiencyOne arising out or resulting from any productivity losses, overhead or indirect costs or other costs and expenses of any kind whatsoever.

4.3 NSPI shall make monthly payments on the first Business Day of each month in accordance with Schedule "B" to EfficiencyOne on account of the Contract Price when due, together with applicable HST. EfficiencyOne will submit an invoice to NSPI in advance of the payment date referenced in Schedule "B".

4.4 Unless otherwise indicated all dollar amounts referred to in this Agreement are in lawful money of Canada.

4.5 If applicable, payments shall be subject to harmonized sales tax (as defined in the *Excise Tax Act* (Canada)) ("**HST**"). No additional taxes (foreign or domestic), customs, duties or brokerage fees shall apply.

4.6 If applicable, NSPI will withhold from payments to EfficiencyOne any amounts required to be withheld under applicable Laws and treaties in respect of services rendered in Canada by a non-resident and may remit them to the relevant authority. Where available, statutory withholding may be waived if EfficiencyOne delivers to NSPI a formal waiver of the withholding requirement issued and signed by Canada Revenue Agency. The Parties shall cooperate at all times to ensure that all proper withholdings are deducted from payments and if any withholdings are overlooked then such withholdings may be deducted from later payments.

5. NOTIFICATION OF SIGNIFICANT CHANGES

5.1 EfficiencyOne shall provide notice of Significant Changes to NSPI at the same time as EfficiencyOne makes application to the UARB for the approval of the Significant Changes. Subject to the terms of the Act and the general discretion of the UARB under

the Act, NSPI shall, have the right to make written submissions to the UARB on any such Significant Changes to the EECA Plan.

6. SAFETY

6.1 EfficiencyOne shall at all times be responsible for safety and loss management in the supply or performance of the EECA.

6.2 EfficiencyOne shall ensure that all employees, Subcontractors, agents and representatives of EfficiencyOne comply with all federal, provincial and municipal health, safety and environmental statutes, regulations, policies and guidelines and all health, safety and environmental rules as prescribed by EfficiencyOne.

7. PROTECTION OF PROPERTY

7.1 EfficiencyOne shall take all commercially reasonable steps to protect the property of NSPI's customers and other third parties from damage which may occur as the result of the performance of the EECA.

7.2 Should EfficiencyOne damage the property of NSPI's customers or property of other third parties while performing the EECA, EfficiencyOne shall make good such damage at EfficiencyOne's expense and shall indemnify NSPI from and against all liabilities, claims, damages, settlements, awards, costs, expenses and proceedings incurred by NSPI or its servants, employees and/or agents in respect of such damage, except to the extent such damage occurs as a result of the negligent acts of NSPI or those for which NSPI is responsible at Law.

8. ENVIRONMENT

8.1 EfficiencyOne and its Subcontractors shall at all times comply with all Environmental Laws that apply in any way to the supply or performance of the EECA. EfficiencyOne and its Subcontractors shall not cause, permit or suffer the Release of a Hazardous Substance in contravention of any Environmental Laws.

8.2 Notwithstanding any other provision in this Agreement (and in addition to any other right to indemnity held by NSPI under the terms of the Agreement) EfficiencyOne shall indemnify NSPI, NSPI's parent, their respective subsidiaries, affiliates and related companies, and their respective officers, directors, employees, agents and shareholders, and agrees to hold each of them harmless from and against any and all Indemnified Costs resulting from any Release of any Hazardous Substance which is caused or contributed to by EfficiencyOne or its Subcontractors or any breach of any Environmental Law by EfficiencyOne or its Subcontractors.

9. EFFICIENCYONE'S COVENANTS

9.1 EfficiencyOne warrants, covenants and agrees with NSPI that:

(a) it has all requisite capacity and authority to execute, deliver and perform its obligations under this Agreement;

(b) this Agreement has been duly and validly executed and delivered by EfficiencyOne and constitutes a legal, valid and binding obligation of EfficiencyOne enforceable against EfficiencyOne in accordance with its terms;

- (c) to its knowledge, there is no matter, thing or event, including without limitation, any litigation, proceeding, breach, default or financial circumstance that would adversely affect EfficiencyOne's ability to perform its obligations under this Agreement;
- (d) it will furnish all labour, materials, products, tools, and other necessary components necessary to perform and provide the EECA, unless otherwise provided herein;
- (e) it shall diligently perform or cause to be performed the EECA in a proper and workmanlike manner;
- (f) it has the skills, expertise and resources to carry out the EECA and to comply, observe and perform the obligations to which it is subject in accordance with the terms of this Agreement;
- (g) prior to commencing any work hereunder, it shall obtain and maintain all permits, licenses and notices that a prudent supplier acting in accordance with industry standards would be required to obtain, maintain and provide in comparable circumstances and shall comply with all applicable Laws, ordinances, rules, regulations, codes and orders of any and all authorities having jurisdiction which are or become in force during the Term in respect of the EECA;
- (h) it will comply with applicable federal, provincial and municipal statutes, regulations and bylaws pertaining to the EECA performed by or on behalf of EfficiencyOne under this Agreement. EfficiencyOne shall be responsible for ensuring similar compliance by any suppliers and Subcontractors;
- (i) it is the Franchise Holder pursuant to the Act;
- (j) it is not a non-resident of Canada for the purposes of the *Income Tax Act*;
- (k) it will execute or cause to be made, done and executed all further acts, deeds, assurances, agreements, instruments or other documents as may be reasonably required to ensure fulfillment of the terms of this Agreement;
- (l) the EECA shall be delivered and performed by individuals duly licensed and authorized by Law, if applicable, to perform said undertakings;
- (m) the EECA shall be delivered and performed solely by EfficiencyOne or its Subcontractors and EfficiencyOne acknowledges that EfficiencyOne shall at all times remain responsible for the proper completion of this Agreement; and
- (n) upon becoming aware of a potential disruption having a material impact in the supply of the EECA, EfficiencyOne shall provide notification to the UARB and NSPI.

10. SUBCONTRACTORS

- 10.1 EfficiencyOne shall be permitted to subcontract the performance of any part of the EECA without the prior written approval of NSPI.

10.2 Where EfficiencyOne subcontracts any part of the EECA, EfficiencyOne shall preserve and protect the rights of the Parties under this Agreement with respect to the EECA to be supplied or performed under subcontract, and shall be as fully responsible to NSPI for the acts and omissions of Subcontractors and of persons directly or indirectly employed by them, as if they were acts and omissions of persons directly employed by EfficiencyOne.

10.3 Nothing contained in the Contract Documents shall create a contractual relationship between a Subcontractor and NSPI.

11. CONFIDENTIAL AND PERSONAL INFORMATION

11.1 The Parties have executed or agree to execute the confidentiality agreement attached hereto as Schedule "D" - Confidentiality ("**Confidentiality Agreement**").

11.2 EfficiencyOne shall be responsible for all physical and electronic security required to ensure the security of the Personal Information which has been provided by NSPI to EfficiencyOne.

11.3 EfficiencyOne shall indemnify and hold harmless NSPI for any liabilities, claims, damages, settlements, awards, costs, expenses and proceedings incurred by NSPI or its servants, employees and/or agents in consequence of EfficiencyOne's misuse of the Personal Information or any disclosure, whether intentional, inadvertent, negligent or otherwise of any of the Personal Information by EfficiencyOne contrary to the terms of this Agreement or the Act, or in consequence of EfficiencyOne's contravention of CASL.

12. PERFORMANCE REQUIREMENTS AND EVALUATIONS

12.1 EfficiencyOne's performance under the terms of this Agreement shall be measured in accordance with the performance requirements established by the UARB pursuant to Section 79M of the Act as set out in Schedule "C" – Performance Requirements.

13. FORCE MAJEURE

13.1 Neither Party shall be in breach of its obligations under this Agreement where failure to perform or delay in performance of any obligation is due, wholly or in part, to a Force Majeure Event.

13.2 Each Party shall notify the other Party promptly of any Force Majeure Event and shall take reasonable steps to minimize the impact of the failure or the delay and to resolve the event or occurrence that has given rise to the Force Majeure Event in order to resume performance. The time for performing an obligation as a result of Force Majeure Event shall be extended for the period lost, subject to the condition that the Term of this Agreement shall not be extended as a result of any Force Majeure Event.

13.3 Each Party suffering a Force Majeure Event shall take, or cause to be taken, such action as may be necessary to void, or nullify, or otherwise to mitigate, in all material respects, the effects of such Force Majeure Event. The Parties shall take all reasonable steps to ensure normal performance under this Agreement, including the resumption of any disrupted obligations.

13.4 For certainty, in no case shall the failure or omission of EfficiencyOne to carry out or observe any of the terms, provisions, or conditions of this Agreement or any negligent

act or omission of EfficiencyOne, or others for whom EfficiencyOne is responsible constitute an event of Force Majeure or result in an extension of the time to perform the EECA.

14. INDEMNITY

14.1 EfficiencyOne shall assume all risk of loss, damage or injury, including death, to person or property, caused by its directors, officers, employees, Subcontractors, agents or representatives, and agrees not to make or bring any claim, action or demand against NSPI or its directors, officers, servants, agents, or employees in respect of such loss, damage or injury excepting such loss, damage or injury caused by the negligence or wilful misconduct of NSPI or NSPI's directors, officers, servants, agents or employees.

14.2 EfficiencyOne agrees to indemnify and save harmless NSPI, its directors, officers, servants, agents, or employees, and their heirs, executors, administrators, successors and assigns, or any of them, from and against any liabilities, losses, expenses (including legal costs on a solicitor-client basis), claims, demands, actions, and causes of action, whatsoever suffered by NSPI by reason of, or in any way arising out of or in connection with a breach of this Agreement by EfficiencyOne excepting only to the extent caused by the negligence or wilful misconduct of NSPI or NSPI's directors, officers, servants, agents or employees.

14.3 NSPI agrees to indemnify and save harmless EfficiencyOne, its directors, officers, servants, agents, or employees, and their heirs, executors, administrators, successors and assigns, or any of them, from and against any liabilities, losses, expenses (including legal costs on a solicitor-client basis), claims, demands, actions, and causes of action, whatsoever suffered by EfficiencyOne by reason of, or in any way arising out of or in connection with a breach of this Agreement by NSPI excepting only to the extent caused by the negligence or wilful misconduct of EfficiencyOne or EfficiencyOne's directors, officers, servants, agents or employees.

14.4 The provisions set forth in this Section shall apply and be effective with respect to any claim, cause of action, or legal theory whatsoever including without limitation, claims based upon breach of contract, failure to meet performance guarantees, tort (including negligence) and strict liability.

14.5 EfficiencyOne shall defend, indemnify and hold harmless NSPI from any claim, suit, cause of action, judgment, cost or expense (including legal fees) based on a claim by a third party that any intellectual property which is part of the EECA or supply or performance of EfficiencyOne's obligations under this Agreement infringes any patent, copyright, trade secret or other intellectual property right, provided the EfficiencyOne is promptly notified of such claim and is given complete authority for defense of same. EfficiencyOne shall pay all damages, costs and expenses resulting from such a claim, including legal fees and settlement costs, but shall not be responsible for any cost, expense or compromise incurred by NSPI without EfficiencyOne's prior consent.

15. LIMIT OF LIABILITY

15.1 Neither Party shall be liable to the other Party for any Consequential Losses with respect to the performance or non-performance under this Agreement or for any actions undertaken in connection with or related to this Agreement.

1 15.2 EfficiencyOne's total liability to NSPI with respect to the performance or non-
2 performance under this Agreement or for any actions undertaken in connection with or
3 related to this Agreement shall be limited to the greater of the sum of two million dollars
4 (\$2,000,000) or the proceeds of the applicable insurance policies taken out by
5 EfficiencyOne under this Agreement ("**EfficiencyOne Limit of Liability**") provided that
6 the EfficiencyOne Limit of Liability shall not apply to:

7 (a) indemnification of NSPI by EfficiencyOne under the terms of this Agreement for
8 any third party claims (including but not limited to EfficiencyOne's obligations
9 pursuant to Sections 7.2, 8.2, 11.3, 14.5 and 18.1);

10 (b) any wilful misconduct or fraud of EfficiencyOne or its employees, agents or
11 representatives; and

12 (c) any obligation on the part of EfficiencyOne to refund in whole or in part the
13 Contract Price pursuant to this Agreement or the Act.

