DECISION **2022 NSUARB 137**
M10473

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF THE PUBLIC UTILITIES ACT

- and -

IN THE MATTER OF AN APPLICATION by **EFFICIENCYONE (E1)** for Approval of a Supply Agreement for Electricity Efficiency and Conservation Activities between E1 and Nova Scotia Power Inc. (NS Power), the establishment of a final agreement between the parties, and approval of a 2023-2025 Demand Side Management (DSM) Resource Plan

BEFORE: Stephen T. McGrath, LL.B. Chair
Roberta J. Clarke, Q.C., Member
Steven M. Murphy, MBA, P.Eng., Member

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BOARD COUNSEL: S. Bruce Outhouse, Q.C.

FINAL SUBMISSIONS: July 11, 2022

DECISION DATE: **September 6, 2022**

DECISION: **Subject to the adjustments and directives in paragraph [197] of this decision, the Board finds that E1's Settlement Plan is in the best interests of NS Power customers and the 2023-2025 DSM Resource Plan is approved.**

TABLE OF CONTENTS

1.0 INTRODUCTION

[1] EfficiencyOne (E1) was granted a franchise under the *Public Utilities Act*, R.S.N.S. 1989, c. 380 (*Act*) to provide "electricity efficiency and conservation activities" to Nova Scotia Power Incorporated (NS Power). In addition to the efficient use and conservation of electricity, the activities, programs and plans may include changing demand patterns for consumption of electricity. The efficient use of electricity, including how and when it is used, as well as the need to conserve or use less electricity, are widely acknowledged to result in financial and environmental benefits. Programs which promote these activities are known as demand-side management (DSM).

[2] Under the *Act*, NS Power must undertake cost-effective electricity efficiency and conservation activities that are reasonably available to reduce costs for its customers. In doing so, NS Power must enter agreements with the franchise holder to supply these activities. If the franchise holder and NS Power are unable to agree on the terms of a supply agreement, either or both may apply to the Nova Scotia Utility and Review Board to establish a final agreement.

[3] Any supply agreement between E1 and NS Power must be approved by the Board. Each supply agreement is for a three-year term and must describe the electricity efficiency and conservation activities that the franchise holder will provide and the cost.

[4] On March 11, 2022, E1 applied to the Board for approval of a supply agreement with NS Power for a three-year term for the calendar years 2023, 2024 and 2025 (Supply Agreement). E1's application described the proposed electricity efficiency and conservation activities to be provided under the Supply Agreement (2023-2025 DSM Resource Plan). The proposed plan is called the "Settlement Plan" in E1's application.

[5] E1 said the Settlement Plan will deliver approximately 412.7 GWh of affordable, incremental net energy savings and 96.7 MW (78.8 MW from energy efficiency and 17.9 MW from demand response) of cumulative system-peak demand savings to Nova Scotians. E1 said the Settlement Plan would generate lifetime benefits for Nova Scotia ratepayers of $543 million. The proposed cost of the Settlement Plan is $173 million over the three-year term ($53.1 million (2023), $57.5 million (2024) and $62.5 million (2025)).

[6] Upon receipt of the application, the Board issued a Notice of Paper Hearing and Hearing Order. Although the Hearing Order contemplated a paper process for the proceeding, it provided that any party could request an oral hearing at any time up to the filing of rebuttal evidence. Ultimately, the Board did not receive any request for an oral hearing.

[7] Notices of Intervention were received from several parties. These included: the Consumer Advocate (CA); the Small Business Advocate (SBA); several of NS Power's large and medium industrial customers (collectively known as the "Industrial Group"); the Nova Scotia Department of Natural Resources and Renewables (NRR); the Assembly of Nova Scotia Mi'kmaw Chiefs (ANSMC) and the Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO); Membertou First Nation; Heritage Gas Limited; the Investment Property Owners Association of Nova Scotia; the Ecology Action Centre (EAC); the Affordable Energy Coalition (AEC); and the Berwick Electric Commission, the Riverport Electric Light Commission, the Town of Mahone Bay, and the Town of Antigonish (collectively known as the "Municipal Electric Utilities" (MEUs)). Board Counsel participated in the proceeding with the filing of evidence by Synapse Energy

Economics, Inc. (Synapse). NS Power also participated in the proceeding and, under the *Act*, is deemed to be an applicant.

[8] One of the Settlement Plan's notable features is a proposed increase in investment in DSM programming for low-income, Mi'kmaw and diverse communities. E1 said this increase followed the guiding principle that programs and initiatives must be accessible on an equitable and non-discriminatory basis to all ratepayers.

[9] The Settlement Plan and its proposed investment level received general support from NS Power and most intervenors. Some concerns were raised about aspects of some programs included or excluded from the proposed DSM portfolio, targets for the increased investment in low-income and underserved community programs, the calculation of avoided costs and the application of cost-effectiveness tests.

[10] Significantly, the Industrial Group and the SBA raised concerns about the allocation of DSM investment and spending on incentives and measures below cost-effectiveness thresholds. They questioned whether the plan is achieving "the most savings for the least amount of ratepayers' money" (SBA) and whether electricity efficiency and conservation activities are being acquired by NS Power under its Supply Agreement with E1 at the "lowest cost available" (Industrial Group).

[11] For the purposes of the present proceeding, the Board is satisfied with the balance achieved by E1 in its proposed Settlement Plan and finds it reasonable and in the best interests of NS Power's customers. The proposed increase in investment for DSM programming for low-income, Mi'kmaw and diverse communities, supported by most of the parties in this proceeding, recognizes past under-service and attempts to address barriers to participation in DSM programs.

[12] Subject to the adjustments and directives in this decision, the Board finds that E1's Settlement Plan is in the best interests of NS Power customers and the 2023-2025 DSM Resource Plan is approved.

2.0 BACKGROUND

[13] E1's 2023-2025 DSM Resource Plan application uses the Standardized Filing Framework (Framework), developed in consultation among E1, NS Power, and stakeholders, and filed with the Board in a Consensus Agreement on July 22, 2016. The Framework helps to ensure consistent content in DSM Plan filings, including standard DSM information items, and requires E1 to develop and file one or more alternate scenarios of DSM savings and budgets when submitting a DSM application for Board approval. It also includes standards for overall DSM planning and evaluation processes and identifies objectives for pursuing DSM activities. The Framework provides that proposed DSM plans will balance multiple aspects of DSM for the benefit of customers and identifies a "balanced plan approach" to guide the development of DSM plans.

[14] The Framework also directs that the Reference Plan identified in NS Power's Integrated Resource Plan (IRP) will serve to inform the development of a preferred DSM resource plan by E1. In its application, E1 stated that its proposed 2023-2025 DSM Resource Plan achieves this directive.

2.1 Settlement DSM Plan

[15] E1 developed its Settlement Plan over the course of a stakeholder engagement process. This helped to ensure that all ratepayer classes were given the opportunity to participate and provide meaningful input into various plan scenarios. Planning began in March 2021 with initial stakeholder meetings and continued through to

the filing of this application. Stakeholders were provided with initial model results and assumptions, technical tables, and rate and bill impact analysis results, and given the opportunity to ask questions of and provide comments to E1. The result of this stakeholder engagement is the Settlement Plan, which E1 believes will deliver cost-effective energy savings that are in the best interest of ratepayers and is reflective of stakeholders' feedback.

[16] The Settlement Plan incorporates the accumulated market knowledge and intelligence gained by E1 over the years of operating the franchise. It represents a suite of DSM programs and service offerings that will deliver approximately 412.7 GWh of incremental net energy savings and 96.7 MW (78.8 MW from energy efficiency and 17.9 MW from demand response) of cumulative system-peak demand savings to ratepayers. These energy savings reflect approximately 1.2% of NS Power's generator load. The Settlement Plan features 356 measures and 14 energy efficiency and 2 demand response program components. 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. The details of the Settlement Plan are summarized as follows:

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	53.1	172.0	120.7	1,502	12.4	26.9	3.0	2.0	1.4	2.9	2.0
2024	57.5	179.0	142.6	1,540	10.8	25.6	10.0	2.0	1.4	2.8	2.0
2025	62.5	191.9	149.5	1,639	11.0	26.3	17.9	2.0	1.4	2.9	2.1
Total	173.0	542.8	412.7	4,681	11.3	78.8	17.9	2.0	1.4	2.9	2.0

[Exhibit E-1, p. 11]

With a DSM investment of approximately $58 million per year, E1 expects the Settlement Plan to generate lifetime benefits for ratepayers of $543 million.

[17] NS Power's 2020 IRP is the key planning document upon which E1 relies in its DSM planning. However, much has changed in Nova Scotia's electricity landscape since the development of the 2020 IRP. The need to meet more aggressive environmental goals and emissions reductions than anticipated by the IRP, including earlier retirement of Nova Scotia's coal fired generating plants, means that E1 needs to aggressively pursue alignment with the IRP to avoid falling behind and being unable to achieve future requirements. As such, the Settlement Plan closely aligns with NS Power's 2020 IRP Reference Plan's aggregate DSM spending level, which calls for a $188.0 million investment in DSM between 2023 and 2025. The Settlement Plan proposes an investment of $173.0 million across the three-year period. When examined over the five-year period ending in 2025, the Settlement Plan's DSM investment aligns with that of the IRP and results in an estimated incremental net energy savings of 649 GWh. The Settlement Plan therefore offers ratepayers the opportunity to capture DSM energy savings at the level established by the IRP. E1 also expects that the Settlement Plan will generate lifetime CO_2e savings of 1,742 kilotonnes (kt), valued at approximately $170 million.

[18] The Settlement Plan builds upon E1's existing programs and services, enhances service offerings, and establishes new initiatives aimed at pursuing increased energy saving solutions and reaching diverse and underserved markets. Consistent with the direction of the Framework, E1's proposed Settlement Plan follows a balanced portfolio design.

[19] The Settlement Plan invests in both energy and demand reduction initiatives. For the first time, targeted demand response offerings will be included in E1's DSM Plan. A pilot initiative will focus on reducing system coincident peak demand during

times when its impact is most beneficial to the grid. The Settlement Plan will re-introduce residential behaviour and whole home low-income program components, diversifying beyond lighting measures through expansion of more complex retrofit projects, and will develop a residential new construction market transformation program through its Enabling Strategies component.

[20] E1 has stated that the proposed Settlement Plan will result in average rate impacts between -0.1% and 1.0% by NS Power rate class, averaged over the lifetime of DSM measures. These figures are calculated relative to a scenario with no DSM as opposed to 2022 DSM levels. Further, E1 expects that with implementation of the Settlement Plan, average participants would see their power bills reduced between 1.2% and 7.9%.

2.2 Alternate Scenario

[21] In Matter M06733, the Board ordered that future DSM Plan applications by E1 must include alternate DSM scenarios, in addition to E1's proposed plan. E1 complied with that order in this application, filing a fully costed DSM alternative scenario, in compliance with the Framework requirements.

[22] Through the stakeholder engagement process, E1 modelled several alternate DSM scenarios with both higher and lower investment levels than the proposed Settlement Plan. E1 stated that stakeholders generally signaled a need to develop an alternate scenario with higher DSM spending. This need was based on the results of NS Power's 2020 IRP and the subsequent legislative amendments which introduced more aggressive scheduling of fossil fuel electricity production shutdowns. However, the alternate plan presented by E1 in the current application involves a lower DSM investment

plan than the proposed Settlement Plan. In Synapse IR-1, E1 was asked why it did not propose a DSM alternative with investment levels as high as those assumed in NS Power's 2020 IRP. E1 responded:

> (a) EfficiencyOne's (E1) Settlement Plan proposes an investment of $173 million that includes both energy efficiency and demand response. The investment in energy efficiency of $163 million slightly exceeds the Base DSM scenario that was selected as the IRP Reference Plan of $159 million. The balance of the difference is driven by the level of Demand Response (DR) in the Settlement Plan of $10 million as compared to the Base DR scenario selected in the 2020 IRP of $29 million (excluding the critical peak pricing rate option, which will be administered by NS Power) for a difference of $19 million. For the first time, E1 is proposing targeted DR activities in a DSM Plan and although E1 and NS Power have been working collaboratively on the launch of DR pilots, the Base DR investment and demand savings appear to be too aggressive and it would be challenging for E1 to ramp up to that level by 2025.
>
> (b) E1 used the 2020 IRP as the most recent IRP to inform the 2023-2025 DSM Plan. Although it is reasonable to assume that higher levels of DSM may be optimal because of the recent legislative change, a more appropriate IRP scenario and the associated level of DSM has not been identified. E1 is expecting this to occur with NS Power's 2020 IRP update.
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> [Exhibit E-14, IR-1]

[23] The alternate scenario represents a total investment in energy efficiency and demand reduction of $160.1 million from 2023-2025. The scenario projects 4,469 GWh of lifetime energy savings utilizing a portfolio with an average measure life of 12.6 years. This represents first year energy savings of 377.3 GWh or 1.1% energy savings against NS Power's load and approximately 12% less energy savings than accruing under the Settlement Plan. This scenario was developed with an average first year unit cost of $0.41/kWh.

