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April 24, 2026

VIA WEB PORTAL
VIA EMAIL

Crystal Henwood, Clerk of the Board
Nova Scotia Energy Board
1601 Lower Water Street, 3rd Floor
P.O. Box 1692, Unit "M"
Halifax, NS B3J 3S3

Dear Ms. Henwood:

Re: M12550 - To obtain a cost reasonableness review of NS Power - CI C0051815 – $5,959,515 - RTU Replacements Program

Please accept the following submissions on behalf of the Consumer Advocate regarding the above-noted matter.

Background

This proceeding arises from the Nova Scotia Energy Board's decision concerning the 2025 Annual Capital Expenditure (ACE) Plan (M12012), where the Board stated its intention to engage an expert to review the scope of project CI C0051815 (NS Power's Remote Terminal Unit ("RTU") Replacements Program Phase 6) and provide an opinion on the reasonableness of the estimated project costs.

The review was completed by Midgard Consulting Inc. on behalf of Board Counsel, and filed with the Board on February 17, 2026. As noted in the Midgard Report, NS Power is "seeking approval from the NSEB for the capital costs of the Project … identified as approximately $5.96M."[1] This application would cover the replacement of 14 RTUs at various substations and generating stations across Nova Scotia, which have surpassed their manufacturer end-of-service dates by 10 years or more. The project scope includes "the removal of existing units, installation of new RTUS,

[1] N-3, p. 7. This figure was subsequently reduced by $0.90M.

connection of Intelligent Electronic Devices ('IEDS') such as recloser controllers and relays, and the harvesting of removed components to maintain a sustainable spare parts inventory for the remaining fleet."[2] Notably, the project included a four-fold increase in average labour hours compared to the estimated labour hours from Phase 1 of the project.

Midgard considered various aspects of NS Power's application, including the project execution strategy, project controls & governance, and cost reasonableness. Midgard's report was critical of NS Power's application in various respects, including:

1. <u>Installation Prioritization and Sequencing:</u> Midgard states that NS Power's approach fails to sequence sites from low-to-high complexity, and therefore "misses the opportunity to refine standard procedures on simpler units before addressing complex, control-heavy hubs. The absence of Program-level productivity metrics further prevents empirical verification that repetitive tasks are benefiting from compounding learning."[3]

2. <u>Process Standardization and Cost Reduction:</u> Midgard finds that there is the absence of "formal post-project reviews and quantitative productivity metrics limits the ability to validate claimed efficiency gains. Furthermore, the budget reduction applied after two completed sites implies that initial Project cost estimates were high, in spite of available historical data. Using materials cost as the proxy for the complexity of the equipment, Phase 6 materials costs are comparable with those in Phase 5. The material differences in the Phase 6 cost estimates are tied to labour and overtime."[4]

3. <u>Delivery Model Justification:</u> Midgard questions NS Power's use of an internal resource model for core execution without conducting the comparative financial analysis required by the CEJC. Midgard states that while "materials and civil works were competitively procured, the high-value system integration scope was assigned internally based on qualitative assertions of specialized skills rather than demonstrated cost efficiency. The absence of a quantitative make-versus-buy analysis prevents verification that the chosen level of internal labour is the prudent delivery model."[5]

4. <u>Estimate Basis and Risk Quantification:</u> As noted in the Report, the "Phase 6 estimate classification (Class 3) is technically supported by the level of engineering definition but lacks the historical data calibration typically required for such precision. Due to the unavailability of granular data from Phases 1-5, both the base estimate and the 10% contingency allowance rely on judgment rather probabilistic risk modeling or actual realized contingency needs of prior Phases. Consequently, while the estimate

[2] N-3, p. 8
[3] N-3, p. 21
[4] N-3, p. 21
[5] N-3, p. 27

methodology is compliant with classification standards, the resulting contingency amount is not data-driven."[6]

With these considerations in mind, Midgard further concludes the following with respect to the cost reasonableness of the project:

1. Labour Hour Escalation and Scope Justification: The filed labour estimate of 1,939 hours per RTU lacks sufficient evidentiary support. While qualitative drivers (e.g. increased I/O points and IED integration) justify some level of effort increase, the magnitude of the variance relative to industry norms and technical documentation is unsubstantiated. Furthermore, the absence of task-level traceability and historical productivity data prevents verification of efficiency gains expected from standardization. Consequently, Midgard recommends a 30% reduction in labour hours to align the estimate with reasonable productivity levels supported by technical documentation.

2. Material Procurement and Cost Competitiveness: NSPI utilizes appropriate competitive tendering processes for major equipment (RTUs) and leverages established master service agreements for civil works, ensuring pricing reflects current market conditions. The material cost variances relative to early Phases are adequately justified by quantifiable increases in functional requirements and verifiable macroeconomic factors, including inflation and currency devaluation. The material costs presented in the application represent reasonable value for the enhanced functionality delivered.