14 15.3 NSPI's total liability to EfficiencyOne with respect to the performance or non-
15 performance under this Agreement or for any actions undertaken in connection with or
16 related to this Agreement shall be limited to the sum of two million dollars (\$2,000,000)
17 ("**NSPI Limit of Liability**") provided that the NSPI Limit of Liability shall not apply to:

18 (a) any wilful misconduct or fraud of NSPI or its employees, agents or
19 representatives; and

20 (b) NSPI's liability for payment of the Contract Price pursuant to the Agreement or
21 the Act.

22 16. INSURANCE

23 16.1 EfficiencyOne shall obtain, maintain and pay for, during the entire Term of this
24 Agreement, the following minimum insurance coverage as follows, such insurance as it
25 relates to this Agreement shall be in a form and from an insurer acceptable to NSPI:

26 (a) General liability insurance shall be in the name of EfficiencyOne and shall name
27 NSPI as an additional insured and shall have limits of not less than five million
28 dollars (\$5,000,000) inclusive per occurrence for bodily injury, death, and
29 damage to property including loss of use thereof. Such insurance shall be
30 primary and non-contributing with, and not in excess of, any other insurance
31 available to NSPI. This policy shall also contain cross liability and severability of
32 interest and blanket contractual liability.

33 (b) Environmental impairment insurance with limits of not less than five million
34 dollars (\$5,000,000);

35 (c) Automobile liability insurance in respect of licensed vehicles shall have limits of
36 not less than two million dollars (\$2,000,000) inclusive per occurrence for bodily
37 injury, death, and damage to property. For automobiles not owned or operated
38 by or on behalf of EfficiencyOne the insurance shall be in the form of a standard
39 non-owned automobile policy and shall include standard contractual liability
40 endorsement. For automobiles owned or operated by or on behalf of
41 EfficiencyOne the insurance shall be in the form of a standard owner's form
42 automobile policy and shall provide third party liability and accident benefits

- 1 insurance covering licensed vehicles owned or operated by or on behalf of
2 EfficiencyOne.
- 3 (d) Property Insurance covering all loss of or damage to EfficiencyOne's property
4 and equipment of EfficiencyOne or for which EfficiencyOne is legally liable or
5 responsible used in performance of the EECA for the full replacement value,
6 which insurance shall not allow subrogation claims by the insurer against NSPI.
- 7 (e) To the extent that the EECA includes the provision of professional services,
8 professional liability errors and omissions insurance covering all claims arising
9 out of errors and omissions of EfficiencyOne in the performance of professional
10 services as part of the EECA with a limit of two million dollars (\$2,000,000). In
11 the event other claims erode EfficiencyOne's professional errors and omissions
12 insurance below two million dollars (\$2,000,000), in the annual aggregate,
13 EfficiencyOne agrees to reinstate the limit.
- 14 (f) Workers' compensation to the full extent required in Nova Scotia and wherever
15 EfficiencyOne's personnel contracts of employment are made or are expressed
16 to be made.
- 17 16.2 If EfficiencyOne fails to effect or keep in force any of the foregoing insurances, NSPI
18 may, without prejudice to any other right or remedy, effect such insurance and pay the
19 premiums due and recover the same as a deduction from any other monies due to
20 EfficiencyOne under this Agreement.
- 21 16.3 EfficiencyOne shall be responsible to pay deductible amounts and for determining the
22 deductible amount in respect of each policy. EfficiencyOne shall not violate, nor
23 knowingly permit to be violated, any conditions of the policies maintained according to
24 the provisions of this Section, and it shall be EfficiencyOne's duty and responsibility to
25 impose upon each Subcontractor the same responsibilities and obligations imposed
26 upon EfficiencyOne under such provisions.
- 27 16.4 EfficiencyOne agrees to provide proof of insurance to NSPI on an annual basis. Such
28 proof shall be in the form of a certificate of insurance signed by EfficiencyOne's
29 insurance broker.
- 30 **17. INTELLECTUAL PROPERTY**
- 31 17.1 NSPI acknowledges that all branding, trade and business marks of EfficiencyOne used
32 in the course of provision of EECA pursuant to this Agreement, (the "**EfficiencyOne
33 Brands**") are, and shall remain, the sole and exclusive property of EfficiencyOne and
34 shall not be used by NSPI without EfficiencyOne's express consent. Upon termination of
35 this Agreement, NSPI shall immediately upon instruction from EfficiencyOne return or
36 destroy, as instructed by EfficiencyOne, the EfficiencyOne Brands.
- 37 17.2 Any trademarks, brands, logos or other branding or trade or business marks used in
38 NSPI's business ("**NSPI Brands**") shall remain the sole and exclusive property of NSPI
39 and shall not be used by EfficiencyOne for any purpose except in connection and as
40 necessary for the provision of the EECA. Upon termination of this Agreement,
41 EfficiencyOne shall immediately upon instruction from NSPI return or destroy, as
42 instructed by NSPI, the NSPI Brands.

18. LIENS AND CLAIMS

18.1 EfficiencyOne shall indemnify and hold harmless NSPI, NSPI's parent and their subsidiaries and affiliates (collectively the "**Lien Indemnitees**" or singularly "**Lien Indemnatee**") and defend each of them from and against any and all losses and costs arising out of any and all claims for payment, liens, attachment or any other process, filed against any property of the Lien Indemnitees by or in respect of a Subcontractor of any tier or any other party providing work, materials in respect of the EECA or any part thereof (referred to in this Section as "**Liens or Claims**"), including solicitor and client fees and expenses incurred by NSPI in discharging any such Liens or Claims or similar encumbrances.

18.2 EfficiencyOne shall discharge promptly any Liens or Claims. If EfficiencyOne does not promptly satisfactorily discharge such Liens or Claims, NSPI at its sole option may (i) require EfficiencyOne to pay, within five (5) Business Days after request by NSPI, or (ii) subject to any requirements of the *Builders' Lien Act* of Nova Scotia, offset against any holdback or other amounts due or to become due to EfficiencyOne, all costs and expenses incurred by NSPI or other Lien Indemnatee in causing the release of, paying or settling such Liens or Claims. EfficiencyOne shall have the right to contest any such Liens or Claims, provided it first provides to NSPI a bond or other assurance of payment reasonably satisfactory to NSPI in the amount of such Liens or Claims and in form and substance reasonably satisfactory to NSPI. In no circumstance whatsoever shall NSPI be liable for a greater amount than the amount payable by NSPI to EfficiencyOne.

19. DISPUTE RESOLUTION

19.1 In the event of a dispute in connection with this Agreement, a senior representative of EfficiencyOne and a senior representative of NSPI shall promptly meet to discuss and resolve the dispute and the Parties shall have thirty (30) days to resolve the dispute (or ten (10) days if either Party notifies the other Party that the matter requires urgent resolution).

19.2 Unless the parties agree otherwise, in the event resolution cannot be achieved in accordance with Section 19.1 of this Agreement, then such dispute or difference shall be referred to the UARB in accordance with Section 79P of the Act.

19.3 Notwithstanding any dispute, EfficiencyOne shall diligently carry out the EECA, and shall not suspend, impair, interfere with, restrict or discourage the prompt completion of any portion of the EECA, unless specifically authorized to do so by the UARB. .

20. DEFAULT AND TERMINATION

20.1 This Agreement may be terminated immediately by either Party, in whole or in part, upon the happening of one or more of the following events:

(a) EfficiencyOne's Franchise is terminated and the Agreement has not been assigned by the Minister; or

(b) The UARB approves the termination of the Agreement.

In the event of a termination pursuant to this Section 20.1, neither Party shall be entitled to any compensation or damages for any Consequential Losses as a result of such termination. Immediately upon receipt of such termination notice, EfficiencyOne will

discontinue all EECA under this Agreement and will only finish such portions of the EECA as may be necessary to preserve and protect the EECA already in progress. Such termination does not relieve either Party from any of their respective obligations under this Agreement for EECA provided up to the date of termination. Any claim for payment by EfficiencyOne must be asserted within thirty (30) days from the date of such termination.

20.2 Notwithstanding any other provision in this Agreement, in the event this Agreement is terminated in accordance with Section 20.1(a), EfficiencyOne shall:

- (a) Immediately return all monies paid on account of the Contract Price which amounts have not been legitimately incurred or subject to contractual commitments for expenditure which cannot otherwise be mitigated to NSPI; and
- (b) Provide to NSPI all reasonable required termination assistance to allow the EECA provided under this Agreement to continue and to facilitate the orderly transition of the EECA to NSPI or any third party as directed by NSPI, provided that EfficiencyOne shall be entitled to commercially reasonable payment for such transition services on a time and material basis.

20.3 The Parties acknowledge that this Agreement is subject to the general supervision of the UARB.

20.4 A Party shall be determined to be in default of its obligations under this Agreement if (each a "**Event of Default**"):

- (a) it is in breach of any material term or condition of this Agreement, which breach is not cured by the Party within thirty (30) days after written notice from the other Party;
- (b) it assigns this Agreement other than as permitted by the Act and/or the UARB;
- (c) any representation or warranty made by either Party shall prove to be untrue when made in any material respect;
- (d) there is a sale, transfer or relinquishment, voluntary or involuntary, by operation of law or otherwise, of legal control of the business of either Party except for a transfer to a related corporation or a transfer resulting from a merger, acquisition, amalgamation or reorganization, or, in the case of EfficiencyOne, a change in the Membership of the corporation;
- (e) Either Party sells, transfers or assigns all or substantially all of its assets;
- (f) a petition in bankruptcy is filed with respect to either Party; or
- (g) any proceeding is commenced under any bankruptcy or insolvency legislation or under any other federal, state or provincial law relating to insolvency or bankruptcy, the adjudication of either Party as a bankrupt, the appointment by any competent court having jurisdiction of a temporary or permanent receiver, trustee or other officer having similar powers over either Party its business or assets, or the making of any assignment by either Party for the benefit of its creditors.

20.5 If a breach notified pursuant to Sections 20.4(a) cannot be corrected within the period required therein, the defaulting Party shall not be in breach or violation if it:

(a) commences and diligently and continuously carries out the correction of the breach or violation within the specified time;

(b) provides to the non-defaulting Party, and the UARB an acceptable plan for such correction; and

(c) corrects the breach or violation in accordance with such plan.

20.6 Upon the occurrence of an Event of Default, the non-defaulting Party may apply to the UARB to terminate this Agreement in whole or in part.

21. NOTIFICATIONS

21.1 All notices to be given to either Party under this Agreement shall be written and addressed to the NSPI and to EfficiencyOne as follows:

To NSPI:

Nova Scotia Power Incorporated
1223 Lower Water Street
PO Box 910
Halifax, NS B3J 3S8
Attention: Corporate Secretary
Facsimile: (902) 428-6171

To EfficiencyOne:

EfficiencyOne
230 Brownlow Avenue
Suite 300
Dartmouth, NS B3B 0G5
Attention: CEO
Facsimile: (902) 470-3599

21.2 All notices may be sent by facsimile, a nationally recognized overnight courier service, first class mail or hand delivered. Notice shall be given when received by the addressee on a Business Day. In the absence of proof of the actual receipt date, the following presumptions will apply:

(a) Notices sent by facsimile shall be presumed to have been received upon the sending Party's receipt of its facsimile machine's confirmation of successful transmission. If the day on which such facsimile is received is not a Business Day or is after five p.m. (local time for the recipient) on a Business Day, then such facsimile shall be deemed to have been received on the next following Business Day.

(b) Notice by overnight courier shall be presumed to have been received on the next Business Day after it was sent.

(c) Notice by first class mail shall be presumed delivered five (5) Business Days after mailing.

21.3 Either Party may modify its address for notices by advance written notice to the other Party.

22. AUDIT AND INSPECTION

22.1 EfficiencyOne shall, during the Term and for a period of thirty-six (36) months thereafter, keep accurate records of all EECA supplied to NSPI, as necessary to determine that the EECA was provided in accordance with the terms and conditions of this Agreement.

