

E1 Responses to Industrial Group (IG) Information Requests
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Request IR-01:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, Page 4, Line 8

The Settlement Plan will “... [C]reate favourable market conditions for the increased adoption of energy efficient and system peak demand reduction equipment and upgrades.”

Please explain what “market conditions” are created and how E1 changes market conditions.

Response IR-01:

Please refer to EfficiencyOne’s response to NSUARB IR-02.

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Request IR-02:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, Page 10 (Page 19/584 of PDF), Line 11

“The Settlement Plan has an average first year unit cost of \$0.39/kWh and a weighted average measure life of 11.3 years, resulting in a lifetime unit cost of \$0.035/kWh.”

(a) Does this assume there are no costs after the first year? ($\$0.39 \div 11.3 = \0.035)

(b) Do any of the measures incur costs after the first year, such as maintenance? If so, please identify and quantify the costs.

Response IR-02:

(a) Yes. The reference above refers to energy efficiency measures. For these measures, there are no costs (utility DSM program costs), including maintenance, incurred by ratepayers after the first year. For example, all costs related to energy efficiency measures installed in 2023 are assumed to be incurred in 2023.

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

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Request IR-03:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, Page 15 (Page 24/584 of PDF), Line 13

“E1’s investment in customer incentives continues to be a significant category of spending as expected in a resource acquisition model. E1 has implemented an Incentive Setting Process which was an outcome of the CLEAResult study conducted following the 2016-2018 DSM Plan. The incentive setting methodology is used when adding new measures or changing incentive levels on existing measures to confirm incentive levels fall within an acceptable range.”

(a) Does the level of incentives change when NS Power rates change? Please explain.

(b) Has E1 taken into account the effect of the rate increases proposed by NS Power in the current General Rates Application? If so, please explain how. If no, why not?

Response IR-03:

(a) No, incentive levels do not automatically change when NS Power rates change. There are implications to the incentive setting methodology in limited instances when there is a rate change – specifically project paybacks may decrease slightly, assuming that the rates increase, and the product prices remain the same.

The incentive setting methodology is applied when incentive changes are made. The only thresholds that use customer electricity bill savings as an input are for Custom programs, which calculate incentives individually for each project. These incentives could be impacted

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1 by changes in NS Power rates since they use the rates as a direct input to the incentive
2 calculation. Each time EfficiencyOne (E1) becomes aware of new NS Power (or Municipal
3 Electric Utility) rates, they are used in Custom incentive calculations going forward.
4 However, the incentive calculation is based on a number of factors, and so the simple
5 payback component of the calculation, which uses NS Power rates as an input, is not always
6 the limiting factor in determining what incentive E1 provides.

7
8 (b) No, E1 has not taken into account proposed rate changes in NS Power's current General
9 Rate Application as this remains an open matter before the Nova Scotia Utility and Review
10 Board (NSUARB). However, if there are rate changes as a result, the new rates would be
11 updated in the incentive setting process specifically related to the payback calculation.

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Request IR-04:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, Page 16(Page 25/584 of PDF), Line 17

Avoided energy and capacity costs have been calculated by NS Power using the 2020 IRP Reference Plan 2.0C. The avoided costs of energy and the avoided costs of capacity are 30% and 41% lower, respectively, than in the 2014 IRP, which were used in the TRC test for the 2020-2022 DSM Plan.

(a) Please explain E1’s understanding of why the avoided energy costs in the 2020 IRP are so much lower than in the 2014 IRP.

(b) Please explain E1’s understanding of the relationship between avoided costs for evaluating DSM and marginal costs used to set rates such as ELIADC and GRLF.

(c) How sensitive are NS Power’s avoided energy costs to natural gas prices?

Response IR-04:

(a) Please refer to EfficiencyOne’s (E1) response to NSUARB IR-13.

(b) Please refer to E1’s response to NSUARB IR-13.

(c) Please refer to E1’s response to NSUARB IR-13.

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Request IR-05:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 3. Settlement DSM Plan; Table 1: 2023-2025 Settlement Plan, Page 11(Page 20/584 of PDF)

(a) Please restate Table 1 to express currency in real dollars versus nominal dollars.

(b) Please present the data for E1's Alternative Scenario in the same format as Table 1 (pg. 11).

Response IR-05:

(a) Please refer to Table 1, below, for the Settlement Plan investment level only restated in 2022 dollars.

Table 1: 2023-2025 Settlement Plan Investment and Savings – Investment Restated in Real Dollars

Year	Investment (\$ million)	Lifetime Benefits (\$ million)	First-Year Energy Savings (GWh)	Lifetime Energy Savings (GWh)	Weighted Average Measure Life (years)	Peak EE Demand Savings (MW)	Available DR Capacity (MW)	Total Resource Cost Test (TRC)		Program Administrator Cost Test (PAC)	
								incl. carbon	excl. carbon	incl. carbon	excl. carbon
2023	51.9	172.0	120.7	1,502	12.4	26.9	3.0	2.0	1.4	2.9	2.0
2024	55.5	179.0	142.6	1,540	10.8	25.6	10.0	2.0	1.4	2.8	2.0
2025	59.6	191.9	149.5	1,639	11.0	26.3	17.9	2.0	1.4	2.9	2.1
Total	167.0	542.8	412.7	4,681	11.3	78.8	17.9	2.0	1.4	2.9	2.0

Real dollars are stated in 2022 dollars.

(b) Please refer to Table 2 below for the Alternate Scenario investment level only restated in 2022 dollars.

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- 1 Table 2 – 2023-2025 Alternate Scenario Investment and Savings – Investment Restated in Real
2 Dollars

Year	Investment (\$ million)	Lifetime Benefits (\$ million)	First-Year Energy Savings (GWh)	Lifetime Energy Savings (GWh)	Weighted Average Measure Life (years)	Peak EE Demand Savings (MW)	Available DR Capacity (MW)	Total Resource Cost Test (TRC)		Program Administrator Cost Test (PAC)	
								incl. carbon	excl. carbon	incl. carbon	excl. carbon
2023	50.0	167.3	114.1	1,459	12.8	26.2	1.5	2.0	1.4	3.1	2.2
2024	51.5	172.2	130.2	1,483	11.4	24.9	4.8	2.0	1.4	3.1	2.2
2025	53.4	179.1	133.0	1,527	11.5	25.2	8.3	2.0	1.4	3.1	2.2
Total	154.8	518.6	377.3	4,469	11.8	76.4	8.3	2.0	1.4	3.1	2.2

- 3 Real dollars are restated in 2022 dollars.

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Request IR-06:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 4.2.4 Application of Costs, Page 18 (Page 27/584 of PDF), Line 12

“The Board has established that the Total Resource Cost test be applied at the program level, rather than the measure level, in accordance with industry best practices. Screening at the measure level is the most restrictive application of the cost-effectiveness test and denies the DSM Administrator the opportunity to deliver a portfolio of demand side management services that are accessible on an equitable and non- discriminatory basis and responsive to the current market.”

(a) Please provide E1’s definition of Program in the context of offerings to the respective "categories".

(b) Please define "categories" as used in the Plan.

(c) Please define "sector" as used in the Plan.

(d) Please define "customer group" and "segments" as used in the Plan.

(e) Historically, E1 had Programs, comprised of components comprised of individual measures. Please provide E1's current categorization.

(f) Please provide a list of Programs and their components, by year, since E1 (and formerly ENS) filed DSM Plans.

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Response IR-06:

(a) Consistent with historical categorization, EfficiencyOne's (E1) 2023-2025 DSM Plan portfolio has been categorized by Residential and Business, Non-Profit and Institutional (BNI) sectors, and programs, which are comprised of program components (which are further comprised of measures). The organization, by program and program component, are used for purposes of organizing and reporting progress towards achievement of performance indicators and targets. For the 2023-2025 DSM Plan specifically, the programs included are defined as follows:

- Efficient Product Rebates
- Existing Residential
- New Residential
- Efficient Product Rebates (BNI)
- Custom Incentives
- Direct Installation
- Demand Response

Categories, customer group, and segments were used throughout the 2023-2025 DSM Plan as a way to organize and offer insight into the target customer markets for the proposed programs and program components. Within the 2023-2025 DSM Plan Application, three customer groups (Residential, BNI, and Diverse & Underserved Communities) and four customer categories and segments (residential, small business, commercial & industrial, diverse & underserved) were used for these purposes.

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

(c) Please refer to part (a) of this IR response.

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1 (d) Please refer to part (a) of this IR response.

2

3 (e) Please refer to part (a) of this IR response.

4

5 (f) E1 (formerly Efficiency Nova Scotia Corporation) has filed DSM Plans in Nova Scotia since
6 2011 (the 2012 DSM Plan). Please refer to Attachment 1 of this IR response for a list of
7 programs and their program components since 2012.

IG IR-06 Attachment 1: Programs and Program Components 2012-2025

2012	
Program	Program Component
Efficient Products	Appliance Retirement
	Instant Savings
Existing Houses	Low Income Homeowner
	Residential Direct Install
	Home Energy Assessment
	Fuel Substitution
	Multi-unit Residential Buildings
	Solar
	LED Holiday Light Exchange
New Houses	Performance Plus
Prescriptive Rebate	Business Energy Rebates
Custom	Custom Retrofit
	Custom New Construction
Small Business Direct Install	Business Energy Solutions

2013-2014	
Program	Program Component
Efficient Product Rebates	Appliance Retirement
	Instant Savings
Existing Residential	Low Income Homeowner
	Residential Direct Install
	Home Energy Assessment
	Green Heat
	Multi-unit Residential Buildings
	Solar
	LED Holiday Light Exchange
New Residential	Performance Plus
Energy Saving Actions	Home Energy Report
Efficient Product Rebates	Business Energy Rebates
Custom Incentives	Custom
	Custom New Construction
Direct Installation	Business Energy Solutions

2015	
Program	Program Component
Efficient Product Rebates	Appliance Retirement
	Instant Savings
Existing Residential	LED Holiday Light Exchange
	Residential Direct Install
	Home Energy Assessment
	Green Heat
	Rental Properties & Condos
New Residential	New Home Construction
Energy Saving Actions	Home Energy Report
Efficient Product Rebates	Business Energy Rebates
Custom Incentives	Custom
	Energy Management Information Systems
Direct Installation	Business Energy Solutions

2016	
Program	Program Component
Efficient Product Rebates	Appliance Retirement
	Instant Savings
Existing Residential	Residential Direct Install
	Rental Properties & Condos
	Home Energy Assessment
	Green Heat
New Residential	New Home Construction
Efficient Product Rebates	Business Energy Rebates
Custom Incentives	Custom
	Strategic Energy Management
	Energy Management Information Systems
Direct Installation	Small Business Energy Solutions

