

BEFORE THE NOVA SCOTIA UTILITY AND REVIEW BOARD

In the Matter of An Application Nova Scotia Power Incorporated (NS Power) for approval of its
Time-Varying Pricing Tariff Application

(NSUARB M09777)

**Evidence of
Melissa Whited**

**On Behalf of
Counsel to Nova Scotia Utility and Review Board**

February 24, 2021

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your name, title, and employer.**

3 A. My name is Melissa Whited. I am a Principal Associate at Synapse Energy Economics
4 ("Synapse"), located at 485 Massachusetts Avenue, Cambridge, MA 02139.

5 **Q. Please describe Synapse Energy Economics.**

6 A. Synapse Energy Economics (Synapse) is a research and consulting firm specializing in
7 electricity and gas industry regulation, planning, and analysis. Our work covers a range of
8 issues, including economic and technical assessments of demand-side and supply-side
9 energy resources; energy efficiency policies and programs; integrated resource planning;
10 electricity market modeling and assessment; renewable resource technologies and
11 policies; and climate change strategies. Synapse works for a wide range of clients,
12 including attorneys general, offices of consumer advocates, public utility commissions,
13 environmental advocates, the U.S. Environmental Protection Agency, U.S. Department of
14 Energy, U.S. Department of Justice, the Federal Trade Commission, and the National
15 Association of Regulatory Utility Commissioners. Synapse has over 30 professional staff
16 with extensive experience in the electricity industry.

17 **Q. Please summarize your professional and educational experience.**

18 A. I have 12 years of experience in economic research and consulting. At Synapse, I have
19 worked extensively on issues related to utility regulatory models and rate design. I have
20 been an invited speaker in numerous industry conferences, including as a panelist for the
21 National Association of Regulatory Utility Commissioners (NARUC) Subcommittee on
22 Rate Design at the 2021 Winter Policy Summit and the 2018 Annual Meeting.

1 I have sponsored testimony before the Newfoundland and Labrador Board of
2 Commissioners of Public Utilities, the Georgia Public Service Commission, the Rhode
3 Island Public Utilities Commission, the Massachusetts Department of Public Utilities, the
4 Maine Public Utilities Commission, the California Public Utilities Commission, the
5 Hawaii Public Utilities Commission, the Public Service Commission of Utah, the Public
6 Utility Commission of Texas, the Virginia State Corporation Commission, and the
7 Federal Energy Regulatory Commission. I hold a Master of Arts in Agricultural and
8 Applied Economics and a Master of Science in Environment and Resources, both from
9 the University of Wisconsin-Madison. My resume is attached as Appendix A.

10 **Q. Have you previously testified before the Nova Scotia Utility and Review Board?**

11 A. No. However, I supported Alice Napoleon, consultant to the Board Counsel in the
12 Advanced Meter Infrastructure cases (Matter Nos. M07767 and M08349).

13 **Q. On whose behalf are you providing evidence in this case?**

14 A. I am providing evidence on behalf of Counsel to the Nova Scotia Utility and Review
15 Board (“Board”).

16 **Q. What is the purpose of this evidence?**

17 A. My evidence identifies certain aspects of Nova Scotia Power’s (or “the Company”)
18 proposal that, in my opinion, are deficient or not in the public interest, and provides
19 recommended modifications to NS Power’s time-varying pricing (TVP) tariffs and
20 implementation plans.

1 **II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS**

2 **Q. Please describe your conclusions.**

3 A. My conclusions are as follows:

- 4 • NS Power’s application and “Soft Launch” approach leave key components of the
5 implementation and tariff refinement processes undefined and subject to limited
6 review and discussion. Given the importance of the customer engagement strategy
7 and the tariff evaluation and modification process, the Company’s proposed Soft
8 Launch approach is not in the public interest.
- 9 • The Company’s proposed lost revenue recovery mechanism is flawed and
10 unwarranted. Specifically, it focuses only on one potential impact on revenues
11 while ignoring potential countervailing impacts; is likely unnecessary because the
12 lost revenues are expected to be small relative to recent trends in overcollections;
13 and is not accompanied by a robust evaluation, measurement, and verification
14 plan that would ensure the impacts are accurately quantified.
- 15 • The requirement that customers have both a MyAccount profile and electronic
16 billing is unnecessary. In addition, the requirement that customers enroll by
17 November 1 of each year may reduce adoption of the tariffs in a manner that
18 would likely offset the benefit from minimizing the risk of gaming.
- 19 • The CPP event hours are too narrowly defined, depriving the Company of a key
20 tool in mitigating grid constraints.
- 21 • The price signals provided to customers through the TVP tariffs do not fully
22 reflect marginal costs on the system, and therefore may not be efficient.

