M12780

NOVA SCOTIA ENERGY BOARD

IN THE MATTER OF: ***The Public Utilities Act***

– and –

IN THE MATTER OF: **An Application by EfficiencyOne for approval of the 2027–2031 Demand-Side Management (DSM) Purchase Agreement between EfficiencyOne and Nova Scotia Power Inc., the establishment of a final agreement between the parties, and approval of a 2027–2031 Demand-Side Management (DSM) Resource Plan.**

DIRECT TESTIMONY

OF

THEODORE M. LOVE
GREEN ENERGY ECONOMICS GROUP, INC.

on behalf of

The Consumer Advocate

June 23, 2026

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I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.?

A. My name is Theodore M. Love, and I am a partner at Green Energy Economics Group, Inc. ("GEEG"), an energy consulting firm founded in 2005. My office address is 2534 Downingsville Rd, Lincoln, Vermont.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. My testimony is submitted on behalf of the Consumer Advocate ("CA").

Q. PLEASE BRIEFLY DESCRIBE YOUR QUALIFICATIONS?

A. I have been involved in the review and preparation of natural gas and electric energy efficiency plans, as well as potential studies and cost-effectiveness analyses, in nearly a dozen states, three Canadian Provinces, and China, since I began working with GEEG in 2007. My educational background and relevant experience are set forth in my resume attached as Exhibit TML-1 to my testimony.

Q. PLEASE DESCRIBE YOUR WORK WITH ENERGY EFFICIENCY AND CONSERVATION PLANS IN CANADA.

A. I have represented the Consumer Advocate on the Demand Side Management Advisory Group ("DSMAG") and reviewed EfficiencyOne's ("E1") DSM plans and reports since 2019. I have also presented evidence before the Ontario Energy Board on Enbridge Gas' Energy Efficiency Plan (EB-2021-0002) on behalf of the Small Business Utility Alliance.

Previously I have reviewed and analyzed a number of plans for electric and gas efficiency programs in British Columbia since 2007. I supported preparation of testimony regarding BC Hydro's 2006, 2008, and 2012 Integrated Electricity Plan and Long-Term Acquisition Plans; demand-side management ("DSM") plans by Terasen Gas in October

2008, and, in November 2011, by its successor, Fortis Energy Utilities BC Gas. I also worked on testimony regarding FortisBC Electric's DSM Plan in March 2012.

Q. HAVE YOU PRESENTED TESTIMONY IN PROCEEDINGS BEFORE THIS OR OTHER REGULATORY BOARDS?

A. Yes. In Nova Scotia, I have previously provided evidence on EfficiencyOne's 2023 to 2025 DSM Plan (Matter No. M10473) and 2020 to 2022 DSM Plan (Matter No. M09096) as well as issues related to time varying pricing (Matter No. 12499) . I have also provided expert evidence in Ontario, Massachusetts, Maryland, California, and Pennsylvania.

Q. ARE YOU SPONSORING ANY EXHIBITS?

A. Yes, I am sponsoring the following exhibits:

1. Exhibit TML-1 –Resume of Theodore M. Love
2. Exhibit TML-2 – Non-Participant Bills (IRP vs. Preferred)
3. Exhibit TML-3 – Unit Acquisition Costs
4. Exhibit TML-4 –ACEEE Benchmark Acquisition Costs

Q. PLEASE PROVIDE A SUMMARY OF YOUR TESTIMONY.

A. My testimony begins with a discussion of two DSM plan governance issues; the mid-term check-in and mid-course adjustment process. I then discuss what the appropriate savings targets should be for the plan overall and for low-income customers specifically. Next, I discuss what affordability means in the context of the DSM Portfolio as well as E1's rising unit costs and how they should be addressed. Finally, I turn to program specific issues, including how E1 should address pre-weatherization barriers, residential heat pumps, demand responses programs, and the inclusion of solar-PV in the program.

II. MID-TERM CHECK-IN

Q. WHAT IS E1 PROPOSING FOR A MID-TERM CHECK-IN PROCESS?

A. E1 proposes a mid-term Demand Side Management Advisory Group ("DSMAG") session in the first quarter of 2029, supplemented by annual DSMAG sessions, one-on-one stakeholder meetings, and expanded cumulative reporting.[1] E1 is explicit that the check-in is informational only: it "does not constitute a plan amendment proceeding or create any obligation for E1 to seek plan amendments,"[2] and "as the franchise holder, E1 retains full discretion to determine whether to propose and seek NSEB approval of an amendment."[3]

Q. DO YOU SUPPORT THE STRUCTURE OF THE MID-TERM CHECK-IN?

A. I support the transparency and engagement elements, including the mid-term session, the annual sessions, the one-on-one meetings, and the cumulative reporting. My concern is not with the proposed mid-term check-in, but with the absence of any trigger that would require E1 to revisit the Plan when conditions materially change. This should be better addressed through the Mid-Course Adjustment ("MCA") process.

III. MID-COURSE ADJUSTMENT PROCESS

Q. WHAT DID THE NSUARB DETERMINE REGARDING THE MCA PROCESS.

A. In its decision on the 2026 DSM Extension (M12249), the Board found the existing MCA process "unbalanced" and directed E1 to revise it. The Board wrote that "the potential for E1 to proceed with relatively unrestrained changes to ensure it meets its own performance targets and objectives at the cost of hardship and prejudice to the rate classes

[1] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence, pp. 64-66 of 71; E1 Response to Synapse M12780, Exh. E-16), IR-72, pp. 2-4 of 7.
[2] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence, p. 66 of 71.
[3] E1 Response to Synapse (M12780, Exh. E-16), IR-72, p. 6 of 7.

who are funding E1's work needs to be revisited, particularly now that its DSM Plans will only be reviewed every five years," and that ratepayers "need more opportunity to consider and object to these changes before they are made."[4] That direction frames the question before the Board: whether E1's redesigned process actually rebalances flexibility toward ratepayer protection over a five-year term.

Q. WHAT DOES E1 PROPOSE IN RESPONSE THE BOARD'S DIRECTIVE ON MCAS?

A. E1 proposes to lower the threshold that triggers an explanation for program-level spending and savings changes from 25% to 20%; introduce a 15% threshold for rate-class spending changes; circulate draft MCAs to the DSMAG for a two-week comment period before filing them in its Q1 report; and add MCAs as an agenda item at the annual DSMAG session.[5] E1 confirms it is "not proposing an additional regulatory process specific to the MCA" and would continue to file MCAs in its Q1 report.[6]

Q. DO YOU SUPPORT THE PROPOSED APPROVAL PROCESS FOR MCAS?

A. No. Without explicit Board approval for an MCA, the proposed process is just a rubber stamp for E1 to "proceed with unrestrained changes"[7]. While I can appreciate that a fully litigated plan filing process may not be necessary to address an MCA, I recommend that Board approval or denial should be given on the limited modification provided in an MCA within an expedited timeframe, with intervenors given a chance to weigh in on modifications within 30 days to help inform, and then Board to provide an explicit approval or denial of the MCA as soon as possible therafter.

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[4] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence, pp. 61-62 of 71.
[5] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence, p. 64 of 71.
[6] E1 Response to NSEB (M12780, Exh E-12), IR-30, p. 5 of 6.
[7] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1). Evidence, pp. 61-62 of 71.

Q. DO YOU SUPPORT THE PROPOSED THRESHOLD VALUES AND REPORTING ENHANCEMENTS?

A. Yes. The 20% program-level and 15% rate-class thresholds are reasonable values, and I support the enhanced reporting, including mid-year and cumulative reporting against the five-year targets. My concerns are not with these values but with how the thresholds operate and with what these thresholds require E1 to do or not to do.

Q. IS THE 15% RATE-CLASS THRESHOLD APPLIED ANNUALLY OR CUMULATIVELY?

A. The Application does not specify whether the threshold applies annually or cumulatively; it simply proposes "a spending threshold of 15% for rate class spending changes that require explanations."[8] In response to CA IR-15(c), E1 clarified that "the 15% threshold is intended to be cumulative for the DSM Plan period."[9] I support that clarification, and I recommend the Board confirm it on the record, since an annually applied rate-class collar would be less than ideal.

Q. WHY WOULD AN ANNUALLY APPLIED RATE-CLASS COLLAR BE UNWORKABLE?

A. Rate-class spending can vary more than 15% from year to year. In the 2016–2024 data E1 filed as Attachment 1 to CA IR-15, single-year variances against plan included +117% for the Small General class (2021), −66% for the Large General class (2024), and a swing from +71% to −74% for the Municipal class.[10] Custom Business, Non-profit and Institutional ("BNI") projects can take up to two years to complete, so a single large project slipping from one year into the next can move a small rate class outside a 15%

[8] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence p. 64 of 71.
[9] E1 Response to Consumer Advocate (M12780, Exh. E-7) IR-15, p. 2 of 2.
[10] E1 Response to Consumer Advocate (M12780, Exh. E-7) IR-15, Attachment 1 (Historical Expenditures by Rate Class, 2016-2024).

band through no failure of program design. An annually applied collar would therefore trigger near-continuous MCA filings, undercutting the Legislature's stated purpose in moving to five-year plans, which was to "save time, money, and resources by reducing the frequency of full regulatory proceedings."[11]

In addition, an annual collar could make it difficult to utilize unspent money in future years, since any unspent funds that are carried forward would need to be less than the annual collar percent of the next years budgets to avoid another MCA. If E1 is held to series of annual collars on spending, there is a real risk that savings could continue to fall further and further behind, and the gap needed to reach economically optimal levels of savings as identified in the Integrated Resource Plan ("IRP") would be wider and wider.

Q. BESIDES THE PROPOSED THRESHOLDS, WHAT DO YOU THINK SHOULD TRIGGER AN MCA?

A. The Preferred Plan deliberately acquires only 64% of the IRP-identified DSM savings, which E1 characterizes as maintaining a "trajectory" toward IRP levels.[12] If a new IRP confirms, or even increases, the level of cost-effective DSM that serves ratepayers' long-term interest, nothing in E1's proposal requires E1 to adjust the Plan to capture it. E1 states that IRP outcomes "have not automatically triggered amendments to a DSM Plan in the past" and that it would consider whether such outcomes "may be more useful in informing the next DSM Plan."[13] In other words, a finding that ratepayers are leaving cost-effective savings on the table could be deferred for years, at which point the any potential studies or IRP forecasts may be stale. Since cost-effective DSM is a least-cost

[11] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence p. 65 of 71.
[12] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1), p. 27 of 71.

resource, deferral forces Nova Scotia Power to acquire higher-cost supply instead, and the foregone first-year savings opportunities cannot be easily, or cheaply, recovered. I recommend that E1 should file an MCA to address any material change to optimal DSM resource acquisition levels identified in the Evergreen IRP process. A material change would be cumulative DSM savings levels that are more than 20% away from currently approved levels over the current plan horizon.

Q. DO YOU HAVE ANY OTHER CONCERNS REGARDING THE MCA PROCESS?

A. Yes. The proposed thresholds operate at the program and rate-class level but do not address one of the most persistent areas of under-delivery that E1 has had over the past two plan terms. Specially, E1's underperformance in reaching its planned low-income savings, as illustrated by Figure 3 and discussed further in Section V. In order to address this past performance issue through the proposed MCA process, I recommend that E1 consolidate its dedicated low-income energy efficiency program components[14] under a single "Low Income Program" that is then subject to the program-level threshold trigger of 20%.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS REGARDING THE E1'S PROPOSED MCA PROCESS.

A. I respectfully recommend that the Board:

- **Require explicit Board approval for any MCA filing**. To expedite this process, intervenors should be given 30 days to provide comments on any

[14] Affordable Single Family, Affordable Multifamily, Mi'kmaw New Home Construction, and Mi'kmaw Home Energy Efficiency Project

MCAs, after which the Board would issue its decision on the filing as soon as is feasible thereafter.

