

RIGS Energy Atlantic Grid Support Facility

The RIGS¹ Energy Atlantic facility is described by NB Power as a grid support facility that will help New Brunswick to meet its “growing energy demand”². The installation is designed to provide up to 500 MW of dispatchable backup power during periods of peak demand for electricity. The plant is situated in Tantramar, New Brunswick—a location which reportedly has been chosen because of its proximity to existing transmission and natural gas infrastructure.³

In February 2026, New Brunswick’s Energy and Utilities Board (EUB) heard expert testimony by a consultant engaged by the Conservation Council of New Brunswick (CCNB) who argued that utility-scale batteries would be a much better option. However, two experts from the Brattle Group, an American consulting firm, asserted that a battery energy storage system would not be as reliable as combustion turbines.

The Brattle consultants stated that they found the gas plant to be a “prudent investment” because of NB Power’s forecast for the need for additional electricity including the “tight supply from neighbours including HydroQuebec”, the likelihood of future data centres, the projected increase in the number of electric vehicles, and population growth in the province.⁴ The term ‘prudent investment’ is important. NB Power has to convince the EUB that the RIGS facility satisfies this criterion, and the EUB in approving the project must also state for the record it has judged the initiative to be a ‘prudent investment’.

Peak Demand

In this review, it is shown that the RIGS Energy Atlantic Support Facility is *not* a prudent investment. Other technology options exist that provide several very significant advantages, including:

- Significantly lower capital costs
- Less costly electricity generation per kilowatthour
- Increased generation of dispatchable electricity
- Zero emissions of greenhouse gases

By definition, a prudent decision would show ‘sound judgement’ and ‘care and thought for the future’. But a decision to proceed with an investment when less expensive

¹ RIGS is short for Renewable Integration and Grid Security

² About the RIGS Energy Atlantic Grid Support Facility. <https://rigsenergyatlantic.ca/about-rigs/>

³ Ibid.

⁴ EUB hears conflicting testimony on proposed gas plant. <https://warktimes.com/2026/02/12/eub-hears-conflicting-testimony-on-proposed-gas-plant>. 12 February 2026.

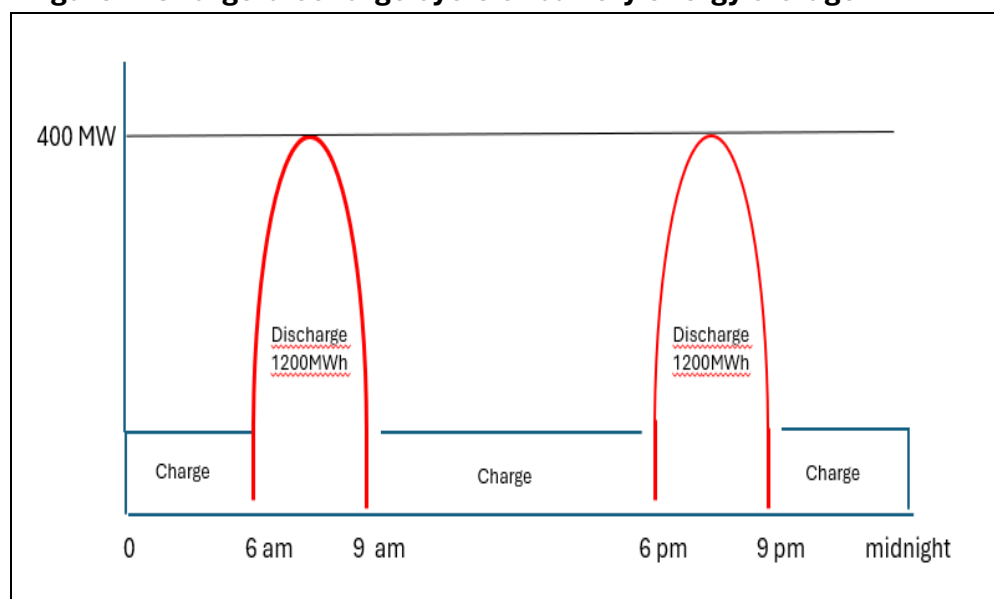
alternatives of superior quality and proven performance readily exist *cannot* be considered prudent.