22.2 NSPI shall have the right to apply to the UARB to request access to any of the records referred to in 22.1.

22.3 NSPI shall have the right to apply to the UARB to inspect or observe the EECA at all times, whether using its own forces or those of a designated third party. EfficiencyOne shall facilitate such inspections and provide sufficient, safe and proper facilities at all times for inspection of the EECA.

23. ASSIGNMENT

23.1 Neither Party shall assign all or any portion of this Agreement without the prior written approval of the UARB and/or the Minister as the situation requires.

24. SHARING OF DATA AND INFORMATION

24.1 EfficiencyOne shall work co-operatively with NSPI to provide NSPI with information and data from time to time in order to assist NSPI with planning and load forecasting as may be reasonably required by NSPI. For greater certainty, such information and data shall be consistent with the past practices of the Parties.

24.2 In the event of a dispute regarding any request for information by NSPI, NSPI shall have the right to apply to the UARB to request access to the information and data referred to in 24.1.

25. COORDINATION MEETINGS AND REPORTS

25.1 During the Term of this Agreement, EfficiencyOne shall prepare and deliver to the UARB and NSPI a quarterly report (the "Quarterly Report") in a form acceptable to the UARB.

25.2 EfficiencyOne shall prepare and deliver to the UARB and NSPI an annual report (the "Report") in a form acceptable to the UARB. For greater certainty, the Report shall summarize and provide details as to the EECA and milestones achieved in the prior year, contain a discussion and analysis of major discrepancies relative to the EECA Plan's intent and forecasts, EfficiencyOne's financial statement for the previous year with respect to the EECA, evaluation reports and a summary of planned versus actual savings and costs for each metric.

25.3 The Parties agree that ongoing coordination and regular communication between NSPI and EfficiencyOne is important in order to ensure effective planning. To that end, the Parties shall meet quarterly or as otherwise agreed upon to discuss the provision of the EECA.

~~25.4 Notwithstanding ss. 25(1) and (2), EfficiencyOne shall provide evaluation and reporting in accordance with s. 5 of the Consensus Agreement among EfficiencyOne, NSPI, Consumer Advocate, Small Business Advocate, Industrial Group, Affordable Energy Coalition and Ecology Action Centre, dated June 16, 2015, pursuant to the UARB's Decision of August 12, 2015 (M06733).~~

26. GENERAL

26.1 This Agreement shall only be renewed in accordance with the provisions of the Act.

26.2 This Agreement shall extend to, be binding upon and enure to the benefit of the respective successors and permitted assigns of the Parties hereto.

26.3 EfficiencyOne will be an independent contractor. EfficiencyOne shall not act as an agent for NSPI, bind NSPI to any obligation with a third party, nor hold itself out as having authority to bind or obligate NSPI. None of the persons engaged by EfficiencyOne or any of its Subcontractors in the performance of the EECA will be considered employees of NSPI.

26.4 This Agreement shall be deemed to have been made in and shall be governed by, construed and interpreted in accordance with the laws of the Province of Nova Scotia and the laws of Canada, as applicable therein. Where the provisions of this Agreement or the Act permit or require a matter to be referred to or proceeded with before a court, or in any other case where the Parties bring a matter in respect of this Agreement before a court, the Parties irrevocably attorn to the jurisdiction of the Supreme Court of Nova Scotia.

26.5 No consent or waiver, express or implied, by any Party to this Agreement of any breach or default by any other Party in the performance of its obligations under this Agreement or of any of the terms, covenants or conditions of this Agreement shall be deemed or construed to be a consent or waiver of any subsequent or continuing breach or default in such Party's performance.

26.6 Time shall be of the essence for purposes of this Agreement.

26.7 This Agreement, upon approval by the UARB, shall represent the entire Agreement between the Parties with respect to the subject matter hereto and shall not be modified, varied or amended except by an instrument in writing signed by the Parties and approved by the UARB or as ordered or directed, by the UARB at any time.

26.8 Should any provision of the Agreement be declared by a judicial or other competent authority to be unenforceable, the remaining provisions of the Agreement shall remain in full force and effect.

26.9 The Parties acknowledge that this Agreement and all related documents shall be in English.

1 26.10 This Agreement may be executed by the Parties in counterparts, each of which when so
2 executed and delivered shall be deemed to be an original and when taken together shall
3 be deemed to be one and the same instrument. The electronic delivery, including,
4 without limitation, by email or facsimile transmission, of any signed original of this
5 Agreement shall be the same as the delivery of an original.

6 **27. SURVIVAL**

7 27.1 Subject to the provisions of the Act, all provisions of this Agreement which by their
8 express terms or nature are continuing shall survive the expiration or termination of this
9 Agreement, including, without limitation, this provision, and the provisions relating to the
10 EECA Plan (s. 3.2), EfficiencyOne's covenants (s.9), confidentiality (s. 11), indemnity
11 (s.14), intellectual property (s. 17), notification (s. 21) and general provisions (s. 26) as
12 well as any provisions which are required to determine, or which exclude or limit, any
13 liability or which are otherwise required to give effect to or interpret any such provisions
14 which are continuing.

15 ***[Remainder of page intentionally left blank]***
16

1 **IN WITNESS THEREOF**, the Parties have duly executed this Agreement, in duplicate, as of the
2 date set forth above.

		NOVA SCOTIA POWER INCORPORATED
_____		Per: _____
Witness		Name: _____
		Title: _____
_____		Per: _____
Witness		Name: _____
		Title: _____
_____		Per: _____
Witness	Name: _____	
	Title: _____	

3

4

SCHEDULE A**ELECTRICITY EFFICIENCY AND CONSERVATION ACTIVITIES****Schedule A****Electricity Efficiency and Conservation Activities**

The figure below identifies the scope of savings (3 -year Cumulative Annual ~~Net~~ Energy ~~and Net Savings, Cumulative Annual~~ Peak Demand ~~Savings and Lifetime Energy~~ Savings) associated with carrying out EECAs over the Term.

	Cumulative Annual Net Energy Savings at Generator over the Term (GWh)	Cumulative Annual Net Peak Demand Savings at Generator over the Term (MW)	<u>Lifetime Energy Savings (GWh)</u>
Performance Targets*	405.9	62.5	

The Performance Targets will be achieved in accordance with the EECA Plan as set out in Schedule E ~~and the Consensus Agreement as adopted by the Board.~~

* For certainty, in accordance with the performance requirements set out in Schedule "C" attached hereto, EfficiencyOne shall be deemed to be in substantial compliance with the approved Performance Targets if 90the stipulated percent ~~(90%) or greater level of~~ achievement is reached on both each Performance Targets. If less than 90the stipulated percent ~~(90%) level~~ any of ~~either~~ Performance Targets is achieved, a regulatory process will be triggered.

**

SCHEDULE B**COMPENSATION****Schedule B (Page 1 of 2)****Compensation****I. Net Contract Price**

The figure below identifies the ~~net~~ Contract Price to be paid by NSPI allocated for each year of the Term.

	2016	2017 ~~20~~	2018 ~~18~~	Total ~~2022~~
UARB Approved	\$33,210,000	\$34,020,000	\$34,920,000	\$102,150,000
~~Balance- Adjustment¹~~	~~(\$8,518,030)~~	~~nil~~	~~nil~~	~~(\$8,518,030)~~
~~Net-Contract Price to be Paid by NSPI²~~	~~\$24,691,970~~	~~\$34,020,000~~	~~\$34,920,000~~	~~\$93,631,970~~

The Parties acknowledge that any surplus realized by EfficiencyOne in delivering the Performance Targets at the end of the Term shall be reported to the UARB and refunded to NSPI³ unless EfficiencyOne is directed to do otherwise by the UARB.

~~1 The term "Balance Adjustment" refers to the 2014 surplus of DSM funds in the amount of \$8,518,030 that is to be returned by EfficiencyOne in accordance with the UARB-approved cost-allocation methodology. The return of the Balance Adjustment is to be accounted for through a reduction in the payment of the 2016 portion of the Contract Price.~~

~~2 The Parties acknowledge that the portion of Contract Price approved by the UARB for 2016 is to be reduced by the amount of the Balance Adjustment. As such, the amount to be paid by NSPI to EfficiencyOne in 2016 shall not exceed \$24,691,970 and the total amount to be paid by NSPI over the Term shall not exceed \$93,631,970.~~

~~3 Together with all accumulated interest earned by EfficiencyOne on such surplus.~~

Schedule B (Page 2 of 2)**Compensation****II. Payments**

In accordance with Section 4.3 of the Agreement, the monthly payments to be made by NSPI to EfficiencyOne over the Term, ~~accounting for the Balance Adjustment~~, shall be as set out below. The monthly payment amounts referred to following are exclusive of required HST. HST shall be remitted to EfficiencyOne in addition to these monthly amounts.

On the First Business Day of:	~~2016~~ ²⁰	~~2017~~ ⁴	~~2018~~ ⁵ 2022	Total
January	\$0	\$2,900,436	\$2,977,167	-
February	\$0	\$2,641,338	\$2,711,215	-
March	\$0	\$2,833,345	\$2,908,301	-
April	\$2,596,090	\$3,010,077	\$3,089,709	-
May	\$2,483,522	\$2,544,095	\$2,611,400	-
June	\$2,307,508	\$2,363,788	\$2,426,322	-
July	\$2,368,453	\$2,426,220	\$2,490,406	-
August	\$2,388,522	\$2,446,778	\$2,511,508	-
September	\$3,029,041	\$3,102,920	\$3,185,008	-
October	\$3,953,232	\$4,049,652	\$4,156,786	-
November	\$2,796,894	\$2,865,111	\$2,940,907	-
December	\$2,768,709	\$2,836,238	\$2,911,271	-
Total	\$24,691,970	\$34,020,000	\$34,920,000	\$93,631,970

4 The 2017 payments owing by NSPI will be reduced to reflect any 2015 under spending by EfficiencyOne, if any, against the 2015 UARB-approved DSM Resource Plan, together with any 2014 Balance Adjustment interest earned in 2015.

5 The 2018 payments owing by NSPI will be reduced to reflect any Balance Adjustment interest earned in 2016.

SCHEDULE C

Performance RequirementsPERFORMANCE REQUIREMENTS~~-(PAGE 1 OF 2)~~I. UARB-APPROVED PERFORMANCE TARGETS, THRESHOLDS, AND INDICATORS⁶

a) Performance Targets and Thresholds:

i. Performance Targets are set over the three -year contract period, rather than annually.

ii. EfficiencyOne is deemed to be in substantial compliance with the UARB-approved Plan Performance Targets if ninety percent (90%) or greater achievement is reached on the cumulative annual net energy savings at generator and cumulative net peak demand savings at generator Performance Targets listed at b) i and ii below. If less than ninety percent (90%) of either Performance Target at b) i and ii below is achieved, a regulatory process will be triggered.

~~ii.~~ iii. EfficiencyOne is deemed to be in substantial compliance with the UARB-approved Plan Performance Targets if ~~90 percent~~ Seventy Five Percent (75%) or greater achievement is reached on the ~~two~~ Lifetime Energy Savings Performance Targets ~~as listed below at b) iii.~~ If less than ~~90~~ Seventy Five percent (75%) of ~~any~~ Performance Target at b) iii below is achieved, a regulatory process will be triggered.

