

21 March, 2023

ESC AESO LTP Initial Survey Feedback

Submitted electronically at: <https://www.aesoengage.aeso.ca/2024-long-term-transmission-plan>

1. LTP Objectives

The AESO strives to develop and deliver a concise long-term transmission plan of our vision for potential transmission system development needs over the next 20 years to:

- *Optimize the use of the transmission system to meet identified transmission needs while minimizing costs*
- *Identify potential near-term transmission facility needs and provide insight into potential long-term transmission system growth to ensure continued reliability*
- *Present AESO's strategy to manage existing and potential future congestion on the grid*
- *Enable the reliable transition to low and zero-emitting generation technologies*
- *Enable technological advances and efficient energy use, including higher integration of inverter-based resource facilities, electric vehicles, and energy storage facilities[DO2]*
- *Identify how the transmission system may need to evolve in line with a transforming energy industry*
- *Satisfy the AESO's mandate according to the Transmission Regulation and Electric Utilities Act to update the transmission system plan every two years*

*Are there other objectives you would like to be considered for the LTP?**

- Yes
- ~~No~~
- If yes, please elaborate.
 - Utilize energy storage resources as transmission assets to optimize both existing and future transmission. With the passage of Bill 22 last year there will now be a regulatory path for TFOs and DFOs to own energy storage resources.
 - Utilization should initially focus on the use of energy storage resources to manage temporary or near-term congestion while long-term transmission expansion is explored and undertaken
 - Consider how tariff reform allowing economic energy arbitrage from market participant energy storage resources may change line utilization and congestion outside of TFO/DFO owned not market energy storage resources

2. LTP Content and its Value to Stakeholders

The AESO would like to better understand how stakeholders utilize and consume the LTP information and seeks feedback to continue to evolve the LTP to provide the highest value to stakeholders.

*Is the AESO's LTP a valuable document for your organization?**

- Yes
- ~~No~~
- Please specify how the LTP is of value or could provide more value to your organization
 - The LTP provides a detailed view into the current transmission system capabilities and the future constraints that are expected. This provides information to support development and investment commitment for new resources.
 - The LTP also provides common information for both customers and resources to engage with, ensuring that both parties have a knowledgeable understanding of the Alberta transmission system capabilities and constraints
 - The LTP is value as an on-going view into the Alberta transmission system development plan and investment opportunities within the Alberta electricity market

*3. Please provide a list of topics of interest for your organization that fit within the objectives of the LTP you believe should be considered in the upcoming 2024 and future LTPs.**

Energy storage resources are emerging within a suite of non-wires alternatives to supplement the traditional wires-based Alberta Interconnected Electrical System. Especially in areas of acute congestion, the AESO, through the 2024 LTP, should explicitly explore how non-wires alternatives, especially energy storage resources, can be deployed to maximize the value of the wires-based system. Additionally, energy storage resources may be able to be deployed more quickly than transmission upgrades/additions. As the pace of both renewable generation additions and fuel switching of transportation and space heating to electricity grows, system expansion will need to be more nimble than it has been historically. Allowing generation and load investment to continue unencumbered will be critical to Alberta's economic and climate goals. Energy storage resources can play a critical role in minimizing system costs and enabling new investment attached to Alberta's electrical system. Finally, the LTP should consider how energy storage resources enabled to economically participate in energy arbitrage may affect the system needs explored in the LTP.

4. Please describe any change you would like to see in how the LTP documents are presented.*

No comment

5. Near-Term Transmission Plans

Near-term regional transmission plans address regional transmission system needs over the next five years, a time horizon that has reasonable timing certainty in load and generation development trends. The near-term plan includes the following information for each of the potential transmission development: and include:

- *The need driving the potential transmission development*
- *Description of that the potential transmission development to meet the need*
- *High-level cost estimate*
- *Potential timing*

*How does your organization utilize this information?**

Energy Storage Canada and its members utilize the near-term regional transmission plan to understand where transmission investment will be and where opportunities for both unregulated and regulated are in the Albert electricity market and system.

*6. What is the most valuable information in the near-term plan your organization would like to continue to see in the upcoming 2024 and future LTPs?**

The LTP represents a snapshot in the AESO's current plans for system expansion in Alberta. Energy Storage Canada believes that storage is well suited to preempt and supplement transmission development in Alberta. Energy Storage Canada would like to see opportunities for non-wires alternatives, especially energy storage, stated so that these developments may be moved forward, to the benefits of ratepayers and increased generation investment in Alberta.

7. *Is there any information missing in the near-term transmission plans that fits within the objectives of the LTP and provide more value to your organization?**

- Yes
- ~~No~~
- If yes, please elaborate.
 - Exploration of how energy storage resources acting in capacity as non-wires alternatives can replace or supplement existing near-term system developments
 - Consideration of how tariff reform allowing economic energy arbitrage from market participant energy storage resources may change line utilization and congestion outside of TFO/DFO owned not market energy storage resources. Ideally the 2023 LTO can explore this idea to feed into the 2024 LTP

8. Longer-Term Transmission Plans

Longer-term transmission plans provide the direction for which the bulk (240 kV and above) transmission system may develop in the longer term under a range of future scenarios to maintain a reliable system while enabling the transformation of the grid.

*How does your organization utilize this information?**

As a utilization resource, energy storage resources can help bridge the gap between long-term transmission expansion and near-term transmission system constraints. Our members use the information to identify opportunities to support the transmission system while ensuring profitable participation in the AESO electricity market.

9. *Is there any information missing in the long-term transmission plans that fits within the objectives of the LTP and provide more value to your organization?**

- Yes
- ~~No~~
- If yes, please elaborate.
 - Exploration of how energy storage resources acting in capacity as non-wires alternatives can replace or supplement existing near-term system developments
 - Consideration of how tariff reform allowing economic energy arbitrage from market participant energy storage resources may change line utilization and congestion outside of TFO/DFO owned not market energy storage resources. Ideally the 2023 LTO can explore this idea to feed into the 2024 LTP

10. Planning Approach and Process

As the timing, location and size of future generation and industrial load development cannot be determined with certainty, the LTP traditionally has relied on scenarios outlined in the Long-term Outlook, supported by available information from the AESO connection process, to ensure transmission development plans can accommodate a range of potential future conditions.

*Are there additional ways to complement the current approach and better prepare the transmission system for the future?**

- Yes
- ~~No~~
- If yes, please provide details on how the current approach can be complimented.
 - The AESO should seek to complement the results the 2023 LTO with both real world and model data external to the LTO process. While ESC is excited and supportive of the 2023 LTO's inclusion of the Alternative Decarbonization scenario, which aims to investigate a scenario in which renewables and storage are more heavily deployed in Alberta, ESC also note that previous LTOs have significantly underestimated renewable and storage deployment, leading to congestion, curtailment, and dampened investment in the near term. As interest in connecting to AIES expands, it is critical that the AESO's system planning draw from a diverse set of outlook data in so as to best accommodate connection interest, and ultimately development.
 - Energy Storage Canada's whitepaper *Energy Storage: A Key Pathway to Net Zero in Canada* finds between 1,130 – 1,850 MW of short duration energy storage potential in an Albertan net-zero-by-2035 grid

*11. Other: Please provide any additional information that you would like to share, which may contribute to the 2024 LTP development.**

No comment