- **Direct E1 to modify the Standard Filing Framework ("SFF") to clarify the cumulative nature of the collars.** This should establish that E1's plan goals are for the entirety of the term, and that unspent funding in early years can be used in later years to make sure that investment and associated savings are not lost.
- **Update the SPP to include an MCA filing trigger to address updated IRP projections.** Any findings from the Evergreen IRP process that identify optimal DSM resource acquisition levels that are more than 20% away from the existing DSM Plan over its remaining term should require an MCA filing.
- **Direct E1 to consolidate the dedicated low-income program components into a single "Low Income Program" that is then subject to the MCA threshold.** E1 should group the Affordable Single Family, Affordable Multifamily, Mi'kmaw New Home Construction, and Mi'kmaw Home Energy Efficiency Project components into this new program so that investment in dedicated low-income programs can be more closely monitored and so significant underinvestment can trigger an MCA.

IV. PLAN SCENARIOS AND SAVINGS TARGETS

Q. DOES E1 HAVE A LEGISLATIVELY MANDATED SAVINGS TARGET?

A. No. Unlike other jurisdictions in North America that have defined energy savings targets, usually established through an Energy Efficiency Resource Standards ("EERS"), E1 utilizes a Standardized Filing Framework ("SFF") to help guide its plan design and savings targets. The SFF was established through a Consensus Agreement with multiple

intervenors Matter Number M10473 and the Consensus Agreement was subsequently approved by the Nova Scotia Utility and Review Board ("NSUARB") on October 7, 2015.[15] The SFF has been updated multiple times since its initial creation, including a number of changes that are proposed in the current DSM Plan application.

Q. WHAT GUIDANCE DOES THE SFF PROVIDE REGARDING SAVINGS TARGETS?

A. The SFF directs E1 to provide a Preferred Plan that is informed by the level of DSM savings identified in NS Power's Integrated Resource Plan ("IRP"). The current IRP is NS Power's 2022 Evergreen IRP, which identifies 683.1 GWh of energy savings and 123.9 MW of demand savings from energy efficiency over 2027–2031, plus 44.3 MW of demand response available capacity, which is equivalent to approximately 1.2% of annual load.[16]

Q. DID E1 UTILIZE THE IRP SAVINGS LEVELS FOR ITS PREFERRED PLAN?

A. No. Instead, E1 commissioned APEX Analytics to recommend a savings target range. APEX conducted a weighted jurisdictional scan based on climate, building stock, energy pricing, and socioeconomic similarity. APEX recommended a target range of 0.8%–1.0% of load, with a weighted-average point estimate of 0.90%.[17] E1 chose the bottom of this range (0.8%), citing short-term affordability concerns and rising per-unit acquisition costs[18].

[15] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). Appendix F. p. 3
[16] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). Evidence, p. 21-22
[17] E1 Response to NSEB (M12780) IR-08, Attachment 1
[18] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). p. 22

Q. WHAT SCENARIOS DOES E1 PRESENT IN ITS APPLICATION?

A. E1 presents two scenarios: its Preferred Plan and an Alternate Scenario. The Preferred Plan invests $318.75 million over 2027–2031 and acquires 435.4 GWh of energy-efficiency savings[19]. The Alternate Scenario invests slightly less, $308.4 million, and appears to hold energy-efficiency savings at the same level as the Preferred Plan while eliminating the Eco Shift demand-response component.[20] This means that both of E1's preferred and alternate scenarios deliver identical energy-efficiency savings, but the Alternate is a lower-cost variant with lower demand response projections, not a lower energy savings target.

Q. WHAT DO THE SAVINGS TARGETS FOR THE PREFERRED PLAN LOOK LIKE?

A. The following table provides savings as a percentage of sales for each year in the planning window

Table 1. Projected First-Year Energy Efficiency Savings by Year as a Percentage of Sales[21]

Year	First-Year Net Savings (GWh)	NS Power Load Forecast (GWh)	% of Load
2027	121	11,193	1.1%
2028	101	11,226	0.9%
2029	78	11,159	0.7%
2030	70	11,130	0.6%
2031	65	11,125	0.6%
5-Year Average	**87**	**11,167**	**0.8%**

[19] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). p. 55
[20] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). p. 67
[21] E1 Response to NSEB (M12780, Exh E-12) IR-10

The Preferred Plan presents a five-year cumulative average of 0.8% of NS Power's annual load with much of those savings front-loaded. By year five, the Preferred Plan delivers first-year savings equivalent to only 0.6% of load, which is half of E1's stated long-term IRP goal of 1.2%, and below the bottom of E1's benchmarking range of 0.8%–1.0% range. E1's Application acknowledges that its Preferred Plan's 435.4 GWh represents only 64 percent of the IRP-identified level.[22] As Figure 1 below shows, E1's proposed savings fall below even the Low profile (475 GWh) from E1's 2019 DSM Potential Study that the IRP is based on.

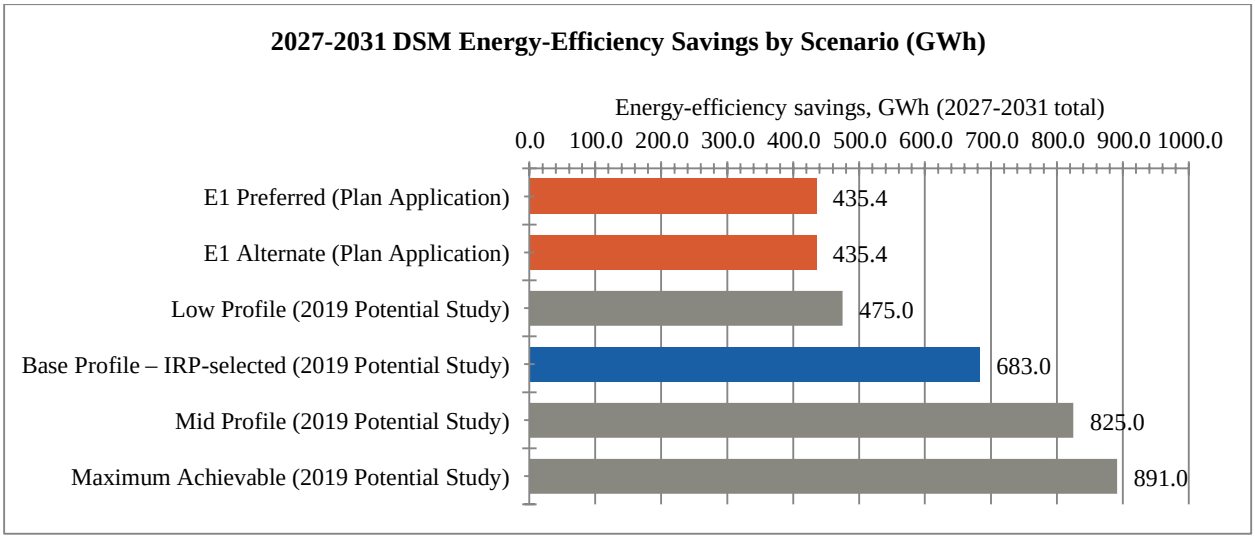

Figure 1. 2027–2031 DSM energy-efficiency savings by scenario (GWh). [23]

Q. WHY IS IT IMPORTANT THAT THE 2020 IRP SELECTED THE "BASE PROFILE" LEVEL OF SAVINGS?

A. It is important because the IRP chose that level on economic grounds. The IRP found that DSM energy-efficiency programs in the range of the Base profile are "shown to be most economic relative to other options evaluated under the primary IRP metric of 25-year

[22] E1. 2027-2031 DSM Plan Application (M12780, Exh. E-1). p. 27

[23] E1 2027-2031 DSM Plan Application, Matter M12780: Preferred and Alternate; 2019 DSM Potential Study, Matter M08929, Exhibit N-1(iv), Appendix F: Low, Base, Mid, Maximum Achievable; Base profile selected by the IRP, Matter M08929, Exhibit N-9.

NPV of Revenue Requirement (with end effects)."[24] The 2020 IRP describes one of its purposes as determining "the most economic range of DSM programs to be pursued in future DSM procurement processes."[25] The Base level is therefore not a stretch target but the level the integrated planning process found least-cost for ratepayers over the long term.

Q. GIVEN THAT THE 2019 POTENTIAL STUDY IS OVER SIX YEARS OLD, AND THE LAST IRP UPDATE USING IT IS ALSO FROM 2020, CAN WE STILL USE IT TO INFORM THE 2027-2031 DSM PLAN?

Yes. As I discuss further in this testimony, updating the potential study and integrating the DSM Plan goal setting process with the IRP process needs to happen. However, NSP still continues to update its forecasts to ensure that there are adequate resources available to serve the electric needs of Nova Scotia. NSP's most recent 10-year System Outlook from 2025, under Matter M12386, shows that projected peak load growth is approximately 1.1% per year over the next ten years, representing 264 MW of new peak capacity requirements, as shown in the following figure.

[24] NSP. 2020 Integrated Resource Plan (M08929, Exh. N-9). p. 108
[25] NSP. 2020 Integrated Resource Plan (M08929, Exh. N-9). p. 58.

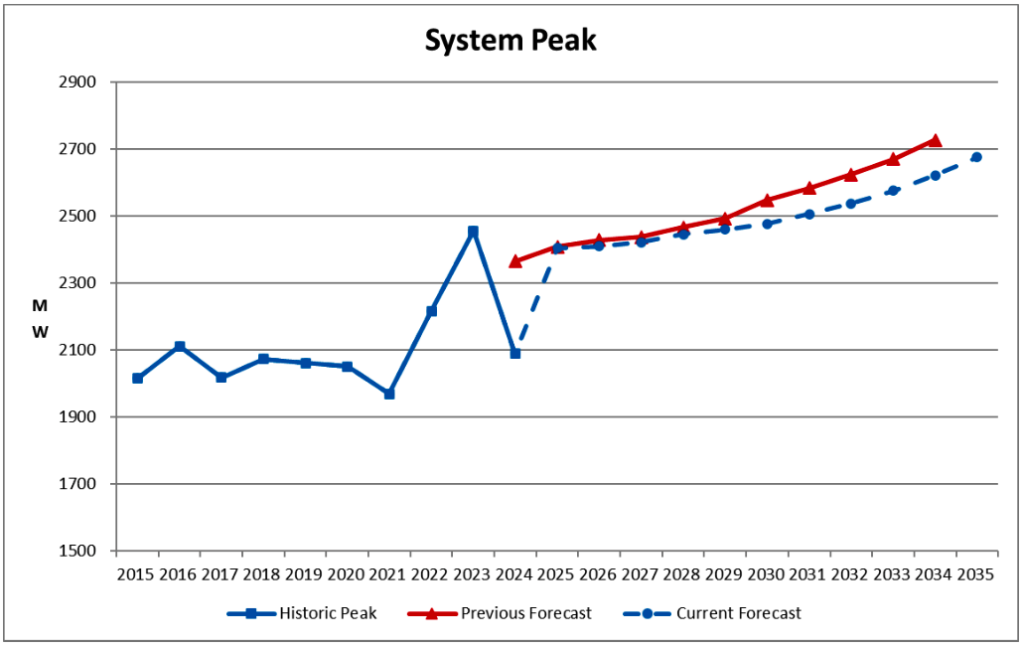

Figure 1. Historical and Predicted Annual System Peak[26]

NSP has projected 354 MW of net additional firm supply capacity coming online over the next ten years. However, this includes 234 MW of cumulative peak reductions from DSM. This value aligns with the IRP projection, and not with the current path projected by E1's Preferred Scenario. The following figure illustrates that there is a gap of 73 MW, or at 31%, of the 234 MW of peak reduction that NSP is planning on coming from DSM, if savings continue at 2031 levels for 2032 to 2035.

