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Request IR-1:

Based on publicly available sources, at least two (initially and subsequently) awarded Projects dropped out of the Rate Base Procurement. We kindly ask NSP to share the reasons for such a high drop out rate. Please also provide feedback, whether details of the procurement design could and should be changed in order to avoid similar dropouts during the Green Choice procurement.

Response IR-1:

Two of the Rate Base Procurement selected projects (Clydesdale Ridge and Ellershouse 3) withdrew from the process. NS Power is not the procurement administrator or involved in selection or managing of this program and is unaware of the reason these projects dropped out. The program administrator is responsible for the program and in a better position to provide project details, including reasons for dropping out. Likewise, any recommendations to avoid similar issues in other programs are the responsibility of the program administrator. Please also refer to NSUARB IR-9.

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Request IR-2:

Based on publicly available sources, several awarded RBP projects will achieve commercial operation later (2025/2026) than initially planned (2024/2025) due to problems connecting the projects in time to the Nova Scotia Power transmission system. Is there a plan in place to ensure that similar issues will not occur during the ongoing Green Choice procurement and if so, what are the details of such plan?

Response IR-2:

A significant cause of delay in connecting RBP projects to the Nova Scotia Power Transmission system was due to global supply chain issues in procuring required equipment to interconnect RBP projects. This is an ongoing issue.

To help alleviate this issue, the Nova Scotia Power System Operator (NSPSO) is permitted to enter into Engineering and Procurement (E&P) agreements; E&P agreements allow NS Power to order long lead equipment in advance of executing a Standard Generator Interconnection and Operating Agreement (GIA). E&P agreements are available to Interconnection Customers (as permitted in Section 9 of the GIP), including Green Choice procurement proponents, to improve project execution timelines. Section 9 – Engineering & Procurement (E&P) Agreement of the GIP states, in part, the following:

Prior to executing a GIA, an Interconnection Customer may, in order to advance the implementation of its interconnection, request and Transmission Provider shall offer the Interconnection Customer, an E&P Agreement that authorizes the Transmission Provider to begin engineering and procurement of long lead-time items necessary for the establishment of the interconnection.¹

¹ https://www.nspower.ca/docs/default-source/pdf-to-upload/revised-standard-generation-interconnection-procedure-gip-20160dd2f99a2cd644a8be336fb7a36c5860.pdf?sfvrsn=4a29ba3f_0

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1 NS Power also experienced delays in receiving acceptable Electromagnetic Transient (EMT)
2 models from Interconnection Customers to enable study at the SIS stage. In order to improve this
3 process, NS Power has published model quality requirements to its OASIS site and will require
4 completed Model Quality Tests as part of the provision of a detailed stability model for the facility
5 under the GIP. As discussed in M10905, NS Power has also added resources to its Transmission
6 Planning team to accommodate a greater volume of studies. NS Power anticipates that the
7 combination of these changes, and the growing experience of Interconnection Customers and the
8 broader industry with regard to EMT modeling, will result in shorter SIS study timelines relative
9 to the Rate Base Procurement projects.

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Request IR-3:

Based on the publicly available Green Choice RFP documents, the procurement anticipates that the awarded projects will be delivering electricity in 2027 or 2028. The CPI Adjustment Period for these projects ends in December 2027, in order to incentivize projects to deliver electricity as early as possible. Please explain the differences in the planning between the Green Choice procurement and NSP’s assumptions that the Green Choice projects will be in service as of 2028/2029 (figure 6). Further, has the NSPSO shared this information with the Green Choice Program Administrator? Further, considering the delays experienced by NSP for the awarded RBP projects, does NSP believe that the stated in-service dates for the Green Choice Projects of 2028 and 2029 are reasonable? Further, is NSP able to guarantee Green Choice projects to interconnect in 2027 if they wish to do so in accordance with the Green Choice procurement?

Response IR-3:

Regardless of the CPI adjustment period, Green Choice projects are estimated to achieve commercial operation by end of 2028 as per Green Choice procurement RFP timelines (established by the Green Choice procurement administrator)¹ and therefore be available for Winter 2028/2029, demonstrating alignment between the 2024 10-Year System Outlook and the Green Choice RFP. At this point, the Nova Scotia Power System Operator (NSPSO) does not foresee any delay in achieving Commercial Operation Dates (COD) as per the Green Choice procurement RFP. Therefore, no update to the Green Choice administrator is required.

With respect to the timelines for RBP projects, please refer to SWEB IR-2.

Whether a Green Choice project is able to achieve COD by 2027 “if they wish to do so” is contingent on a number of factors, including the particulars of each potential project’s

¹ <https://novascotiagcp.com/proponent-documents>

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1 interconnection design and Network Upgrade requirements. CODs will be in part subject to parties
2 satisfying the requirements established in the NSUARB approved Generator Interconnection
3 Procedures (GIP), which include the completion of various interconnection studies in accordance
4 with the Combined T/D Advanced Stage Interconnection Request Queue. As such NS Power is
5 unable to provide general statements guaranteeing connection timelines but will continue to follow
6 the requirements of the GIP.