2.3 Intervenor Consensus for Settlement Plan

[24] The Settlement Plan and its proposed investment level received general support from most intervenors. The CA also urged E1 to continue to identify and develop additional low-income housing and apartment building programs and update reporting low-income savings accordingly. Synapse and the CA further recommended that E1

develop and adopt a performance metric specifically for low-income customers. In addition, the CA supports the exploration, through the DSM Advisory Group (DSMAG), of cost-effectiveness testing methodologies.

[25] However, some concerns were raised. The SBA recommended that the Board direct E1 to re-allocate investment from DSM measures that failed a Total Resource Cost (TRC) test to those that pass the cost-effectiveness test (except for measures aimed at low-income programs). The SBA also urged the Board to require E1 to direct more of the incremental DSM investment from 2022 to 2023 from less cost-effective residential programs to more cost-effective programs in the business, non-profit, and institutional (BNI) sectors.

[26] The Industrial Group made several requests about the proposed Settlement Plan, including that the Board direct E1 to:

- provide payback information in its measure level tables and where a payback period is three years or less, to adjust incentives and/or justify the inclusion of the measure on some other basis;
- justify on an individual basis measures which fail the TRC test; and
- incorporate the most current Statistics Canada data into its investment levels as part of E1's compliance filing.

3.0 Evaluation and Verification Reports

[27] As in previous years, E1 engaged the services of Econoler as an independent third-party reviewer. In addition, Econoler was asked to conduct research to inform E1's current and future event-based demand response activities, as well as potential strategies about market transformation and codes and standards.

[28] Econoler evaluated the results of E1's 2021 DSM program portfolio. This portfolio included three residential programs and three BNI programs. Each program had one or more program components.

[29] There are three broad evaluation categories: impact evaluations (comprehensive or condensed), process evaluations, and market evaluations. Impact evaluations were conducted for all program components and at least one comprehensive impact evaluation is conducted every three years for all program components.

[30] The evaluation showed that overall savings in 2021 were below target levels, but E1 achieved 109.418 GWh in net electrical energy savings and 27.484 MW in net peak demand savings at the generator in 2021. These savings represent 63,911 tonnes of CO_2e in terms of annually avoided GHG emissions. Econoler did not make any cross-cutting recommendations in 2021 but did provide several recommendations on individual program components.

[31] Separate from the evaluation process, the Board engaged the services of H. Gil Peach & Associates, LLC to conduct a savings verification review. That review focuses on verification of electricity energy savings and demand reduction as measured, modeled, and estimated by Econoler. Energy savings are estimated for first year and demand reduction is modeled.

[32] The examination undertaken by Peach & Associates is based on a careful review of Econoler's evaluation for each program component or initiative in the DSM portfolio, including a review of each evaluation's explicit or implicit design, and consideration of evaluation methods, standards, or evaluation protocols used in each evaluation. Calculation methods are also reviewed. The evaluation results are verified, and if appropriate, adjustments to the savings data and estimates are recommended.

Normally, the examination would include selected "due diligence" site visits to check installation counts and quality of work, and discussion of program experience with customers. However, due to the continuing COVID restrictions in 2021, there were no on-site savings verification visits.

[33] The Board notes that none of the participants in this proceeding raised any concerns with respect to the Econoler Evaluation Report or the Peach Verification Report regarding the 2021 DSM portfolio. In the circumstances, the Board accepts those reports as filed.

4.0 ISSUES

4.1 Proposed Levels of DSM Spending for 2023-2025

[34] As noted earlier in this decision, E1 is seeking Board approval of its Settlement Plan, which includes spending $173.0 million over the three-year period from 2023 to 2025. DSM programs which will be implemented over that period are projected to produce a targeted energy savings of 412.7 GWh and targeted demand savings of 96.7 MW, which includes 17.9 MW attributed to demand response initiatives. Annual spending is projected to progressively increase from $53.1 million in 2023, to $57.5 million in 2024, and to $62.5 million in 2025.

[35] E1 stated that the 2023 spending level of $53.1 million is about 3.5% of NS Power's annual revenue, assuming a revenue total of $1.5 billion. This is a significant increase from the 2.3% experienced in 2021. The Board notes that the AEC recommended that the spending level should increase to 3% as soon as possible, but the proposed Settlement Plan already exceeds that recommendation.

[36] The Settlement Plan includes 14 energy efficiency programs, and two demand response programs, which incorporate 356 measures. The spending allocation directs 55% towards residential programs and 45% towards the BNI sectors. With a focus on reducing barriers to reaching a wide, diverse range of customers, E1 will be allocating $35.8 million toward DSM programs for underserved markets and diverse communities. This represents 21% of the total funding level and provides a focused support for low income and Mi'kmaw communities. The DSM portfolio includes dedicated investment of $7 million toward Mi'kmaw Community programming. For comparison, the approved spending for the 2020 to 2022 period was $110 million, with $12.9 million allocated to underserved markets and diverse communities.

[37] In addition, $10.0 million will be directed toward demand response pilot programming, with annual spending of $1.5 million, $3.5 million, and $5.0 million in succession between 2023 and 2025.

[38] The Settlement Plan proposes spending at levels that are significantly higher (by 57%) than the current levels. E1 emphasized that increased investment in energy efficiency is necessary to support the achievement of emissions reductions targets by the year 2030 at the lowest cost to ratepayers. E1 also noted that the Settlement Plan incorporates ratepayer benefits from energy efficiency related to the avoided costs of carbon.

[39] Regarding the Settlement Plan's alignment with the 2020 IRP and recently legislated climate change reduction goals, E1 stated the following:

> The Settlement Plan will enhance DSM deliverables and effectiveness by increasing DSM spending to a level that ensures unity with Nova Scotia's current and future energy landscape, while remaining aligned with, and rooted in, the 2020 IRP. It is important to recognize that the Settlement Plan remains founded upon the 2020 IRP's lowest net revenue option and deliberately employs an investment trajectory that promises DSM alignment with the 2020 IRP by 2025. The cumulative Settlement Plan investment level

> over the period of the Plan aligns generally, in aggregate, with the Reference Plan investment level ($173M v. $188M).
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> [Exhibit E-1, p. 41]

[40] The Board notes that no party in this proceeding opposed the spending level proposed in the Settlement Plan, although the Industrial Group's consultant recommended that the $10 million budget for demand response should be reduced, except for the direct cost of equipment.

[41] The Board also notes NS Power's support for the Settlement Plan. In its rebuttal evidence, NS Power stated:

> NS Power would like to reiterate its support of E1's Settlement Plan.
>
> E1's proposed plan represents an increase in DSM spending in the province, and the largest portion of that will help support programs for low-income Nova Scotians and First Nations in the province. These sectors have traditionally been under-served and, as such, NS Power remains pleased with the increase in this area set out in the Settlement Agreement.
>
> DSM contributes to reduction of greenhouse gas (GHG) emissions. E1's Settlement Plan will not only provide substantial electricity efficiency benefits, but will also assist with GHG reduction goals. Working together with E1 and other stakeholders is critical to achieving the government's 2030 energy targets in a way that supports a just energy transition.
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> [Exhibit E-28, p. 2]

[42] In past decisions, the Board has indicated its views on consensus and settlement agreements. The Board focuses on whether such agreements are in the public interest. In this proceeding, there is broad support for the Settlement Plan.

[43] As set out in s. 79L (8) and (9) of the *Act*, to approve a DSM supply agreement, the Board must be satisfied that the proposed plan is in the best interests of NS Power customers, taking into account affordability, as well as any other matters the Board considers appropriate. The Board is satisfied that the budgeted spending and savings targets are in the best interests of NS Power's customers and are affordable. The Board agrees that increased spending on programs that focus on low income and

Mi'kmaw communities is an important step in providing underserved communities with access to DSM programs. Further, the Board finds that, given the history of E1's targets, the plan is achievable. Therefore, the Board approves the spending levels contained in the Settlement Plan.

4.1.1 Research and Development

[44] In its application, E1 proposed increased investment in development and research which specifically targets innovation, pilots, and emerging technologies. Future areas of focus are expected to include electrification, deep retrofits, virtual audits, and market transformation. This investment is budgeted at $4.5 million, consisting of $1.5 million for each year of the plan.

[45] In its response to NSUARB IR-7, E1 indicated that it did not have a plan for specific initiatives or estimates for associated energy, demand, or carbon savings. Synapse highlighted this as a concern, since E1 provided no indication of how decisions will be made for that funding. Synapse stated that a framework for considering and approving development and research initiatives, projects, and pilots should be addressed in more detail. Specifically, Synapse stated that the framework should lay out the process, including delineation of roles and responsibilities, for considering and approving development and research activities. In addition, study design elements should include:

- What has already been learned from previous research, and how these past and potentially ongoing learnings will relate to the currently proposed research.
- What the gaps are in understanding that the current proposed research proposes to fill.
- What alternative approaches could be used to fill in these knowledge gaps, and why the proposed approach is better than alternatives.
- How the metrics and data collected will enable E1 to decide whether to recommend rolling out to a full-scale program.

- The logic for the pilot study design.
- Whether there are opportunities for learning on other, related issues.

[Exhibit E-25, p. 32]

[46] To address its concern, Synapse recommended that the Board require E1 to develop a framework, as described above, as a condition of approving the proposed budget for development and research.

[47] In its rebuttal evidence, E1 noted that an innovation process, significantly encompassing Synapse's recommendations, was initiated in 2021 and continues to be developed. The general purpose of that initiative is to develop, test, and evaluate the success of new ideas with the objective of achieving E1's long-term organizational goals. E1 noted that it expects the innovation process to continue evolving and to incorporate best practices and lessons learned from completed projects. In addition, E1 listed the following seven principles upon which its innovation process is based:

1) Balance Short-Term and Long-Term Objectives.
2) Establish Corporate Innovation Objectives.
3) Establish Innovation Governance Committee.
4) Apply Consistent Screening Criteria.
5) Adopt an Iterative Approach to Project Roll-Out.
6) Develop a Corporate Innovation Plan.
7) Measure Innovation Success Corporately.

[48] The Board considers that a rigorous process must be in place to ensure prudent use of ratepayer funds. Although E1 provided some insight into its innovation process, the listed principles and brief definitions appear to be general guidance statements which do not address key study design elements, such as those highlighted by Synapse. It is also noteworthy that E1 stated its innovation process continues to be developed and is expected to continue evolving. The Board acknowledges the importance of the concerns raised by Synapse and directs E1 to prepare detailed plans

and processes for each of its research initiatives prior to proceeding with significant expenditures. Those plans and processes must be documented and fully discussed with members of the DSM Advisory Group in advance of implementation.

4.2 Proposed Performance Targets

[49] The Settlement Plan sets a target for cumulative annual energy savings of 412.7 GWh and cumulative annual peak demand savings of 78.8 MW. E1 stated in its application:

> E1's success in implementing an approved DSM Plan is evaluated through Performance Targets. The Standardized Filing Framework sets out the performance targets and thresholds which must be met through the execution of the DSM Plan. The Board-Approved Performance Targets are:
>
> • Cumulative annual energy savings; and
>
> • Cumulative annual peak demand savings.
>
> Where a minimum of 90% achievement is reached with respect to each of the cumulative annual energy savings and cumulative annual peak savings, E1 is deemed to be in substantial compliance with the Performance Targets. The Performance Targets apply, and are evaluated, to the period of the Board-Approved Supply Agreement, rather than annually.
>
> Evaluation of E1's compliance and success in implementing the approved DSM Plan will be monitored through Quarterly Reports and Annual Progress Reports.
>
> [Exhibit E-1, p. 60]

[50] The Supply Agreement defines Performance Indicators as management tools that provide information to allow an organization to take action to help it deliver on performance targets.

[51] Both the CA and Synapse raised concerns about the increased level of spending on low-income programs and recommended that performance targets be established.