3. Indirect Cost Allocation and Transparency: Indirect cost components utilize transparent methodologies consistent with NSEB-approved accounting policies. The specific exclusion of 50% of overtime labour from overhead application and the granular separation of travel expenses demonstrate a prudent approach to cost allocation that minimizes undue burden on ratepayers. Accordingly, the indirect cost mechanisms appear reasonable, and scrutiny should remain focused on direct labour management rather than overhead methodologies.[7]

The above findings resulted in the following recommendations:

1. Adjustment to Labour Estimate: Reduce the approved labour hours for the Project by 30% to reflect a technically supportable baseline consistent with RFW documentation.

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[6] N-3, p. 27
[7] N-3, p. 36

2. Enhanced Reporting Requirements: Direct NSPI to (i) reconcile assumed installation durations to site-specific technical documents, (ii) document the attribution methodology for Program-level project management, and (iii) provide a task-level labour basis of estimate that explicitly maps hours to discrete deliverables for future Phases.

NS Power filed its Rebuttal to the Midgard Report on April 10, 2026, in which it disputes Midgard's various findings and recommendations. In this regard, NS Power asserts that:

- NS Power's project execution and prioritization reflect prudent sequencing guided by its asset management framework, and learnings and productivity gains are inherently incorporated into each subsequent phase of work.[8]

- While NS Power cannot provide evidence demonstrating efficiency gains, estimating for these projects has been relatively accurate, resulting the majority of prior projects not requiring usage of contingency, which demonstrates that projects have been executed largely as planned, "clearly demonstrating process maturity and expertise."[9]

- NS Power's use of internal resources for the core technical scope of Phase 6 was reasonable, based on various factors, including the specialized nature of the work, the familiarity of internal resources with NS Power's systems, standards and delivery practices, and the need to coordinate execution across multiple sites and workstreams. Further, NS Power submits that "greater reliance on external field labour would not necessarily have resulted in a full substitution of internal costs, as internal technical presence, coordination and site support may still have been required during installation, commissioning and testing activities at existing operating substations. The evidence also shows that the increase in labour-related costs relative to earlier phases is attributable to broader technical scope, increased complexity and accessibility requirements, and expanded testing and quality practices, rather than to a simple decline in workforce efficiency."[10]

- NS Power's contingency estimate was reasonable, and was based on "the project team's experience on prior RTU replacement projects (incorporating lessons learned), actual estimates received on material pricing, and anticipated cost changes from increase complexity."[11]

[8] N-7, p. 7
[9] N-7, p. 8
[10] N-7, p. 12
[11] N-7, p. 13

More specifically, and with respect to Midgard's recommendations, NS Power disagrees with Midgard's assertion that labour hour estimates are unsubstantiated and rejects the recommendation for a 30% reduction. In this regard, NS Power notes that Midgard's own estimates did not account for certain activities that "drive significant labour hours"[12]. Moreover, NS Power states that Midgard's analysis underestimates installation duration, does not account for site-specific complexity, misallocates travel time, and underestimates engineering and project management requirements; it does not reflect inefficiency or imprudence in NS Power's estimate."[13] NS Power further states that a "reduction as recommended by Midgard is likely to result in an increased risk of equipment failure (as the labour budget may not allow for appropriate execution of all anticipated required tasks, resulting in potential for reduced quality assurance, and compressed commissioning/testing), associated safety implications, and an understated labour budget."[14] NS Power asserts that if Midgard's recommendations were adopted, "this project would ultimately land in an ATO position."[15]

With respect to Midgard's reporting recommendation, NS Power agrees that "clearer documentation of certain estimating assumptions and project execution outcomes can be beneficial in informing future phases of the RTU Replacement Program," but "does not consider Midgard's proposed reporting requirements to be necessary components of the standards capital project documentations submitted for approval."[16]

Submissions

The Consumer Advocate has reviewed the Midgard Report, NS Power's Rebuttal, and all responses to Information Requests filed in this proceeding.

As noted above, the purpose of this proceeding was to review the cost reasonableness of Phase 6 of the RTU Replacements Project, and specifically to allow the Board to better assess why there has been a four-fold increase in average labour hours compared to Phase 1 of the program, and whether such an increase is justified.

Unfortunately, it would appear that Midgard's review was based on limited evidence. In particular, NS Power apparently did not preserve relevant data pertaining to Phase 1, and offered the following explanation:

> Phase 1 IFC drawings/packages, scope documents and detailed estimated costs and tasks breakdowns are not available. The records associated with Phase 1 date back approximately 15 years, and the key personnel involved in earlier phases are no longer

[12] N-7, p. 16
[13] N-7, p. 17
[14] N-7, p. 18
[15] N-7, p. 18
[16] N-7, p. 21

> with the Company … the data required to fully respond to the foregoing question is not expected to be recovered.[17]

Accordingly, Midgard stated that the "technical comparison between Phase 1 and Phase 6 scope, complexity, or execution methods cannot be supported by primary documentation."[18]