[26] NSP. 2025 10-Year System Outlook (M12386), p.16

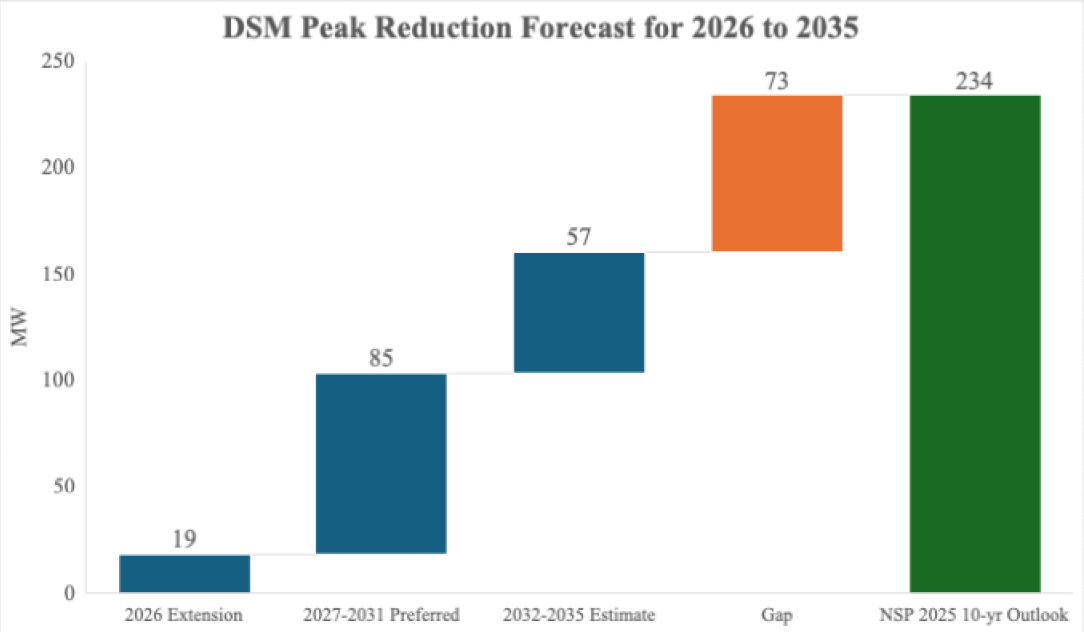

Figure 2. Gap in Projected DSM Peak Demand Reduction for 2026 to 2035[27]

That 73 MW gap represents nearly all of the 90 MW buffer that NSP projects between the forecasted growth in new peak demand of 234 MW and their projected net addition of 354 of firm supply capacity. When impacts for any reduction in firm supply capacity from demand response programs are accounted for, which E1 estimates at 15 MW by 2031[28], the gap will likely exceed the buffer amount. This means that, unless the DSM Plan targets savings closer to the IRP level, NSP will need to source significantly more expensive firm supply capacity, which will end up costing all ratepayers more than simply investing in the IRP specified amount of DSM savings in the first place.

[27] E1 2026 DSM Extension (M12249): 2026 Extension; E1 2027-2031 DSM Resource Plan Application (M12780): 2027 – 2031 Preferred; 2031 Values from Preferred Scenario used for 2032-2035.
[28] E1 Response to Synapse (M12780, E-16) IR-10

Q. IS IT POSSIBLE TO GET DSM INVESTMENTS BACK ON THE ECONOMICALLY OPTIMAL PATH AFTER THE CURRENTLY PROPOSED PLAN TERM?

A. As we just discussed, and E1 acknowledges in their response to Synapse IR-10(g), the Preferred Scenario results in a large gap relative to the IRP trajectory that future plan periods would need to address. This can create a conundrum for Nova Scotia, where there may not be the ability to ramp up DSM activity to a level that catches up in the time required. Energy efficiency programs take time to develop, markets take time to build, and contractor capacity takes time to grow. APEX cautioned that "substantial reductions in savings goals could cause market participants to exit the energy efficiency sector," leading to reduced competition, upward pressure on pricing, and degraded service quality. "Rebuilding program infrastructure after a major market disruption," APEX noted, "would require significant time and resources and could result in extended periods of reduced program effectiveness."[29]

Q. DID E1 EVER EXAMINE A SCENARIO THAT MEETS THE IRP TARGETS AS PART OF THEIR PLANNING PROCESS?

A. Yes. As part of the plan development process, E1 modeled a full IRP-aligned energy efficiency scenario at 683.1 GWh and 123.9 MW of peak demand savings. This scenario was found to be cost-effective, with a total investment of $464 million[30] and net benefits under the PAC test of approximately $600 million.

[29] E1 Response to NSEB (M12780, Exh. E-12) IR-08, Attachment 1 (APEX Analytics, May 22, 2026)
[30] E1 Response to NSEB (M12780, Exh. E-12) IR-07(a)(iii)

Q. WHAT JUSTIFICATION DOES E1 OFFER FOR RECOMMENDING A PREFERRED PLAN BELOW THE IRP-IDENTIFIED LEVEL?

A. E1's justification rests entirely on short-term affordability. E1 states that it held investment at 2026 levels because near-term rate restraint serves ratepayers in the current economic environment, and it acknowledges this "results in lower long-term energy savings to ratepayers than would be achieved by a plan more fully aligned with the scale of DSM savings contemplated by the IRP."[31] That justification does not support the scenario E1 chose because it ignores the significant economic benefits inherent in the IRP scenario and relies on a limited, and flawed, view of affordability, which I discuss more in the next section.

Q. WHY DO YOU FEEL THAT E1'S PREFERRED SCENARIO IS AT ODDS WITH ECONOMIC PRINCIPLES?

A. The economics clearly favor more DSM, not less. From a planning perspective, the IRP found the Base profile most economic.[32] E1's analysis shows that energy efficiency is a least-cost resource and their Application puts DSM at $0.05/kWh against the $0.09/kWh cost of the generation supply it displaces.[33] When a least-cost resource is acquired below the level integrated planning identified as most economic, the utility must make up the difference with higher-cost supply, and the foregone first-year savings cannot be recovered later. Planning below the IRP-identified level therefore raises long-term costs for ratepayers; it does not lower them. In addition, the IRP scenario delivers significantly more net benefits, around $600 million compared to around $400 million for the

[31] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). Evidence. Pg. 25
[32] NS Power 2020 Integrated Resource Plan (M08929, Exh N-9), p. 108
[33] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). Evidence, p.40 of 71.

Preferred Scenario under the PAC that was deemed to be the appropriate benefit-cost analysis to be used for the DSM portfolio.

Q. WHAT DO YOU RECOMMEND REGARDING E1'S SAVINGS TARGETS?

A. I respectfully recommend that the Board treat the IRP-identified Base level as the minimum planning target until an updated potential study is available, consistent with energy efficiency's status as a least-cost resource. Following this, I recommend that the Board **direct E1 to utilize an overall savings target for the DSM portfolio that is aligned with the IRP-identified Base DSM level of approximately 683 GWh for 2027–2031 ("IRP-aligned scenario"),** rather than the 435.4 GWh Preferred Plan;

V. LOW INCOME SAVINGS TARGETS

Q. HOW DOES THE PREFERRED PLAN PROPOSE TO SERVE LOW-INCOME CUSTOMERS?

A. The Preferred Plan includes four program components that exclusively serve low-income and equity customers: Affordable Multifamily Housing, Affordable Single-family Homes, the Mi'kmaw Home Energy Efficiency Project, and Mi'kmaw New Home Construction. The residential solar-PV program, dedicated to Mi'kmaw communities, is an additional equity offering. Together, the dedicated low-income and equity energy efficiency components deliver savings "representing 11% of the total residential savings," which E1 states "is aligned with 2023-2026 at 10.5%."[34] In first-year energy terms, these dedicated components total approximately 14 GWh of the roughly 126 GWh of cumulative first-year residential savings in the Preferred Plan.[35]

[34] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). Evidence, p. 51
[35] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1), Exhibit, p. 58

Q. HOW DID E1 ARRIVE AT THE 11% LEVEL?

A. E1 set the level by reference to its own historical performance. In response to the Consumer Advocate, E1 confirmed that it "relied on the 10.5% figure from the 2023–2026 DSM Plan as the primary benchmark for assessing what a reasonable and appropriate percentage would be for the 2027–2031 DSM Plan," and that the increase to 11 percent "reflects E1's commitment to incrementally expanding support for low-income and equity customers."[36] Notably, E1 did not always set the target this way. In its Evidence, E1 describes having previously applied "a total investment in low-income and equity support that aligns with current Census data on low-income prevalence in Nova Scotia as design inputs," and explains that it has now "mov[ed] away" from that approach.[37] E1 confirms it "moved away from using a design objective for total investment in low-income and equity based on Census data on low-income prevalence in Nova Scotia" in favor of expressing dedicated savings "as a percentage of residential savings."[38]

Q. DO YOU HAVE ANY CONCERNS ABOUT THE E1'S UPDATED APPROACH TO SETTING LOW INCOME TARGETS?

A. Yes. My overarching concern is that E1 has set its targets for low-income and equity customers by reference to its own past performance rather than to the need in the population, and that the resulting target locks in historically low delivery to the customers who most need bill relief.

[36] E1 Response to Consumer Advocate (M12780, Exh. E-7), IR-16(a)
[37] E1 2027-2031 DSM Plan Application (M12780, Exh. E-1), Evidence, p. 18
[38] E1 Response to Consumer Advocate IR-16(a)

Q. WHY IS A HISTORICAL BENCHMARK INAPPROPRIATE FOR THESE CUSTOMERS?

A. Using a historical benchmark is circular. Benchmarking the next plan's goals to the last plan's achievement measures E1 against itself, not against the needs of the market it wishes to serve. If historical delivery has been low, anchoring to that historical performance guarantees the gap persists, as shown in the following figure.

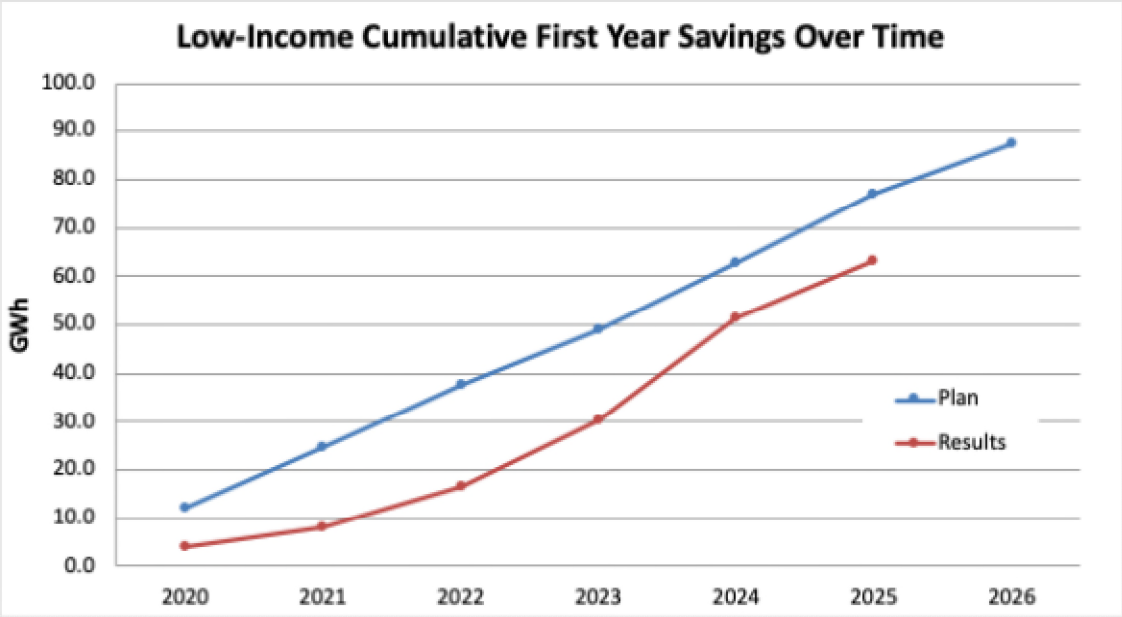

Figure 3. Low-Income Cumulative First Year Savings Over Time[39]

Since E1's cumulative results fail to meet plan, save for anomalies in 2023-2024 due to the rush to capture lighting measures before they ended, it is logical that savings targets should increase for future plans to account for the shortfall. The opposite is true. Figure 4 shows that the 2026 extension and the 2027-2031 plans reduce the low-income savings targets considerably, dropping from planned average of 12.9 GWh from 2020 to 2025 by more than 50% to a planned average of 5.9 GWh from 2027 to 2031.

