DECISION | **2025 NSEB 18**
M12282

NOVA SCOTIA ENERGY BOARD

IN THE MATTER OF THE PUBLIC UTILITIES ACT

- and -

IN THE MATTER OF AN APPLICATION by **EFFICIENCYONE** for approval of a New Benefit-Cost Analysis Test for Evaluating Demand Side Management Plans

BEFORE: Stephen T. McGrath, K.C., Chair
Steven M. Murphy, MBA, P.Eng., Member
Darlene Willcott, LL.B., Member

APPLICANT: **EFFICIENCYONE**
James R. Gogan, Counsel
Lucia Westin-Eastaugh, Counsel

INTERVENORS: **CONSUMER ADVOCATE**
David J. Roberts, Counsel
Michael Murphy, Counsel

SMALL BUSINESS ADVOCATE
Melissa P. MacAdam, Counsel
Rebekah Powell, Counsel

DEPARTMENT OF ENERGY
Daniel Boyle, Counsel

EAST COAST ENVIRONMENTAL LAW
Kostantina Northrup, Counsel

EASTWARD ENERGY INCORPORATED
David MacDougall, Counsel

INDUSTRIAL GROUP
Nancy G. Rubin, K.C.

Brianne Rudderham, Counsel

KWILMU’KW MAW-KLUSUAQN and
ASSEMBLY OF NOVA SCOTIA MI’KMAQ CHIEFS
Twila Gaudet
Jessica Ginsburg

NOVA SCOTIA POWER INCORPORATED
Jennifer Power, Counsel
Jennifer Ross, Counsel

BOARD COUNSEL: William L. Mahody, K.C.

HEARING DATES: September 22-23, 2025

FINAL SUBMISSIONS: October 21, 2025

DECISION DATE: **December 10, 2025**

DECISION: **The Board does not approve EfficiencyOne's proposed benefit-cost analysis test and provides directions on the test to be used to focus on reducing electricity costs for customers.**

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1.0 INTRODUCTION

[1] In the course of addressing EfficiencyOne's (E1) application to the Nova Scotia Utility and Review Board (NSUARB) for approval of its supply agreement with Nova Scotia Power Incorporated (NS Power) and demand-side management (DSM) resource plan for 2023-2025, concerns were raised about the cost-effectiveness test the NSUARB had historically used to assess DSM resource plans (2022 NSUARB 137). Cost-effectiveness testing assesses the relative value of a plan by comparing benefits and costs expressed as both the dollar value of the net benefit (or cost) and as a ratio of benefits to costs. Cost-effectiveness testing currently uses a form of the Total Resource Cost (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.

[2] Evidence filed by Board Counsel Consultant, Synapse Energy Economics, Inc. (Synapse), in that proceeding noted that the form of TRC test applied by the NSUARB excluded non-electric and non-energy benefits that would typically be included in a TRC test as it is generally defined in the industry. Synapse expressed concern that this skewed the TRC test results.

[3] Because the NSUARB had previously determined it did not have the authority to include non-energy benefits in cost-effectiveness testing under the *Public Utilities Act*, RSNS 1989, c 380 *(PUA*) (2020 NSUARB 56), Synapse recommended that the NSUARB put more weight on the Program Administrator Cost (PAC) test. The PAC test assesses the cost effectiveness of DSM programs from the perspective of the utility. It does not account for participant costs and participant benefits.

[4] In response to this evidence, E1 submitted that a broad review of cost-effectiveness testing methodologies may be appropriate given recent legislative changes, and the advancement in demand response and electrification initiatives. E1 said a thorough assessment of the relative merits of both the PAC test and a jurisdiction-specific test was needed to determine the optimal cost-effectiveness testing methodology for Nova Scotia. It proposed to address this before filing its next DSM plan for approval. The NSUARB found this suggested approach was reasonable.

[5] This proceeding was initiated by E1 to approve a new jurisdiction-specific cost-effectiveness test. E1's proposed test accounts for impacts from the utility, host customer and societal perspectives, and includes utility system and non-utility system costs and benefits. E1 argues that recent legislative changes not only remove the restrictions on the Board to consider non-energy benefits previously identified by the NSUARB but require the Nova Scotia Energy Board (Board) to take long-term sustainability into account in the application of the cost-effectiveness test for DSM plans.

[6] The legislative changes highlighted by E1, while significant, do not change the requirement in the *Public Utilities Act* that DSM must be undertaken to reduce electricity costs for customers. The Board's obligation to consider a broad range of factors when making decisions, including the extent to which its decisions support sustainable prosperity and sustainable development, does not give the Board, or E1 in the delivery of DSM plans, licence to ignore or override specific statutory requirements. E1's proposed cost-effectiveness test not only fails to focus on the legislative requirement that DSM must reduce electricity costs for customers, but includes many suggested benefits that, if taken into account, could increase electricity costs for customers (although from a societal

perspective, customers could still be better off in the longer term). As such, the Board finds the *Public Utilities Act* continues to restrict what the Board can consider in assessing the cost-effectiveness of DSM plans and precludes the Board from adopting E1's proposed cost-effectiveness test. For the purpose of screening DSM plans at the portfolio level, E1 is directed to use the PAC test.

[7] However, the Board notes that although the *Public Utilities Act* restricts the Board's ability to consider non-energy and societal benefits in assessing the cost-effectiveness of DSM plans, the Board has more discretion when it considers the content of specific DSM measures and programs in a DSM plan that meets an appropriate cost-effectiveness test. Subject to the constraint that the DSM Plan, at the overall plan or portfolio level, must reduce electricity costs for customers, the Board not only can, but is required to appropriately consider (and balance) several factors identified in recent legislation. This includes the extent to which its decisions support sustainable development and sustainable prosperity.

2.0 PROPOSED BENEFIT-COST ANALYSIS TEST

[8] E1 is the holder of a franchise issued by the Minister of Energy to provide demand-side management activities to NS Power. Under the *Public Utilities Act*, E1 must develop a demand-side management plan (DSM Plan) on a regular basis, which is subject to Board approval.

[9] In E1's DSM framework, energy efficiency and demand response activities are structured within a tiered hierarchy. The measure level is the foundational tier, focusing on the specific, individual technologies, actions or practices that reduce energy

consumption or shift energy uses. The program level groups related measures into targeted initiatives aimed at specific customer segments (e.g., residential, commercial, industrial). The portfolio (or plan) level is the highest tier, representing the entire collection of all programs and measures.

[10] As part of E1's DSM Plan approval process, the Board uses cost-effectiveness testing as a tool to help evaluate each DSM plan. Cost effectiveness testing has long been utilized in the evaluation of DSM plans in Nova Scotia, serving as a foundational element in the Board's assessment process to ensure proposed DSM initiatives deliver measurable benefits and value to ratepayers. This established practice reflects a commitment to rigorous and transparent analysis in support of effective demand-side management, and is recognized as a means to evaluate DSM plans in other jurisdictions.

[11] Currently the Board uses a form of the TRC test to evaluate cost-effectiveness of E1's DSM plans. This test is used to determine whether individual DSM programs or measures are cost-effective from the utility system perspective. In effect, it answers the question: *Do the total costs of a DSM measure or program, including participant costs, exceed the benefits to the utility system?* The TRC test evaluates cost-effectiveness by comparing total costs to total benefits, with specific rules for what is included. Total costs in the test currently used include Program Administrator/Utility Costs (such as costs for program design, marketing, and administration; measurement and verification; and incentive payments to participants) and Participant Costs, including measure purchase and installation costs and ongoing operation and maintenance (O&M) costs. Total benefits include avoided utility system costs, such as avoided energy and

capacity costs; avoided generation, transmission and distribution costs; as well as avoided fuel and variable O&M costs. The TRC test does not include many benefits that accrue outside the utility system. As such, TRC test benefits are narrowly focused on utility system savings.

[12] Before 2011, the NSUARB applied the TRC test at the measure level. This approach was adjusted in 2011, when the NSUARB approved a request from E1's predecessor, Efficiency Nova Scotia Corporation, to apply the cost-effectiveness analysis at the program level (2011 NSUARB 99). The approach was reconfirmed by the NSUARB in its 2022 decision relating to the E1 2023-2025 DSM Plan Application (Matter M10473). However, during that proceeding, E1 submitted 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.
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> [Matter M10473, Exhibit E-29, p. 13]

In its decision, the NSUARB agreed with E1. The NSUARB, therefore, directed E1 to work with the Demand-side Management Advisory Group (DSMAG) before the 2026-2028 DSM Plan application to assess and develop an optimal DSM cost-effective testing methodology.

[13] After the NSUARB's decision in M10473, several legislative changes occurred that directly impact DSM in Nova Scotia. In 2022, the level of the DSM cost-effectiveness analysis was amended through legislation related to s. 79H(2) of the *Public Utilities Act,* to change the evaluation of a DSM plan to the portfolio level. In November of 2022, the *Public Utilities Act* was further amended to replace the definition of "electricity efficiency and conservation activities" with a new definition of "demand-side

management" in s. 79A(b). The amendments also replaced s. 79A(b)(iv) with a new section providing for "(iv) strategic electrification of energy end uses currently powered by fossil fuels in a manner that reduces overall greenhouse gas emissions and electricity costs". In 2024, Nova Scotia passed the *Energy Reform Act (2024),* SNS 2024, c 2, which enacted two new statutes relevant to DSM: the *Energy and Regulatory Boards Act*, SNS 2024, c 2, (Schedule A,) and the *More Access to Energy Act* (Schedule B). These legislative actions broadened the Board's mandate to include sustainable development, sustainable prosperity, and climate goals aligned with the *Environmental Goals and Climate Change Reduction Act*., SNS 2021, c 20.

[14] In accordance with the NSUARB's direction in M10473, E1 worked with the DSMAG to review cost-effectiveness testing methodologies to develop an optimal cost-effectiveness test for Nova Scotia. The review included consideration of the legislative amendments noted above that were adopted after the NSUARB's decision in M10473. To carry out this review, E1 first retained a consultant, Energy Futures Group (EFG), through a competitive request for proposal process. E1 and EFG then engaged with the DSMAG in the development of a new cost-effectiveness test for Nova Scotia. On May 13, 2025, EFG issued their final report to E1 recommending a new benefit-cost analysis (BCA) test for Nova Scotia, that would, if approved by the Board, be applied to future DSM Plans.

[15] In proposing the new BCA test, E1 has suggested that the current TRC test needs to be replaced. E1 noted that the TRC test is a narrow test that compares total costs (utility + participant) to avoided utility costs while excluding many benefits recognized under modern legislation, particularly environmental, societal and other fuel

savings. By introducing a new BCA test, E1 aims to address the limitations of the TRC test and enhance the rigour and relevance of DSM cost-effectiveness evaluation consistent with best practices and Nova Scotia-specific legislative requirements.

[16] E1 submitted that the proposed BCA test has been informed by the changes to the Nova Scotia policy objectives, including the expanded list of factors for the Board to consider in its evaluation of DSM Plans. E1 also argued that the BCA test is aligned with Nova Scotia's policy objectives as opposed to the current TRC test, by incorporating non-utility impacts, including other fuel, host customer benefits, and societal impacts into the benefit-cost analysis. In particular, E1 submitted that the Board is required to give weight to the long-term environmental, social and economic benefits of DSM programs, such as reduced greenhouse gas (GHG) emissions, increased energy efficiency, and enhanced sustainable prosperity for Nova Scotians.

[17] The proposed BCA test has also been developed by following the principles and guidance from the *National Standard Practice Manual for Distributed Energy Resources*. The National Standard Practice Manual (NSPM) is a framework used to assist in developing BCA tests for DSM. It provides principles, methodologies and decision-making guidance intended to ensure that BCA tests reflect the full range of relevant impacts, align with jurisdictional policy goals, and avoid bias toward or against particular types of resources. NSPM guidance notes that a jurisdiction's BCA framework should include all utility system impacts and all categories of non-utility system impacts that are relevant given a jurisdiction's energy policy goals and objectives.

[18] E1's proposed BCA test is a portfolio-level benefit-cost framework intended to reflect the full range of costs and benefits consistent with Nova Scotia's legislative

direction, regulatory requirements, and policy objectives. The BCA test incorporates the following avoided utility system costs, which are intended to include the full set of utility system impacts permissible under the *Public Utilities Act* and consistent with NSPM definitions:

- Generation System Impacts, including avoided energy production, avoided generation capacity, avoided carbon compliance costs, avoided variable O&M and generation risk and reliability impacts;
- Transmission System Impacts, including avoided transmission capacity costs and avoided transmission losses;
- Distribution System Impacts, including avoided distribution capacity upgrades, reduced distribution losses, distribution and system O&M savings, and reliability and resilience impacts at the distribution level; and
- Utility Administrative and Other System Impacts, including program administration, incentive payments, credit and collection impacts, and utility system risks (such as fuel price volatility, constraints, and emergency conditions).

[19] In recognition of legislation included in the *Energy Reform Act* and *More Access to Energy Act*, the BCA test also includes non-utility system impacts that affect customers and society. These impacts are intended to reflect that DSM measures frequently produce benefits outside the electric system, particularly through electrification and fuel switching. The non-utility impacts in the proposed BCA test include:

- Host-Customer Impacts, including incremental costs of installed measures, customer O&M cost changes, comfort, amenity, indoor air quality and associated health benefits, productivity, economic well-being, empowerment, pride, asset and property value changes, water savings, and customer risk reduction;
- Other Fuel Savings, including avoided other fuel consumption and avoided gasoline and diesel costs (i.e., EV adoption measure); and
- Societal Impacts, including greenhouse gas (GHG) emissions reductions valued at the social cost of carbon, reductions in air pollutants (NOx, SO_2, particulates) with associated health and environmental benefits, and societal-level resilience (continuity of critical services during outages).

[20] In the BCA test, E1 has proposed that utility system impacts and other fuel impacts will be quantified using actual avoided costs and commodity costs. GHG emissions will be calculated using the current social cost of carbon. Societal impacts will be discounted using a 2% social discount rate to reflect the regulatory guidance on long-term greenhouse gas and other societal impacts, and to reflect the emphasis on sustainable development and sustainable prosperity from the *Energy Reform Act*.

[21] In addition, E1's proposed BCA test recognizes that many customer and societal non-energy benefits, such as comfort improvements, pride and reduced maintenance, do not have direct market prices against which they can be valued. To ensure these impacts are captured consistently and transparently, the BCA framework will use proxies to assign related values to these benefits. The proxy values are intended to provide a reasonable, evidence-based monetary estimate for an impact that is real but not directly observed through market transactions. Specifically, host customer non-energy benefits will be quantified using proxy adders applied as a percentage of net energy benefits or of measure costs (for electrification) depending on the impact category, target market and distributed energy resource type. These benefits will then be discounted over the life of the related measure in the same manner as utility system impacts. E1 submitted that using proxy values ensures the BCA test accounts for important outcomes that would otherwise be understated or omitted.

[22] The original proxy values proposed for the BCA test are identified in Table 14 of EFG's May 2025 report. The proxy values are used only for non-utility impacts that are real, material and reasonably attributable to DSM measures. E1 noted that it used a structured, evidence-based process to select these proxy values. This included reviews

of empirical literature, industry benchmarks, jurisdictional precedents, as well as professional judgement. E1 believes that the proposed proxy values are credible, conservative, and aligned with best practices. In the Partial Consensus Agreement, filed as Exhibit E-32 in this proceeding, the parties to the Consensus Agreement agreed to reduce the quantification of the host customer non-energy benefits for amenity, empowerment and pride to zero for the purposes of the 2027–2031 DSM Plan. The Consensus Agreement also reduced the proposed proxy values for the “Building Shell”, “BNI” and “Solar + Storage” measures categories.

[23] The proposed BCA test will use a 2% social discount rate to account for the time value of money. This is based on the premise that societal policy objectives concerning the reduction of GHGs are aligned with activities undertaken through E1’s DSM plans. The 2% social discount rate for GHG emissions reductions is based on the *Social Cost of Greenhouse Gas Estimates - Interim Updated Guidance for the Government of Canada* issued in December 2022. E1 submitted that the adoption of a 2% social discount rate for evaluating impacts under the proposed BCA test is both reasonable and legally sound. E1 said it reflects a societal perspective consistent with the principles articulated in the NSPM and aligns with the statutory objectives of the *Energy Reform Act* and the *Environmental Goals and Climate Change Reduction Act*, including GHG mitigation, energy affordability and sustainable development. E1 also submitted that the 2% rate is supported by authoritative guidance from NSPM, the U.S. Office of Management and Budget Circular A-4, and the Canadian Treasury Board Secretariat. E1 believes that this approach ensures that long-term societal benefits, such as GHG reductions, public health improvements, and climate resilience, are not disproportionately

discounted relative to near-term costs, thereby upholding principles of intergenerational equity.

