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October 14, 2025

Crystal Henwood
Clerk of the Board
Nova Scotia Energy Board
1601 Lower Water Street, 3rd Floor
Halifax, NS B3J 3S3

Re: 2025 M12282 Demand Side Management (DSM) Benefit Cost Analysis Test (BCAT) Closing Submission

Dear Ms. Henwood:

Please accept the following as Nova Scotia Power Incorporated's (NS Power, Company) closing submissions in the above noted matter.

INTRODUCTION

NS Power acknowledges the significant effort and collaboration that took place through the Demand Side Management Advisory Group (DSMAG) process to arrive at the proposal now before the Nova Scotia Energy Board (NSEB, Board) for a new Benefit Cost Analysis (BCA) Test.

Under section 79I of the *Public Utilities Act* (PUA), NS Power is required to pursue cost-effective demand-side management (DSM) measures that are reasonably available to reduce costs for its customers. NS Power's statutory mandate and, by implication, EfficiencyOne (E1) in relation to DSM, is centered on cost reduction and affordability, and NS Power's position and recommendations provided in this proceeding are necessarily guided by that obligation.

This submission is organized as follows: E1 position, a review of the legislation with accompanying analysis, followed by NS Power's position and recommendations for a new BCA Test, and conclusion.

EFFICIENCYONE'S PROPOSAL

E1's DSM Plan is currently subject to the application of the Total Resource Cost ("TRC") Test, as the M03669 Board approved cost effectiveness test applied at the program level.

The TRC Test compares benefits and costs expressed as both the dollar value of the net benefit (or cost), and as a ratio of benefits compared to costs. Following the Board's Decision in E1's 2023-2025 DSM Plan (M10473), the applicable TRC was modified.[1] Under the current modified TRC test, host customer costs are considered, yet host customer benefits are not, creating an imbalance.

In M10473, the Board further directed that E1 conduct a thorough assessment of the relative merits of both the Program Administrator Cost (PAC) test and a jurisdiction-specific test to determine the optimal cost effectiveness testing methodology or BCA for Nova Scotia and to work with DSMAG to conduct the review.[2] E1 retained Energy Futures Group (EFG), to assist in engaging with the DSMAG in the development of a new cost-effectiveness test for Nova Scotia.

On EFG's recommendation, E1 is proposing a BCA that is a jurisdiction-specific test (JST) that includes non-energy benefits (NEBs) and non-energy host customer impacts. More broadly, E1 seems to be proposing that the societal impact view become the dominant perspective. E1 determined that two legislative changes have significant implications to be recognized in the new BCA test that reflect Nova Scotia's policy objectives:

1. On November 9, 2022, the Nova Scotia government passed a legislative amendment to the PUA that a) changed the level at which cost-effectiveness testing would apply from the program level to the portfolio level; and b) added a definition of "demand-side management" to include strategic electrification of energy within that definition at 79A(b)(iv); and

2. Second, on April 5, 2024, the Energy Reform (2024) Act, SNS 2024, c 2 ("ERA") received Royal Assent. This legislation expanded the list of factors for the Energy Board to consider in relation to all applications. Included among this list of factors are the following:
    a) energy efficiency
    b) sustainable development (development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs
    c) sustainable prosperity (prosperity where economic growth, environmental stewardship and social responsibility are integrated and recognized as being interconnected)
    d) greenhouse gas emissions reductions goals (as articulated in the Environmental Goals and Climate Change Reduction Act).[3]

However, without context the above list is not a complete representation of the list of

[1] M10473 – Board Decision, 297808, para 71. September 9, 2022.
[2] M10473 – Board Decision, 297808, paras 72-73.
[3] E1 Evidence, paras 14-15.

factors. The above list is pulled from the purpose section of the *More Access to Energy Act* (MAEA) and is not entirely the same as the factors set out in section 6(2) of the *Energy and Regulatory Boards Act* (ERBA) which dictates specifically the factors the Board "shall give appropriate consideration to the extent to which" the matter under review supports each factor with a goal of approving matters that are consistent with the purposes of the Act.[4] Further discussion on this follows in the Legislative and Regulatory Framework section.

