

April 14, 2026

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Dear Ms. Myatt:

**M12591 – Nova Scotia Power Inc. – CI C0032664 Energy Control Centre – Optimization
Portfolio Tools \$7,486,068**

The Nova Scotia Energy Board has reviewed an application by Nova Scotia Power Inc. (NS Power) dated December 1, 2025, in which Board approval was requested for the following non-confidential work order:

CI C0032664 Energy Control Centre – Optimization Tools \$7,486,068

Board staff issued Information Requests (IRs) about this matter on January 16, 2026, to which NS Power's responses were received on February 6, 2026.

Although the original filing was non-confidential, NS Power requested that certain portions of its responses to Board staff IRs be treated as confidential. The Board accepts the confidential designations as filed.

This project was originally included in the 2024 Annual Capital Expenditure Plan with a budget of \$4,329,150, which later increased by \$3,156,918 due to the changes of eligibility for Federal funding. However, the Board notes that NS Power was able to redirect all the available funding to three other projects: Wind Integration (CI C0053696), Dynamic Line Ratings (DLR) (CI 47751) and Intelligent Asset project (CI C0080252).

The scope of the proposed capital expenditure application includes three software solutions designed to support automation and stakeholder communications:

- Energy Control Centre Portfolio Optimization tool;
- System Dispatch Dashboard; and
- Outage Request Platform.

NS Power indicated that the Energy Control Centre Portfolio Optimization and Outage Request Platform are established, off-the-shelf, solutions used by other utilities, while the System Dispatch Dashboard (SDD) is an in-house customized solution.

In response to IR-1, NS Power described its current operational processes, which rely primarily on manual communications by system operators. These communications are carried through phone calls, emails, SharePoint form, Open Access Same-time Information System posting, and meetings among multiple internal NS Power departments and external stakeholders, including New Brunswick Power. The proposed technologies would replace these manual updates with automated functions.

NS Power explained the function and requirements of the three software solutions.

The Energy Control Centre Portfolio Optimization tool is used to provide information on “real-time system conditions, generating plant restrictions, transmission limitations, variations in wind, and load from forecasted values, and other variables”. The tool can provide “enhanced economic optimization capabilities for real-time generation dispatch and streamline dispatch processes”, thereby supporting increased renewable energy generation sources. It can assist System Operators in managing dispatch decisions in compliance with reliability and operational constraints.

The SDD is intended to provide real-time grid condition data, including current system load, available generation, transmission constraints, interchange summaries, and reserves. The proposed SDD would automate tasks that are currently performed manually to manage routine and repetitive system status information sharing. Increased penetration of variable-renewable energy is expected to introduce operational challenges, including “higher variability, reduced system inertia, and an increased number of controllable and semi-controllable generating facilities requiring System Operator oversight”. The SDD is intended to improve the efficiency of information sharing between System Operators and Market Participants. The SDD will also enable stakeholders to access real-time information on the Open Access Same-time Information System (OASIS).

The Outage Request Platform is used to manage outages in systems where variable renewable energy resources serve as the primary supply, supported by dispatchable quick-start generation. As the amount of renewable generation continues to grow, the complexity of system outage coordination is expected to increase. NS Power noted that the Outage Request Platform provides the following improvements:

Automation of outage submission, validation, approval sequencing, and scheduling functions ...enable more effective management of a substantially larger and more complex outage portfolio.

[Exhibit N-2, RIR-3, p. 2]

NS Power stated that the new technology solutions will support the Evergreen IRP objectives and NS Power’s 2030 renewable electricity targets. NS Power noted that the electricity system is transitioning from conventional thermal generation to a more dynamic portfolio with a high penetration of variable-renewable energy resources, which will increase the operational complexity of System Operators.

NS Power explained the tasks associated with manual economic dispatch:



- Understand the real-time deviation from the day-ahead or intra-day optimized dispatch plan.
- Translate any deviation into a MW adjustment for a dispatchable unit, identifying the most economic unit to move based on the unit's efficiency curve, fuel cost, and current operating level.
- Account for changes in unit efficiency due to real-time issues resulting in unit deratings.
- Respect environmental limits, transmission system limits, and other system constraints, which may limit the ability to deliver a generator's full capability to the system.
- Prepare and manually communicate re-dispatch instructions.
- Monitor pending inclement weather events and pre-posture dispatch of the generation fleet in anticipation of potential reliability impacts.
- Initiate immediate response to forced generation outages which can result in uneconomic dispatch, followed up by a return to economic dispatch once the reliability issue has been addressed.

