

NON-CONFIDENTIAL

Request IR-1:

Reference: Brattle Evidence, Section III: Affordability of E1's Preferred Plan, page 6:

“While E1 and its consultant (Apex Analytics) did conduct a Jurisdictional Scan comparing E1's first year unit costs to other similar programs, it is unclear whether the peer group is sufficient.”

(a) Please identify each specific deficiency Brattle has identified in the APEX peer group, including:

(i) which utilities should have been excluded and why, and

(ii) which utilities should have been included and why.

(b) Please identify any specific Canadian utility benchmarking studies Brattle considers more probative of E1's cost performance than the APEX scan, and explain why.

Response IR-1:

This IR response has been provided by The Brattle Group.

(a) (i) Brattle did not undertake an analysis of which utilities should have been excluded and why. The Brattle Evidence indicated that additional information is required to assess the criteria used to select the peer group in the APEX jurisdictional scan, including how that peer group was identified. Brattle compared E1's reliance on the APEX survey with a separate analysis by ACEEE, a respected organization that tracks energy efficiency performance across U.S. jurisdictions. Based on that comparison, Brattle observed that an alternative benchmark could support a different conclusion regarding E1's relative costs. Accordingly, Brattle concluded that E1's assertion that its costs are comparable based on the APEX survey is not sufficient, on its own, to establish that the proposed costs are reasonable.

NON-CONFIDENTIAL

1 (ii) Brattle did not undertake an analysis of which utilities should have been included.
2 See above for the explanation.

3
4 (b) Brattle has not conducted a review of all other Canadian benchmarking studies to determine
5 which would have more probative value as part of its review of the 2027-2031 Preferred
6 Plan. It is also unclear why benchmarking would be limited to Canadian jurisdictions as
7 one could achieve a more useful and broader comparison by including comparable US
8 jurisdictions in an alternative benchmarking study.

NON-CONFIDENTIAL

Request IR-2:

Reference: Brattle Evidence, Section III: Affordability of E1's Preferred Plan, page 7:

"While some of these factors are unique to Nova Scotia, depletion of LED-driven savings as well as broader inflationary pressures and supply chain constraints are similarly experienced in other jurisdictions; therefore, they do not fully explain why E1 is delivering one kWh of energy savings at twice the cost it takes for other jurisdictions."

(a) Please quantify the specific portion of the average lifetime unit cost differential (E1 at \$0.05/kWh vs. American Council for an Energy-Efficient Economy (ACEEE) median at \$0.029/kWh) that Brattle attributes to each of:

- (i) E1-specific delivery inefficiency;**
- (ii) Nova Scotia market structure;**
- (iii) Mi'kmaw community-targeted programming;**
- (iv) low-income/equity programming share;**
- (v) climate/geography;**
- (vi) measure mix; and**
- (vii) other factors.**

Response IR-2:

This IR response has been provided by The Brattle Group.

(a) (i-vii) A comparable cost breakdown is not available from the ACEEE study, therefore it is not possible to provide the breakdown of the cost components as requested.

NON-CONFIDENTIAL

Request IR-3:

Reference: Brattle Evidence, Section IV: Representation of Demand Response in E1's Preferred Plan, page 14, footnote 25:

"In October 2022, IESO received a ministerial directive that increased the CDM budget by \$342 million, from \$692 million to just over \$1 billion, to enable new and expanded CDM programming."

(a) Please confirm Brattle's understanding that Peak Perks was launched under a specific Ontario Ministerial Directive and a \$342 million budget expansion, and please describe how the Ontario regulatory/funding context differs from Nova Scotia's statutory framework, where E1 operates under the *Public Utilities Act*, is subject to Nova Scotia Energy Board (NSEB)-approved budgets, and must satisfy the Program Administrator Cost (PAC) test at the portfolio level.

(b) Please provide the most recent published Peak Perks PAC test result and confirm whether Peak Perks has, as of the date of the Brattle Evidence, achieved cost-effectiveness under the PAC test (Brattle Evidence page 13: "Through these discussions, E1 concluded that their Eco Shift program 'is expected to reach cost-effectiveness under the Program Administrator Cost test within the next year.'")

Response IR-3:

This IR response has been provided by The Brattle Group.

(a) Yes. Brattle understands that Peak Perks was launched under a specific Ontario Ministerial Directive, accompanied by a \$342 million budget expansion, and that this context differs from Nova Scotia's circumstances. That is precisely the purpose of the footnote and the accompanying text: to explain the differences between the IESO and Nova Scotia contexts,

NON-CONFIDENTIAL

1 including the factors that enabled IESO to proceed with Peak Perks despite early PAC
2 results that were weaker than ex ante expectations.