[52] Under the Settlement Plan, E1 will allocate $35.8 million toward DSM programs for underserved markets and diverse communities. This increase is nearly

three times the 2020-2022 investment level of $12.9 million and represents 21% of the total Settlement Plan investment, which is much greater than the 8% average investment during the 2015 to 2020 timeframe. In addition, increased support for Mi'kmaw communities is also provided under the Settlement Plan with the investment levels increasing to $7.0 million, largely within the new Affordable Single-family Home program component.

[53] The CA's consultant, Theodore Love, Green Energy Economics Group, Inc., noted that spending and energy savings for low-income programs has lagged. The significant increase in the proposed investment for these programs under the Settlement Plan prompted him to recommend establishing a specific performance target to "...make sure that investment in energy efficiency in underserved communities will not fall behind and be covered up by savings from other residential or BNI programs." Mr. Love proposed that E1 be required to meet at least 90% of the cumulative first-year low-income energy savings target of 39.4 GWh.

[54] Synapse also recommended that the Board adopt a performance metric for savings for the low-income segment "...to ensure that funds are effectively spent and that this population experiences benefits of energy efficiency." Synapse noted that reducing energy burdens for this population produces benefits for these customers in energy cost savings, and for all ratepayers through, for example, a reduction in arrears and collection expenses.

[55] In its rebuttal evidence, E1 acknowledged that it had difficulty meeting savings targets for diverse and underserved communities in 2020 and 2021 due to the COVID-19 pandemic, but said it was confident in its ability to achieve the Settlement Plan's energy savings targets for the programs in these communities. Given the

significant increased focus on these programs in the Settlement Plan, E1 agreed that setting performance targets is appropriate. However, E1 noted that the savings target proposed by Mr. Love included incidental savings, which were secondary to other programs not specifically proposed for these sectors.

[56] E1 proposed that the 15.8 GWh savings anticipated under these sector-specific programs be set as the performance target. E1 also proposed that the target should be considered satisfied if it achieves at least 90% of the cumulative aggregate annual energy savings applicable to the Affordable Single-family Homes, Affordable Multi-family Housing and Mi'kmaw Home Energy Efficiency Project programs. Regarding the other 23.6 GWh of secondary incidental energy savings, E1 proposed this savings be designated as a performance indicator. In his closing submission, the CA said that counter-proposal was reasonable.

[57] Considering the increased investment in programs for low-income and underserved communities, the Board finds that it is appropriate to establish a separate performance target for these programs. The Board accepts the performance target of 15.8 GWh for the programs specifically aimed at these sectors. The Board accepts E1's suggestion that the target will be met if it achieves at least 90% of the cumulative aggregate annual energy savings applicable to the Affordable Single-family Homes, Affordable Multi-family Housing and Mi'kmaw Home Energy Efficiency Project programs. The Board also accepts that the 23.6 GWh secondary incidental savings attributable to low-income in other sectors be established as a performance indicator.

4.3 Avoided Costs

[58] In determining the cost effectiveness of its DSM portfolio, E1's calculations incorporated the avoided costs of energy, capacity, transmission, distribution and carbon. The avoided costs of capacity and energy were calculated by NS Power, based on Reference Plan 2.0C in the 2020 IRP. The avoided costs of transmission and distribution were provided by NS Power in a separate filing using a methodology based on historical transmission and distribution investments. E1 calculated the avoided costs of carbon by applying the federal trajectory pricing to an emissions intensity for Base DSM savings from the 2020 IRP Reference Plan 2.0C results.

[59] E1 stated that the 2020 IRP Reference Scenario 3.1C was more suitable for assessing the affordability of the Settlement Plan, given its alignment with recent environmental legislation and directives. However, when E1 filed its application, NS Power had not yet updated the avoided costs of energy and capacity to account for the recently legislated climate change reduction goals. E1 noted that forecasts using the IRP's current avoided costs will be conservative and will understate the expected DSM economic benefits.

[60] Various parties expressed similar concerns in their evidence and submissions. The CA recommended recalculating the avoided costs to align with current legislation and IRP assumptions, with the goal of providing updated cost-effectiveness results in the next annual report.

[61] The MEUs noted that electricity system differences related to their participation in the wholesale market result in different factors for avoided costs than those incurred through NS Power. As such, they recommended that the Board direct E1

to consider and provide supplementary information on the cost and benefits of programs targeted at the MEUs wholesale market participants in all future DSM Plans.

[62] Synapse noted that E1's inclusion of avoided water and other fuel costs in the cost-benefit analysis appears to contradict the Board's finding in Matter M08888 that non-energy impacts should not be considered. This issue is more fully addressed later in this decision.

[63] In its rebuttal evidence, NS Power responded to the CA's suggestion by noting that avoided cost data will not be required again until 2025, when it will be needed to prepare the 2026-2028 DSM Resource Plan. In the meantime, ongoing "evergreening" of the IRP will result in more current updated scenarios from which to base updated avoided costs, if necessary, prior to the 2026-2028 DSM Plan development. NS Power confirmed in its closing submission that it will work with E1 and the DSM Advisory Group to discuss potential updates to the avoided costs in advance of the 2026-2028 DSM Resource Plan.

[64] The Board understands that recently legislated climate change reduction goals are not addressed in IRP Reference Plan 2.0C, nor are they fully addressed in Reference Plan 3.1C. The Board agrees that these factors need to be incorporated in updated avoided costs; however, there is no immediate urgency and directs that this issue be tasked to the DSMAG to be resolved in time for use during preparation of the 2026-2028 DSM Plan.

4.4 Cost-effectiveness Testing

[65] Cost-effectiveness testing assesses the relative value of the Settlement Plan through a comparison of benefits and costs expressed as both the dollar value of

the net benefit (or cost) and as a ratio of benefits to costs. As the Board ordered in Matter M03669, cost-effectiveness testing for E1's proposed Settlement Plan uses the TRC test at the program level. This test compares the costs incurred to design and deliver programs and customers' costs with avoided energy and other supply-side resource costs, including capacity, transmission, distribution and carbon. Each program in the Settlement Plan must achieve a benefit-to-cost ratio of at least 1 to pass the TRC test.

[66] The TRC test considers cost effectiveness from the combined perspective of the utility and the program participants. The PAC test assesses the cost effectiveness of DSM programs from the perspective of the utility. Both tests make use of NS Power's Weighted Average Cost of Capital as the discount rate. E1 has provided the results of the PAC tests for each Settlement Plan program for information purposes.

[67] For the first time in its proposed DSM plan, E1 included avoided costs of carbon in both the TRC and PAC tests. For informational purposes only, E1 also provided TRC and PAC test results without avoided costs of carbon.

[68] Moreover, E1 noted that DSM measures produce both non-electric and non-energy benefits and costs. Non-electric benefits impact customer fuel consumption from sources other than grid-supplied electricity. Non-energy benefits impact customer non-fuel costs that are affected by the installed measures (e.g., reduced maintenance). As such, within the Settlement Plan modelling, E1 has included the additional customer cost of biomass for some measures that switch from electricity to biomass (e.g., wood stoves), as well as the customer cost savings from reduced water consumption for some measures (e.g., commercial dishwashers). These additional non-electric fuel costs and reduced water costs are, therefore, considered in the TRC and PAC calculations.

[69] In its evidence, Synapse noted that inclusion of non-electric fuel costs and reduced water costs in TRC and PAC calculations appears to contradict the Board's finding in Matter M08888 that non-energy benefits should not be considered. Synapse further stated:

> Since these avoided costs do not have an impact on electric system costs, they should not be included in the PAC in any case. While including these avoided costs in a TRC is consistent with how the TRC is generally defined, these avoided costs should not be included in the BCA for the TRC test in keeping with the Board Decision in M08888. However, removing these costs from the TRC will result in a test that is skewed. A TRC that includes participant costs but does not include participant benefits is inherently unbalanced.
>
> [Exhibit E-25, p. 17]

[70] To address this concern, Synapse recommended that E1's cost-effectiveness testing methodology be modified. Specifically, Synapse recommended that since the PAC test should not account for participant costs and participant benefits, and is therefore more balanced, the Board should put more emphasis on the PAC test for future DSM applications. Alternatively, Synapse recommended the Board launch a process to develop a jurisdiction-specific cost-effectiveness test that reflects the Province's policy priorities.

4.4.1 Findings

[71] In Matter M08888, the Board found that it does not have the jurisdiction to consider non-energy impacts in DSM cost-effectiveness testing. In the current proceeding, E1's inclusion of non-energy benefits (such as avoided water and other fuel costs) in its TRC calculations ignores this finding. As noted by Synapse in its evidence, the impact of removing these avoided costs would not be material and the proposed Settlement Plan would still be cost-effective using the TRC test. Nevertheless, the Board finds that inclusion of such non-energy benefits in E1's 2023-2025 Settlement Plan TRC

calculations is not consistent with the Board's finding in Matter M08888. Therefore, E1 is directed to remove these non-energy benefits from its TRC and PAC calculations and file a Settlement Plan compliance filing with the Board in this proceeding.

[72] In response to Synapse's recommendation related to modification of E1's DSM plan cost-effectiveness testing methodology, E1 stated:

> E1 submits that a broad review of cost-effectiveness testing methodologies may be appropriate at the present time given recent legislative changes, as well as advancement in demand response and electrification initiatives. A thorough assessment of the relative merits of both the PAC test and a jurisdiction-specific test is required to determine the optimal cost-effectiveness testing methodology for Nova Scotia. E1 proposes that this matter be explored further through the DSM Advisory Group in advance of the 2026-2028 DSM Plan.
>
> [Exhibit E-29, p. 13]

[73] The Board finds that E1's suggested approach is reasonable. The Board, therefore, directs E1 to work with the DSMAG before the 2026-2028 DSM Plan application to assess and develop an optimal DSM cost-effectiveness testing methodology.

4.5 Allocation of Program Costs

[74] E1 said it applied the following "guiding principles" in developing its 2023-2025 DSM Resource Plan:

> Transparency – E1 will provide stakeholders and customers with information and insight into the analyses supporting plan development and results and demonstrate how received comments were considered.
>
> Accessibility & Equity – E1 services are accessible on an equitable and non-discriminatory basis and, where necessary, E1 targets hard to reach or potentially underserved market segments.
>
> Affordability – E1's portfolio aims to maximize value to electricity ratepayers, using the Integrated Resource Plan, the Rate and Bill Impact Analysis, and cost effectiveness testing as a framework to consider both short- and long-term affordability.
>
> [Exhibit E-1, Appendix A, p. 19]

[75] E1 also said its resource plan portfolio aligned with the "Balanced Plan Approach" in the Framework, as set out in s. 4.3.1 of the Consensus Agreement filed with the Board on July 22, 2016:

> **4.3.1 BALANCED PLAN APPROACH**
>
> EfficiencyOne will produce DSM Resource Plans that balance multiple aspects of DSM for the benefit of customers, including:
>
> - Short-term and long-term energy and capacity avoidance;
> - Program delivery costs;
> - Avoided energy and capacity investments;
> - Non-electric and non-energy benefits;
> - Diversity of program delivery;
> - Business relationships and maintenance of market presence;
> - Access to programs by all market sectors and rate classes by addressing barriers to participation; and
> - Rate impacts.
>
> [M07543, Exhibit E-3, Appendix 1, p. 10]

[76] To achieve a balanced portfolio for the proposed Settlement Plan in this application, E1 applied the following design objectives:

> - Low-income investment is 17-22% of the total energy efficiency investment. This aligns with 2016 Census data for low-income prevalence in Nova Scotia.
> - 50/50% Residential-to-Business, Non-Profit & Institutional ("BNI") investment split.
> - 40/60% Residential-BNI energy savings split (informed by NS Power's 2021 Load Forecast and E1's 2019 DSM Potential Study).
> - Increased investment in development and research specifically targeting innovation.
> - Expansion of education and outreach for diverse and underserved communities.
> - Increased diversity of energy and demand savings to further help customers achieve cost effective energy solutions.
> - Expanded accessibility for a wider variety of market sectors and customer segments.
>
> [Exhibit E-1, p. 13]

[77] One of the Settlement Plan's notable features is a proposed increase in investment for DSM programming for low-income, Mi'kmaw and diverse communities. E1 said this increase followed the guiding principle that programs and initiatives must be accessible on an equitable and non-discriminatory basis to all ratepayers. In its application, E1 states:

> The Settlement Plan will feature program enhancements aimed at increasing overall accessibility of DSM programs and the removal of barriers that inhibit community participation. Building upon past successes and lessons learned, the Settlement Plan leverages the effectiveness of existing barrier mitigation strategies and extends successful programs, while continuing to develop and implement new initiatives designed to further reduce the impact of DSM barriers and enhance overall accessibility for customers. The Settlement Plan will also include a significant expansion in education and outreach initiatives for Nova Scotia's diverse communities under E1's Enabling Strategies.
>
> ...
>
> Under the Settlement Plan, E1 will be allocating $35.8 million toward DSM programs for underserved markets and diverse communities, amounting to a 177% growth in funding. This increase in DSM investment intended for low-income and diverse markets is intentionally close to three times the 2020-2022 investment level of $12.9 million and reflective of E1's commitment to equitable and non-discriminatory program delivery. With this in mind, E1 will now allocate 21% of the total Settlement Plan investment toward low-income programming – a substantial increase from the average of 8% seen during the 2015 to 2020 timeframe. Further, increased support for Mi'kmaw communities is also provided for under the Settlement Plan with the investment levels increasing to $7.0 million. Notably, the new Affordable Single-family Home program component constitutes a considerable portion of this growth in investment and will offer significant savings for the families who need it most with an investment level of $24.7 million.
>
> [Exhibit E-1, pp. 55-56]

[78] E1's proposed DSM programs for low-income ratepayers and in Mi'kmaw communities were supported by the ANSMC/KMKNO, Membertou, the AEC, the EAC and NS Power. Increased investment in programs for low-income customers was also supported by the CA and by Synapse but, as discussed already in this decision, these parties urged the Board to set specific performance targets for these programs.