[39] Sources: E1's 2020 to 2025 Annual Reports. E1 2026 DSM Extension Filing (M12249). 2027 to 2031 DSM Plan Application (M12780).

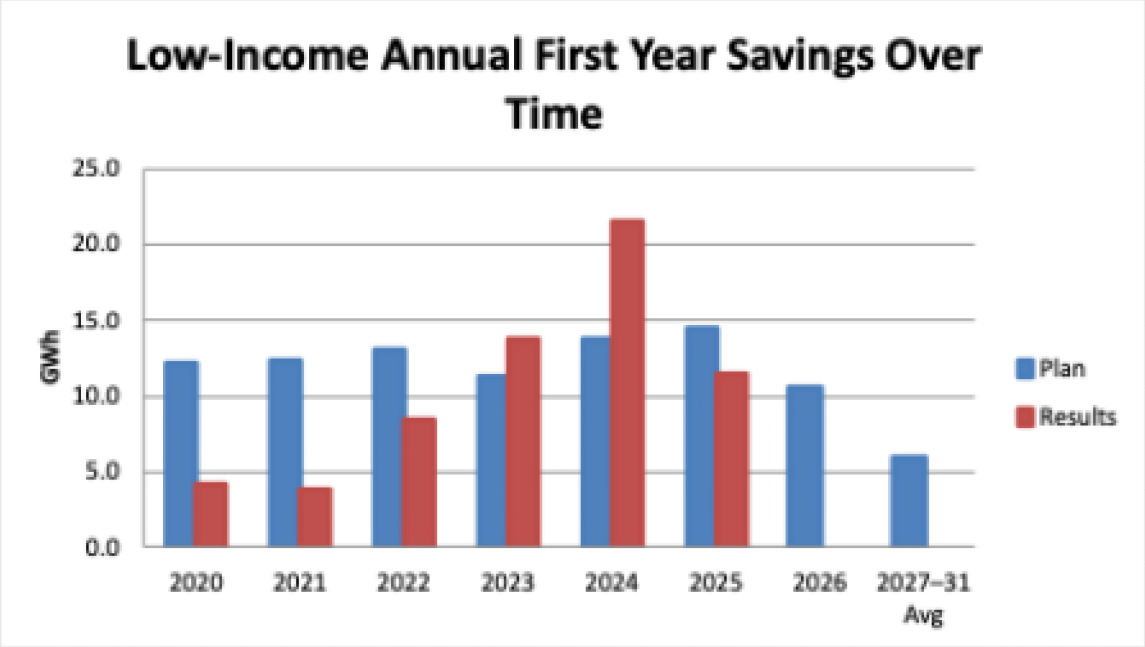

Figure 4. Low-Income Annual First Year Savings Over Time[40]

Q. IF THE CUMULATIVE SAVINGS ARE FALLING BEHIND PLAN AND THE CURRENT PLAN PROJECTS LESS SAVINGS, WHAT IS THE REMEDY?

E1 should anchor the savings target to the need of the community. In this case 14.9% of Nova Scotians are Low-Income,[41] yet the Low-Income dedicated programs represent only an 11% share of residential savings, below their share of the residential population. E1's responses confirm that the Low-Income savings target is not grounded in needs. In response to CA IR-16(b), E1 stated that it "has not, to date, defined equity for residential low-income customers by reference to their proportionate share of residential load," and that it "is not aware that disaggregated residential load data attributable specifically to low-income customers exists."[42] That is a data gap E1 should close; it is not a reason to default to a low, self-referential target.

[40] Ibid.
[41] "Prevalence of low income based on the Low-income measure, after tax (LIM-AT) (%)" from the 2021 census available at: https://www12.statcan.gc.ca/
[42] E1 Response to Consumer Advocate (M12780, Exh E-7) IR-16(b)

Q. WHAT DO YOU RECOMMEND FOR A DEDICATED LOW-INCOME SAVINGS TARGET?

A. I recommend that the **Low-Income savings target for dedicated programs should be set to 14.9% of the Residential Savings target,** currently 3.76 GWh in the Preferred Plan, in order to match the low-income percentage of the population.

Q. HOW SHOULD THIS TARGET BE MADE ENFORCEABLE?

A. Through the plan-oversight mechanisms I discuss earlier in this testimony. As I recommend in the section on plan reporting and review, the four dedicated low-income components should be consolidated into a single dedicated low-income program. The 20% program-level explanation threshold, together with a cumulative spending and savings floor, should then apply to that consolidated program, so that persistent under-delivery to low-income customers triggers both an explanation and a remedy rather than passing unnoticed beneath program- and rate-class-level thresholds. The 14.9% savings level should be a performance target, not merely a reported performance metric.

VI. AFFORDABILITY

Q. WHAT DOES IT MEAN TO HAVE AFFORDABLE ENERGY?

A. There are many different definitions of affordability, and there has never been a clear one used as it relates to the E1 DSM Plan. What is clear is that 40% of Nova Scotia homes, or 191,886 households, are in energy poverty, spending more than 6% of after-tax income on energy.[43] For these households, the relevant affordability metric is not the near-term rate increase from a higher DSM rider, but the long-term reduction in energy bills from deeper, broader efficiency programs. Low-income and equity-deserving customers are

[43] E1 Response to AEC IR-01, Matter M12780

less likely to self-participate in market-rate programs, less likely to access rebate programs independently, and more dependent on direct-install and affordable housing program components, which makes investment in these program components crucial. Market rate programs are important because they allow access to bill savings for customers that may not necessarily need the full level of support that low-income and equity-deserving customers do. Cost-effective demand response programs reduce the need for investment in expensive generation, and reduce costs for all customers. By offering a full portfolio of DSM programs, Nova Scotia provides the opportunity for all customers to reduce their bills and more than offset the cost of delivering the DSM portfolio.

Q. EARLIER YOU SAID E1 MEASURED AFFORDABILITY USING THE WRONG METRIC. PLEASE EXPLAIN.

A. E1's affordability argument focuses on the near-term rate impacts. Customers pay bills, not rates. Affordability is properly assessed by what a customer pays in total, that customer's bill, and not by the per-kWh rate in isolation, because a measure that raises the rate slightly while reducing overall consumption can lower the bill. E1's affordability case emphasizes the rate impact of DSM, yet E1's bill-impact analysis shows that program participants experience lower bills and that the bill impact on non-participants is modest relative to historical levels.[44] The Board has also clearly recognized that the long-term perspective is more important than short term rate impacts:

> "The Board does not believe that ratepayers are well-served, or that it is in their best interests to focus only on short-term costs and thereby deny customers the real long-term cost savings that are possible from a balanced and properly implemented DSM program."[45]

[44] E1 2027-2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence, p. 44 of 71.
[45] 2016-18 Plan Decision (M06733 file August 12th, 2025) P.29 para 82

E1's affordability argument amounts to arguing that a cost-effective, benefit-positive investment should be rejected because it increases near-term rates. This is inconsistent with the purpose of DSM under the Public Utilities Act. The NSEB confirmed in M12282 that "the purpose of the demand-side management provisions in the Public Utilities Act is to reduce electricity costs for customers."[46] A cost-effective investment that reduces long-term electricity bills directly serves that purpose. This is not a theoretical benefit either. E1 confirmed that the net present value ("NPV") of aggregate bill savings from historical DSM activities (2011–2026) is **$3.2 billion** for all NS Power customers.[47] Going towards the IRP scenario will only increase these savings for NS Power customers.

Q. ARE YOU SAYING THAT CUSTOMERS' RATES ARE NOT INCREASED BECAUSE OF DSM?

A. No. The DSM Cost Recovery Rider ("DCRR") portion of a customer's bill is used to recover costs for the DSM Portfolio. However, customers are already paying a DCRR, and even the IRP level of DSM spending barely impacts the DCRR that customers are already paying.

Q. HOW SHOULD THE INCREMENTAL COST OF THE IRP SCENARIO BE EVALUATED?

A. The IRP scenario, as modeled by E1, costs $464M over five years vs. $318.75M for the Preferred Plan, an incremental cost of $145.25M, or approximately $29M per year. This incremental cost would deliver an additional 247.7 GWh of energy savings annually. The correct evaluative test is the PAC test, which E1 applied, and which the IRP scenario

[46] Board Decision in M12282 from December 10, 2025, page 53, para. 128.
[47] E1 Response to NSEB IR-17(d)(iii). M12780

passed and yields around $200 million more in PAC net benefits compared to E1's Preferred Scenario. The PAC already accounts for the cost of capital at NS Power's WACC of 6.65%, meaning it already prices in the time value of money and the cost of recovering the investment through the DCRR.

Q. DID E1 PERFORM ANY RATE AND BILL ANALYSIS OF THE IRP SCENARIO?

A. Yes. E1 provided the IRP scenario RBIA as Attachment 2 – Appendix K, Scenario 3 in its response to Synapse IR-02. Similar to the Preferred Scenario, both participants and average customers have bill reductions across the analysis horizon. This leaves impacts on non-participants.

A. E1's RBIA shows rate and bill impacts against a counterfactual of no-DSM. Given that the preferred plan represents a reduction in spending in real terms, this means that bill impacts for non-participants will largely stay the same for the Preferred Scenario. If we then assume that the counter-factual is no change in bills for customers due to continued DSM at the Preferred Plan level, the IRP scenario would represent an average increase in non-participant bills of between 0.08% to 0.66% depending on rate class, as shown in the following table.

Table 2. Change in Non-Participant Bills for IRP compared to E1 Preferred Plan[48]

Rate Class	27-46 Avg
Residential	0.46%
Small General	0.66%
General	0.66%
Large General	0.37%
Small Industrial	0.62%

[48] See Exhibit TML-2 for the source and annual breakout. The IRP scenario has the effects of strategic electrification removed.

Medium Industrial	0.08%
Large Industrial	0.44%
Municipal	0.28%

If we limit the bill impacts to the 2027 to 2031 program years, the IRP scenario would represent an average increase in non-participant bills of between 1.17% to 3.09% depending on rate class, as shown in the following table

Table 3. Change in Non-Participant Bills for IRP compared to E1 Preferred Plan during 2027 to 2031[49]

Rate Class	27-31 Avg
Residential	1.89%
Small General	2.49%
General	3.09%
Large General	2.07%
Small Industrial	2.61%
Medium Industrial	1.17%
Large Industrial	2.82%
Municipal	1.58%

These changes in cost are minimal and do not represent any rate shock. More importantly, more customers would have the opportunity to mitigate this increase in bills by participating in the DSM Portfolio.

Q. WILL CUSTOMERS PAY FOR UNDERINVESTMENT IN DSM IN OTHER WAYS?

A. Yes. Not only will customers forego the net economic benefit of DSM, but they may also need to pay for higher cost supply-side resources. As described previously in my testimony, peak capacity needs are projected to grow, and current forecasts require more

[49] See Exhibit TML-2 for the source and annual breakout. The IRP scenario has the effects of strategic electrification removed.

investment in DSM than the E1 Preferred Plan provides, which means that NS Power will need to acquire alternative sources of capacity, which will inevitably cost more than the DSM investment and leave customers on the hook to pay for these higher cost sources of energy. This also points at a fundamental issue in the current RBIA analysis, which presents plan impacts against a counter-factual of no-DSM. Removing or reducing DSM has additional effects on supply-side planning that have not fully been analyzed and need to be explored through the Evergreen IRP process. So even if the DCRR is eliminated, that does not mean customer's rates or bills will necessarily go down.