3
4 (b) According to the March 2025 Cadmus evaluation of the Peak Perks program, which
5 assessed the program as of the 2024 program year, Peak Perks was not cost effective under
6 the PAC test.

NON-CONFIDENTIAL

Request IR-4:

Reference: Brattle Evidence, Section IV: Representation of Demand Response in E1's Preferred Plan, page 13, footnote 20 citing Peak Perks Program Evaluation Report (Cadmus, March 2025) and page 14:

"Customers enroll an eligible Wi-Fi thermostat, and the response is automated. Eligibility also uses equipment many higher-usage households already have in the form of central air conditioning or a heat pump controlled by an eligible smart thermostat."

- (a) Please confirm Brattle's understanding that Peak Perks is principally a summer cooling-based Demand Response (DR) program (precooling, 2°C temperature setback during summer afternoon peaks).**
- (b) Please identify the portion of Peak Perks' 200+ MW available capacity that is sourced from winter heating-controlled thermostats (e.g., heat pump or electric heat-controlled thermostats) versus summer air conditioning-controlled thermostats.**
- (c) Please confirm Brattle's understanding that Nova Scotia is a winter-peaking system and that summer cooling-based DR provides no value during NS Power's December–February peak period.**
- (d) Please provide any utility-scale winter-heating thermostat DR programs in winter-peaking jurisdictions that Brattle considers more directly comparable to Eco Shift than Peak Perks, including cost-per-kW data.**

NON-CONFIDENTIAL

1 Response IR-4:

2
3 **This IR response has been provided by The Brattle Group.**

4
5 (a) Yes, that is correct.

6
7 (b) This information is not available as the 2025 Cadmus evaluation report only reports
8 summer capacity savings.

9
10 (c) Yes, Brattle fully understands that Nova Scotia is a winter-peaking system and has not
11 suggested that E1 pursue a summer cooling-based DR program. That does not change the
12 relevance of Peak Perks as a thermostat-controlled DR program. The key program design
13 features Brattle identified – simple incentives, automated participation, device-partner
14 enrollment channels, customer comfort protections, and repeated event-season learning –
15 are equally applicable to DR programs targeting either cooling or heating loads.

16
17 (d) While Otter Tail Power currently does not use smart thermostats, they do use Direct Load
18 Control (DLC) programs, which addresses winter heating. Cost-per-kw data from the Otter
19 Tail program is not readily available.

NON-CONFIDENTIAL

Request IR-5:

Reference: Brattle Evidence, Section IV: Representation of Demand Response in E1's Preferred Plan, page 12:

"Costs for residential thermostat programs are \$577/kW-year by 2031 while BNI curtailment programs only cost \$172/kW-year."

(a) Please provide the underlying source data for each peer utilities referred to including:

- (i) utility name;**
- (ii) program type (thermostat vs. domestic hot water vs. battery vs. other);**
- (iii) program maturity / years of operation;**
- (iv) number of enrolled devices;**
- (v) summer-peaking vs winter-peaking system;**
- (vi) USD or CAD conversion year and rate.**

(b) Please quantify the assumed scale (number of residential participants) at which Brattle believes E1's residential DR program would achieve cost-effectiveness under the PAC test, and the program investment required to reach that scale.

Response IR-5:

This IR response has been provided by The Brattle Group.

- (a) (i-vi) The underlying source data is not readily available from the ACEEE report. Please refer to Footnote 2 of the Brattle Evidence (page 2) for the conversion rates.**

NON-CONFIDENTIAL

1 (b) Brattle is not able to provide an estimate for the number of customers which would lead to
2 a cost effective PAC test. In fact, program scale is not the only sufficient requirement for
3 the cost-effectiveness under PAC. For instance, it might be possible to improve the cost-
4 effectiveness of the programs by actively monitoring participant's performance and
5 removing non-participating devices from the program. This would allow E1 to reduce the
6 ongoing incentive costs associated with the program. Another potential opportunity is to
7 identify the largest cost element in each of the programs and reoptimize the delivery model
8 in a way to achieve material savings.

NON-CONFIDENTIAL

Request IR-6:

Reference: Brattle Evidence, Section IV: Representation of Demand Response in E1's Preferred Plan, page 12:

"E1's logic for limiting residential DR in the Preferred Plan is internally inconsistent in that E1 states residential DR is important but then pauses expansion until cost-effectiveness improves."

(a) Please confirm whether Brattle's recommendation to actively scale residential DR is contingent on:

- (i) the Board waiving or relaxing the portfolio PAC ≥ 1.0 threshold;**
- (ii) reallocating funding from other programs; or**
- (iii) increasing the total DSM budget. If any of (i), (ii) or (iii), please specify.**

(b) Please identify any DSM administrator in a winter-peaking jurisdiction that has expanded a residential DR program from sub-1.0 PAC at developmental scale to cost-effective scale within a 5-year planning period, and provide supporting data.