[79] The ANSMC/KMKNO noted that Mi'kmaw households tend to experience higher than average energy bills and are among the hardest hit by rising energy costs and the least able to respond to new opportunities in energy efficiency and conservation.

The evidence filed by Membertou noted that it remains underserved and underrepresented in terms of energy program opportunities, like many communities in Mi'kmaki. The ANSMC/KMKNO viewed the expanded programming in E1's current plan dedicated to Mi'kmaw communities as aligned with the *United Nations Declaration on the Rights of Indigenous Peoples* (Article 29) and the Truth and Reconciliation Commission of Canada's Call to Action #92.

[80] The AEC's evidence discussed the prevalence of energy poverty in Nova Scotia and noted Nova Scotia has one of the highest energy poverty rates in the country. Pending further research, the AEC estimated that 26% of Nova Scotians (or approximately 105,000 households) lived in energy poverty (defined as a household that pays more than 6% of household income on home energy). The AEC noted that low-income households and many moderate-income households simply cannot afford to invest in energy efficiency.

[81] The EAC said that targeting energy-poor and hard to reach households is a common gap in energy programs that needs to be addressed. It said an increased level of investment in low-income households allows Nova Scotia to address key barriers to energy efficiency goals and ensures that low-income populations can participate in a just transition and fuel switching programs that will allow the province to meet its climate objectives.

[82] NS Power, in its rebuttal evidence, said:

> E1's proposed plan represents an increase in DSM spending in the province, and the largest portion of that will help support programs for low-income Nova Scotians and First Nations in the province. These sectors have traditionally been under-served and, as such, NS Power remains pleased with the increase in this area set out in the Settlement Agreement.
>
> [Exhibit E-28, p. 2]

[83] Mr. Love recommended that the Board adopt the Settlement Plan, and he said the following about spending aimed at low-income customers:

> The Settlement Plan provides a significant increase in investment and savings for Nova Scotia's low-income residents. As discussed earlier in this testimony, savings and investment have dragged even more for this sector than for the residential sector in general. The low-income population faces the highest energy burden and has been the most impacted by the COVID-19 pandemic. The projected spending level of $35.8 million, 21% of total investment, for low-income customers is much higher than the previous average of 8% for the 2015 to 2020. This increased goal is a very important step in making the plan more equitable and helping address broader issues in Nova Scotia.
>
> [Exhibit E-20, p. 7]

[84] Although NS Power and most of the intervenors in this proceeding supported E1's proposed significant increase in investment in DSM programming for low-income, Mi'kmaw and diverse communities, the SBA and the Industrial Group raised concerns about the allocation of DSM spending. They questioned whether the plan is achieving "the most savings for the least amount of ratepayers' money" (SBA) and whether electricity efficiency and conservation activities are being acquired by NS Power under its Supply Agreement with E1 at the "lowest cost available" (Industrial Group).

4.5.1 Allocation to Low-income Program Components

[85] The cost effectiveness test results for the Settlement Plan are shown as follows:

2023-2025 Settlement Plan	Total Resource Cost (TRC) Test	Program Administrator Cost (PAC) Test
Residential Energy Efficiency (EE) Programs		
Efficient Product Rebates	1.1	2.2
Existing Residential	1.5	2.4
New Residential	2.6	4.8
Residential Low-Income	*1.0*	*1.2*
Residential Sector Total	1.5	2.4

Business, Non-Profit & Institutional (BNI) Energy Efficiency (EE) Programs		
Efficient Product Rebates	3.7	7.5
Custom Incentives	2.5	4.3
Direct Installation	2.2	3.0
BNI Low-Income	*2.8*	*7.6*
BNI Sector Total	2.9	5.0
EE Portfolio Total (includes Enabling Strategies and EE Programs)	2.0	3.3
Demand Response (DR) Program		
DR Program Total	1.1	0.7
Settlement Plan Total (EE + DR + ES)	2.0	2.9

[Exhibit E-1, pp. 19-20]

[86] The Settlement Plan has an overall TRC test value of 2.0 (2.0 for energy efficiency programs and 1.1 for demand response). All programs have a TRC test value greater than 1 and thus pass at the Board approved level. However, two components of the Existing Residential Program do not pass the TRC test. These include the Affordable Single-family Homes and Mi'kmaw Home Energy Efficiency Project program components. As stated by E1, these are dedicated low-income and diverse or underserved communities program components, which are expected to lower TRC values, when compared to market-rate DSM programs.

[87] John G. Athas, of Daymark Energy Advisors, Inc., the SBA's consultant, recommended that the bulk of the increase in DSM spending between 2022 and 2023 should be allocated to more cost-effective measures aimed at the BNI sectors. Although he acknowledged that E1 targets equal investment in the residential and BNI sectors to achieve a balanced portfolio, Mr. Athas recommended that 80% of the increase in

investment from 2022 to 2023 should be targeted to the most effective measures and program components.

[88] Mr. Athas estimated that shifting approximately 80% of E1's proposed funding for its Affordable Single-family Homes and Residential Behavior program components to more cost-effective BNI programs would produce lifetime MWh savings at less than half the cost of achieving them under the residential sector portfolio. Expressed differently, he said that shifting this investment from the residential to the BNI portfolio would produce almost 13% more lifetime GWh savings under the plan without increasing expenditures for the year 2023.

[89] Mark Drazen, of Drazen Consulting Group, Inc., the Industrial Group's consultant, said the Board should review the proposed DSM plan in the same way as a supply contract and ask itself whether the supply is being acquired at the lowest cost available. Mr. Drazen concluded E1 is not minimizing the cost of its suite of DSM measures because of a "policy decision to subsidize low-income and underserved communities" and by subsidizing DSM measures through incentives that are greater than necessary (discussed later in this decision).

[90] The Industrial Group noted that E1 acknowledged that certain low-income program components do not pass the TRC test and negatively affect the overall cost-effectiveness of the resource plan. To minimize the impact of this, the Industrial Group submitted that funding for low-income investment under the proposed Settlement Plan be based on more recent Statistics Canada data for the number of low-income households in Nova Scotia. The Industrial Group submitted this data showed that the prevalence of low-income households has been declining since the period represented in the 2016 Statistics Canada census data selected as the base for E1's funding levels for 2023-2025.

The Industrial Group submitted that use of historic and high data on the prevalence of low-income households in Nova Scotia caused E1 to overshoot its goal to achieve equity and "presented a stretch Plan which is not grounded in the data, nor as efficient or cost-effective as it could and should be."

[91] In its rebuttal evidence, E1 noted that following Mr. Athas' recommendation would significantly defund or eliminate programs targeted at low-income and underserved markets. E1 emphasized the equitable nature of these programs was of equal importance to program delivery costs:

> ...The Standardized Filing Framework was developed through a collaborative approach recognizing key design principles that stakeholders had agreed must be taken into consideration in the development of future DSM plans. Among the eight (8) design principles was program delivery costs. However, the design requirements also included seven (7) other articulated design principles of equal importance and which included: diversity of program delivery and access to programs by all market sectors and rate classes by addressing barriers to participation. The diverse and underserved communities programs, included in the Settlement Plan, specifically targets this equity and access issue. A targeted focus on "*maximization of measures and programs that have the highest cost-effectiveness ratios*" with lessor [*sic*] regard to the other key DSM plan design principles would be a departure from the Standardized Filing Framework and inconsistent with the consensus nature of the agreement itself. (emphasis in original)
>
> [Exhibit E-29, p. 2]

[92] E1 said that when developing its DSM plan, it transparently applied its guiding principles and pursued a plan that balanced multiple aspects of DSM for the benefit of customers. This included a targeted equal splitting of DSM investment between the residential and BNI sectors. E1 said no concerns were raised about this by stakeholders during the development of the plan.

[93] In its closing submission, the SBA agreed with E1 that the Guiding Principles and the Framework were important considerations when drafting DSM plans but submitted these were not binding guidelines driving program design. The SBA submitted the Principles and Framework were a starting point, but funds may need to be

shifted to other programs and rate classes to ensure the plan is achieving "the most savings for the least amount of ratepayers' money."

[94] While generally supportive of E1's proposed plan, the SBA encouraged the Board to adopt the recommendations contained in Mr. Athas' evidence. However, the SBA also submitted that TRC requirements should be applied differently for low-income programs:

> The SBA and Mr. Athas recognize that some of the measures that fall below the TRC ratio of 1.0 are designated for low-income programs, and low-income programs are not exempt from the requirement of passing the TRC test in Nova Scotia. This ultimately negatively impacts the overall TRC test results in the filing. We want to underscore that the SBA supports the overall investment for low-income programs, and do not believe that the TRC requirement of 1.0 should be applied to these programs in the same way we submit that it should be applied to other sectors. We point to testimony filed by Synapse on May 20, 2022 in response to concerns about a focus on investment:
>
> > The focus on investment may do little to ensure low-income populations experience the benefits of energy efficiency. Energy efficiency targeting low-income populations offer these customers a way to manage their bills. Low-income customers generally spend a large portion of household income on energy bills; that is, they have high energy burdens. In general, reducing energy burdens for this population produces proportionally large benefits, both for these customers and for ratepayers as a whole (e.g., through reductions in arrearages and collection expenses.)
>
> The SBA agrees with this response and reinforces that developing and adopting a performance metric specifically for low-income customers outside of the other measures could ensure funds are effectively spent and that actual benefits of energy efficiency can be realized by low-income sectors - without negatively impacting the TRC test and funds spent in other sectors.
>
> [SBA Closing Submission, June 30, 2022 (footnote omitted)]

[95] Similarly, the Industrial Group acknowledged the benefits of supports for low-income ratepayers but said the acquisition of electricity efficiency and conservation activities under its supply agreement with E1 should be considered based on whether it is at the lowest cost available. Although the Industrial Group said it was not taking a position in this proceeding on the Board's jurisdiction to approve E1's "policy decision to subsidize low-income and underserved communities," it submitted this is an issue warranting consideration given provisions in the *Act* addressing the non-discriminatory

delivery of electricity and the cost-effectiveness of electricity efficiency and conservation activities. The Industrial Group also referenced the Nova Scotia Court of Appeal decision in *Dalhousie Legal Aid Service v. Nova Scotia Power Inc.*, 2006 NSCA 74, in respect of the Board's inability to approve a rate assistance program for low-income ratepayers.

[96] In its rebuttal evidence, E1 argued it was statutorily empowered to make the "policy decision" questioned by the Industrial Group. It said its efforts under the 2023-2025 DSM Plan to overcome systemic barriers to program delivery and savings to some groups was "aligned with its statutory ability as the franchise holder to provide reasonably available, cost-effective electricity efficiency and conservation activities to all NS Power customers." It also submitted the need to invest in underserved markets is a policy decision upon which most stakeholders in this proceeding are aligned and that "the manner in which this is accomplished remains the function of the DSM Administrator."