Q. HOW DO YOU RECOMMEND THAT THE BOARD CONSIDER AFFORDABILITY WHEN EVALUATING THE DSM PLAN?

A. I recommend that the Board continue to focus on the long-term benefits of DSM, as shown through the PAC and the effects on all customer's bills. While short term rate impacts should be reviewed, the IRP identified level of savings have a minimal impact on non-participant bills compared to a business-as-usual case, as proposed by E1's Preferred Plan.

VII. UNIT COSTS

Q. HAVE E1'S ENERGY-EFFICIENCY ACQUISITION COSTS RISEN OVER TIME?

A. Yes, substantially. As shown in Figure 5, E1 projects a 2027–2031 energy-efficiency first-year unit cost of $0.66/kWh, up from $0.49/kWh approved for the 2026 DSM Plan, an increase of roughly 35% in a single planning cycle.[50]

[50] E1 2027-2031 Plan Application (M12780, Exh E-1) Evidence, Table 7, p. 56; E1 Responses to IG Information Requests (M12780, Exh. E-9) IR-10, Preamble, p. 1.

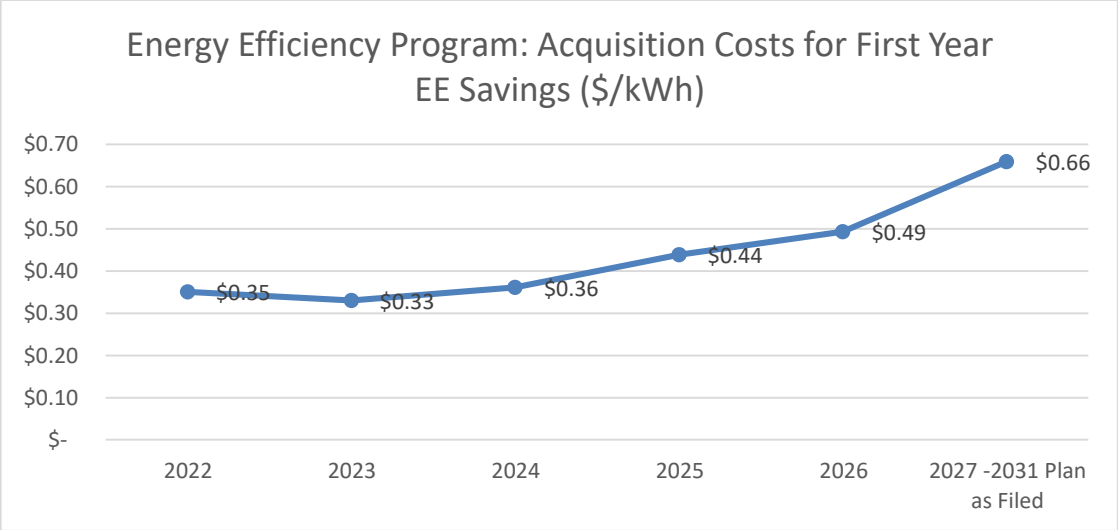

Figure 5 - Acquisition Costs for First Year EE Savings[51]

The upward trajectory is not limited to the most recent step: E1's lifetime unit cost, which it presents as the more favorable metric, also rises across the planning period, climbing from $0.02/kWh in 2023 to $0.07/kWh by 2031.[52]

Q. WHAT DOES E1 IDENTIFY AS THE DRIVERS OF THEIR PROJECTED SAVINGS ACQUISTION COST INCREASES?

A. E1 attributes the change in unit delivery costs between the 2023–2026 and 2027–2031 Plan periods to four factors:[53]

(1) the conclusion of the federal Greener Homes Grant program, after which E1 increased incentive levels to maintain participation, directly raising per-unit delivery costs;

[51] E1's 2020 to 2025 Annual Reports. E1 2026 DSM Extension Filing (M12249). 2027 to 2031 DSM Plan Application (M12780). See Exh. TML-3 for details.
[52] M12780, E1 Responses to IG Information Requests, (M12780 Exh. E-9) IG IR-10, Table 1, p. 3
[53] M12780, E1 2027-2031 Plan Application, Evidence, p. 47, listing factors (a) through (d).

(2) the transition away from low-cost, high-volume lighting (LED) measures toward deeper, more complex measures such as building envelope upgrades, heat pump installations, and custom commercial projects;

(3) broader inflationary pressures — labour, supply chain, and material costs — across the DSM industry; and

(4) the 2024 DSM Evaluation results for residential heat pumps, which reduced evaluated savings for that measure by approximately 50 percent.

E1 characterizes these factors as "largely beyond E1's control."[54] Two of the four — the heat-pump savings reductions and the removal of lighting — warrant closer scrutiny, because they are the principal numerical drivers and because each carries an accountability dimension that the "beyond E1's control" framing understates.

Q. WHAT IS THE SIGNIFICANCE OF THE APPROXIMATELY 50 PERCENT REDUCTION IN EVALUATED HEAT-PUMP SAVINGS?

A. It establishes a more accurate baseline for the cost of the measure, but it does not excuse the cost. Instead, it sharpens the question of how E1 will bring that cost down. The reduction arose from an update to the adjustment ratio that E1's independent evaluator applies to HOT2000 modelled savings, derived through a billing analysis that compared modelled predictions against metered consumption.[55] The same adjustment flowed through Home Energy Assessment, Affordable Single-family Homes, and the Mi'kmaw Home Energy Efficiency Project, all of which rely on the HOT2000 model.[56] I accept the

[54] E1 2027-2031 Plan Application (M12780, Exh E-1), Evidence, p. 47.

[55] E1 2025 DSM Programs Evaluation Reports (M12780, Exh E-3), Home Energy Assessment – Final Report, Table 42 p. 87 (PDF p.248), in M12780, E1 2027-2031 Plan Application, Appendix A – Preferred Plan, p. 39.

[56] M12780, E1 2027-2031 Plan Application, Appendix A – Preferred Plan, pp. 8 and 36, identifying the HOT2000 modelling software adjustment ratio update and the affected program components.

corrected savings as the appropriate baseline going forward. The evaluated figure reflects what these measures actually deliver, and historical unit costs that relied on the higher savings estimate were more favorable than warranted. However, accepting the lower savings number is not the end of the inquiry.

If a heat pump now produces roughly half the evaluated savings it was previously credited with, the cost of acquiring each kWh through that measure has effectively doubled, and the appropriate response is for E1 to examine how to deliver the measure more economically rather than to treat the higher cost as fixed. That examination should include whether incentive levels can be reduced without losing participation, and whether the program design can be changed to raise the savings each installation actually delivers. This could be accomplished by requiring a minimum heating switchover temperature, by requiring removal or lock-out of backup electric resistance heating, or by tightening eligibility so that incentives flow to installations that displace the most fossil or resistance heating. E1 has not yet shown that it has pursued these levers. Until it does, the corrected savings should be read as a reason to redesign the measure for greater cost-effectiveness, not as an external cost increase that E1 is powerless to address.

Q. IS THE REMOVAL OF LOW-COST LIGHTING A SUFFICIENT EXPLANATION FOR THE COST INCREASE?

A. Again, It is a legitimate but partial explanation. As LED lighting reached market saturation, its very low-cost, high-volume savings were no longer available, and E1 appropriately wound those measures down.[57] That shift mechanically raises the portfolio-average unit cost, and I do not contest the underlying market reality. The qualification is

[57] E1 2027-2031 Plan Application (M12780, Exh. E-1), Appendix A – Preferred Plan, p. 10.

that the loss of lighting explains why the average rose, not how high E1 has allowed it to rise. E1 retains discretion over measure selection, incentive levels and the pace at which it pursues higher-cost measures. As discussed further in this testimony, I have concerns regarding incentive levels for some of the new measures in E1's plan. The lighting transition is therefore context for the increase, not a justification for its magnitude.

Q. HOW DO E1'S SAVINGS ACQUISITION COSTS COMPARE TO OTHER JURISDICTIONS IN NORTH AMERICA?

A. They are higher. A 2026 ACEEE report compiled 2024 energy-efficiency spending and savings for 42 of the largest U.S. utilities, about 60% of U.S. households.[58] Converted to Canadian dollars, the fleet-wide first-year acquisition cost averaged $0.35/kWh, with individual utilities ranging from $0.12/kWh to $0.92/kWh. E1's proposed $0.66/kWh[59] when converted to net at meter savings is $0.72/kWh[60] or more than double the fleet average and is exceeded by only one of the 43 utilities in the dataset. The comparison is summarized in Figure 6, below.

Figure 6 First-year Energy Efficiency Acquisition Cost (2024, CAD, Net at Meter Savings)[61]

Benchmark	First-Year Cost ($/kWh Net at Meter, CAD)
U.S. fleet average (42 utilities, weighted)	$0.35
U.S. range — lowest (Salt River Project)	$0.12
U.S. range — highest (Union Electric / Ameren MO)	$0.92
U.S. median	$0.36

[58] Specian, M., and A. Aquino. 2026. Faster and Cheaper: Demand-Side Solutions for Rapid Load Growth. Washington, DC: ACEEE, at p. 86. Per-utility 2024 spending and savings data converted from USD to CAD at an exchange rate of 1.36831. The report states the spending figures reflect "the full cost of running those programs in 2024."

[59] M12780, E1 2027-2031 Plan Application, Evidence, Table 7 at p.56 of 71.

[60] The comparative US benchmark savings were reported Net at Meter, the Preferred Plan savings of $0.66/kWh, net at generation were converted to net at meter using a line loss factor of 1.0947 from the 2025 DSM Evaluation Reports (M12780, Exh. E-3), Instant Savings Final Report p. 25.

[61] Specian, M., and A. Aquino. 2026. Faster and Cheaper: Demand-Side Solutions for Rapid Load Growth. Washington, DC: ACEEE, at p. 86. Per-utility 2024 spending and savings data converted from USD to CAD at an exchange rate of 1.36831. The report states the spending figures reflect "the full cost of running those programs in 2024."; See Exh-TML-4 for additional details.

Benchmark	First-Year Cost ($/kWh Net at Meter, CAD)
U.S. standard deviation	$0.17
E1 — 2027–2031 Preferred Plan	**$0.72**

Q. IS THE ACEEE REPORT REALLY AN APPLES-TO-APPLES COMPARISON TO E1?

A. While no two DSM program designs are exactly alike and no two jurisdictions have the same economic conditions, two of the largest trends in DSM portfolio design are addressed since electrification is removed from the ACEEE report and most residential lighting savings were phased out from US portfolios in 2020. Thus the ACEEE data includes a wide representation of jurisdictions, program sizes, and designs, making it a meaningful benchmarking reference.

Q. HAS E1 BENCHMARKED ITS UNIT COSTS AGAINST OTHER JURISDICTIONS?

A. E1 engaged Apex Analytics to conduct a jurisdictional scan comparing its first-year unit costs to other jurisdictions, filed as Attachment 2 to its response to IG IR-10.[62] That scan is narrower than the record warrants. The broader comparison from the ACEEE data representing 42 utilities covering roughly 60 percent of U.S. households, places E1's $0.73/kWh (net at meter) at more than double the fleet average of $0.35/kWh and shows it exceeded by only one of the 42 utilities.[63] A benchmarking exercise that produces a more favorable comparison through a limited jurisdictional sample should be weighed against this wider, independently compiled dataset.

[62] M12780, E1 Responses to IG Information Requests, (M12780, Exh, E-9) IG IR-10, Attachment 2.
[63] Specian, M., and A. Aquino. 2026. Faster and Cheaper: Demand-Side Solutions for Rapid Load Growth. Washington, DC: ACEEE, at p. 86.