23 **Q. What are your recommendations?**

24 A. I recommend that the Board:

- 25 • Reject NS Power’s Soft Launch proposal and instead direct the Company to
26 develop a pilot program that provides stakeholders with the opportunity to fully

1 evaluate and comment on the Company’s proposed customer engagement strategy
2 and the tariff evaluation and modification processes;

- 3 • Reject the Company’s proposed LRAM at this time;
- 4 • Direct NS Power to modify its TVP tariffs to remove the requirement that
5 customers have both a MyAccount profile and electronic billing;
- 6 • Direct the Company to remove the tariff requirement that customers be enrolled in
7 a TVP by November 1 of each year, and replace it with a restriction on re-
8 enrolling in a TVP tariff within a 12-month period;
- 9 • Direct the Company to modify its CPP event hours to enable events to be called at
10 any time between 7:00 am and 8:00 pm during the winter for a duration of up to 4
11 hours; and
- 12 • Approve the prices proposed by NS Power, but direct the Company to analyze
13 and consider the magnitude of long-run marginal costs when updating the tariffs
14 in the future to better align prices with actual long-run marginal costs.

15 **III. BACKGROUND AND OVERVIEW**

16 **Q. Please provide an overview of the Company’s application.**

17 A. NS Power proposes to introduce a Critical Peak Pricing (CPP) tariff and a Time-of-Use
18 (TOU) tariff on an opt-in basis for the Domestic, Small General, and General Demand
19 classes. The proposed tariffs would have on-peak periods limited to the winter season
20 (defined as November through March). The proposed on-peak to off-peak price ratio
21 would be approximately 2:1 for the TOU tariff and 10:1 for the CPP tariff (\$1.50/kWh).¹

¹ Nova Scotia Power, Inc., Time-Varying Pricing Tariff Application, M09777, November 30, 2020 (hereafter “Application”) at 5.

1 The Company proposes to introduce the tariffs using a “Soft Launch” approach, which it
2 describes as similar to a pilot approach, except that the regulatory and stakeholder
3 engagement processes are more consolidated.² In addition, NS Power requests that the
4 Board approve a Lost Revenue Adjustment Mechanism (LRAM), which would allow the
5 Company to defer for future recovery the fixed cost recovery foregone due to customer
6 load shifting.

7 **Q. Have you identified issues with the proposal?**

8 A. Yes, I have. My concerns relate to the following:

- 9 1) NS Power’s application omits details of key components, and the Company’s
10 proposal to roll out rates using a “Soft Launch” approach rather than a pilot
11 approach would reduce stakeholder and regulatory review.
- 12 2) The proposed lost revenue adjustment mechanism is not warranted or in the
13 public interest.
- 14 3) Several tariff requirements are unnecessary and would likely stymie customer
15 uptake of the tariffs.
- 16 4) The CPP event hours are too narrowly defined and could hinder NS Power’s
17 ability to respond to grid conditions.
- 18 5) The Company’s price signals do not fully consider system marginal costs,
19 raising questions regarding the efficiency of the price signals.

² NS Power Response to Synapse IR-55.

1 **IV. IMPLEMENTATION PLAN**

2 **Q. Please describe the Company’s proposed implementation plan for its TVP tariffs.**

3 A. During the first and second quarters of 2021, the Company proposes to develop a
4 customer engagement, marketing, and education plan and an evaluation, measurement,
5 and verification (EM&V) plan with input from stakeholders. Under the Company’s
6 proposal, these plans would be confirmed and approved by way of a compliance filing.³

7 The Company would then recruit a limited number of participants for the TVP tariffs for
8 a “Soft Launch.” The Soft Launch would cap the enrollment on each tariff for the first
9 year. Enrollment for the Domestic class would be limited to 250 customers for CPP and
10 1,000 customers for TOU. The Small General and General Service classes would be
11 capped at 500 customers each for the CPP tariff and 500 customers each for the TOU
12 tariff.⁴

13 The tariffs would go into effect on November 1, 2021. Following the 2021/2022 winter
14 season, the Company proposes to review and refine its tariffs.⁵

15 **Q. Is the Company’s proposal reasonable?**

16 A. No. The Company’s application leaves key components of the implementation and tariff
17 refinement process undefined and subject to limited review and discussion. Although the
18 Company does propose to conduct analysis and iterate on the tariffs once they are in
19 place, there are no clear evaluation metrics or methodology proposed, and the “Soft

³ Application at 50.