~~6 These Performance Targets, Indicators and Thresholds were established under the terms of the Consensus Agreement among EfficiencyOne, NSPI, the Consumer Advocate, the Small Business Advocate, the Industrial Group, the Affordable Energy Coalition and the Ecology Action Centre, dated June 16, 2015, which was approved by the UARB in its Decision dated August 12, 2015 (M06733).~~

b) Performance Targets consist of:

- i. Cumulative annual net energy savings at generator
- ii. Cumulative annual net peak demand savings at generator
- iii. Lifetime Energy Savings

c) Performance Indicators (for UARB reporting) consist of:

- i. Annual incremental energy savings (reported by program) and rate class);
- ii. Cumulative annual energy savings (reported by program) and rate class);
- iii. ~~Lifetime—Annual~~ lifetime energy savings (~~once methodology is developed~~)
(reported by program) and rate class);
- iv. Annual incremental system-peak demand savings (reported by program) and rate class);
- v. Cumulative annual system-peak demand savings (reported by program) and rate class);
- vi. Total ratepayer benefits ~~(once methodology is developed)~~);
- vii. Total spending (reported by program and rate class));
- viii. Customer satisfaction ;

SCHEDULE C (PAGE 2 OF 2)**Performance Requirements**

- ix. An analysis of the impact on rates through the implementation of the ~~2016–2018~~ programs will be included as part of EfficiencyOne's historical-looking rate and bill impact analysis, filed by October 31st of each year ; and
- x. Reporting on low-income program participation, expenditures, and savings through a variety of methods, including estimation based on geographic census information .

~~d) For the Performance Indicators reported by program, EfficiencyOne will also report on them by rate class, as soon as available, but not later than within its Q3 report to the UARB.~~

SCHEDULE D**CONFIDENTIALITY CONFIDENTIALITY AND NONDISCLOSURE AGREEMENT**

THIS CONFIDENTIALITY AGREEMENT made effective this 1st day of _____,
2015January, 2020

Between:

EfficiencyOne, hereinafter "EfficiencyOne"

Party of the First Part

And

Nova Scotia Power Incorporated, hereinafter "NSPI"

Party of the Second Part

Whereas the Parties have entered into a Supply Agreement for Electricity Efficiency and Conservation Activities made effective as of January 1, 201620 ("Supply Agreement") whereby Efficiency One is to provide EECA (as that term is defined in the Supply Agreement) to NSPI;

And whereas in accordance with the Supply Agreement, and the Electricity Efficiency and Conservation Act (Nova Scotia) and the Public Utilities Act (Nova Scotia) (together hereinafter referred to as the "Legislation"), and as may be directed by the Nova Scotia Utility and Review Board, and as may be further agreed between the Parties, the Parties will be receiving, reviewing, and analyzing Confidential Information from each other;

And whereas the Parties wish to clarify the manner in which any Confidential Information disclosed by one Party ("Disclosing Party") to the other is to be treated by the recipient of the Confidential Information ("Recipient");

In consideration of the agreements of the Parties set forth below, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

Confidential Information

1. The Parties agree that for the purpose of this Agreement "Confidential Information" means all information, regardless of the form in which it is communicated or maintained and prepared by the Disclosing Party, and is disclosed directly or indirectly to the Recipient, pursuant to the Supply Agreement, the Legislation, as directed by the Nova Scotia Utility and Review Board or as otherwise agreed between the Parties. Confidential Information includes, but is not limited to the following: all reports analyses, notes, memoranda, correspondence, spreadsheets, drawings, survey plans, maps, contracts, commercial arrangements, intellectual property, trade secrets, corporate strategies, business plans or other information that is based on, contain or reflect any Confidential Information, material, whether printed or electronic, which has been designated by the Disclosing Party as confidential information, including proprietary information and other commercially sensitive information. This includes but is not limited to information which has been or may be filed with the Nova Scotia Utility and Review Board ("the Board") in confidence in answer to Information Requests and any further material that may be filed with the Board in confidence whether in response to future Information Requests or otherwise, and whether printed or electronic. Confidential Information shall also include any explanation or other information provided by either Party to the Recipient concerning the foregoing and which has been identified by the Party providing the information as confidential at the time it is initially provided, whether printed or electronic. Confidential Information may also include any password or other information necessary to access electronic copies of Confidential Information.

Permitted Scope of Use

2. The Recipient may use the Confidential Information solely for the purposes of providing or receiving EECA, as the case may be, in accordance with the Legislation and the Supply Agreement and for no other reason or purpose.

No Obligation to Disclose

3. This Agreement does not obligate either Party to disclose any Confidential Information to the other.

Protection of Confidential Information

4. The Recipient shall hold the Confidential Information in strict confidence and shall strictly protect the Confidential Information from all harm, loss, theft, reproduction and unauthorized access, employing at least the same degree of care that the Recipient employs to protect its own confidential information of a similar nature, but in any event, not less than reasonable care. The Recipient shall ensure that such Confidential Information is not disclosed, published,

released, transferred or otherwise made available in any form to, for the use or benefit of, any person except as provided in this Agreement.

Acknowledgements

5. The Recipient acknowledges that the Confidential Information is confidential and a trade secret and is owned by the Disclosing Party and is highly valuable and material to the interests, business and affairs of the Disclosing Party and that any unauthorized disclosure thereof by the Recipient would be detrimental to the Disclosing Party.

Permitted Disclosures

6. The Recipient shall be permitted to disclose relevant aspects of the Confidential Information to its employees and professional advisors to the extent that such disclosure is reasonably necessary for the performance of its duties and obligations; provided, however, that prior to such disclosure the Recipient shall inform such persons and parties of the confidential nature of the Confidential Information and each such person or party signs the undertaking attached to this Confidentiality Agreement. The Recipient shall inform the Disclosing Party of the name of each person to whom it has disclosed the Confidential Information in accordance with this provision and shall provide to the Disclosing Party the signed undertaking. The Recipient shall be fully responsible for ensuring that any such persons to whom it discloses the Confidential Information complies with the confidentiality obligations contained in this Agreement and shall be liable for any breach of this Agreement by such persons.

7. The non-disclosure obligations in this Agreement shall not restrict any disclosure by the Recipient pursuant to any applicable law or an order of any court of competent jurisdiction or regulatory body with regulatory responsibilities over the Recipient, provided that the Recipient shall provide the Disclosing Party with prompt prior written notice of its obligation to disclose so that the Disclosing Party may seek a protective order or other appropriate remedy concerning the disclosure of its Confidential Information and/or waive compliance with the confidentiality provisions of this Agreement. In addition, the Recipient shall take reasonable steps, to the extent permitted by law, to remove from the Confidential Information that is required to be disclosed, any information that is commercially sensitive to the Disclosing Party. In the event of an order for disclosure by a court of competent jurisdiction or regulatory body with regulatory responsibilities over the Recipient, the Recipient shall first notify the Disclosing Party of such order and allow the Disclosing Party not less than ten (10) days to remove any such information that is commercially sensitive.

Term

8. The term of this Agreement shall commence on the effective date of the Supply Agreement unless superceded by another form of writing, and notwithstanding the return of any Confidential Information or any other event, shall continue in full

force and effect for a period of FIVE (5) years from the effective date of this Agreement.

Equitable Remedy

9. The Recipient acknowledges that any unauthorized use of the Confidential Information or any breach of its obligations under this Agreement will result in irreparable harm to the Disclosing Party which cannot be adequately compensated for by damages. Neither the Recipient, nor any term in this Agreement, shall interfere with, delay, or prevent the Disclosing Party from seeking an interim and interlocutory equitable remedy to enforce any provision of this Agreement. The Recipient agrees not to oppose an application for equitable relief by the Disclosing Party in such circumstances. Any such relief or remedy shall not be exclusive, but shall be in addition to all other available legal or equitable remedies. The Recipient agrees that the provisions of this Section are fair and reasonable in the commercial circumstances of this Agreement. This Article shall survive the termination of this Agreement.

Return of Information

10. On the earlier of either thirty (30) days following the termination of the Supply Agreement or at the written request of the Disclosing Party (and unless superseded by another form of writing), the Recipient shall return or destroy (at the Disclosing Party's direction) and delete from all electronic devices all Confidential Information provided to it, including all copies (and all notes and documents prepared by the Recipient that may incorporate same) and still in the Recipient's possession (and otherwise under its control or in the possession of other persons to whom it has been provided as permitted hereunder) and, if requested by the Disclosing Party, shall provide written confirmation to the Disclosing Party to that effect. Notwithstanding the forgoing, the Recipient shall be entitled to retain the Confidential Information in one legal file copy that may be retained solely for the determination of its legal obligations under this Agreement.

Residual Information

11. The Recipient or its designate or any other person having access to the Confidential Information pursuant to this Agreement shall not, during and after the termination of this Agreement, use in its business any Residual Information. "Residual Information" means the ideas, know-how and techniques that would be retained in the unaided memory of an ordinary person skilled in the art, not intent on appropriating the proprietary information of the disclosing party, as a result of such person's access to, use, review, evaluation, or testing of the Confidential Information of the disclosing party for the purposes described herein. An employee's memory is unaided if the employee has not intentionally memorized the Confidential Information for the purpose of retaining and subsequently using or disclosing it.

Limited Rights

12. The Recipient agrees that no rights are granted to Recipient other than the limited rights to use the Confidential Information on the terms of this Agreement. For certainty, no license is granted under this Agreement (directly or indirectly) under any patent, discovery, copyright, or other intellectual or industrial property right now or in the future.

Indemnity

13. The Recipient shall indemnify and hold the Disclosing Party harmless from any and all loss, liability, cost or expense (including, without limitation, solicitor's costs on a solicitor and client basis and all other costs of defence) caused in whole or in part by the Recipient's breach of any provision of this Agreement. This Article shall survive the termination of this Agreement.

Governing Law

14. This Agreement is governed and shall be construed in accordance with the laws of the Province of Nova Scotia.

General Provisions

15. This Agreement is binding on the Parties, their administrators, successors, executors and assigns.

Executed and delivered this ____ day of _____, ~~2015~~, 20__.

EfficiencyOne

Nova Scotia Power Incorporated

By: _____

By: _____

Name:

Name:

Title:

Title:

SCHEDULE "A" to CONFIDENTIALITY AGREEMENT

UNDERTAKING

I _____, HAVE READ AND
AGREE TO ABIDE AND AM BOUND BY THE TERMS AND CONDITIONS SET
OUT IN THE CONFIDENTIALITY AGREEMENT DATED THE ____ DAY OF
____ BETWEEN EFFICIENCYONE AND NOVA SCOTIA
POWER INCORPORATED.

Dated the ____ day of _____ 2014__.

Witness

Name:

Recipient Designate

SCHEDULE E

~~APPROVED~~ EECA PLAN

~~[As approved]~~[Subject to approval] by the UARB]

DRAFT

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[E1 responses to NSPI IRs]

Request IR-15:

- (a) Regarding E1 (NSPI) RIR-5, from whom did E1 received general support for increasing the emphasis on demand reduction? And for increasing focus on helping underserved markets?
- (b) Please add a column to the table to identify which stakeholder submitted the comment.
- (c) Please provide a copy of E1's 2018 Annual Progress Report as referenced in E1 (NSPI) RIR-6.

Response IR-15:

- a) Please refer to EfficiencyOne's response to MEUNSC IR-05 for written stakeholder comments received December 21, 2018. Below are the specific statements regarding Demand Reduction and the underserved markets.

Synapse wrote: An example of a new approach is E1's increased emphasis on peak savings in the proposed framework. Given anticipated increases in avoided capacity costs and the findings of the Generation Optimization study, this approach seems likely to result in benefits to ratepayers.

IG wrote: We believe that most appropriate efficiency programs are not just those "at large" but those that have a sharper focus on demand savings (as the peaks continue to grow) and if appropriate, a focus on CO2 reductions.

MEUNSC wrote: We would agree that any new plan should continue with an increased

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1 emphasis on demand reduction

2
3 AEC wrote: We strongly support the proposal to fund an Affordable Multi-family
4 Housing Program. We support the proposed First Nations efficiency program.

5
6 EAC wrote: Supporting increased and stable programming for underserved Nova
7 Scotians supporting the demand response programs

8
9 b) Please refer to part a) of this IR response.

10
11 c) Please refer to the EfficiencyOne 2018 DSM Annual Progress Report as filed with the
12 Nova Scotia Utility and Review Board.¹

¹ EfficiencyOne 2018 DSM Annual Progress Report, M09096, Exhibit E-1, March 29, 2019.

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[E1 responses to NSPI IRs]

Request IR-16:

Reference: In E1 (NSPI) RIR-12(d), E1 states that “the incentives in retail stores for this measure [A-series LED lamps] have been discontinued as of 2019.