Why deploy batteries?

Large megawatt-scale batteries are well adapted to managing the peak demand for electricity within a quotidian timeframe. There are generally two demand peaks in the 24-hour cycle: one in the morning between the hours of 6 to 9 am, and another in the early evening between about 6 and 9 pm. In the case of the RIGS example, this interval matches the output characteristics of utility-scale batteries, which are capable of delivering full power for at least 4 hours. NB Power estimates that the additional demand for electricity could reach 400 megawatts (M during these peak periods of the day. This number will be used as the basis for the calculations that follow.

How does a large battery provide electricity during these periods of peak power demand? The operation of a battery for the RIGS facility is shown conceptually in Figure 1.

Figure 1 Charge/discharge cycle of battery energy storage



In this example, there are two periods of peak electricity demand. From 6 am to 9 am the demand for electricity rises by 400 MW over approximately a 3-hour period. A similar peak occurs between 6 and 9 pm. The electrical energy consumed during each peak period is therefore about 1200 megawatt-hours (MWh).

The battery is charged from the grid during the off-peak hours. Between 9 pm and 6 am the next morning, a 9-hour period, the battery is charged so that it can deliver 1200 MWh during the 3-hour morning period of peak demand. Then between 9 am and 6 pm, the battery is charged once again so it can deliver 1200 MWh of electricity during the

evening peak period. This would be considered a routine task for a MW-scale battery system which in this case, given the required capacity, would more likely be composed of two or three battery installations operating in unison.

Utility-Scale Battery Storage Costs

The most important metric is the capital cost of the battery energy storage unit. Costs vary widely in the data reported in the literature. But there is general agreement on a range of values, and these can be compared with the numbers presented by the expert testimony in the NB Power evaluation.

The most comprehensive analysis is in a recent report entitled **BESS Cost in 2026: What Utility-Scale and C&I Battery Storage Really Costs per kWh – From the \$70 Cell to the All-In project Capex**⁵. The example costed is a ‘large utility’ 100 MW/400 MWh (4 hr) unit in the United States (post tariff). The cost is for a turnkey contract that includes engineering, procurement and construction (EPC). The duty-cycle is referenced as ‘arbitrage-heavy’ meaning 550 annual equivalent full cycles—which would approximately correspond to the RIGS requirement.

The turnkey capex (capital cost) for a 100 MW battery is estimated as \$74 to \$11 million which converts to \$104 to \$162 million CAD. For a 300MW installation providing 1200 MWh of electricity over a four-hour period) the cost would be in the range of \$312 to \$486 million CAD. However, this is less than the recently-commissioned cost of a 300MW/1200MWh battery storage installation in Hagersville, Ontario, which came in at \$538 M\$ CAD. In this analysis, the higher cost figure of \$538 million for a 300 MW installation will be used.⁶

Power generation

The installation of a battery storage system at the RIGS location is an effective way of managing the twice daily peak demand for electricity experienced by NB Power. But this installation does not generate any electricity: it stores electricity during off-peak periods and discharges that electricity during the peak periods. The electricity the batteries store during off-peak periods is provided by the grid. The battery system therefore consumes electricity at a rate of around 2.4 GWh a day: a substantial amount of electricity.

The RIGS facility is intended to both manage peak demand *and* to generate the electricity required for this purpose. The proposed battery system fulfils only a part of this

⁵ See the article by Kamil Talar. BESS Cost in 2026: What Utility-Scale and C&I Battery Storage Really Costs Per kWh — From the \$70 Cell to the All-In Project Capex. <https://howtostoreelectricity.com/bess-cost-per-mwh-utility-scale-2026/>

⁶ ESS-news. Developers close \$538 million for 1.2 GWh battery storage facility in Canada. <https://www.ess-news.com/2024/12/18/hagersville-battery-park-energy-storage-canada-financin/>

requirement. The RIGS battery system must therefore be coupled with a renewable energy installation which generates electricity. The most cost-effective option in coastal New Brunswick is wind power.