Q. WHAT CAN E1 DO TO MITIGATE THE LARGE INCREASE IN UNIT COSTS?

A. The main tool that E1 has available is to set incentives at the right level. They should be high enough to drive participation but no higher than necessary. E1 has not done a full, in depth analysis of its incentive design in nearly a decade. The current Incentive Setting Process rests on work CLEAResult completed for the 2016–2018 Plan period, filed in June 2016 and revised in March and May 2017.[64] E1 itself describes the process as "an outcome of the CLEAResult study conducted following the 2016–2018 DSM Plan."[65]

For the 2027–2031 Plan, E1 did not repeat that study. Instead it engaged Apex Analytics to review whether the existing methodology's assumptions "remain aligned with those used by other DSM administrators" and to benchmark E1's first-year unit costs.[66] That benchmarking memo compared E1 to only six jurisdictions; New Brunswick, Prince Edward Island, Newfoundland and Labrador, Manitoba, Vermont, and New Hampshire.[67] Apex "did not recommend any changes specific to the incentive setting methodology," concluding that E1's practices were "more rigorous than their peers."[68]

Two limitations follow from this. First, the Apex engagement was a methodology review and a six-jurisdiction unit-cost benchmark, not a fresh, ground-up incentive-design study of the kind CLEAResult performed. It did not re-derive incentive levels from primary customer research, updated price-sensitivity or current measure economics;

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[64] Apex Analytics LLC, Research Findings on Incentive Setting Best Practices, filed as E1 Response to IG (M12780, Exh. E-9), IR-11, Attachment 1, p. 2. CLEAResult's methodology was initially filed June 2016 with revisions in March 2017 and May 2017.

[65] E1 2027 - 2031 Application (Exh. E-1), Evidence p. 49.

[66] E1 Response to IG (M12780, Exh. E-9), IR-11(b).

[67] E1 Response to IG (M12780, Exh. E-9), IR-10, Attachment 2, p. 1 (Apex Analytics, Review of EfficiencyOne First-Year Costs and Unit Cost Reasonableness, May 22, 2026).

[68] E1 Response to IG (M12780, Exh. E-9), IR-11, p. 5.

it checked the existing approach against peers and pronounced it sound. Second, a six-jurisdiction scan is a narrow evidentiary base on which to rest the proposition that incentive levels across the entire 2027–2031 portfolio are set no higher than necessary.

The distinction matters because incentives are the largest driver of E1's costs and therefore of its $/kWh. Customer incentives now account for roughly 71% of total Plan costs, up from 66% in the 2026 Plan. A methodology that is merely "aligned" with peers does not establish that each incentive is calibrated to the minimum level that still secures participation —the guiding principle the Board itself directed E1 to pursue in its decision in Matter M06733 dated August 12, 2025.[69] This is a standard that the Board should hold E1 to, especially given that unit costs have risen so high and so quickly. The CLEAResult framework contemplated periodic primary research (price-sensitivity and conjoint analysis) for high-value measures and regular refinement of incentive levels; the record does not show that this depth of research has been refreshed for the deeper, higher-cost measures that now dominate the portfolio and drive the unit-cost increase.

As the portfolio has shifted from low-cost lighting toward heat pumps, building-envelope upgrades, and custom projects, the incentive-design evidence base has not kept pace. The measures that most affect $/kWh today are precisely those for which E1 has the least current, measure-specific incentive research. Reducing acquisition costs requires E1 to do more of this work, not to rely on a methodology validated against a small peer set.

[69] P. 32. Para 92

Q. WHAT DO YOU RECOMMEND REGARDING WAYS TO RESTRAIN SAVINGS ACQUISTION COSTS?

A. I recommend that the Board: d**irect E1 to undertake measure-specific primary research (e.g., price-sensitivity or conjoint analysis) for high-value measures,** consistent with the thresholds the CLEAResult methodology already contemplates, to confirm that incentive levels are set at the minimum necessary to secure participation. **This research should then be used to inform updates to incentive no later than January 1, 2028.**

VIII. PRE-WEATHERIZATION BARRIERS

Q. DO YOU HAVE OTHER CONCERNS ABOUT HOW LOW-INCOME PROGRAMS ARE IMPLEMENTED?

A. Yes. Low-income participants often face barriers that prevent a home from being weatherized. E1 confirms that customers in the Affordable Multifamily Housing and Affordable Single-family Homes program components face such barriers, "particularly in older buildings where mold, asbestos, leaking roofs, or extensive electrical upgrades may be required to complete recommended energy efficiency improvements."[70] Further it is quite concerning that E1 does not even track the incidence of these barriers. In response to Synapse, E1 confirmed that "Data is not collected on the proportion of customers that could not proceed due to pre-weatherization barriers,"[71] and that while approximately 17% of Affordable Single-family Homes participants do not complete the program, E1 "does not have this data broken down further as to the portion that could not proceed due

[70] E1 Response to Synapse (M12780, Exh. E-16) IR-45(c), p. 2.
[71] E1 Response to Synapse (M12780, Exh. E-16) IR-45(d), p. 2.

to pre-weatherization barriers."[72] Without this data, E1 cannot know how many low-income customers are turned away each year.

Q. HOW CAN E1 CLOSE THIS DATA GAP?

A. E1 should record, for each dedicated low-income and equity program component, the number and proportion of customers who do not proceed because of pre-weatherization barriers, the nature of those barriers, and the disposition of each case. E1 already conducts the site visits at which this information arises, as its Service Providers "assess homes for upgrade readiness during site visits and identify potential remediation solutions"[73], so capturing the result of that assessment is a recordkeeping change, not a new program cost. This data is a prerequisite to better understanding the challenge and refining the approach for future plans.

Q. WHY IS IT IMPORTANT TO ADDRESS PRE-WEATHERIZATION BARRIERS?

A. While measures such as performing asbestos abatement or addressing a leaky roof may not have direct energy savings associated with them, they are what enable a job to be fully comprehensive and can lead to greater savings than would be achievable without first addressing these barriers. This is even more important now than before since lighting savings have largely gone away and E1 has a limited number of electrically heated homes to address. Maximizing savings opportunities and reducing deferrals is crucial for keeping overall savings acquisition costs in line.

In addition, addressing pre-weatherization barriers comes with a host of other environmental, habitability, and comfort improvements. Data from U.S. nationwide

[72] E1 Response to Synapse (M12780, Exh. E-16) IR-46(h), p. 3.
[73] E1 Response to Synapse (M12780, Exh. E-16), IR-46(g), p. 3.

Weatherization Assistance Program ("WAP") showed that improving buildings through comprehensive weatherization contributed to an average annual savings of $514 USD per household in out-of-pocket medical expenses.[74] Similarly, these health improvements kept residents at work, saving workers an average of $538 USD annually due to missing fewer days of work from illness.[75] Cumulatively, the total annual health and household-related benefits for a weatherized unit averages $14,148 USD.[76]

Q. IS E1 DOING ANYTHING TO SPECIFICALLY ADDRESS THESE BARRIERS FOR LOW-INCOME CUSTOMERS?

A. Not really. E1 confirms there is "no funding in the proposed 2027–2031 DSM Plan included for pre-weatherization barriers,"[77] and that where barriers are severe, customers are simply "directed to provincial housing authorities or other resources."[78] Referral alone is not a remedy since it shifts the burden to other agencies and leaves the low-income customer un-weatherized in the interim, forgoing both the energy savings and the substantial health, habitability, and avoided-medical-cost benefits that weatherization delivers. A modest carve out of funding within the proposed Low-Income Program would let E1 resolve barriers directly, as it acknowledges it can already do "where costs and risk are minimal"[79], rather than treating any barrier as grounds to drop the customer. Since

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[74] National Association for State Community Service Programs. (2022). *Weatherization Assistance Program Funding Report Program Year 2022*. https://nascsp.org/wp-content/uploads/2023/12/PY22-WAP-Annual-Funding-Report-1.pdf.

[75] Ibid.

[76] Tonn, B., Rose, E., Hawkins, B., Conlon, B., Oak Ridge National Laboratory, & Oak Ridge Institute for Science and Education. (2014). *Health and Household-Related Benefits attributable to the Weatherization Assistance Program*. https://weatherization.ornl.gov/wp-content/uploads/pdf/WAPRetroEvalFinalReports/ORNL_TM-2014_345.pdf.

[77] E1 Response to Synapse (M12789, Exh E-16), IR-45(e), p. 2. See also E1 Response to Synapse (M12789, Exh E-16) IR-46(i), p. 3.

[78] E1 Response to Synapse (M12789, Exh E-16), IR-46(g), p. 3.

[79] E1 Response to Synapse (M12789, Exh E-16), IR-46(i), p. 4.

pre-weatherization barriers are a well-documented and recurring feature of low-income housing stock, there is no reason to defer this carve-out pending further study.

Q. WHAT DO YOU ESTIMATE A REASONABLE PRE-WEATHERIZATION BARRIER CARVE-OUT SHOULD BE?

A. Most energy efficiency portfolios that have pre-weatherization budgets, set them at a percentage of low-income weatherization spending. For example, Illinois requires that at least 15% of the low-income weatherization budget be invested in pre-weatherization measures,[80] and Minnesota permits up to 15%.[81] Pennsylvania's electric energy efficiency programs on the other hand generally have settlement agreements for pre-weatherization funding at 4.06% to 6.39% of Low-Income spending. Given this range, I believe a reasonable starting place would be allowing up to 10% of five-year budgets for dedicated low-income programs to be spent on pre-weatherization, with a $10,000 per home cap. For E1's Preferred Scenario this represents $5.6 million over five years as shown in the following table.

Table 4. Example Calculation of Pre-Weatherization Carve-out for E1's Preferred Scenario

Assumption	Value ($M)
Affordable Multifamily Housing Budget	$11.3
Affordable Single-family Homes Budget	$43.7
Mi'kmaw Home Energy Efficiency Project Budget	$0.6
Total Dedicated LI Retrofits Budgets	**$55.6**
Pre-Weatherization Carve-out (10%)	**$5.6**
Pre Weatherization Carve-out 5yr Avg	$1.1

[80] ACEEE, 2025 State Scorecard, at p. 41 available at: https://www.aceee.org/research-report/u2502
[81] Ibid. at 41.

Utilizing a percentage figure to set the carve-out amount allows flexibility, as budgets may change over the course of the plan term.

Q. WHAT EFFECT WILL THIS CARVE-OUT RECOMMENDATION HAVE ON COST-EFFECTIVENESS?

A. Pre-weatherization budgets can allow E1 to go deeper on some projects and reduce deferrals for projects that they may not have been able to do before, which helps reduce the cost of acquiring completed projects. However, it is difficult to project what these positive effects might be. We can estimate what shifting 10% of dedicated low-income retrofit funding to pre-weatherization would look like. The following table estimates the impact of this shift.

Program	PAC Benefits ($M)	PAC Costs ($M)	PAC BCR
Affordable Multifamily Housing	$12.7	$9.8	1.3
Affordable Single-family Homes	$30.5	$38.1	0.8
Mi'kmaw Home Energy Efficiency Project	$0.5	$0.6	0.9
Total Dedicated LI Retrofits	$43.7	$48.4	0.9
Pre-Weatherization Carve-out	$0.0	$5.6	0
Remaining Funds (at existing BCR)	$38.7	$42.9	0.9
New Total Benefits and Costs	$38.7	$48.4	0.8
Difference	-$5.0	$0.0	-0.1

Since the dedicated low-income spending had a PAC BCR of slightly below 1, shifting the savings away mainly meant reducing benefits by around the same amount as the carve-out. This means that benefits would be $5 M lower, and the dedicated low-income PAC BCR would be 0.8 instead of 0.9. That being said, a loss of $5 million in benefits at

the same level of spending is not enough to move the Residential Sector, EE Total, or Portfolio Total PAC BCR in a meaningful way.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS REGARDING PRE-WEATHERIZATION BARRIERS?