**(a) Are incentives for this measure otherwise available from E1 than in retail stores?
Please explain if so.**

Response IR-16:

a) Replacement of incandescent bulbs with A-series LED lamps have been maintained in the Efficient Product Installation program component in 2019. Rebates on A-series LED lamps are also available for small businesses through the Direct Installation program.

Replacement of incandescent bulbs with LEDs through Efficient Products Installation ensures all lighting products in a participant’s home are considered for replacement, and participants are not left with a mixture of efficient and inefficient lighting products. Efficient Product Installation replaces incandescent bulbs with LEDs to ensure greater energy savings, and related cost savings, for participants than when compared to the replacement of CFL bulbs. Replacement of CFLs is not eligible under this program component.

The intent of the Direct Installation program is be as comprehensive as possible for small businesses who often lack capital for upgrades. Therefore, LEDs continue to be rebated under this program to help mitigate the affordability barrier.

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[E1 responses to NSPI IRs]

Request IR-17:

Reference: In E1 (NSPI) RIR-13(d) E1 lists “program enhancements” to overcome participation barriers and states it will “build upon successful strategies used in 2016 through 2019”.

(a) Please explain further how E1 will “build upon” the bulleted points listed, identifying new activities, products and services etc.

(b) Explain whether there is a difference in kind, delivery model or financial funding of the enumerated strategies and if so, what is the dollar value?

Response IR-17:

a) The 2020-2022 DSM Plan is a high-level plan, and as such, strategies have only been identified. Upon approval of the 2020-2022 DSM Plan, EfficiencyOne will be implementing the strategies and identify at that time the specific tactics required along with the costing of these tactics through the annual business planning and budgeting activities.

b) Please refer to part a) of this IR response.

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1 **[E1 responses to NSPI IRs]**

2 **Request IR-18:**

3
4 **Reference: E1 (NSPI) RIR-15, Attachment 1 CLEAResult Report, p.51 of 206.**

5
6 **CLEAResult understands that ENS is currently investigating the**
7 **opportunity to recognize local avoided costs, and to consider discount and**
8 **premium zones for electricity conservation. This position will be**
9 **considered in any incentive methodology recommendations.**

10
11 **(a) Has this been considered and implemented by E1 in setting its incentive**
12 **methodology? If so, how?**

13
14 **Response IR-18:**

15
16 EfficiencyOne notes that the CLEAResult Report¹ referenced above (filed June 30, 2016) was
17 more recently updated and filed on May 11, 2017. While the quote above remains unchanged,
18 the most up to date report is noted as a footnote of this IR response for reference.

19
20 a) While some information has been provided by Nova Scotia Power to help inform a 2019
21 locational demand reduction pilot, EfficiencyOne does not have complete information to
22 inform the development of programs that would enable localized avoided cost
23 mechanisms. The current incentive setting process does not include metrics from this
24 potential consideration.

¹ EfficiencyOne, Incentive Setting Methodology: CLEAResult Report & EfficiencyOne Implementation Plan, M07544, 69772, May 11, 2017.

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[E1 responses to NSPI IRs]

Request IR-19:

Reference: E1 (NSPI) IR-15, Attachment 1 CLEAResult Report, p.51 of 206.

... Some educational initiatives are incurring savings attribution issues, and have received tentative disallowance. This specifically was the case for the home energy reports (HER) program. In the future, this may lead to additional difficulty minimizing expenditure by moving funding from financial incentives to educational incentives. This issue must be considered if an eventual goal is to ultimately eliminate financial incentives from programs, and reach market transformation of an energy efficient culture.

(a) How has E1 considered savings attribution from educational initiatives?

(b) Has E1 measured or quantified the energy and demand savings from its enabling strategies, even if not “counted” towards E1’s performance measures? If so, please list savings for the years 2014 to present and for the proposed Preferred Plan and Alternate Scenario?

Response IR-19:

EfficiencyOne notes that the CLEAResult Report referenced above (filed June 30, 2016) was more recently updated and filed on May 11, 2017. While the quote above remains unchanged, please refer to the EfficiencyOne, Incentive Setting Methodology: CLEAResult Report & EfficiencyOne Implementation Plan¹ for the most up to date report.

¹ EfficiencyOne, Incentive Setting Methodology: CLEAResult Report & EfficiencyOne Implementation Plan, M07544, 69772, May 11, 2017.

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1 a) While there are educational initiatives proposed in the 2020-2022 DSM Plan (e.g. Green
2 Schools, funded under Enabling Strategies), there are no education-only initiatives that will
3 generate energy or demand savings claimed by EfficiencyOne towards its performance
4 targets. However, it is important to note that EfficiencyOne will continue to educate
5 customers in a variety of ways. For example, education is inherent when marketing
6 program offerings (making potential customers aware of the incentive and benefits from
7 the efficient technology). Furthermore, EfficiencyOne also educates participants on the
8 ways to maximize the efficiency of the measure they have installed.

10 b) Two efforts under Enabling Strategies have energy and demand savings quantified: LED
11 Holiday Light Exchange and Codes and Standards.

13 Savings for the LED Holiday Light Exchange offering, in both 2014 and 2015, were
14 included in the Efficient Product Rebates Residential program (0.2 GWh and 0.4 MW in
15 2014; 0.1 GWh and 0.2 MW in 2015). This offering was discontinued in 2016.

16 EfficiencyOne estimates energy savings from Codes and Standards activities. Since
17 savings from Codes and Standards are not attributed to EfficiencyOne's activities, they are
18 not included in the overall Nova Scotia Utility and Review Board approved target.
19 EfficiencyOne reports on these savings for informational purposes only and does not claim
20 them toward its Performance Targets. Following are the evaluated savings from updates to
21 national or provincial energy efficiency regulations:

23 **2014:** 31.4 GWh annual energy savings and 5.2 MW of system peak demand savings.

25 **2015:** 9.75 GWh annual energy savings and 2.4 MW of system peak demand savings.

27 **2016:** In 2016 the evaluation of Codes and Standards focused on updating 2016 impacts

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1 for the same codes and regulations evaluated in 2015. This is due to a lack of new
2 national and provincial energy efficiency regulations in 2016. These impacts in
3 2016 were: 23.5 GWh annual energy savings and system peak demand savings of
4 5.0 MW.

5
6 **2017:** 21.9 GWh annual energy savings and 4.0 MW of system peak demand savings.

7
8 **2018:** 23.8 GWh annual energy savings and 4.0 MW of system peak demand savings.

9
10 **2019 & 2020 – 2022:** The energy and demand savings from potential changes to national
11 or provincial energy efficiency regulations have not yet been quantified. Rather, this is a
12 retrospective exercise, where savings in a given year are estimated following the adoption
13 of new standards. Any upcoming energy and demand savings from national or provincial
14 energy efficiency regulations will be the same in either the Preferred Plan or Alternate
15 Scenario as these savings do not overlap with savings claimed by EfficiencyOne towards
16 its performance targets. Furthermore, anticipated code changes have been considered for
17 related measures in the 2020-2022 DSM Resource Plan, which impacts the projected
18 lifetime energy savings of these measures.

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[E1 responses to NSPI IRs]

Request IR-20:

Reference: E1 (NSPI) RIR-15, Attachment 2, December 12, 2017, Marketing Evaluation Plan, pages 5-6.

Please outline the activities taken by E1 to implement the recommendations listed on pages 5-6 and provide copies of any reports or research generated as a result of compliance with those recommendations.

Response IR-20:

Please see the table below.

Recommendation	Activities take by E1
Revisit and review internal plans, guidelines, and tracking systems as needed and capture and document status toward respective goals and objectives.	• E1's marketing team meets quarterly to review its overall marketing plan and tracking systems; • E1's marketing team meets monthly to review marketing campaign results by program; • Goals and objectives are documented for every marketing campaign in a creative brief, which is reviewed with E1's creative and media agencies. The results of every campaign are reviewed by E1's marketing team and program managers and compared to program targets; and • Marketing campaign results are tracked and maintained in a dashboard.
Leverage existing, ongoing market research and reporting activities to gather market insights.	• E1 gathers market insights from a variety of sources, including public awareness and attitudes surveys, customer satisfaction surveys, and program evaluations.
Conduct primary research to gather qualitative insights on the successes and challenges of the marketing team's internal infrastructure (that is, its tools, practices, tracking systems, and processes), and its externally-facing efforts.	• E1's marketing team meets monthly with program staff to assess its current tools, practices, tracking systems, and processes; and • E1 also conducts program specific marketing research. In 2018, E1 conducted primary research with Home Energy Assessment (HEA) participants and New Home Construction (NHC) contractors to gather insights that improved program communication and promotion.

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Recommendation	Activities take by E1
Conduct periodic best practices review of a sample of campaign materials.	• E1 regularly reviews the campaign materials, social media sites and websites of comparable organizations in other jurisdictions for best practices; and • E1's creative and media agencies also monitor and report on best practices periodically.

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Request IR-21:

- (a) Has E1 completed the incentive setting process for all measures as planned in the second quarter of 2018?**
- (b) Please provide a list of all measures for which incentives were adjusted by more than 10% as a result of the review and provide an explanation for the adjustment.**
- (c) Who within E1 has ultimate authority to review the incentive setting workbook and make decisions with respect to incentives?**
- (d) What steps have been taken by E1 subsequent to the final report by Research Into Action (E1 (NSPI) IR 15, Attachment 3) regarding the evaluation of E1's incentive setting practices and procedures?**

Response IR-21:

- a) The incentive review process, as originally envisioned, for all measures in Q2 of 2018, did not occur as originally planned. This is due to the findings by Research Into Action, made available in their Practices and Procedures Volume 1: Incentive Setting Evaluation Report¹ in Q1 of 2018. Due to these findings, a modified approach was taken to review incentive levels in 2018. This approach was taken to ensure prudent expenditures of ratepayer funds. Please refer to EfficiencyOne's response to part d) of this IR response for additional details.
- b) Numerous incentive reviews have occurred following the filing of the Incentive Setting Implementation Plan. The first was the Financial Simulation which was completed in Q2 of 2017, as per the Incentive Setting Implementation Plan. Next was the scheduled review

¹ M08604, Research Into Action, Practices and Procedures Evaluation - Volume 1: Incentive Setting, Exhibit E-4, April 6, 2018.

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1 of measures with levels of incentive spending greater than \$400,000 per year for two
2 consecutive years. This occurred in the fall of 2017 as per the Incentive Setting
3 Implementation Plan and was used as input for Research Into Action's report. As noted in
4 part a) above, due to the findings from Research Into Action, a modification was made to
5 the original plan for Q2 of 2018. This involved having the Instant Savings and Business
6 Energy Rebates program components review their incentive levels in the spring and/or fall
7 of 2018. Also completed in the fall of 2018, was a financial simulation on incentive levels
8 in the 2020-2022 DSM Plan.

9
10 Please refer to Attachment 1 of this IR response for the list of incentives that were updated
11 in 2017 or 2018, through the course of these reviews, where incentives were adjusted by
12 more than 10%.

13
14 c) The incentive setting process (and workbook template) is managed internally by the
15 Strategic Planning Manager. This incentive setting process considers a variety of inputs
16 and provides guidance for incentive levels. The process itself does not generate a specific
17 incentive level for a given measure. Rather, it provides considerations that staff can use to
18 inform their decision. Program Managers and Service Delivery Managers review this
19 information and make a decision on the incentive level for a given measure.

20
21 d) Research Into Action's report was completed in Q1 of 2018. This report included a review
22 of EfficiencyOne's process to review existing incentive levels; a process which was tested
23 for the first time on eight measures in the fall of 2017. The process to review existing
24 incentive levels was developed by EfficiencyOne, by creating templates and
25 operationalizing the recommendations provided by CLEAResult earlier in 2017.