Response IR-6:

This IR response has been provided by The Brattle Group.

- (a) (i-iii) Not necessarily. As we have discussed in our Evidence, we recommend that E1 prioritizes near-term residential DR measures with strong winter peak reduction potential, particularly smart thermostats and domestic hot water direct load control and adopt best practices from successful programs such as Ontario's Peak Perks program. Moreover, it will be instrumental for E1 to refine the composition of its portfolio based on the results of E1's 2026 DSM Potential Study and any subsequent updates to made during the 2027-2031 plan period, with emphasis on winter peak value, customer segments, event performance, and locational value.**

NON-CONFIDENTIAL

1 Also, as mentioned in the response to CA IR-4, E1 can maintain short-term
2 affordability by reallocating funds within the existing DSM portfolio budget –
3 away from higher cost energy efficiency measures to DR resources that are more
4 directly tied to winter peak reduction, capacity deferral, and resource adequacy
5 value – rather than materially increasing the overall revenue requirement Our
6 expectation is that these two activities would allow E1 to create cost effective
7 portfolio that builds upon its existing residential DR portfolio.
8

9 (b) The Brattle team did not conduct this analysis as part of its review of the Preferred Plan.

NON-CONFIDENTIAL

Request IR-7:

Reference: Brattle Evidence, Section V: Representation of Strategic Electrification in E1's Preferred Plan, page 20-21:

"...the Board must also require E1 to consider transportation electrification measures into any proposed set of strategic electrification programs" and "...Newfoundland Power's 2021–2025 Electrification, Conservation and Demand Management [ECDM] Plan... shows that managed charging passes the cost-effectiveness test while unmanaged charging fails it."

(a) Please reconcile Brattle's recommendation to include managed EV charging as Strategic Electrification (SE) with the Board's 2025 Benefit Cost Analysis (BCA) Decision requirement that SE measures must reduce both GHG emissions AND electricity costs for customers under the modified PAC test.

(b) Please provide the cost-effectiveness assumptions used in the Newfoundland Power 2021–2025 ECDM Plan for managed EV charging, including the cost-effectiveness test (CET) used, and confirm whether the result would be cost-effective if evaluated under Nova Scotia's modified PAC test.

Response IR-7:

This IR response has been provided by The Brattle Group.

(a) Managed EV charging programs aim to shift EV charging load away from distribution system peak hours to off-peak hours. As a result, such programs may help avoid or defer expensive incremental distribution investment. To the extent EV charging load profiles align with broader electric system peaks, managed charging may help defer marginal transmission and generation capacity costs as well. Such cost savings may flow through to customers in the form of lower electric rates in the near to long-term, depending on the

NON-CONFIDENTIAL

1 program life. Relatedly, if EV charging load can successfully be moved from system peak
2 hours to off-peak hours through managed charging, that shifted load may now be serviced
3 by lower carbon emitting baseload units rather than higher emitting generation units that
4 are typically deployed during system peak hours.

5
6 (b) The description for the EV charging cases is provided in the Newfoundland CDM Plan
7 2021-2025.¹ The description does not explicitly identify the test used but provides the
8 following detail for cost-effectiveness value-streams:

- 9
- 10 • **Benefits:** Revenues from incremental electricity sales based on forecasted
11 electricity rates (mid scenario)
12
 - 13 • **Costs:**
 - 14 • Investment costs associated with each scenario
 - 15 • Cost of energy supply
 - 16 • Cost of capacity²
- 17

18 Furthermore, the section mentions that “For each of the modeled scenarios, the cost-
19 effectiveness of an investment in the specified lever was calculated from the utilities’
20 perspective.”³ Based on this description and given the consideration for revenues from
21 incremental sales, the test appears to be a close equivalent of the modified PAC test, albeit
22 it does not explicitly mention the test type. Brattle is unable to draw definitive conclusions
23 about how such results might translate to Nova Scotia without any program characteristics
24 that are designed specifically for Nova Scotia’s DSM portfolio.

¹ See Newfoundland Labrador Hydro and Newfoundland Power, *Electrification, Conservation and Demand Management Plan 2021-2025*, 2021, Schedule C, Page 141 – 143 of 325.

² *Id.* Page 141 of 325.

³ *Id.*, page 141 of 325.