[24] If NS Power's Weighted Average Cost of Capital (WACC) was used as the BCA test discount rate, E1 stated that this would fundamentally misalign the BCA with Nova Scotia's legislative requirements to consider sustainable development, sustainable prosperity, and GHG reductions, in a manner that would improperly bias the analysis against long-lived, intergenerational impacts and have the effect of erasing significant long-term benefits intended to be captured under the proposed BCA.

[25] The benefit to cost ratio threshold under the proposed BCA test would remain the same as the current TRC test threshold, which is a ratio of 1.0, and would be applied at the portfolio level.

[26] Finally, E1 proposed that the BCA test, if approved by the Board, be subject to an "evergreen" periodic review process through the DSMAG to ensure that the included impacts and quantification of all impact categories are reflective of accurate and current data, and of any changes to Nova Scotia policy objectives. This review would be conducted in advance of the development of a new DSM Plan. The Consensus Agreement specifically noted that E1 will utilize the period between the hearing of this matter, and the filing of its 2032-2036 DSM Plan, to examine methods for quantifying proxy values for amenity, empowerment and pride. The Consensus Agreement also includes a provision that:

> f) As an integral component of the Evergreen process for systematically reviewing and refining the BCA framework and impact quantification in preparation for the 2032–2036 DSM Plan, E1 will undertake comprehensive literature reviews, jurisdictional analysis, market research, and targeted customer surveys designed to validate host customer nonenergy impacts and provide annual stakeholder sessions and reports on its progress. The resulting information will be shared with the Demand Side Management Advisory Group (DSMAG) for discussion to inform the quantification of non-energy impacts in the BCA test.

[Exhibit E-32, p. 3]

[27] In summary, E1 submitted that the proposed BCA, in combination with the Consensus Agreement, responds to the Board's direction to develop an optimal DSM cost-effectiveness methodology for Nova Scotia. E1 believes the BCA test is appropriate, consistent with legislative direction and in the public interest, as supported by the written and oral evidence having been put before the Board in this matter. E1 is, therefore, requesting the Board approve the proposed BCA as the new cost-effectiveness test for DSM, which is to be screened at the portfolio level.

3.0 INTERVENOR POSITIONS

3.1 Consumer Advocate

[28] The Consumer Advocate is a signatory to the Consensus Agreement. The Consumer Advocate argues that recent amendments to the *Public Utilities Act* altered the criteria the Board is to apply in evaluating E1's proposed cost-effective demand side management. He states that section 79H of the *Public Utilities Act* now requires applications to be evaluated at the "portfolio level that would be the aggregate amount of demand-side management programs," which also includes strategic electrification. With the enactment of the *Energy and Regulatory Boards Act,* the Consumer Advocate argues that the Board's mandate is to give appropriate consideration to several policy objectives, which include sustainable development and sustainable prosperity, the purposes of the *More Access to Energy Act* and other objectives. He said the legislation does not specify that there is a "hierarchy amongst these policy objectives, nor does it suggest that sustainable development and sustainable prosperity are secondary to other policy objectives".

[29] The Consumer Advocate states that as a result of these factors, along with the goals pertaining to energy efficiency and greenhouse gas emissions reductions set out in the *Environmental Goals and Climate Change Reduction Act*, the scope of the Board's mandate has been broadened to "consider non-utility impacts such as fuel usage, host customer benefits, GHG emissions and other environmental considerations," and it is therefore "appropriate for the Board to assess the proposed BCA test against these broader considerations." In his closing submissions, he states:

> Based on this new legislative environment, the Consumer Advocate respectfully submits that any cost-effectiveness test must take into account sustainability-focused factors, and incorporate concepts such as environmental stewardship, social responsibility, and sustainable prosperity. It is the Consumer Advocate's position that E1's proposed test achieves those goals. Indeed, the weight of the evidence submitted by the Parties to this matter favors the approval of the Partial Consensus Agreement.
>
> [Consumer Advocate Closing Submissions, p. 13]

[30] With respect to the discount rate, the Consumer Advocate submits that the 2% social discount rate "better reflects the Board's statutory mandate to give "appropriate consideration" to sustainable development and sustainable prosperity, as compared to the WACC discount rate, since the 2% discount rate places greater emphasis on long-term impacts and intergenerational equality."

[31] In terms of the value of beneficial electrification, the Consumer Advocate submits it is appropriate to maintain the 10% proxy value set out in the Consensus Agreement.

[32] The Consumer Advocate is of the view that the BCA test proposed by E1 is more appropriate and more reflective of the policy goals of Nova Scotia than the modified PAC proposed by the Industrial Group's consultant, Patrick Bowman, Bowman Economic Consulting Inc. and should be preferred by the Board for that reason. In his closing submissions, the Consumer Advocate states:

> Instead, Mr. Bowman recommends adoption of the PAC test as the primary cost-effectiveness test. However, as noted by Mr. Neme in his testimony, the PAC Test is actually particularly ill-suited for implementation as a primary test in Nova Scotia, given that "under the PAC test no electrification measure will ever screen as cost effective because electrification only adds cost to the grid. There would be no benefit. There would only be cost.
>
> [Consumer Advocate Closing Submissions, p. 14]

[33] While the Consumer Advocate's position is that the BCA test as proposed by E1 is more appropriate, he "recognizes that the traditional PAC test could apply as a secondary or complementary test."

3.2 Industrial Group

[34] The Industrial Group is not a party to the Consensus Agreement. It objects to the use of the proposed BCA test as the new primary cost-effectiveness test. It recommends the Board approve the PAC test as the primary test for further DSM Plan applications, and a modified version of the PAC test for strategic electrification programs as proposed by its consultant, Mr. Bowman. The Industrial Group also recommends that the primary PAC test be applied at the portfolio, program and measure levels, and if such program or measure does not pass the primary test, justification for inclusion must be provided by E1. The Industrial Group takes the position that the Board should not, and cannot, take into consideration broad non-energy impacts, including the social impact of carbon.

[35] The Industrial Group reiterates that Mr. Bowman is not recommending one single primary test at the portfolio level to the exclusion of others:

> …he is recommending a primary test to be used complementarily with secondary testing. Using the PAC as a primary test does not preclude the consideration of other societal impacts or sustainability factors. Mr. Bowman has recommended that the Board continue to take various testing or impacts into consideration outside the primary test so that the Board may fully exercise its discretion over DSM. [Footnote omitted]
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> [Industrial Group Closing Submissions, p. 18]

[36] The Industrial Group addressed the changes to the *Public Utilities Act* and pointed out that “the main change to the *Public Utilities Act* since the last DSM Plan approval that impacts E1’s programming and planning, is the addition of strategic electrification as part of the definition of DSM.” It said the *Public Utilities Act* focus remained on reducing electricity costs.

[37] The addition of strategic electrification, it argues, should not “be interpreted to expand the Board’s jurisdiction to now take into consideration of a broad range of non-energy benefits with respect to all other energy efficiency or demand response programs. The prior definition of DSM has largely remained, with simply the addition of strategic electrification.”

[38] The Industrial Group notes that the *Public Utilities Act* has also been amended to specify the level at which the Board must evaluate the cost-effectiveness of a DSM Plan. It states:

> Prior to this amendment, the Board had established its own approach to cost-effectiveness testing at the program level, while also taking into consideration cost-effectiveness at the measure level. It was within the Board’s discretion to approve plans that did not pass at the program or measure level based on an overall review of the need and benefits of any such program proposed. This overriding discretion remains.
>
> [Industrial Group Closing Submissions, p. 6]

[39] The Industrial Group commented on the Board’s ability to consider “sustainable development” and “sustainable prosperity”. It is of the view that the ability to consider these concepts does not give the Board jurisdiction to consider non-energy and societal benefits. Rather, s. 6(2)(d) of the *Energy and Regulatory Boards Act* simply gives the Board the ability to give “appropriate consideration to the extent to which …” any of those factors are supported. The Board, it states, is directed to turn its mind to several factors, but the Industrial Group argues the legislation leaves open what the Board can

consider as “appropriate”. In other words, this direction does not extend the Board’s mandate beyond assessing whether the proposed DSM is in the “best interests of NS Power’s customers” as set out in s. 79L(4) of the *Public Utilities Act*. It states in its closing submissions:

> The mandate for E1 has not been fundamentally altered by the statutory amendments and enactments, and the cost-effective testing should also not be fundamentally changed to include a broad array of factors that have no direct impact on reducing electricity costs.
>
> [Industrial Group Closing Submission, p. 10]

[40] The Industrial Group argues that the incorporation of reducing GHG emissions or sustainability in no way supports the inclusion of factors such as “pride” or “amenity”. The Industrial Group agrees that environmental goals are important. However, while subsection 79A(b)(iv) of the *Public Utilities Act* permits consideration of GHG emissions in DSM planning, the provision does not give environmental considerations priority over energy-based cost effectiveness. The Industrial Group states:

> … Allowing E1 a broader scope to consider all environmental and societal impacts within a benefit cost test is incongruous with the mandate for franchise holders and would expand E1’s role, and possibly even NSPI’s testing.
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> Similarly, the *[Energy and Regulatory Boards Act]* requires the Board to consider other factors including how decisions support competition, innovation and economical energy supply. All of these may be appropriately considered by the Board in rendering a decision, but they do not expand E1’s mandate under the *PUA*. The meaning of DSM may be interpreted through the lens of these factors, but the words in the *PUA* must still be given meaning. The Board should not ignore the repeated references to reducing costs for customers, and need for energy-based efficiency and conservation. Support for sustainability is merely one factor to consider, not the core driver of the Board’s regulatory powers.
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> [Industrial Group Closing Submissions, p. 10]

[41] In terms of the social cost of carbon, the Industrial Group submits that adopting a broad societal test to account for the social cost of carbon will expand E1’s mandate beyond what was intended by the Legislature. It states: “In fact, the use of the social cost of carbon as relied on by E1, and its consultant, is derived from the federal

government's guide on regulation making - not regulation of utility rate making." Further, the Industrial Group submits that if the authority to include a quantified social cost of carbon is derived from the Board's power to "give appropriate consideration to the extent to which … such matters support sustainable development and sustainable prosperity," then this authority must extend to all the Board mandates. It argued that the use of a global social cost of carbon in integrated resource and capital planning would fundamentally skew these processes leading to absurd results.

[42] In terms of the discount rate, the Industrial Group disagrees with the use of the 2% social discount rate proposed by E1. It states:

> The rate proposed by E1 is a very low societal discount rate that is not used anywhere else in Canada nor is it used commonly in the United States. Instead of basing the discount rate on the amount that is charged to ratepayers by the utility, i.e., WACC, it is based on the amount embedded in the Government's calculation for the social cost of carbon and then applied across the board to all other impacts within the Proposed BCA. With respect, this is the tail wagging the dog and is neither appropriate nor justified. E1 and EFG have again relied on the policy objectives to ground this request, yet there is nothing within the legislation which would rationalize this societal rate. The Industrial Group relies on the evidence of Mr. Bowman regarding the inappropriateness of a 2% discount rate. [Footnote omitted]
>
> [Industrial Group Closing Submissions, p. 17]

[43] Regarding the proposed proxy adders, the Industrial Group states if the Board "determines it has jurisdiction to incorporate non-energy and broad societal impacts into the cost-effectiveness testing for DSM," it should not do so. Adding in broad, unquantifiable non-energy benefits, "focusing on customer feelings are inappropriate for the purpose of guiding E1's energy efficiency and conservation programs and activities."

[44] In terms of including non-energy host customer benefits in the cost-effectiveness testing for DSM, the Industrial Group argued the proposed proxy adders and host customer feelings are not reasonable and do not have sufficient evidentiary foundation to include them at this time. The Industrial Group states:

> The broad and subjective array of non-energy benefits proposed to be included in the host customer impacts cannot be squared with the definition of DSM in the PUA. There are no legislative provisions or signals that these proposed considerations should be included within the cost-effectiveness testing. The incorporation of reducing GHG emissions or sustainability in no way supports the inclusion of “pride” or “amenity”, for example. These are subjective feelings and the Industrial Group respectfully submits that assigned proxy adders should not be used to balance out actual tangible costs to customers or the utility.
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> [Industrial Group Closing Submissions, p. 13]

3.3 Small Business Advocate

[45] The Small Business Advocate agreed to the Consensus Agreement and recommends the Board adopt the proposed BCA test as amended by the Consensus Agreement. In closing submissions, the Small Business Advocate states:

> In her evidence, Melissa Whitten of Daymark Energy Advisors, [consultant for the Small Business Advocate] expressed concerns about the use of proxy values for some non-energy benefits, and the inability to measure or verify some non-energy benefits. She identified the non-energy benefits of amenity, empowerment and pride as being of the most concern and recommended more work be done to quantify them, with the results of that being presented to the members of the Demand Side Management Advisory Group (DSMAG). In the alternative, Ms. Whitten recommended that the value assigned to the unquantified non-energy be made Nil until the other work was completed and approved by the Board, and that amenity, empowerment and price (sic) be excluded from the new proposed new BCA. [Footnotes omitted]
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> [Small Business Advocate Closing Submissions, pp. 1-2]

[46] The Small Business Advocate reiterated in her closing submissions that Ms. Whitten’s preference would be the adoption of the PAC test as the primary test, to eliminate the need to quantify the non-energy benefits noted above, noting that “additional cost benefit information would need to be included, such as bill impact considerations.”

[47] The Small Business Advocate concludes in the closing submissions that:

> In the interest of obtaining access to the measures and benefits that may be available to its customer classes, the SBA agreed to the Consensus Agreement as the reductions in the proxy values for building shell measures, BNI custom measures, solar and storage, along with the values for amenity, empowerment and pride to zero reasonably addresses its key concerns at this point…[Footnote omitted]
>
> [Small Business Advocate Closing Submissions, p. 3]

3.4 Nova Scotia Power

[48] NS Power does not support E1's proposed BCA test and recommends the Board approve the current TRC with two modifications which would consider, in the context of strategic electrification, GHG emissions reductions on a net tonnage basis along with a reduction in electricity costs, as well as the inclusion of other fuel impacts, such as displaced fuel.

[49] Regarding subsection 79A(b)(iv) of the *Public Utilities Act*, NS Power states that the legislation provides that any strategic electrification measure must reduce GHG emissions and reduce costs to customers. It submits that this amendment only alters the current TRC test to the extent that "greenhouse gas emissions reductions (on a net tonnage basis as the section does not refer to costs, only emissions reductions) must be considered." NS Power argues that the addition of this subsection does not alter the core objectives of DSM to reduce overall electricity costs or reducing the cost of electricity for NS Power customers. In addition:

> … There is no basis to read into the subsection a broad array of considerations such as comfort, health, safety, productivity, empowerment, or social well-being. That said, NS Power acknowledges the inclusion of greenhouse gas emissions reduction in the PUA as it relates to strategic electrification activities and agrees that assessing strategic electrification programs that do both, reduce emissions (on a net tonnage basis) and electricity costs, must be evaluated in order for the Board to approve such programs.
>
> [NS Power Closing Submissions, p. 5]

[50] NS Power states that the Board's "core mandate remains to ensure *just and reasonable rates"* and that the "listed factors in section 6(2)(a-e) [of the *Energy and Regulatory Boards Act*] supplement, but do not replace, the Board's primary mandate." In its closing submissions, it states:

> The operative phrase of section 6(2) is **<u>"shall give appropriate consideration to the extent to which…"</u>** signals restraint in how the factors are to be applied. Though the word "shall" creates a mandatory duty, the use of "appropriate consideration" qualifies that duty

> and does not dictate how much weight each factor must receive, if any. [Emphasis in original]
>
> [NS Power Closing Submissions, p. 7]

[51] In addressing the definition of "sustainable development", NS Power states that it is not clear which aspects of "sustainable development" have direct application to the proposed BCA test. It states in its closing submissions:

> … Moreover, the inclusion of the term, "sustainable development" seems to simply codify appropriate consideration of the principle of intergenerational equity, which the Board has previously and currently considers.
>
> By treating the inclusion of the sustainability factors as a mandate to account for non-utility impacts in its benefit-cost analysis, it appears that EFG transformed general policy language into a prescriptive requirement that the [*More Access to Energy Act*] or [*Energy and Regulatory Boards Act*] do not impose.
>
> [NS Power Closing Submission, p. 9]

[52] NS Power submits that E1 has not demonstrated how the host customer benefits that are included in the BCA test (comfort, amenity, health and safety, empowerment, and pride) and non-energy benefit factors are adequately linked to "sustainable development" and "sustainable prosperity".