In an Information Request filed by the Consumer Advocate, Midgard was asked to explain why it did not attempt to conduct a technical comparison between Phase 6 and any phases other than Phase 1. Midgard advised that the scope of its work was framed around the question of the labour hours escalation between Phase 1 and Phase 6, and further that it did rely upon some publicly available information regarding Phase 5, as well as professional engineering judgment applied to the defined scope of work for Phase 6.[19]

While the Consumer Advocate appreciates that the scope of the Board's review concerned the fourfold increase in labour hours, we would submit that further information concerning the other phases could have been instructive, particularly in the absence of any data concerning Phase 1. Such information could have been provided by NS Power to Midgard to assist in its review. Alternatively, NS Power could have provided the data in support of its own position that the significant increase in labour hours is justified. As noted in Midgard's response to CA IR-3(e), access to historical documentation (including complete technical, labour, and execution data from Phase 1 and other prior phases) "would improve the factual record of the report and enable direct empirical comparison with Phase 1 data." As this information was not provided, there would appear to be somewhat of an evidentiary gap on this point.

In the absence of a technical comparison based on primary documentation, the Consumer Advocate nevertheless agrees with Midgard's alternative methodologies (IFC-based allocation, RFW documentation review, Phase 5 cost normalization).[20] Based on Midgard's review, Midgard found there was a 33% variance between NS Power's filed labour estimate and the allocation derived from Phase 6 technical documentation. This led Midgard to conclude that the filed labour requirements "lack sufficient evidentiary support," and further that a reduction of 30% in labour hours would "align the estimate with a technically supportable baseline that reflects reasonable productivity."[21]

The Consumer Advocate agrees with and supports Midgard's recommendation, but acknowledges NS Power's assertion that Midgard's assessment appears not to have taken into account certain activities which NS Power says "drive significant labour hours," including various SM Electrician and Engineering tasks. NS Power does not, however, quantify this work, and nor does it suggest that this work alone could account for the 33% variance assessed by Midgard. In

[17] N-3, p. 29
[18] N-3, p. 30
[19] N-4, CA IR-3(a)
[20] N-4, CA IR-3(d)
[21] N-3, p. 32

any event, the Consumer Advocate would maintain that some reasonable reduction in the range suggested by Midgard is supportable.

NS Power suggests that such a reduction would apparently have severe negative consequences, including "an increased risk of equipment failure (as the labour budget may not allow for appropriate execution of all anticipated required tasks, resulting in potential for reduced quality assurance, and compressed commissioning/testing), associated safety implications, and an understated labour budget."[22]

NS Power's position in this regard would appear to suggest that if the budget were decreased, NS Power would be forced to complete a substandard job in order to ensure the project remained within budget. Respectfully, such an approach would not comply with good utility practices.

Regardless of the established budget, NS Power would be expected to complete the project in a safe and timely manner. To the extent this resulted in the project being completed under-budget, or without the need to apply a contingency, "only the factual funds expended to place the asset in service are incurred under the project."[23] Further, to the extent this resulted in cost overruns, NS Power would have the ability to file an ATO, a fact which NS Power acknowledges in its Rebuttal.[24]

To the extent that NS Power nevertheless holds the view that any reduction in the budget would permit the company to take unreasonable risks in completing the project, the Consumer Advocate states that the Board may wish to remind NS Power of its obligations.

As noted above, the Midgard Report is also critical of NS Power's project planning, and suggests that NS Power has given little, if any, attention in project planning to cost minimization driven by compounding learning, geographic proximity, and other factors. NS Power's response appears to confirm this to be the case, by noting that capital investment decisions are grounded in the Capital Expenditure Justification Criteria (CEJC), which prioritizes projects based on factors such as asset condition, criticality, and risk mitigation.

While the Consumer Advocate acknowledges the importance of the CEJC, NS Power should consider adopting an approach that balances the need to comply with the CEJC framework with the need to maximize cost minimization. In that regard, the Consumer Advocate suggests that an appropriate balance can be struck by prioritizing projects that score high in the CEJC framework, but otherwise considering the factors suggested by Midgard in its sequencing in the interest of cost minimization.

[22] N-7, p. 18
[23] N-7, p. 14
[24] N-7, p. 18

Finally, the Consumer Advocate takes no position regarding Midgard's recommendation regarding enhanced reporting. The Consumer Advocate agrees with Midgard that the 33% variance "demonstrates that filed labour requirements lack sufficient evidentiary support," and further the "filed estimate lacks the work breakdown structures, task-duration standards, and deliverable mapping necessary to verify that labour hours scale proportionally to these scope drivers."[25] That being said, the Consumer Advocate agrees with NS Power that the recommended level of detail is much higher than the level that has been expected, and otherwise found to be sufficient, to this point.

The Consumer Advocate thanks for the Board for the opportunity to provide these submissions.

Yours truly,

PINK LARKIN

Michael Murphy on behalf of
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[25] N-3, p. 32