NON-CONFIDENTIAL

1 **Request IR-8:**

2
3 **Reference: Brattle Evidence, Section VII: Conclusion, page 35:**

4
5 **“Support targeted Solar PV for Mi'kmaw communities, if desired, through**
6 **non-DSM funding mechanisms such as government programs, equity**
7 **programs...”**
8

9 **Please identify the specific non-DSM funding mechanisms that Brattle considers currently**
10 **available, in place, and committed to support solar-PV in Mi'kmaw communities in Nova**
11 **Scotia during the 2027–2031 period. Please provide funding amounts and program details.**
12

13 Response IR-8:

14
15 **This IR response has been provided by The Brattle Group.**
16

17 Brattle is currently not aware of non-DSM funding mechanisms committed to support solar PV
18 specifically in the Mi'kmaw communities in Nova Scotia. However, support of equity-based
19 programming with non-DSM funding is not without precedent. Efficiency Canada's 2025 Energy
20 Efficiency Programs Report highlights the different sources of funding for programs aimed at
21 furthering equity outcomes for underserved groups. The report notes that in 2024, ratepayer
22 funding accounted for only slightly more programs than those funded by government.¹ It also
23 highlighted the success E1's HomeWarming program in increasing participation five-fold
24 compared to 2023 levels through federal and provincial funding via the Oil to Heat Pump
25 Affordability program (OHPA) and Home Heating Oil Transition Fund, in addition to ratepayer
26 funding.² While not perfectly aligned with solar PV programs, there may be useful examples from

¹ See Gaede, J., Nippard, A., Turner, K. 2026. The 2025 Energy Efficiency Programs Report. Efficiency Canada, Carleton University, Ottawa, ON, page 50.

² *Id.*, page 51.

NON-CONFIDENTIAL

- 1 other equity-based programming for E1 to draw from. E1's own DSM plan also highlights its
2 experience with leveraging Provincial or Federal funds to administer solar PV programs.³

³ See EfficiencyOne, *EfficiencyOne 2027–2031 DSM Resource Plan Application*, March 31, 2026, Appendix A, page 85 and 86 of 112.

NON-CONFIDENTIAL

Request IR-9:

Reference: Brattle Evidence, Section V: Representation of Demand Response in E1's Preferred Plan, page 9, Figure 2:

"...other winter-peaking utilities like Otter Tail Power have achieved DR peak reduction capability of 28% peak reduction capability (13%, if large customer flexibility contracts excluded)."

(a) Please provide a comparison table of Otter Tail Power and NS Power on each of the following metrics:

- (i) total system peak (MW);**
- (ii) residential customer count;**
- (iii) industrial customer count and size distribution;**
- (iv) generation mix;**
- (v) capacity reserve margin;**
- (vi) historical DR program maturity (years of operation);**
- (vii) presence of interruptible industrial customers**

(b) Please identify any winter-peaking utility with comparable system size and residential customer profile to NS Power (~525,000 residential customers; ~2,460 MW peak) that has achieved residential DR penetration above 5% of system peak, and provide the underlying program design data.

(c) Please confirm whether Otter Tail Power's 13% (excluding large customer contracts) is achieved across residential and small commercial customers, and provide the residential-only DR penetration for Otter Tail Power.

NON-CONFIDENTIAL

Response IR-9:

This IR response has been provided by The Brattle Group.

(a) (i-vii) Please refer to the table below.

Metric	Otter Tail Power	NS Power
Total System Peak	970 MW	2,459 MW
Residential Customer Count	104,633	513,881
Industrial Customer Count	13	2,285
Industrial Customer Size Distribution	Not available	Customers range from under 1 MW to 160 MW in size.
Generation Mix	43% Market Purchases 26% Coal 22% Wind 7% Gas/Oil 1% Solar 1% Hydro	17% Maritime Link Energy Deliveries 3% Non-Maritime Link Market Purchases 41% Coal 15% Gas/Oil 15% Wind 5% Hydro 3% Biomass 1% Solar
Planning Reserve Margin	9.0% - 33.9%, depending on the season	20%
DR Program Maturity	Not available	The interruptible rider has been available since the late-1970s. ¹ The Time-varying Pricing (TVP) Tariff Pilot has been in place since 2021. ²
Presence of Interruptible Industrial Customers	Exact quantity unknown	29

Note: Data in the NS Power column was provided by NS Power.

¹ The "Industrial Interruptible Rate" was approved by the Board in March 1977.

² M09777 – Board Decision, NS Power Time Varying Pricing Tariff Application, 284333, June 22, 2021.

NON-CONFIDENTIAL

- 1 (b) This information is not readily available at this time.
2
3 (c) Confirmed. OTP's reduction has been achieved across residential and small commercial
4 customers. OTP has greater than 30 percent residential enrollment in DR programs.