[97] In addressing the Industrial Group's recommendation that the level of investment in low-income programs should be based on updated Statistics Canada data (the 2021 Census of Population), E1 emphasized that the level of investment was not determined on a pure mathematical calculation based on statistical data and its use of the 2016 census data was only a starting point. E1 said that taking a strict formulaic approach to investment in low-income and underserved communities restricted its role "as an experienced DSM administrator and franchise holder that is statutorily empowered to provide reasonably available DSM programs within this province." In determining the amount of this investment, E1 said it:

> …has listened to stakeholders and advocacy groups for low-income and underserved communities and…developed a DSM Plan that prioritizes the removal of systemic participation barriers and features the continuation of successful programs, the development and implementation of new initiatives, and the expansion of related education and outreach opportunities. The need to invest in underserved markets is a policy decision upon which the majority of stakeholders are aligned. E1 respectfully submits that much like

> the measure selection and incentivization processes discussed above, the manner in which this is accomplished remains the function of the DSM Administrator.
>
> [E1 Reply Submission, p. 4]

4.5.1.1 Findings

[98] Although the Industrial Group suggested that the Board's jurisdiction to approve E1's "policy decision to subsidize low-income and underserved communities" warranted consideration, none of the parties in this proceeding – including the Industrial Group – took a position on this issue. Indeed, the Industrial Group was the only one to suggest that it was an issue. All the other parties in the proceeding supported E1's proposed programs in these areas or, in the SBA's case, submitted the cost-effectiveness test should be applied differently to such programs. In the circumstances, where none of the parties (many of whom are represented by experienced counsel before the Board) are actively pursuing the issue in the proceeding, and the Board does not have the benefit of a full record of submissions on the point, the Board declines to make a specific finding on this issue. This matter may be pursued by the parties in a future proceeding if they choose to do so. That said, given that the Board is a statutory body that must operate within the bounds of its jurisdiction, the Board considered whether there was an obvious lack of jurisdiction that would preclude it from approving E1's application and finds that not to be the case.

[99] While it is clear from *Dalhousie Legal Aid Service* that s. 67(1) of the *Act* precludes the Board from approving a different rate for a low-income customer for service that is the same as that received by a more affluent customer, the Board is not exercising any authority under s. 67(1) in this proceeding. The Board is approving a supply agreement between E1 and NS Power for the provision of electricity efficiency and conservation activities under s. 79L. The approval of such an agreement is not the

approval of a toll, rate, or charge, nor is the provision of electricity efficiency and conservation activities by E1 to NS Power a "service" as that term is defined in s. 2(f) of the *Act*.

[100] Under s. 79H of the *Act*, the Board is required to determine the cost-effective electricity efficiency and conservation activities that must be undertaken for the purpose of the *Act*. Cost-effectiveness is a fundamental consideration for the approval of electricity efficiency and conservation activities, but there are other considerations.

[101] Subsections 79L(8) and (9) identify further criteria:

> (8) The Board shall approve an agreement pursuant to this Section if, in addition to any other matters considered appropriate by the Board, it is satisfied that the agreement, including the proposed electricity efficiency and conservation activities that are the subject of the agreement, is in the best interests of Nova Scotia Power Incorporated's customers and satisfies the requirements of Section 79J.
>
> (9) The Board's assessment of the proposed electricity efficiency and conservation activities for the purpose of the approval must take into account their affordability to Nova Scotia Power Incorporated's customers, along with any other matters considered appropriate by the Board or as may be prescribed.

[102] The Board has previously noted that "affordability" is not defined in the *Act*. In *Re EfficiencyOne*, 2015 NSUARB 204, the Board discussed the concept of affordability in s. 78L(9) of the *Act* in the context of balancing short-term rate impacts and long-term costs:

> [77] Traditionally in determining a capital expenditure or a program such as DSM the Board has applied the test of lowest long term cost. This is a principle that is examined in the IRP and in every capital work order application the Board reviews. Issues of affordability, although not explicitly stated in the *PUA* until 2014, were always relevant to discussions under such topics as rate shock and affordability generally. Indeed, for example, affordability has been on the Issues List in recent Annual Capital Expenditure Plans and in several hearings for Halifax Water which also is regulated under the *PUA*.
>
> ...
>
> [82] The Board finds that the inclusion of Section 79L(9) of the *PUA* directs the Board to take into account an increased focus on short term rate impacts. Having said that, the Board notes that there will be a review of the DSM program every three years. There will always be rate pressures to be taken into account in both determining rates and in determining the DSM program. A focus exclusively on short term affordability means that the Board would never get to consider long term costs. That would be to the detriment of ratepayers. 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. Accordingly, while the Board finds that there has been a change in focus mandated by the Legislature, and an increased emphasis on short term rate impacts, the overarching consideration continues to be "the best interests of Nova Scotia Power Incorporated's customers" as stated in Section 79L(8) of the *PUA*.

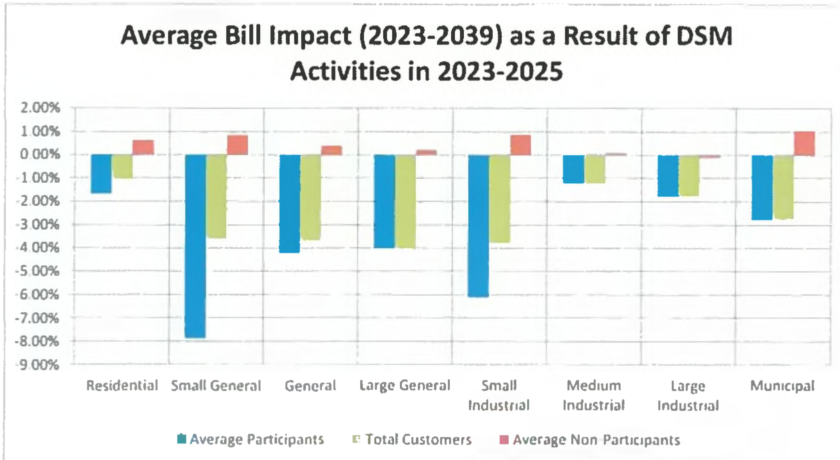
[103] In this proceeding, Mr. Love raised another possible lens through which affordability might be viewed. After discussing the Board's balancing of short-term and long-term perspectives on affordability, Mr. Love addressed affordability in the context of barriers to participating in energy efficiency programs:

> **Q. ARE THERE OTHER ASPECTS OF AFFORDIBILITY THAT SHOULD BE CONSIDERED?**
>
> A. Yes. One of the most important aspects of affordability is the effect of DSM investments on classes of customers who are most acutely affected by changes in energy costs. This includes low-income customers and those groups of customers who may have additional barriers to participation in energy efficiency programs, such as tenants and First Nations customers.
>
> [Exhibit E-20, p. 9]

[104] It is also clear that ss. 79L(8) and (9) vest the Board with some degree of discretion when considering an application to approve a supply agreement. In addition to the somewhat subjective assessment of the "best interests of Nova Scotia Power Incorporated's customers" and "affordability," the legislation contemplates the decision may take into account "any other matters considered appropriate by the Board." In fact, this phrase is repeated in both subsections.

[105] One other matter that may be appropriate to consider is that participants in DSM programs generally see greater bill reductions, while non-participants may see higher bills. For example, Figure 5 in the Rate and Bill Impact Analysis filed with E1's application (reproduced below) shows that average bill impacts from the proposed Settlement Plan for participants are better than for non-participants:

Figure 5: Average Bill Impact (2023-2039) as a Result of DSM Activities in 2023 2025 (Settlement Plan)



[Exhibit E-1, Appendix B, p. 28]

[106] Given this inherent feature of DSM programming, it may be appropriate to consider the design of a DSM portfolio and what groups of customers are most likely to be able to participate in the proposed DSM programs. It may also be relevant to consider whether there are barriers to participation that should be addressed to ensure that all customers can equitably benefit from electricity service under a balanced DSM program at the lowest long-term cost.

[107] DSM programs in this jurisdiction have not generally been developed or approved by identifying the range of reasonably available measures and programs and selecting or approving only those with the very best cost-effectiveness ratios. Because of the nature of DSM programs, other factors have also tended to be considered.

[108] The "Balanced Plan Approach" included in the July 2016 Consensus Agreement discussed earlier identifies a range of factors that stakeholders considered may be relevant considerations. The Consensus Agreement had broad support amongst stakeholders, and was signed by E1, NS Power, the CA, the SBA, the MEUs, the AEC and the EAC.

[109] A balancing of factors has also been evident in past Board decisions. For example, in *Re EfficiencyOne*, 2019 NSUARB 105, the Board approved a compromise arrangement resulting in a DSM plan including elements of a higher budget plan preferred by E1 in its application and a lower budget alternative scenario. In that case, it was proposed that funding for First Nations and low-income programs would remain at the higher levels contemplated in the preferred plan, while the budgets for all other programs would be adjusted to lower amounts based on the alternate scenario. In its decision, the Board said:

> ...The Board agrees that maintaining the First Nations and Low-Income Programs, which would not have been included in the Alternate Scenario at the same levels, is an important step in providing access to DSM for under-served communities.
>
> [2019 NSUARB 105, para. 31]

[110] Although the Board finds it has the discretion to consider other matters, cost-effectiveness remains a fundamental concern. When a supply agreement for electricity efficiency and conservation activities is presented to the Board for approval, it is open to question whether there has been an appropriate balancing of factors. Whether the "multiple aspects of DSM" identified in the Balanced Plan Approach are of "equal importance," as was stated by E1 in its rebuttal evidence, or whether they continue to be relevant or appropriate, are matters that may be considered.

[111] In the present proceeding, the SBA submits that 80% of E1's proposed funding for its Affordable Single-family Homes and Residential Behavior program components should be shifted to more cost-effective programs. The Industrial Group submits that the level of investment in low-income programs should be based on updated Statistics Canada data (the 2021 Census of Population).

[112] For the purposes of the present proceeding, the Board is satisfied with the balance achieved by E1 in its proposed Settlement Plan and finds it reasonable and in the best interests of NS Power's customers. The proposed increase in investment for DSM programming for low-income, Mi'kmaw and diverse communities was supported by most of the parties in this proceeding, recognizes past under-service in these areas and attempts to address barriers to participation in DSM programs.

[113] The Board finds the SBA's recommendation would result in an unbalanced plan that would shift investment away from the residential class (which is NS Power's largest customer class in terms of number of customers and load), and away from low-income and underserved programs. The Board also accepts E1's submission that the amount of low-income investment was not directly determined from its use of the 2016 Statistics Canada data and declines to adopt the Industrial Group's recommendation to update the investment level based on the 2021 Census.

[114] While the Board finds the allocation of investment in the proposed 2023-2025 DSM Resource Plan balanced and appropriate in this case, the Board is concerned with E1's apparent suggestion that challenges to the choices it makes in the development of DSM resource plans restrict its flexibility and encroach upon its statutory responsibilities and jurisdiction. In carrying out its role as the franchise holder under the *Act*, E1 is a public utility under the general supervision of the Board. While E1 has the exclusive right to supply NS Power with reasonably available, cost-effective electricity efficiency and conservation activities as the franchise holder under the *Act*, it may only do so under the terms of a supply agreement approved by the Board. Under s. 79H of the *Act*, the Board must determine the cost-effective electricity efficiency and conservation activities to be undertaken for the purposes of the *Act*.

[115] In response to questions about the balancing of its portfolio, such as those raised by the SBA and the Industrial Group in this proceeding, the Board expects E1 to demonstrate how its proposed resource plan is justified and complies with statutory requirements. In future proceedings, responding to such concerns with objections that such questions encroach upon E1's statutory responsibilities may warrant little weight in the absence of a cogent explanation for the choices E1 made in developing its proposed resource plan.

4.5.2 Reallocation of Investment in Measures Failing the Total Resource Cost Test

[116] E1 only conducts cost effectiveness testing for the Settlement Plan at the program level. Nonetheless, it has also provided measure-level TRC and PAC ratios as part of Attachment 4 of Appendix A of its application. There are 78 measures listed in that Appendix as being administered in 2023 that have a TRC ratio below 1.0.

[117] Mr. Athas determined that measures failing the TRC test account for 25.4 GWh of first year energy savings out of a total of 120.7 GWh saved by the plan in 2023 (approximately 21% of the proposed energy savings). He argued that if these measures fail the TRC test, there is a more cost-effective means to address the related energy savings issue and noted this is a significant portion of energy that could be addressed more effectively. He proposed that a threshold should be set for TRC test results and measures below a 0.9 ratio should not be included in E1 programs. He further recommended that investment in measures that do not pass the TRC test be reallocated to measures that are cost-effective.