In its Application, E1 concluded that:

> Given the expanded list of factors under the ERA that the Energy Board is required to give appropriate consideration to in evaluating DSM Plans, EFG determined it was appropriate to include non-utility system impacts in the new BCA test design, in addition to utility-system benefits.[5]

The non-utility system impacts E1's proposed JST includes are "other fuel impacts, host customer impacts (all costs and benefits), greenhouse gas impacts, and criteria air pollutant impacts"[6] to be calculated or quantified in the following ways:

- The utility system impacts and other fuel impacts will be quantified using actual avoided costs and commodity costs.
- Greenhouse gas emissions will be calculated using current social cost of carbon.
- The host customer non energy benefits will be quantified using proxy adders applied as a percentage of either net energy benefits or of measure costs (for electrification) depending on the impact category, target market and DER type.
- The societal impacts would be quantified using a 2 percent real discount rate to reflect the regulatory perspective on long-term greenhouse gas and other societal impacts, and to reflect the emphasis on sustainable development and prosperity from the ERA.
- The quantification of the host customer and societal quantifications would be subject to the proposed evergreen process along with all other impact categories.[7]

E1 suggests that by adopting such an approach, alignment with existing Nova Scotia policy goals and objectives is achieved. E1 has proposed that the JST 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

[5] E1 Notice of Application, filed May 16, 2025, at para 19.
[5] E1 Notice of Application, filed May 16, 2025, at para 19.
[6] E1 Notice of Application, para 20.
[7] E1 Notice of Application, para 24.

any changes to Nova Scotia policy objectives to be conducted in advance of the development of a new DSM Plan.

LEGISLATIVE AND REGULATORY FRAMEWORK AND ANALYSIS

Though there have been legislative changes in Nova Scotia, the Board's decision in M08888 issued April 15, 2020 holds. There, the Board found that it did not have the jurisdiction to consider non-energy benefits and that the Board's principal responsibility in regulating utilities is to ensure safe and adequate service, just and reasonable rates, and lowest long-term cost.[8] Further, the Board determined that "cost-effective" means considering the "electricity efficiency and conservation activities" of E1, as defined in the PUA, to determine whether they are "affordable" and result in the lowest long-term cost of electricity".[9] Nova Scotia's current legislation has not *expressly* empowered the Board with the jurisdiction to consider non-energy impacts in its decision-making but for in regard to the reduction of greenhouse gas emissions as enabled by strategic electrification and the amendments do not alter the Board's mandate to uphold cost-effectiveness as the primary goal in its decision-making regarding DSM.

The operative provisions relevant to the evaluation of DSM are sections 79H and 79I(1) of the *Public Utilities Act*, RSNS 1989, c. 380, s 79C (PUA). Those sections provide as follows:

> 79H(1) Subject to Section 79I, the Energy Board shall determine <u>the cost-effective</u> 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 <u>cost-effective demand side management</u> at the portfolio level that would be the aggregate amount of demand-side management programs.
>
> 79I(1) On and after the Implementation Date, Nova Scotia Power Incorporated shall undertake <u>cost-effective demand-side management</u> that is reasonably available <u>in an effort to reduce costs for its customers</u>.
>
> (emphasis added)

It is the reduction of costs for customers identified in s. 79I(1) that is the overall and overriding objective of the activities, programs, or plans outlined in 79A(b)(i) to (vi) of the PUA which are:

> "demand-side management" means activities, programs or plans relating to:

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[8] M08888, 2020 NSUARB 56, Decision, April 15, 2020, at para 33.
[9] M08888, 2020 NSUARB 56, Decision, April 15, 2020, at para 47.

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

Though section 79A(b)(iv) was replaced[10] with subsection (iv) on November 9, 2022, this addition did not fundamentally alter the core objectives of DSM under the PUA. Such activities remain the "means" to an "end" of reduced overall electricity costs or of reducing the cost of electricity for NS Power's customers.

Regarding subsection (iv), the legislation provides that any strategic electrification measure must reduce greenhouse gas emissions <u>and</u> reduce costs to customers simultaneously (emphasis added). The current TRC test considers the utility's (internalized) cost of greenhouse gas emissions in the avoided cost of energy series, reflecting the savings of compliance costs associated with avoided GHG emissions from electricity production. This amendment only alters the current 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. 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.