2017-2018	
Program	Program Component
Efficient Product Rebates	Appliance Retirement
	Instant Savings
Existing Residential	Efficient Product Installation
	Home Energy Assessment
	Green Heat
New Residential	New Home Construction
Efficient Product Rebates	Business Energy Rebates
Custom Incentives	Custom
	Strategic Energy Management
	Energy Management Information Systems
Direct Installation	Small Business Energy Solutions

2019	
Program	Program Component
Efficient Product Rebates	Appliance Retirement
	Instant Savings
Existing Residential	Efficient Product Installation
	Home Energy Assessment
	Green Heat
New Residential	New Home Construction
Efficient Product Rebates	Business Energy Rebates
Custom Incentives	Custom
	Strategic Energy Management
	Energy Management Information Systems
Direct Installation	Small Business Energy Solutions

2020-2022 DSM Plan	
Program	Program Component
Efficient Product Rebates	Appliance Retirement
	Instant Savings
Existing Residential	Efficient Product Installation
	Affordable Multi-family Housing
	Home Energy Assessment
	Green Heat
	Mi'kmaw Home Energy Efficiency Project
New Residential	New Home Construction
Efficient Product Rebates	Business Energy Rebates
Custom Incentives	Custom
	Strategic Energy Management
	Energy Management Information Systems
Direct Installation	Small Business Energy Solutions

2023-2025 DSM Plan	
Program	Program Component
Efficient Product Rebates	Appliance Retirement
	Instant Savings
Existing Residential	Efficient Product Installation
	Affordable Multi-family Housing
	Home Energy Assessment
	Green Heat
	Mi'kmaw Home Energy Efficiency Project
	Affordable Single-family Homes
New Residential	Residential Behaviour
	New Home Construction
Efficient Product Rebates	Business Energy Rebates
Custom Incentives	Custom
	Strategic Energy Management & Energy Management Information Systems
Direct Installation	Small Business Energy Solutions
Demand Response	Residential Demand Reponse
	BNI Demand Response

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Request IR-07:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 4.2.4 Application of Costs, Page 18(Page 27/584 of PDF), Line 22

“...measures which fail the Total Resource Cost individually are combined into Programs which cumulatively are cost-effective.”

(a) Please confirm that the inclusion of individual measures which did not pass the TRC were permitted by the Board if "necessary to provide strategic or long-term benefits"?

(b) Please identify each measure and the respective Program associated with each measure which does not pass the TRC test and provide the justification for its inclusion.

Response IR-07:

(a) The 2012 DSM Resource Plan application included the following:

“ENSC is proposing that the TRC test for the 2012 DSM Plan be applied at the program level, not at the measure level as was previously required. ENSC is seeking the flexibility to consider factors in addition to TRC, when selecting measures. In some cases, a measure that fails the TRC test may provide strategic or long-term benefits, such as stimulating demand for newer technologies to achieve economies of scale.

The TRC test compares the net present value of lifetime benefits (avoided cost of energy and avoided cost of capacity) to the net present value of the total costs (the sum of ENSC's

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1 *investment and the participants' cost). Each program in 2012 has a TRC value greater than*
2 *1.0, indicating that the lifetime benefits exceed the total cost.”¹*

3
4 The Nova Scotia Utility and Review Board’s (NSUARB) Decision on this matter offers the
5 following finding:

6
7 *The Board has considered the ENSC's request to change the TRC test from the measure level*
8 *to the program level. There appears to be no opposition to this request and the Board agrees*
9 *with the benefits and flexibility which will be provided to ENSC with this change.*

10
11 In the associated Order, the NSUARB stated:

12
13 *The Board approves ENSC's request to apply the TRC test at the program level, starting*
14 *January 1, 2012.”²*

15
16 (b) Please refer to Attachment 4 (filed electronically) to Appendix A of EfficiencyOne’s (E1)
17 2023-2025 DSM Plan Application for the Measure-level Technical Tables by year, which
18 provide the Total Resource Cost (TRC) and Program Administrator Cost (PAC) ratios at the
19 measure level. The relevant columns in the Measure-Level Technical Tables are titled “TRC
20 Ratio” and “PAC ratio.”

21
22 There are several reasons why a measure might be included despite having a TRC ratio less
23 than one. Given that many of the reasons are global across all measures, E1 has provided
24 rationale below:

¹ M03669, 07314, Board Decision – 2012 Electricity Demand Side Management Plan for 2012, Issued June 30 2012, at para 82.

² M03669, 07313, Board Order

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- 1 • Avoided costs used to calculate TRC ratios are likely understated, resulting in
2 artificially low TRC ratios, as described in E1’s submitted 2023-2025 DSM Resource
3 Plan Evidence.
- 4 • TRC ratios use incremental costs as a key input. Incremental costs are dependent on
5 retail pricing at a particular point in time and are challenging to obtain. In this way,
6 TRC ratios can only be reflective of particular market conditions.
- 7 • Non-energy impacts (with the exception of gas, water, and biomass impacts) are not
8 included in the TRC ratio calculation, resulting in artificially low TRC ratios. These non-
9 energy impacts motivate customer participation in many cases (i.e. comfort benefits
10 of ductless heat pump installation).
- 11 • The TRC costs at the measure level include some program administration costs, which
12 is not best-practice if TRC is used to screen individual measures, as suggested in the
13 Evidence of Scott Robinson.
- 14 • Many measures with TRC ratios less than one are offered exclusively for low-income
15 Nova Scotians.
- 16 • Some measures in Instant Savings allow E1 to have a year-round presence in retail
17 stores, outside of the spring and fall campaigns.
- 18 • Some measures allow E1 to maintain market presence and business relationships at
19 very low total incentive costs, since measure uptake is very low for some measures
20 with low TRC ratios.
- 21 • For measures with low uptake, or brand-new measures, it is often difficult for E1 to
22 characterize the measure with high accuracy since it often relies on a relatively small
23 sample of projects to extract information from. By offering incentives to early
24 adopters of new measures, E1 encourages market transformation, which may help
25 bring costs down over time.
- 26 • Some measures with TRC ratios less than one are typically bundled with measures
27 that have higher TRC ratios. For example, several measures in Efficient Product

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- 1 Installation (EPI) have a TRC less than one and are installed when E1 is already in the
2 home, acquiring the savings immediately while preventing the need for E1 or the
3 customer to revisit the measure at a later date, perhaps at a higher acquisition cost. In
4 EPI, it also produces a better customer experience for E1 to upgrade all lighting,
5 instead of only upgrading lighting that fits into measure characterizations that were
6 shown to have a TRC greater than one.
- 7 • Some measures with a TRC value of less than one provides utility benefits in excess
8 of utility costs – these measures possess PAC ratios equal to or above 1.0.

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1 **Request IR-08:**

2
3 ***For example, two components of the Existing Residential Program, namely the Affordable***
4 ***Single-family Homes and the Mi'kmaw Home Energy Efficient Project, do not pass the TRC***
5 ***test***

6
7 **Given that certain components and measures extended to low-income categories by E1 would**
8 **not pass the TRC test, has E1 examined whether alternative funding could be used to fund such**
9 **measures. If so, please list alternative funding sources and explain why were they not chosen.**

10
11 **Response IR-08:**

12
13 In the development of the Settlement Plan, EfficiencyOne (E1) followed the Balanced Plan
14 Approach outlined in the Standardized Filing Framework. The Approach requires that E1 balance
15 multiple aspects of DSM for the benefit of customers. Included within these various
16 considerations is a requirement to ensure, and increase, equity, and accessibility across all rate
17 classes and customer segments including low-income customers. Considering these factors, E1
18 did not examine the use of “alternative funding” (assumed to mean non-ratepayer funding) in
19 the development of its targeted low-income program initiatives.

20
21 While certain measures within the Existing Residential program are acknowledged to not pass
22 the Total Resource Cost (TRC) test, E1 submits that incorporation of these particular measures is
23 in keeping with proper DSM plan development and in accordance with the Balanced Plan
24 Approach. E1 also notes that it is accepted practice in various jurisdictions that low-income
25 programs are exempted from the requirement of passing the TRC test.

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1 Additionally, in its 2012 DSM Resource Plan Application, E1 requested that the TRC screening test
2 *“be applied at the program level, not at the measure level as was previously required.”* In its
3 Decision, the Nova Scotia Utility and Review Board (NSUARB) accepted this revised approach
4 noting that it agreed, *“with the benefits and flexibility which will be provided to ENSC with this*
5 *change.”* Based upon this established screening criteria, E1 maintains that the use of targeted
6 select measures, which may not pass the TRC test at the individual measure level, remain
7 appropriate for inclusion in the development of DSM Programs; particularly those targeted at
8 low-income customers.

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Request IR-09:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 4.2.4 Application of Costs, Page 25 (Page 34/584 of PDF), Line 5

The avoided costs of transmission and distribution were provided by NS Power via a separate filing.

(a) What time period did NS Power use in calculating avoided transmission and distribution costs?

(b) Please provide the calculations, including source documents.

Response IR-09:

(a) Please refer to EfficiencyOne's (E1) response to NSUARB IR-13. Please also reference the response to NSPI IR-01 (a) as issued by the IG.

(b) Please refer to E1's response to NSUARB IR-13. Please also reference the response to NSPI IR-01 (b) as issued by the IG.

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Request IR-10:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 4.2.4 Application of Costs, Page 25 (Page 34/584 of PDF), Line 7

The avoided costs of carbon are calculated by E1 through the application of the federal trajectory pricing to an emissions intensity for Base DSM savings, calculated based on the NS Power system using the 2020 IRP Reference Plan 2.0C results, using a similar method to what NS Power used to calculate avoided energy and capacity costs.

Please provide the details of the calculation.

Response IR-10:

Please refer to EfficiencyOne's response to NSUARB IR-25.

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Request IR-11:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 4.2.4 Application of Costs, Page 34 (Page 43/584 of PDF), Line 19

“Based on the cost of fuel as reported in NS Power’s 2021 financial statements of \$0.075/kWh, the cost of DSM at \$0.035/kWh is less than the average cost of fuel by \$0.039/kWh.”

Please provide the calculation of the \$0.075 figure.

Response IR-11:

Please refer to EfficiencyOne’s response to IG IR-15 (a).

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Request IR-12:

Reference: Evidence Page 35(Page 44/584 of PDF), Table 4

Please provide the calculations of the costs and cost differences.