⁴ Application at 48.

⁵ Application at 49.

1 Launch” process would reduce the review and approval of any tariff or implementation
2 modifications. My specific concerns are as follows:

- 3 • First, key components of the implementation process – the customer engagement
4 plan and the EM&V plan – have yet to be fleshed out, and the Company is
5 proposing that these elements be approved through a compliance filing rather than
6 through a more formal process.
- 7 • Second, introducing the tariffs through a “Soft Launch” rather than a pilot would
8 abbreviate the process for evaluating and modifying the tariffs after the first
9 winter, even though the evaluation and modification of the initial tariffs will be
10 critical for ensuring that the TVPs meet Nova Scotia’s energy policy goals.

11 **Q. Please explain your concerns related to the development of the customer**
12 **engagement plan.**

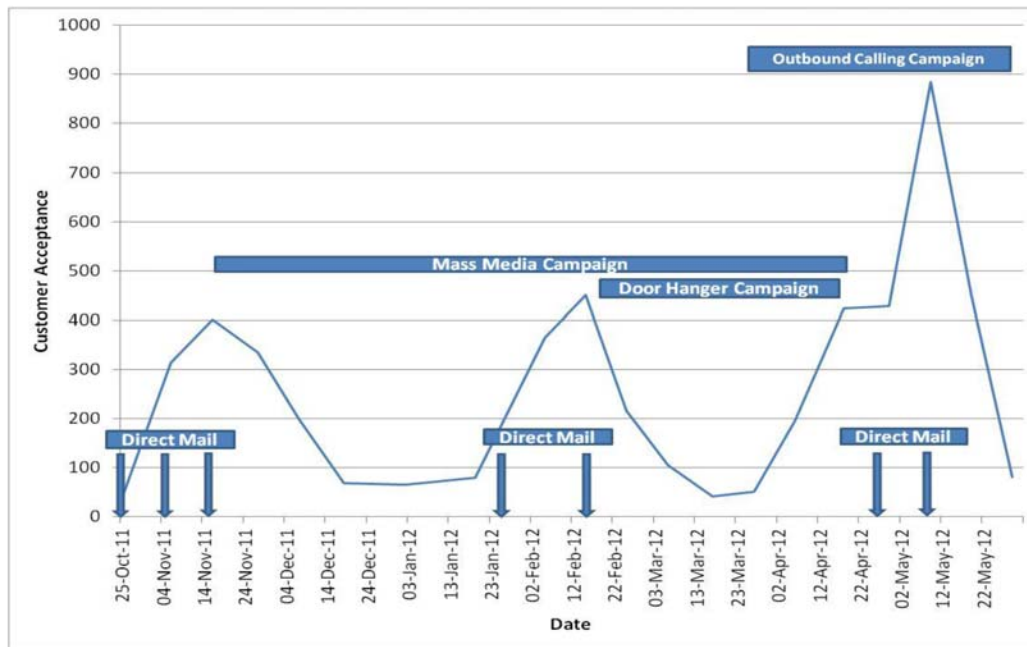
13 A. A comprehensive customer engagement strategy is critical to the success of TVPs. Many
14 utility TVP tariffs fail to obtain enrollment levels of more than 5 percent, in large part
15 due to inadequate customer engagement and education efforts.⁶ In contrast, extensive and
16 well-executed TVPs, such as Sacramento Municipal Utility District’s (SMUD’s)
17 SmartPricing Options pilot, have achieved enrollment levels of approximately 18
18 percent.⁷ However, the differences between SMUD’s approach and NS Power’s approach
19 are striking. While NS Power has not yet developed a customer engagement plan, SMUD
20 began conducting surveys and focus groups 16 months prior to implementing its pilot
21 tariffs, and conducted a total of 25 focus groups and 4 surveys to solicit input on
22 marketing messages and communication issues as input to development of the marketing

⁶ Nexant. SMUD SmartPricing Options Pilot Evaluation, August 6, 2014, page 74.

