IESO Reliability Standards Review webinar
Feedback Form
August 26, 2020

Date Submitted:	**Feedback Provided By:**	
2020/09/16	Company Name:	APPrO
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Following the August 26, 2020 webinar on the planning assumptions related to resource adequacy, the IESO is seeking feedback from participants on the areas to prioritize the methodology and assumptions, as well as the potential impacts of the proposed changes on participant's businesses (outage planning, investment decisions, etc.).

The IESO will work to consider feedback and incorporate comments as appropriate and post responses on the engagement webpage. The referenced presentation can be found under the August 26, 2020 entry on the Reliability Standards Review webpage.

Please provide feedback by September 16, 2020 to engagement@ieso.ca. Please use subject: *Feedback: Reliability Standards Review. To* promote transparency, feedback submitted will be posted on the Reliability Standards Review webpage unless otherwise requested by the sender.

Topic	Feedback
Areas to prioritize	We support the IESO's priorities of reviewing the forced outage and non-firm import modeling assumptions. We recommend that the IESO also prioritize reviewing the demand and transmission capability assumptions in the resource adequacy modeling. We also request that the IESO improve the transparency of the resource adequacy modeling in support of the resource adequacy engagement that is starting later this month. We appreciate the additional information the IESO provided in the 2019 APO but there currently is not enough information for market participants to carry out their own resource adequacy modeling or to validate the IESO's resource adequacy modeling. It is important that market participants can reproduce the IESO's results and run their own analyses to support their investment decisions.
Methodology and assumptions	Our comments on methodology and assumptions are based on the IESO's presentation on August 26, 2020, as well as the APO Resource Adequacy and Energy Assessments Methodology document and APO Demand Forecast Methodology released in January 2020. <u>Demand</u> First, we recommend that the IESO's future resource adequacy modeling include a sensitivity that removes the ICI program. There is uncertainty about the future of this program, and it would be helpful for all participants to understand the impact of different scenarios related to ICI on resource adequacy.

Topic	Feedback
	Second, the IESO should review its weather correction methodology to assess whether normal and extreme weather variability has changed over time. Other jurisdictions have found that there is higher weather variability in more recent years and have increased their load forecast uncertainty assumptions with respect to high temperatures. <u>Forced Outages</u> The IESO's forced outage rate assumptions are based on historical performance. This is a reasonable assumption for assets less than 20 years old but may not be appropriate as Ontario's generation fleet ages and starts to have higher outage rates. Similarly, forced outage rates may increase in the future as generators defer needed investments into their facilities until a sufficient resource adequacy model is developed that pays for those costs. In addition, planned outages may be cancelled and deferred by the IESO due to tight supply concerns, which are expected to become more frequent. We recommend that the IESO develop a methodology to forecast forced outage rates because the existing methodology may become less accurate. <u>Non-Firm Imports</u> The IESO has identified many of the factors that need to be considered for modeling non-firm imports. Below, we provide some suggestions for these factors as well as additional factors the IESO should consider. • Capacity available in neighbouring jurisdictions – it would be helpful for the IESO to describe what information would be relied on in this analysis. For

Topic	Feedback
	example, MISO's most recent Planning Resource Auction for the Michigan zone cleared insufficient resources to meet the forecast need. Given this result, how much capacity would be viewed as available from MISO over the Michigan ties? • Supply availability in real-time– it is important to capture the correlation between extreme weather demand and supply availability in neighbouring jurisdictions. Early reports indicate that California made optimistic assumptions about supply availability in neighbouring jurisdictions and did not fully account for the correlation in extreme peak demand across the southwest U.S. It will be important to develop this assumption in tandem with a review of the demand forecast weather variability assumptions. • Sufficient intertie capability – there are frequently major transmission outages during peak demand periods. For example, there was an outage reducing the Michigan intertie import capability by about 650 MW from July 28 to September 11 this year. Planned and forced transmission outages affecting the interties should be modeled if non-firm imports will be relied upon. We have provided suggestions on transmission modeling in the section that follows. • Imports likely to flow under tight supply conditions/prices – it is difficult or impossible to assess the likelihood of imports to flow during scarcity events. The IESO has policies that encourage imports to flow such as the Import Offer Guarantee but also policies that undermine the incentive to import such as prohibiting activated DR resources from setting price during an energy emergency alert. Further, the renewed market will be heavily mitigated and may not attract significant import interest relative to less restrictive neighbouring markets. More discussion is needed about how the IESO would assess the likelihood to flow.

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	• Deliverability within Ontario – adding significant import capacity from Michigan or NY-Niagara will exacerbate the forecast bottled capacity issues on the FETT interface. This is another reason to include planned and forced transmission outages in the resource adequacy modeling. • Ability to manage non-discretionary outages – it is already difficult to schedule planned generator outages during June to September because extreme weather forecasts are used in the IESO's operations planning assessments. Relying on additional non-firm imports in resource adequacy assessments will make it more difficult to take planned generator outages because scarcity events will become more severe and more frequent. The IESO should review its outage assessment methodology. Additional factors: • Non-firm imports assumptions should account for committed firm imports – import capacity that clears the Capacity Auction will compete with non-firm imports for resources in neighbouring jurisdictions and capacity on the interties. • Non-market neighbours are more complex to assess – neighbouring jurisdictions without markets are less transparent and it is more difficult to rely on historical data to determine non-firm import assumptions. <u>Transmission Outages</u> The IESO currently assumes that all transmission facilities are in-service in its resource adequacy modeling. This is an optimistic assumption given that transmission facilities are frequently out of service during high demand periods.

Topic	Feedback
	This is more likely to become an issue as existing supply retires and there are insufficient resources in the East zone. The IESO is forecasting that the FETT interface will become binding more frequently and will bottle capacity in southwestern Ontario. We recommend that the IESO review its transmission limit assumptions and methodology. At a minimum, it would be prudent to model known planned transmission outages that reduce interface limits. We also recommend that the IESO and industry start discussions about modeling forced outages on transmission facilities to understand the potential impact on adequacy.
Potential impacts of the proposed changes on participant's businesses (outage planning, investment decisions, etc.).	Transparency and reproducibility of the resource adequacy methodology will support investment in existing and prospective resources. It will avoid surprising participants with sudden changes to capacity needs and allow participants to plan investment and retirements in a more rigorous way. The proposed changes have the potential to make it more difficult to schedule planned generation outages. For example, relying on non-firm imports in the planning timeframe will reduce the amount of resources available in the operational timeframe when assessing planned outages. This could require reviewing the assumptions used in assessing planned outages in the operational timeframe.

General Comments/Feedback:

We support the IESO's efforts to make its resource adequacy methodology more transparent and allow market participants to reproduce those results. We make the following recommendations to improve transparency:

- Provide all input data including all hourly load forecasts broken down by zone, assumptions for embedded generation and ICI, hourly generation profiles, planned outage assumptions by unit/plant, forced outage assumptions unit/plant. For greater clarity, the IESO should provide all system data, assumptions, methodologies and models as may be required such that interested stakeholders could replicate the loss-of-load probability and expectation (LOLP/LOLE) result using multi-area reliability simulation software (whether with GE MARS or other software package). This will allow participants to reproduce the IESO's results and would assist both in validating the reasonableness of the assumptions and in providing confidence in the result. It would also allow them to make their own reliability assessments.
- Provide all output data from the model runs including all LOLP/LOLE results and any sensitivity analyses (e.g., for ICI).