The required capacity of the proposed wind farm can be calculated from the peak power demand provided by the battery system. The batteries are charged with 2400 MWh of electricity over an 18-hour period during the day--an average power requirement of 133 MW.

The wind power component

An example of the wind power installation required by the RIGS facility is provided by the Salmon River wind park in New Brunswick. This project will involve the construction of a 200 MW wind farm costing an estimated C\$700 million ⁷. A wind farm of this size (assuming a capacity factor of 0.4) will generate $200 \times 0.4 \times 24 = 1920$ MWh/day. This is 20% less than the amount nominally required by the RIGS battery facility, but bear in mind that the battery system is connected to the grid and any shortfall in charging could be made up with off-peak supply from the grid. Or alternatively the wind farm could be enlarged to 240 MW. Given the continuing declining costs of wind turbines (and batteries), constructing and operating a 240 MW wind park would be the best option.

Is the cost of the Salmon River wind farm typical? It works out to a capital cost of C\$3500/kW. Are we underestimating the cost of a wind farm in Atlantic Canada? On the contrary, Canadian wind farms costs are reported to be in the range of 1600 -1800 \$/kW, so if anything, the cost estimates applied here are on the high side.⁸

A concern with all wind energy systems is that there is always the possibility of a windless period when a wind farm may produce almost no power for several days. These are low-probability events but nevertheless are likely to occur at least once a year. This is the reason that the Effective Load Carrying Capacity (ELCC) for wind generation is often considered to be unacceptably low.

However, recent analysis in Manitoba has clearly shown that when wind farms are operating in different locations with batteries in the network, the ELCC approaches the same level as a simple cycle gas turbine.⁹ For example, in the Manitoba analysis, even

⁷ River Valley Sun. Public utility insists it hasn't blown it on wind energy deals.

⁸ Market Snapshot: The cost to install wind and solar power in Canada is projected to significantly fall over the long term. November 2023.. <https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/market-snapshots/2018/market-snapshot-cost-install-wind-solar-power-in-canada-is-projected-significantly-fall-over-long-term.html>

⁹ Climate Action Team Manitoba. New Modelling shows that wind and batteries can meet Manitoba's power needs at lower cost than gas. <https://climateactionmb.ca/wp-content/uploads/2026/08/Full-Analysis-New-Modelling-of-Wind-and-Batteries-in-Manitoba-1.pdf>

two hours of battery storage provides an Effective Load Carrying Capacity of 91 % which, according to Manitoba Hydro, is comparable to the availability of a Simple Cycle Gas Turbine. Four-hour battery storage provides an ELCC of close to 100 percent.¹⁰

The key conclusions of the CAT analysis are that Manitoba Hydro's energy demand growth can be met by modestly increasing the utility's wind targets, and that building out wind generation at diversified sites substantially improves the reliability of wind as a source of power. These are significant findings that the EUB should take into account when re-assessing the economic viability of the RIGS facility in Tantramar.

Air pollution

The RIGS facility consists of several Simple Cycle Gas Turbines (SCGT) operating in unison. The photo below (provided by ProEnergy) shows an arrangement that is likely to be similar to the one to be constructed at Tantramar.



The Tpoaz Generating Station near Houston, Texas, is similar to the facility that ProEnergy is proposing to build near Centre Village in the Tantramar area, according to ProEnergy. Source: ProEnergy.

Several aspects of the design shown in the image are notable. The first is that the exhaust gases from the gas turbines are vented to the atmosphere through a series of chimneys that are quite low. This suggests that the diffusion of the exhaust gases into the atmosphere in the immediate vicinity of the installation is likely to be limited, which raises concerns about the quality of the air close to the facility. The second point worth

¹⁰ Ibid page 7

noting is that there does not appear to be any engineering infrastructure that might indicate some form of carbon capture or pollution abatement.

