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Request IR-1:

What percent of resources for energy efficiency are coming from each end-user sector (Residential, Commercial, Industrial) in 2013, 2014, and 2015?

Response IR-1:

2013:

As per the Balance Adjustment for the 2013 Program Year, the percentage of spending by sector was as follows:[1]

- 58% Residential
- 32% Commercial
- 8% Industrial
- 2% Other

2014 and 2015:

Nova Scotia Power does not have actual numbers for this information.

Per ENSC's 2014 DCRR Compliance Filing (With Revised Appendices) Appendix A, Table 4:[2]

- 54% Residential
- 34% Commercial
- 9% Industrial

[1] ENSC to UARB 2015 DSM Plan Evidence BA Tables 7 and 8 REVISED, July 3, 2014; Column F.
[2] ENSC 2014 DCRR Compliance Filing (With Revised Appendices) Appendix A, Table 4, January 27, 2014, Table 3, Column H.

- 3% Other

Per ENSC's 2015 DSM Plan Evidence – Amended July 3, 2014, Appendix C, Table 9:[3]

- 65% Residential
- 24% Commercial
- 9% Industrial
- 2% Other

[3] ENSC 2015 DSM Plan Evidence - Amended July 3, 2014, Appendix C, Table 9, Column D.

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Request IR-2:

The benefits of most efficiency measures last well beyond one year; why would those savings not be included as benefits to the system for their life?

Response IR-2:

DSM cost-effectiveness tests (e.g.: TRC and PAC) are designed to recognize savings beyond the first year in their calculation. The benefit/cost ratios utilize the NPV of costs and benefits over a period of time.[1]

[1] Page 9 of the (2002) California Standard Practice Manual: Economic Analysis of Demand-Side Management Programs and Projects, defines the b/c ratio as: "The benefit-cost ratio (BCR) is the ratio of the total benefits of a program to the total costs discounted over some specified time period. The benefit-cost ratio gives a measure of a rough rate of return for the program to the participants and is also an indication of risk. A benefit-cost ratio above one indicates a beneficial program."

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Request IR-3:

Please define "cost effective, reasonably available energy efficiency."

Response IR-3:

Please refer to CA IR-38.

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Request IR-4:

Please define "affordability" and provide metrics for assessing affordability.

Response IR-4:

Please refer to CA IR-38.

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Request IR-5:

What is the rationale of not including efficiency programming that provides benefits in excess of costs?

Response IR-5:

Please refer to E1 IR-11 and CA IR-1.

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Request IR-6:

What is the rationale of eliminating four residential programs and one commercial program, as indicated in Evidence "Appendix B - NSPI Alternate DSM Plan ELECTRONIC.xslx"?

Response IR-6:

Please refer to CA IR-1 and E1 IR-11.

Request IR-7:

(a) What is the rational of cutting "Enabling Strategies" by over 70% compared to E1 DSM plan as indicated in Evidence "Appendix B - NSPI Alternate DSM Plan ELECTRONIC.xslx"?

(b) What are the percentage cuts for "Education and Outreach" vs "Development and Research" vs "Other?"

Response IR-7:

Please refer to CA IR-1 and E1 IR-11.

In preparing this response, NS Power noted an error in the summation of the 2016-2018 Enabling Strategies amount which affected the reported contract total (which does not affect the individual year totals). The correct amount for 2016-18 Enabling Strategies should have shown $6 million (not $4 million), resulting in a total contract cost of $67.5 million (not $65.4 million). Attachment 1, also filed electronically, contains a revised Appendix B reflecting the correct amount for the 2016-18 Enabling Strategies. An Errata with a revised Appendix B to NS Power's evidence will be filed with the Board.

As a result of this summation error, a revised version of Table 6 and a revised version of Table 7 from the Direct Testimony of David Pickles have been produced by Mr. Pickles. Please find revised Table 6 and revised Table 7 as Attachment 2 and Attachment 3. An Errata to the testimony of Mr. Pickles will also be filed with the Board with the revised Tables 6 and 7.