[118] Mr. Athas said that energy efficiency programs in the BNI sector were generally more cost-effective than the proposed residential energy efficiency programs;

therefore, investment in measures failing the TRC test could be redirected to more cost-effective programs in the BNI sector. Mr. Athas said that additional investment in the BNI sector would not necessarily put residential class customers at a disadvantage because the shift in investment to the more cost-effective programs would produce increased system cost savings relative to those measures that fail the TRC test.

[119] In its rebuttal evidence, E1 submitted that DSM program level screening represents industry best practice. E1 also noted that in Matter M03669, the Board determined that cost-effectiveness screening at the program level, rather than the measure level, is appropriate and provide E1 the flexibility needed to develop a balanced DSM plan. E1 stated:

> In accordance with Board directive and industry best practices, E1 maintains that the flexibility afforded it through screening at the program level is necessary for the development of a balanced plan, including the ability to incorporate measures in its DSM plans which achieve TRC test results less than 1.0. Adoption of the Small Business Advocate's proposal would result in the exclusion of measures beneficial to the low-income and small business sectors.
>
> [Exhibit E-29, p. 12]

[120] In its closing submissions, the Industrial Group submitted there had been a "creeping departure" from the principles originally used to guide the approval of cost-effective DSM measures and programs. The Industrial Group noted that measures with a TRC ratio less than 1.0 were initially allowed only if the elimination of those measures jeopardized the program. In 2011, after the responsibility for DSM shifted from NS Power to Efficiency Nova Scotia Corporation (ENSC), the Board approved the application of the TRC test at the program level at the request of ENSC who noted that measures that fail the TRC test may provide strategic or long-term benefits, such as stimulating demand for newer technologies to achieve economies of scale.

[121] The Industrial Group argued that the 2023-2025 DSM Resource Plan has strayed from these original concepts. The Industrial Group submitted that when E1 was asked to justify the inclusion of measures which do not pass the TRC test, it "...offered general rationales, without reference to specific measures and programs..." making it "...impossible to know why or on what basis any particular non-cost-effective measure should be permitted."

[122] The E1 response referenced by the Industrial Group stated:

> There are several reasons why a measure might be included despite having a TRC ratio less than one. Given that many of the reasons are global across all measures, E1 has provided rationale below:
>
> • Avoided costs used to calculate TRC ratios are likely understated, resulting in artificially low TRC ratios, as described in E1's submitted 2023-2025 DSM Resource Plan Evidence.
>
> • TRC ratios use incremental costs as a key input. Incremental costs are dependent on retail pricing at a particular point in time and are challenging to obtain. In this way, TRC ratios can only be reflective of particular market conditions.
>
> • Non-energy impacts (with the exception of gas, water, and biomass impacts) are not included in the TRC ratio calculation, resulting in artificially low TRC ratios. These non-energy impacts motivate customer participation in many cases (i.e. comfort benefits of ductless heat pump installation).
>
> • The TRC costs at the measure level include some program administration costs, which is not best-practice if TRC is used to screen individual measures, as suggested in the Evidence of Scott Robinson.
>
> • Many measures with TRC ratios less than one are offered exclusively for low-income Nova Scotians.
>
> • Some measures in Instant Savings allow E1 to have a year-round presence in retail stores, outside of the spring and fall campaigns.
>
> • Some measures allow E1 to maintain market presence and business relationships at very low total incentive costs, since measure uptake is very low for some measures with low TRC ratios.
>
> • For measures with low uptake, or brand-new measures, it is often difficult for E1 to characterize the measure with high accuracy since it often relies on a relatively small sample of projects to extract information from. By offering incentives to early adopters of new measures, E1 encourages market transformation, which may help bring costs down over time.
>
> • Some measures with TRC ratios less than one are typically bundled with measures that have higher TRC ratios. For example, several measures in Efficient Product Installation (EPI) have a TRC less than one and are installed 1 when E1 is already in the home,

> acquiring the savings immediately while preventing the need for E1 or the customer to revisit the measure at a later date, perhaps at a higher acquisition cost. In EPI, it also produces a better customer experience for E1 to upgrade all lighting, instead of only upgrading lighting that fits into measure characterizations that were shown to have a TRC greater than one.
>
> • Some measures with a TRC value of less than one provides utility benefits in excess of utility costs – these measures possess PAC ratios equal to or above 1.0.
>
> [Exhibit E-9, E1(IG) IR-7(b)]

[123] The Industrial Group recommended that E1 be directed to justify, on an individual basis, measures which fail the TRC test.

[124] In its reply submission, E1 repeated its position that cost-effectiveness screening is performed at the program level, following the current Board-approved methodology and best practices. It also submitted:

> In addition to the above, E1 as an experienced DSM administrator requires the ability to identify and select measures for inclusion within an overall cost effective DSM program/portfolio mix. Doing so allows E1 to consider customer experience and delivery efficiencies by bundling measures in more comprehensive packages, maintaining market presence and business relationships, and avoiding revisits and lost opportunities, particularly in whole home programs where some measures may represent a one-time chance to achieve energy savings.
>
> [E1 Reply Submission, pp. 2-3]

4.5.2.1 Findings

[125] As discussed already in this decision, the Board is satisfied with the balance achieved by E1 in its proposed Settlement Plan and finds it reasonable and in the best interests of NS Power's customers.

[126] In Matter M03669, the Board established that the TRC test be applied at the program level when evaluating the cost-effectiveness of E1's proposed DSM plans. The Board finds that TRC testing at the program level, as opposed to the measure level, remains appropriate for the current application. The Board agrees with E1 that screening at the measure level is a restrictive application of the cost-effectiveness test.

[127] Applying the TRC test at the measure level could prevent E1 from proactively considering potential or future market development and may reduce the overall net economic benefits of efficiency investments. In many cases, measures which fail the TRC individually may be combined into programs which, cumulatively, are cost-effective. Furthermore, focusing on measure cost-effectiveness could deny E1 the opportunity to deliver a portfolio of DSM services that are accessible on an equitable and non-discriminatory basis and responsive to the current market. The Board agrees with E1 that measures which fail the TRC test can provide strategic or long-term benefits, such as stimulating demand for newer technologies to achieve economies of scale or increasing access to income-eligible customers.

[128] That said, the Board also agrees with the Industrial Group that the inclusion of measures that fail the TRC test should be justified on some other basis, such as demonstrating that the proposed program would be jeopardized without the inclusion of such measures or by showing that the measures provide strategic or long-term benefits.

[129] Although broadly stated, the Board finds that some of the factors outlined in E1's response to E1(IG) IR-7(b) provide this justification for the inclusion of the questioned measures in this proceeding. The Board has placed little weight on the factors E1 identified in its IR response that relate to perceived limitations of the TRC test and the inclusion of non-energy impacts. In the Board's view, these amount to little more than a statement that the measures might have passed if a different cost-effectiveness test was used. To the extent that there are ongoing concerns about the cost-effectiveness test, the Board notes these concerns are better addressed in the stakeholder process to consider the test already discussed in this decision. In future applications, E1 is directed

to provide specific justification, on an individual basis, for each measure that fails cost-effectiveness testing.

4.5.3 Incentives

[130] Mr. Drazen considered whether incentives were needed for all the measures where E1 proposed to use them and whether the proposed incentive levels were higher than necessary. He said that, in some cases, a customer's reduction in bills was high enough for the customer to install a measure without any incentive payment from E1.

[131] Mr. Drazen said he had identified over 50 measures that have a payback period of 36 months or less. Mr. Drazen calculated that if these incentives were eliminated, the total cost of incentives would be reduced by about $9 million over the three-year period covered by the proposed DSM Supply Agreement. Mr. Drazen also said that proposed incentives for measures with payback periods longer than three years may also have incentives that are higher than necessary.

[132] Mr. Drazen noted that applying a payback test to an incentive was not a new issue. It was considered by the Board in the past and was identified as an important metric in the CLEAResult report, which was produced following the Board's direction (in Matter M06733) to undertake research about the determination of incentives and filed with the Board in Matter M07544. Mr. Drazen recommended that E1 should provide full information on how incentives were determined for all programs and that it should add payback information in its Schedule of Measures leaving it up to the Board to decide whether and how to modify proposed incentives.

[133] In its rebuttal evidence, E1 said its incentive methodology was a matter settled by the Board. E1 said its Board approved methodology was developed following an extensive process directed by the Board in matter M07544. E1 commented:

> E1's latitude and autonomy to adjust and/or revisit incentives provides necessary flexibility during plan implementation. This flexibility is critical to allow E1 to mitigate incentive-based risks and continuously adapt incentive programming over the course of the Plan period. The methodology established through the work previously undertaken by E1 (M07544) has been accepted by the NSUARB and represents "best practices" in the area of incentivization.
>
> [Exhibit E-29, p. 15]

[134] Regarding the elimination of incentives in cases where the payback period for the measure was less than three years, E1 considered this was beyond the recommendations in the CLEAResult report and the Board approved incentive methodology. E1 said that a payback analysis was one factor to consider when setting incentives; however, a comprehensive incentive methodology must also consider non-financial barriers. In its reply submission, E1 noted other considerations such as the level of disruption to a household or business during renovation, the amount of time and effort required to find and secure contractors, or uncertainty due to lack of knowledge about technologies and their performance.

[135] E1 also noted that it is not credited with any energy savings if its third-party evaluator determines that a customer would have implemented the measure without the incentive. As such, E1 said it is focused on limiting incentives to the lowest amount necessary.

[136] The Industrial Group's closing submission reiterated Mr. Drazen's evidence that incentives should be no higher than necessary and should account for bill reductions received by customers using a payback analysis. The Industrial Group also considered the procedural history relating to the development of E1's incentive methodology,

correctly noting that the report and plan including the methodology were accepted as filed by the Board, but not specifically approved.

[137] The Industrial Group argued that E1 had the tools to evaluate payback periods for individual measures and providing this information would better inform the appropriate level of incentives. The Industrial Group recommended that the Board direct E1 to provide this information in its measure level tables and to adjust incentives or provide additional justification if a payback period is three years or less.

[138] E1 argued in its reply submission that the removal of a measure based on its payback period alone overlooks the context and numerous elements of a fully developed DSM plan. It further submitted:

> Measures are selected for inclusion within DSM programs by considering E1's Guiding Principles, the overall objectives of the DSM Plan, and E1's duty as Nova Scotia's DSM Administrator. The selection of measures is within the expertise of E1, and to restrict its flexibility in this regard encroaches upon E1's statutory responsibilities and jurisdiction in relation to DSM Plan design and implementation in this province.
>
> [E1 Reply Submission, p. 2]

4.5.3.1 Findings

[139] As discussed already in this decision, the Board does not consider that requiring E1 to justify and explain the choices it has made and to demonstrate how they comply with the statutory requirements encroaches upon E1's role as a Board regulated franchise holder. The Board understands that E1 follows an incentive setting methodology developed through a consultative process. For purposes of this proceeding, the Board accepts the way E1 has applied this methodology and finds that the incentives for measures in the proposed DSM Resource Plan are reasonable and appropriate. In doing so, the Board accepts E1's submission that there are factors beyond payback periods that may, where appropriate, be considered to set proposed incentives.

[140] However, the Board agrees with the Industrial Group that E1 can evaluate payback levels and incentives for individual measures and that providing this additional information, on a measure level, will provide the Board and stakeholders with a better basis to consider the level of incentives that E1 proposes for certain measures. The Board, therefore, directs E1 to include payback information in its measure level tables in future applications for the approval of resource plans. For measures where the payback period is three years or less, E1 is further directed to provide additional information about the other factors that E1 has considered in concluding that the proposed incentive level for the measure is appropriate.

[141] To be clear, the Board makes no finding that a measure with a payback period of three years or less is presumed to be unreasonable or inappropriate, and its direction is only that E1 should be more explicit about the other factors considered in setting the incentive for the measure. The Board also notes that this direction is not intended to restrict E1's current ability to adjust or revisit incentives during plan implementation to mitigate incentive-based risks and adapt incentive programming over the course of the plan period. The Board finds that the potential for net savings adjustments by E1's third-party evaluator, which are also subject to verification, provides an appropriate disincentive for E1 to proceed with overly generous adjustments to the measure incentives in its approved resource plan. However, in its quarterly reports for this and future resource plans, E1 is directed to identify any instances where it has adjusted the per unit incentive amount for a measure by more than 10% from the amount included in its resource plan and provide an explanation for the variance.