The US Environmental Protection Agency describes the air pollution from a gas turbine in this way :

The combustion process in the engines and turbines result in a number of air pollutants, including nitrogen oxides (NO_x), sulfur oxides (SO_x), carbon monoxide (CO), volatile organic compounds (VOC), and methane in small proportions. Methane emissions occur as a result of incomplete combustion of the natural gas fuel .. (and) also result from leaks in the fuel gas supply line to the engine or during engine malfunctions.¹¹

Moreover, the emission of particulate matter (the very fine particles of carbon that all fossil fuels combustion emits and which is particularly harmful for human health) is particularly concerning. Scientists measuring the pollution from a gas turbine generator in California in 2016 reported a “strong presence of high concentrations of nanoparticles”, and “two orders of magnitude higher turbine particle emissions than background.”¹²

The least cost option

The cost of the proposed RIGS facility in Tantramar is stated in a report by the province’s Auditor General as being between \$2.850 and \$3.125 billion.¹³ However, this figure is not the capital cost of the installation. It is the cost to NB Power of operating the facility for 25 years.

The alternative facility described in this report consists of a 300 MW/1200 MWh battery system linked to a 200 MW wind farm. The capital costs are based on real installations recently constructed and powered up in Canada.

In Haldimand County, Ontario, Boralex, a renewable energy company based in Quebec, recently sealed a contract to build and operate the Hagersville Park 300 MW/1200 MWh

¹¹ US Environmental Protection Agency. Natural Gas STAR program. Engine exhaust. <https://www.epa.gov/natural-gas-star-program/engine-exhaust>

¹² Brewer E., Li Y. et al. PM_{2.5} and ultrafine particulate matter emissions from natural gas-fired turbine for power generation. Science Direct Atmospheric Environment. April 2016.
<https://www.sciencedirect.com/science/article/abs/pii/S1352231015305550>

¹³ See : Auditor General questions NB Power’s \$3.55 billion gas plant deal. <https://warktimes.com/2026/06/02/auditor-general-questions-nb-powers-3-55-billion-gas-plant-deal/> and also Report of the Auditor General of New Brunswick. AGNB Annual Report Volume I 2026: Performance Audit. https://www.agnb-vgnb.ca/uploads/volume_translations/85/report/agnb-VI-2026-Report-En.pdf. The AG’s report presents a scathing critique of the procurement process followed by NB Power.

battery energy storage facility for \$538 million.¹⁴ The cost of a 200 MW windfarm, based on the Salmon River installation as noted earlier, is estimated to cost about \$700 million.

The operating costs of the installations need to be factored in if the 25-year cost to NB Power of the proposed windpower-battery installation is to be calculated. These costs are shown in Table 1.

Table 1 Cost data for the windpark and battery

	Windpark ¹⁵ 200 MW	Battery ¹⁶ 300MW/1200MWh
Capital costs, M\$	700	538
Operation, high value M\$/yr	3.360	7.50
Operation, low value M\$/yr	3.108	4.50

The methodology followed here is the same as that applied by the Auditor General and reported in Wark Times.¹⁷ The details are laid out in the annex. The results are shown in Table 2.

Table 2 Project costs over 25-year period

	Wind park + battery	
	Low value	High value
Net present value, M\$	\$1,336.2	\$1,378.2
Average annual costs, M\$/yr ¹⁸	\$103.5	\$106.8
Estimated project cost based on annual costs over 25 years, M\$	\$2,588	\$2,670

¹⁴ Developers close \$538 million for 1.2 GWh battery storage facility in Canada. <https://www.ess-news.com/2024/12/18/hagersville-battery-park-energy-storage-canada-financing/>

¹⁵ Windfarm cost breakdown 2026. Latest cost - Real-time price insights. Analyzing the monthly running costs of a windfarm operation. <https://latestcost.com/wind-farm-cost-breakdown/> Operating costs average around \$185,000 to \$200,000 USD per month. These figures convert to between \$3.108 and \$3.360 million CAD per year (at 1.4\$CAD/\$USD)

¹⁶ Grid-scale battery storage cost overview 2026. <https://latestcost.com/grid-scale-battery-storage-cost-overview/>

¹⁷ Auditor General questions NB Power's \$3.55 billion gas plant deal. <https://warktimes.com/2026/06/02/auditor-general-questions-nb-powers-3-55-billion-gas-plant-deal/>

¹⁸ The annual average costs are the annual costs which over a 25-year period discounted at 5.9 percent p.a. sum to the net present value of project costs: capital + operating, over the same period.