Response IR-12:

Please refer to Table 1 below for the calculations related to the reference above. Additionally, Table 2 further breaks out the calculation for the DSM Costs.

Table 1: Comparison of the DSM Cost to NS Power's Avg. Cost of Fuel

Year	DSM Cost			Nova Scotia Power Average Cost of Fuel			Difference Between DSM & Fuel	
	\$ per kWh	Change	Change (%)	\$ per kWh	Change	Change (%)	\$ per kWh	Fuel as % of DSM
2015	0.018			0.049			0.031	171%
2016	0.016	(0.002)	-11%	0.045	(0.004)	-7.3%	0.029	183%
2017	0.019	0.003	19%	0.043	(0.002)	-3.9%	0.024	129%
2018	0.019	-	0%	0.056	0.013	29.4%	0.037	196%
2019	0.019	-	0%	0.059	0.003	5.2%	0.040	212%
2020	0.021	0.002	11%	0.067	0.008	13.2%	0.046	219%
2021	0.023	0.002	10%	0.075	0.008	11.9%	0.052	226%

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1 Table 2: DSM Cost Calculation

Year	Investment (\$ Millions)	Lifetime Energy Savings (kWh)	\$ per kWh
2015	32.0	1,778.9	0.018
2016	30.8	1,972.3	0.016
2017	30.3	1,620.8	0.019
2018	34.0	1,778.6	0.019
2019	34.1	1,762.8	0.019
2020	28.4	1,361.3	0.021
2021	36.0	1,548.8	0.023

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1 **Request IR-13:**

2

3 **Reference: Evidence Page Evidence Page 35(Page 44/584 of PDF), Table 4**

4

5 **Please provide the calculations of the costs and cost differences.**

6

7 Response IR-13:

8

9 Please refer to EfficiencyOne's response to IG IR-12.

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Request IR-14:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 4.2.4 Application of Costs, Page 39(Page 48/584 of PDF), Line 10

“[I]n contrast to leading American jurisdictions, in 2020 less than 2% of ratepayers’ money was spent on DSM.”

Please explain whether this percentage includes money spent by NS Power ratepayers for measures not funded by E1. Provide the source material for the response.

Response IR-14:

In 2020, NS Power spent \$27 million or 1.8% of total customer collections on DSM. The \$27 million includes only those DSM costs paid to EfficiencyOne as per the 2020-2022 Supply Agreement for Electricity Efficiency and Conservation Activities between Nova Scotia Power Incorporated and EfficiencyOne effective January 1, 2020. The source material for this data is Nova Scotia Power Inc. – Consolidated Financial Statements December 31, 2020, and 2019-2020 Consolidated Statements of Income (pg. 7).

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Request IR-15:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 4.2.4 Application of Costs, Page 53 (Page 62/584 of PDF), Table 10.

(a) Please provide the calculations of the “Cost of Fuel per kWh.”

(b) Is this the same as the marginal cost of energy? If not, how do the two differ?

Response IR-15:

(a) The source material for the cost of fuel per kWh is NS Power’s Management Discussion and Analysis (MD&A), Fuel for Generation and Purchased Power, Average Fuel Costs for each given year. For example, for the calculation of the cost of fuel in 2021, EfficiencyOne (E1) used the fuel cost for generation and purchased power of \$817 million divided by the production volume of 10,905 GWh, resulting in \$0.075/kWh. Since 2021 is the most recent information, this value was extrapolated for the period of 2022 to 2036, remaining constant with the 2021 value; no inflation adjustments were made.

(b) The cost of fuel per kWh is related to the average cost for the total annual production, while the marginal cost of energy represents the cost per kWh of whichever generating unit is on the margin at any point in time.

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Request IR-16:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 9. Underserved Markets and Diverse Communities, Page 55 (Page 64/584 of PDF), Footnote 39

(a) Please confirm E1 chose to use the 2016 Census data, as per footnote 39, which relies on 2015 data, instead of Statistics Canada's most recent data regarding the percentage of Nova Scotian's who fall within the category of "low-income" in order to determine the funding level as part of E1's "balanced plan"?

(b) Please confirm that the 2016 Census data for low income Nova Scotians is 17.0% in comparison to the most recent published data of 12.1% for 2019, which tracks a material improvement?

Response IR-16:

(a) EfficiencyOne (E1) confirms that the 2016 Census data was used to obtain the percentage of Nova Scotia's population reported to be low-income.

(b) E1 confirms that the 2016 Census data, using the Low-Income Measure After-tax (LIM-AT), reported 17.2% of Nova Scotians met the LIM-AT criteria for low-income. The LIM-AT measures low-income based on household incomes after tax and before expenses. Using the data source provided in IG IR-17 (Canadian Annual Income Survey, 2019) E1 understands that the Market Based Measure (MBM) is 12% for Nova Scotia. The MBM measures poverty based on disposable income, i.e. after tax and after statistical assumptions are made on the use of income toward living expenses.

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1 According to Statistics Canada definitions, the LIM-AT measure, “*defines an individual as*
2 *having low income if their adjusted after-tax income falls below 50% of the median adjusted*
3 *after-tax income.*”¹ Whereas the market basket measure (MBM) is, “*based on the cost of a*
4 *specific basket of goods and services representing a modest, basic standard of living. It*
5 *includes the costs of food, clothing, footwear, transportation, shelter and other expenses*
6 *for a reference family. These costs are compared with the disposable income of families to*
7 *determine whether or not they fall below the poverty line.*”²

8
9 The 2018 Federal report *Opportunity for All – Canada’s First Poverty Reduction Strategy*³,
10 set-out long-term commitments to reduce poverty, including establishing the MBM as
11 Canada’s Official Poverty Line. E1 understands the MBM is intended to measure poverty
12 levels⁴ rather than low-income. E1 further understands that the Census and Canadian
13 Annual Income Survey differ in scope in terms of sample size and data points examined.

14
15 The 2016 Census data is more closely linked with E1’s historic methodology for low-income
16 impacts and estimates. The 23 March 2019 release of *The Daily*⁵, as linked in IG IR-17, uses
17 data from the Canadian Income Survey which is based on probability samples subject to
18 sampling variability. The note to readers states, “*As a result, year-to-year estimates will*
19 *show more variability than trends observed over longer time periods [...] Experimental*
20 *median weekly family income and experimental low-weekly income statistics presented in*
21 *this release are based on weekly income and include selected income sources only. They*

¹ *The Daily — Canadian Income Survey, 2019* (2021). Available at: <https://www150.statcan.gc.ca/n1/daily-quotidien/210323/dq210323a-eng.htm>

² Ibid.

³ 2018. *Opportunity for All – Canada’s First Poverty Reduction Strategy*. Available at: <https://www.canada.ca/en/employment-social-development/programs/poverty-reduction/reports/strategy.html>

⁴ 2020. *A Critical Assessment of Canada’s Official Poverty Line*. Available at: <https://www.fraserinstitute.org/sites/default/files/critical-assessment-of-canadas-official-poverty-line.pdf>

⁵ *The Daily — Canadian Income Survey, 2019* (2021). Available at: <https://www150.statcan.gc.ca/n1/daily-quotidien/210323/dq210323a-eng.htm>

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1 *also use an experimental low-weekly income threshold. Therefore, these statistics cannot*
2 *be directly compared with annual statistics on median income or annual statistics on the*
3 *official poverty rate (MBM) or the low-income rate based on the low-income measure*
4 *(LIM)."*

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Request IR-17:

Reference: **Statistics** **Canada:** **<https://www150.statcan.gc.ca/n1daily-quotidien/210323/dq210323a-eng.htm>**

The market basket measure (MBM) was adopted as Canada's Official Poverty Line in June 2019. ... The decline in the national poverty rate from 2018 to 2019 represents a continuation of a general downward trend in the poverty rate observed in recent years. Except for an increase in 2015 associated with the oil price shock in that year, the poverty rate has fallen by a statistically significant margin

(a) Please restate the 2023-2025 Plan, using the most current Statistics Canada data for Low-Income classification, i.e. 12.1%?

(b) If the spend on low income components is reduced to 12.1%, and the funds reallocated, please confirm that the result is an improvement in Energy savings at a Plan level.

Response IR-17:

(a) Restating the 2023-2025 DSM Plan, with a cap on low-income spending at 12.1% and reallocating these to other program components, would result in the development of a new scenario, requiring EfficiencyOne (E1) to re-model the plan. The low-income spending percentage was one of the key assumptions shared with the Demand Side Management Advisory Group (DSMAG) during the scenario development phase of DSM Plan development, and stakeholder feedback requesting such a significant change was not received during that phase. As such, E1 is not in a position to carry out the activities associated with a redesign of a model scenario at this time.

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1 In response to feedback received after the 2020-2022 DSM Plan process, E1 purposely
2 developed a comprehensive stakeholder engagement plan, for the 2023-2025 DSM Plan,
3 that was more transparent and responsive to stakeholders and focused on earlier
4 engagement in the Plan development. The engagement allowed for several opportunities
5 for the DSMAG to provide feedback through active discussions and written comment
6 periods, specifically in relation to the DSM scenarios that would be examined through
7 modelling. The process included sharing with the DSMAG, the high-level assumptions for
8 each scenario that formed the basis of inputs into the models, sharing model results after
9 each model run, providing written responses to stakeholder comments on how E1
10 specifically considered the feedback, and holding technical sessions for active DSMAG
11 discussions. As part of the scenario development, E1 committed to model up to five
12 scenarios and conduct three rounds of modeling with the intention of filing a Preferred Plan
13 and Alternate Scenario for approval that reflected stakeholder concerns, opportunities,
14 and goals.

15
16 (b) Please refer to part (a) of this IR response.

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Request IR-18:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Evidence, 4.2.4 Application of Costs, Page 58 (Page 67/584 of PDF), Line 7

E1 proposes to spend \$10 million on “DR pilot programming.” Further, E1 says that since 2019 it has worked collaboratively “to develop, assess and evaluate DR pilot programs ... to ascertain feasibility and scalability.”

(a) Please provide a detailed breakdown of the \$10 million of costs to be incurred.

(b) Have E1 or NS Power researched similar programs of other utilities? If so, which utilities?

(c) What differences are there between the proposed DR offerings in Nova Scotia versus other utilities’ DR offerings?

(d) NS Power already has experience with demand control features in the ELIADC and Large Industrial Interruptible rates. Can the experience and with these rates be utilized in the creation and operation of the new Demand Response rates? If no, why not?

(e) What ongoing costs (e.g., operating and maintenance and or bill credits) are expected to be incurred with Demand Response measures?