26
27 Subsequent to the Research Into Action report, EfficiencyOne took the findings and
28 estimated staff resource requirements to complete the incentive review process as
29 originally created. In the Q2 of 2018, a conservative estimate indicated that an additional

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1 two to three staff would be required to complete the process as originally established. With
2 the intention of ensuring prudent ratepayer expenditures (i.e., not hire additional staff
3 unnecessarily), EfficiencyOne adopted an interim alternate incentive review process,
4 specific to the program components with the highest number of measures (Instant Savings
5 and Business Energy Rebates). This modified incentive review process for these two
6 program components was completed during the spring and fall of 2018. This interim
7 process was used in order to complete incentive reviews, while seeking to further analyze
8 and streamline the original process.
9

10 In Q3 of 2018 EfficiencyOne developed an alternate approach that could be used to meet
11 the objectives of the original approach, while not requiring the level of additional resources
12 as would otherwise be needed. This included the development of new incentive review
13 templates and updated processes. In Q4 of 2018, EfficiencyOne sought comments from
14 CLEAResult on the updated approach, prior to implementation. Initial contact was made
15 with CLEAResult in Q4 of 2018. In 2019, EfficiencyOne has taken efforts to secure a new
16 Services Agreement with CLEAResult and expects to have their feedback by the end of
17 Q2 in 2019.
18

19 In addition to the interim approach mentioned above, in Q4 of 2018, EfficiencyOne also
20 used an enhanced financial simulation on all of the measures in the 2020-2022 DSM Plan.
21 This was based on the financial simulation that originally occurred in 2017.
22

23 Finally, it should be noted that the process for considering incentive levels for new
24 measures and offerings has not been changed.

Measure	Decision Year	Program Component	Original Incentive	Updated Incentive	% Reduction	Rationale for Change
Downlight luminaire [$\geq$ 3,000 lm]	2017	Business Energy Rebates	\$30	\$20	33%	Not tracked at that time - incentive reduced in June 2017 (following initial financial simulation, but prior to incentive setting process roll out).
LED Downlight Recessed: 1,000 - 2,999 lm	2017	Business Energy Rebates	\$15	\$12	20%	Following review of average cost of lighting products in this category
LED Downlight Recessed: $\geq$ 3,000 lm	2017	Business Energy Rebates	\$20	\$15	25%	Following review of average cost of lighting products in this category
LED Downlight Solid State Retrofit: 1,000 - 2,999 lm	2017	Business Energy Rebates	\$15	\$12	20%	Following review of average cost of lighting products in this category
LED Downlight Solid State Retrofit: $\geq$ 3,000 lm	2017	Business Energy Rebates	\$20	\$15	25%	Following review of average cost of lighting products in this category
LED Downlight Surface Mount: 1,000 - 2,999 lm	2017	Business Energy Rebates	\$15	\$12	20%	Following review of average cost of lighting products in this category
LED Downlight Surface Mount: $\geq$ 3,000 lm	2017	Business Energy Rebates	\$20	\$15	25%	Following review of average cost of lighting products in this category
1 x 2 Troffer	2017	Business Energy Rebates	\$15	\$10	33%	Following review of average cost of lighting products in this category
1 x 4 Troffer	2017	Business Energy Rebates	\$30	\$25	17%	Following review of average cost of lighting products in this category
2 x 2 Troffer	2017	Business Energy Rebates	\$30	\$25	17%	Following review of average cost of lighting products in this category
2 x 4 Troffer	2017	Business Energy Rebates	\$40	\$30	25%	Following review of average cost of lighting products in this category
Linear Ambient Luminaire: 2,500 - 4,999 lm	2017	Business Energy Rebates	\$20	\$15	25%	Following review of average cost of lighting products in this category
Flood and spot luminaire: 250 - 999 lm	2017	Business Energy Rebates	\$20	\$15	25%	Following review of average cost of lighting products in this category
Flood and spot luminaire: 1,000 - 4,999 lm	2017	Business Energy Rebates	\$40	\$30	25%	Following review of average cost of lighting products in this category
Parking Garage Luminaire: 2,000 - 6,499 lm	2017	Business Energy Rebates	\$125	\$100	20%	Following review of average cost of lighting products in this category
Parking Garage Luminaire: $\geq$ 6,500 lm	2017	Business Energy Rebates	\$200	\$150	25%	Following review of average cost of lighting products in this category
Flood and Spot Luminaires: 1,000 - 4,999 lm	2018	Business Energy Rebates	\$30	\$20	33%	Average sale price had come down.
Flood and Spot Luminaires: 5,000 - 14,999 lm	2018	Business Energy Rebates	\$100	\$50	50%	Average sale price had come down.

Measure	Decision Year	Program Component	Original Incentive	Updated Incentive	% Reduction	Rationale for Change
Flood and Spot Luminaires: >=50,000 lm	2018	Business Energy Rebates	\$600	\$400	33%	Average sale price had come down. Also adjusted to be more in line with Pole/Arm Mounted luminaires at 50,000 lm as the same lamp can be used it is just changing the bracket it is attached to that can change how it is categorized. DLC can see these lamps as interchangeable so aligning them would prevent someone from saying it was one versus the other to get the higher rebate.
High-bay Luminaire (Premium): 10,000 - 19,999 lm	2018	Business Energy Rebates	\$130	\$75	42%	Average sale price had come down.
High-bay Luminaire (Premium): 20,000 - 29,999 lm	2018	Business Energy Rebates	\$200	\$130	35%	Average sale price had come down.
High-bay Luminaire (Premium): 30,000 - 39,999 lm	2018	Business Energy Rebates	\$300	\$200	33%	Average sale price had come down.
Pole/Arm-Mounted Decorative Luminaire: >=5,500 lm	2018	Business Energy Rebates	\$150	\$100	33%	Average sale price had come down.
Parking Garage Luminaire: 2,000 - 6,499 lm	2018	Business Energy Rebates	\$100	\$50	50%	Average sale price had come down.
Parking Garage Luminaire: >=6,500 lm	2018	Business Energy Rebates	\$150	\$75	50%	Average sale price had come down.
Air Source Heat Pumps: < 65,000 Btu/h (< 5.4 tons) - Single package systems only	2018	Business Energy Rebates	\$500	\$300	40%	Market availability and market price decrease.
Air Source Heat Pumps: < 65,000 Btu/h (< 5.4 tons) - Ductless Mini-Split Heat Pumps - Tier 1	2018	Business Energy Rebates	\$500	\$300	40%	Market availability and market price decrease. Also, aligned HSPF and SEER levels to match Green Heat.
Air Source Heat Pumps: < 65,000 Btu/h (< 5.4 tons) - Ductless Mini-Split Heat Pumps - Tier 2	2018	Business Energy Rebates	\$550	\$400	27%	Market availability and market price decrease. Also, aligned HSPF and SEER levels to match Green Heat.
Air Source Heat Pumps: < 65,000 Btu/h (< 5.4 tons) - Ductless Mini-Split Heat Pumps - Tier 3	2018	Business Energy Rebates	\$625	\$500	20%	Market availability and market price decrease. Also, aligned HSPF and SEER levels to match Green Heat.
Air Source Heat Pumps: > 65,000 Btu/h and < 135,000 Btu/h - Tier 2	2018	Business Energy Rebates	\$700	\$600	14%	Aligning rebates with other product category of that size. Provided more consistency on rebates per ton.
Ground & Water Source Heat Pumps: Open Loop - Tier 1	2018	Business Energy Rebates	\$650	\$500	23%	Aligning rebates with other product category of that size. Provided more consistency on rebates per ton.
Ground & Water Source Heat Pumps: Open Loop - Tier 2	2018	Business Energy Rebates	\$750	\$600	20%	Aligning rebates with other product category of that size. Provided more consistency on rebates per ton.
Ground & Water Source Heat Pumps: Closed Loop / Direct Georexchange (DGX) - Tier 1	2018	Business Energy Rebates	\$650	\$500	23%	Aligning rebates with other product category of that size. Provided more consistency on rebates per ton.

Measure	Decision Year	Program Component	Original Incentive	Updated Incentive	% Reduction	Rationale for Change
Ground & Water Source Heat Pumps: Closed Loop / Direct Geoexchange (DGX) - Tier 2	2018	Business Energy Rebates	\$700	\$600	14%	Aligning rebates with other product category of that size. Provided more consistency on rebates per ton.
Packaged Terminal Heat Pumps (PTHP): < 11,000 Btu/h	2018	Business Energy Rebates	\$350	\$300	14%	Market availability and market price decrease.
Packaged Terminal Heat Pumps (PTHP): > 11,000 Btu/h	2018	Business Energy Rebates	\$350	\$300	14%	Market availability and market price decrease.
Programmable Thermostat for Electric Baseboard Heaters (1-2 pack)	2018	Instant Rebates	\$12	\$15	-25%	Incentive increase to encourage greater participation.
Programmable Thermostat for Electric Baseboard Heaters (pack of 3 or more)	2018	Instant Rebates	\$36	\$45	-25%	Incentive increase to encourage greater participation.

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[E1 responses to NSPI IRs]

Request IR-22:

References: i) E1 (NSPI) RIR-31, Attachment 1.

ii) M06733 E1 (NSPI) RIR-10, Attachment 1.

a) Please identify (by highlighting cells in each spreadsheet) all measures in the 2020-2022 Plan (Reference i) that are continued from the 2016-2018 Plan (Reference ii). Since the measures are arranged differently in the two spreadsheets, please number the identified measures for cross reference.

b) For each measure that is common to both plans, please provide the comparative levels of E1 incentive and annual energy and demand savings in the following form or equivalent (dollar, energy and demand figures illustrative only):

Program - Residential efficient product rebate						
Measure <description>	2016	2017	2018	2020	2021	2022
Incentive \$	\$200	\$200	\$200	\$175	\$176	\$177
Annual energy saving kWh	125	125	125	100	100	100
Peak demand saving kW	1.2	1.2	1.2	1.1	1.1	1.1
Measure <description>						
Incentive \$						
Annual energy saving kWh						
Peak demand saving kW						
Program – BNI efficient product rebates						
Measure <description>						

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c) **If the estimated energy and/or demand saving has changed from the values in M06733 please explain the reasons and the basis for the change.**

Response IR-22:

a) Please refer to Attachment 1 of this IR response for 2020 – 2022 Plan measures, filed electronically, and Attachment 2 for 2016 – 2018 Plan measures, filed electronically.

Please note that EfficiencyOne’s response to NS Power IR-30, Attachment 1¹ was used as a reference instead of EfficiencyOne’s response to NS Power IR-31, Attachment 1 because EfficiencyOne believed that to be the intended reference.

b) The comparative levels of incentives and annual energy and demand savings per unit can be found in Attachment 1 of this IR response. Columns I, J, K, and BS contain energy and demand savings. Columns BU-BX contain incentives. The level of incentives within the 2016-2018 DSM Resource Plan and first year energy and demand savings per unit in both Plans are held constant within the two Plans. Please note, the 2020-2022 DSM Plan measure characterization was not based on the 2016-2018 Plan, but more recent evaluation results. As such, the approach to building measure characterizations and the characterization data itself between the two plans is not identical. Some measures require assumptions to be made in building their characterization. For example, a heat pump can be characterized per unit or per tonne of capacity. If characterized per unit, an average installed capacity must be assumed. These nuances mean that unitary savings and

¹ M09096, 2020-2022 DSM Plan - E1 Responses to NS Power IR Requests 1-69, Exhibit E-3, March 29, 2019.

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incentives cannot be directly compared in all cases so caution should be taken in making
direct comparisons between the two sets of data.

c) Energy and demand savings are subject to annual evaluations, which frequently results in
changes to energy and demand savings. As these evaluated changes to energy and demand
savings occur, EfficiencyOne updates its electronic records but does not maintain a
consolidated variance explanation for each change, as these are captured within the
evaluation reports. There are numerous factors that can lead to changes in savings during
an evaluation. Some of these are routine changes to variables that happen nearly every year,
while others are changes in methodology. A few examples include:

- In 2016 a new interactive effects methodology for lighting was implemented by the
evaluator. This applied to lighting measures in Custom, Small Business Energy
Solutions, and Business Energy Rebates.²
- Annual changes in the evaluator's billing analysis for Home Energy Assessment can
change the overestimation ratio and result in differing energy and demand savings.³
- Variations in tracked versus evaluated runtime hours can lead to changes in energy
savings. This is particularly common for lighting measures.

Please refer to EfficiencyOne's past evaluation reports, as filed with the Nova Scotia Utility
and Review Board, for detailed information on the reasons and rationale for any changes.