The 25-year cost of the windfarm-battery installation is approximately \$370 million less than the cost of the dual-fuel technology proposed by NB Power.¹⁹

In addition to the lower project costs over a 25 year period, the battery-wind farm combined system has several major advantages:

- The windfarm constantly generates electricity if windspeeds are within its design range—which is the majority of the time. This means that the windfarm-battery combination will generate substantially more electricity than the dual-fuel peaker plant—which only operates for a fraction of the time. This will produce greater annual revenue for NB Power.
- The battery system and wind farm can be constructed anywhere in the grid network and in different locations. These locations can be selected so that there is minimal environmental and ecological impact. There is absolutely no reason why either the battery system or the wind farm should be located in Tantramar.
- The wind farm and battery can be constructed in locations where the high-capacity provincial electrical power grid is already in place. The cost of additional transmission can be kept to a minimum. **The wind farm and the battery system do not need to be in the same location.**
- The systems can be constructed on different timelines. The battery system should be constructed first. At the same time, NB Power should be vigorously pursuing demand side management policies including time-of-use pricing and incentives for households switching from resistance heating to heat pumps. Programs that increase the energy efficiency of buildings and residences should also be prioritised. NB Power should also trial residential battery systems and vehicle-to-grid technologies.
- The concept is modular. As peak demand trends become clearer over the next decade, a fourth 100 MW battery unit can be installed and connected in parallel. Similarly for the wind farm: additional turbines can always be installed. And for both batteries and turbines, future models are likely to be less costly.
- The cost of electricity from the wind farm will be significantly less than the cost of electricity from the RIGS gas/diesel facility. The latter only runs for a few hours a day, whereas the wind farm is constantly generating power from a free source of energy.
- Neither the battery system nor the wind farm requires frequent provisions of diesel fuel by heavy trucks along local roads in poor condition. The environmental impacts of providing a RIGS gas/diesel facility with a regular supply of diesel fuel should not be underestimated.

¹⁹ Based on the difference between the mean values for low and high-value scenarios

- Last but certainly not least, **there are no emissions of greenhouse gases from the battery-wind farm combination, and no harmful air pollution resulting from the operation of the gas turbines.**

The EUB should *not* move forward with the RIGS gas/diesel facility until the Board has fully examined the economics of a battery-wind farm combined system. **The RIGS gas/diesel facility proposed by NB Power is NOT a prudent investment. It is expensive, socially unacceptable, economically wasteful, and environmentally harmful.**

Annex

Costing Methodology

1. NB Power has released only a limited amount of financial data about the contract it entered into with ProEnergy for the RIGS facility. However, calculations made by the Auditor General of New Brunswick (AGNB) and reported by Wark Times provide a number of clues. It is first necessary to find the discount rate used by the AGNB in its calculations. The following data have been reported for the scenario where NB Power owns the facility.²⁰

	Low operating cost)	High operating costs
Net present value, M\$	\$1,478	\$1,613
Average annual revenue requirement, M\$/yr	\$114	\$125
Estimated project cost over 25-year period, M\$	\$2,850	\$3,125

Calculating the Net Present Value of the reported annual revenue requirements over a 25-year period should give the NPV figure in the first row. A trial-and-error procedure shows that the AGNB used a discount rate of 5.9 percent per annum.

2. The NPV of the actual costs shown in Table 1 can then be determined by discounting all costs over a 25-year period at 5.9 percent p.a. This produces the NPV figure shown in Table 2.

3. The average annual cost of operating the facility can then be calculated by determining the NPV of a 25-year period of equal annual costs which gives the same NPV for the project. These average annual figures are the ones shown in Table 2: namely \$103.5 and \$106.8 million per year.

4. These figure are then multiplied by 25 to give the total estimated project cost over a 25-year period as shown in Table 2.