Regarding consideration of the purpose of the MAEA in relation to greenhouse gas emissions reductions, the principle of *generalia specialibus non derogant*, that specific provisions override general ones, is instructive as noted in Sullivan on the Construction of Statutes (6th ed., 2014, pp. 363–364; 7th ed., 2022, §11.05). Sullivan explains that when two provisions conflict, and one deals specifically with the matter while the other is more general, the specific provision should apply to the exclusion of the general one. She notes: "The specific prevails over the general; it does not matter which was enacted first." Even absent conflict, the specific provision prevails if applying the general would render the

[10] The repealed section was: (iv) the utilization or management by Nova Scotia Power Incorporated of its electrical system in a more cost-effective manner.

specific superfluous.[11] In application to the present matter, the general purposes of the More Access to Energy Act and section 6(2) factors are in NS Power's submission, general and cannot usurp the specific DSM provisions in the PUA.

Pursuant to s. 79H, it is the Board that must determine what activities must be undertaken to fulfill the objectives of section 79A(b). Further section 79L(4) states:

> 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. (emphasis added).

Taken altogether, the PUA dictates the operational requirements for DSM. As will be discussed below, sustainability goals are policy objectives that do not override the operational requirement to approve programs that are demonstrably cost effective and in line with the above statutory duties.

The Energy and Regulatory Boards Act

Bill 404 also created the *Energy and Regulatory Boards Act* which was proclaimed on April 5, 2025. Section 6(2) states:

> 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… (emphasis added)
>
> (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

[11] Sullivan on the Construction of Statutes (6th ed., 2014, pp. 363–364; 7th ed., 2022, §11.05

E1 submits that altogether, the November 9, 2022 amendment to the PUA and the addition of the MAEA and ERBA, have broadened the scope of what the Board must now consider when assessing the applications that come before it, including those pertaining to DSM activities.[12] This conclusion was reached without providing contextual analysis to explain how the specific host customer benefits and non-energy benefits E1 proposes, fits within the list of factors. E1 did not unpack the legislative intent of section 6(2) or engage in statutory interpretation to determine how the subfactors may be considered.

First, the Board's core mandate remains to ensure *just and reasonable rates*. The listed factors in section 6(2)(a-e) supplement but do not displace the Board's primary mandate. This is clear when applying the modern principle of statutory interpretation from *Rizzo & Rizzo Shoes Ltd, (Re)*, [1998] 1 SCR 27, by reviewing the provisions in their context and in their grammatical and ordinary sense, harmoniously with the scheme and object of the Act.

The operative phrase of section 6(2) is "**<u>shall give</u> <u>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.

The Board has recently demonstrated caution in considering factors not expressly accounted for in the ERBA, absent detailed contextual analysis. For example, in recent matter, M12171, NS Power requested approval of a 12-month waiver of regulation 5.4 for low-income customers who receive financial support from charitable organizations. NS Power argued that low-income affordability should be considered or read in as falling under section 6(2)(c) economical energy supply in the Province. NS Power submitted that s. 6(2) of the ERBA "…provides the Board with the statutory support needed to move past the [Dalhousie Legal Aid] decision and facilitate affordability solutions for the benefit of low-income customers."[13] The Board held that while s. 6(2)(c) includes the term "economical energy supply in the Province", low-income affordability is not referenced in the ERBA. The Board ruled that, "Absent clear legislative language, the Board is not convinced, based on the limited contextual analysis provided in the submissions in this matter, that s. 6(2) of the ERBA fundamentally changes the interpretive approach to s. 67 of the PUA used in the Dalhousie Legal Aid decision." There, as here, the link between the factors a party seeks to introduce and those explicitly accounted for in the ERBA is lacking.

In short, E1 has not demonstrated how the host customer benefits within the JST (comfort, amenity, health and safety, empowerment, and pride) and non-energy benefit factors are adequately linked to "sustainable development" and "sustainable prosperity" and ought to be appropriately considered such that the Board should change its interpretation of DSM under the PUA. Again, none of the host customer benefits proposed in the JST are expressly accounted for in the ERBA.

[12] E1 Evidence, filed May 16, 2025, pages 15-16.
[13] M12171, Decision Letter, June 11, 2025 document 322091.

The More Access to Energy Act

Bill 404 created the *More Access to Energy Act* (MAEA) which carries the following purpose:

> 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;
> (f) provide for a phased transition of the system operator from Nova Scotia Power Incorporated to an Independent Energy System Operator.