Response IR-18:

(a) Please refer to the Demand Response Roadmap (Appendix A, Attachment 5 of EfficiencyOne’s (E1) 2023-2025 DSM Plan) and the 2023-2025 Demand Response Technical

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1 Tables (Appendix A, Attachment 6 of E1's 2023-2025 DSM Plan). The Demand Response
2 Technical Tables (Filed Electronically) provides the \$10 million demand response (DR)
3 investment broken down by the following categories:

- 4 • DR options (tab: 19. Annual Cost_Option)
- 5 • DR cost categories (tab: 20. Annual Cost Category)
- 6 • DR sub-options (tab: 21. Annual Cost_SubOption)
- 7 • DR costs by utility (tab: 22. Annual Cost_Entity)

8
9 Please note that, while the Demand Response Technical Tables include both E1 and NS
10 Power costs, E1's Application is for E1's portion of the investment (\$10 million).

11
12 (b) E1 and NS Power have conducted research on DR programs, including informal reviews of
13 other jurisdictions' offerings. The following are some jurisdictions E1 has reviewed. This list
14 is not comprehensive due to the informal nature of the research and various parties who
15 may have conducted research.

- 16 • NB Power – Business, Non-Profit & Institutional (BNI) curtailment and direct load
17 control (DLC) water heating
- 18 • Efficiency Vermont's PowerShift project– DLC water heating
- 19 • PGE, Southern California Edison – BNI curtailment
- 20 • BC Hydro – behavioural

21
22 E1 has also reviewed DR resources from industry experts including ESource, Peak Load
23 Management Alliance (PLMA), American Council for an Energy-Efficient Economy (ACEEE),
24 Guidehouse, and the Regulatory Assistance Project (RAP).

25 Additionally, E1 engaged Guidehouse to help design a DR portfolio. Guidehouse has
26 extensive experience with DR in other jurisdictions in Canada and the US. For winter DR,

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1 Guidehouse conducted DR studies for BC Hydro, SaskPower, statewide DR study for the
2 Michigan Public Utility Commission that included all Michigan Investor-owned Utilities, and
3 Puget Sound Energy in Washington. Additionally, Guidehouse has conducted several
4 summer DR studies for utilities all over the US.

5
6 (c) Some differences that have been noted between proposed DR offerings in Nova Scotia
7 versus other utilities' offerings include:

- 8 • E1 does not propose any summer peak focused DR initiatives. Many other
9 jurisdictions have a summer peak making direct load control of air-conditioners and
10 pool pumps popular measures. E1 and Guidehouse have not included these measures
11 in E1's DR program. Guidehouse's specific experience with winter DR studies, as
12 described in part (b), served as useful references for the E1 analysis.
- 13 • The co-delivery of energy efficiency and demand response programs is sometimes,
14 although not always, present in other jurisdictions.
- 15 • Usually, DR Plans or roadmap studies do not consider sharing of programmatic costs
16 between entities and only consider a single entity for bearing costs, whereas the E1
17 Demand Response Roadmap assumed sharing of programmatic costs between E1 and
18 NS Power.

19
20 (d) NS Power is responsible for the creation of any new demand response rates (for example,
21 the pilot involving a new Critical Peak Pricing rate and Time of Use rate for residential, small
22 general, and general rate classes).

23 NS Power's experience with the Extra-Large Industrial Active Demand Control (ELIADC) and
24 Large Industrial Interruptible rate is expected to also help inform the development and
25 piloting of a BNI curtailment offering. Examples of learnings could include how to market

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- 1 and recruit customers, what type of loads might be most suitable, how customers respond
2 to events, and the value of different use cases.
3
4 (e) Please refer to the Demand Response Roadmap (Appendix A, Attachment 5 of E1's 2023-
5 2025 DSM Plan) and the 2023-2025 Demand Response Technical Tables (Appendix A,
6 Attachment 6 of E1's 2023-2025 DSM Plan). Please also refer to Attachment 1 of E1's
7 response to Synapse IR-24 for Guidehouse's DR modelling Inputs, which details the
8 assumptions used.

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Request IR-19:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Attachment 1: Barriers to Participation & Mitigating Strategies, Page 7(Page 84/584 of PDF)

E1 lists five “pathways” for Residential customers.

(a) Please explain “battery control” and “behavioural DR”.

(b) What are the costs—direct and indirect—of the types of equipment that must be installed to enable NS Power to notify customers and to assert the necessary control?

Response IR-19:

(a) “Battery control” is a behind-the-meter (BTM) battery control offering, which uses batteries for load shifting and dispatching the grid in return for an annual incentive payment to the customer. Customers of any rate class with behind the meter batteries are proposed to be eligible for this offering. Please refer to the Demand Response Roadmap (Appendix A, Attachment 5, Table 19) of EfficiencyOne’s (E1) 2023-2025 DSM Plan Application for more information on the BTM Battery Control option.

“Behavioural DR” is a residential offering where demand response (DR) event notifications with energy savings tips are provided, followed by post-event peer comparisons to motivate customers to reduce demand during DR events. It is proposed this option would be co-delivered with the Residential Behaviour energy efficiency (EE) program. No incentives are proposed as part of this offering. Please refer to the Demand Response

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Roadmap (Appendix A, Attachment 5, Table 20 of E1's 2023-2025 DSM Plan Application for more information on the Behavioural DR option.

(b) For the purposes of modelling DR, Guidehouse has categorized costs into the following categories:

- Program development: one-time program set-up costs.
- Program administration: annual fixed costs for administering programs. Includes full-time employees and annual software licensing fees.
- Marketing & recruitment: one-time variable costs for program marketing, customer education and outreach.
- Technology enablement: one-time variable costs for technology enablement (e.g. equipment, controls, installation).
- Incentives: annual and one-time payments to customers for participation in DR offerings.
- Program delivery: additional program delivery costs in \$/kW-year that are not represented as part of other itemized costs, such as third-party delivery costs for Business, Non-profit and Institutional curtailment.
- Operations and maintenance (O&M): annual O&M costs associated with the installed equipment (e.g. vendor licensing fees).

Table 1, below, presents the 2023-2025 costs broken out by the above cost categories, including both E1 and NS Power's estimated costs.

Table 1: Demand Response costs by category and year, including E1 and NS Power costs

Cost Category	2023 Costs (\$)	2024 Costs (\$)	2025 Costs (\$)
Program Delivery	83,855	235,949	370,006

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Cost Category	2023 Costs (\$)	2024 Costs (\$)	2025 Costs (\$)
Program Administrative	566,100	966,581	1,226,929
Marketing & Recruitment	49,960	231,487	529,144
Program Development	946,953	652,658	220,731
Technology Enablement	15,268	1,571,595	1,996,291
O&M	3,861	39,538	91,650
Incentives	239,985	648,068	1,498,314
Total	1,905,981	4,345,876	5,933,065

For additional information, please refer to Attachment 1 of E1's response to Synapse IR-24 for Guidehouse's DR Modelling Inputs workbook, which details the assumptions used for modelling.

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Request IR-20:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Attachment 1: Barriers to Participation & Mitigating Strategies, Page 11(Page 88/584 of PDF)

For BNI Demand Response what is the difference between “curtailment” and “direct load control”? Please explain how they would be implemented with specific examples.

Response IR-20:

Please refer to the Demand Response Roadmap (Appendix A, Attachment 5 of EfficiencyOne’s (E1) 2023-2025 DSM Plan Application) for additional detail on demand response pathways included in the 2023-2025 DSM Plan portfolio.

Direct load control is targeted at Residential and small Business, Non-Profit & Institutional (BNI) customers. It facilitates utility control of common technologies such as water heaters and space heating through smart thermostats. Customers may enter the program with compatible devices they own or may participate in a direct install program to have eligible controls installed. Customers receive an annual payment for continued participation in the direct load control offering.

BNI curtailment is targeted at large BNI customers and would be customized depending on the opportunities identified for that customer. Common loads include lighting, HVAC, industrial processes, refrigeration, pumps, fans and blowers. Working with NS Power, E1, and/or a third-party aggregator, the customer nominates loads that can be controlled, either manually or through automation. Customers are compensated on a \$/kW-year basis for verified load reductions during events.

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Request IR-21:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Appendix A 2023-2025 DSM Resource Plan; 3. 2023-2025 SETTLEMENT PLAN, Table 9: 2023-2025 Settlement Plan Investment and Savings, by Program Component, Page 40 (Page 138/584 of PDF)

Please restate Table 9 to express currency in real dollars versus nominal dollars.

Response IR-21:

Please refer to Table 1, below, for the 2023-2025 Settlement Plan investment level only, restated in real dollars.

M10473 – EfficiencyOne (E1) Application for Approval of a Supply Agreement for Electricity Efficiency and Conservation Activities between E1 and NS Power (2023-2025 DSM Plan)

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- 1 Table 1: 2023-2025 Settlement Plan Investment and Savings – Investment Restated in Real
2 Dollars

2023-2025	Investment (\$ million)	Lifetime Benefits (\$ million)	First-Year Energy Savings (GWh)	Lifetime Energy Savings (GWh)	Peak EE Demand Savings (MW)	Available DR Capacity (MW)	Total Resource Cost Test (TRC)		Program Administrator Cost	
							incl. carbon	excl. carbon	incl. carbon	excl. carbon
Residential (Res) Energy Efficiency (EE) Programs										
Efficient Product Rebates	13.8	30.8	32.3	279.0	3.5	-	1.1	0.7	2.2	1.4
Appliance Retirement	3.0	2.0	3.7	15	0.5		0.9	0.6	0.6	0.4
Instant Savings	10.7	28.8	28.6	264	2.9		1.1	0.7	2.6	1.7
Existing Residential	64.3	163.0	156.7	1,292	30.7	-	1.5	1.1	2.4	1.8
Efficient Product Installation	10.0	24.3	36.2	220	4.9		2.3	1.5	2.3	1.5
Affordable Multi-family Housing	3.9	11.6	5.6	102	1.7		1.2	0.9	2.9	2.1
Home Energy Assessment	11.6	66.9	25.7	515	13.0		2.0	1.6	5.7	4.4
Green Heat	6.6	29.7	10.7	193	8.2		1.5	1.2	4.4	3.5
Mi'kmaw Home Energy Efficiency Project	3.5	3.3	1.6	30	0.5		0.9	0.6	0.9	0.6
Affordable Single-Family Homes	23.2	18.0	8.6	164	2.5		0.7	0.5	0.7	0.5
Residential Behaviour	5.4	9.3	68.2	68	0.0		1.7	0.9	1.7	0.9
New Residential	0.8	3.9	0.4	13	1.3	-	2.6	2.4	4.8	4.4
Low-Income Participation	33.4	42.8	36.5	384	6.5		1.0	0.7	1.2	0.8
Res EE Programs Total	78.9	197.8	189.4	1,584	35.4	-	1.5	1.0	2.4	1.7
Business, Non-Profit & Institutional (BNI) Energy Efficiency (EE) Programs										
Efficient Product Rebates	22.9	174.3	109.1	1,623	20.6	-	3.7	2.5	7.5	5.1
Custom Incentives	24.5	109.1	77.5	940	15.2	-	2.5	1.7	4.3	2.9
Direct Installation	19.1	58.8	36.7	533	7.6	-	2.2	1.5	3.0	2.0
Low-Income Participation	0.6	4.7	2.9	43	0.8		2.8	1.9	7.6	5.2
BNI EE Programs Subtotal	66.6	342.2	223.3	3,097	43.4	-	2.9	2.0	5.0	3.4
Total EE Programs	145.5	539.9	412.7	4,681	78.8	-				
Enabling Strategies (ES)										
Education & Outreach	4.1									
Development & Research	4.2									
Other Enabling Strategies	3.8									
Total ES	12.1									
EE Portfolio Total (EE + ES)	157.6	539.9	412.7	4,681	78.8	-	2.0	1.4	3.3	2.3
Demand Response (DR) Program										
Residential Demand Response	5.2					7.1		0.8		0.6
BNI Demand Response	4.2					10.7		2.7		0.8
DR Program Total	9.4	2.9	-	-	-	17.9		1.1		0.7
DSM Portfolio Total (EE + ES + DR)	167.0	542.8	412.7	4,681	78.8	17.9	2.0	1.4	2.9	2.0