		2016						2017						2018						2016 to 2018 period					
		EfficiencyOne Plan			NSPI Alternative Plan			EfficiencyOne Plan			NSPI Alternative Plan			EfficiencyOne Plan			NSPI Alternative Plan		EfficiencyOne Plan			NSPI Alternative Plan		
End Use Category	Average TRC over 2016-2018	FY Unit Cost $/MWh	MWh	Cost	Percentage of Total DSM Cost	MWh	Cost	Percentage of Total DSM Cost	FY Unit Cost $/MWh	MWh	Cost	Percentage of Total DSM Cost	MWh	Cost	Percentage of Total DSM Cost	FY Unit Cost $/MWh	MWh	Cost	Percentage of Total DSM Cost	MWh	Cost	FY Unit Cost $/MWh	MWh	Cost	Percentage of Total DSM Cost	MWh	Cost
RES-Appliance	1.3	$ 274	5,818	$ 1,592,994	4.1%	5,818	$ 1,592,994	7.2%	$ 276	6,376	$ 1,757,773	4.4%	6,376	$ 1,757,773	7.9%	$ 277	6,191	$ 1,713,304	4.0%	6,191	$ 1,713,304	$ 275	18,386	$ 5,064,071	4.2%	18,386	$ 5,064,071
RES-HVAC/Shell	1.5	$ 335	14,769	$ 4,948,436	12.8%	4,600	$ 1,200,000	5.4%	$ 372	17,443	$ 6,487,501	16.1%	4,600	$ 1,200,000	5.4%	$ 435	18,854	$ 8,192,421	19.2%	4,600	$ 1,200,000	$ 384	51,067	$ 19,628,358	16.2%	13,800	$ 3,600,000
RES-Lighting	3.8	$ 314	12,566	$ 3,951,969	10.3%			0.0%	$ 321	12,772	$ 4,095,629	10.2%			0.0%	$ 325	11,799	$ 3,833,331	9.0%			$ 320	37,136	$ 11,880,929	9.8%	-	$ -
RES-Behaviour			-	$ -						-	$ -						-	$ -					-	$ -				$ -
RES-Plug Load	3.8	$ 162	13,179	$ 2,136,509	5.5%	13,179	$ 2,136,509	9.6%	$ 162	14,343	$ 2,327,851	5.8%	14,343	$ 2,327,851	10.4%	$ 163	14,334	$ 2,339,070	5.5%	14,334	$ 2,339,070	$ 163	41,856	$ 6,803,430	5.6%	41,856	$ 6,803,430
RES-Water Heat	1.1	$ 313	4,806	$ 1,506,312	3.9%			0.0%	$ 301	4,546	$ 1,367,672	3.4%			0.0%	$ 306	4,031	$ 1,231,854	2.9%			$ 307	13,382	$ 4,105,837	3.4%	-	$ -
RES-Package	1.7	$ 453	4,436	$ 2,010,124	5.2%			0.0%	$ 460	4,326	$ 1,991,500	4.9%			0.0%	$ 463	4,364	$ 2,019,743	4.7%			$ 459	13,126	$ 6,021,367	5.0%	-	$ -
COM-Lighting	1.9	$ 225	22,906	$ 5,164,000	13.4%	22,906	$ 5,164,000	23.3%	$ 233	20,827	$ 4,854,509	12.0%	20,827	$ 4,854,509	21.7%	$ 238	22,287	$ 5,310,140	12.5%	22,287	$ 5,310,140	$ 232	66,019	$ 15,328,649	12.6%	66,019	$ 15,328,649