In its application, E1 considers the inclusion of sustainable development and sustainable prosperity as policy goals in the legislation as most impactful to DSM and suggests that there is emphasis in the legislation on these two specific goals.[14]

The meaning of sustainable development and sustainable prosperity for the purposes of the legislation have the same meaning as under the *Environment Act* (EA) and *Environmental Goals and Climate Change Reduction Act* (*EGCCRA)* respectively, which state:

> (aw) “sustainable development” means development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs
>
> (l) "sustainable prosperity" means prosperity where economic growth, environmental stewardship and social responsibility are integrated and recognized as being interconnected.

EGCCRA itself is a piece of legislation designed to codify policy goals. EGCCRA offers guiding

[14] See EFG’s Direct Testimony of David G. Hill, May 16, 2025, page 10; see E1 Evidence page 5, para 24.

principles that dictate what the achievement of "sustainable prosperity" must include. Overall, it seems that sustainable prosperity is a long-term economic transition goal that does not lend itself to dictating what an immediate operational framework should be.

Similarly, the EA's purpose codifies and recognizes policy goals and guiding principles. The EA also outlines the principles of sustainable development, for example:

> (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.

It is not clear which aspect of the definition of "sustainable development," or which principles are reflected in or have direct application to, the proposed JST. 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 MAEA or ERBA do not impose.

In relation to subsection (e) <u>greenhouse gas emissions reduction goals of the Province articulated in the Environmental Goals and Climate Change Reduction Act</u>, the following is what is spelled out at section 7(b) of EGCCRA specifically in relation to DSM:

> **Climate change response and greenhouse gas emissions goals**
> (b) to support, strengthen, and set targets for energy efficiency programming while prioritizing equitable access and benefits for low income and marginalized Nova Scotians.

While the above section directs that energy efficiency programming be supported, strengthened, and delivered in a manner that prioritizes equitable access and benefits for low-income and marginalized Nova Scotians, this provision does not displace the long-standing statutory requirement that DSM programming be cost effective.

NS POWER'S POSITION

This initiative overall has made great progress throughout the DSMAG; however, more work is required to eliminate the potential for unintended consequences and to ensure alignment with the current and existing legislative and regulatory framework. In support of the further work required, NS Power offers the following recommendations:

1. Nova Scotia is in the midst of an electricity system transformation that is creating upward pressure on customer rates. Any customer-funded DSM programs that risk adding to customer costs that do not improve affordability must be carefully evaluated;
2. The NSEB has established a robust regulatory regime which relies on the development of objective, verifiable, and quantifiable evidence in a transparent manner;
3. The test to be adopted should be reflective of the existing TRC test with the following modifications:
    a. in the context of strategic electrification measures, greenhouse gas emissions reductions on a net tonnage basis should be assessed along with a reduction in electricity costs; and
    b. other fuel impacts, such as displaced fuel should be included.

NS Power recommends that the test consider "other fuel impacts", namely the costs associated with displaced fuel, to more closely align the test with a TRC model. Other fuel is considered a non-utility system impact which allows for a more comprehensive assessment of fuel switching programs which falls within the strategic electrification mandate under the PUA.

NS Power has reflected its recommendation in table format as compared to the PAC test, current TRC, and E1's proposed JST at Appendix A below.

Mechanics of the BCA

Discount Rate

NS Power agrees with the submission by Mr. Bowman that it is inappropriate to use a low discount rate as proposed by E1 when assessing utility resources that are complementary to, or alternatives to, bulk power projects. The references cited by E1 for using a 2 percent discount rate are for guiding government decision-making on policy, not utility decisions on spending as confirmed on cross-examination of Ms. Courtney Lane of Synapse.

The discount rate used should continue to be NS Power's cost of capital. Using a lower discount rate artificially inflates the perceived value of long-term savings and benefits, ignoring the reality that Nova Scotians are facing affordability and high energy transition costs today. A discount rate reflective of the true opportunity cost of capital ensures that only those initiatives with a strong, immediate financial benefit are prioritized, aligning more closely with the economic interests of rate payers.

Avoided Cost Series

NS Power submits that the current avoided cost series is primarily intended to inform analysis of traditional energy efficiency measures that reduce both energy and peak demand, or contribute to demand response. In the pursuit of the clearest benefit cost analysis, NS Power will update the avoided cost series of DSM and Demand Response (DR) to reflect an updated planning scenario.