[53] NS Power agrees with Mr. Bowman's conclusion that it is not appropriate to use a 2% social discount rate. It states that the references cited by E1 for using a low discount rate are for guiding government decision making on policy, not utility decisions on spending. It also agrees with Mr. Bowman that the discount rate should continue to be NS Power's WACC).

[54] In its reply submissions, NS Power commented on E1's commitment to the evergreen process and stated:

> … NS Power submits that it would be procedurally and substantively unsound for the Board to endorse a new approach in principle with the intention of working out its true mechanics later.…
>
> [NS Power Reply Submissions, p. 4]

> Regulatory approval must rest on a demonstrably sound and evidence-based framework – one that can be shown, at the outset, to be capable of producing rational, transparent, and replicable results in line with legislative requirements.
>
> [NS Power Reply Submissions, p. 5]

[55] NS Power also noted that the Industrial Group's proposed PAC test did not take other fuel impacts into account. It said its proposed modified TRC test was more closely aligned with including these impacts.

3.5 East Coast Environmental Law

[56] East Coast Environmental Law (ECEL) is a party to the Consensus Agreement and supports E1's proposed new BCA test as amended by the contents of the agreement. It states in its closing submissions:

> … We are especially supportive of the proposed inclusion of avoided social costs of carbon among non-utility system benefits, because we believe that taking social costs of carbon into account when evaluating DSM plans would help to show the true value of DSM initiatives in Nova Scotia.
>
> [East Coast Environmental Law Closing Submissions, p. 1]

[57] ECEL has stated that its primary interest in this matter is how E1's proposed BCA will "support sustainable development" and "sustainable prosperity". With respect to the interpretation of these terms, ECEL argues that "sustainable development" should be interpreted under the *Energy and Regulatory Boards Act* as having the same meaning as in the *Environment Act,* and "sustainable prosperity" should be interpreted under the *Energy and Regulatory Boards Act* as having the same meaning as in the *Environmental Goals and Climate Change Reduction Act*.

[58] ECEL agrees with E1 that the *Energy Reform (2024) Act* empowers the Board to consider non-energy benefits in cost-effectiveness testing for DSM plans. It is ECEL's view that the changes introduced by the *Energy Reform (2024) Act* give the Board an environmental mandate and jurisdiction that it did not previously possess. It empowers

the Board to regulate creatively to support the achievement of Nova Scotia's environmental policies and goals, including the Province's climate change mitigation goals.

[59] ECEL comments on the fact that the *Energy Reform (2024) Act* now gives E1 responsibilities to the Nova Scotia Independent Energy System Operator (IESO) as well as to NS Power. It states in its closing submissions:

> The IESO's exercise of its duties under the *More Access to Energy Act* should be informed by the Act's stated purposes of supporting "the sustainable development, sustainable prosperity, energy efficiency and greenhouse gas emissions reduction goals of the Province articulated in the *Environmental Goals and Climate Change Reduction Act*". Arguably, these purposes must now also inform EfficiencyOne's work to identify how much cost-effective DSM is reasonably available within the province, so that EfficiencyOne's statutorily-required cooperation with the IESO accords with the purposes of the *More Access to Energy Act*. Correspondingly, we would argue that the Board's authority and jurisdiction in respect of EfficiencyOne are now contextualized by the purposes of the *More Access to Energy Act*, insofar as those purposes inform EfficiencyOne's obligations to support integrated resource planning and other duties of the IESO. [Footnote omitted]
>
> [East Coast Environmental Law Closing Submissions, p. 5]

[60] ECEL submits that the legislative changes expand the Board's authority and jurisdiction. It concludes, however, that:

> … The Board's new responsibility to consider sustainable development and sustainable prosperity does not override other considerations that inform Board regulation under its governing statutes and regulations, such as the public's interest in affordable energy rates and reliable energy systems. Instead, the Board's new responsibility expands a complex nexus of statutory provisions that shape the Board's role as Nova Scotia's energy regulator, making it clear that sustainable development and sustainable prosperity should be considered substantively in Board decision-making, on par with other public-interest factors that have informed Board decision-making to date.
>
> [East Coast Environmental Law Closing Submissions, p. 7]

3.6 Eastward Energy

[61] In its submissions, Eastward Energy asked the Board to make a preliminary and final order that Eastward be added as a full member of DSMAG. On November 4, 2025, the Board noted that Eastward has a valuable perspective that would benefit the DSMAG and directed that Eastward be added as a member.

[62] Eastward addressed the added definition of strategic electrification in s. 79A(b)(iv) of the *Public Utilities Act*. Eastward noted that the approach to cost-effective testing for strategic electrification proposed by Mr. Bowman, namely running the PAC test with the additional step of including the increased revenues to be received by NS Power, aligns with the recommendations by Eastward's consultant, Posterity Group. Eastward submitted in its reply submissions that nothing precludes the use of E1's proposed BCA test as a secondary test.

[63] During the hearing, Eastward raised the issue of hybrid heating, and submits that E1 should consider hybrid heating measures to reduce peak load demands as a key factor in the development of the 2027-2031 DSM Plan. Eastward states the following in its closing submissions:

> The value of hybrid heating is uncontroverted on the record. Eastward believes that due to the potential very substantial economic benefits of hybrid heating it would be useful for the Board, which has a mandate to support competition and innovation in the provision of energy resources including hybrid peaking resources, to highlight in its decision the necessity for E1 to focus on hybrid heating measures as a key factor for consideration in the development of the 2027-2031 E1 plan. This would be consistent with the Chair's questioning of Mr. Neme on the correct test to track the DSM policy objective of a reduction of costs for customers set out in section 79I of the *Public Utilities Act*. [Footnotes omitted]
>
> [Eastward Energy Closing Submissions, p. 8]

[64] In relation to NS Power's marginal emissions, Eastward submits that the use of average versus marginal emissions rates is not appropriate given that, going forward, incremental generation will be served by coal and later by heavy fuel oil and natural gas or fuel oil combustion turbines operating at low efficiencies. Hybrid heating systems when using natural gas infrastructure will operate at over 90% efficiency. Eastward's position is that "using marginal generation emissions is both a more appropriate and representative approach which should be utilized by E1 in its modelling analysis."

[65] Eastward, in its closing submissions, further commented on the fact that throughout 2025, E1 would be exploring potential strategic electrification program components and measures for its 2027-2031 DSM Plan. In terms of natural gas to electric conversion, E1 used the illustrative example of using 1,000 heat pumps to replace gas as a primary heating fuel. Eastward commented on that example and stated as follows:

> In response to Undertaking U-1, using the E1 proposed BCA test with host customer impacts removed, the benefit cost ratio for the illustrative replacement of natural gas systems is still only 0.50.
>
> Eastward does not believe that such a measure could in any way be considered a valid strategic electrification measure and is concerned that E1 believes it could potentially put forward a justification for such a measure.
>
> Eastward submits that for process efficiency purposes it would be of value for the Board to provide guidance to E1 with respect to the level of justification that would be required to possibly justify a measure that would have such a negative benefit and a benefit cost ratio substantially below 1.0.
>
> [Eastward Energy Closing Submissions, p. 9]

[66] In terms of reliability impacts, Eastward submits that the Board should confirm that any benefit-cost analysis related to natural gas must capture any lost value of natural gas system reliability, and further that:

> … if reliability differs between modelled scenarios, an assessment of the incremental reliability impacts beyond those captured in the existing avoid costs shall be conducted.
>
> …
>
> Furthermore, it would be beneficial for E1 to seek a more explicit confirmation from Nova Scotia Power that ancillary service costs, peak costs and system reliability are in fact embedded in the avoided cost values provided by them.
>
> [Eastward Energy Closing Submissions, p. 10]

[67] With respect to sustainable development and sustainable prosperity, Eastward argues that these factors are only one set of the items to which the Board must give appropriate consideration. Eastward submits that in determining the primary cost test to be used by E1, the Board "has to balance the various legislative requirements that

guide its actions and determine what best supports those requirements, and the level of appropriate consideration required in that regard."

[68] Eastward commented on the 2% social discount rate in its closing submissions. It stated:

> The driver for the 2% discount rate was related to the emphasis that EFG put on sustainable development and its interpretation of the societal objectives of the Province, which was then applied across all areas that have impacts into the future. Again this appears to be putting a stronger emphasis on the sustainability factors than may be warranted by a balanced approach to the overall policy objectives of the Province in relation to DSM. Eastward submits this needs to be carefully considered by the Board in such light. [Footnote omitted]
>
> [Eastward Energy Closing Submissions, p. 13]

4.0 DISCUSSION AND ANALYSIS

4.1 Demand-side Management Legislation and Policies in Nova Scotia

4.1.1 Introduction

[69] The *Public Utilities Act* requires NS Power to engage E1 to undertake "cost-effective demand-side management". The Board must approve these agreements and "determine the cost-effective demand-side management that must be undertaken for the purpose of this Act."

[70] The application before the Board is to determine the cost-effectiveness test the Board should use to assess demand-side management plans under the *Public Utilities Act*. The parties disagree about the types of impacts the cost-effectiveness test should include; or, said another way, what costs and benefits the Board can consider in assessing the cost-effectiveness of demand-side management.

[71] In 2020, the NSUARB found it did not have the jurisdiction to consider non-energy impacts in cost-effectiveness testing. Since that time, there have been

amendments to the demand-side management provisions in the *Public Utilities Act* and the *Energy Reform (2024) Act* split the NSUARB into two separate boards, the Nova Scotia Energy Board and the Nova Scotia Regulatory and Appeals Board. In carrying out its mandates, the new legislation requires the Energy Board to give “appropriate consideration” to a broadened scope of factors when making decisions. E1 submits the Board now has the jurisdiction to consider a broader range of impacts, including non-energy impacts, in the cost-effectiveness test for demand-side management. Not all intervenors in this proceeding support E1’s position (although some do).

[72] The heart of this disagreement is based on conflicting interpretations of the relevant legislation that now guides or directs the Board in making decisions about demand-side management plans. To assess this, the Board will first review the principles of statutory interpretation, summarize the NSUARB’s earlier decision about non-energy benefits, and outline the statutory changes since that time that are being relied upon by E1 in this application. The Board will then consider the meaning of “cost-effective” as it is used in the demand-side management provisions in the *Public Utilities Act*.

[73] If the Board determines it now has the jurisdiction to consider a broader scope of impacts in its cost-effectiveness assessment, it must determine whether the proposed BCA should be approved.

4.1.2 Statutory Interpretation

[74] Well recognized principles applied by courts and tribunals throughout the country guide the Board when interpreting legislation. A majority of the Supreme Court of Canada summarized these principles in *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65. The court also said it was assumed that legislators intended that

administrative decision makers such as this Board would interpret the law consistent with these principles:

> [117] A court interpreting a statutory provision does so by applying the "modern principle" of statutory interpretation, that is, that the words of a statute must be read "in their entire context and in their grammatical and ordinary sense harmoniously with the scheme of the Act, the object of the Act, and the intention of Parliament": *Rizzo & Rizzo Shoes Ltd. (Re)*, 1998 CanLII 837 (SCC), [1998] 1 S.C.R. 27, at para. 21, and *Bell ExpressVu Limited Partnership v. Rex*, 2002 SCC 42, [2002] 2 S.C.R. 559, at para. 26, both quoting E. Driedger, Construction of Statutes (2nd ed. 1983), at p. 87. Parliament and the provincial legislatures have also provided guidance by way of statutory rules that explicitly govern the interpretation of statutes and regulations: see, e.g., *Interpretation Act*, R.S.C. 1985, c. I-21.
>
> [118] This Court has adopted the "modern principle" as the proper approach to statutory interpretation, because legislative intent can be understood only by reading the language chosen by the legislature in light of the purpose of the provision and the entire relevant context: Sullivan, at pp. 7-8. Those who draft and enact statutes expect that questions about their meaning will be resolved by an analysis that has regard to the text, context and purpose, regardless of whether the entity tasked with interpreting the law is a court or an administrative decision maker. An approach to reasonableness review that respects legislative intent must therefore assume that those who interpret the law — whether courts or administrative decision makers — will do so in a manner consistent with this principle of interpretation.

[75] The majority in *Vavilov* noted that the application of these principles by administrative decision makers may look different than the interpretive exercises undertaken by courts. They emphasized that regardless of the form of analysis, the interpretation must be consistent with the text, context and purpose of the contested provision:

> [119] Administrative decision makers are not required to engage in a formalistic statutory interpretation exercise in every case. As discussed above, formal reasons for a decision will not always be necessary and may, where required, take different forms. And even where the interpretive exercise conducted by the administrative decision maker is set out in written reasons, it may look quite different from that of a court. The specialized expertise and experience of administrative decision makers may sometimes lead them to rely, in interpreting a provision, on considerations that a court would not have thought to employ but that actually enrich and elevate the interpretive exercise.
>
> [120] But whatever form the interpretive exercise takes, the merits of an administrative decision maker's interpretation of a statutory provision must be consistent with the text, context and purpose of the provision. In this sense, the usual principles of statutory interpretation apply equally when an administrative decision maker interprets a provision. Where, for example, the words used are "precise and unequivocal", their ordinary meaning will usually play a more significant role in the interpretive exercise: *Canada Trustco Mortgage Co. v. Canada*, 2005 SCC 54, [2005] 2 S.C.R. 601, at para. 10. Where the meaning of a statutory provision is disputed in administrative proceedings, the decision maker must demonstrate in its reasons that it was alive to these essential elements.

> [121] The administrative decision maker's task is to interpret the contested provision in a manner consistent with the text, context and purpose, applying its particular insight into the statutory scheme at issue. It cannot adopt an interpretation it knows to be inferior — albeit plausible — merely because the interpretation in question appears to be available and is expedient. The decision maker's responsibility is to discern meaning and legislative intent, not to "reverse-engineer" a desired outcome.

[76] As noted in *Vavilov*, the Parliament of Canada and the provincial legislatures have also provided guidance by way of statutory rules that explicitly govern the interpretation of statutes and regulations. In Nova Scotia, this guidance is in the *Interpretation Act*, RSNS 1989, c 235, including ss. 9(1) and 9(5):

> **9** **(1)** The law shall be considered as always speaking and, whenever any matter or thing is expressed in the present tense, it shall be applied to the circumstances as they arise, so that effect may be given to each enactment, and every part thereof, according to its spirit, true intent, and meaning
>
> …
>
> **(5)** Every enactment shall be deemed remedial and interpreted to insure the attainment of its objects by considering among other matters
>
> (a) the occasion and necessity for the enactment;
>
> (b) the circumstances existing at the time it was passed;
>
> (c) the mischief to be remedied;
>
> (d) the object to be attained;
>
> (e) the former law, including other enactments upon the same or similar subjects;
>
> (f) the consequences of a particular interpretation; and
>
> (g) the history of legislation on the subject.

[77] In this case, the Board must consider the text, context and purpose of the statutory provisions relating to the cost-effectiveness of demand-side management under the *Public Utilities Act*.

4.1.3 Board Approval of Demand-side Management

[78] Before 2010, NS Power undertook its own demand-side management programs. In 2009, responding to growing concerns over the potential inherent conflict

between selling electricity and taking measures to reduce electricity sales, the Legislature enacted the *Efficiency Nova Scotia Corporation Act*, SNS 2009, c 3. This created a not-for-profit corporation to design and administer electricity demand-side management programs with a view to restraining future electricity demand and use in the province; and to engage in energy efficiency and conservation programs other than electricity demand-side management programs. It also established a fund for electricity demand-side management, fed by assessments against electric public utilities. The NSUARB had to approve expenditures from the fund for electricity demand-side management. This statute was proclaimed in force in January 2010.

[79] In 2014, the Province enacted the *Electricity Efficiency and Conservation Restructuring (2014) Act*, SNS 2014, c 5. This legislation amended the *Public Utilities Act* to create a franchise for the delivery of electricity efficiency and conservation activities that were deemed to be a public utility. This statute is the origin of the existing demand-side management provisions in the *Public Utilities Act*.

[80] Subsections 79I(1) and (2) of the *Public Utilities Act* require NS Power to undertake demand-side management by entering into a purchase agreement with E1 (the franchise holder under the *Act*). E1 provides the required demand-side management to NS Power under this agreement:

> **79I** **(1)** On and after the Implementation Date, Nova Scotia Power Incorporated shall undertake cost-effective demand-side management that is reasonably available in an effort to reduce costs for its customers.
>
> **(2)** Nova Scotia Power Incorporated shall meet its obligations pursuant to subsection (1) by entering into a demand-side management purchase agreement with a franchise holder, and upon application by the franchise holder, the Energy Board shall establish the terms and conditions of the agreement, which agreement must
>
> (a) be for a term of five years;

(b) describe the demand-side management that the franchise holder will provide to Nova Scotia Power Incorporated;

(c) identify the amount that Nova Scotia Power Incorporated will pay to the franchise holder for the supply of demand-side management; and

(d) include such other reasonable terms as the Energy Board considers appropriate.