A. I have two recommendations related to pre-weatherization barriers:

- **Require tracking and reporting of pre-weatherization barriers.** E1 should record and report, by program component, the number and proportion of customers who cannot proceed because of pre-weatherization barriers and the nature of those barriers. E1 does not currently collect this data, yet it is a prerequisite to sizing the problem and to holding E1 accountable for the low-income customers it presently turns away.
- **Establish a carve-out that allows E1 to spend up to 10% of dedicated low-income retrofit program funding on pre-weatherization barriers with a cap of $10,000 per home.** These funds should address barriers such as mold, asbestos, and roofing or electrical deficiencies. The current plan includes no such funding and instead refers severe cases to provincial housing authorities; referral alone leaves low-income customers un-weatherized and forgoes the energy, health, and habitability benefits weatherization delivers. Because these barriers are well documented, the fund should be established now rather than deferred pending further study.

IX. RESIDENTIAL HEAT PUMPS

Q. WHAT TYPES OF ENERGY EFFICIENCY MEASURES ARE DELIVERING SAVINGS TO THE RESIDENTIAL SECTOR IN E1'S PREFERRED PLAN?

A. The following graph breaks out the percentage of first year savings, net benefits under the PAC test, and incentives by the top measure categories for the five-year term of the proposed plan.

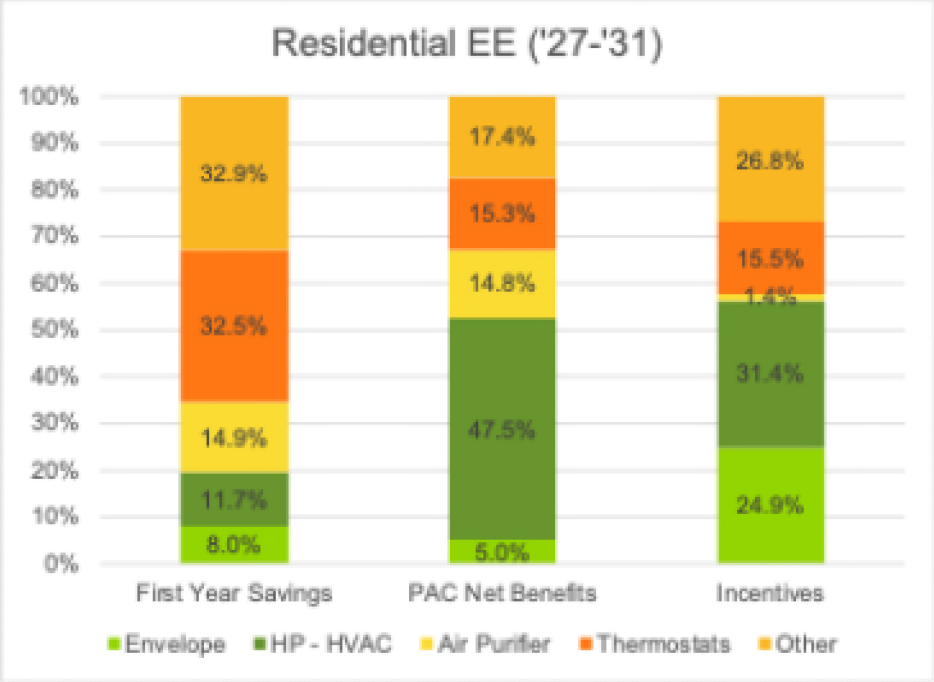

Figure 7. Contributions to Residential Energy Efficiency Savings, Net Benefits, and Incentives by Measure Category

Thermostats and air purifiers, which are a relatively low-cost measures, make up around 47% of first year savings and 30% of net benefits, but only 17% of incentive budgets. These measures have some of the highest returns in terms of savings per incentive dollar but without recent baseline surveys or updated potential analysis it is difficult to determine if E1's programs have or will reach market saturation soon. My experience in the United States has been that some thermostat rebate efforts are starting to show signs of declining enrollment. Air-purifiers serve a much smaller portion of residential load than other measures that would address larger load profiles, like heating ventilation and

cooling ("HVAC") and water heating, and may have much less potential savings expansion.

Building envelope measures make up around 25% of incentive budges but only account for 8% of first year savings and 5% of net benefits. This is a necessary measure that has a large and deep market, but it can be difficult to address when the only benefit that is countable under the PAC is electric savings and many do not use electricity to heat their homes. However, as more homes convert to all electric heating, the opportunity and need to make sure that they are properly weatherized in order to properly size new equipment and keep ongoing operating costs low and residents comfortable will be crucial.

Heat Pumps for HVAC, namely centrally ducted HPs and mini-split HPs, are one of the areas that has the greatest potential for savings and net benefits. This is evident by the fact that they account for 48% of PAC net benefits and 31% of spending while delivering 8% of first year savings. The market is only growing as cold climate heat pumps are now a proven, commercially available product with a workforce ready and able to install them.

Q. WHAT HEAT PUMP MEASRUES IS E1 PROPOSING TO ADD TO THE INSTANT SAVINGS PROGRAM COMPONENT?

A. E1 is proposing to add two new point-of-sale rebate measures to the Instant Savings program component: Centrally Ducted Heat Pump Systems and Mini-Split Heat Pumps. The following table provides E1's projected participation and anticipated incentives for these measures in the new plan period.

Table 5. Projected Participation and incentives for Newly Added Heat Pumps in the Instant Savings Program Component[82]

Measure	Metric	2027	2028	2029	2030	2030
Centrally Ducted HP	Participation (units)	0	250	400	450	400
	Per Unit Incentive ($)	0	$900	$1,250	$1,250	$1,500
	Total Incentive ($)	0	$225,000	$500,000	$562,500	$600,000
Mini-Split HP	Participation (units)	0	1,250	2,500	2,800	2,200
	Per Unit Incentive ($)	0	$500	$700	$700	$900
	Total Incentive ($)	0	$625,000	$1,750,000	$1,960,000	$1,980,000

A. E1 proposes starting these measures in 2028 with a $900 incentive for centrally ducted HPs, and a $500 dollar incentive for mini-split HPs. E1 then projects ramping up the incentive for each measure in each subsequent year until the incentive for centrally ducted HPs is $1,500 and the incentive for mini-split HPs is $900, which represents an 67% and 80% increase respectively. These incentive increases also carry over into the HEA Program.

Q. WHY IS E1 STARTING THESE MEASURES IN 2028?

A. In its response to Synapse IR-43, E1 states that it is delaying the launch of these measures until 2028 because "certain activities cannot reasonably proceed until approval of the Plan has been obtained, including the establishment of industry partnerships, the development of related program processes, and partner training."

Q. DO YOU AGREE WITH E1'S JUSTIFICATION FOR WAITING UNTIL 2028 TO PROVIDE THESE REBATES?

A. No. Mini-split and centrally ducted HPs are not a new technology to E1. Both of these measures are already offered as installed measures under the Affordable Single-family Homes program and as rebated measures under the Business Energy Rebates program.

[82] Source: E1 2027-2031 DSM Plan Application (M12780, Exh. E-1). Appendix A – Attachment 3

E1's Efficiency Preferred Partner network already includes heat pump installers. The incremental work of extending point-of-sale rebates to the Instant Savings program does not require building new industry relationships from scratch. E1's own response to Synapse IR-43 acknowledges this, as it states that "[E1] is undertaking preparations for implementation of DSM programs for the 2027–2031 period" even before approval. There is no structural reason why Instant Savings partnership agreements for heat pumps cannot be negotiated on a conditional basis before the decision issues. Even if there is a six-month delay in offering rebates, E1 should still be able to have them ready for the 2027 heating season.

Q. WHY ARE THESE TWO MEASURES SO IMPORTANT?

A. As discussed earlier, these measures are one of the main areas to explore for both future expansion of energy savings and as a source of net benefits. They are extremely cost-effective measures, with PAC BCRs ranging from 3.12 to 13.29, depending on incentive level. Also, since these rebates are a point-of-sale, the baseline assumption is that the customer is purchasing new less efficient equipment and the opportunity is now lost until that piece of equipment is replaced in another two decades, unless a much more expensive retrofit is undertaken. Every year without these measures in the market is a missed opportunity to reduce long-term bills for Nova Scotians.

Q. DO YOU HAVE ANY OTHER CONCERNS WITH E1'S APPROACH TO MINI-SPLIT AND CENTRALLY DUCTED HPS IN THE RESDIENTIAL SECTOR?

A. Yes. I am concerned that E1 is increasing incentives unnecessarily in its current plan. E1 has not provided any justification for increasing incentives by between 67% and 80% over four years for a measure that it has yet to have launched and without any updated

potential study. Given the importance of affordability and the rising unit costs projected for the portfolio, this level of increase needs at least some justification.

Q. IS THERE ANY PROGRAMATIC RATIONALE UNDER WHICH ESCALATING INCENTIVES MIGHT BE APPROPRIATE?

A. In some circumstances, escalating incentives are appropriate. For example, when a program is targeting progressively harder-to-reach customers after the most cost-effective participants have been served, or when early-adopter customer segments are more self-motivated and late-adopters require more financial push. However, E1 has not made this argument, and these would be new incentives for a market that has not yet had aggressive DSM intervention. In addition, E1 projects a drop off in participation as the rebates reach their highest level in the final year. It is not clear why offering a higher incentive would lead to lower participation.

Another reason incentives may be increased is to address high freeridership rates. As incentives are increased, the first cost barrier to participate is lowered, and more of the population that was unable to participate due to this barrier can now take advantage of the opportunity, which would lower freeridership rates. Again, net-to-gross ratios are projected to stay the same for the period, negating any projected effect on freeridership from raising incentives.

Q. WHAT DO YOU RECOMMEND REGARDING HEAT PUMP INCENTIVES IN THE INSTANT SAVINGS PROGRAM?

A. I recommend that the Board:

- **Direct E1 to offer incentives for mini-split and centrally ducted HPs as soon as possible.** Ideally these rebates should be available January 1, 2027, but at a minimum should be available within the first year of the next phase

- **Direct E1 to keep incentives for mini-split and centrally ducted HPs at $500 and $900 respectively in the Instant Savings and HEA programs.** This will keep acquisition costs lower and allow budgets to stretch further. These measures should be included in the updated analysis I am requesting E1 undergo to establish a more solid basis for setting incentives moving forwards. If participation lags, or freeridership rates become an issue, E1 can modify incentive levels as part of an MCA.

X. DEMAND RESPONSE

Q. WHAT IS E1 PROPOSING FOR DEMAND RESPONSE IN THE 2027–2031 PLAN?

A. E1 proposes a Demand Response program with two components. The Business, Non-profit and Institutional ("BNI") Demand Response component, delivered through the Smart Synergy pathway, grows from 17.0 MW of available capacity in 2027 to 25.5 MW in 2031 on an investment of $18.8 million.[83] The Residential Demand Response component, delivered through the Eco Shift pathway, is held flat at roughly 4 MW of available capacity on an investment of $10.3 million, with no new customer enrollments over the term.[84] Across both components, E1 plans total investment of $29.1 million, available capacity reaching 29.3 MW by 2031, and a five-year Program Administrator Cost ("PAC") test ratio of 1.7.[85]

[83] E1 2027–2031 DSM Resource Plan Application (M12780, Exh. E-1), Appendix A – Preferred Plan, Table 47, p. 81.
[84] E1 2027–2031 DSM Resource Plan Application (M12780, Exh. E-1), Appendix A – Preferred Plan, Table 47, p. 80.
[85] E1 2027–2031 DSM Resource Plan Application (M12780, Exh. E-1), Appendix A – Preferred Plan, Table 47, p. 82.

Q. HOW DO THE TWO COMPONENTS COMPARE ON COST-EFFECTIVENESS?

A. They differ markedly. The BNI Smart Synergy component is cost-effective: E1 confirms that "E1's Smart Synergy program demonstrates cost-effectiveness."[86] The Residential Eco Shift component does not pass the PAC test, and E1 acknowledges this directly, stating that "the Residential Demand Response (Eco Shift) program component does not yet meet the standard cost-effectiveness threshold."[87] E1 nonetheless includes Eco Shift, relying on an expectation that it will become cost-effective in the future as participation and operational experience grow.