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Request IR-4:

What is the impact of new generation for hydrogen production on NSP’s ability to achieve the 2030 clean energy targets? Specifically, how does NSP foresee the potential to provide adequate transmission interconnection service (capacity) to future wind generation projects specifically built to serve the local Nova Scotia load?

There exists a mechanism for generators to essentially lock-up interconnection capacity without ever having to reach their stated/forecasted in-service dates at the time of initial interconnection request submission. This is evidenced by the number of generators in Figure 12 (such as IR516 – IR598) that have initiated their interconnection requests several years ago, with varying interconnection milestones met, but having not achieved Commercial Operation.

Does a mechanism exist within the GIP/GIA to remove these projects from the queue, and/or update their Queue Order priority to be more in line with their current forecasted milestone dates?

The above could reasonably be viewed as “queue squatting” and allows projects with non realistic timelines to lock up interconnection capacity (via achieving system impact studies) for indefinite amounts of time.

Response IR-4:

As referenced in the 10-Year System Outlook report, NS Power is conducting System Impact Studies for the hydrogen projects based on the assumption that the operation of the hydrogen/ammonia plants will be scheduled by the customer based on scheduled generation output of their associated renewable generation resources.¹ The network upgrades required to enable the

¹ M11764, the Report Page 59 of 67, Lines 1-3

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1 capacity needed to support adequate interconnection service will be studied and determined as part
2 of the Generator Interconnection Procedures (GIP).

3
4 Generation resources associated with the hydrogen facilities that connect to the NS Power
5 transmission system are required to follow the NSUARB approved GIP in the same manner as any
6 other Independent Power Producer (IPP) or NS Power project and are assigned an Advanced
7 Queue position in the same manner as other projects. Note that there is no mechanism under the
8 GIP to reserve portions of the NS Power system for future use by resources dedicated to supply
9 NS load. However, NS Power does have a 3,000 MW Network Transmission Service Reservation
10 that enables its own generation, and contracted generation, to supply its network load customers
11 via the existing transmission system.

12
13 The GIP is prescriptive when it comes to Interconnection Request (IR) timelines. Failure of an
14 Interconnection Customer (IC) to meet the timelines or requirements of the GIP will result in the
15 IR being withdrawn per Section 3.6 of the GIP. However, the GIP does permit an in-service date
16 up to 7 years from the date of receipt of an Interconnection Request, which can be further expanded
17 to 10 years or longer if both Parties agree (please refer to GIP Section 3.3.1).

18
19 Once a project has an executed Generator Interconnection and Operating Agreement (GIA), the
20 GIA governs the future of the project. Per GIP Section 11.3, at the same time the GIA is executed,
21 the IC must demonstrate they have ordered major equipment associated with their project, and they
22 must provide a Letter of Credit or deposit sufficient to cover the costs of all required Network
23 Upgrades associated with their project. In this way, any Network Upgrades that may also be needed
24 for lower queued projects can be built regardless of the in-service date for the original generating
25 facility.

26
27 Section 17 of the GIA provides a mechanism to place a non-compliant project into Default.
28 Historically, Default has been used when an IC misses an agreed upon Milestone Date (Appendix
29 B). The Defaulting party then has 30 days to cure, or to begin a cure, the Default. The cure can

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- 1 involve revising the agreed upon Milestone Dates if both Party's agree, or by curing the Default
- 2 within 90 days.

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Request IR-5:

In Section 7.9.1, it is stated that “When the second NS/NB tie is in service, the RoCoF constraint will be removed.”. Does this statement imply that the requirement for IBRs to provide inertia support of 3 MW-s per MVA will be removed with the addition of this second tie line?

Response IR-5:

No.

The “Rate of Change of Frequency (RoCoF) constraint” refers to a NS Power responsibility to manage the RoCoF during a grid event, so that it is not excessively high and causes facilities to trip offline. At this time, NS Power designs to maintain a RoCoF at or below 2.5 Hz/s on a 500ms sample time for the most severe planning contingency. With the Reliability Tie in service, the design constraint no longer exists, as a single contingency would not separate Nova Scotia from the Eastern Interconnection.

The 3 MWs requirement for new projects is required to enable wind generation facilities to stay online during grid disturbances, not to support grid RoCoF. Without Synchronous Inertial Support (or equivalent) at or very near the plant Point of Interconnection (POI), the plant will trip when the Short Circuit Ratio (SCR) falls below the design level for the facility. To significantly increase IBR beyond what is in-service in the province today, inertial-type support at or near the POI of new IBR facilities is required. As the calculation of SCR includes summation of all IBR in close proximity to the proposed project, without additional support, the new wind generating facility will trip for grid events where the SCR at the POI drops below the design value for the facility. Additionally, it could also cause other nearby facilities (existing plants) to trip. Please refer to NSUARB IR-13 for more details.