COM-Other	2.8	$ 240	22,953	$ 5,502,104	14.3%	22,953	$ 5,502,104	24.8%	$ 239	22,841	$ 5,466,313	13.6%	22,841	$ 5,466,313	24.5%	$ 239	23,308	$ 5,578,350	13.1%	23,308	$ 5,578,350	$ 239	69,103	$ 16,546,768	13.6%	69,103	$ 16,546,768
COM-HVAC	1.1	$ 420	8,891	$ 3,735,026	9.7%			0.0%	$ 415	8,745	$ 3,625,726	9.0%			0.0%	$ 408	9,136	$ 3,728,310	8.8%			$ 414	26,771	$ 11,089,062	9.1%	-	$ -
COM-Motors	3.5	$ 158	992	$ 157,147	0.4%	992	$ 157,147	0.7%	$ 159	967	$ 153,737	0.4%	967	$ 153,737	0.7%	$ 160	1,079	$ 172,218	0.4%	1,079	$ 172,218	$ 159	3,038	$ 483,102	0.4%	3,038	$ 483,102
COM-Refrigeration	2.6	$ 217	1,074	$ 233,291	0.6%	1,074	$ 233,291	1.1%	$ 222	1,045	$ 232,239	0.6%	1,045	$ 232,239	1.0%	$ 219	1,154	$ 252,944	0.6%	1,154	$ 252,944	$ 219	3,273	$ 718,473	0.6%	3,273	$ 718,473
COM-Process	2.7	$ 121	885	$ 106,919	0.3%	885	$ 106,919	0.5%	$ 122	840	$ 102,553	0.3%	840	$ 102,553	0.5%	$ 124	944	$ 116,839	0.3%	944	$ 116,839	$ 122	2,669	$ 326,311	0.3%	2,669	$ 326,311
IND	2.7	$ 211	19,864	$ 4,198,947	10.9%	19,864	$ 4,198,947	18.9%	$ 198	21,433	$ 4,237,999	10.5%	21,433	$ 4,237,999	19.0%	$ 219	18,803	$ 4,118,596	9.7%	18,803	$ 4,118,596	$ 209	60,101	$ 12,555,542	10.3%	60,101	$ 12,555,542
TOTAL		$ 265	133,139	$ 35,243,779		92,271	$ 20,291,912		$ 269	136,505	$ 36,701,002		93,273	$ 20,332,974		$ 283	136,285	$ 38,607,120		92,702	$ 20,801,461	$ 272	405,929	$ 110,551,900		278,246	$ 61,426,346
Enabling Strategies				$ 3,300,000	8.6%		$ 1,900,004	8.6%			$ 3,600,000			$ 1,994,461	8.9%			$ 4,000,000			$ 2,155,194			$ 10,900,000			$ 6,049,659
Education and Outreach				$ 1,600,000	4.2%			0.0%			$ 1,700,000	4.2%						$ 1,800,000	4.2%					$ 5,100,000	4.2%		
Development and Research				$ 1,100,000	2.9%			0.0%			$ 1,200,000	3.0%						$ 1,300,000	3.1%					$ 3,600,000	3.0%		
Other				$ 600,000	1.6%			0.0%			$ 700,000	1.7%						$ 900,000	2.1%					$ 2,200,000	1.8%		
TOTAL with Enabling Strategies				$ 38,543,779	100.0%		$ 22,191,915	100.0%			$ 40,301,002	100.0%		$ 22,327,434	100.0%			$ 42,607,120	100.0%		$ 22,956,655			$ 121,451,900	100.0%		$ 67,476,005
First Year Unit Cost $/MWh				$ 289			$ 241				$ 295			$ 239				$ 313			$ 248			$ 299			$ 243