4.6 Demand Response

[142] In its application, E1 stated:

> For the first time, E1 is proposing targeted Demand Response activities under its Settlement Plan. These DR activities are intended to facilitate direct electricity customer response on a real-time basis to better align demand with existing NS Power system capacity. E1 proposes to work collaboratively with NS Power in the implementation of these measures. Given their intended introduction to DSM activities for the first time in the Settlement Plan, E1 proposes that the targeted reduction of 17.9 MW over the 3-year Plan be established as a Performance Indicator defined within the Supply Agreement.
>
> [Exhibit E-1, p. 60]

[143] Although E1 stated this is the first time that such targeted demand response savings were proposed under the Settlement Plan, the Board notes that it is not the first time demand response initiatives were undertaken by E1. Of note is the Kentville (Klondike) Locational DSM Pilot which operated from December 2019 to March 31, 2021. Econoler's Existing Residential Program evaluation report states that the Klondike pilot generated gross savings of 0.071 GWh and 0.042 MW.

[144] In addressing demand response, Mr. Drazen noted that developing more control of demand load is worthwhile since it will increase NS Power's ability to reduce system peak demand. However, he viewed demand response as essentially a rate design matter which can and should be handled mostly by NS Power, with E1's involvement being limited as a supplier of equipment.

[145] In its rebuttal evidence, NS Power stated:

> NS Power has no objection to the amount proposed for DR programs in the Settlement Plan. The Company has successfully collaborated with E1 on DR programs such as the ongoing pilot to assess the DR potential of residential electric water heater controllers and inform the viability of a future large-scale program. While NS Power agrees that rate design is a matter to be handled by the Company as the public electric utility, there is a role for E1 in implementation of DR programs as the DSM franchise holder in Nova Scotia.
>
> [Exhibit E-28, p. 5]

[146] E1 proposed that the targeted demand response reduction of 17.9 MW over the three-year plan be established as a performance indicator. The Board considers that

investing $10 million in yet-to-be-developed demand response projects requires more focused attention than might be associated with a performance indicator. The Board directs that the targeted 17.9 MW demand response reduction be established as a performance target. In addition, in its quarterly reports, E1 is directed to file details describing its proposed demand response projects, as well as its progress, including spending to date, towards achieving the targeted 17.9 MW load reduction. If any rate design issues are identified in relation to the proposed demand response initiatives, the Board expects NS Power to present those to the Board in a separate proceeding.

4.7 Residential Behaviour

[147] As noted in its application, E1 intends to re-introduce a residential behavioural response program with similar features to those in the previously offered Home Energy Report. Section 4.2.2.7 of Appendix A provides the following description:

> This is a new program component being re-introduced under the Existing Residential Program in the Settlement Plan (previously offered as Home Energy Report). The Residential Behaviour program component plans to provide tools and insights that will encourage Nova Scotians to adopt more energy conscious behaviours and activities, leading to electricity savings and reduced utility bills. Through personalized and timely energy-use feedback, residential customers are empowered to make informed choices about their energy consumption behaviours and the E1 programs and services that can help support them along the way.
>
> In the Settlement Plan, E1 will establish a home energy reporting initiative that builds on the foundation of E1's 2015 program and leverages advancements in energy reporting tools enabled through advanced metering infrastructure (AMI) data. AMI data provides near real-time energy consumption information and, when coupled with analytical tools and software, can provide meaningful insights that encourage Nova Scotians to shift behaviours.
>
> [Exhibit E-1, Appendix A, p. 78]
>
> The Residential Behaviour program component is expected to launch with the delivery of an opt-out home energy reporting service provided by paper, electronic mail, and/or online application. E1 is anticipating leveraging a third-party delivery model for this program component. As described in Section 4.2.2.7, Residential Behaviour may evolve over the 2023-2025 Plan period to include other feedback-based initiatives such as gamification through energy reduction challenges, and alerts and notifications providing at-a-glance energy saving recommendations and tips for residential customers.
>
> [Exhibit E-1, Appendix A, p. 81]

[148] Table 30 in Appendix A, partially reproduced below, listed the proposed spending levels and anticipated energy savings.

Table 30: Three-Year Summary of the Residential Behaviour Program Component

Annual Plan	Investment ($M)	Energy Savings (GWh)	Demand Savings (MW)	Participation (homes)
2023 Total	1.1	8.7	n/a	38,195
Low-income	*0.13*	*0.96*		*4,240*
2024 Total	2.2	29.8	n/a	131,379
Low-income	*0.24*	*3.30*		*14,583*
2025 Total	2.2	29.8	n/a	131,379
Low-income	*0.24*	*3.30*		*14,583*

[149] In their evidence, the CA's consultant and Synapse both expressed some concerns with this proposed program.

[150] Based on the information available at the time, Mr. Love questioned whether there was any coordination between E1's proposed behaviour response program and NS Power's Customer Energy Management (CEM) system. Without such coordination, he cautioned that savings might be double-counted and potential cost reductions could be missed.

[151] In its rebuttal evidence, E1 stated that collaboration with NS Power in CEM would be in the best interests of ratepayers through enhancement of efficiencies between the two behavioural programs and entities. E1 also noted that, although no formal agreement has been reached on E1's specific role in the operation of the CEM, past discussions with NS Power were supportive of engaging with E1. In addition, to ensure stakeholders are kept apprised of the ongoing collaboration between E1 and NS Power, E1 proposes to provide updates to the Board in E1's quarterly reports leading up to the establishment and operation of the E1 behavioural programs and CEM.

[152] In his closing submission, the CA stated:

> The Consumer advocate supports the continued collaboration between E1 and NSP, especially as it leads to reducing costs for ratepayers. The Consumer Advocate welcomes E1's offer to provide quarterly updates leading up to the establishment of its behavioral program.
>
> [CA Closing Submission, p. 2]

[153] The concern raised by Synapse was that there is great uncertainty about the ability of the behavioural demand response program to produce winter peak load reductions.

[154] In its rebuttal evidence, E1 agreed that there is some uncertainty, but noted that the behavioural demand response option is intended to be an add-on to the Energy Efficiency behavioural program component as opposed to a stand-alone offering. E1 also stated:

> The uncertainty surrounding E1's behavioural Demand Response pathway is further mitigated by the fact that E1 will evaluate and revisit its Behavioural Demand Response results in both the first and second years and make adjustments accordingly under its phased implementation. As examples and based on findings within the three-year Plan period, this could lead to the introduction of new incentives to compensate customers for reducing their load during peak times or adjustments to the participation/unit impacts of Demand Response pathways.
>
> [Exhibit E-29, p. 6]

[155] The Board acknowledges the concerns expressed by the CA and Synapse and notes that the CA's concerns appear to have been allayed with E1's offer to provide quarterly updates. E1 is directed to provide such updates in its quarterly reports.

[156] Regarding the concern raised by Synapse, the Board notes E1's agreement about the uncertainty that the behavioural demand response program will be able to produce tangible winter peak load reductions. However, the Board is concerned with E1's suggestion that new incentives may be needed to compensate customers for reducing their load. This appears to resemble a time-varying pricing (TVP) or a critical peak pricing (CPP) scenario which was recently approved as pilot tariffs for NS Power. Before any

such incentives are implemented, E1 is directed to liaise with NS Power and stakeholders, and then seek Board approval of that proposal.

4.8 New Home Construction Program

[157] The New Home Construction (NHC) program was adopted in 2011. The program has provided "support, education, and incentives to the building industry" in the province. While E1 states in its application that the program has been successful, it proposed to wind it up and replace it with "a new market transformation program within Enabling Strategies".

[158] E1 said:

> …In Econoler's 2020 evaluation, it became evident that, with the increased popularity of heat pump installations in the residential new construction market, future savings adjustments were estimated to be reduced by at least 70% for the New Home Construction program component. The cost of delivering the existing program would therefore become too expensive to offer within a limited DSM budget.
>
> [Exhibit E-1, Appendix A, p. 85]

[159] Figure 6 of the application shows that the wind-up of the NHC program would result in a two million dollar decrease from the 2022 investment level to the 2023-2025 Settlement Plan. E1 explained that new registrations for the program will end in July 2022, and the final year of the completions will be the first year of the Settlement Plan. Table 34 of Appendix A shows a spending of less than $1 million in 2023 for the NHC program and none thereafter.

[160] In its discussion of Enabling Strategies, E1 commented on the market transformation program which it claims will assist the new residential market:

> With the increased popularity in heat pump adoption, E1 has an opportunity to expand influence further into the new construction industry. In an effort to help meet the provincial climate goals of net zero by 2050, broadening and taking a more holistic approach is required to facilitate change in the new construction market. In 2022, E1 will be re-designing a market transformation program and that will be launched in 2023, overlapping the wind up of the New Home construction program component.

In the 2023-2025 Plan years, E1 will place increased emphasis on activities that help to redefine the market for energy efficiency through market transformation and customer education. Market transformation is a high-level framework of programs to create market change by creating accelerated adoption of energy efficient products, services, and practices. These efforts often support increasing the stringency and compliance of building codes. In 2023-2025, E1 is transitioning from a traditional resources acquisition approach to a market transformation approach for the new residential market. Activities within this area of focus may include:

- Conducting baseline studies and market research to determine current market state, building code and efficiency literacy levels, and best practices established in other jurisdictions;

- Providing training, education, and supporting industry capacity development for market actors such as building designers, contractors, builders, and enforcement officials;

- Developing case studies, supporting code awareness and enfor4cement, and promotional activities to build awareness and compliance; and

- Leveraging online tools to engage and inform, increase consumer demand for energy efficient buildings, and improve access to market actors engaging in high efficiency construction standards.

[Exhibit E-1, Appendix A, pp. 130-131]

[161] The only intervenor who specifically commented on the proposal to wind up the NHC program was the CA. Mr. Love said that he considered it a "mistake" to phase out the program completely "particularly for building shell measures," although he supports the Settlement Plan generally. He went on to say:

...The insulation, windows and doors will remain for many decades and will be much more expensive to come back later to upgrade. Contractors building new homes will not be the ones paying the electric bill, so may choose to cut costs on the building shell such as insulation, windows and doors. Providing incentives can encourage builders to make the upgrades at the time of initial construction if at least some of the incremental costs are offset. Returning later to make those upgrades would be far more expensive than the incremental costs of the upgrades at the time of the new home construction. Having a better insulated house also allows for easier adoption of heat pumps and permits downsizing of the HVAC equipment. I hope that a future portfolio will see a return to supporting further improvements in building shells for new home construction, and that a reexamination of avoided costs may help make such an effort worthwhile.

[Exhibit E-20, p.14]

[162] In response to Mr. Love's comments, E1 said in its rebuttal evidence:

The residential new home construction program component as originally constructed was not sustainable at this time and was therefore not included in the Settlement Plan. With the removal of heat pump savings, overall savings for this program component dropped by 70-

> 80% and the unit cost increased significantly. The program component was not considered an appropriate and affordable program component within a limited DSM investment level.
>
> The new home construction market is transforming and E1 is required to adapt its offerings to support this changing environment. E1 will continue to support this market through Enabling Strategies, and by continuing to explore and adapt offerings that meet the energy efficiency needs of this market.
>
> [Exhibit E-29, pp. 18-19]

[163] The Board observes that the 2021 Econoler Evaluation Report confirms that participation levels in the NHC program were lower in 2021 than in 2020 by 8%, leading to 3% lower net energy savings and 5% lower peak demand savings. Econoler suggests that the NHC program should be a target for market transformation but made no other recommendations about the program. The Verification Report indicates that the program is one of the top three lifetime net energy savings program components.

[164] The most recent Econoler Evaluation Report supports E1's statement that there would likely be a continued reduction in the NHC program as currently structured. The Board understands that E1 has attempted to balance DSM investment to address the greatest needs or spend where most benefits will be derived. While the Board observes that the NHC program may no longer be appropriate or affordable, as E1 suggests, the Board considers that there is some merit to Mr. Love's views.

[165] The CA said in his closing submission that he "intends to closely follow developments in this sector" and will wait to see what the Enabling Strategies will bring. The Board intends to do the same.

