Centre Village Renewables Integration and Grid Security Synchronous Condensing/Generation Facility Project

Comment requesting a comprehensive impact assessment for the project

To the Impact Assessment Agency of Canada:

The Coalition for Responsible Energy Development in New Brunswick (CRED-NB), a grassroots coalition of over 150 businesses, organizations and individuals, accepts the limits of a finite planet by maximizing human and environmental health and minimizing its use of energy, using only renewable sources, supporting the sustainable mining of resources and maximizing the reuse and recycling of resources. For more information about our work, visit https://crednb.ca .

CRED-NB is opposed in principle to any new fossil fuel project. Science unequivocally demonstrates that any new fossil fuel development will worsen the effects of climate change. Even if this overarching truth is not being considered in this commenting process, we urge you to recommend to the Minister of Environment and Climate Change Canada that the Centre Village dual-fuel gas-diesel generator project receive a comprehensive impact assessment.

In its Initial Project Description document (dated July 4) prepared by the project proponent PROENERGY, Chapter 12, Project Alternatives, "identifies potential alternative means of carrying out the Project as well as alternatives to the Project." However the Project Alternatives information conclusions are incorrect. The proponent claims, without evidence, that there are no viable alternatives to the project.

A comprehensive impact assessment would allow viable alternatives such as a battery electric storage system (BESS) to be considered by the Impact Assessment Agency of Canada (IAAC). Such alternatives would be capable of meeting the needs of the New Brunswick grid without producing greenhouse gas emissions.

A viable alternative to the project: Battery Electric Storage Systems (BESS)

In this comment, we will provide evidence that a BESS offers an economically viable alternative to the project. It is available at the scale required, will enable the integration into the grid of variable renewable energy generation sources like solar and wind, and provide the firming services necessary to ensure grid stability and reliability. It will provide these benefits for less money and with lower greenhouse gas emissions than a dual-fuel gas-diesel generator.

An equity-sharing partnership in a BESS could be negotiated with First Nations communities and organizations with the advantages of an ownership stake in a clean emissions-free power technology.

During the Q and A portion of the virtual public information sessions in English on July 21 and 22, NB Power representatives were asked whether battery storage was considered and if so, why it was rejected.

Below are reasons given by a representative from NB Power for why a BESS is not viable for the New Brunswick grid, followed by evidence to the contrary.

NB Power: Using a gas-fired power plant will reduce greenhouse gas emissions.

CRED-NB response: The proposed power plant is expected to produce 100,000 tons of $CO_{2(e)}$ emissions per year and according to the Initial Project Description and Environmental Impact Assessment Registration (IPDEIAR) it could produce up to 910,825 tons of $CO_{2(e)}$ emissions per year. The operation of BESS would produce no greenhouse gas emissions.

The IPDEIAR also indicates that other toxic air contaminants would be emitted through the combustion of gas and diesel. Those include up to 74 tonnes NOx, 54 tonnes CO, 5 tonnes SO_2, 45 tonnes TSP/$PM_{2.5}$ and 60 tonnes NH3 per year. The operation of BESS would produce no toxic emissions.

NB Power: Battery storage at large megawatts like 400 MW is not economically viable.

CRED-NB Response: BESS systems have never been cheaper. They can also be built in phases to defer the capital required until expansion is needed.

The 2023 NB Power Integrated Resource Plan (IRP) shows the levelized cost of energy (LCOE) based on 2022 prices for a dual-fuel combustion turbine, a 4-hour lithium-ion battery storage, etc. The LCOE of the turbine is more than twice that of storage. The LCOE of storage will decrease further as low-cost wind power is added to the system. The IRP also shows the levelized cost of capacity as $9/kW-month for the turbine and $20/kW-month for storage. This difference is negated by the 50%+ price drop in battery storage systems since 2022.

NB Power: We don't have the capacity on the NB grid to charge the batteries.

CRED-NB Response: As New Brunswick adds new wind farms and solar PV arrays to reduce emissions and lower costs they will provide power for charging storage. In the meantime, a BESS will use power from existing wind farms and run-of-the-river hydroelectric dams that NB Power currently must always buy even when the grid does not need it. The intertie with Quebec is another source of charging power since it is often not fully used. Unlike a gas-fired power plant, the cost of using a BESS will drop as more wind farms are deployed due to the lower cost of energy and the ability to use otherwise curtailed wind power.