⁷ *Id.*, page 75.

1 and education plan.⁸ Recruitment of participants for the pilot itself lasted 8 months and
2 involved direct mail, mass media campaigns, door hangers, and outbound calls, as shown
3 in the figure below.⁹

4 **Figure 1. Timeline Showing SMUD's Customer Recruitment Process**



5
6 It also appears that NS Power has yet to undertake significant work in the development of
7 tools and educational materials that would enable customers to understand how the
8 proposed TVPs could impact their bills and what strategies they could employ to shift
9 load. To date, NS Power has offered no concrete proposals for customer marketing,
10 education and outreach that would enable the Board and stakeholders to determine that
11 such efforts will be comprehensive and likely to lead to peak load reductions and a
12 positive customer experience.

⁸ *Id.*, page 14.

⁹ *Id.*, page 13.

1 **Q. Please explain your concerns related to the Company’s evaluation, measurement,**
2 **and verification plans.**

3 A. EM&V plans must be developed early in the process to ensure that the TVP evaluations
4 are able to provide the information necessary to understand whether the tariffs are
5 achieving their objectives, and whether course corrections are needed. Moreover, as
6 discussed in the following section, without a thoroughly-vetted EM&V plan, the
7 evaluation results cannot be assured to provide accurate estimates of lost revenues, were
8 the Board to approve a lost revenue adjustment mechanism.

9 The EM&V plan should begin by articulating the goals of the TVP tariffs and developing
10 metrics that measure these objectives. The specific metrics chosen can have important
11 implications for the design of the customer recruitment strategy, including how many
12 customers must be enrolled to produce statistically significant results, and whether pre-
13 enrollment hourly usage data is necessary to reduce bias in the estimation of load
14 reductions.

15 **Q. Please provide an example of how the choice of evaluation metrics might impact the**
16 **enrollment targets.**

17 A. The choice of metrics may dictate that additional data be collected to sufficiently assess
18 the impacts on particular customer segments, such as:

- 19 • The extent to which low-income customers enroll or shift load relative to non-low
20 income customers,
- 21 • The degree to which customers with advanced technologies (e.g., electric vehicles
22 or storage) respond to the tariffs.

1 To assess such impacts, the Company may need to recruit a larger number of participants
2 than originally anticipated to ensure that the sample size for each customer segment is
3 adequate to produce statistically significant results.

4 Because NS Power has not clearly articulated the objectives, metrics, or methodologies it
5 plans to use to evaluate the TVPs, it is impossible to determine whether NS Power's
6 EM&V process and customer enrollment targets will result in useful information
7 following the first winter.

8 **Q. The Company states that it will develop a customer engagement strategy and**
9 **EM&V plan during the first half of 2021 and will solicit stakeholder input on these**
10 **plans. Does this mitigate your concerns?**

11 A. No. The current proceeding has consisted of two phases, with Phase 1 serving to gather
12 stakeholder input and Phase 2 being the current formal application review. As the
13 Company notes in its application, "the key issues to be resolved through this process"
14 include how the Company will implement TVPs, including customer engagement,
15 education, and marketing, as well as how it will review and refine the TVP tariffs.¹⁰

16 Despite customer engagement and EM&V being identified as "key issues" to be
17 addressed during the process, the Company has not developed any clear proposals that
18 can be evaluated during the current procedural schedule. Because of this, there is no
19 formal process for obtaining, documenting, or responding to input from stakeholders, or
20 for stakeholders to present alternative evidence to the Board. Even more troubling is the

¹⁰ Application at 9.

1 Company’s proposal to submit its plans to the Board “to be confirmed and approved by
2 way of a compliance filing.”¹¹

3 **Q. Why is a compliance filing inappropriate for submission of the Company’s customer**
4 **engagement and EM&V plans?**

5 A. A compliance filing is generally intended to be informational, rather than be used for
6 resolving significant unaddressed issues in an application. The customer engagement and
7 EM&V aspects of the TVP implementation process are vital to its success and should not
8 be treated as an afterthought. Without a comprehensive marketing and education
9 approach, many customers will not have the knowledge or the tools to feel empowered
10 enough to take advantage of the TVP tariffs, or to effectively shift load, resulting in a
11 much less successful program. Similarly, without a robust evaluation plan, the Company
12 risks being unable to accurately determine whether the tariffs have achieved their primary
13 aim of reducing peak demand, and how various customer segments may be impacted.