- 3 Real dollars are stated in 2022 dollars.

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Request IR-22:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Appendix A 2023-2025 DSM Resource Plan; 3.4 Settlement Plan – Customer Groups & Segments, Page 47 (page 145/584 of PDF)

Figure 12: 2023-2025 Settlement Plan Investment Summary, by Year

(a) Please provide a breakdown of amounts of investment, and the measures proposed for investment within Figure 12 as they relate to each “Customer Group & Segment” for the years set out;

(b) Please provide the amount of investment in Low-Income Participation (as found in Table 9, page 40 of Appendix A 2023-2025 DSM Resource Plan) that contribute to each figure represented within Figure 12.

Response IR-22:

(a) EfficiencyOne (E1) did not model the 2023-2025 Settlement Plan at the Customer Group and Segment level, as such the investment level and measure level information is not available. As with past DSM Plans, modelling is conducted at the measure level for the individual program components.

(b) Please refer to Table 1, below, that reconciles Table 9 Low-Income Participation for the Residential and the Business, Non-Profit & Institutional (BNI) Sector to Figure 12 – Diverse and Underserved Communities. E1 did not separate out the low-income participation for Demand Response in Table 9 but has included it in Figure 12.

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1 Table 1: Summary of Diverse and Underserved Communities by Sector

Sector	Investment (\$ million)			
	2023	2024	2025	Total
Residential - EE Programs	11.3	11.7	12.1	35.2
BNI - EE Programs	0.2	0.2	0.2	0.6
Demand Response Programs	0.0	0.2	0.2	0.5
Total	11.6	12.1	12.6	36.2

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Request IR-23:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Appendix A 2023-2025 DSM Resource Plan; 3.4.1 Diverse & Underserved Communities, Page 50 (Page 148/584 of PDF)

Figure 13: 2023-2025 Low-Income Investment, First-Year Energy Savings & Greenhouse Gas Reductions

(a) Please provide detailed supporting calculations to demonstrate what particular investments the 21% Low-Income Investment seen at Figure 13 is composed of;

(b) Please provide supporting calculations to demonstrate how E1 arrived at the 10% Low-Income Energy Savings (GWh) highlighted at Figure 13;

Response IR-23:

(a) Please refer to Attachment 1 of EfficiencyOne's (E1) response to CA IR-02 for the methodology used for the estimation of DSM Low-Income Impacts for the 2023-2025 DSM Resource Plan. For the low-income investments and savings in the 2023-2025 DSM Plan by program component for both dedicated low-income programs and incidental impacts, please refer to the following tables in Appendix A of E1's 2023-2025 DSM Plan Application:

- Table 18: Three-Year Summary of the Appliance Retirement Program Component;
- Table 19: Three-Year Summary of the Instant Savings Program Component;
- Table 24: Three-Year Summary of the Affordable Multi-family Housing & Non-Profit Organizations Program Component;
- Table 25: Three-Year Summary of the Efficient Product Installation Program Component;

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- 1 • Table 26: Three-Year Summary of the Mi'kmaw Home Energy Efficiency Project
2 Program Component;
- 3 • Table 29: Three-Year Summary of the Affordable Single-family Homes Program
4 Component;
- 5 • Table 30: Three-Year Summary of the Residential Behaviour Program Component;
- 6 • Table 39: Three-Year Summary of the Business Energy Rebates Program Component;
7 and
- 8 • Table 50: Three-Year Summary of the Small Business Energy Solutions Program
9 Component.
- 10
- 11 (b) Please refer to part (a) of this IR response.

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1 **Request IR-24:**

2
3 **Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Appendix A - 2023-2025 DSM**
4 **Plan, 7. Enabling Strategies, Page 124 (Page 222/584 of PDF)**

5
6 ***“Historically, E1 has invested an average of 10% of its total DSM Portfolio investment in***
7 ***Enabling Strategies.”***

8
9 **(a) Please specify each Enabling Strategy and explain the how the cost is allocated for each**
10 **year of the Plan.**

11
12 **(b) What information is provided to NSPI to allow it to allocate these costs?**

13
14 **(c) Please provide the amount of investment in real dollars for Enabling Strategies for the**
15 **years 2023-2025.**

16
17 **Response IR-24:**

18
19 **(a) Please refer to Table 1, below, for the allocation of Enabling Strategies for each year of the**
20 **Plan. The allocation methodology that EfficiencyOne (E1) applies is based on the**
21 **percentage of program costs. This approach is consistent with previous years. For the 2023-**
22 **2025 DSM Plan, no Education and Outreach costs were allocated to the industrial classes**
23 **since these activities are not applicable to these rate classes.**

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1 Table 1: Allocation of Enabling Strategies by Rate Class Methodology

Development & Research / Other Enabling			
Allocation using Total Program Costs Percentages			
Rate Class	2023	2024	2025
Residential/Charitable (2,3,4)	54%	54%	55%
Small General (10)	5%	5%	5%
General Demand (11)	26%	25%	25%
Large General (12)	4%	4%	4%
Small Industrial (21)	4%	3%	3%
Medium Industrial (22)	2%	2%	2%
Large Industrial (23, 25)	4%	4%	4%
Municipal (24)	2%	2%	2%
Unmetered (999)	0%	0%	0%
TOTAL	100%	100%	100%
Education & Outreach			
Allocation Using Total Program Costs W/O Industrials Percentages			
Rate Class	2023	2024	2025
Residential/Charitable (2,3,4)	59%	60%	60%
Small General (10)	6%	6%	6%
General Demand (11)	29%	28%	28%
Large General (12)	4%	4%	4%
Small Industrial (21)	0%	0%	0%
Medium Industrial (22)	0%	0%	0%
Large Industrial (23, 25)	0%	0%	0%
Municipal (24)	2%	2%	2%
Unmetered (999)	0%	0%	0%
TOTAL	100%	100%	100%

- 2
- 3 (b) Please refer to E1's response to IG IR-25, part (b).
- 4
- 5 (c) Please refer to E1's response to IG IR-21.

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Request IR-25:

Please provide cost allocation tables, by rate class, for each year in a) E1’s Preferred Plan; b) Alternate Scenario; c) Settlement Plan, and d) a Scenario where the Low Income funding is set at 12% of the investment.

Response IR-25:

(a) EfficiencyOne (E1) developed both the Preferred Plan and Alternate Scenario through an extensive stakeholder process. As a result of this effort, in February 2022, E1 and stakeholders were able to gain alignment on one Plan, now referred to as the Settlement Plan, that replaced E1’s Preferred Plan. For that reason, the Preferred Plan in this IR response has been replaced with the Settlement Plan.

(b) Please refer to Tables 1 to 4, below, for the Settlement Plan spending by rate class for 2023-2025 and by individual year.

Table 1: Settlement Plan – Allocation of 2023-2025 DSM Expenditures by Rate Class (\$ millions)

Program costs by participating rate class													
Program	Efficient Product Rebates RES	Existing Residential	New Residential	Efficient Product Rebates BNI	Custom Incentives	Direct Installation	Total Programs	Education & Outreach	Development & Research	Other Enabling	Total Enabling Strategies	Demand Response	All Costs Combined
Rate Class													
Residential	\$13.2	\$62.5	\$0.8	\$1.7	\$0.2	\$3.3	\$81.6	\$2.6	\$2.4	\$2.2	\$7.2	\$5.5	\$94.3
Small General	\$0.2	\$1.5	\$0.0	\$2.2	\$0.6	\$3.2	\$7.7	\$0.2	\$0.2	\$0.2	\$0.7	\$0.1	\$8.5
General Demand	\$0.3	\$1.7	\$0.0	\$12.9	\$11.6	\$11.8	\$38.4	\$1.2	\$1.1	\$1.0	\$3.4	\$1.7	\$43.4
Large General	\$0.0	\$0.0	\$0.0	\$1.9	\$3.4	\$0.0	\$5.4	\$0.2	\$0.2	\$0.1	\$0.5	\$2.1	\$7.9
Small Industrial	\$0.0	\$0.0	\$0.0	\$1.9	\$2.1	\$1.2	\$5.2	\$0.0	\$0.2	\$0.1	\$0.3	\$0.0	\$5.6
Medium Industrial	\$0.0	\$0.0	\$0.0	\$0.4	\$2.4	\$0.0	\$2.8	\$0.0	\$0.1	\$0.1	\$0.2	\$0.2	\$3.2
Large Industrial	\$0.0	\$0.0	\$0.0	\$1.7	\$4.3	\$0.0	\$6.1	\$0.0	\$0.2	\$0.2	\$0.3	\$0.5	\$6.9
Municipal	\$0.4	\$1.2	\$0.1	\$0.3	\$0.6	\$0.3	\$2.8	\$0.1	\$0.1	\$0.1	\$0.3	\$0.0	\$3.1
Unmetered	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1
Total Spending	\$14.1	\$67.0	\$0.8	\$23.2	\$25.2	\$19.8	\$150.2	\$4.4	\$4.5	\$4.1	\$12.9	\$10.0	\$173.0
Numbers may not add due to rounding													

