

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*

-and -

IN THE MATTER OF: An Application by NOVA SCOTIA POWER INCORPORATED
for approval of its 2024 Load Forecast Report

INFORMATION REQUESTS

To: **Mark Peachey**
Manager, Regulatory System Planning & Innovation
Nova Scotia Power Inc.
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Email: Mark.Peachey@nspower.ca

From: The Consumer Advocate

Responses Due: **June 19, 2024**

Copies: 1 electronic copy (PDF searchable)

Contact Person: **David J. Roberts**
Consumer Advocate
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1 **Request IR-1:**

2
3 References: Exhibit N-1, pp. 19, 21; Exhibit N-2, CA RIR-1, M11108; and Exhibit N-1, 2024
4 ACE Plan, M11458, p. 128, referencing “increasing weather risks,” including the “number of
5 hours of wind gusts greater than 80 km/h,” with the recent period reflecting a 149 percent
6 increase over the 2009-2013 period.

7
8 (a) Has NS Power evaluated its long-term load forecast model to consider cloud cover or
9 wind gusts as input weather forecast variables? Please explain.

10
11 (b) Please provide forecast trends in average daily wind speed, cloud cover, and hours of
12 wind gusts similar to those presented in Figure 9, if available.

13
14 **Request IR-2:**

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16 Reference: Exhibit N-1, pp. 31-35; Exhibit N-2, CA IR-2(c), M11108.

17
18 (a) Please provide the analysis that demonstrates that the 2024 residential and commercial
19 load forecasts consider the following impacts.

- 20 i. Continued use of electric resistance heating equipment (not referring to backup
21 electric resistance heating capabilities of heat pumps) on cold days.
22 ii. Continued use of fossil fuel or wood heating equipment until failure, then
23 replacement with heat pumps.
24 iii. Replacement of existing fossil fuel or wood heating equipment in-kind.
25 iv. New construction including fossil fuel or wood heating equipment.

26
27 (b) For each program that Efficiency One is implementing to help Nova Scotia residential
28 and commercial customers transition energy end use from fossil fuels to electricity,
29 please explain how the impacts are incorporated into the 2024 Load Forecast Report.
30 If the impacts are not considered in this report, please state what additional data,
31 information, or analysis is required to incorporate the program impacts into future
32 reports.

33
34 (c) Please identify any other programs that NS Power anticipates will help Nova Scotia
35 residential and commercial customers transition energy end use from fossil fuels to
36 electricity and explain how the impacts are incorporated into the 2024 Load Forecast
37 Report. If the impacts are not considered in this report, please state what additional
38 data, information, or analysis is required to incorporate the program impacts into future
39 reports.

40
41 (d) Please identify any market trends that NS Power anticipates will help Nova Scotia
42 residential and commercial customers transition energy end use from fossil fuels to
43 electricity and explain how the impacts are incorporated into the 2024 Load Forecast
44 Report. If the impacts are not considered in this report, please state what additional

1 data, information, or analysis is required to incorporate the market trends into future
2 reports.

3
4 (e) Does NS Power believe that additional market interventions are necessary to achieve
5 the level of electrification indicated in its load forecast? If so, please provide the
6 supporting analysis.

7
8 (f) Please summarize the electrification outcomes necessary to achieve federal and
9 provincial policy goals for electrification.

10
11 (g) Please provide NS Power's estimate of the gap between (i) existing electrification
12 measures identified in responses to parts (b) and (c) and the market trends identified in
13 response to part (d) and (ii) the electrification outcomes included in its load forecast as
14 necessary to achieve federal and provincial policy goals for electrification.

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16 **Request IR-3:**

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18 Reference: Board Decision, Matter No. M11307, noting that, "The Consumer Advocate, E1
19 and Eastward Energy supported continued study about the value of the Hybrid Peak Mitigation
20 electrification profile, particularly about the potential costs of this strategy. While NS Power
21 noted that future assessment of the strategy is included in Action Plan Item 4b, the Utility
22 stated the study should be led by an external 3rd party to coordinate a multi-stakeholder study
23 process." (p. 4) Also noting that, "NS Power must not delay or defer any part of the Evergreen
24 IRP process in anticipation that the IRP responsibilities will be assumed by the new IESO at
25 some point in the future. Given the impending 2030 deadline, it is essential that the Evergreen
26 IRP process continue uninterrupted, and the Evergreen IRP Updated Action Plan and Roadmap
27 be diligently executed." (p. 5)

28
29 Please describe the steps that NS Power has taken to further assess the Hybrid Peak Mitigation
30 electrification profile and those steps that NS Power is aware that others have taken. In your
31 response, please specifically address the "multi-stakeholder study process" and other relevant
32 components of Action Plan Item 4b. Also please identify any obstacles to completing these
33 activities that NS Power believes the Board might be able to usefully assist in overcoming.

34
35 **Request IR-4:**

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37 Reference: Exhibit N-1, p. 39, lines 21-22.

38
39 (a) Please confirm that the 1.6 kW/vehicle "sensitivity" was used as the basis for the 2024
40 load forecast. If not confirmed, please explain and provide any further supporting
41 calculations.

42
43 (b) Please provide the system-coincident unmanaged peak impact per vehicle for 2023 in
44 the same format as the response in Exh. N-2, Matter M11108, CA RIR-3.