14 Because the customer engagement strategy and EM&V plans represent such critical
15 components of the TVP implementation process, they should be subject to a formal
16 process for stakeholders to review and comment on their adequacy. This will then enable
17 the Board to use all of this information to make a determination and, if warranted, direct
18 the Company to modify the plans. A compliance filing does not typically provide such a
19 forum.

¹¹ Application at 50.

1 **Q. What are your concerns regarding the review and modification process following**
2 **the first winter?**

3 A. Under the Company's proposed Soft Launch approach, the tariffs and customer
4 engagement strategy would be reviewed and potentially modified following the first
5 winter. While this approach is similar to a pilot, the Company states that the Soft Launch
6 would allow for a more consolidated regulatory approval and stakeholder engagement
7 process relative to a pilot.¹² Although the Company's desire to streamline the process is
8 understandable, it should not come at the detriment of adequate review and input from
9 stakeholders.

10 **Q. What do you recommend with respect to NS Power's implementation process?**

11 A. While I understand the Company's desire to expedite the roll-out of TVP tariffs, there are
12 numerous critical components associated with the introduction of time-varying rates that
13 require more iteration and review than the abbreviated regulatory review and approval
14 process envisioned by the Company through the Soft Launch approach. I therefore
15 recommend that the Board deny the Company's proposed Soft Launch approach and
16 instead direct the Company to develop a pilot to test its proposed TVP tariffs and
17 customer outreach strategy. This pilot proposal should include the following elements:

- 18 • A schedule for development and submission of an EM&V plan and customer
19 engagement strategy for stakeholder review and Board approval;
- 20 • A detailed schedule for the review and modification of the tariffs and
21 implementation process. This should include a timetable for the submission of an

¹² *Ibid.*

1 evaluation report, a stakeholder engagement process, and the development of any
2 proposed tariff or customer engagement modifications.

3 After the Company has developed and filed its EM&V and customer engagement strategy
4 plans, I recommend that interested stakeholders be afforded the opportunity to issue
5 information requests and submit comments. This will provide the Board with greater
6 information with which to assess the Company's proposal and approve or modify the
7 proposed EM&V process and customer engagement strategy.

8 In addition, I recommend that the tariff evaluation and modification process after the first
9 winter also provide stakeholders with an opportunity to issue information requests and
10 submit comments to inform the Board's review.

11 **V. LOST REVENUE ADJUSTMENT MECHANISM**

12 **Q. Why is the Company proposing a lost revenue adjustment mechanism?**

13 A. The Company states that the proposed LRAM is designed to manage the mismatch in
14 timing of non-FAM revenues and costs created by TVP tariffs, since "it may be several
15 years before the infrastructure cost savings produced by TVP are realized."¹³

16 **Q. Do you have any concerns regarding the Company's proposed LRAM?**

17 A. Yes, I have multiple concerns with the Company's LRAM proposal. First, an LRAM is
18 designed to protect the utility against insufficient revenue recovery due to reduced or
19 shifted sales. However, it isolates a single element affecting the utility's revenues, while
20 ignoring other impacts, such as electrification or weather, that may cause revenues to

¹³ Application at 45.

1 increase. Because of this, it does not guarantee that costs and revenues are better aligned
2 than without the mechanism.

3 Second, the analytical effort required to determine the impacts of load shifting due to
4 time-varying rates, as opposed to other exogenous factors, is non-trivial and can be
5 contentious. This may be a key reason why the Company is aware of only one other
6 utility that has an LRAM for time-varying rates.¹⁴ NS Power's failure to propose a well-
7 developed EM&V plan in its application only heightens this concern.

8 Third, the lost fixed costs that the Company proposes to recover under the LRAM are
9 dwarfed by the Company's frequent over-recovery of revenues,¹⁵ calling into question the
10 very need for this mechanism.

11 **Q. How much revenue has the Company over-collected in recent years?**

12 A. In response to an information request, NS Power provided data regarding its under and
13 over-collections for 2013 through 2020.¹⁶ The table below indicates that the Company
14 has over-collected more than \$95 million, or an average of nearly \$12 million per year, in
15 non-fuel revenues over this timeframe. This non-fuel over-collection represents the
16 additional revenues collected above the Company's approved ROE range.

¹⁴ Response to Synapse IR-11.

¹⁵ NS Power Response to NSUARB IR-4.

