

Background

Mactaquac Generating Station Life Achievement Project



Business Case and Technical Considerations

NB Power's recommendation to maintain the Mactaquac Generating Station to its original intended lifespan of approximately 2068 has the lowest overall utility cost and therefore the lowest long-term pressure on customer rates compared to the other options under consideration. This option also ensures NB Power's ability to fulfill its mandate of providing safe, reliable electricity at low and stable rates while safeguarding New Brunswick's long-term renewable energy supply.

Because NB Power is a regulated utility with cost-based rates and an obligation to serve embedded in legislation, the options were ranked based on minimum cost to the utility and customers.

Costing assumptions

The economic analysis calculates total costs for NB Power under each of the various scenarios over a 100+ year timeframe (2030-2130). This includes, for each of the options, capital costs, contingencies, operational costs, decommissioning costs, site costs and replacement operational costs (energy and system requirements).

The costs were determined in 2016-2017 dollars during the 100-year lifespan and calculated using standard accounting principles. NB Power will follow processes for financial approvals to be defined by the Energy and Utilities Board (EUB).

All options assume NB Power continues to meet New Brunswick's Renewable Portfolio Standard in which 40 per cent of in-province load is met by renewables by 2020 (of which Mactaquac provides approximately 12 per cent). In addition, CO₂ emissions are not allowed to escalate beyond 4.0 Mt between 2016-2017 and 2039–2040.

Approvals will be sought for project expenditures for all anticipated capital costs including contingencies, and a management reserve (e.g. 15%) which would be subject to appropriate governance control to allow NB Power to respond to the potential need for scope changes or other extraordinary impacts on costs.



The estimates of total utility costs determined for the options and used in the comparison are as shown in the table below.

\$2016-17 Billions	1 repower	2 no power	3 river restore	4 life achievement
Base Case	\$4.4	\$5.6	\$4.3	\$2.9 - \$3.6

The life achievement recommendation was also considered within the context of New Brunswick's future energy needs and NB Power's mandate to provide safe, reliable energy at low and stable rates.

The table below provides details of those considerations.

UTILITY CONSIDERATIONS FOR LIFE ACHIEVEMENT AT MACTAQUAC		
Energy policy	Financial Considerations	Replacement Services
Allows NB Power to meet obligations under the Electricity Act to provide safe, reliable electricity at low and stable rates.	Lowest-cost solution when compared to others.	Allows for continued generation and defers cost of end-of-life options.
Provides eligible renewable energy under the Renewable Portfolio Standard.	Lower project costs mean less pressure to increase rates and utility debt.	Sovereignty and security of supply values would not be impacted
Maintains reliable operations of the integrated power grid.		Satisfies all technical and renewable energy requirements required by the grid including: • Operating reserves • Regulation and load following • Reactive supply and voltage control • System black start • Frequency response and inertia.

For more backgrounders on other topics of interest and project updates, visit the [project website](#).