2025 **M12282**

NOVA SCOTIA ENERGY BOARD

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

IN THE MATTER OF: **An Application by EfficiencyOne for approval of a New Benefit-Cost Analysis Test for Evaluating Demand Side Management Plans**

RESPONSES TO INFORMATION REQUESTS

To: Synapse Energy Economics

From: Bowman Economic Consulting Inc.
The Industrial Group

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Issued at Halifax, Nova Scotia, this 21st day of August 2025.

Request IR-1:

Refer to the Evidence of Patrick Bowman at page 14, which describes the PAC including the benefits of added utility revenue for electrification measures.

(a) Do energy efficiency measures impact utility revenues?

(b) Why it is appropriate to treat electrification measures differently than other measures in EI's DSM Plan?

(c) What other jurisdictions account for the changes in revenues from energy efficiency measures in their BCA tests?

(d) What other jurisdictions use the PAC test as the primary cost-effectiveness test for energy efficiency programs?

Response:

(a) Yes.

(b) In Nova Scotia, it is necessary under the Public Utilities Act s. 79L(4) for the Energy Board to consider whether the Demand Side Management (including electrification activities, programs and plans) are in the best interests of Nova Scotia Power's customers. The interests of customers (i.e., those not participating in an electrification program) are represented, among other things, by the rates that the customers will pay in future. Indeed, this is nearly the only impact on NSP customers broadly from electrification activities.

If an electrification measure is undertaken for a particular class of customers, the net impact on other customers will include all of the factors shown in the Bowman evidence at page 14. If one does not include the benefits of the added sales and revenue, what other benefits accrue to NSP's customers (i.e., the non-participants)? The fuel oil savings and non-energy benefits accrue only to the participating customer. The GHG benefits are global in nature (literally impacts on all people on the planet), and the specific dollar value attributable to the NSP customers would be very small, and in any event would not be an impact on them *qua* customers.

The Board cannot ignore the impacts on other customers, as it is a legislative requirement, and E1's proposals appear to basically ignore this requirement in respect of electrification proposals. First, E1 attempts this by focusing only on global societal benefits, not the NSP customers specifically (which appears to be contrary to the Public Utilities Act s.79L(4) requirement), and second, E1 appears to indicate the Board should only ever look at the portfolio level (which appears to be contrary to the definition of Demand Side Management under s.79A(b) of the Act, which includes activities, programs, and plans).

To be clear, Mr. Bowman's proposal is to <u>include</u> the revenues from electrification as a <u>benefit</u> from the activity. Absent this inclusion, electrification would still occur, as customers are always free to pursue activities in their own interests (such as activities that save them fuel oil bills in future), but they would be pursuing these

actions without E1 subsidies, as such subsidies cannot be justified under the Act without relying on the benefits brought by the added NSP revenues.

This is fundamentally different than energy efficiency (conservation) activities, which have benefits for NSP customers in terms of avoided NSP fuel costs in future, and avoided generation and transmission expansion, etc. An energy efficiency program can therefore be assessed under s.79L(4) of the Act without a need to rely on changes to revenues (though an assessment of rate impacts remains an important part of assessing energy efficiency programs). Electrification impacts on customers cannot be so assessed absent considering revenue changes.

(c) The question is unclear as Mr. Bowman has not recommended that lost revenues be included in the BCA tests for energy efficiency measures.

For United States references, it may be helpful for Synapse to be aware of the information published by the American Council for an Energy-Efficient Economy (ACEEE) regarding the BCAs applied in each state, available: https://database.aceee.org/state/evaluation-measurement-verification . That information notes that multiple states include lost revenues in their primary or secondary cost-effectiveness tests, including Florida, Georgia, Indiana, Kentucky, Kansas, Louisiana, Colorado, and many others.

(d) Mr. Bowman has not done a detailed survey of Canadian jurisdictions but does note that Manitoba is the only other jurisdiction with a regulated Energy Efficiency utility (Efficiency Manitoba) and by regulation is required to use the PAC test as the primary cost-effectiveness test (M.R. 119/2019[1]).

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[1] Manitoba Regulation 119/2019 notes as follows “Determining cost-effectiveness

12(1) For the purpose of clause 11(d), the cost-effectiveness of the portfolio of electrical energy demand-side management initiatives included or under consideration to be included in an efficiency plan must be determined by comparing:

(a) the levelized cost to Efficiency Manitoba of the electrical energy net savings resulting from those initiatives;

with

(b) the levelized marginal value to Manitoba Hydro of the net savings resulting from those initiatives, as determined by Manitoba Hydro based on a methodology consistent with its resource planning process, taking into account the timing and duration of the savings.”

Mr. Bowman is also aware that British Columbia changed their DSM Regulation in 2023 to make the Utility Cost Test (UCT) the primary test (the UCT is the same as the PAC Test)[2] which is a change from their previous requirement to use the Total Resource Cost (TRC) test. It also appears that the Ontario Independent Electricity System Operator (IESO) reports cost effectiveness for its latest DSM plan using PAC results as the primary cost-effectiveness test, though it is not clear if this is used as a screening criteria or only a reporting measure.[3] Similarly, it appears Prince Edward Island[4], Newfoundland and Labrador[5], and New Brunswick[6] all use the PAC test as a primary test.