(3) Notwithstanding subsection (2) and clause 79C(2)(a) but subject to any other requirement for review or approval by the Energy Board in this Act, Nova Scotia Power Incorporated may

(a) maintain or develop rate structures or technologies for its customers incorporating load management features, including load shifting and interruptibility;

(b) repealed 2022, c. 53, s. 6.

(c) undertake any demand-side management with respect to its own property;

(d) undertake charitable giving with respect to demand-side management; and

(e) undertake any other activity, subject to approval by the Energy Board, that, in the opinion of the Energy Board, will not unduly interfere with the franchise holder's franchise.

[81] The Board must review and approve demand-side management purchase agreements between NS Power and E1 under s. 79L of the *Public Utilities Act*:

79L **(1)** Upon receiving the application of a franchise holder respecting a demand-side management purchase agreement, the Energy Board shall establish a process for the review and approval of the application.

(2) The franchise holder shall provide any information or evidence required by the Energy Board for its determination of the application.

(3) The franchise holder is responsible for providing information and evidence to the Energy Board to justify the demand-side management that is proposed to be undertaken for Nova Scotia Power Incorporated, and Nova Scotia Power Incorporated may rely upon the expertise of the franchise holder in respect of the delivery of demand-side management.

(4) The Energy Board shall approve an application pursuant to this Section if, in addition to any other matters considered appropriate by the Energy Board, it is satisfied that the application, including the proposed demand-side management that is the subject of the application, is in the best interests of Nova Scotia Power Incorporated's customers and satisfies the requirements in Section 79I.

> **(5)** The Energy Board's review of the proposed demand-side management for the purpose of the approval must consider any matters deemed appropriate by the Energy Board or as may be prescribed.

[82] As part of approving demand-side management supply agreements, the Board must determine the cost-effective demand-side management to be undertaken. The Board's evaluation of the proposed demand-side management must be at the portfolio level, as noted in s. 79H:

> **79H** **(1)** Subject to Section 79I, the Energy Board shall determine the cost-effective demand-side management that must be undertaken for the purpose of this Act.
>
> **(2)** The Energy Board, in evaluating a franchise holder's application pursuant to Section 79L, shall evaluate the proposed cost-effective demand-side management at the portfolio level that would be the aggregate amount of demand-side management programs.

4.1.4 The 2020 Non-energy Benefits Decision

[83] The NSUARB determined it did not have the jurisdiction to consider non-energy benefits in the cost-effectiveness testing for demand-side management in *Re EfficiencyOne*, 2020 NSUARB 56. In that case, E1 specifically sought approval to use measure-level non-energy benefits in cost-effectiveness testing for future demand-side management planning regulatory processes.

[84] E1 said the NSUARB could consider non-energy benefits, such as thermal comfort, noise reduction, property value impacts, equipment maintenance costs, lighting quality and home durability. E1 argued that jurisdiction to include non-energy benefits in cost-effectiveness testing stemmed from the NSUARB's obligation to decide what is in the best interests of customers. It said the *Public Utilities Act* provided the NSUARB with broad discretion and jurisdiction to determine what factors are relevant in the assessment of customers' best interests. E1 submitted that a reasonable interpretation of best interests was not limited to the context of electricity savings.

[85] While acknowledging that it had an over-arching public interest mandate in everything it does, the NSUARB noted its principal responsibilities in regulating utilities were to ensure safe and adequate service, just and reasonable rates, and the lowest long-term cost. The NSUARB found it had to interpret the scope of its discretion in the context of the statutory framework, which did not include accounting for the proposed non-energy benefits:

> [34] The Board also has an over-arching public interest mandate in everything it does.
>
> [35] With regard to EfficiencyOne specifically, the Legislature has given the Board further instruction with respect to affordability and the best interests of ratepayers. EfficiencyOne argued that "in the best interests of Nova Scotia Power Incorporated's customers", in the absence of any limiting language, allows "a cumulative consideration of the diverse interests of the customer" in a manner that accounts for the unrestrictive range of costs and benefits.
>
> [36] EfficiencyOne also argued that a legislative intention for the Board to account for a broader environmental context when considering the best interests of customers under the *Public Utilities Act* was evidenced in comments made by the Minister of Energy in 2009, when the bill leading to the enactment of the *Efficiency Nova Scotia Corporation Act*, S.N.S. 2009, c. 3, was introduced in the House of Assembly. EfficiencyOne replaced the Efficiency Nova Scotia Corporation as the demand-side management provider in 2014.
>
> [37] The Board agrees with the submissions of the Industrial Group that the open-ended interpretation urged by EfficiencyOne is not appropriate. The Board's jurisdiction, as noted by the Industrial Group, is to determine what is in the best interests of customers and must be necessarily limited by the statutory definition of "electricity efficiency and conservation activities" outlined in Section 79A(b).
>
> [38] The Board interprets the comments of the Minister of Energy cited by EfficiencyOne in relation to the *Efficiency Nova Scotia Corporation Act* as simply acknowledging that there are also environmental benefits associated with using less electricity. Neither the purposes of that Act set out in s. 2 nor the objects of Efficiency Nova Scotia Corporation set out in s. 8 included a separate environmental mandate for the corporation. In any event, statutory amendments in 2014 all but eliminated that corporation when the *Electricity Efficiency and Conservation Restructuring (2014) Act*, S.N.S. 2014, c. 5, added Sections 79A to 79V to the *Public Utilities Act*. The new legislation requires NS Power to undertake cost-effective electricity efficiency and conservation activities that are reasonably available in an effort to reduce the costs for its customers by entering into an agreement with the holder of the electricity efficiency and conservation franchise granted under s. 79C of the *Act*. The Board does not interpret anything in the amendments to the *Public Utilities Act* as establishing an environmental mandate or jurisdiction under the *Act*.
>
> [39] The Board agrees with the Industrial Group that to interpret "broad discretion" as a license for the Board to exercise regulatory oversight functions in respect of matters beyond that which is clearly contemplated by Section 79A of the *Public Utilities Act* misinterprets the jurisdiction conferred by the *Public Utilities Act*.

[40] The Board cites with approval the passage noted above in *Atco*:

> … The Board's seemingly broad power to make any order and to impose any additional conditions that are necessary in the public interest has to be interpreted within the entire context of the statutes which are meant to balance the need to protect consumers as well as the property rights retained by owners, as recognized in a free market economy. The limits of the powers of the Board are grounded in its main function of fixing just and reasonable rates ("rate setting") and in protecting the integrity and dependability of the supply system. [Emphasis added]
>
> [Exhibit E-13, p. 8]

[41] The Board agrees with the Industrial Group that, in the absence of any evidence to suggest that non-energy benefits directly contribute towards EfficiencyOne's mandate to address electricity use, the Board would be acting outside the scope of its statutory authority by considering such benefits.

[42] The Board refers back to certain of the non-energy benefits referenced in the Vermont Energy evidence, such as noise reduction, property value, reduction in labour costs, health benefits and an array of environmental benefits. Such a broad array of considerations cannot be squared with the definition of electricity efficiency and conservation activities in the *Public Utilities Act*.

[43] EfficiencyOne stated that the use of the term "cost-effective" in Sections 79H and 79I(1) of the *Public Utilities Act* means that the Legislature intended the cost-effectiveness of such activities to be a matter falling within the Board's jurisdiction. The Board acknowledges that cost-effectiveness is an integral part of the administration of DSM activities and the Board currently uses the well-established Total Resource Cost Test. There are other measures such as the Program Administration Cost Test which the Board could also use if it chose to do so. The question here is not whether the Board can use cost-effectiveness in reviewing energy efficiency programs; the Board does. The question here is whether the Board can include non-energy benefits.

[44] As noted, EfficiencyOne in its Reply Submission, attempted to isolate whether the Board has jurisdiction to approve non-energy benefits from the decision as to whether any non-energy benefits should be considered. While that is a valid point, the Board has to examine what non-energy benefits are in order to consider the jurisdictional question. Non-energy benefits stray far away from the Board's core mandate.

[45] NS Power cited *Reference Re National Energy Board Act*, a decision of the Federal Court of Appeal which examined Section 10(3) of the *National Energy Board Act*, as it then was, and considered whether the words "and other matters necessary or proper for the due exercise of its jurisdiction" provided the National Energy Board with the authority to order costs where the *National Energy Board Act*, at that time, did not expressly do so. The Court found that the National Energy Board did not have that authority.

[46] The power to award costs, which was denied to the National Energy Board, seems more aligned to the core functions of the National Energy Board than non-energy benefits are to the core functions of the Utility and Review Board in overseeing the electricity efficiency and conservation franchise holder as a public utility, yet the Federal Court of Appeal found that the National Energy Board did not have those powers.

[47] The Board finds that "cost-effective" means considering the "electricity efficiency and conservation activities" of EfficiencyOne, as defined in the *Public Utilities Act*, to

determine whether they are "affordable" and result in the lowest long-term cost of electricity.

[2020 NSUARB 56]

4.1.5 Statutory Changes

[86] In the present case, E1 notes there have been significant statutory changes since the NSUARB's decision in 2020. E1 argues that changes to the *Public Utilities Act* and s. 6(2) of the *Energy and Regulatory Boards Act* now direct the Board to consider non-energy impacts as part of its evaluation of the cost-effectiveness of demand-side management.

[87] E1 points out that "electricity efficiency and conservation activities" in s. 79A in the *Public Utilities Act* was replaced with a new definition, "demand-side management". The new definition now includes a reference to strategic electrification (s. 79A(b)(iv)):

79A In this Section and Sections 79B to 79V,

…

(b) "demand-side management" means activities, programs or plans relating to

(i) the efficient use of electricity,

(ii) the conservation of electricity,

(iii) the alteration of the consumption pattern of an end-user of electricity that has the effect of reducing demand during Nova Scotia Power Incorporated's periods of highest demand,

(iv) strategic electrification of energy end uses currently powered by fossil fuels in a manner that reduces overall greenhouse gas emissions and electricity costs,

(v) the delivery of a reduction in the amount of electrical energy or capacity that Nova Scotia Power Incorporated would otherwise be required to supply to its customers, or

(vi) any other prescribed activities, plans or programs;

[88] E1 noted that the amendments to the *Public Utilities Act* also removed the explicit requirement for the Board to take into account the affordability of demand-side

management activities from the text in s. 79L(9) (much of which is now included in s. 79L(5)). E1 submitted this affordability requirement featured in the NSUARB's reasons in reaching its conclusions in its decision in 2020:

> Section 79L(9) has been repealed, thereby removing the statutory obligation to specifically consider the affordability of proposed electricity efficiency and conservation activities as previously defined. E1 recognises that the Board has consistently treated affordability as a central component of its regulatory assessments and intends to maintain this approach. Nonetheless, it is noteworthy that affordability is no longer designated a specific statutory consideration under the updated legislative framework, as it was during the consideration of E1's application in M08888.
>
> [E1 Reply Submissions, p. 16]

[89] E1 also references the *Energy Reform (2024) Act*, which, amongst other things, requires the Board, when making decisions, to give appropriate consideration to factors set out in s. 6(2) of the *Energy and Regulatory Boards Act*:

> **6** **(2)** In approving or fixing rates, tolls, charges, tariffs, capital applications and all other matters over which the Energy Board has authority, the Board shall give appropriate consideration to the extent to which such rates, tolls, charges, tariffs, capital applications or other matters
>
> (a) support competition and innovation in the provision of energy resources in the Province;
>
> (b) support the development of a competitive electricity market;
>
> (c) ensure the provision of safe, secure, reliable and economical energy supply in the Province;
>
> (d) support sustainable development and sustainable prosperity; and
>
> (e) support such other factors as prescribed by the regulations,
>
> with the goal of approving rates, tolls, charges, tariffs, capital applications or other matters that are consistent with the purpose of this Act, the *More Access to Energy Act* and the regulations.

[90] To follow through the threads in s. 6(2), there is no explicit purpose provision in the *Energy and Regulatory Boards Act*; however, its long form title describes it as "An Act to Establish the Nova Scotia Energy Board, the Nova Scotia Regulatory and Appeals Board and the Energy and Regulatory Boards Tribunal". The statute establishes the two

boards as divisions of the Tribunal, describes their powers and duties, addresses appointments to the boards, and provides for the administration of the Tribunal and the boards.

[91] The purpose of the *More Access to Energy Act* is set out in s. 2 of that statute and includes similar but not identical objectives to the list of factors in s. 6(2):

> **2** The purpose of this Act is to
>
> (a) increase competition and innovation in the Province's energy sector;
>
> (b) ensure the provision of a safe, secure, reliable and economical energy supply in the Province;
>
> (c) ensure a transparent, efficient and coordinated approach to Provincial energy-supply planning;
>
> (d) provide for competitive procurement practices for new energy system resources;
>
> (e) support the sustainable development, sustainable prosperity, energy efficiency and greenhouse gas emissions reduction goals of the Province articulated in the *Environmental Goals and Climate Change Reduction Act*; and
>
> (f) provide for a phased transition of the system operator from Nova Scotia Power Incorporated to an Independent Energy System Operator.

[92] "Sustainable development" is defined in s. 3 of the *More Access to Energy Act* as having the same meaning as in the *Environment Act*, SNS 1994-95, c 1:

> "sustainable development" means development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs;
>
> [*Environment Act*, s 3(aw)]

[93] The meaning of "sustainable development" may also be informed by s. 2 of the *Environment Act*, which notes that the purpose of that statute is to support and promote the protection, enhancement and prudent use of the environment while recognizing several goals, including:

> (b) maintaining the principles of sustainable development, including

(i) the principle of ecological value, ensuring the maintenance and restoration of essential ecological processes and the preservation and prevention of loss of biological diversity,

(ii) the precautionary principle will be used in decision-making so that where there are threats of serious or irreversible damage, the lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation,

(iii) the principle of pollution prevention and waste reduction as the foundation for long-term environmental protection, including

(A) the conservation and efficient use of resources,

(B) the promotion of the development and use of sustainable, scientific and technological innovations and management systems, and

(C) the importance of reducing, reusing, recycling and recovering the products of our society,

(iv) the principle of shared responsibility of all Nova Scotians to sustain the environment and the economy, both locally and globally, through individual and government actions,

(v) the stewardship principle, which recognizes the responsibility of a producer for a product from the point of manufacturing to the point of final disposal,

(vi) the linkage between economic and environmental issues, recognizing that long-term economic prosperity depends upon sound environmental management and that effective environmental protection depends on a strong economy, and

(vii) the comprehensive integration of sustainable development principles in public policy making in the Province;

[94] "Sustainable prosperity" is defined in s. 3 of the *More Access to Energy Act* as having the same meaning as in the *Environmental Goals and Climate Change Reduction Act*, SNS 2021, c 20:

"sustainable prosperity" means prosperity where economic growth, environmental stewardship and social responsibility are integrated and recognized as being interconnected.

[*Environmental Goals and Climate Change Reduction Act*, s 2(l)]

[95] The meaning of "sustainable prosperity" may also be informed by ss. 4 and 5 of the *Environmental Goals and Climate Change Reduction Act*:

4 This Act is based on the following principles:

(a) the achievement of sustainable prosperity in the Province must include

(i) Netukulimk,

(ii) sustainable development,

(iii) a circular economy, and

(iv) equity;

(b) the achievement of sustainable prosperity is a shared responsibility among all levels of government, the private sector and all Nova Scotians;

(c) climate change is recognized as a global emergency requiring urgent action; and

(d) such others as may be prescribed by the regulations.

Sustainable prosperity long-term objective
5 **(1)** The long-term objective of the Government is to achieve sustainable prosperity.

(2) To achieve its objective of sustainable prosperity, the Government shall

(a) establish, adopt, support and enable goals that foster an integrated approach to environmental sustainability and economic well-being;

(b) raise awareness of the importance of sustainable prosperity and the climate change emergency and the elements that contribute to them;

(c) encourage the growth of the clean economy and work to support all Nova Scotians in benefiting from its growth;

(d) support the well-being and quality of life of all Nova Scotians;

(e) create conditions necessary for making progress toward sustainable prosperity, including regulation, programs and initiatives that encourage actions and innovation by local government, business, non-government organizations and Nova Scotians; and

(f) work toward continuous improvement in measures of social, environmental and economic indicators of prosperity.