¹⁶ *Ibid.*

1

Table 1. Under/(Over)-Collection¹⁷

(\$ Millions)

	Fuel	Non-Fuel	Total
2013	\$67.70	\$0.00	\$67.70
2014	(\$1.30)	(\$40.20)	(\$41.50)
2015	\$24.10	(\$26.40)	(\$2.30)
2016	(\$28.30)	(\$4.40)	(\$32.70)
2017	(\$86.00)	(\$18.40)	(\$104.40)
2018	\$15.40	(\$3.10)	\$12.30
2019	\$38.80	(\$2.80)	\$36.00
2020	(\$35.70)	\$0.00	(\$35.70)
	(\$5.30)	(\$95.30)	(\$100.60)

2 **Q. How does this over-collection of approximately \$12 million per year compare to the**
3 **potential lost revenues under TVP?**

4 A. The Company indicates that the revenue shortfall could total \$3.0 million due to load
5 shifting under TOU tariffs with a price ratio of 2:1 and a CPP price of \$1.50/kWh,
6 assuming 15% enrollment in each TVP tariff.¹⁸ However, if historical levels of revenue
7 over-collection continue, these lost revenues would be more than offset by the non-fuel
8 revenues.

9 **Q. What is your recommendation regarding the LRAM?**

10 A. I recommend that the Board reject the LRAM, as it does not account for other impacts on
11 the Company's system that might offset the lost revenues; the Company has not
12 submitted a robust EM&V plan by which to quantify lost revenues; and the Company has
13 not demonstrated that an LRAM is even needed, given the recent levels of over-
14 collection. Further, it is unlikely that revenues will be significantly impacted in the near-

¹⁷ *Id.* Non-fuel overcollection represents earnings above the NSUARB approved ROE range as presented in Undertaking-1 in Matter M09288

¹⁸ This shortfall does not account for any shortfall attributable to natural beneficiaries. NS Power Response to NSUARB IR-7(b).

1 term due to limited enrollment levels. If, in the future, the enrollment levels and load
2 shifting grow to the point where the Company is unable to collect adequate revenues, the
3 Company can file a general rate case application or propose alternative mechanisms for
4 addressing the revenue shortfall.

5 **VI. TARIFF AVAILABILITY REQUIREMENTS**

6 **Q. What concerns do you have regarding the tariff requirements?**

7 A. I am concerned that the Company's availability requirements would unnecessarily restrict
8 participation in the tariffs. Specifically, the Company's requirement that customers have
9 both a MyAccount profile and electronic billing is unnecessary, while the requirement
10 that customers enroll by November 1 of each year should be replaced by a restriction on
11 re-enrolling in the TVP tariff within 12 months.

12 **Q. What justification does NS Power offer for requiring customers to have a**
13 **MyAccount profile and electronic billing?**

14 A. The Company states that the primary reason is to "maintain compliance with
15 Measurement Canada Regulation GEN-31 Section 5.7" which the Company summarizes
16 as "if you utilize interval data for billing purposes (which both our TVP and CPP rates
17 will) then Meter reading information recorded (pursuant to section 11 (2) (m) of the
18 *Electricity and Gas Inspection Regulations*) shall be provided to the purchaser so that the
19 total delivered amount of electricity (which appears on a purchaser's billing invoice) is
20 capable of being reconciled with the total consumption registered by the meter."¹⁹ The

¹⁹ NSPI Response to NSUARB IR-8.

1 Company believes that the availability of this data on the customer's MyAccount page
2 will satisfy this requirement.

3 **Q. Why do you believe it is unnecessary to require customers to have a MyAccount**
4 **profile and electronic billing?**

5 A. Although data accessed through the MyAccount portal would certainly satisfy the
6 requirement that the customer be provided with data allowing him or her to reconcile the
7 total delivered energy with the total consumption registered by the meter, the Company
8 has failed to offer a convincing explanation of why this data would only be available on
9 MyAccount and not also on a customer's bill. For example, if this requirement is
10 currently satisfied by providing the current and previous month's meter reads on a
11 customer's bill, there is no reason why this practice could not continue under the TVP
12 tariffs. The information provided on the bill should be expanded to show consumption by
13 time period (i.e., on-peak and off-peak), but otherwise would be fundamentally the same,
14 thereby satisfying the Measurement Canada regulation. I note that the Company has
15 offered no rationale why the customer must also have electronic billing, and therefore I
16 conclude that this requirement is also unnecessary for the implementation of TVP tariffs.