M10473 – EfficiencyOne (E1) Application for Approval of a Supply Agreement for Electricity Efficiency and Conservation Activities between E1 and NS Power (2023-2025 DSM Plan)

E1 Responses to Industrial Group (IG) Information Requests
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1 Table 2: Settlement Plan – Allocation of 2023 DSM Expenditures by Rate Class (\$ millions)

Program costs by participating rate class													
Program	Efficient Product Rebates RES	Existing Residential	New Residential	Efficient Product Rebates BNI	Custom Incentives	Direct Installation	Total Programs	Education & Outreach	Development & Research	Other Enabling	Total Enabling Strategies	Demand Response	All Costs Combined
Rate Class													
Residential	\$3.7	\$19.5	\$0.8	\$0.5	\$0.1	\$1.1	\$25.6	\$0.8	\$0.8	\$0.5	\$2.1	\$0.4	\$28.2
Small General	\$0.1	\$0.5	\$0.0	\$0.7	\$0.2	\$1.0	\$2.5	\$0.1	\$0.1	\$0.0	\$0.2	\$0.0	\$2.7
General Demand	\$0.1	\$0.6	\$0.0	\$4.1	\$3.8	\$3.8	\$12.4	\$0.4	\$0.4	\$0.2	\$1.0	\$0.4	\$13.8
Large General	\$0.0	\$0.0	\$0.0	\$0.6	\$1.1	\$0.0	\$1.7	\$0.1	\$0.1	\$0.0	\$0.1	\$0.5	\$2.4
Small Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$0.7	\$0.4	\$1.7	\$0.0	\$0.1	\$0.0	\$0.1	\$0.0	\$1.8
Medium Industrial	\$0.0	\$0.0	\$0.0	\$0.1	\$0.8	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$1.0
Large Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$1.4	\$0.0	\$2.0	\$0.0	\$0.1	\$0.0	\$0.1	\$0.1	\$2.2
Municipal	\$0.1	\$0.4	\$0.1	\$0.1	\$0.2	\$0.1	\$0.9	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$1.0
Unmetered	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Spending	\$4.0	\$20.9	\$0.8	\$7.4	\$8.2	\$6.4	\$47.8	\$1.4	\$1.5	\$0.9	\$3.8	\$1.5	\$59.1
Numbers may not add due to rounding													

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3 Table 3: Settlement Plan – Allocation of 2024 DSM Expenditures by Rate Class (\$ millions)

Program costs by participating rate class													
Program	Efficient Product Rebates RES	Existing Residential	New Residential	Efficient Product Rebates BNI	Custom Incentives	Direct Installation	Total Programs	Education & Outreach	Development & Research	Other Enabling	Total Enabling Strategies	Demand Response	All Costs Combined
Rate Class													
Residential	\$4.3	\$21.0	\$0.0	\$0.5	\$0.1	\$1.1	\$27.0	\$0.9	\$0.8	\$0.8	\$2.5	\$2.2	\$31.7
Small General	\$0.1	\$0.5	\$0.0	\$0.7	\$0.2	\$1.1	\$2.6	\$0.1	\$0.1	\$0.1	\$0.2	\$0.0	\$2.8
General Demand	\$0.1	\$0.6	\$0.0	\$4.1	\$3.9	\$3.9	\$12.6	\$0.4	\$0.4	\$0.4	\$1.2	\$0.5	\$14.3
Large General	\$0.0	\$0.0	\$0.0	\$0.6	\$1.1	\$0.0	\$1.8	\$0.1	\$0.1	\$0.1	\$0.2	\$0.5	\$2.4
Small Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$0.7	\$0.4	\$1.7	\$0.0	\$0.1	\$0.1	\$0.1	\$0.0	\$1.8
Medium Industrial	\$0.0	\$0.0	\$0.0	\$0.1	\$0.8	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$1.1
Large Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$1.4	\$0.0	\$2.0	\$0.0	\$0.1	\$0.1	\$0.1	\$0.1	\$2.3
Municipal	\$0.1	\$0.4	\$0.0	\$0.1	\$0.2	\$0.1	\$0.9	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$1.0
Unmetered	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Spending	\$4.6	\$22.5	\$0.0	\$7.4	\$8.4	\$6.6	\$49.5	\$1.5	\$1.5	\$1.6	\$4.5	\$3.5	\$57.5
Numbers may not add due to rounding													

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5 Table 4: Settlement Plan – Allocation of 2025 DSM Expenditures by Rate Class (\$ millions)

Program costs by participating rate class													
Program	Efficient Product Rebates RES	Existing Residential	New Residential	Efficient Product Rebates BNI	Custom Incentives	Direct Installation	Total Programs	Education & Outreach	Development & Research	Other Enabling	Total Enabling Strategies	Demand Response	All Costs Combined
Rate Class													
Residential	\$5.2	\$22.0	\$0.0	\$0.6	\$0.1	\$1.1	\$29.0	\$0.9	\$0.8	\$0.9	\$2.6	\$2.8	\$34.5
Small General	\$0.1	\$0.5	\$0.0	\$0.8	\$0.2	\$1.1	\$2.7	\$0.1	\$0.1	\$0.1	\$0.2	\$0.0	\$3.0
General Demand	\$0.1	\$0.6	\$0.0	\$4.7	\$4.0	\$4.1	\$13.4	\$0.4	\$0.4	\$0.4	\$1.2	\$0.8	\$15.4
Large General	\$0.0	\$0.0	\$0.0	\$0.7	\$1.2	\$0.0	\$1.9	\$0.1	\$0.1	\$0.1	\$0.2	\$1.1	\$3.1
Small Industrial	\$0.0	\$0.0	\$0.0	\$0.7	\$0.7	\$0.4	\$1.8	\$0.0	\$0.1	\$0.1	\$0.1	\$0.0	\$1.9
Medium Industrial	\$0.0	\$0.0	\$0.0	\$0.2	\$0.8	\$0.0	\$1.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$1.1
Large Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$1.5	\$0.0	\$2.1	\$0.0	\$0.1	\$0.1	\$0.1	\$0.2	\$2.4
Municipal	\$0.2	\$0.4	\$0.0	\$0.1	\$0.2	\$0.1	\$1.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$1.1
Unmetered	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Spending	\$5.6	\$23.6	\$0.0	\$8.4	\$8.6	\$6.8	\$52.9	\$1.5	\$1.5	\$1.6	\$4.6	\$5.0	\$62.5
Numbers may not add due to rounding													

6

7 (c) Please refer to the Tables 5 to 9, below, for the Alternate Scenario spending by rate class
8 for 2023-2025 and by individual year.

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E1 Responses to Industrial Group (IG) Information Requests
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1 Table 5: Alternate Scenario – Allocation of 2023-2025 DSM Expenditures by Rate Class (\$ millions)

Program costs by participating rate class													
Program	Efficient Product Rebates RES	Existing Residential	New Residential	Efficient Product Rebates BNI	Custom Incentives	Direct Installation	Total Programs	Education & Outreach	Development & Research	Other Enabling	Total Enabling Strategies	Demand Response	All Costs Combined
Rate Class													
Residential	\$13.2	\$51.4	\$0.8	\$1.6	\$0.2	\$3.5	\$70.7	\$2.5	\$2.9	\$2.1	\$7.6	\$2.9	\$81.2
Small General	\$0.2	\$1.5	\$0.0	\$2.1	\$0.6	\$3.4	\$7.8	\$0.3	\$0.3	\$0.2	\$0.8	\$0.1	\$8.8
General Demand	\$0.3	\$1.7	\$0.0	\$12.3	\$11.6	\$12.6	\$38.5	\$1.4	\$1.6	\$1.2	\$4.1	\$1.0	\$43.7
Large General	\$0.0	\$0.0	\$0.0	\$1.8	\$3.4	\$0.0	\$5.3	\$0.2	\$0.2	\$0.2	\$0.6	\$1.2	\$7.1
Small Industrial	\$0.0	\$0.0	\$0.0	\$1.8	\$2.1	\$1.3	\$5.2	\$0.0	\$0.2	\$0.2	\$0.4	\$0.0	\$5.6
Medium Industrial	\$0.0	\$0.0	\$0.0	\$0.4	\$2.4	\$0.0	\$2.8	\$0.0	\$0.1	\$0.1	\$0.2	\$0.1	\$3.1
Large Industrial	\$0.0	\$0.0	\$0.0	\$1.7	\$5.3	\$0.0	\$6.9	\$0.0	\$0.3	\$0.2	\$0.5	\$0.3	\$7.7
Municipal	\$0.4	\$0.9	\$0.1	\$0.3	\$0.6	\$0.3	\$2.6	\$0.1	\$0.1	\$0.1	\$0.3	\$0.0	\$2.9
Unmetered	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1
Total Spending	\$14.1	\$55.6	\$0.8	\$22.1	\$26.2	\$21.1	\$140.0	\$4.5	\$5.8	\$4.2	\$14.5	\$5.6	\$160.1

Numbers may not add due to rounding

2

3 Table 6: Alternate Scenario – Allocation of 2023 DSM Expenditures by Rate Class (\$ millions)

Program costs by participating rate class													
Program	Efficient Product Rebates RES	Existing Residential	New Residential	Efficient Product Rebates BNI	Custom Incentives	Direct Installation	Total Programs	Education & Outreach	Development & Research	Other Enabling	Total Enabling Strategies	Demand Response	All Costs Combined
Rate Class													
Residential	\$3.7	\$16.5	\$0.8	\$0.5	\$0.1	\$1.1	\$22.7	\$0.8	\$0.9	\$0.6	\$2.3	\$0.4	\$25.5
Small General	\$0.1	\$0.5	\$0.0	\$0.7	\$0.2	\$1.1	\$2.6	\$0.1	\$0.1	\$0.1	\$0.3	\$0.0	\$2.8
General Demand	\$0.1	\$0.6	\$0.0	\$4.1	\$3.8	\$4.1	\$12.6	\$0.5	\$0.5	\$0.3	\$1.3	\$0.3	\$14.1
Large General	\$0.0	\$0.0	\$0.0	\$0.6	\$1.1	\$0.0	\$1.7	\$0.1	\$0.1	\$0.0	\$0.2	\$0.4	\$2.3
Small Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$0.7	\$0.4	\$1.7	\$0.0	\$0.1	\$0.0	\$0.1	\$0.0	\$1.8
Medium Industrial	\$0.0	\$0.0	\$0.0	\$0.1	\$0.8	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$1.0
Large Industrial	\$0.0	\$0.0	\$0.0	\$0.5	\$1.7	\$0.0	\$2.2	\$0.0	\$0.1	\$0.1	\$0.1	\$0.1	\$2.5
Municipal	\$0.1	\$0.3	\$0.1	\$0.1	\$0.2	\$0.1	\$0.8	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$0.9
Unmetered	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Spending	\$4.0	\$17.9	\$0.8	\$7.3	\$8.5	\$6.8	\$45.3	\$1.5	\$1.8	\$1.2	\$4.5	\$1.3	\$51.1