4.1.6 The Meaning of "Cost-effective" under the *Public Utilities Act*

[96] From the text used by the Legislature in s. 79I(1) of the *Public Utilities Act*, it follows that NS Power's statutory duty relates to demand-side management (as defined in the *Act*) that is (a) cost effective, and (b) reasonably available. Further, the explicitly stated purpose of NS Power undertaking this demand-side management is to reduce

costs for its customers. Those requirements frame the scope of what NS Power is required to purchase under its agreement with E1.

[97] In turn, the requirements in s. 79I feed into the Board's obligation to review and approve a demand-side management agreement upon application by the franchise holder. In addition to being satisfied that the proposed demand-side management is in the best interests of NS Power's customers, under s. 79L(4), the Board must be satisfied that the application meets the requirements of s. 79I.

[98] Section 79H highlights the Board's obligation to consider the cost-effectiveness even more explicitly in stating that the Board must determine the cost-effective demand-side management that must be undertaken for the purpose of this *Act* and that it must evaluate the proposed cost-effective demand-side management at the portfolio level. The requirements of s. 79I also frame the exercise of the Board's discretion under s. 79H to determine the cost-effective demand-side management that must be undertaken, since the Board's obligation is "Subject to Section 79I".

[99] The *Public Utilities Act* does not explicitly define "cost-effective" or "cost-effective demand side management". While s. 79V(1)(e) of the *Public Utilities Act* authorizes the Governor in Council to make regulations defining any word or expression used but not defined in the statute, there are no such regulations.

[100] The NSPM is a publication of the National Energy Screening Project, a United States based stakeholder group of organizations and individuals working to update and improve cost-effectiveness screening for distributed energy resources. A copy of the NSPM was included in E1's evidence in this proceeding. It contains the following discussion about assessing the cost-effectiveness of investments:

> Benefit-cost analysis is a systematic approach for assessing the cost-effectiveness of investments by comparing the benefits and costs of alternative options. It is widely used by businesses for deciding whether to proceed with projects, investments, programs, initiatives, or other courses of action. The analysis entails identifying all the relevant benefits and costs of a project and determining whether the benefits exceed the costs over the lifetime of the expected program or project.
>
> [Exhibit E-1, Appendix A, Attachment 2, p. 38 of 302]

[101] The Board does not believe this description is controversial. Where the parties disagree, is in their views of the relevant benefits and costs for the cost-effectiveness test under the *Public Utilities Act*.

[102] The recent statutory amendments to s. 79I of the *Public Utilities Act* substituted “demand-side management” for “electricity efficiency and conservation activities”. However, the requirement that what is undertaken is “cost-effective” and done to try to “reduce costs for customers” is the same as it was before the amendments.

[103] It is reasonable that the references in s. 79I(1) to cost-effectiveness and reducing costs for customers are related. That is, the costs considered in assessing cost-effectiveness are the costs for customers. It is arguable that “costs for customers” may mean more than electricity costs, although that is not an argument that was specifically considered in the NSUARB’s 2020 decision. It also seems like the less likely interpretation in the context of the *Public Utilities Act*, where utility costs are the focus of what is reviewed and passed along to customers in approved rates. For example, under s. 79M(3), the Board must determine and approve the costs payable by NS Power to a franchise holder under a demand-side management supply agreement and s. 79M(5) confirms NS Power’s entitlement to recover those costs from customers.

[104] The references to “cost-effective” in s. 79H of the *Public Utilities Act* do not appear to further the textual or contextual analysis but do reinforce that the demand-side management provided by the franchise holder must be cost-effective.

[105] The *Public Utilities Act* only uses the term "cost-effective" in its demand-side management provisions. In addition to being referenced in ss. 79I and 79H, the term is used in s. 79C(2)(a), 79K and 79W:

> **79C** **(1)** Upon application pursuant to Section 79B, the Minister may grant an electricity efficiency and conservation franchise pursuant to this Section.
>
> **(2)** A franchise
>
> (a) gives the franchise holder the exclusive right to supply Nova Scotia Power Incorporated with <u>reasonably available, cost-effective demand-side management</u> for the purpose of this Act;
>
> …
>
> **79K** **(1)** Nova Scotia Power Incorporated shall provide a franchise holder with such information in its possession or control, including records and personal information, respecting customer electricity usage and load as is necessary to enable the franchise holder to provide Nova Scotia Power Incorporated with <u>reasonably available cost-effective energy efficiency and conservation activities</u>.
>
> **(2)** Upon written notice from a franchise holder, Nova Scotia Power Incorporated shall, within a reasonable period, provide the franchise holder, for the purpose of enabling the franchise holder to provide Nova Scotia Power Incorporated with <u>reasonably available cost-effective energy efficiency and conservation activities</u>, such information in its possession or control, including records and personal information, respecting customer electricity usage and load as is specified in the notice.
>
> …
>
> **79W** **(1)** The franchise holder shall co-operate with the IESO in the IESO's pursuit of its duties under the More Access to Energy Act, including but not limited to the IESO's duty to conduct integrated resource planning exercises.
>
> **(2)** The franchise holder shall co-operate with the IESO respecting the integrated resource planning process to
>
> (a) develop avoided cost calculations for demand-side management resources; and
>
> (b) identify the maximum amount of <u>cost-effective demand-side management reasonably available</u>. [Emphasis added]

[106] As with s. 79H, these provisions do not appear to add to the analysis, except to reinforce the requirement that the demand-side management must be cost-effective. In the case of ss.79K and 79W, the latter of which was added by the *Energy Reform*

(2024) Act, the provisions also repeat the requirement in s. 79I(1) that the demand-side management be "reasonably available".

[107] While it no longer uses the term "cost-effective", E1 said the change to the definition of "demand-side management" supported its position that a benefits costs test that accounted for more than just utility impacts was needed. Aside from changing the term from "electricity efficiency and conservation" to "demand-side management", the most substantive change was the replacement of s. 79A(b)(iv). The original version of this subclause read:

> (iv) the utilization or management by Nova Scotia Power Incorporated of its electrical system in a more cost-effective manner

The current version is:

> (iv) strategic electrification of energy end uses currently powered by fossil fuels in a manner that reduces overall greenhouse gas emissions and electricity costs

[108] E1 submits that strategic electrification cannot be appropriately assessed under a traditional PAC test or the existing TRC test because no electrification measure would ever pass these tests. E1 noted that in the case of strategic electrification, electric utility impacts are the primary costs and non-utility impacts are the primary benefits. E1 argued that this necessarily expands the scope of cost-effectiveness testing to non-utility impacts, including other fuel impacts:

> As noted above, the November 9, 2022 amendment to the PUA added a definition for demand-side management that included "strategic electrification" that "reduces overall greenhouse gas emissions and electricity costs". This, by necessity, expands the scope of inquiry to include non-utility impacts, which include other fuel impacts. <u>Without being able to measure and quantify other fuel impacts as part of its analysis of the cost-effectiveness of its strategic electrification programs, E1 would not be able to properly carry out its strategic electrification mandate. To perform cost effectiveness testing of strategic electrification you must include the relevant benefits and costs.</u> In the case of strategic electrification the electric utility impacts become the primary costs and the non-utility impacts (other fuel savings and GHG emissions savings) become the primary benefits. Without their inclusion the testing cannot be conducted appropriately. [Emphasis added]
>
> [Exhibit E-1, p. 17 of 38]

[109] The Board assumes the argument E1 is advancing with this point, as it relates to the intended meaning of “cost-effective” in the *Public Utilities Act*, is that in amending the statute to include strategic electrification, the Legislature would have understood that it was specifying a measure that could only be assessed under a cost-effectiveness test that included non-utility benefits. This argument has some merit, but given the NSUARB’s previous decision indicating it did not have the jurisdiction to consider non-energy benefits, one would have expected that if the intent was to more precisely prescribe the way cost-effectiveness must be assessed, the Legislature would have taken a more direct approach, just like it did in directing the Board to evaluate cost-effectiveness at the portfolio level rather than at the program level used by the NSUARB for many years (s. 79H(2)).

[110] There are other cues about the meaning of “cost-effective” in both the previous and the current version of s. 79A(b)(iv).

[111] The previous version of the subclause used the term “cost-effective” in the context of the operation of the electrical system. This could have implied that “cost-effective” in the legislation was aimed at electricity system costs. Since this provision no longer exists, the Board does not place much weight on it.

[112] However, the current subclause, while not using the term “cost-effective”, makes it clear that the strategic electrification included in the definition of “demand-side management” must reduce “electricity costs” (in addition to greenhouse gas emissions). This strongly suggests that the objective of reducing costs for customers in s. 79I(1) is referring to electricity costs.

[113] The activities listed in the subclauses in s. 79A(b) are primarily associated with impacts to the electrical system. Subclauses (i) and (ii) contemplate reducing the amount of electricity produced by the system through efficiency and conservation; subclause (iii) contemplates reducing the system's peak demand; and subclause (v) refers to reductions of both energy and capacity. If anything, subclause (iv) is the outlier in this list since it focuses on non-electric energy end uses and contemplates displacing these uses through electrification, thereby increasing the amount of electricity produced by the system.

[114] It would be inconsistent to limit strategic electrification activities to a requirement to reduce electricity costs, as s. 79A(b)(iv) very clearly does, and then allow demand-side management activities under s. 79A(b)(i), (ii), (iii) and (v) aimed at reducing a broader range of costs (which may not specifically reduce electricity costs and could actually increase them). Rather, it seems much more likely that the explicit reference to reducing electricity costs in subclause (iv) recognizes that it is somewhat different in nature from the other activities identified in s. 79A(b), and ensures these activities are also aimed at the same purpose as the others: reducing electricity costs for customers.

[115] E1 argues that the Board now has a legislated mandate to consider non-utility impacts in the assessment of cost-effectiveness and says that incorporating sustainability-focused factors into regulatory decision-making is now the law in Nova Scotia:

> As explained above, the *Energy and Regulatory Boards Act*, introduced as Schedule A to the *Energy Reform Act*, broadens the scope of factors that the Energy Board must consider in assessing E1's BCA tests and applications.
>
> The *Energy Reform Act* and the two new pieces of legislation it creates, the *Energy and Regulatory Boards Act* and the *More Access to Energy Act*, require the Energy Board to incorporate sustainability-focused factors into its regulatory decision-making, and "sustainable development" and sustainable prosperity".

> The definitions of these terms include consideration of the impacts of development on future generations, environmental stewardship, and social responsibility. Through a focus on "sustainable development" and sustainable prosperity", it now falls within the ambit of the Energy Board to include considerations such as:
>
> - environmental impacts of DSM programs generally, including how these programs contribute to reducing greenhouse gas emissions and other pollutants;
> - encouraging practices and technologies that reduce overall energy consumption and improve efficiency; and
> - the potential of DSM programs to create green jobs and stimulate economic growth.
>
> The legislation incorporates sustainability-focused factors into regulatory decision-making, incorporating concepts such as environmental stewardship, social responsibility, and sustainable prosperity. This comprehensive approach ensures that the Energy Board's assessments and strategies not only focus on cost-effectiveness but also contribute to broader environmental and social goals, fostering a more sustainable and equitable future.
>
> [Exhibit E-1, pp. 17-18 of 38]

[116] E1 submits that the recent legislative changes empower the Board to look beyond traditional utility cost considerations and to actively incorporate broader societal objectives into its decision-making process. It said:

> … The Board is thus authorized—and required—to give weight to the long-term environmental, social, and economic benefits of DSM programs, such as reduced GHG emissions, increased energy efficiency, and enhanced sustainable prosperity for Nova Scotians. This approach ensures that regulatory approvals for rates, tariffs, and DSM programs are not made in isolation, but rather in a manner that supports the province's policy goals of climate mitigation, energy transition, and sustainable development.
>
> [E1 Closing Submissions, p. 7]

[117] Referring specifically to s. 6(2) of the *Energy and Regulatory Boards Act*, E1 states:

> The *Energy and Regulatory Boards Act* requires the Board, in "**all other matters over which the Energy Board has authority**," to "**give appropriate consideration**" to whether decisions "**support sustainable development and sustainable prosperity**", among other purposes [emphasis added]. The *More Access to Energy Act* embeds these as energy-sector purposes and ties them to Nova Scotia's GHG goals in the *Environmental Goals and Climate Change Reduction Act*.
>
> The implementation of a cost-effectiveness screen, as outlined in this Application, constitutes a "matter" requiring the Board to adhere to the statutory obligations of the *Energy and Regulatory Boards Act*. E1's Closing Submissions further detail both the scope

> of this authority and the manner in which the Proposed BCA fulfills these requirements. [Footnotes omitted]
>
> [E1 Reply Submissions, p. 14]

[118] The Industrial Group and NS Power argue that the recent statutory changes do not fundamentally alter the Board's jurisdiction or change the focus of the cost-effectiveness test for demand-side management under the *Public Utilities Act*. The Industrial Group argues that E1 has placed a disproportionate emphasis on two additional factors (sustainable development and sustainable prosperity) to unjustifiably extend its mandate beyond the plain language of the *Act*. It said, "the additional factors provide guidance but do not fundamentally alter the … main goal to reduce electricity costs for customers." The Industrial Group said the Board must not use these policy goals to re-write the legislation.

[119] The Industrial Group argues the main change to the *Public Utilities Act* since E1's last demand-side management plan was approved, impacting E1's programming and planning, is the addition of strategic electrification to the definition of demand-side management. The Industrial Group emphasizes that s. 79A(b)(iv) constrains strategic electrification by the requirements that it reduce both greenhouse gas emissions and electricity costs. Regarding the reduction of electricity costs, the Industrial Group states:

> … The emphasis on reducing electricity costs is consistent with the PUA's focus on cost-effectiveness of these programs, and the specific role for E1 to address energy-based efficiency and conservation. This provision has not expanded E1's mandate beyond energy impacts.
>
> [Industrial Group Closing Submissions, p. 5]

[120] The Industrial Group argued that the focus of the cost-effectiveness test, based specifically on the language in the *Public Utilities Act*, should "first and foremost" be the reduction of costs for customers. The Industrial Group said the reference to GHG

reductions in the part of the definition of “demand-side management” that addresses strategic electrification should not be a jumping point to a broader search for benefits given the explicit requirement to reduce electricity costs:

> It is important to note that the reference to GHG emissions within the definition of DSM specifically pertains to strategic electrification and remains subject to the overarching goal of reducing electricity costs for customers. The Board should not ignore the location of that consideration, nor the qualifier that it must also reduce costs to ratepayers. The inclusion of that factor does not mean that non-energy benefits should now be added to the cost-effectiveness testing for DSM for all other programs.
>
> [Industrial Group Closing Submissions, pp. 7-8]

[121] The Industrial Group also argued that if the Board was compelled to include broad non-energy and societal impacts in cost-effectiveness testing because of s. 6(2) of the *Energy and Regulatory Boards Act*, then it would need to include those impacts in all its decisions relating to other utilities and entities it regulates, leading to absurd results:

> Taking this to its logical outcome, in order for this cost effectiveness test to “make sense”, it would also need to be used by the IESO-NS in its development of the Integrated Resource Plan, and by NSPI in its capital planning. Incorporating the global social cost of carbon would fundamentally skew the outcomes of these processes, leading to absurd results. While cost-effectiveness testing for both NSPI and IESO-NS goes beyond the scope of this proceeding, it demonstrates the implications of such a broad-reaching interpretation of the *PUA*.
>
> Moreover, if the authority to include a quantified social cost of carbon is derived from the Board’s power to “give appropriate consideration to the extent to which… such matters support sustainable development and sustainable prosperity”, then this authority must necessarily extend to all the Energy Board mandates and include the other enumerated factors such as competition. This would be particularly challenging when balancing two regulated energy suppliers – NSPI and Eastward Energy, other non-regulated competitive energy suppliers such as oil and propane heating suppliers, and a franchise-holder with a scope to provide programs both to reduce electricity and to strategically electrify.
>
> The Industrial Group respectfully submits that the legislative amendments have not changed the law surrounding cost-effectiveness of DSM, or other resources, as suggested by E1. The Board should be cognizant of the unintended consequences that this interpretation of the *[Energy and Regulatory Boards Act]* could have on the overall regulation of public utilities in NS.
>
> [Industrial Group Closing Submissions, p. 12]

[122] NS Power submitted that the existing legislation in Nova Scotia still does not explicitly empower the Board to consider non-energy benefits, except for the reduction

of GHG emissions associated with strategic electrification. It said the new legislation does not alter the Board's mandate to uphold cost-effectiveness as the primary goal in decision-making about demand-side management. It argued that the overall and overriding objective in s. 79I(1) of the *Public Utilities Act* is the reduction of costs for customers through the activities, programs or plans outlined in the definition of demand-side management in s. 79A(b)(i)-(vi).