17 **Q. What is the Company's rationale for requiring that a customer must commence**
18 **service on a TVP tariff on November 1, rather than at any time following the**
19 **installation of a smart meter?**

20 A. The Company explains this requirement as guarding against potential gaming of the tariff
21 structure. Specifically, the Company states that, "absent any enrollment timing controls,
22 customers may be incented to enroll in the programs during the non-winter period when
23 prices are lower and return to the standard offer tariffs during the winter periods when

1 prices rise and the load shift is intended to be achieved. Such behaviour would be
2 contrary to the purpose of the TVP program."²⁰

3 **Q. Do you agree that this tariff provision is warranted to guard against gaming?**

4 A. No. The requirement that customers enroll by November 1 each year may be warranted
5 for large, sophisticated customers, who could potentially realize substantial savings by
6 changing tariffs twice a year. However, this risk is likely to be minimal for Domestic
7 customers, where the time and attention required to change tariff enrollment twice a year
8 likely offsets the financial benefit of doing so. Further, inclusion of this restriction for
9 Domestic customers is more likely to undermine the objectives of the TVP tariffs by
10 deterring customer enrollment if customers are told that they must wait for the following
11 year to enroll in the TVP tariffs, at which point they may have lost interest or forgotten
12 that the tariff exists. I have similar concerns that this restriction will reduce the likelihood
13 that Small General customers will enroll in TVP tariffs.

14 I recommend that, if the Company believes that gaming of the tariff is likely to occur, the
15 Company implement an alternative tariff provision that restricts a customer from re-
16 enrolling in the TVP tariff for 12 months. That is, once a customer opts out of a specific
17 TVP tariff, he or she may not re-enroll in that specific TVP tariff for a year. This will
18 serve to minimize the risk of gaming while reducing the likelihood that customers will
19 find it difficult to enroll in the tariffs due to timing.

²⁰ NS Power Response to Synapse 1R-25.

1 **VII. CPP EVENT HOURS**

2 **Q. Please describe when the CPP tariff would be invoked.**

3 A. The Company states that it intends to use CPP as a tool to reduce load “during capacity
4 constrained periods, high cost periods, or other system challenges.”²¹ The tariff language
5 restricts CPP events to four-hour durations during the on-peak winter hours only (7:00
6 am to 11:00 am during the morning and 4:00 pm to 8:00 pm in the evening), and to a
7 maximum of 22 events per winter season.²²

8 **Q. What is the rationale for limiting the CPP hours to the on-peak morning and**
9 **evening periods?**

10 A. The Company states that it “is more likely to need the demand/load reductions during the
11 peak times of the critical event days,” and “making the event windows static by limiting
12 them only to peak periods improves the customer experience by simplifying the program
13 design and encourages higher enrollment rates.”²³

14 **Q. What concerns do you have regarding the specification of the CPP event hours?**

15 A. My primary concern with the CPP event hours is that it limits the tools available to the
16 Company during capacity constraints that occur outside of peak hours. Based on an
17 analysis of the Company’s load data,²⁴ a non-trivial percentage of the highest load hours
18 have occurred during the mid-day “off-peak” hours in recent years.

²¹ NS Power Response to NSUARB IR-9.

²² See, for example, Time Varying Rates Application Appendix A Page 2 of 3.

²³ NS Power Response to Synapse IR-34.

²⁴ Appendix J 01b TVP Synapse DR-01 Att 1 CONFIDENTIAL.xlsx

1 **Q. Please describe your analysis and conclusions regarding the occurrence of system**
2 **peak loads.**

3 A. I analyzed when the top 1 percent of load (i.e., the highest 88 hours) occurred on the
4 system for the three most recent years for which data was available.²⁵ Of these top 88
5 hours, on average 19 percent of them occurred during the midday period between 11 am
6 and 4 pm, as shown in the table below.

	2016/17	2017/18	2018/19	Average
Mid-Day Peak	19%	32%	7%	19%
Non-Mid-Day Peak	81%	68%	93%	81%

7

8 Because a relatively large proportion of high load hours occur during the “off-peak”
9 period, limiting the CPP events to only on-peak hours would deprive the Company of an
10 important tool for managing system constraints. The ability to reduce consumption during
11 the hours of 11 am to 4 pm is likely to be even more important if there is a “snap-back”
12 effect from customers on TOU rates. That is, if customers delay their morning usage until
13 the mid-day, it could increase demand on the system during the midday period even more
14 than it would have been. Similarly, if customers pre-heat their homes during the midday
15 period in preparation for reducing load during the evening peak, midday load could
16 increase further. Calling a CPP event during the midday period could help mitigate this
17 possibility.