Q. DO YOU SUPPORT THE PROPOSED RESIDENTIAL DEMAND RESPONSE (ECO SHIFT) COMPONENT?

A. I support continuing Eco Shift at an exploratory level, but I do not support expanding it. E1 has appropriately scaled back the Eco Shift program component: it proposes no new enrollments and instead maintains the existing device base, holding available capacity near 4 MW.[88] While we are generally supportive of using demand response to create more efficiency from the existing grid, scaling back is a reasonable posture for a component that is not yet cost-effective. The 2025 evaluation found that Eco Shift delivered only 0.854 MW of available capacity against a 7.135 MW target, despite a 907% year-over-year increase in participation.[89] Continuing to leverage assets already in the field preserves prior investment and operational learning at a contained cost, but

[86] E1 Response to Consumer Advocate (M12780, Exh. E-7), IR-06, p. 1 of 3.
[87] E1 2027–2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence, p. 29.
[88] E1 2027–2031 DSM Resource Plan Application (M12780, Exh. E-1), Appendix A – Preferred Plan, Table 45, p. 80.
[89] E1, 2025 DSM Programs Evaluation Reports (M12780, Exh E-3), Demand Response Program – Final Report, p. xiii

committing new ratepayer funds to enroll additional residential participants would not be prudent until the component demonstrates cost-effectiveness.

Q. IS E1'S EXPECTATION THAT ECO SHIFT WILL BECOME COST-EFFECTIVE WELL SUPPORTED?

A. The support is thin. E1's Evidence states that, "through direct discussions with the IESO Demand Side Management team, the program is expected to reach cost-effectiveness under the Program Administrator Cost (PAC) test within the next year, approximately four years after its launch."[90] In response to CA IR-06, however, E1 clarified that the Ontario IESO "did not provide evidence or assurances that E1's Residential Eco Shift program specifically will achieve cost-effectiveness within the next year."[91] The expectation therefore rests on the general trajectory of other jurisdictions' programs rather than on a demonstrated path for Eco Shift. This reinforces my view that the component should continue only at an exploratory level, with the burden on E1 to show measurable progress toward cost-effectiveness before any expansion.

Q. DO YOU SUPPORT THE PROPOSED BNI DEMAND RESPONSE (SMART SYNERGY) COMPONENT?

A. Yes. Smart Synergy is cost-effective, delivers dispatchable winter peak capacity that the IRP identifies as an increasingly valuable system resource, and benefits all ratepayers by deferring more expensive firm supply capacity. I support its continued, modest growth over the Plan term.

Q. IN THE DSMAG MEETINGS E1 WAS ASKED TO EXTEND SMART SYNERGY ELIGIBILITY TO LARGE INDUSTRIAL INTERRUPTIBLE ("LII")

[90] EfficiencyOne 2027–2031 DSM Resource Plan Application (M12780, Exh. E-1), Evidence, p. 31.
[91] E1 Response to Consumer Advocate (M12780, Exh. E-7), IR-06, p. 1.

CUSTOMERS FOR THE INTERRUPTIBLE PORTION OF THEIR LOAD.[92] DO YOU SUPPORT THIS PROPOSAL?

A. No. While E1 has not committed to this, but instead states it "may be appropriate" and that it is "committed to further discussions to fully assess the incremental value and appropriateness of such participation."[93] I recommend the Board direct that LII customers not be made eligible for Smart Synergy on their interruptible load, because doing so would be paying twice for the same demand reduction.

Q. PLEASE EXPLAIN WHY ALLOWING LII CUSTOMERS INTO SMART SYNERGY WOULD CONSTITUTE DOUBLE COUNTING.

A. LII customers already provide dispatchable load reduction under NS Power's Large Industrial Interruptible Rider ("LIIR"). Under that rider, a customer receives a demand-charge reduction — effective May 1, 2026, $7.638 per kVA — on all billing demand above its contracted firm demand, and in exchange it is required to reduce that interruptible load to its firm level whenever NS Power calls an interruption.[94] The system already has the benefit of that dispatchable reduction and pays for it whether or not an event is called. Enrolling the same above-firm load in Smart Synergy and allowing them to collect roughly $100 per kW of average seasonal performance on top of the demand-charge credit, for a curtailment the customer is already obligated to perform, would mean paying twice for the same demand reduction. The customer's billing demand and interruptible credit are calculated on a kW-month basis over different time frames than a Smart Synergy event, so participating in an event would not change the credit the

[92] EfficiencyOne 2027–2031 DSM Resource Plan Application (M12780, Exh. E-1), Appendix A – Preferred Plan, p. 79.
[93] E1 Response to Consumer Advocate (M12780, Exh. E-7), IR-18, p. 2.
[94] Nova Scotia Power, 2025 Tariffs, Large Industrial Tariff (2000 kVA or 1800 kW, and Over), Rate Code 23, p. 4; E1 Response to Industrial Group (M12780, Exh. E-9), IR-18(f), p. 5.

customer receives, nor would it change the amount of dispatchable load actually available to the system. In short, the system would pay a second incentive and receive no incremental demand reduction in return.

Q. WHAT DOES E1 SAY ABOUT THIS DOUBLE-COUNTING CONCERN?

A. E1 acknowledges that determining incremental value for an LII customer "may present a technical challenge, given that such customers are already contractually obligated to reduce load to their firm service level upon a curtailment call under the interruptible tariff," and that any incentive would have to be "strictly limited to incremental voluntary curtailments that are separate from, and additional to, the customer's existing interruptible tariff obligation," and E1 also confirms it, "has not yet developed a finalized methodology" for isolating that incremental value.[95] More fundamentally, E1 states that NS Power "does not plan firm capacity requirements on the basis of interruptible load above the customer's contracted firm demand requirements," and that for this reason E1 has not treated that interruptible load as eligible incremental demand response capacity under Smart Synergy.[96] Because the system does not plan around that load as firm capacity, paying a Smart Synergy incentive for reducing it would not procure any capacity the system was relying on.

Q. DOES ANY RELIABILITY STANDARD SPEAK TO COUNTING THE SAME LOAD REDUCTION TWICE?

A. Yes. It is a well-established reliability practice to avoid double counting. The Northeast Power Coordinating Council's reserve directory provides that a Balancing Authority "shall not count" reserve "from loads that are already counted in other demand response

[95] E1 Response to Consumer Advocate (M12780, Exh. E-7), IR-18, p. 2.
[96] E1 Response to Industrial Group (M12780, Exh. E-9), IR-18(b), p. 3.

programs and would result in double counting the same capacity."[97] That same logic applies here: load that is already committed and compensated under the interruptible tariff should not also be counted and paid as Smart Synergy capacity. Permitting it would charge ratepayers twice for a one-time reduction.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS REGARDING DEMAND RESPONSE.

A. I respectfully recommend that the Board:

- **Approve continuation of the Residential Demand Response (Eco Shift) component only at the proposed exploratory level.** E1 should not enroll new residential participants or expand investment until the component demonstrates cost-effectiveness under the PAC test, and E1 should report annually on its measured progress toward that threshold.
- **Approve the BNI Demand Response (Smart Synergy) component.** It is cost-effective and delivers dispatchable winter peak capacity that benefits all ratepayers.
- **Confirm that Large Industrial Interruptible customers are not eligible for Smart Synergy on their interruptible load.** Paying a Smart Synergy incentive for load that is already committed and compensated under the Large Industrial Interruptible Rider would compensate customers twice for the same demand reduction and procure no incremental capacity for the system.

[97] Northeast Power Coordinating Council, Inc., NPCC Regional Reliability Reference Directory #5: Reserve (December 2, 2010, as amended October 15, 2025), Requirement R7, p. 5. Available at: https://www.npcc.org/standards/regional-criteria

XI. INCLUSION OF SOLAR-PV

Q. DO YOU SUPPORT THE INCLUSION OF THE SOLAR-PV PROGRAM?

A. Yes I do. The installed costs for solar PV systems have declined dramatically in recent years, but the upfront costs have been a barrier to low-income customers' ability to take advantage of this opportunity to offset their electric bills with self-generated solar power. While I would like to see all low-income customers eventually have access to similar solar-PV programs, it makes sense to start with the Mi'kmaw communities, since it integrates well with the New Residential program that also targets the Mi'kmaw communities. Installing solar-PV at the time of new construction decreases the costs, since electrical wiring and roof mounting may be incorporated into the design. While the investment is relatively modest at only $2.8 million over the five-year plan, it will also provide capability building for possibly expanding the program to other low-income customers in future plans.

Q. DOES THE SOLAR-PV PROGRAM HAVE OTHER BENEFITS?

A. Yes. The electricity generated from the PV systems will offset some of the needs for new generation supply and it will help meet some of the provincial greenhouse gas reduction goals. It also provides resilience to Nova Scotia through distributed generation.

XII. CONCLUSION

Q. PLEASE SUMMARIZE YOUR KEY FINDINGS AND OBSERVATIONS

A. In summary, I respectfully recommend that the Board should:

1. Require explicit Board approval for any MCA filing. To expedite this process, intervenors should be given 30 days to provide comments on any MCAs, and the Board would issue its decision on the filing as soon as is feasible thereafter.

2. Direct E1 to modify the Standard Filing Framework (“SFF”) to clarify the cumulative nature of the collars. This should establish that E1’s plan goals are for the entirety of the term, and that unspent funding in early years can be used in later years to make sure that investment and associated savings are not lost.
3. Update the SPP to include an MCA filing trigger to address updated IRP projections. Any findings from the Evergreen IRP process that identify optimal DSM resource acquisition levels that are more than 20% away from the existing DSM Plan over its remaining term should require an MCA filing.
4. Direct E1 to utilize an overall savings target for the DSM portfolio that is aligned with the IRP-identified Base DSM level of approximately 683 GWh for 2027–2031 (“IRP-aligned scenario”), rather than the 435.4 GWh Preferred Plan, rather than the 435.4 GWh Preferred Plan.
5. Set the Low-Income savings target for dedicated programs to 14.9% of the Residential Savings target, currently 3.76 GWh in the Preferred Plan, in order to match the low-income percentage of the population.
6. Direct E1 to consolidate the dedicated low-income program components (Affordable Single Family, Affordable Multifamily, Mi'kmaw New Home Construction, and Mi'kmaw Home Energy Efficiency Project), into a single “Low Income Program” that is then subject to the MCA threshold.
7. Direct E1 to undertake measure-specific primary research (e.g., price-sensitivity or conjoint analysis) for high-value measures, consistent with the thresholds the CLEAResult methodology already contemplates, This research

should then be used to inform updates to incentives no later than January 1, 2028.

8. Require tracking and reporting of pre-weatherization barriers. E1 should record and report, by program component, the number and proportion of customers who cannot proceed because of pre-weatherization barriers and the nature of those barriers.
9. Establish a carve-out that allows E1 to spend up to 10% of dedicated low-income retrofit program funding on pre-weatherization barriers with a cap of $10,000 per home. These funds should address barriers such as mold, asbestos, and roofing or electrical deficiencies.
10. Direct E1 to offer incentives for mini-split and centrally ducted HPs as soon as possible. Ideally these rebates should be available January 1, 2027, but at a minimum should be available within the first year of the next phase.
11. Direct E1 to keep incentives for mini-split and centrally ducted HPs at $500 and $900 respectively in the Instant Savings and HEA programs. These measures should be included in the updated analysis I am requesting E1 undergo to establish a more solid basis for setting incentives moving forwards.
12. Approve continuation of the Residential Demand Response (Eco Shift) component only at the proposed exploratory level.
13. Approve the BNI Demand Response (Smart Synergy) component since it is cost-effective and delivers dispatchable winter peak capacity that benefits all ratepayers.

14. Confirm that Large Industrial Interruptible customers are not eligible for Smart Synergy on their interruptible load since it would compensate customers twice for the same demand reduction and procure no incremental capacity for the system.

15. Approve the inclusion of the Solar-PV Program in the DSM Portfolio

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.