NB Power: We need a proven technology like this dual-fuel generator for grid reliability and stability. We need voltage load regulation and inertia absorption (frequency regulation) that this generator can provide.

CRED-NB Response: BESS systems have been widely deployed for years. The first 100 MW BESS in the world was installed in Australia in 2017. It immediately proved its ability to provide cost-effective high quality voltage stabilization, frequency regulation and reserve capacity. It continues to prove that today as have the many battery storage systems which have been installed globally since. As of the end of 2024 there were 150,000 MW / 363,000 MWh of installations, 13,000 MW in California alone. BloombergNEF expects another 94,000 MW to be installed in 2025. Implying that battery grid storage is unproven or not capable is simply not true.

A recent study, the April 2024 report by Clean Energy States Alliance, examined how BESS systems would compare to a new gas-fired peaker plant in the state of Maine. That is particularly relevant since Maine shares a border, a climate, and a power reserve-sharing agreement with New Brunswick. According to the study, a 4-hour BESS is a more cost effective option for reserve capacity than building a new gas-fired peaker plant. The report is based on a 2022 cost analysis which includes a federal (US) investment tax credit (ITC) of 30%. Even without the ITC the BESS is still the better choice because of the large (50%+) drop in BESS prices from 2022 to 2025.

Lastly here are four examples of BESS projects hinting at how fully grid scale battery technology storage has been embraced by the power industry.

- The 4-hour 250MW Oneida Energy Storage project in Haldimand County, Ontario started operation earlier this year.
- The 4-hour 411 MW Skyview 2 BESS proposed for the Township of Edwardsburgh Cardinal, Ontario is now undergoing a provincial environmental assessment. This project's power capacity is equivalent to that of the dual-fuel generator proposed for Tantramar.
- The recently approved Darden Clean Energy Project in California will install a 4,600 MW 4-hour BESS. This BESS has 10 times the power of the proposed dual-fuel generator.
- A BESS can also handle cold weather. A 60 MWh BESS was recently installed in Simo, Finland which is within 100km of the Arctic Circle.

Battery technology is ready and able to handle New Brunswick's power reliability needs.

PROENERGY: "Battery storage can only put energy onto the grid for a finite period of time, based on overall storage capability. This limits the ability to backstop wind and provide reliable

peaking capacity during the coldest days of the year." (Initial Project Description Summary, p. 14)

CRED-NB Response: Gas-fired turbines can fail during winter weather conditions such as was experienced in January 2024 in Alberta. The key to reliability is having a diverse portfolio of options to balance supply with demand such as BESS facilities, interties with other jurisdictions, and demand side management. A 4-hour BESS can provide power for many more than 4 hours depending on how much power is being demanded. Interties can be used to draw clean power from other jurisdictions. Automated demand side management service can be installed to quickly reduce grid load with little or no inconvenience to customers. Customers could even be engaged to provide power to the grid via their electric vehicles.

NB Power: The gas generator will enable the integration of more intermittent renewables and will also provide load-following.

CRED-NB Response: As already mentioned, BESS systems provide excellent auxiliary services such as frequency regulation. This is in large part due to their ability to quickly respond to changing load and supply conditions. The ability to adjust to a changing load, or "load-following", is one reason why they have been widely used to integrate variable renewable energy. The success of BESS systems is underscored by the continuing massive growth in BESS installations**.** In contrast, expensive gas-fired power is being pushed aside by BESS systems especially in places, such as Australia, where rapid renewable integration is being pursued.

Conclusion

The evidence above casts doubts on the accuracy of the information PROENERGY presented in its Project Description Document and NB Power relied on to reject a BESS as an alternative to the dual-fuel generator project.

In the document, as well as during the virtual public information sessions, NB Power did not release any numbers to support their reasoning, stating that this is commercially sensitive material; however, the evidence that we have presented shows that a BESS is a more economical and cleaner alternative for ensuring grid stability and reliability.

Because the proponent is not required to evaluate alternatives to the project during this stage of the review, a comprehensive impact assessment offers the only means to bring this information to light so that the merits of NB Power's rejection of a BESS can be assessed.

CRED-NB therefore urges the IAAC to recommend to the Minister of Environment and Climate Change Canada that this project undergo a comprehensive impact assessment.

Respectfully submitted,

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