²⁵ Appendix J 01b TVP Synapse DR-01 Att 1 CONFIDENTIAL.xlsx

1 **Q. What do you recommend regarding the CPP hours?**

2 A. I recommend that the Company modify the tariff to allow CPP events to be called at any
3 time between 7:00 am and 8:00 pm during the winter for a duration of up to 4 hours.

4 However, I understand the Company's concerns regarding customer acceptance of such a
5 long potential CPP period, and thus I recommend that the CPP events be limited to no
6 more than one per day with a maximum duration of 4 hours. In addition, I recommend
7 that the Company conduct market research to determine whether a CPP tariff as
8 originally proposed by the Company would be likely to attract significantly more
9 participants.

10 **VIII. ACCURACY OF TARIFF PRICE SIGNALS**

11 **Q. How did the Company develop the on-peak to off-peak price ratios in its proposed**
12 **tariffs?**

13 A. The on-peak to off-peak price ratios of approximately 2:1 for TOU and 10:1 for CPP
14 were developed by the Company "to provide sufficient incentive to cause participating
15 customers to shift load from peak to off-peak periods."²⁶ While the Company considered
16 resource adequacy needs and trends in recent energy prices, the Company did not
17 explicitly base these prices on long-run marginal energy or capacity costs.

18 **Q. Are these TVP price ratios reasonable?**

19 A. The price ratios proposed by the Company, particularly for the TOU tariffs, fall within
20 the typical range of price ratios observed in other jurisdictions. However, without an

²⁶ NS Power Response to Synapse 1R-6.

1 analysis of the Company's long-run marginal energy or capacity costs, it is unclear
2 whether the price ratios convey efficient price signals to customers.

3 **Q. What do you recommend regarding the TVP prices?**

4 A. I recommend the Board approve the prices proposed by NS Power, but direct the
5 Company to consider the magnitude of long-run marginal costs when updating the tariffs
6 in the future to better align prices with actual long-run marginal energy and capacity
7 costs. The long-run marginal capacity costs should, at a minimum, include marginal
8 generation capacity costs, but ideally should also consider the costs of adding additional
9 distribution and transmission capacity costs.

10 **IX. TESTING A COMBINED TOU+CPP TARIFF**

11 **Q. The Company proposes to implement a CPP option and a TOU option, but not a**
12 **combined TOU+CPP option. Do you have any comments on this proposal?**

13 A. Yes. During the stakeholder sessions in Phase 1, Synapse recommended consideration of
14 a combined TOU+CPP option. This recommendation was based on the premise that a
15 combined tariff can help to accustom customers to basic time-varying pricing concepts
16 and load shifting strategies throughout the year, prior to the onset of any critical peaks.
17 The Company has rejected testing a combined tariff at this time, arguing that "it would be
18 difficult to develop a quantitative-based conclusion that these proposals are better than
19 what the Company has proposed until some experience operating under these new tariff
20 constructs is gained."²⁷ However, the Company has stated that it will examine this
21 recommendation further following the first winter of TVP operation to determine whether

²⁷ Application at 38.

1 the TVP tariffs should be modified (and presumably whether a combined tariff should be
2 offered).²⁸

3 **Q. Does the Company's plan to evaluate the tariffs following the first winter of**
4 **operation alleviate your concern that the combined tariff would not be offered from**
5 **the outset?**

6 A. Not entirely. While it would certainly be possible to examine customer preferences for a
7 combined TOU+CPP tariff or other modifications through the use of statistical
8 techniques such as conjoint analysis, the Company has not yet proposed any specific
9 approaches. As discussed above, without a detailed EM&V plan or objectives, it is
10 unclear how effective the Company's examination of such proposals will be. I therefore
11 reiterate my recommendation for the Company to develop a robust EM&V plan, which
12 should include a discussion of how the Company will evaluate customer preferences for
13 alternative TVP specifications.

14 **Q. Does this conclude your testimony?**

15 A. Yes, it does.

²⁸ *Ibid.*