Feedback Form

2020 Annual Planning Outlook Engagement – January 26, 2021

Feedback Provided by:

Name: Michael Zajmalowski

Title: Director, Market Compliance & Integration

Organization: Northland Power Inc.

Email: [redacted]

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Following the January 26, 2021 engagement webinar on 2020 Annual Planning Outlook (APO), the Independent Electricity System Operator (IESO) is seeking feedback from participants on the APO report, module, methodology and supplemental data. The engagement presentation, the 2020 APO, and additional information on the outlook can be found on the Annual Planning Outlook webpage. The IESO will work to consider feedback and incorporate comments in future outlooks as appropriate.

Please provide feedback by February 17, 2021 to engagement@ieso.ca. Please use subject: *Feedback: 2020 Annual Planning Outlook Engagement*. To promote transparency, this feedback will be posted on the Annual Planning Outlook webpage unless otherwise requested by the sender.

Thank you for your time.

2020 Annual Planning Outlook Report

Topic	Feedback
What chapter/section is most helpful? Choose all that apply: Demand forecast, supply outlook, transmission outlook, capacity adequacy, energy adequacy, surplus baseload generation, transmission security, integrating needs, meeting needs, marginal costs, greenhouse gas emissions, other Tell us more: What did you like about it?	Most chapters of the Annual Planning Outlook are helpful. Understanding the inputs that drive the outputs is critical to then test the assumptions. I think equally important to the actual report are the tables and figures that provide the analytical support for the decisions and strategy that the IESO sets.
What do you want to read more about?	It would be helpful to understand what real options the IESO is considering in addressing the capacity shortfalls in the middle of the decade (2025/2026). For e.g. if the IESO has a plan to ramp up the amount of capacity its going to attempt to procure via the capacity auctions on the interties, it would be helpful to understand what volume it plans on ramping up to. The December 2020 auction procured 80 MW. Does the IESO plan on increasing that number? If so, what are some real targets the IESO is contemplating over the next several years? The IESO recently announced plans to rely on non-firm imports in solving Ontario capacity requirements, similar question to above, what are some real considerations for increasing that number? What role does the IESO expect the ICI to play going forward, and what's the impact on the capacity need? What other solutions is the IESO considering to secure enough capacity for the early years where the IESO is currently indicating a shortfall? For e.g. is the IESO considering any further penetration in DER's to address the total demand for energy?

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	It would be interesting to understand whether any inputs or outputs are impacted by the changes from Market Renewal. For e.g. the implementation of Locational Marginal Pricing.
What key factors, uncertainties, and additional considerations should the IESO include in future outlooks?	The IESO assumes all existing generation continues to operate for the entire planning period. The IESO should engage with off-contract resources or resources that are approaching the end of their contract to test this assumption? How realistic is it that all gas facilities continue to operate until 2040, as well as every other generator in the province? The IESO should perform an appropriate amount of due diligence to have some assurance that these resources in fact can all continue operating to 2040 without jeopardizing reliability. Also, what degradation does the IESO apply to existing assets? Does the IESO assume that a wind generator can provide the same level of capacity in year 1 vs. year 20? What assumptions is the IESO making on repowering wind and solar assets after their end of life? How will the IESO determine whether its more economic to incent new builds that are more efficient than to continue extending existing resources until 2040? What has the IESO done to better understand the costs associated with extending the operating lives of these assets? The IESO should design programs that meet certain thresholds that investors or financiers would be demanding?

2020 Annual Planning Outlook Modules, Methodology, and Supplemental Data

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Are the assumptions, inputs, and methodology reasonable?	Table 2 – Summer and Winter effective capacity. It would be helpful to understand how the IESO defines the period that is being solved for by effective capacity. For e.g. if the summer peak demand occurs anywhere between HE13 to HE18,

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	then does the IESO consider what percentage of resources can provide 6 hours of peak contribution? As we know, Demand Response is assessed on a four-hour commitment, whereas a Natural Gas generator can provide peaking energy indefinitely. What opportunities exist to value the incremental energy that certain resources provide over others? It would be helpful to know what data the IESO relies on from market participants to come up with its effective capacity (e.g. form 1230), or whether this information is obtained independently. Figure 9 and 10 – How often does the IESO refresh the methodology or update values it uses to assess effective capacity? Does the IESO use one single value for effective capacity resources based on fuel, or does it apply different values based on location. For e.g. would wind in Ottawa get the same ELCC as wind in Kenora? Are there any plans to implement capacity contribution factors across the 10 zones? Figure 17 – Reserve Margin – Can the IESO confirm what variables go into defining the reserve margin? Is Load Forecast Uncertainty (LFU) a factor in reserve margin? Figure 20 & 21 – What changes for the HQ Imports to go from 2.2 TWh in 2022 and 2023 to 0 TWh for the remainder of the planning period? Figure 24 & 25 – It appears to show that IESO is forecasting that they will be a net importer (15.6 TWh of imports vs. 12 TWh of exports) as early as 2023 in Scenario 1. Can the IESO please confirm what is driving this assumption? For e.g. does the IESO predict that it's marginal resource's heat rate will be significantly higher than the marginal resource in neighbouring markets where the exports are currently being sold? As for Scenario 2, it appears as though Ontario remains a net exporter for the duration of the planning period. More

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	specifically can the IESO break down the assumptions it is making for the import/export on the Michigan, New York and Quebec interfaces. Given Ontario's Output-Based Pricing System for emissions, do the IESO's assumptions incorporate the marginal emissions rates from external jurisdictions? Figure 33 – If the IESO is forecasting anywhere between 1,204-1,917 MW short of capacity in 2025 (provided existing off-contract resources can be retained), can the IESO indicate what other options it is considering to ensure that it can satisfy this requirement. Considering the Resource Adequacy procurement solutions will not be designed to procure for new installations, what options are available to the IESO to procure for this capacity? Specifically, can the IESO identify what fuel/resource types (wind, solar, demand response, imports, storage, etc.) it is banking on to be available to meet this need?
What information do you want to see more of?	Solutions the IESO is considering in meeting its supply gap, even if low probability. At this point we are trying to get clarity on what real options the IESO is relying on for new capacity to be available, and when.

General Comments/Feedback

The IESO's Annual Planning Outlook serves as the backbone to the future of resource procurement in Ontario. Northland Power greatly appreciates the opportunity to provide comments on the Annual Planning Outlook report and process to complete the annual report.

Northland Power appreciate the challenges the IESO faces to predict future demand growth, contributions from existing and new resources, taking into account the various procurement strategies available to the IESO to come up with values that represents clear signals to market pariticpants to take timely action to ensure the reliability in Ontario. While the Annual Planning Outlook provides relevant updates across a number of fronts including Transmission and Resource Planning, there are still areas that are unclear to Northland Power how the IESO will ensure existing options will close the capacity gap in 2026. Northland Power would appreciate any additional information the IESO can share, even if only on a probabalistic level of options that are being explored to close the gap. As an example, the IESO is forecasting the net trade on the interties to

materially shift over the next several years. Any additional analysis that the IESO can provide that articulates what assumpitons/modeling was completed to come to the conclusions is helpful.