Strengthening Alberta's Electricity Transmission Intertie Infrastructure

Issue

Affordable, reliable electricity is critical to the sustainability of the Canadian economy.

Background

Reliable and affordable electricity are essential components of a well-functioning, competitive economy. Provincial interties are a key aspect of Alberta's integrated transmission system, with three operating in Alberta (connecting to B.C., Saskatchewan, and Montana). These interties enable the import and export of electricity from neighbouring jurisdictions to both support Alberta's robust, competitive, energy-only market and provide system reliability, which is of utmost importance to residential, farm, and small business and industrial consumers throughout the province. Alberta is currently the least interconnected province in Canada as a percentage of electrical load.

On January 14 and 15, 2024, Alberta Electric System Operator issued provincewide grid failure warnings due to increased demand caused by extreme cold. These warnings requested that residents and businesses limit their consumption and were not only disruptive, but they were also potentially economically costly due to possible lost productivity because of interruption to business operations.

Record low temperature brought record high demand for electricity. And renewable energy sources could not keep up. There was no wind on the weekend and the sun set before peak demand. To make matters worse, four natural gas-powered plants failed. Prior to the shortages, there was strong wind generation, backed by steady supply from natural gas-powered plants.[1]

In addition, recent years have seen the AESO has imposed a significant reduction in import capacity (curtailment) for the Montana and B.C. interties, which is having a negative effect on transmission system operations and, more importantly, is leading to an estimated $300 to $500 million in additional costs annually for Alberta electricity consumers.[2]

These potentially disastrous situations could be avoided, and costs reduced with increased and more robust transmission intertie infrastructure.

Berkshire Hathaway Energy Canada's Montana-Alberta Transmission Line (MATL) Intertie Enhancement Project

The Montana Alberta Transmission Line (MATL) is a 344-kilometer, 230 kV 300 MW merchant transmission line connecting Great Falls, Montana and Lethbridge, Alberta. Analysis by Berkshire Hathaway Energy Canada shows that having a 450 MW back-to-back DC converter on the MATL intertie would increase transfer capacity for both the B.C. and MATL interties, optimizing the intertie system and improving grid reliability to help avoid future blackouts. With the support of

[1] Alberta's electrical grid is overloaded. Here's what to know. (https://ppforum.ca/policy-speaking/whats-wrong-with-albertas-overloaded-electrical-grid/)

[2] AESO's curtailments of the Montana-Alberta- B.C. interties cost Alberta consumers $70 million in the first 46 days.

the Canada Infrastructure BHE UST is developing a potential project to increase MATL's capacity from 300 MWs to 500 MWs. Upgrades have been discussed for several years, yet no action has been taken.[1]

It is anticipated the additional capacity of the MATL intertie enhancement project would result in AESO easing the current curtailment, in turn leading to significant cost benefits for Alberta electricity consumers. In addition to reducing electricity costs for rate payers, the project would generate an estimated $2.4 to $3.1 million in property taxes in Lethbridge or Warner County, substantial tax revenue for Alberta, and employment opportunities for First Nations. The project would produce more than 200 construction and engineering jobs during build out and result in five full-time operations jobs when complete.

Expanding intertie infrastructure is of strategic interest to Alberta and Canada's economic and climate goals.

Alberta's current intertie infrastructure limits access to hydropower produced in B.C. and Manitoba, as well as access to renewable power produced in southern Alberta and the United States. Interties complement high penetrations of variable renewable electricity by enabling jurisdictions to trade surplus renewable generation with other markets when output is high and to import electricity when output is low.[2] Finding ways to improve the transmission system's reliability, lower electricity costs for consumers, and improve access to renewable energy sources are critical objectives to enable a less carbon-intensive and more sustainable Canadian economy.

The Alberta Chambers of Commerce recommends the Government of Alberta:

1. Support private investment in provincial interties to enable competition in Alberta's energy-only market, lower electricity costs, and improve grid reliability, including BHE Canada's MATL intertie and back-to-back DC converter station project; and
2. Promote development of interjurisdictional interties to improve access to electricity produced by renewable resources and increase opportunities for interprovincial and Canada-U.S. electricity trade.

[1] 2023 Fixed-Income Investor Conference. Berkshire Hathaway Company (https://www.brkenergy.com/content/published/api/v1.1/assets/CONT9F21419F1BA744AEB8F28E5DF45C0A56/native?cb=_cache_41f1&download=true&channelToken=43656b04884643bc9fe334ad550d375f)

[2] Strategic Electricity Interties Report of the Standing Committee on Natural Resources 2017 (https://www.ourcommons.ca/Content/Committee/421/RNNR/Reports/RP9335660/rnnrrp07/rnnrrp07-e.pdf)