² M07964, E-1, 2016 DSM Evaluation Reports, Filed March 31, 2017, at Efficient Product Rebates Program 2016
DSM Evaluation, page 23

³ M09096, E-5, 2018 DSM Evaluation Reports, at Existing Residential Program 2018 DSM Evaluation, page 16

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[E1 responses to NSPI IRs]

Request IR-23:

Reference: E1 (NSPI) RIR-31, Attachment 1, cells K130, K134.

(a) Please explain why Single-Tank Door type Dishwasher - Low Temp requires an incentive of 5,371% of the measure installed cost?

(b) Please explain why Under-Counter Dishwasher – High Temp requires an incentive of 313% of the measure installed cost.

(c) Please explain the need for any other measure incentive that exceeds 100% of the installed measure cost.

Response IR-23:

a) This measure was modelled as a Replace-on-Burnout measure by Navigant and EfficiencyOne, meaning that the modelling assumes this measure is installed to replace baseline equipment at the end of its life. In this scenario, the relevant customer cost is the incremental cost, which is modelled as \$19 for this measure. EfficiencyOne offers this measure as both a Replace-on-Burnout measure, and an Early Replacement measure (due to the fact that Business Energy Rebates does not screen customers on their relevant decision type). In an early replacement context, the full costs of the measure become more relevant (via the Remaining Useful Life Discounted Incremental Cost Method recommended by Synapse as part of Incentive Setting). EfficiencyOne estimates the full costs of this measure to be circa \$10,000, which greatly exceeds the modelled incentive.

b) This measure was modelled as a Replace-on-Burnout measure by Navigant and EfficiencyOne, meaning that the modelling assumes this measure is installed to replace

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baseline equipment at the end of its life. In this scenario, the relevant customer cost is the incremental cost, which is modelled as \$160 for this measure. EfficiencyOne offers this measure as both a Replace-on-Burnout measure, and an Early Replacement measure (due to the fact that Business Energy Rebates does not screen customers on their relevant decision type). In an early replacement context, the full costs of the measure become more relevant (via the Remaining Useful Life Discounted Incremental Cost Method recommended by Synapse as part of Incentive Setting). EfficiencyOne estimates the full costs of this measure to be circa \$4,000, which greatly exceeds the modelled incentive.

- c) EfficiencyOne does not intend to provide incentives in excess of installed measure costs, as part of the delivery of the 2020-2022 DSM Resource Plan. Rationale for the appearance of ratios in excess of 100 percent (incentive vs incremental costs) are provided below and grouped by program component.

Affordable Multi-Family Housing and Non-Profit Organizations

- Incremental Costs associated with measure are based on a draft characterization for the Custom Program Component and are not known with a high degree of confidence, given the lack of material historical participation in the current pilot. EfficiencyOne does not intend to offer incentives in excess of project costs for this new Program Component.

Appliance Retirement

- Incremental measure costs in Appliance Retirement reflect EfficiencyOne's costs to pick-up retired appliances and recycle them (via a contracted party). Incentive costs are modelled as the sum of the aforementioned costs, and the financial incentive provided, to the participant. In this way, the incentives modelled for these activities will always appear to be in excess of measure costs. The ratio in this case is reflective of the modelling

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approach taken – as there is no installed measure replacing the retired appliance, there are
no “true” efficient measure costs, incremental or otherwise.

Business Energy Rebates

- With the exception of rows 136 and 137, incentives in excess of incremental costs are due to the reasons described in part a) and part b) of this IR response.
- For rows 136 and 137, EfficiencyOne relied upon incremental cost data developed by Navigant, which was in some cases updated following the development of final estimated incentives as developed by program staff. These updates occurred due to Navigant obtaining updated incremental costs based on ongoing secondary research. It should be noted that the Business Energy Rebates Program Component limits incentive payments to 50% of equipment costs as verified by project invoices.

Instant Savings

- Row 272 displays data for Efficient Refrigerators. The incentive amount for 2020 is reflective of the offering current at the time of Plan development. As in part a) and b) of this IR response, this measure is classified as Replace-on-Burnout. The incentive level of \$75 contemplates participant uptake in both Replace-on-Burnout and Early Replacement decision types.

Small Business Energy Solutions

- With the exception of rows 309, incentives in excess of incremental costs are due to the reasons described in part a) and part b) of this IR response.
- For row 309, EfficiencyOne relied upon incremental cost data developed by Navigant, which was in some cases updated following the development of final estimated incentives as developed by program staff. These updates occurred due to Navigant obtaining updated

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- 1 incremental costs based on ongoing secondary research. It should be noted that the
- 2 Business Energy Solutions Program Component limits incentive payments to 60 percent
- 3 of project costs as verified by project invoices.

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[E1 responses to NSPI IRs]

Request IR-24:

Reference: E1 (NSPI) RIR-31 Attachment 2

(a) Please provide the assumptions, calculations, source data and other inputs used by E1 to determine the proposed incentive for each measure in each year of the proposed Preferred Plan (Columns X, Y and Z).

(b) Please explain whether and how E1 took into account the bill savings to customers in determining the incentive amount for each measure. If these bill reductions were considered, please provide the calculations.

(c) Please provide the assumptions, calculations, source data or other inputs used by E1 to determine the estimated energy and demand savings for each measure in each year of the Plan (Columns AP, AQ, AR, BE, BF, BG, BT, BU, and BV).

Response IR-24:

a) The ProCESS model input file (please refer to EfficiencyOne's response to NS Power IR-31 Attachment 2)¹ is the most comprehensive source of measure assumptions developed for the 2020-2022 DSM Resource Plan. EfficiencyOne does not have a centralized source of assumptions, calculations, source data, and other inputs used for each value within this excel workbook. Developing such a resource would be a considerable undertaking since there are 288 measures, each with its own incentive, energy savings, and demand savings values (i.e. over 800 fields per year of the plan.) However, EfficiencyOne has outlined

¹ M09096, 2020-2022 DSM Plan - E1 Responses to NS Power IR Requests 1-69, Exhibit E-3, March 29, 2019.

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its approach to developing the requested information in parts a) and c) of this IR response
and demonstrated via examples how this information was determined in building the
ProCESS model input file.

Incentives are based on the current incentive offered for a given measure, or
EfficiencyOne's estimate of future changes, if applicable. For new measures, incentive
levels were informed by the incentive setting process. These incentive levels represent the
best available information, with both new and existing measures already subject to
EfficiencyOne's incentive setting process. EfficiencyOne will, throughout the course of
program delivery, continue to adjust incentives in accordance with its incentive setting
procedure and as needed to respond to market conditions, measure uptake, etc. More
information on the incentive setting process and its current status can be found in
EfficiencyOne's response to IG IR-21.

EfficiencyOne has provided examples for four measures to illustrate the process for
determining the incentive levels modelled.

LED - R, BR and Decorative | Instant Savings

E1 (NSPI) RIR-31 Attachment 2, "Measures" sheet, row 218, columns X, Y, and Z

Unique Measure Names	Incentives	Incentives	Incentives
	2020	2021	2022
	All	All	All
	\$/unit	\$/unit	\$/unit
LED - R, BR and Decorative Instant Savings	1.86	1.86	1.86

The incentive for the *LED - R, BR and Decorative* measure was based on the 2017 average unitary
cost. No changes are anticipated from 2020 to 2022 so the incentive levels remain flat.

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Whole home - tier 2 (60% better than code target)| New Home Construction

E1 (NSPI) RIR-31 Attachment 2, “Measures” sheet, row 229, columns X, Y, and Z

Unique Measure Names	Incentives 2020 All \$/unit	Incentives 2021 All \$/unit	Incentives 2022 All \$/unit
Whole home - tier 2 (60% better than code target) New Home Construction	5,550.00	5,550.00	5,550.00

The *Whole home - tier 2 (60% better than code target)* measure was based on the current and anticipated incentive offerings in the New Home Construction program. The incentive comprises \$5,000 for achieving performance that is 60% better than code. This is the current incentive offering. EfficiencyOne anticipates that the support for energy modelling will increase from \$500 to \$550 in in 2019. The total incentive is therefore $\$5,000 + \$550 = \$5,550$. No changes are anticipated from 2020 to 2022 so the incentive levels remain flat over this period.

Linear Replacement Lamp (4 foot) | Business Energy Rebates

E1 (NSPI) RIR-31 Attachment 2, “Measures” sheet, row 70, columns X, Y, and Z

Unique Measure Names	Incentives 2020 All \$/unit	Incentives 2021 All \$/unit	Incentives 2022 All \$/unit
Linear Replacement Lamp (4 foot) Business Energy Rebates	4.00	3.50	3.50

The 2020 incentive for the Linear Replacement Lamps (4 foot) was based on the 2017 average unitary cost. The cost of Linear Replacement Lamps (4 foot) is anticipated to decline over the period 2020 through 2021 so the incentive is planned to decline moderately over this period.

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Cold Climate Air-Source Heat Pump (24kBTU/hr) | Business Energy Rebates
E1 (NSPI) RIR-31 Attachment 2, “Measures” sheet, row 22, columns X, Y, and Z

Unique Measure Names	Incentives	Incentives	Incentives
	2020	2021	2022
	All	All	All
	\$/unit	\$/unit	\$/unit
Cold Climate Air-Source Heat Pump (24kBTU/hr) Business Energy Rebates	800.00	800.00	800.00

The incentive for the Cold Climate Air-Source Heat Pump (24kBTU/hr) measure was based on the 2017 average unitary cost. No changes are anticipated from 2020 to 2022 so the incentive levels remain flat.

b) As per EfficiencyOne’s incentive setting and review procedures, bill savings to customers are considered for the following customer and decision types: “Commercial and Industrial Customer, Large Capital Equipment Purchase” and “Commercial and Industrial Customer, Large Purchase”. Effectively this means that the Custom program would be the only program to consider customer payback as a threshold for incentive levels. The 2020-2022 DSM Plan does not include assumptions for specific rebates on specific Custom projects, as actual energy savings for each project are modelled on a case-by-case basis when participating in the program. Simple payback calculations consider the customer bill savings when developing and presenting the customer with an incentive offer. As per CLEAResult recommendations, and EfficiencyOne’s incentive setting procedures, incentives should not be provided to customers to the point where the simple payback is less than one year, unless justified for special reasons.

c) Because EfficiencyOne’s programs are evaluated and verified by third parties, measure characterization was in line with evaluation findings and methodologies employed throughout. The savings used in the Plan represent the most current evaluation findings

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available at the time (2017 evaluation reports²) and are subject to changes through evaluation throughout the course of delivering the 2020-2022 Plan.

EfficiencyOne has provided examples for four measures to illustrate the process for energy and demand savings. Please note, Columns AQ, BF, and BU (non-coincident demand savings) are not used in the model or plan development and can be disregarded.