²⁰ Wark Times . Auditor General questions NB Power's \$3.55 billion gas plant deal.
<https://warktimes.com/2026/06/02/auditor-general-questions-nb-powers-3-55-billion-gas-plant-deal/>

Annex 2

The need for synchronous condensers

NB Power has argued that the New Brunswick electricity grid needs synchronous condensers to maintain stability when increasing levels of renewable energy technologies, like solar energy and wind power, are added to the grid. A synchronous condenser is essentially a synchronous electric motor which is kept spinning by the grid. Since a large motor has substantial inertia, a synchronous condenser provides four services: inertia, short-circuit strength, reactive power, and voltage control.²¹

In the past, these services were provided automatically by fossil fuel-burning power stations that generate high-pressure steam spinning turbines coupled to heavy electrical generators. A simple- or combined-cycle gas turbine installation provides the same grid-stabilizing function. But as increasing levels of solar energy and wind power are added to the grid, measures must be taken to keep the grid stable. Synchronous condensers perform this job well.

In many countries that have significant levels of renewable power generation—like the UK and Australia, synchronous condensers are an essential part of the electrical power system. In the UK, the Lister Drive Greener Grid Park in Liverpool runs two synchronous condenser systems which have heavy flywheels attached to the rotating shaft of the electric motors—greatly increasing their inertia.²² The Greener Grid Parks installation helps deliver stability to the power network, enabling more renewable energy such as wind and solar generation to be deployed, and helping National Grid ESO, the operator of Great Britain’s electricity network, achieve its aim of phasing out fossil fuels by 2025²³

In South Australia, four large synchronous condensers have been installed at Davenport and Robertstown allowing the state’s existing wind and solar farms to operate at near maximum capacity. Before the ‘syncons’ were operational, South Australia had to keep gas plants up and running in order to provide inertia and fault current, and burning carbon fuels for stability rather than energy. ElectraNet’s Chief Executive said the growth of renewables within the South Australian power network had created a shortfall in system

²¹ Synchronous condensers 2026: The spinning machines holding inverter-dominated grids together.

<https://howtostoreelectricity.com/synchronous-condenser/>

²² National Grid connects trail-blazing new green tech in Liverpool in boost to system stability.

<https://www.nationalgrid.com/electricity-transmission/national-grid-connects-trail-blazing-new-green-tech-liverpool-boost-system-stability>

²³ Statkraft’s new Liverpool scheme helps to deliver a greener and stable electricity grid in Great Britain.

<https://www.statkraft.co.uk/newsroom/2023/lister-drive/>

strength and inertia which needed to be addressed to ensure electricity users continued to receive a secure and reliable power supply.²⁴

But there are now alternative technologies which also perform this function. A grid-forming battery incorporates an inverter that creates the grid's voltage and frequency rather than just following it. A grid-forming battery provides inertia-like fast frequency response, contributes to fault currents, and delivers reactive power, while at the same time earning revenue from arbitrage: the latter a service that a synchronous condenser cannot match.²⁵

Grid-forming batteries are also much less expensive. Data from Australia indicated that grid-forming batteries are just a fraction of the cost of synchronous condensers providing the same service.²⁶

These developments in innovative synchronous condenser infrastructure and grid-forming batteries confirm that a new dual-fuel peaker plant in Tantramar is clearly not the optimal solution. Where a retired thermal unit is in place and the need is for power system stability, retrofitting the asset to function as a synchronous condenser may be the cheapest and quickest option. But for new build and for system strength across a decarbonizing grid, grid-forming batteries provides both stability services and revenue generation.

In short, asserting as NB Power does, that the synchronous condenser service of the RIGS facility is essential for the stability of the provincial power system is nonsense.

²⁴ Energy Magazine. SA synchronous condensers installed. <https://www.energymagazine.com.au/sa-synchronous-condensers-installed/>

²⁵ Synchronous condensers 2026: The spinning machines holding inverter-dominated grids together. <https://howtostoreelectricity.com/synchronous-condenser/>

²⁶ Ibid