1 (c) Please provide system-coincident peak impact per vehicle data from the SGNS Project
2 (M11621).
3

4 **Request IR-5:**
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6 References: Exhibit N-1, 2024 ACE Plan, M11458, p. 70, lines 9-20, stating that:
7

8 although the Load Forecast provides justification for specific capital projects, it
9 does not directly correlate with or support the budgeting for new customer routines
10 (D004, D061 and D062). ... the Load Forecast is a forecast of new housing starts
11 only, and as such, differs from new customers that may require a capital upgrade.
12 For example, a request to connect an existing building as a dedicated service, such
13 as a detached garage would not be counted as a housing start but would be counted
14 as a new customer, and require work to be completed under the new customer
15 routine. As such, it would not be beneficial for cost budgeting and procurement
16 purposes to base the forecast units under D061, D062 and D004 distribution
17 routines on the units included in the Load Forecast Report, as this could result in
18 large variances to budget. Rather, NS Power continues to monitor trends, and will
19 modify its approach to forecasting new customer-driven work volumes by
20 incorporating more recent trends (i.e. including shorter periods in its forecast), as
21 required.
22

23 Exhibit N-5, CA RIR-2(a), M11458, stating that: “Detached garages and other similar new
24 customer claims ... [and] Unmetered services (such as streetlights and area lights) and large
25 renovations” are the source of the variance between the 2024 Load Forecast Report and the
26 D061 forecast.
27

28 (a) Please explain how the Load Forecast accounts for additional energy and peak demand
29 from requests “to connect an existing building as a dedicated service,” “large
30 renovations,” and other new loads that require a distribution capital upgrade but are not
31 included in forecast new housing starts.
32

33 (b) Please summarize the load forecast for unmetered services and explain how it
34 contributes to the source of the variance between the two forecasts.
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36 **Request IR-6:**
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38 References: Exhibit N-12, NSUARB RIR-79(c), M11458, stating that NS Power’s residential
39 load forecast for 2024 includes 2,017 new single-family units and 3,765 new multi-family
40 units, while the D061 forecast is 4,374 new customer installs.
41

42 Please explain how NS Power forecasts the 4,374 customer installs in the D061 routine capital
43 budget forecast and why it is reasonable for this number to differ from the 2024 residential
44 load forecast.

1 **Request IR-7:**

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3 Reference: Exhibit N-5, CA RIR-2(b), M11458; Exhibit N-9, NSUARB RIR-72(g), M11458.
4 Exhibit N-2, CA RIR-4, M11108; and Exhibit N-1, 2024 Load Forecast Report, pp. 32-33, 36-
5 43.

- 6
7 (a) Please confirm that NS Power lacks accurate data on the number of housing units
8 connected, by type (e.g., single-family vs multi-family) and level of service (e.g.,
9 ampere rating). If not confirmed, please provide the relevant data for these factors for
10 the past five years.
11
12 (b) Please provide a summary of the plans to use advanced metering infrastructure data to
13 enhance modeling and forecasting via incorporation into NS Power's distribution
14 planning modeling software. Where available, please provide the specific scope of
15 work for the modeling and forecasting changes referenced in your response.
16
17 (c) Please explain how the forecast increase in EV charging, commercial electrification of
18 heating, and solar generation is being considered in distribution facilities planning.
19
20 (d) Please identify the additional data and analysis required by NS Power before
21 extrapolating the results from the SGNS Project and any other recently-completed or
22 research/pilots currently underway to provide province-wide estimated impacts of (i)
23 EV charging, (ii) residential heating electrification, (iii) commercial heating
24 electrification, and (iv) solar generation.
25

26 **Request IR-8:**

27
28 Reference: Exh. N-10, NS Power Rebuttal Evidence, 2023 Load Forecast Report, M11108, p.
29 21.

- 30
31 (a) Please provide the factors used to determine transformer sizing, in the transformer
32 sizing charts and in practice for specific transformers.
33
34 (b) Please provide the formula or method used for the transformer sizing charts, including
35 identifying the sources of data for the relevant factors, including but not limited to the
36 number of customers connected, panel sizes, and special loads such as EVs.
37
38 (c) Please provide the formula or method used for transformer sizing decisions for specific
39 transformers (both new and replacement units), including identifying the sources of
40 data for the relevant factors, including but not limited to the number of customers
41 connected, panel sizes, and special loads such as EVs.
42

- 1 (d) Are transformer sizing decisions ever influenced by available transformers in NS
2 Power's inventory or anticipated delivery schedule? If so, please explain the
3 circumstances and the frequency of such events.
4

5 **Request IR-9:**
6

7 Reference: Exhibit N-1, Section 10.0.
8

- 9 (a) Please provide the quantified reduction in system peak as a result of time-varying
10 pricing (TVP) rate offerings in the 2024 Load Forecast Report.
11
12 (b) Please provide NS Power's forecast for when it will fulfill the commitment that its
13 investment in AMI technology would result in a reduction in system peak demand, and
14 thus reduce the amount of necessary system peaking capacity.
15
16 (c) Considering the top ten peak event periods during the 2023-2024 winter, where an
17 event is defined as a morning, mid-day, evening, or full-day period: please identify the
18 peak hour associated with each event period and whether that hour occurred on a
19 weekday or weekend and during a peak TOU period or not.
20
21 (d) Please provide the projected reduction in system peak associated with TVP rates, the
22 number of customers required to achieve those savings, and the associated peak impact
23 per customer. In your response, please provide support for all data and assumptions.
24
25 (e) Please identify what additional data and analysis is required by NS Power before
26 extrapolating the results from its TVP pilot to province-wide estimated impacts, if any.
27