Numbers may not add due to rounding

4

5 Table 7: Alternate Scenario – Allocation of 2024 DSM Expenditures by Rate Class (\$ millions)

Program costs by participating rate class													
Program	Efficient Product Rebates RES	Existing Residential	New Residential	Efficient Product Rebates BNI	Custom Incentives	Direct Installation	Total Programs	Education & Outreach	Development & Research	Other Enabling	Total Enabling Strategies	Demand Response	All Costs Combined
Rate Class													
Residential	\$4.3	\$17.4	\$0.0	\$0.5	\$0.1	\$1.2	\$23.4	\$0.8	\$1.0	\$0.8	\$2.6	\$1.1	\$27.1
Small General	\$0.1	\$0.5	\$0.0	\$0.7	\$0.2	\$1.1	\$2.6	\$0.1	\$0.1	\$0.1	\$0.3	\$0.0	\$2.9
General Demand	\$0.1	\$0.6	\$0.0	\$4.1	\$3.9	\$4.2	\$12.8	\$0.5	\$0.6	\$0.4	\$1.4	\$0.3	\$14.5
Large General	\$0.0	\$0.0	\$0.0	\$0.6	\$1.1	\$0.0	\$1.8	\$0.1	\$0.1	\$0.1	\$0.2	\$0.3	\$2.2
Small Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$0.7	\$0.4	\$1.7	\$0.0	\$0.1	\$0.1	\$0.1	\$0.0	\$1.9
Medium Industrial	\$0.0	\$0.0	\$0.0	\$0.1	\$0.8	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$1.0
Large Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$1.8	\$0.0	\$2.3	\$0.0	\$0.1	\$0.1	\$0.2	\$0.1	\$2.6
Municipal	\$0.1	\$0.3	\$0.0	\$0.1	\$0.2	\$0.1	\$0.8	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$0.9
Unmetered	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Spending	\$4.6	\$18.8	\$0.0	\$7.3	\$8.7	\$7.0	\$46.5	\$1.5	\$2.0	\$1.5	\$5.0	\$1.8	\$53.2

Numbers may not add due to rounding

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E1 Responses to Industrial Group (IG) Information Requests
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1 Table 8: Alternate Scenario – Allocation of 2025 DSM Expenditures by Rate Class (\$ millions)

Program costs by participating rate class													
Program	Efficient Product Rebates RES	Existing Residential	New Residential	Efficient Product Rebates BNI	Custom Incentives	Direct Installation	Total Programs	Education & Outreach	Development & Research	Other Enabling	Total Enabling Strategies	Demand Response	All Costs Combined
Rate Class													
Residential	\$5.2	\$17.5	\$0.0	\$0.6	\$0.1	\$1.2	\$24.5	\$0.9	\$1.0	\$0.8	\$2.6	\$1.4	\$28.6
Small General	\$0.1	\$0.5	\$0.0	\$0.7	\$0.2	\$1.2	\$2.7	\$0.1	\$0.1	\$0.1	\$0.3	\$0.0	\$3.0
General Demand	\$0.1	\$0.6	\$0.0	\$4.2	\$4.0	\$4.3	\$13.2	\$0.5	\$0.5	\$0.4	\$1.4	\$0.4	\$15.0
Large General	\$0.0	\$0.0	\$0.0	\$0.6	\$1.2	\$0.0	\$1.8	\$0.1	\$0.1	\$0.1	\$0.2	\$0.5	\$2.5
Small Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$0.7	\$0.4	\$1.8	\$0.0	\$0.1	\$0.1	\$0.1	\$0.0	\$1.9
Medium Industrial	\$0.0	\$0.0	\$0.0	\$0.1	\$0.8	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$1.1
Large Industrial	\$0.0	\$0.0	\$0.0	\$0.6	\$1.9	\$0.0	\$2.4	\$0.0	\$0.1	\$0.1	\$0.2	\$0.1	\$2.7
Municipal	\$0.2	\$0.3	\$0.0	\$0.1	\$0.2	\$0.1	\$0.9	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$1.0
Unmetered	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total Spending	\$5.6	\$19.0	\$0.0	\$7.5	\$9.0	\$7.2	\$48.3	\$1.5	\$2.0	\$1.5	\$5.0	\$2.6	\$55.9
Numbers may not add due to rounding													

- 2
- 3 (d) Please refer to E1's response to IG IR-17 regarding a scenario where the low-income
- 4 funding is set at 12% of the investment.

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Request IR-26:

Reference: EfficiencyOne 2023-2025 DSM Resource Plan Filing, Appendix A, Page 117, Table 55 and Table 56, Page 118 (Page 216/584 of PDF)

Description of Direct Load Control: “Customers receive an annual payment to participate in DR events.”

(a) What is E1’s current thinking as to how the credits will be set and the likely level?

(b) Would the credit be the same for Residential and BNI customers? If not, what is the reason for any difference?

Response IR-26:

(a) Draft incentive levels are set out in the Demand Response Roadmap (Appendix A, Attachment 5 of EfficiencyOne’s (E1) 2023-2025 DSM Plan Application).

Incentive levels are based on the value the resource provides (capacity) and what incentive is required to recruit, engage, and retain customers based on Guidehouse’s demand response experience.

(b) As outlined in the Demand Response Roadmap, incentive levels for direct load control water heaters are the same for Business, Non-Profit & Institutional (BNI) and residential customers on the basis that the capacity available is the same. BNI customers receive a higher incentive for smart thermostat direct load control because it is assumed the load controlled will be greater for BNI customers. Please refer to E1’s response to Synapse IR-

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- 1 24, specifically Attachment 1 (DR model inputs) for additional details on the assumptions
- 2 used.

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Request IR-27:

Reference: Customers receive an annual payment to participate in DR events Appendix A, Page 118, Table 56 (Page 216/584 of PDF)

Re Program Component Pathways: BNI Customers will receive *“additional energy payment (\$/kWh) based on actual energy reduced during DR events.”*

(a) How will these additional payments be calculated? Please give examples based on actual costs.

(b) Will such payments also be made to Residential customers? If no, why not.?

(c) How will NS Power recover the amounts paid?

Response IR-27:

(a) The \$/kWh payment referenced refers to the Business, Non-Profit & Institutional (BNI) curtailment demand response (DR) offering. The primary incentive for BNI curtailment is proposed to be a \$88/kW-year capacity payment based on either nominated or performed load reduction. BNI curtailment offerings will at times also have an energy payment (\$/kWh) in addition to the capacity payment; however, this was not included as part of Guidehouse’s final DR modelling, and all incentives are included as a capacity payment.

An incentive payment is typically calculated by a customer’s actual performance during event days based on an “X of Y prior days” analysis, which compares event load to the same hours on specified prior days with an adjustment for same-day load prior to the event. If

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no events are called the customer would typically be compensated based on their nominated load. Incentive payment structure, and measurement and verification (M&V) plan will be finalized as part of the implementation plan for demand response pending Nova Scotia Utility and Review Board (NSUARB) approval of the 2023-2025 DSM Plan.

As an example of an incentive calculation, if a customer had an average verified load reduction of 1,000 kW over all events in a year, they would receive an incentive payment of \$88,000 for that year (\$88/kW-year X 1,000 kW). Please note, this is an illustrative example only, program details will be refined during implementation planning.

Please refer to the Demand Response Roadmap (Appendix A, Attachment 5, Table 16 of EfficiencyOne's (E1) 2023-2025 DSM Plan Application) for more details on the BNI curtailment offering.

- (b) No, residential customers are not eligible for BNI curtailment. BNI curtailment is a pathway tailored to the needs of larger BNI customers. Specific DR pathways tailored for residential needs have also been included in the DR program. Residential customers may receive incentive payments in other DR offerings such as direct load control, behind the meter battery control, and electric vehicle charging control. These incentives may be a set \$/year amount or based on a \$/kW-year controlled.

Please refer to the Demand Response Roadmap (Appendix A, Attachment 5, Section 3.2 of E1's 2023-2025 DSM Plan Application) for more details on all DR offerings.

- (c) E1 expects NS Power will recover E1 expenditures on demand response programs in the same manner they recover other DSM costs.

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Request IR-28:

Reference: Evidence Appendix A, Page 121(Page 219/584 of PDF), Table 57, footnote e and Page 123 (Page 221/584 of PDF), Table 59

(a) Please provide the calculations and source material for the 10—Year Levelized Unit Cost of \$229.59/kW/year. (Table 57)

(b) What is the relationship, if any, between this levelized cost and the payments to DR customers?

(c) Please provide the calculations and source material for the 10—Year Levelized Unit Cost of \$214.68/kW/year. (Table 59)

Response IR-28:

(a) Please refer to Attachment 1 (filed electronically) to this IR response (cell D14).

(b) The levelized cost includes all costs related to administering a demand response program, including incentives. Attachment 1 to this IR response includes a separate levelized cost of incentives only. For the Settlement Plan, the levelized cost of incentives is \$87.3/kW-year or 38% of costs. For the Alternate Scenario, the levelized cost of incentives is \$70.2/kW-year or 33% of costs.

For additional information on planned demand response (DR) incentives, please refer to the Demand Response Roadmap (Appendix A, Attachment 5 of EfficiencyOne’s 2023-2025 DSM Plan Application).

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- 1 (c) Please refer to Attachment 1 (filed electronically) to this IR response (cell D23).

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Request IR-29:

Reference: Evidence Appendix A, Attachment 2L Avoided Costs Brief, Page 3, Table 2 (Page 260/584 of PDF)

What is E1's understanding of the reason(s) that avoided energy cost decreases from 2023 (\$92/MWh) to 2024 (\$65/MWh)?

Response IR-29:

Please refer to EfficiencyOne's response to NSUARB IR-13.

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Request IR-30:

Reference: Evidence Appendix A, Attachment 4

(a) Please provide a copy of the workbook with formulas intact.

(b) For every measure that has a TRC ratio of 3.00 or higher, please explain in detail how E1 determined the incentive to pay to customers.

(c) Has E1 calculated the direct electric bill saving to the customer of each measure? If not, why not?