[Exhibit N-2, RIR-16, p. 4]

NS Power noted that the company is currently managing three types of renewable resources: wind, hydro, and biomass, and expects to expand its renewable resource portfolio by adding solar generation and battery energy storage systems by 2030. The above economic dispatch tasks are required not only to manage renewable resources, but also to manage non-renewable generation resources. Although the nature of these tasks remains unchanged, the increasing number and diversity of resources will increase dispatch complexity, resulting in increased dispatch deviations and the need for system adjustments.

In response to multiple IRs, including IR-1, IR-4, and IR-5, NS Power explained the alignment between the proposed optimization tools and the action plans arising from the 2018-2019 Fuel Adjustment Mechanism Audit Dispatch Study (M10453). NS Power provided a summary table outlining the study's recommendations and demonstrating how the functions of each proposed automation tool address specific deliverable requirements. Although, in its decision letter for M10453 the Board accepted the proposed recommendations, it also directed NS Power to include quantified benefits when submitting related capital work orders:

The Board also agrees that a quantification of the benefits of the proposed new IT infrastructure is useful information that should be estimated to the best of NS Power's ability. The Board expects this information to be included in the capital work order when submitted to the Board for review.

[M10453, Board Decision Letter, p. 2]

NS Power did not provide a quantification of the benefits for the proposed optimization tools, but it provided the Quantification of Economic Benefits Memorandum prepared by Concentric in RIR-5, Attachment 3. In the memorandum, Concentric stated that the report provides a theoretical estimate of these economic benefits and noted the following:

The theoretical economic benefit in this Memorandum should be interpreted as the likelihood of closing the gap between the current Day Ahead Optimized Plan as currently performed, and the real-time optimization dispatch for the future portfolio.

[Exhibit N-2, RIR-5, Attachment 3, p. 9]

Concentric focuses their estimations on wind resources and noted that NS Power's future generation portfolio is expected to incorporate more than 1,000 MW of wind generation. Concentric explained that wind speed, and therefore wind generation capacity, is inherently variable, creating a risk that real-time wind output may differ significantly from NS



Power's estimated Day Ahead generation plan. To assess the potential cost implications of this variability, Concentric developed a table to explain the annual cost of theoretical suboptimal hourly dispatch, based on scenarios in which wind generation is unavailable and needs to be replaced by the next lowest variable-cost generation resource. As an example from the table, Concentric noted the following:

If the incremental delta of dispatching (or keeping warm) the replacement generation is \$5/MWh, then the annualized cost of suboptimal dispatching will be \$1.3 million.

[Exhibit N-2, RIR-5, Attachment 3, p. 9]

Conclusion

The Board recognizes that Concentric's quantification of the benefits of the new IT infrastructure involved assumptions about real-time wind output and its potential replacement by the next lowest variable-cost generation resource available at the relevant point in time. Due to the complexity it would have raised, it also involved assumptions about optimized economic dispatch of not less than one hour. In the circumstances, the Board accepts this evidence about the potential benefits of the infrastructure and is satisfied that it will provide benefits to ratepayers. The Board notes that the optimization tools were identified in the action plan from the 2018-2019 Fuel Adjustment Mechanism Audit Dispatch Study. The project also supports the Evergreen IRP objectives and the 2030 renewable electricity target.

Based on the information provided, the Board accepts that this project is necessary and finds the associated costs to be justified and reasonable. Accordingly, the Board approves NS Power's request for \$7,486,068, in relation to this work order.

Yours truly,



Roland A. Deveau, K.C.
Vice Chair



Darlene Willcott, LL.B.
Member



NSEB APPROVAL SHEET

Project Title: Energy Control Centre - Optimization Tools

CI Number: C0032664

Date: December 1, 2025

Expenditure Profile			Type of Filing	
Year	Budget Amount	Project Estimate	☒	Capital Project Authorization
			☐	Unforeseen and Unbudgeted (U&U)
			☐	Planned & Advanced (P&A)
			☒	Subsequent Approval Item
			☐	Authorization to Overspend (ATO)
			☐	Scope Change
			☐	Final Cost (FIN)
2021	199,139	199,139		
2022	358,284	358,284		
2023	788,855	913,494		
2024	1,245,073	1,917,622		
2025	1,737,800	3,207,436		
2026		890,093		
Total	\$4,329,150	\$7,486,068		

COMMENTS

Submitted on behalf of NOVA SCOTIA POWER INCORPORATED



Authorized Signatory
Dave Pickles
Chief Operating Officer

DATE

November 27, 2025

Approved on behalf of NOVA SCOTIA ENERGY BOARD



DATE

April 14, 2026