4.9 Municipal Electric Utilities

[166] According to E1's application, the MEUs in the province are the only customers in NS Power's Municipal rate class. The MEUs participate in the DSMAG. Each MEU is considered a participant by E1 "when any customer within their distribution

system participates in a program." E1 confirmed that each year, there has been participation in its programs from all MEUs. However, individual customers of each MEU are not modelled in DSM plans or programs.

[167] The Board notes that in the assumptions used by E1 in its Rate and Bill Impact Analysis for the proposed plan, E1 does not use the number of accounts for the Municipal rate class but instead uses the number of customers. E1 went on to state that "NS Power is forecasting that as of 2023 there will be only one Municipal Electric Utility" which will make results based thereafter on only one customer.

[168] In part, IRs from the MEUs to E1 questioned:

- whether E1 would be prepared to allow the MEUs which participate in the Wholesale Market to pay their DSM costs directly to E1 rather than to NS Power;
- whether E1 would engage directly with those MEUs regarding spending levels and mid-course adjustments; and
- whether E1 would forecast and track individual MEU customers participation in DSM programs.

[169] In each case, while expressing no objection in principle, E1 said that approval by the Board might be required, and that it is open to discussion on these and other issues of interest to the MEUs.

[170] The four MEUs which participate in the Wholesale Market filed evidence describing how they are different from NS Power's "bundled service customers." Since they have different factors for avoided costs, they said they need a "separate and unique evaluation of E1's proposed spending in MEU jurisdictions."

[171] In addition, the MEUs believe that there are opportunities for participation in demand response programs which should be explored, even though the current assumption is that there will be no participation from the MEUs.

[172] The Board summarizes the three recommendations made by the MEUs in their evidence:

- The Board should direct E1 to consider and provide supplementary information regarding programs targeted to MEU Wholesale Market participants in all future DSM Plans.
- The Board should explicitly give E1 the flexibility to "research, pilot, and adjust program delivery targets" for the MEUs within the funding of the proposed plan.
- The Board should conclude that the MEU Wholesale Market participants may pay their allocated DSM costs directly to E1 "subject to the specific allocations, payment requirements, and any further direction" from the NS Power general rate application (GRA).

[173] NS Power said in its rebuttal evidence that the MEUs want to have a separate regime for DSM. While not opposing any administrative efficiencies that may be permissible, NS Power does not support any changes suggested by the MEUs for the 2023-2025 Plan for two reasons: the first being that the current legislative scheme of the *Act* only relates to the relationship between NS Power and E1 as the franchise holder; and secondly, any such changes would need to be fully considered in a separate proceeding before the Board.

[174] E1 echoed NS Power's views regarding the statutory regime and the need for a proper proceeding to consider the changes sought by the MEUs. In its rebuttal evidence, E1 said it is receptive to working with the MEUs where possible.

[175] The MEUs noted, in their closing submission, their appreciation for E1's apparent willingness to collaborate with them and committed to working with E1 regarding the first two of the MEU recommendations. The MEUs accepted that the third recommendation is not within the scope of this application and intend to raise it during the GRA.

[176] The Board considers the MEUs recommendations warrant further discussion. With respect to payment of DSM costs directly to E1, the Board agrees that the current legislative regime relates to the provision of DSM programs to NS Power. As a result, consideration of any such change cannot be undertaken in this proceeding but may be more properly the subject of another application or proceeding.

4.10 DSM Advisory Group

[177] As a result of the Consensus Agreement approved by the Board for the 2020-2022 DSM Plan, revised Terms of Reference for the DSMAG were developed. This was intended to reinvigorate the then-existing DSMAG. By September 2021, revised Terms of Reference were filed with the Board.

[178] The DSMAG is made up of representatives from a broad group of stakeholders interested in DSM matters and is intended to foster "direct and open dialogue on a without prejudice basis." The role of the DSMAG is consultative. The Advisory Group is engaged in the process for development and review of DSM plans.

[179] E1 noted in its application that the most recent stakeholder engagement resulted in alignment between E1 and NS Power on the Settlement Plan. Mr. Love commended the stakeholder engagement through the DSMAG, especially regarding underserved communities.

[180] Based on statements in the closing submissions of the SBA and the Industrial Group, the Board understands that there is some disagreement about the raising of issues within the DSMAG and in a subsequent hearing.

[181] In response to SBA IR-11(e) which asked for estimates of changes to budgets with different measured lives than those in the Settlement Plan, E1 said that it

had received no feedback from stakeholders when the key assumptions and design objectives had been shared with the DSMAG. E1 said it was not able to conduct a redesign. E1 went on to describe its engagement process which was "more transparent and responsive to stakeholders."

[182] Further, Mr. Athas suggested that the investment allocation between rate classes should not be bound by the split target contemplated in the plan. This led to E1 stating in its rebuttal evidence that this concern "had not been raised by stakeholders during the Settlement Plan development."

[183] In its rebuttal evidence, E1 also took exception to the testimony of Mr. Drazen questioning incentive levels proposed in the plan. E1 claimed the incentive methodology was a settled matter.

[184] In closing submissions, the SBA said that where stakeholders did not raise issues at the DSMAG meetings, tacit approval should not be assumed, as full details of the plan are not known until the plan is filed with the Board. Counsel for the Industrial Group went further in her closing submission saying:

> The Industrial Group is a member of the DSM Advisory Group ("DSMAG"), and supports its purpose i.e., the promotion of information sharing and collaboration in DSM focused proceedings before the Board. The DSMAG Terms of Reference state that comments and positions taken by Members in the DSMAG are confidential and do not preclude any position being taken in any adjudicative process.
>
> Still, within this proceeding, E1 has explicitly or inferentially stated that a failure to raise an issue or objection within the DSMAG somehow precludes or lessens the weight to be assigned to a concern that is raised in the regulatory process. To the extent that E1's Rebuttal suggests so, it should be disregarded.
>
> [Industrial Group Submissions, p.7, July 4, 2022]

[185] The Board observes that the revised Terms of Reference provide that during the development of a DSM plan, stakeholders are entitled to convey their positions

without prejudice. The process is intended to be consultative and collaborative. Resolution of issues in advance promotes regulatory efficiency by narrowing the issues.

[186] The Terms of Reference state at page 7:

> ...Members shall use best efforts to ensure that their positions raised in the Prehearing Process reflect the positions they will take in any subsequent regulatory proceeding on the matter.
>
> [DSM Advisory Group Revised Terms of Reference Date Filed: September 20, 2021 (M09096)]

[187] The Terms of Reference were not approved by the Board but were the product of DSMAG discussions resulting from the Consensus Agreement approved in the Board's decision on the 2020-2022 Plan (2019 NSUARB 105). The Board is unwilling to accept the premise that a stakeholder may not raise issues in a hearing on a DSM Plan that have not been raised in the DSMAG. While the Board agrees that the spirit of the revised Terms of Reference contemplate early identification of issues, the positions of stakeholders are without prejudice. Regulatory efficiency is not promoted, however, when parties are taken by surprise. The Board encourages early identification of issues, but notes that, in proceedings such as this one, there are opportunities to explore any new issues that may arise, especially when they result from finalization of an application or plan.

5.0 APPROVAL OF SUPPLY AGREEMENT

[188] E1 asked the Board to approve the form of Supply Agreement with NS Power attached as Appendix F to the application. E1 said the operating terms and conditions of the Agreement are substantially consistent with the supply agreements approved by the Board for the 2016-2018, 2019, and 2020-2022 DSM Plans.

[189] No party raised any objection to the form of the Supply Agreement. As noted by NS Power in its closing submission, the form is like previous agreements between it and E1. The Agreement must incorporate the Settlement Plan details of the proposed electricity efficiency and conservation activities. The final version of the Supply Agreement will form part of the compliance filing. Parties will be given the opportunity to comment on the Supply Agreement should there be any issues from the compliance filing.

[190] The Board anticipates that any questions regarding the form, terms, and conditions of the Supply Agreement, other than the details set out in the Settlement Plan, would have been raised by the parties during the hearing process. The Board finds the proposed Agreement will comply with the requirements of s. 79J of the *Act*. In the absence of comments or concerns, the Board approves the Supply Agreement in principle, pending review of the compliance filing, pursuant to s. 79L of the *Act*.

6.0 STANDARDIZED FILING FRAMEWORK

[191] As noted earlier in this decision, it appeared to the Board that there was some question over the application of the Framework, particularly around the factors for achieving a balanced DSM portfolio. Additionally, in this decision, the Board has approved Performance Targets in addition to those explicitly noted in the Framework. It has been six years since the Consensus Agreement including the Framework was filed with the Board. Given the nature of the issues raised in this proceeding and the development of DSM programming in Nova Scotia since that time, the Board strongly encourages the DSMAG to consider whether changes to the Framework are required.

[192] Given the consensus nature of the Framework, the Board is not directing that an updated document be filed by a specific date. However, the parties should engage

in discussions early enough so that, if there is a consensus around the continued application or desired changes to the Framework, it is achieved and documented well before the next three-year DSM plan is developed. As an aside, the Board notes that s. 7(b) of the *Environmental Goals and Climate Change Reduction Act*, S.N.S. 2021, c. 20 identifies a Government goal to support, strengthen and set targets for energy efficiency programming while prioritizing equitable access and benefits for low-income and marginalized Nova Scotians. It is not clear whether such targets will be implemented in regulations under s. 79V of the *Public Utilities Act* or otherwise; however, they may help inform those discussions if they are available.

7.0 SUMMARY OF BOARD FINDINGS

[193] Subject to the adjustments and directives in this decision, the Board finds that E1's Settlement Plan is in the best interests of NS Power customers and the 2023-2025 DSM Resource Plan is approved.

[194] The Board approves investment in the Resource Plan in the amount of $173 million over the three-year period.

[195] The Board approves the following Performance Targets for the Resource Plan:

- cumulative annual energy savings: 412.7 GWh
- cumulative annual peak demand savings: 78.8 MW
- cumulative annual energy savings applicable to the Affordable Single-family Homes, Affordable Multi-family Housing and Mi'kmaw Home Energy Efficiency Project programs: 15.8 GWh
- demand response reduction over the three-year plan: 17.9 MW

These targets will be considered to be met if at least 90% of the target is achieved.

[196] The Board approves the Performance Indicators identified in Schedule C of the proposed Supply Agreement based on the values included in E1's application, but directs that an additional Performance Indicator be added as follows:

- Incidental cumulative annual energy savings applicable to low-income and underserved communities from non-targeted programs: 23.6 GWh

[197] E1 is directed as follows:

(a) to provide detailed plans and processes for each of its research initiatives prior to proceeding with significant expenditures, to be documented and fully discussed with members of the DSM Advisory Group in advance of implementation;

(b) to work with NS Power and the DSM Advisory Group to discuss potential updates to avoided costs before the 2026-2028 DSM Resource Plan application;

(c) to remove non-energy benefits from its TRC and PAC calculations and file the revised calculations with a compliance filing in this proceeding;

(d) to work with the DSM Advisory Group to assess and develop an optimal DSM cost-effectiveness testing methodology;

(e) to provide specific justification, on an individual basis, for each measure that fails cost-effectiveness testing in future resource plan applications;

(f) to include payback information in its measure level tables in future applications for the approval of resource plans and provide additional information about the other factors that E1 has considered in concluding that the proposed incentive level for the measure is appropriate for measures where the payback period is three years or less;

(g) to identify any instances where E1 has adjusted the per unit incentive amount for a measure by more than 10% from the amount included in its resource plan and provide an explanation for the variance in its quarterly reports;

(h) to file, in its quarterly reports, details describing E1's proposed demand response projects, as well as its progress, including spending to date, towards achieving the targeted 17.9 MW load reduction;

(i) to provide updates in its quarterly reports leading up to the establishment and operation of E1's behavioural programs and NS Power's CEM; and

(j) to liaise with NS Power and stakeholders, and then seek Board approval before implementing new incentives to compensate customers for reducing their load under the Demand Response Program.

[198] The Econoler Evaluation Report and the Peach Verification Report for the 2021 DSM portfolio are accepted as filed.

[199] E1 is directed make a compliance filing including the final executed Supply Agreement and revised cost-effectiveness calculations as directed above no later than **September 20, 2022**. The other parties in this proceeding may file comments on the compliance filing by **October 4, 2022**, to which E1 may file a reply by **October 11, 2022**.

[200] An Order will issued, subject to the compliance filing.

DATED at Halifax, Nova Scotia, this 6th day of September, 2022.

Stephen T. McGrath

Roberta J. Clarke

Steven M. Murphy