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TO: The Nova Scotia Energy Board (“Board”)
Date: August 19, 2025
RE: **M12247 - NS Power: Evergreen IRP Action Plan and Roadmap Update**

To whom it may concern,

Please consider this letter the formal Intervenor Submission of Natural Forces in the above noted matter.

1. Established in 2001 and head-quartered in Halifax, Natural Forces remains a small company with big values and ambition. Collectively, we have around 300 MW of renewable energy projects currently in operation across Canada, and are actively developing future wind, solar, and hydropower projects across Canada, Ireland, and France.
2. Natural Forces and Atlantic Mining Nova Scotia are working to develop a closed-loop Pumped Storage Hydro (“PSH”) facility sized to be approximately 80 MW / 500 MWh, and co-located renewable generation, at the Touquoy Gold Mine in Moose River (“TPSH”). This exciting first-of-a-kind project for the province would have the ability to balance supply from on-shore and off-shore wind with demand from the Halifax load-centre, and to provide the system strength and stability support of a synchronous generator. The potential integration of renewable generation co-located at the site would further increase its capacity value and cost-effectiveness. These factors – and many more – make it an asset of significant potential strategic importance to the province.
3. Synapse’s “Comments on Nova Scotia Power’s 2025 Integrated Resource Plan Action Plan and Roadmap Update” (August 5, 2025) have recommended that, for reasons including the uncertainty around projected firm capacity resource needs by and beyond 2030, that the Evergreen IRP capacity expansion and dispatch modelling be renewed expeditiously (“Nova Scotia should conduct an updated Evergreen IRP as soon as possible”). Synapse identified driving factors that should be updated in the new Evergreen IRP including the: relative cost of new firm capacity resources; and more battery energy storage (BESS) resources online or planned for 2030.



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- 3.1. As it relates to the relative cost of new firm capacity resources, assumptions that have been used to model Pumped Storage Hydro (PSH) in the current IRP include: capital costs of \$2,286/kW (in 2022 \$CAD); and an operating life of 20 years¹. These capital costs are firmly within the bounds of estimates for TPSH. However, TPSH would have an operating life of more than 40 years. As a result, a model using these assumptions would overstate the levelized cost of firm capacity from TPSH. **Natural Forces asks that the Board broadens Synapse's recommendations on modelling batteries in the next IRP² to include non-BESS storage generally, and TPSH specifically.**
- 3.2. As it relates to more BESS online or planned for 2030, future supply-mix and system-planning should recognize that TPSH has the potential for additional contributions to the province's "*sustainable prosperity*"³ when compared to BESS projects. For example, 62% of the \$354 million in NS Power's BESS Project Capital Cost Approval Application (January 25, 2024) were Material Costs (per Application, M11539, Figure 2 Breakdown of Project Capital Costs, pg. 28 of 44). Much of this sum was paid for the import of equipment manufactured in China. Whereas, Natural Forces estimates that approximately 75% of the capital cost of TPSH would be spent locally. TPSH also utilizes previously disturbed industrial lands, has a net-positive environmental impact as opposed to mine site closure, and could enable the advancement of more future innovative mine reclamation projects in the province. **Natural Forces asks that the Board provide guidance on how a project's contribution to sustainable prosperity can and should be considered in the next IRP, in the event that the project contributes significantly to sustainable prosperity, but is not deemed to be "lowest cost"⁴ by the IRP model.**

¹ Slides 17, 18 and 19 of the "2022 Evergreen IRP Updated Assumptions – January 2023 Update", per NS Power's Response to Natural Forces IR-4, M12247

² For example Synapse recommends that: "...modelers must establish cost and availability timelines for new fossil-fueled generation (CT or reciprocating engines), wind resources, and battery energy storage systems based on the most recently available and accurate information..."; and "...deliberative and stakeholder-informed examination by the IESO for any new fast-acting generation and battery energy storage resources..."

³ Achieving "*sustainable prosperity*" is the long-term objective of the Government of Nova Scotia (i.e., "*prosperity where economic growth, environmental stewardship and social responsibility are integrated and recognized as being interconnected*") per the *Environmental Goals and Climate Change Reduction Act*, s. 5 (1).

⁴ Per NS Power Response to ESC IR-4, M12247



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4. It is an object of the IESO to “*conduct procurements for energy resources, including... ancillary services*” (per *More Access to Energy Act*, s 9 f, where “*ancillary services means services necessary to maintain the reliability of the IESO-controlled grid, including frequency control, voltage control, reactive power and operating reserve services*”). As such, future IRP modelling should provide flexibility for who and how ancillary services could be provided to maximize competition and innovation. The approach to renewable integration in the current IRP model (per NS Power Response to Natural Forces IR-7) predetermines the addition of synchronous condensers to meet synchronous inertia requirements etc. In-so-doing, other resources (such as TPSH) would be precluded from competing to provide these services, thereby restricting their value-stack and weakening their value proposition and cost effectiveness. **Natural Forces asks that it be ensured that the next IRP enables all energy resources to maximize their value-stack generally, and their ability to monetize the ancillary services that they provide specifically.**

Thank you for this opportunity.

Sincerely,

A handwritten signature in blue ink that reads "meg morris".

Meg Morris
Lead Project Manager
Natural Forces