Annual Incremental Peak Demand Savings (kW)							
2016		**2017**		**2108**		**2016-18 Contract**	
EfficiencyOne	NSPI	EfficiencyOne	NSPI	EfficiencyOne	NSPI	EfficiencyOne	NSPI
885	885	973	973	948	948	2,807	2,807
4,123	1,200	4,671	1,200	5,015	1,200	13,810	3,600
2,686	-	2,724	-	2,487	-	7,898	-
-		-		-		-	-
-		-		-		-	-
847	-	796	-	707	-	2,350	-
1,001	-	1,026	-	1,053	-	3,079	-
2,912	2,912	2,644	2,644	2,829	2,829	8,385	8,385
2,983	2,983	2,974	2,974	3,034	3,034	8,991	8,991
1,656	-	1,643	-	1,778	-	5,077	-
113	113	110	110	123	123	347	347
351	351	352	352	391	391	1,094	1,094
135	135	130	130	146	146	411	411
2,698	2,698	2,990	2,990	2,520	2,520	8,207	8,207
						-	-
20,389	11,276	21,033	11,373	21,033	11,192	62,456	33,842

Revised Table 6. Summary of Alternate DSM Scenarios

Scenario Name	Assumption Changes	Three Year Impacts			
		GWH	MW	$M	TRC
E1	None	405.9	62.5	$ 121.5	2.0
A	Eliminate TRC's < 1.0	387.0	59.8	$ 110.0	2.2
B	Eliminate TRC's < 1.0 Allow implemention costs to vary +/- 20% Allow incentive costs to vary from the E1 minimum Participation is estimated as a function of program cost, with goal ~ Scen. A	381.7	60.5	$ 107.9	2.2
C	NS Power Alternate Proposal	279.0	33.0	$ 67.5	3.2
D	Eliminate TRC's < 1.0 Allow implemention costs to vary +/- 20% Allow incentive costs to vary from the E1 minimum Participation is estimated as a function of program cost, with goal ~ 300GWh	300.8	46.3	$ 65.2	2.3

Revised Table 7. Summary of Scenario C (Company's Alternate Scenario) Impacts

Program Name	Cumulative Cost ($Millions)			Peak Demand (MW)			Cumulative (GWh)			TRC Ratio		
	E1	Case C	% Diff.	E1	Case C	% Diff.	E1	Case C	% Diff.	E1	Case C	% Diff.
RES-Appliance	$ 5.06	$ 5.06	0%	2.81	2.81	0%	18.39	18.39	0%	1.28	1.37	7%
RES-HVAC/Shell	$ 19.63	$ 3.60	-82%	13.81	3.60	-74%	51.07	13.80	-73%	1.51	2.88	90%
RES-Lighting	$ 11.88	$ -	-100%	7.90	-	-100%	37.14	-	-100%	3.78		-100%
RES-Plug Load	$ 6.80	$ 6.80	0%	-	-		41.86	41.86	0%	3.82	5.45	43%
RES-Water Heat	$ 4.11	$ -	-100%	2.35	-	-100%	13.38	-	-100%	1.09		-100%
RES-Package	$ 6.02	$ -	-100%	3.08	-	-100%	13.13	-	-100%	1.72		-100%
COM-Lighting	$ 15.33	$15.33	0%	8.38	8.38	0%	66.02	66.02	0%	1.88	2.48	32%
COM-Other	$ 16.55	$16.55	0%	8.99	8.99	0%	69.10	69.10	0%	2.78	3.84	38%
COM-HVAC	$ 11.09	$ -	-100%	5.08	-	-100%	26.77	-	-100%	1.08		-100%
COM-Motors	$ 0.48	$ 0.48	0%	0.35	0.35	0%	3.04	3.04	0%	3.51	4.85	38%
COM-Refrigeration	$ 0.72	$ 0.72	0%	1.09	1.09	0%	3.27	3.27	0%	2.55	3.18	25%
COM-Process	$ 0.33	$ 0.33	0%	0.41	0.41	0%	2.67	2.67	0%	2.74	3.77	37%
IND	$ 12.56	$12.56	0%	8.21	8.21	0%	60.10	60.10	0%	2.67	3.49	30%
TOTAL Programs	**$ 110.55**	**$61.43**	**-44%**	**62.46**	**33.84**	**-46%**	**405.93**	**278.25**	**-31%**	**2.40**	**3.20**	33%
Enabling Strategies	$ 10.90	$ 6.05	-44%									
Educ. and Outreach	$ 5.10											
Develop. & Research	$ 3.60											
Other	$ 2.20											
TOTAL w/Enab. Strat.	**$ 121.45**	**$67.48**	-44%	62.46	33.84	-46%	405.93	278.25	-31%			
1st Yr. Unit Cost $/kWh	$ 0.30	$ 0.24	-19%									

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Request IR-8:

Have the energy efficiency programs offered over the last performance period been affordable and cost effective?

Response IR-8:

Please refer to Board Order 2012 NSUARB 75, dated June 4, 2012, in the Matter of an Application by Efficiency Nova Scotia Corporation for Approval of its Electricity Demand Side Management Plan for 2013 to 2015.