[123] Relying on the interpretive principle that statutory provisions of a general nature cannot override provisions that are specific in nature, NS Power says the general purposes of s. 2 of the *More Access to Energy Act* and the factors the Board must consider under s. 6(2) of the *Energy and Regulatory Boards Act* cannot usurp the specific demand-side management provisions in the *Public Utilities Act*. It argues sustainability goals are policy objectives that do not override the operational requirement to approve demand-side management programs that are demonstrably cost-effective:

> First, the PUA remains the governing statute for DSM in Nova Scotia. The PUA dictates that cost-effectiveness remains the primary goal against which DSM initiatives are judged. The *Energy Reform Act* (ERA) introduced several new statutory purposes, the relationships among which must be considered in light of the overarching framework of the PUA. While E1, the CA, the SBA, and ECEI appear to suggest that the Board must now conduct a balancing exercise between all and factors it must consider, essentially equating cost-effectiveness with sustainable prosperity, that interpretation is not supported by the plain and ordinary meaning of section 6(2) of the *Energy and Regulatory Boards Act* (ERBA), which clearly delineates the Board's task. If the Legislature intended the Board to approve programs solely or largely on sustainability grounds, it would have said so expressly, for example, by creating a separate test or exception. Instead, it instructed the Board to *give consideration* to sustainability *to the extent appropriate*, preserving the primacy of the cost-effectiveness mandate.
>
> [NS Power Reply Submissions, p. 2]

[124] Eastward expressed similar comments in its reply submissions:

> E1 has continued in its Closing Submissions to put considerable emphasis on the Board's requirement at section 6(2)(d) of the *Energy and Regulatory Boards Act* to give "appropriate consideration to the extent" its proposal supports sustainable development and sustainable prosperity. E1 essentially summarizes its position as follows, "...when considering DSM plan applications or evaluating cost-effectiveness, the Board must explicitly address how proposed measures advance sustainable development and

> sustainable prosperity, ensuring present needs are met without compromising future generations". But these remain only one set of the items that the Board must give appropriate consideration to, together with the primary requirements of the *Public Utilities Act* in relation to DSM.
>
> As noted by East Coast Environmental Law, "The Board's new responsibility to consider sustainable development and sustainable prosperity does not override other considerations that inform Board regulation under its governing statutes and regulations, such as the public's interest in affordable energy rates and reliable energy systems".
>
> It appears from the record and E1's overall Closing Submissions that its proposed BCA has been largely driven by these requirements, and not by a weighting of the overall legislative requirements applicable to E1 and the development of its DSM Plans. NSPI appears to share this view where it states, "More broadly, E1 seems to be proposing that the societal impact view become the dominant perspective." [Footnotes omitted]
>
> [Eastward Reply Submissions, pp. 3-4]

[125] E1 argues that the Industrial Group's interpretation of the recent legislative changes in Nova Scotia results in the Board doing nothing more than it has always done by taking relevant policy goals into consideration when making discreet demand-side management decisions. It states:

> …This approach effectively suggests that the recent amendments which address sustainable development and sustainable prosperity – including the repeal and replacement of an entire act that guides the Board's mandate (the repeal of the *Utility and Review Board Act*, being replaced by the *Energy and Regulatory Boards Act*) – have no real impact on the regulation of DSM in Nova Scotia. According to this approach, the amendments are superfluous to powers the Energy Board previously had. It suggests they are simply "admirable and important" environmental goals (to use the language of the IG), but do not actually provide any concrete ability for the Board to do anything about them. Yet this is contrary to the principle of legislative interpretation that legislation is assumed to have meaning: "the legislator does not speak in vain". [Footnotes omitted]
>
> [E1 Reply Submissions, p. 3]

[126] The Consumer Advocate raised a similar criticism about the Industrial Group's submissions:

> In reference to the *PUA*, the Industrial Group argues "while broader legislative objectives— such as promoting sustainability— may inform the context in which a statute is interpreted, the Industrial Group submits that these goals cannot override or alter the clear and specific language used. These considerations may guide the interpretation where ambiguity exists, but do not expand or redefine the statutory mandate of the utility."
>
> This submission overlooks the Board's mandate under the *Energy and Regulatory Boards Act*. The Board's mandate under [section 6(2)] of that Act is to give "appropriate consideration" to several enumerated policy objectives, which include sustainable prosperity, sustainable development, the purposes of the *More Access to Energy Act*, and

> other objectives. The legislation does not specify there is a hierarchy amongst these policy objectives, nor does it suggest that sustainable prosperity and sustainable development are secondary to the other policy objectives enumerated in the statute. [Footnotes omitted]
>
> [Consumer Advocate Reply Submissions, p. 2]

[127] In response to NS Power, E1 argues that there is no statutory conflict that would trigger the interpretive principle that statutory provisions of a general nature cannot override provisions that are specific in nature. E1 says the *Public Utilities Act* addresses what the Board must evaluate (cost-effective demand-side management at the portfolio level) whereas the *Energy and Regulatory Boards Act* and the *More Access to Energy Act* address how the Board must assess matters within its purview (which includes considerations of sustainability and GHG objectives).

4.1.6.1 Findings

[128] Considering the text, context and purpose of the legislation, the Board finds that the purpose of the demand-side management provisions in the *Public Utilities Act* is to reduce electricity costs for customers. Demand-side management must be undertaken by NS Power in an effort to reduce costs for its customers (s. 79I(1)). In the *Public Utilities Act*, this would be expected to be electricity costs. This expectation is reinforced by the definition of "demand-side management", which largely contemplates activities of a nature directly associated with the use and management of the electrical system (s. 79A(b)). The recent amendment to add strategic electrification to this list is arguably different in nature from the others in s. 79A(b) and includes an explicit requirement that strategic electrification be undertaken in a manner that reduces electricity costs (s. 79A(b)(iv)).

[129] The addition of the strategic electrification element to the definition of "demand-side management" and the removal of "affordability" from what is now s. 79L(5) of the *Public Utilities Act* (previously s. 79L(9)) do not strongly suggest a legislative

intention to require the Board to screen demand-side management plans considering a reduction in costs other than electricity costs. As noted already, strategic electrification may only be undertaken if, in addition to reducing greenhouse gas emissions, it reduces electricity costs. This is explicitly stated in s. 79A(b)(iv).

[130] While the NSUARB's 2020 decision concluding that it did not have the jurisdiction to consider non-energy benefits did focus on the reference to "affordability" in s. 79L(9) at that time, the NSUARB did not specifically address the requirements in s. 79I(1) that demand-side management must be "reasonably available" and undertaken "in an effort to reduce costs for customers." Moreover, this seems like a rather vague and indirect way to direct the Board to consider cost reductions other than electricity costs when screening demand-side management plans if that was the Legislature's intent. In contrast, the Legislature was very specific with the amendment in s. 79H(2) directing the Board to evaluate demand-side management at the portfolio level.

[131] The Board also agrees with the submissions from the Industrial Group that the Board's obligation to give appropriate consideration to certain factors, including sustainable development and sustainable prosperity, does not fundamentally alter the main goal of reducing electricity costs for customers. Likewise, the Board accepts NS Power's position that the general provisions in s. 6(2) of the *Energy and Regulatory Boards Act* cannot override specific requirements elsewhere.

[132] As NS Power noted in its submissions, in Matter M12171, the Board expressed doubt that its obligation to appropriately consider "economical energy supply in the Province" in s. 6(2)(c) could alter the requirement in s. 67 of the *Public Utilities Act* that all tolls, rates and charges shall always, under substantially similar circumstances

and conditions in respect of service of the same description, be charged equally to all persons and at the same rate, as determined by the Nova Scotia Court of Appeal in *Dalhousie Legal Aid Service v Nova Scotia Power Inc.*, 2006 NSCA 74 (leave to appeal to the Supreme Court of Canada denied, January 18, 2007). In the same vein, s. 6(2) should not be used to cast doubt or create ambiguity in respect of what is otherwise a readily understood requirement in the *Public Utilities Act* that demand-side management be undertaken to reduce electricity costs for customers.

[133] The Board fully accepts the following submission from the Industrial Group as correctly stating the approach the Board must follow in interpreting this legislation:

> While broader legislative objectives— such as promoting sustainability— may inform the context in which a statute is interpreted, the Industrial Group submits that these goals cannot override or alter the clear and specific language used. These considerations may guide the interpretation where ambiguity exists, but do not expand or redefine the statutory mandate of the utility.
>
> The Board must use the governing principles of statutory interpretation to give meaning to the applicable provisions of the *PUA* in determining the appropriate cost-effectiveness test to use for DSM.
>
> [Industrial Group Closing Submissions, pp. 3-4]

[134] The Board finds there is no real ambiguity to resolve. An analysis of the relevant provisions of the *Public Utilities Act* makes it clear that NS Power must undertake demand-side management to reduce electricity costs for customers. NS Power is satisfying this obligation by entering into a supply agreement with E1. It is this purpose that frames the Board's assessment of cost-effectiveness.

[135] E1 appears to suggest that if one follows the Industrial Group's interpretation of the legislation to its end, the Board would never be able to consider sustainable development and sustainable prosperity in its decisions about demand-side

management, except in very minor ways. The Board has some difficulties with this suggestion.

[136] First, s. 6(2) of the *Energy and Regulatory Boards Act* requires the Board to “give appropriate consideration” to several factors. It is not appropriate to use general considerations of sustainable development and sustainable prosperity (or any of the other factors in s. 6(2)) as a basis for overriding specific statutory requirements. However, there will tend to be more scope for appropriately considering these factors when the Board’s decision is more discretionary than when the decision is more closely directed by the statute.

[137] Second, as E1 has repeatedly stated in its submissions in this proceeding, there is a difference between the screening of a demand-side management plan for cost-effectiveness and determining what cost-effective demand-side management must be undertaken in a plan. E1 describes the screening test as a technical assessment to ensure that only economically-justified portfolios are considered for approval. It said the screening test is designed to objectively measure all relevant benefits and costs to determine whether the demand-side management portfolio delivers net benefits to ratepayers. The Board agrees with this test but finds the relevant benefits and costs to be measured are those that affect electricity costs.

[138] Third, as E1 noted, the Board’s determination of the cost-effective demand-side management that must be undertaken under the statute can involve a host of other criteria. It is likely that different DSM plans comprised of a variety of different measures and programs will be able to pass a screening level of assessment at the portfolio level.

[139] Under s. 79L(5) of the *Public Utilities Act*, the Board's review of proposed demand-side management must include any matters it deems appropriate or that may be prescribed. While "prescribed" contemplates prescribed by the regulations, the Board must "give appropriate consideration to" the factors in s. 6(2) of the *Energy and Regulatory Boards Act* as well. Compared to the screening assessment at the portfolio level, the Board has much greater scope for discretion when determining the demand side management that must be undertaken under a DSM plan that satisfies a portfolio level screening. The Board therefore anticipates that the factors in s. 6(2) would be more appropriately considered at this stage. It is not clear why E1 believes that the factors in s. 6(2) would only apply in "very minor ways" in determining the cost-effective demand-side management that must be undertaken. Since the *Public Utilities Act* directs the screening assessment to be conducted at the portfolio level, it is likely that some measures and programs that may not be cost-effective on their own may be allowed.

[140] As for the Consumer Advocate's criticism of the Industrial Group's submissions, indicating that the legislation does not specify there is a hierarchy amongst policy objectives, or that sustainable prosperity and sustainable development are secondary to the other policy objectives enumerated in the statute, the Board notes that the issue is not whether there is a hierarchy amongst the policy objectives in s. 6(2). The issue is whether the Board's obligation to appropriately consider the factors in s. 6(2) can override specific statutory requirements. As discussed previously, the Board finds they cannot; but as discussed, as the scope for exercising discretion increases, it would be expected that these factors could play a larger role.

[141] Further, the language in s. 6(2) suggests some hierarchy stemming from the words used in the clauses identifying the various factors. In particular, while the Board must appropriately consider the extent to which its decisions "ensure" the provision of safe, secure, reliable and economical energy supply in the Province under s. 6(2)(c), it is only asked to appropriately consider the extent to which its decisions "support" the factors in the other clauses of s. 6(2).

[142] Based on the foregoing, the Board must therefore assess the cost-effectiveness of a proposed demand-side management plan from the perspective of whether it increases or decreases electricity costs. As such, the focus is on utility costs. The Board does not have the authority to evaluate the cost-effectiveness of proposed demand-side management under s. 79H or s. 79L using impacts unrelated to those directly reflected in electricity costs for customers.

4.2 Benefit-Cost Test Alternatives

[143] No party in this proceeding argued that the existing TRC test should be maintained in its present form.

[144] As discussed in more detail previously, E1's proposed BCA test includes utility system and non-utility system impacts, which it submits was informed by the recent legislative changes in Nova Scotia and incorporates the objectives of sustainability, GHG reduction and equitable access. Table 5 in E1's application compares the impacts considered under the existing TRC test and the proposed BCA test:

Table 5: Comparison of Input Categories for TRC Test and Proposed New BCA Test

Impact Category	Sub-Category	BCA Test	TRC Test
Utility System	Electric • Generation • Transmission • Distribution • General	All	All
	Gas	Only Commodity Costs*	Not Included
Non-Utility System	Other Fuels	All	Not Included
	Host Customer	All (costs and benefits)	Costs Only
	Societal	Resilience**	Not Included
		GHG Emissions	Avoided Cost of Carbon Included under Electric Utility System Benefits No Societal Costs Included
		Other Environmental (air pollutants)	Not Included
		Public Health***	Not Included
*Commodity costs are embedded in the "Other Fuels" category.			
**Resilience is embedded in "Host Customer" category.			
***Public Health impacts embedded in "GHG Emissions" and "Other Environmental" categories.			

[145] Mr. Bowman recommends using the PAC test as the primary cost-effectiveness test because he says it is more consistent with what is occurring in other jurisdictions in Canada and furthers the objective of reducing electricity costs specifically articulated in the *Public Utilities Act*. To account for strategic electrification, Mr. Bowman suggests a modification of the PAC test to include increased utility revenue as a benefit.

[146] In its closing submissions, the Industrial Group said:

> Where the *PUA* has clearly mandated the focus of DSM to be on the reduction of costs, the PAC is able to demonstrate that as a primary test; the Proposed BCA cannot. As confirmed by EFG, the outcome of a PAC will signal whether total electrical system costs will go down. With respect to s. 79I of the *PUA*, which articulates that the DSM should be focused on reducing electricity costs for customers, the PAC would be the appropriate test to apply. This was even accepted by EFG.
>
> The PAC would examine the actual costs and benefits of the utility, also using WACC as the appropriate discount rate. It will provide a more accurate picture of the cost-effectiveness of DSM and signal the reduction of costs for customers. The PAC will fulfill

> the requirements of the legislation while avoiding the evident challenges posed by the new Proposed BCA, which is broad in nature and places greater emphasis on societal impacts than on ratepayer costs. [Footnotes omitted]
>
> [Industrial Group Closing Submissions, p. 19]

[147] E1's primary criticisms of the PAC test Mr. Bowman proposed are that it is insufficient to address E1's legislated DSM mandate, particularly its new strategic electrification mandate. As mentioned earlier, no strategic electrification measure would ever pass the PAC test because electric utility impacts are the primary costs and non-utility impacts are the primary benefits.

[148] NS Power also had concerns about the inability to account for other fuel impacts from strategic electrification:

> Neither the PAC proposed nor the Modified PAC test specifically for electrification takes into account "other fuel impacts" which is an energy impact, but a non-utility system impact that factors in avoided costs for households from reduced oil and gas consumption. In NS Power's submission, including this non-utility impact ensures the test is closer aligned more closely with a Total Resource Cost (TRC) test which considers whether a program is economically beneficial more broadly, not just for the utility. In NS Power's submission, this allows for better assessment of the benefits of fuel switching programs within the strategic electrification mandate.
>
> [NS Power Reply Submissions, p. 7]

[149] NS Power, in its closing submissions, said the Board should adopt a modified version of the existing TRC test. It proposed that, in the context of strategic electrification measures, GHG emissions reductions on a net tonnage basis should be assessed along with a reduction in electricity costs; and other fuel impacts, such as displaced fuel, should be included.