LED - R, BR and Decorative | Instant Savings

E1 (NSPI) RIR-31 Attachment 2, “Measures” sheet, row 218, columns AP, AR, BE, BG, BT, and

BV

Unique Measure Names	Energy Savings (kWh)	Coinc. Demand Savings (kW)	Energy Savings (kWh)	Coinc. Demand Savings (kW)	Energy Savings (kWh)	Coinc. Demand Savings (kW)
	2020	2020	2021	2021	2022	2022
	All kWh/unit	All kW/unit	All kWh/unit	All kW/unit	All kWh/unit	All kW/unit
LED - R, BR and Decorative Instant Savings	34.43	0.0049	34.43	0.0049	34.43	0.0049

Energy and Demand savings are calculated as follows:

$$\text{Energy Savings } \left[\frac{\text{kWh}}{\text{yr}} \right] = \frac{\text{Displaced Wattage } [W] \times \text{Hours of Use } \left[\frac{h}{day} \right] \times 365 \left[\frac{day}{yr} \right] \times \text{Interactive Effects}}{1,000 \left[\frac{W}{kW} \right]}$$

$$34.43 \left[\frac{\text{kWh}}{\text{yr}} \right] = \frac{39 [W] \times 2.9 \left[\frac{h}{day} \right] \times 365 \left[\frac{day}{yr} \right] \times (1 - 0.166)}{1,000 \left[\frac{W}{kW} \right]}$$

$$\text{Demand Savings } [kW] = \frac{\text{energy savings } \left[\frac{\text{kWh}}{\text{yr}} \right] \times \text{demand - to - energy ratio } \left[\frac{W}{\text{kWh/yr}} \right]}{1,000 \left[\frac{W}{kW} \right]}$$

$$0.0049 [kW] = \frac{34.43 \left[\frac{\text{kWh}}{\text{yr}} \right] \times 0.141 \left[\frac{W}{\text{kWh/yr}} \right]}{1,000 \left[\frac{W}{kW} \right]}$$

Calculation input values and their location in the evaluation report are summarized below:

² Filed under M08604, EfficiencyOne – 2019 Demand Side Management (DSM) Plan Application, 2017 Annual Progress Report and 2017 Evaluation Reports

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Input	Input value	Source
Displace Wattage (W)	39	2017 Instant Savings Evaluation report, Table 51, page 76
Hours of Use (h/day)	2.9	2017 Instant Savings Evaluation report, page 72
Interactive effects (%)	-16.60%	2017 Instant Savings Evaluation report, Table 61, page 96
Demand-to-energy ratio (W/kWh)	0.141	2017 Instant Savings Evaluation report, Table 62, page 97

Whole home - tier 2 (60% better than code target) | New Home Construction

E1 (NSPI) RIR-31 Attachment 2, “Measures” sheet, row 229, columns AP, AR, BE, BG, BT, and BV

Unique Measure Names	Energy Savings (kWh) 2020	Coinc. Demand Savings (kW) 2020	Energy Savings (kWh) 2021	Coinc. Demand Savings (kW) 2021	Energy Savings (kWh) 2022	Coinc. Demand Savings (kW) 2022
	All kWh/unit	All kW/unit	All kWh/unit	All kW/unit	All kWh/unit	All kW/unit
	2020	2020	2021	2021	2022	2022
Whole home - tier 2 (60% better than code target) New Home Construction	8,791.54	2.4880	8,791.54	2.4880	8,791.54	2.4880

New Home Construction is a performance-based program component. It relies on energy modelling instead of a prescriptive approach to estimating energy savings (the *LED - R, BR and Decorative* measure above is an example of a prescriptive measure). Each participating home in the New Home Construction program component has two energy models produced: one at the design stage and one after the home is built. The difference in modelled energy use of the house as it was constructed, and the equivalent home modelled to code determines the energy savings. The Evaluator reviews a subset of models for technical accuracy and performs a billing analysis³ to assess the accuracy of the modelling software. A correction factor is produced and EfficiencyOne uses this correction factor in its program tracking.

The energy savings used in the 2020-2022 DSM plan model for the *Whole home - tier 2 (60% better than code target)* measure is based on the average tracked savings, which reflects the most recent (2017) evaluation correction factor. Demand savings is calculated as follows:

³ 2017 New Home Construction Evaluation report, section 4.1.3 Overestimation Ratio

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$$\text{Demand Savings [kW]} = \frac{\text{energy savings} \left[\frac{\text{kWh}}{\text{yr}} \right] \times \text{demand-to-energy ratio} \left[\frac{\text{W}}{\text{kWh/yr}} \right]}{1,000 \left[\frac{\text{W}}{\text{kW}} \right]}$$

$$2.488 \text{ [kW]} = \frac{8791.54 \left[\frac{\text{kWh}}{\text{yr}} \right] \times 0.283 \left[\frac{\text{W}}{\text{kWh/yr}} \right]}{1,000 \left[\frac{\text{W}}{\text{kW}} \right]}$$

Calculation input values and their location in the evaluation report are summarized below:

Input	Input value	Source
Annual Savings [kWh/yr]	8791.54	Average of tracked results
Demand-to-energy ratio (W/kWh)	0.283	2017 New Home Construction Evaluation report, page 17

Linear Replacement Lamp (4 foot) | Business Energy Rebates

E1 (NSPI) RIR-31 Attachment 2, “Measures” sheet, row 70, columns AP, AR, BE, BG, BT, and

BV

Unique Measure Names	Energy Savings (kWh) 2020 All kWh/unit	Coinc. Demand Savings (kW) 2020 All kW/unit	Energy Savings (kWh) 2021 All kWh/unit	Coinc. Demand Savings (kW) 2021 All kW/unit	Energy Savings (kWh) 2022 All kWh/unit	Coinc. Demand Savings (kW) 2022 All kW/unit
<u>Linear Replacement Lamp (4 foot) </u> <u>Business Energy Rebates</u>	49.09	0.0069	49.09	0.0069	49.09	0.0069

Energy and Demand savings are calculated as follows:

$$\text{Energy Savings} \left[\frac{\text{kWh}}{\text{yr}} \right] = \frac{(W_{\text{BASE}} [W] - W_{\text{EFF}} [W]) \times IE \times HRS [hrs] \times ISR}{1,000 \left[\frac{\text{W}}{\text{kW}} \right]}$$

$$49.09 \left[\frac{\text{kWh}}{\text{yr}} \right] = \frac{(32 [W] - 18.5 [W]) \times 0.97 \times 4,410 [hrs] \times 0.85}{1,000 \left[\frac{\text{W}}{\text{kW}} \right]}$$

$$\text{Demand Savings [kW]} = \frac{(W_{\text{BASE}} [W] - W_{\text{EFF}} [W]) \times IE_{PD} \times PCF \times ISR}{1,000 \left[\frac{\text{W}}{\text{kW}} \right]}$$

$$0.0069 \text{ [kW]} = \frac{(32 [W] - 18.5 [W]) \times 0.933 \times 0.646 \times 0.85}{1,000 \left[\frac{\text{W}}{\text{kW}} \right]}$$

Calculation input values and their location in the evaluation report are summarized below:

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Input	Input value	Source
W _{EFF} (Wattage of Efficient Product)	18.5	Based on tracked results
W _{BASE} (Wattage of Baseline Product)	32	2017 Efficient Product Rebates Program Evaluation, page 38
ISR (In-Service Rate)	0.85	2017 Efficient Product Rebates Program Evaluation, page 53
HRS (Annual Runtime Hours)	4,410	2017 Efficient Product Rebates Program Evaluation, page 38
PCF (Peak Coincidence Factor)	0.646	2017 Efficient Product Rebates Program Evaluation, page 53
IE (Interactive Effects Factor - Energy)	0.970	2017 Efficient Product Rebates Program Evaluation, page 53
IE _{PD} (Interactive Effects Factor – Peak Demand)	0.933	2017 Efficient Product Rebates Program Evaluation, page 53

Cold Climate Air-Source Heat Pump (24kBTU/hr) | Business Energy Rebates

E1 (NSPI) RIR-31 Attachment 2, “Measures” sheet, row 22, columns AP, AR, BE, BG, BT, and BV

Unique Measure Names	Energy Savings (kWh) 2020	Coinc. Demand Savings (kW) 2020	Energy Savings (kWh) 2021	Coinc. Demand Savings (kW) 2021	Energy Savings (kWh) 2022	Coinc. Demand Savings (kW) 2022
	All kWh/unit	All kW/unit	All kWh/unit	All kW/unit	All kWh/unit	All kW/unit
<u>Cold Climate Air-Source Heat Pump (24kBTU/hr) Business Energy Rebates</u>	8,956.36	2.9310	8,956.36	2.9310	8,956.36	2.9310

Energy and Demand savings are calculated as follows:

Energy Savings [kWh]

$$\begin{aligned}
 &= HC \left[\frac{kbtu}{hr} \right] \times \left(\frac{1}{HSPF_B [btu/Wh]} - \frac{1}{HSPF_E [btu/Wh]} \right) \times FLH_H [Hrs] \\
 &+ CC \left[\frac{kbtu}{hr} \right] \times \left(\frac{1}{SEER_B [\frac{btu}{Wh}]} \times AC - \frac{1}{SEER_E [\frac{btu}{Wh}]} \right) \times FLH_C [Hrs]
 \end{aligned}$$

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$$8956.36 [kWh]$$

$$= 24 \left[\frac{[kbtu]}{[hr]} \right] \times \left(\frac{1}{3.412 [btu/Wh]} - \frac{1}{11.304 [btu/Wh]} \right) \times 1763 [Hrs]$$

$$+ 24 \left[\frac{[kbtu]}{[hr]} \right] \times \left(\frac{1}{13 \left[\frac{[btu]}{[Wh]} \right]} \times 1 - \frac{1}{20 \left[\frac{[btu]}{[Wh]} \right]} \right) \times 462 [Hrs]$$

$$Demand Savings [kW] = \frac{HC_{MIN} \left[\frac{[kbtu]}{[hr]} \right]}{3.412 \left[\frac{[btu]}{[Wh]} \right]} \times \left(1 - \frac{1}{COP_{E_MIN}} \right)$$

$$2.931 [kW] = \frac{20 \left[\frac{[kbtu]}{[hr]} \right]}{3.412 \left[\frac{[btu]}{[Wh]} \right]} \times \left(1 - \frac{1}{2} \right)$$

Calculation input values and their sources are summarized below:

Input	Input value	Source
HC (Heating Capacity)	24	Nominal value.
CC (Cooling Capacity)	24	Nominal value.
HSPF _B (Heating Seasonal Performance Factor, Region V)	3.412	HSPF of electric resistance heating (COP of 1 converted to HSPF)
HSPF _E (Heating Seasonal Performance Factor, Region V)	11.304	Based on typical project data.
SEER _B (Seasonal Energy Efficiency Ratio)	13	Based on typical project data.
SEER _E (Seasonal Energy Efficiency Ratio)	20	Based on typical project data.
FLH _H (Full Load Hours, Heating)	1,763	Retail – Large Dept Store, based on State of Minnesota TRM ⁴
FLH _C (Full Load Hours, Cooling)	462	Retail – Large Dept Store, based on State of Minnesota TRM
HC _{MIN} (Heating Capacity at -15°C)	20	Based on typical project data.
COP _{E_MIN} (Coefficient of Performance at -15°C)	2	Based on typical project data.
AC (Air-Conditioning Present Binary Selection)	1	Based on typical project data.

⁴ Minnesota Department of Commerce – Division of Energy Resources, State of Minnesota Technical Reference Manual for Energy Conservation Improvement Programs – Version 2, Effective January 1, 2017, at page 33.

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1 **[NSPI's Evidence]**

2 **Request IR-25:**

3
4 **Reference: NSPI Evidence, pages 18-19.**

5
6 **NSPI states that E1 will receive Federal and Provincial government**
7 **funding of \$28 million in 2020 (Figure 5) and \$380 million over the period**
8 **through 2030.**

9
10 **(a) Does E1 agree with this evidence? If no, why not?**

11
12 **(b) Has E1 determined the allocation of these funds among the various DSM measures?**

13
14 **(c) Has E1 calculated the reductions in energy and peak demand of the measures**
15 **funded by the Federal and Provincial governments? If so, please provide. If not,**
16 **when will E1 undertake this work?**

17
18 **(d) What additional administrative expenses, if any, will E1 incur to administer these**
19 **programs?**

20
21 **Response IR-25:**

22
23 a) EfficiencyOne does not agree with this statement. Based on existing contracts with the
24 Province, EfficiencyOne could receive funding of \$24 million for **non-DSM** programs in
25 2020. EfficiencyOne has no contracts with the Province to provide funding beyond
26 March 31, 2023.

27
28 b) The single measure supported by these provincial funds that reduce electricity is the solar
29 measure in the Provincial SolarHomes program.

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- 1 c) Provincially funded programs are evaluated separately by EfficiencyOne's third party
2 evaluator. The results are reported to the Province annually. The energy savings resulting
3 from these programs are non-electric, except for the SolarHomes Program which will be
4 subject to the first evaluation at the end of March 2019. These savings will not be
5 counted towards the Nova Scotia Utility and Review Board (NSUARB) approved DSM
6 performance targets.
7
- 8 d) All costs whether administrative or other that are directly related to a specific funding
9 source are directly charged to those programs. All costs shared by DSM and Provincial
10 programs are allocated using the NSUARB approved Cost Allocation Model.