(d) Has E1 calculated the direct non-electric bill saving to the customer of each measure? If not, why not?

Response IR-30:

(a) Please refer to EfficiencyOne's (E1) response to SBA IR-19.

(b) E1 did not follow a distinct process for incentive development that was particular to those measures with a Total Resource Cost (TRC) test result of greater than 3.00. The development process for all incentives, as described in the application was as follows:

"...incentives were set to current levels with the exception of new initiatives and instances where incentives were adjusted to account for future expectations or program activity goals (e.g. greater online activity within residential Instant Savings or increased incentive planned to increase participation in Custom). A financial simulation was applied to all incentives as

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1 *part of DSM Plan development, which analyzed incentive levels against thresholds*
2 *contained in the Incentive Setting Methodology, as accepted by the NSUARB in 2017.”¹*
3

4 E1 has relied on its internal subject matter expertise when accounting for changes in future
5 expectations relative to existing incentives. These incentive reviews were conducted as
6 part of the internal review processes conducted as part of Plan development and occurred
7 multiple times throughout the Plan development Process.

8
9 In terms of the financial simulation conducted, the three thresholds analyzed as part of this
10 work consisted of:

- 11 1. incentive level relative to retail cost;
12 2. incentive level relative to incremental costs; and
13 3. first-year unit cost of measure.

14
15 Please refer to E1’s response to IPOANS IR-02 for additional information.
16

17 (c) E1 has calculated the aggregate electric bill savings resulting from implementation of the
18 2023-2025 DSM Plan, inclusive of the impacts of DSM program cost recovery, avoided
19 utility costs, and the reallocation of fixed utility costs, as developed in E1’s Rate and Bill
20 Impact Analysis (RBIA). The RBIA is the established methodology, which is subject to
21 stakeholder review, for estimating customer bill savings from DSM. This analysis is
22 contained as Appendix B of E1’s 2023-2025 DSM Resource Plan Application.

23
24 (d) Please refer to part (c) of this IR response.

¹ 2023-2025 DSM Resource Plan Application, Appendix A, Table 4, pages 25-26 of 149.

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Request IR-31:

Reference: Evidence Appendix A, Attachment 4

(a) Please identify any measures for which the incentive payment has changed from the time of the previous plan filing and this one and state the basis for the change.

(b) Do the incentives change in any way in the Preferred Plan, Alternate Scenario or Settlement Plan? Please explain.

Response IR-31:

(a) Please refer to Attachment 1 (filed electronically) of this IR response for a list of all measures and incentives from the 2020-2022 DSM Plan, the 2023-2025 Settlement Plan, and the 2023-2025 Alternate Scenario.

The program component naming conventions from the 2023-2025 DSM Plan are used for all measures to allow for simpler comparison; however, please note some measure characterizations and unit bases may have changed between Plans, which hinders direct comparison in some cases. For example, “Case Lighting for Sign Retrofits” through Business Energy Rebates had a unit basis of “Per 50 feet” in the 2020-2022 Plan, but a unit basis of “Per 100 feet” in the 2023-2025 Plan; it therefore appears twice in the table. Likewise, “Cold Climate Air-Source Heat Pump (24kBTU/hr)” in Business Energy Rebates was modeled as a single measure in the 2020-2022 Plan but is represented by six measures in the 2023-2025 DSM Plan (one central, two ductless, two multi-zone, and one single-package variant); it therefore appears on seven rows in the table.

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1 For all 2023-2025 measures, current incentive levels (at the time of DSM Plan preparation)
2 were used as a starting point for the analysis. Many incentives have changed since the
3 2020-2022 DSM Plan was modeled, as EfficiencyOne (E1) adapted to changing product
4 prices, market response to incentives, and evaluation results. This explains a portion of the
5 changes between the two Plans. Additionally, 2023-2025 incentives were adjusted to drive
6 desired levels of participation for each measure. This was done in part through Program
7 Manager estimation of what incentive levels may be required to achieve the desired
8 participation levels, as well as some limited adjustments using price elasticity estimates to
9 match program-level savings and investments to Settlement Agreement amounts, as
10 described in part (b).

11
12 (b) E1 developed both the Preferred Plan and Alternate Scenario through an extensive
13 stakeholder process. As a result of this effort, in February 2022, stakeholders and E1 were
14 able to gain alignment on one Plan, now referred to as the Settlement Plan, that replaced
15 E1's Preferred Plan. For that reason, the Preferred Plan in this IR response has been
16 replaced with the Settlement Plan.

17
18 In some instances the incentives differ between the Settlement Plan and the Alternate
19 Scenario to reflect different levels of desired participation. In these cases, the Settlement
20 Plan used existing reviewed incentives for program components from the former Preferred
21 Plan, previously developed. Two program components had small changes in participation
22 and incentives relative to both the draft Preferred Plan and Alternate Scenario. These
23 changes assumed a linear change to participation with a given change in incentive about
24 the previous program component operating point. The Alternate Scenario incentive levels
25 are included in Attachment 1 (filed electronically) of this IR response.

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Request IR-32:

In M10431 NSPI filed an Application for approval of Certain Revisions to its Rates, Charges and Regulations (filed January 27, 2022). Proposed Rate percentage increases for 2022-2024 are found as follows, and assume \$40 million in DSM spending for 2022:

	2022	2023	2024
Domestic Service Tariff			
Fuel	0.0%	0.0%	0.0%
Non-Fuel	3.3%	3.3%	3.2%
Total	3.3%	3.3%	3.3%
Small General Tariff			
Fuel	0.4%	0.3%	0.3%
Non-Fuel	3.3%	3.4%	3.4%
Total	3.7%	3.7%	3.8%
General Tariff			
Fuel	1.7%	1.7%	1.7%
Non-Fuel	2.4%	2.4%	2.4%
Total	4.0%	4.0%	4.0%
Large General Tariff			
Fuel	1.8%	1.8%	1.8%
Non-Fuel	3.4%	3.4%	3.5%
Total	5.2%	5.2%	5.3%
Small Industrial Tariff			
Fuel	0.6%	0.6%	0.5%
Non-Fuel	4.5%	4.7%	4.9%
Total	5.1%	5.3%	5.4%
Medium Industrial Tariff			

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	2022	2023	2024
Fuel	1.6%	1.5%	1.5%
Non-Fuel	4.0%	4.1%	4.2%
Total	5.6%	5.7%	5.7%
Large Industrial Tariff			
Fuel	3.2%	3.3%	3.4%
Non-Fuel	0.1%	0.1%	0.1%
Total	3.4%	3.4%	3.5%
Other Classes			
Fuel	-0.4%	-0.4%	-0.3%
Non-Fuel	0.5%	0.6%	0.8%
Total	0.1%	0.3%	0.4%
Total FAM Classes			
Fuel	0.7%	0.8%	0.8%

(a) What are the cost implications of the proposed increase in DSM costs, DSM allocation and recovery? Please explain and provide supporting workpapers.

(b) If NSPI's proposed increases are accepted as proposed, what are the implications for E1's proposed 2023-2025 DSM Plan? If there are implications, please provide revised Preferred Plan and Alternate Scenario in tabulated format.

(c) Has E1 considered enhanced Program offerings to industrial categories given they face the highest fuel-related percentage increases in the period 2022-2024? If so how?

Response IR-32:

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- (a) EfficiencyOne's (E1) understanding is that NS Power has proposed the recovery of DSM costs through the re-introduction of a rate rider. E1 does not have the information of what, if any, DSM costs NS Power has included in the table included in this IR.
- (b) E1 understands that the level of DSM investment to be recovered from ratepayers by NS Power will be approved separately by the Nova Scotia Utility and Review Board (NSUARB) through Matter No. M10473 – E1's 2023-2025 DSM Plan Application, not through Matter No. M10431 – NS Power's General Rate Application, filed January 27, 2022.
- (c) E1's DSM 2023-2025 Plan continues to offer dedicated program components and other support and resources that help industrial customers in saving on electricity bills. These bill savings help to offset any rate increases, as shown in the table below.

Category	Description of Target Segment	Dedicated Program Components	Other Support & Resources
Industrial	Industrial includes businesses that produce goods within Nova Scotia, such as: • aquaculture • agriculture • paper • lumber • mining • fabrications • food/beverage processing • other manufacturing sectors	• Strategic Energy Management & Energy Management Information Systems • Custom – Retrofit, Building Optimization and New Construction • Business Energy Rebates • BNI Demand Response	• Industrial Energy Managers (IEMs) – large industrial performance-based incentives • OEMs • EPP network • BDM dedicated to industrial sectors • compressed air audit • trade shows

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Request IR-33:

(a) With respect to the proposed 2023-2025 DSM Plan, please provide a list of the Programs, and identify the measure changes by Program as compared to the last Plan Application.

(b) Please explain the rationale for changes in measures.

Response IR-33:

(a) Please refer to Attachment 1 of EfficiencyOne's (E1) response to IG IR-31.

(b) Please refer to Attachment 1 of E1's response to IG IR-31, as well as to Section 1.3.1 of Appendix A (pages 9-10 of 149) in E1's 2023-2025 DSM Plan Application.

Differences in measures between the proposed 2023-2025 DSM Plan and the previous 2020-2022 DSM Plan generally fall into three categories:

- measures that have been added to the portfolio since the time of 2020-2022 DSM Plan preparation, or are planned to be added over the 2023-2025 timeframe;
- measures that have been removed since the time of 2020-2022 DSM Plan preparation, or are planned to be removed over the 2023-2025 timeframe; and
- measures that exist in both Plans but under different characterizations.

E1 regularly adds measures throughout an approved DSM Plan as new technologies become available and gain the potential of producing cost-effective savings. Refer to Table 1 of Appendix A (page 10 of 149) in E1's 2023-2025 DSM Plan Application for an overview of new initiatives and key enhancements in the 2023-2025 DSM Plan, with references to sections containing more detail on each new initiative or enhancement. E1 also removes

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1 measures when they no longer provide cost-effective savings, they no longer require
2 support for adoption, or for other strategic advantages to the portfolio.

3
4 When performing measure characterizations for input into the DSM Plan model, E1 makes
5 decisions that balance a desire for accuracy with the cost of acquiring more granular
6 estimates. In most cases, where the choice of measure characterization for 2023-2025
7 differs from 2020-2022, it is because E1 modeled the current plan with a higher degree of
8 granularity than the previous Plan. This more granular modeling is reflective of the higher
9 degree of changes and program evolution that E1 is undertaking with the current Plan,
10 relative to the previous Plan, as well as the more detailed historical tracking data that E1
11 had available for preparation of this Plan compared to the previous Plan.