This is the definition of the PAC Test.

[2] B.C. Reg. 167/2023

[3] 2025-2027 Electricity Demand-Side Management Program Plan (with Beneficial Electrification), available: https://www.ieso.ca/-/media/Files/IESO/Document-Library/eDSM/2025-2027-DSM-Plan-with-Beneficial-Electrification.pdf

[4] Prince Edward Island Energy Corporation Electricity Efficiency and Conservation Plan, 2022/23 to 2024/25 indicates the PAC is used with the TRC test, with each applied at the program and portfolio levels at page 4. Available: https://irac.pe.ca/wp-content/uploads/Exhibit-E-9d-Appendix-A-2022-2025-EEC-Plan-for-PEI-Energy-Corp-REVISED-April-14-2022.pdf

[5] Newfoundland and Labrador Hydro Electrification, Conservation and Demand Management Report for the Year Ended December 31, 2024 notes at page 6 that the jurisdiction used both the TRC and PAC tests. Available: http://www.pub.nf.ca/indexreports/conservation/From%20NLH%20-%202024%20Electrification,%20Conservation%20and%20Demand%20Management%20Report%20-%202025-04-10.PDF

[6] NB Power DSM Plan 2018/19 to 2020/21 indicates the PAC test is used with the Participant Cost Test, at section 1.2.5. Available: https://www.nbpower.com/media/1489275/dsm_plan-2019-2021-en.pdf

Request IR-2:

Refer to the Evidence of Patrick Bowman at page 15, which states that "E1 has proposed its BCA include multiple specific inputs that are not consistent with methods and assumptions for alternative resource investments".

(a) Does the Board approve "alternative resource investments" in the same manner as the E1 DSM Plan? Please explain.

(b) Is a BCA required for "alternative resource investments"? If yes, please list the BCA test used to assess "alternative resource investments".

Response:

(a) and (b) Generally, yes.

Mr. Bowman understands the Board is required to assess NS Power capital expenditures that exceed $1 million in value, primarily through the Annual Capital Expenditure (ACE) process or through special capital applications. One example at present is the Wasoquonatl Transmission Incorporation (WTI) project, M12217. The project is a transmission bulk power resource which provides access to capacity that permits decarbonization. As such, the WTI project is part of an Integrated Resource Planning complement of resources, along with Energy Efficiency. The WTI project is being assessed in part based on the NPV of supply costs comparing the future with the transmission line to one without the transmission line, as follows: "A positive System NPV represents the estimated system cost savings of proceeding with the Reliability Intertie over the next lowest cost alternative that is selected by the model without the Reliability Intertie."[7] As such the evaluation concept is similar – define the benefits, define the costs, and compare NPV.

The evidence is clear that the WTI project is being evaluated based on a discount rate based on "NS Power's 2024 NSEB-approved WACC of 6.72 percent"[8]. The

[7] M12217, Exhibit W1, pdf page 19.
[8] M12217, Exhibit W5, pdf page 6.

applicant further notes that: “In order for the two scenarios to be comparable, they must be discounted at the same rate. NS Power’s WACC is considered the appropriate rate to use for this analysis because it represents NS Power’s market-based cost of capital, as opposed to the concessionary cost of capital resulting from the ownership arrangement for the Project. The use of NS Power’s WACC to discount scenarios containing below-market financing arrangements is consistent with the analysis completed in prior proceedings, including M11539 (the Battery Energy Storage System Project), M11393 (the 2024 FAM AA/BA Rider, which included the sale of the $117 million FAM asset) and M11902 (the $500 million Federal Loan Guarantee).”[9]

The same principle underlies Mr. Bowman’s concerns with the E1 discount rate proposal, that the Energy Efficiency resource would be evaluated in a fundamentally different manner than alternative sources of supply resources, using an arbitrarily low discount rate. By using a fundamentally different discount rate than alternative resources, the E1 proposal is entirely offside the NSPM manual, Principle 1, which is to “Treat DERs as a Utility System Resource”, which specifically notes: “DERs are one of many energy resources that can be deployed to meet utility/power system needs. DERs should therefore be compared with other energy resources, including other DERs, using consistent methods and assumptions to avoid bias across resource investment decisions.”[10]

[9] M12217, Exhibit W8, pdf page 143.

[10] NSPM for Benefit-Cost Analysis of Distributed Energy Resources, Table 2-1, page 2-3.

Request IR-3:

Refer to the Evidence of Patrick Bowman at page 18, which states "A RIM test should not be applied as a screening test for energy efficiency, as it can derive excessively narrow metrics and fail to measure proper cost-effectiveness."

(a) Given this statement, why is it appropriate to account for changes in revenues in the PAC test?

(b) How does the proposal to include increased utility revenues in the PAC test differ from the use of the RIM test.

Response:

(a) and (b) Please see IR-1(b) above.