[150] Likewise, E1's primary criticisms of NS Power's proposed test were that it was inconsistent with the "post-2022 statutory landscape", the level at which the cost-effectiveness assessment is applied, the evidence in this matter and the NSPM. The Industrial Group suggested that "amending the current version of the TRC test to make it

more “balanced” was one approach the Board could take (with the inclusion of participant costs and benefits, not extending to vague non-energy benefits)”. However, the Industrial Group argued this would be an inferior option to what Mr. Bowman proposed because it does not accurately measure costs from either the utility or the customer perspective or specifically promote the reduction of ratepayer costs.

4.2.1 Findings

[151] E1 and its consultants purported to follow guidance in the NSPM in determining the proposed BCA test. However, a process that simply takes account of an inventory of energy and climate change policy goals and objectives in a jurisdiction to develop a jurisdiction specific cost-effectiveness DSM test and does not reflect the specific statutory requirements for DSM in the jurisdiction, is not appropriate.

[152] The proposed BCA test includes non-utility system impacts. Given the Board’s findings that the purpose of the demand-side management provisions in the *Public Utilities Act* is to reduce electricity costs for customers and that it does not have the authority to evaluate the cost-effectiveness of proposed demand-side management under s. 79H or s. 79L using impacts unrelated to those directly reflected in electricity costs for customers, the proposed BCA test cannot be used in the screening assessment of DSM plans.

[153] There was no suggestion in any of the expert evidence filed in this proceeding that the existing TRC test should be maintained. Beyond the question about whether the test properly reflected the legislative framework in Nova Scotia, concerns were expressed about its asymmetrical application, including host customer costs but no host non-energy benefits. Mr. Bowman also expressed concern about the use of a standard TRC test because it nets out utility incentives. He said in his opening statement

at the hearing that it measured "a complicated hybrid of the combined utility/customer perspective without actually measuring either one accurately."

[154] It is not apparent to the Board that NS Power's proposal has addressed the concerns that were raised about the existing TRC test. Indeed, since NS Power's proposed approach first appeared only in its closing submissions, there has not been much opportunity at all to explore the merits of this proposal in this proceeding. As such, the Board finds it would not be appropriate to direct E1 to follow this approach at this time.

[155] This leaves Mr. Bowman's recommendation to use the PAC test. In its reply submissions, the Industrial Group argued:

> Primary cost-effectiveness testing must specifically address the goals of the *PUA*, which is the overriding legislation mandating DSM. In contrast with both the submissions of the Industrial Group and NSPI, E1 has not recognized the clearly legislated goal for DSM as reducing electricity costs for NSPI customers. Its focus, instead, is on environmental sustainability which finds support for its consideration in a different statute - the *Energy and Regulatory Boards Act* – not the *PUA*.
>
> While E1 suggests the Proposed BCA addresses "all of the DSM goals", it has failed to explain how the main goal of cost reduction is achieved or considered within its proposed test. The PAC is the only test which specifically addresses the codified goal in s. 79I of the *PUA* to reduce electricity costs for customers – which has been accepted by EFG. [Footnotes omitted]
>
> [Industrial Group Reply Submissions, p. 3]

[156] Based on the Board's interpretation of the *Public Utilities Act*, discussed in detail already in this decision, and the evidence and alternatives presented in this proceeding, the Board finds that the PAC test recommended by Mr. Bowman is the most focused on achieving the statutory requirement that DSM reduce electricity costs for customers. This was acknowledged by E1's own expert, Chris Neme, Energy Futures Group, who agreed that if the reduction of costs referred to in s. 79I(1) was electricity costs, the PAC test would be the appropriate test that one would use to track these costs.

[157] The Board directs E1 to use the PAC test as its primary test for screening the cost effectiveness of its proposed DSM Plan for its next term beginning in 2027.

4.3 Strategic Electrification

[158] Strategic electrification that reduces overall GHG emissions and electricity costs is included in the definition of "demand-side management" in s. 79A(b)(iv) of the *Public Utilities Act*. The PAC test, as traditionally applied, does not appropriately assess strategic electrification programs. That said, the Board must follow the legislation.

[159] Mr. Bowman's proposed modification to the PAC test for strategic electrification provides some basis for overcoming the traditional limitations of the PAC test. In their closing submissions, the Industrial Group argued it was open to the Board to accept a modification of the traditional application of the PAC test to meet a jurisdiction's requirements:

> The PAC need not be rigid or "ruthlessly applied". It can be applied or modified as needed, like a jurisdictional test. As suggested by Mr. Bowman, this can be done with respect to strategic electrification.
>
> Many utilities are also grappling with how to handle electrification. Mr. Bowman has proposed a reasonable solution, which is focused on costs charged to ratepayers. The PAC should be run, with an additional step of including the increased revenues to be received by NSPI with respect to the increased electrification. The increased revenues will be included as a benefit. This will better assess the true costs to the system, and will ensure that strategic electrification programs, that are well conceived and structured, will pass the PAC testing.
>
> …
>
> The PAC will ensure the focus of E1 will be on developing the most cost-effective programs, including hybrid heating to address the anticipated issues with load. Hybrid heating programs will help proposed electrification programs exceed 1.0 on a PAC test.
>
> Mr. Bowman's alternative recommendation for cost-effectiveness testing is more in keeping with the goals of the *PUA*, and specifically E1's mandate. It is a simpler, more consistent and less biased approach to cost-effectiveness testing for DSM. The approach proposed does not preclude further considerations as outlined by E1 to be important, however it signals to E1 the number one goal of its mandate when developing programs and measures from the ground up: to reduce electricity costs for NSPI customers. [Footnotes omitted]
>
> [Industrial Group Closing Submissions, pp. 20-21]

[160] Eastward made similar comments in its submissions:

> In this regard the IG has noted that the approach proposed by Mr. Bowman to cost-effectiveness testing for E1 for strategic electrification – running the PAC test with the additional step of including the increased revenues to be received by NSPI – aligns with the recommendations by Posterity Group, Eastward's consultant. The IG states that, "The PAC will ensure the focus of E1 will be on developing the most cost-effective programs, including hybrid heating to address the anticipated issues with load. Hybrid heating programs will help proposed electrification programs exceed 1.0 on a PAC test."
>
> As noted in Eastward's Closing, Mr. Bowman confirmed that his proposal for strategic electrification "both helps you assess the benefit cost of electrification and it also serves as your measure to show that you are reducing electricity costs". This stands in contrast to E1 who has yet to develop a test to demonstrate the reductions in electricity costs resulting from strategic electrification. Rather E1's focus to date in developing its BCA appears to be on the first half of the strategic electrification definition, a reduction in overall greenhouse gas emissions.
>
> [Eastward Reply Submissions, pp. 2-3]

[161] E1 argued that Mr. Bowman's proposed modification of the PAC test for strategic electrification was not actually a cost-effectiveness test at all, but an assessment of rate impacts. It submitted the use of a rate impact measures test, while helpful in assessing the rate impacts of strategic electrification, should not be used as a cost-effectiveness test.

4.3.1 Findings

[162] The Board accepts the Industrial Group's suggestion that traditional cost effectiveness tests may be modified to suit specific jurisdictional requirements. The means of assessing strategic electrification in Nova Scotia proposed by Mr. Bowman appears reasonable, but it may not be the only solution. A discussion about this may have been facilitated by E1 had it provided information in this proceeding to describe how it was going to meet the statutory requirement that strategic electrification must reduce electricity costs for customers. However, at the hearing E1 confirmed that its work on how to demonstrate reductions in electricity costs resulting from strategic electrification was still being explored and had not been completed.

[163] In the absence of an alternative, E1 should follow Mr. Bowman's recommendation for assessing strategic electrification using the PAC test. The Board notes, however, that both requirements for strategic electrification must be met. It must reduce GHG emissions and electricity costs for customers. However, the Board leaves it open to E1 to propose another approach when filing its 2027-2031 DSM Plan for approval, if it addresses the statutory requirements for cost-effectiveness for DSM as found by the Board in this decision.

4.4 Portfolio Level Assessment

[164] Section 79H(2) requires the Board to evaluate the proposed cost-effective demand-side management at the portfolio level. In its submissions, the Industrial Group urged that it was particularly important that the primary cost-effectiveness test be applied at the portfolio, program and measure levels. It said if a level fails, then justification or a reasonable explanation should be provided by E1. This position was supported by NS Power in its reply submissions.

[165] Although E1 acknowledges and expects that the Board can and will continue to consider various tests and information at various levels of granularity, it emphasizes that cost-effectiveness screening is to be carried out at the portfolio level.

4.4.1 Findings

[166] There is no ambiguity in s. 79H(2): the Board must evaluate the proposed cost-effective demand-side management at the portfolio level. As noted previously in this decision, the Board agrees with E1 that there is a difference between the screening of a demand-side management plan for cost-effectiveness and determining what cost-effective demand-side management must be undertaken in a plan. It also agrees that the screening test is a technical assessment to ensure that only economically justified

portfolios are considered for approval. This screening test is what is conducted at the portfolio level.

[167] In approving the cost-effective demand-side management to be undertaken, the Board may consider a broad range of factors, including alternative cost-effectiveness tests, or cost-effectiveness tests undertaken at the measure or program level. In this regard, E1 is directed to continue to provide the information it was previously directed by the NSUARB for assessment of DSM plans, including justification for measures that fail the primary cost-effectiveness test. E1 may also use the proposed BCA test, as revised in the Consensus Agreement, to provide more information about specific programs and measures. If E1 uses a social discount rate with its proposed BCA test it must also provide a comparison using NS Power's WACC.

[168] That said, the Board notes that the requirement to evaluate the proposed cost-effective demand-side management at the portfolio level implies that, provided the overall portfolio passes the cost-effectiveness test, it is not a contravention of the statute if measures or programs themselves fail. Justification for including such measures and programs could be provided in a number of ways, including based on the factors the Board is required to consider under s. 6(2) of the *Energy and Regulatory Boards Act*.

4.5 Discount Rate

[169] Benefit-cost analysis involves comparing all the costs and benefits of a program over a period of time. There will be a stream of costs and benefits that are usually spread over several years, and in some cases, decades. In a BCA model, all costs and benefits in the future are discounted to their present value. A discount rate represents the time preference of money, applied as an annual percentage against future payments.

Discounting is applied on a compound basis over time; consequently, the further into the future the costs or benefits are, the greater the effect of discounting into its present value.

[170] The choice of an appropriate discount rate is a key determinant of BCA. The discount rate is to reflect the fact that individuals generally prefer receiving benefits sooner and incurring the costs later. Additionally, the discount rate must reflect that the resources used for a given activity carry an opportunity cost because they could have been invested elsewhere. A higher discount rate places greater emphasis on the near-term costs; that is, costs and benefits in the future are worth significantly less than those occurring today. A lower discount rate places a more equal value on all costs and benefits, whenever they are incurred.

[171] According to the NSPM, there are three categories of discount rates that are commonly applied in a BCA of distributed energy resources:

1. Weighted Average Cost of Capital (WACC): Reflects the utility's cost of capital.
2. Customer-focused rate: Represents customer preferences or risk tolerance, typically expressed as borrowing costs or the opportunity cost of alternative investments.
3. Societal discount rate: A lower rate intended to account for intergenerational equity or broader societal consideration.

[172] In the application, Energy Futures Group recommends a 2% social discount rate in the BCA test, stating that this rate "reflects the regulatory perspective that is appropriate for the screening of the DSM portfolio." This recommendation is thought to be consistent with the 2% social discount rate used in the *Social Cost of Greenhouse Gas Estimates - Interim Updated Guidance for the Government of Canada* which came into effect in December 2022. EFG further indicates that a sensitivity analysis may be conducted using higher discount rates.

[173] In the Board's Information Requests, E1 was asked to explain why a 2% social discount rate is appropriate. E1 responded that applying a social discount rate reflects the interests of society - rather than those of an individual customer or a utility – and better accounts for future generations. E1 stated that the 2% social discount rate is consistent with the Province's policy objectives concerning environmental sustainability and long-term prosperity. E1 confirmed that it did not review discount rates used in other Canadian jurisdictions for DSM activities and instead relied on the National Energy Screening Project's Database of State Screening Practices from the United States.

[174] E1 referenced EFG's Report which notes that the *Social Cost of Greenhouse Gas Estimates - Interim Updated Guidance for the Government of Canada* (SC – GHGs) recommends applying a 2% social discount rate in BCAs that use SC – GHGs values across multiple future years. The Board further observes that this guidance states "This updated SC-GHG guidance is to be used in accordance with the Treasury Board Secretariat's regulatory guidance on cost-benefit analysis, *Canada's Cost-Benefit Analysis Guide for Regulatory Proposals*."

[175] In response to Board IR-5(h) asking E1 how its proposed discount rate aligns with the Treasury Board of Canada Secretariat Cost Benefit Analysis Guide for Regulatory Proposals (2019) and Canada's Policy on Cost-Benefit Analysis (2018), E1 acknowledged that the Treasury Board of Canada Secretariat uses a 3% discount rate.

[176] Mr. Bowman, on behalf of the Industrial Group, filed evidence criticizing E1's use of a 2% social discount rate. He explained that as part of a utility's Integrated Resource Planning (IRP), the comparison of alternative new energy generation is performed using WACC as the discount rate. He considers that using a social discount

rate to evaluate DSM against energy generation resources is not consistent with the NSPM Principles.

[177] Mr. Bowman noted that the Treasury Board guidelines are intended for regulatory proposals and policy development, not for decisions involving physical infrastructure or electrification investments. He stated that the *Cost Benefit Guide* emphasizes using discount rates tied to the costs of funds - namely the WACC - while acknowledging that lower social discount rates may be appropriate in certain contexts.

[178] Mr. Bowman recommends that, consistent with NSPM Principle 1, DSM resources should be evaluated on the same basis as other energy resources, such as new generation. In his evidence, Mr. Bowman concluded that “the only reasonable interpretation for any comparison that uses utility savings, avoided generation, etc. is to use the same discount rate as is used for utility IRP, which is the WACC.” Like EFG, Mr. Bowman added that E1 may provide discount rate sensitivity analyses.

[179] In its rebuttal evidence, E1 stated that using WACC as the discount rate is insufficient because it does not represent the regulatory perspective which is the societal and intergenerational impacts that it must account for. E1 points to the SC – GHGs position that the social discount rate is appropriate for assessing a decision that would change GHG emissions.

[180] During the hearing E1 and EFG confirmed that the social discount rate of 2% will be applied to both utility and non-utility costs. Mr. Neme explained that using the social discount rate for both utility and non-utility costs align with the Province’s policy goals.

[181] The Industrial Group asked E1 if an alternative test, like the PAC test, would be performed using WACC. Mr. Neme confirmed that they can be and stated that WACC is the utility's shareholders' time value of money. He questioned why a regulator would consider the interests of ratepayers and policy goals to be the same as shareholders' time value for money. When asked by the Board to confirm that WACC is paid by customers who fund DSM through their electricity rates, Mr. Neme distinguished that WACC is for paying capital and the recovery of capital costs.

[182] E1 was questioned why it is appropriate to apply the social discount rate of 2%, which was established for GHG emissions, to costs and benefits unrelated to GHGs. Mr. Neme clarified that the social discount rate reflects the time value of money. In this instance using 2% better reflects the weight to be given to long-term costs and benefits relative to near-terms ones.

[183] The Board asked E1 to address Mr. Bowman's concern that according to NSPM Principle 1, DSM should be evaluated on the same basis as other energy resources and whether the analysis will be biased if a 2% social discount rate is applied when comparing it to utility resources that are complements or alternatives. Mr. Neme agreed that they should be evaluated on the same basis. He noted that Principle 2 of the NSPM guides the analysis to consider policy objectives and considers that the NSPM Principles shouldn't be interpreted in isolation.

[184] In his testimony, Mr. Bowman recommended that the discount rate should be NS Power's WACC. He considered the discount rate of 2% inappropriate because this BCA compares utility resources that are complements or alternatives to bulk power projects. As DSM is paid through electricity rates, Mr. Bowman regards the social discount

rate as a poor choice because it does not reflect the range of options ratepayers could have spent their money on.

[185] Mr. Bowman asserted that E1 incorrectly applied the social discount rate of 2% because that is the discount rate that the federal government uses for evaluating government programs and policies. The federal government uses the 2% social discount rate only for GHG emissions changes. For all other types of social impacts, the government uses 3%. Mr. Bowman highlighted that a BCA using the social discount rate must be compared against a BCA using the real discount rate of 7%, which is meant to represent the cost of capital. He suggested that the BCA could use two different discount rates, one for measures related to GHG emissions reductions where 2% is applied and WACC for all other costs and benefits.