As the types of programming being considered for inclusion in E1's DSM plans have expanded over time, NS Power notes that some types of DSM programming may require alternate avoided cost data sets, which consider the temporal characteristics of those measures in terms of both energy and peak demand, for a thorough analysis. For example, NS Power proposes to work with E1 to assess bespoke cost curves reflecting the added load of strategic electrification measures (e.g. 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. As E1 considers broadening its programs, they may require specific examination of alternative avoided cost forecasts. NS Power would be pleased to work with E1 and the DSMAG on the development of this avoided cost forecast.

Lastly, regarding alternative forms of generation, the BCA test is designed to test the cost effectiveness of demand side resources not supply-side resources.

CONCLUSION

DSM remains a vital tool for managing system costs, advancing electrification, and supporting the energy transition. However, its primary purpose must remain clear: to deliver measurable, economically sound benefits to customers without imposing unnecessary cost burdens. NS Power's recommendations offer a more balanced, and transparent framework. It allows the Board to reflect evolving policy considerations surrounding strategic electrification in a quantifiable way while preserving the primacy of cost-effectiveness and affordability.

Yours truly,

J. Power

Jennifer Power
Senior Regulatory Counsel

APPENDIX A

Category	PAC (Program Administrator Cost)	Current TRC (Total Resource Cost)	**NS Power Recommendations**	E1's Proposed BCA (Nova Scotia Jurisdictional Test)
Perspective	Utility-centric	Utility (costs and benefits) + Participant 9costs only)	Utility + Participant	Societal + Utility + Host Customer
Included Benefits	Avoided utility costs (energy, capacity, T&D)	Avoided utility costs + participant energy savings	Avoided utility costs + participant energy savings**+ other fuels**	Utility system impacts + other fuels + host customer benefits + societal impacts (GHG, air pollutants, resilience, etc.)
Included Costs	Program admin costs	Program admin + participant costs	Program admin + participant costs	Program admin + participant costs + societal costs (e.g., social cost of carbon)
Non-Energy Benefits (NEBs)	❌ Excluded	❌ Excluded	❌ Excluded	✅ Included via proxy adders (e.g., comfort, empowerment, pride)
GHG Impacts	❌ Excluded	❌ Excluded	✅ **Greenhouse gas emissions reductions to be measured on a net tonnage basis at the measure level evaluation of strategic electrification initiatives under 79A(b)(iv).** *GHG impacts are monetized in the internalized cost	✅ Included (externalized via social cost of carbon)

Category	PAC (Program Administrator Cost)	Current TRC (Total Resource Cost)	**NS Power Recommendations**	E1's Proposed BCA (Nova Scotia Jurisdictional Test)
			of carbon as part of the avoided cost series.	
Other Fuel Impacts	❌ Excluded	❌ Excluded	✅ **Included fuel savings (e.g., heating oil, natural gas)**	✅ Included (e.g., heating oil, natural gas)
Host Customer Costs	❌ Excluded	✅ Included	✅ Included	✅ Included
Host Customer Benefits	❌ Excluded	❌ Excluded	❌ Excluded	✅ Included (via proxy adders)
Screening Level	Measure or program level	Program level (historically)	Measure and Program level provided – Approved at Portfolio level	Portfolio level (as mandated by legislation)
Threshold Ratio	≥ 1.0	≥ 1.0	≥ 1.0	≥ 1.0 (portfolio level only)
Affordability Considerations				
Rate & Bill Impact Analysis (RBIA)	Not embedded in test	Not embedded in test	**RBIA presented side-by-side at measure and program level in DSM Plan**	Separate analysis filed alongside DSM Plan
Ratepayer Cost Impact	Directly reflects utility cost savings	Mixed signal due to inclusion of participant costs	**Balanced Portfolio (NPV of revenue requirement neutral to positive at Portfolio level)**	Broader valuation, but not directly tied to ratepayer bill savings
Revenue Requirement	Not Considered	Not Considered	**Neutral to Positive**	Not Considered
Affordability Consideration	Focused on minimizing utility costs	May penalize programs with high participant costs	**Focused on rate stability and rate affordability**	Broader affordability lens via societal and equity impacts