[186] E1 argued that in a BCA, the discount rate is only to assess the present value of the future benefits against the investment in DSM which is collected from ratepayers. E1 suggested that using WACC would bias the results against long-term benefits and conflict with legislative requirements. E1 acknowledged its DSM program costs are recovered from ratepayers but a higher discount rate is not necessary because there is no capital risk to investors as NS Power earns a return in rates.

[187] In the Industrial Group's closing submissions, it noted that the 2% social discount rate is not used anywhere else in Canada, aside from the Government of Canada's assessment of GHGs. The Industrial Group considers that E1 has relied on policy objectives as the justification for selecting a 2% discount rate.

[188] In its closing submissions, NS Power agreed with Mr. Bowman that E1's BCA should apply WACC as the discount rate. NS Power noted that using a lower

discount rate overstates the value of long-term benefits and does not reflect the current affordability pressures and near-term energy transition costs faced by ratepayers in Nova Scotia. NS Power further stated that using a higher discount rate would help make sure that E1 prioritizes investments that demonstrate clear and immediate benefits.

[189] E1's reply submissions posited that using a discount rate reflecting NS Power's WACC is legally and conceptually wrong, because WACC represents NS Power shareholder risk. Furthermore, because WACC is larger than 2%, the higher value will reduce the long-term benefits in the BCA.

[190] The Consumer Advocate supported the use of the 2% social discount rate and noted that this rate was selected by the Superior Court of Quebec in circumstances where there are similar legislative provisions to Nova Scotia.

[191] NS Power agrees with the Industrial Group's consultant that the 2% social discount rate is not appropriate for cost-effectiveness modeling. It maintains that using 2% as the discount rate artificially inflates the long-term savings and benefits whereas WACC reflects the opportunity cost of capital with a focus on immediate financial benefits. NS Power considers that ratepayers care most about DSM benefits that are effective and immediate.

4.5.1 Findings

[192] Discounting is a fundamental component of BCA. Applying a social discount rate places greater emphasis on future benefits than a standard discount rate typically would. Environment and Climate Change Canada's SC – GHGs guidance uses a lower discount rate to weigh the costs and benefits over time. The SC – GHGs guidance specifies that BCA should follow the Treasury Board's Cost-Benefit Analysis Guide. It

does not appear, however, that E1 adhered to the Treasury Board's direction regarding the prerequisites as to when a social discount rate is to be used.

[193] The Treasury Board direction is clear in its *Policy on Cost-Benefit Analysis*, s. 7.1 about the discount rate to be used:

> The discount rate is the rate at which future costs and benefits are converted to their present equivalents. Discounting accounts for the fact that:
>
> - there is a time preference for current consumption over future consumption (social discount rate)
> - funds used to comply with regulatory requirements could have been invested and earned a return at the rate of the opportunity cost of capital
>
> Departments are required to use the opportunity cost of capital specified in TBS's Cost-Benefit Analysis Guide as the discount rate except for cases where a social discount rate is more appropriate such as when:
>
> - A regulatory proposal primarily affects private consumption of goods and services
> - A regulatory proposal's impacts occur over the long term (50 years or more)
> - <u>Even when a social discount rate is used, estimates of costs and benefits using the opportunity cost of capital must also be reported</u>. [Emphasis added]
>
> [Treasury Board, [2018], [ISBN: 978-0-660-27777-6], s. 7.1]

[194] The Treasury Board Secretariat's Cost-Benefit Analysis Guide states in s. 6.1 that the real rate of 7% is to be used as the discount rate for the cost-benefit analysis, reflecting the opportunity cost of capital.

[195] The Treasury Board is clear that the opportunity cost of capital should be applied as the discount rate. It further emphasizes that the discount rate must reflect the fact that funds used to support the DSM portfolio, namely the rates paid by NS Power's customers, could otherwise have been invested and earned a rate of return at the opportunity cost of capital, represented here by WACC.

[196] Mr. Bowman's rationale aligns with this guidance that the discount rate should correspond to the cost of funds and their alternative uses. He also noted that,

because the BCA must evaluate DSM resources on a comparable basis with other energy resources, it is appropriate to apply the same discount rate used in NS Power's IRP, which uses WACC for the discount rate.

[197] The Board finds that a discount rate using the opportunity cost of capital is warranted and follows the Treasury Board Secretariat's guidelines because E1 receives its funding from NS Power's ratepayers. Therefore, the opportunity cost of those funds is NS Power's WACC.

[198] Moreover, as the Board has determined in this decision, a cost-effectiveness test using a broad range of societal costs and benefits is not consistent with the requirements of the *Public Utilities Act*. The PAC test that the Board has directed E1 to use focuses on utility system costs and benefits making the use of NS Power's WACC even more appropriate. The Board directs E1 to use NS Power's WACC in applying its cost-effectiveness testing.

4.6 Average v Marginal Generation Emissions

[199] Eastward raised a concern about E1's proposal to calculate emissions impacts for the DSM portfolio by using average emissions rates in its modelling analysis. Eastward suggested marginal emissions rates should be used since, going forward, incremental electrical generation will come from coal-fired units, and later from heavy fuel oil and natural gas or fuel oil combustion turbines operating at low efficiencies. Eastward noted that hybrid heating systems utilizing natural gas infrastructure will operate at over 90% efficiency.

[200] Figure 6 from NS Power's 2024 Report on the Application of Short Run Marginal Cost (SMRC) Test to Rates was presented to show that baseload (coal-fired)

generation was on the margin more than 75% of the time in each year from 2014 to 2024, except for 2023 when it dropped to 62%.

Figure 6. Estimated Percentage of Time on the Margin by Type of Generation

Figure 6											
Estimated Percentage of Time on the Margin by Type of Generation											
Type of Generation	**2014 (%)**	**2015 (%)**	**2016 (%)**	**2017 (%)**	**2018 (%)**	**2019 (%)**	**2020 (%)**	**2021 (%)**	**2022 (%)**	**2023 (%)**	**2024 (%)**
Combustion Turbines (CTs) (diesel-fired)	1	1	0	2	3	1	0	0	3	1	0
Imports	7	0	0	0	0	0	0	0	0	0	0
CTs (nat. gas-fired)	3	3	1	7	6	7	9	2	4	8	4
Baseload (HFO or Nat. Gas - Fired)	13	7	4	9	12	16	14	8	19	29	17
Baseload (Coal-fired)	76	89	94	82	79	76	77	90	74	62	79
Average or Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

[Exhibit E-11, p. 6]

[201] In its response, E1 stated:

> The approach E1 is proposing in the 'evergreen' process for calculating the emissions intensity of DSM savings for the purposes of benefit cost analyses is the Difference in Carbon Emissions (DICE) method. This approach considers the long-term mix of generation resources DSM is forecast to offset based on Integrated Resource Plan ("IRP") modelling and is in line with the IRP difference in revenue requirement methodology used to produce avoided costs of capacity and energy. The resulting emissions intensity is a marginal emissions intensity that accounts for the expected long-term effects of DSM, the savings profile of DSM, and the expected magnitude of DSM. This approach aligns with NSPM guidance and is more accurate for long-term planning than using the emissions intensity of the generator on the margin, so long as the IRP inputs and assumptions remain valid.
>
> The emissions intensity of the generator on the margin is relevant for relatively small changes in load over the short-term, while the Difference in Carbon Emissions methodology is more appropriate for changes in load over the long-term that are significant enough to alter the build-out of generation assets.

[Exhibit E-24, pp.17-18]

[202] This issue was further canvassed by Eastward in its questions of the E1 panel during the hearing:

> **Q.** And this is just -- I'm just going to try and get a little clarity on your use of average versus marginal emissions. Just some of the responses to the IRs left us a little confused. So here in Item E you say:
>
> For calculating [benefits] for the portfolio, average emissions rates is an appropriate, but approximate estimate.

Correct?

A. (Hill) Correct.

Q. So are you actually using average emissions rates?

A. (Hill) The emissions rates that we have used for illustrative examples that were included in the BCA Application were based on information from Nova Scotia Power and represented average emissions rates.

Q. Okay.

A. (Neme) But may I add that what Dr. Hill is referencing is the illustrative analysis of an electrification measure in our report. It is our understanding that E1 will be developing the set of assumptions that are used to assess the cost effectiveness, including emission rates, in the coming months as it prepares its DSM Plan.

So the analysis that we included in our report again was just illustrative, that there is work to be done to fine tune the approach and the assumptions that go into E1's ultimate filing.

And as I believe we noted also in this response, in an ideal world one would focus on long-run marginal emission rates but for expediency we had to work with what we had at the time. But, again, the ultimate development of assumptions that will be used is yet to come.

Q. Okay. So I think that's where we were unclear. So for the illustrative examples, you used average emissions but there may be use of marginal rates in the ultimate work?

A. (Hill) As Mr. Neme was saying, the most appropriate values to use would be the long-run marginal emissions rates, but for the purpose of the recommended BCA test and illustrative examples from that test we used what was the available data, which would be the average emissions rates.

Q. And the DICE method that you refer to in a couple of your responses, does that use the long-run marginal costs?

A. (Hill) That was the difference in carbon DICEs for the difference in carbon emissions, and that was used in the 2023 to 2025 DSM Plan Application, and that compared -- and that, again, is an average emissions rate comparison.

Q. Okay. That's average. Okay. Thank you.

[Transcript, pp. 61-64]

[203] On page 11 of its reply submissions, E1 stated:

E1 maintains its position that the use of average emissions rates aligns with NSPM guidance and is more accurate for long-term planning than using the emissions intensity of the generator on the margin, so long as the IRP inputs and assumptions remain valid.

4.6.1 Findings

[204] The Board considers the issue regarding average versus marginal generation emission rates to be worthy of further consideration. During cross-

examination, E1's witnesses stated that, for expediency, average emission rates data available from NS Power was used in the illustrative examples included in the BCA application; however, the most appropriate values to use would be the long-run marginal emission rates. Furthermore, Mr. Neme stated that "there is work to be done to fine tune the approach and the assumptions that go into E1's ultimate filing."

[205] It is the Board's view that long-run marginal, not average, generation emission rates should be used by E1 in its modelling analysis.

4.7 Eastward Energy on DSM Advisory Group

[206] Eastward Energy requested the Board order that it be added as a full member of the DSMAG. Although E1 acknowledged Eastward's valuable information and perspectives regarding natural gas hybrid heating for inclusion in strategic electrification, it considered Eastward's perspectives to be too narrowly focused and potentially conflicting to make it appropriate to be a member of the DSMAG. E1 stated that one-on-one meetings would be the most appropriate means by which to engage with Eastward regarding their electricity-related interests.

[207] Noting that E1's application is the first time that it substantively referred to the potential of starting strategic electrification initiatives, which could involve gas to electric conversions, Eastward explained that it has a direct interest in ensuring that its perspective and insights are provided to E1 and members of the DSMAG. Eastward rejected the notion of a conflict, stating that under the *Gas Distribution Act*, SNS 1997, c 4, it is legislatively mandated to facilitate the use of gas as a hybrid peaking resource to satisfy the integrated electricity system demand. The *Gas Distribution Act* defines hybrid peaking resources as "electricity resources and non-electricity resources used in combination to satisfy the integrated electricity system demand."

[208] Eastward noted that it is actively involved in work to study hybrid peaking resource opportunities and is conducting pilot projects to study the use of gas-fired heat pumps at both residential and commercial sites in Nova Scotia. It contends that its specialised knowledge and information about GHG emissions data and costs relevant to natural gas appliances and heating systems can inform the DSMAG and E1 on the potential for hybrid peaking resources to cost-effectively meet the needs of the overall electric system in an environmentally sound manner. Eastward said it will be important for E1 to consider hybrid heating in their 2027-2031 DSM Plan, which is currently being developed.

4.7.1 Findings

[209] Noting that E1 is currently preparing its 2027-2031 DSM Plan, Eastward asked the Board to make an early finding about its membership in the DSMAG before its input may be too late to be incorporated into the new plan.

[210] Eastward noted in its reply submissions that, other than E1, no party to this proceeding, most of whom are current members of the DSMAG, expressed any concern with Eastward being a member of the DSMAG. The Industrial Group had no objection to adding Eastward as a member of the DSMAG and submitted that a wider array of perspectives is generally welcomed.

[211] Despite E1’s contention that Eastward’s perspectives are too narrowly focused and potentially conflict with the DSMAG’s purpose to make it appropriate for Eastward to join, the Board does not share E1’s concerns. The Board agrees with Eastward that its knowledge and perspectives would provide valuable contributions to the DSMAG. Accordingly, in its letter of November 4, 2025, the Board directed E1 to include Eastward as a DSMAG member.

4.8 Avoided Costs

[212] Eastward raised concern about NS Power's avoided cost values and requested confirmation that ancillary service costs, peak costs and system reliability are embedded in the avoided cost values. Eastward also requested a clear explanation of how those costs are captured.

[213] In addressing that concern, NS Power said that some types of DSM programming may require alternate avoided cost data sets, which consider the time-varying characteristics of those measures regarding peak demand and energy. As an example, NS Power referenced the electrification of transportation and heating, which could contribute energy and demand at different times of day versus the current avoided cost of DSM data set.

[214] In its reply submissions NS Power confirmed that peak demand, ancillary services, and reliability are considered as part of avoided cost modeling. NS Power also noted that the avoided cost modelling exercise is based on the most recent IRP model, which benefited from the input of many participants, and that it will continue to discuss the items embedded in the avoided cost values through the DSMAG and ongoing IRP-related work. The Board accepts NS Power's response as adequately addressing Eastward's avoided cost concerns.

4.9 Natural Gas System Reliability

[215] In its evidence [Exhibit E-11], Eastward raised concerns about the potential for E1 to propose natural gas to electricity conversion as a strategic electrification project in its upcoming DSM portfolio. An E1 example of 1,000 heat pumps replacing natural gas as a primary heating fuel illustrated that the project would have a negative net benefit of $17.4 million and a benefit cost ratio of 0.45. Eastward sought confirmation from E1 that

such a project would not be considered viable, but if proposed, the benefit-cost analysis must fully account for the reliability advantages of natural gas systems, and that any loss of reliability from electrification should be explicitly considered.

[216] E1 responded that it only provided an illustrative example which was not intended to reflect actual results. In its reply submission, E1 said: "E1 has already agreed, in principle, that if a customer's reliability decreases as a result of electrification this should be considered as part of the host customer proxy impacts." The Board accepts E1's response as its confirmation to fully address Eastward's reliability concern in any future natural gas to electricity proposal.

5.0 SUMMARY OF BOARD FINDINGS

[217] The Board finds it does not have the authority to approve E1's proposed BCA because the *Public Utilities Act* restricts the Board's ability to consider non-energy and societal benefits in assessing the cost-effectiveness of DSM plans. E1 is directed to use the PAC test as its primary test for screening the cost effectiveness of its proposed DSM Plan for its next term beginning in 2027. E1 is directed to use NS Power's WACC as the discount rate in this assessment. As required by the *Public Utilities Act*, this screening will occur at the portfolio level.

[218] While the Board leaves it open to E1 to propose another approach for addressing strategic electrification, in the absence of an acceptable approach, E1 should follow Mr. Bowman's recommendation for assessing strategic electrification using the PAC test and including the increased revenues from these activities. The Board notes,

however, that both requirements for strategic electrification must be met. It must reduce GHG emissions and electricity costs for customers.

[219] E1 is directed to continue to provide the information it was previously directed by the NSUARB to provide to assess DSM plans, including justification for measures that fail the primary cost-effectiveness test. E1 may also use the proposed BCA test, as revised in the Consensus Agreement, to provide more information to support specific programs and measures.

[220] In any information E1 provides to the Board for it to consider in approving a DSM plan, it is directed to include the following (except in the case of the primary screening cost-effectiveness test when inconsistent with the PAC test the Board has directed E1 to apply):

a. If E1 uses a social discount rate, it must also provide a comparison using NS Power's WACC.
b. If emissions impacts are calculated, long-run marginal emissions rates should be used.
c. If the reliability of a customer's energy supply changes because of electrification, this should be considered.

[221] The Board notes that the requirement to evaluate the proposed cost-effective demand-side management at the portfolio level implies that, provided the overall portfolio passes the cost-effectiveness test, it is not a contravention of the statute if measures or programs themselves fail. Justification for including such measures and programs could be provided in a number of ways, including based on the factors the Board is required to consider under s. 6(2) of the *Energy and Regulatory Boards Act*.

[222] Finally, as previously directed, Eastward is to be included as a member of the DSMAG.

[223] An Order will issue accordingly.

DATED at Halifax, Nova Scotia, this 10th day of December 2025.

Stephen T. McGrath

Steven M. Murphy

Darlene Willcott