Feedback Form

Resource Adequacy – July 22, 2021

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To promote transparency, feedback submitted will be posted on the Resource Adequacy Engagement webpage unless otherwise requested by the sender.

Following the July 22, 2021 Resource Adequacy webinar, the Independent Electricity System Operator (IESO) is seeking feedback from stakeholders on the following discussed items. Background information related to these feedback requests can be found in the presentation, which can be accessed from the engagement web page.

Please submit feedback to engagement@ieso.ca **by August 13, 2021**. If you wish to provide confidential feedback, please mark the document "Confidential". Otherwise, to promote transparency, feedback that is not marked "Confidential" will be posted on the engagement webpage.

Qualified Capacity Proposals

Topic	Feedback
What questions or feedback do you have on the updated Qualified Capacity (QC) proposals?	### Dispatchable Hydroelectric The IESO's proposed formulation of UCAP for Hydroelectric resources is based on average production data for the resource during a "peak demand window" (specifically, the top 200 hours of Ontario Demand per season): $UCAP$ $= ICAP$ $\times\ Prod.Data\ in\ Top\ 200\ hours\ of\ Ont.Demand\ per\ season\ (avg.of\ 5\ years\ historical\ data)$ • This approach reduces the overall capability of OPG's dispatchable hydroelectric units by about 1000 MWs. Previously, OPG had worked with the IESO's Planning group to include Scheduled Energy (historical generation or dispatch) plus OR offers in the dispatchable hydroelectric calculation for capacity. The current proposal for UCAP calculation reduces the capability of these units below the proposal discussed and the accepted direction going forward. • The proposed approach decreases the capacity available to the system and increases costs for the ratepayer as the IESO would need to procure additional capacity to reach their resource adequacy requirements to maintain a reliable system. • An alternative approach would be to use offers or to use scheduled energy plus scheduled OR. This would be the optimal scenario for the ratepayer. This method was discussed with the IESO in the past and was accepted as a reasonable reflection of the capacity available. • Looking at the top 200 hours does not guarantee that the peak occurs within those top 200 hours. It is possible that a station may have generated its water 2 hours before the peak, and would not be available when the peak occurs. If the prediction of when the unit should be available at peak is not correct then the UCAP calculation for that station would be arbitrarily lower than it should be. This applies to many different technologies not only dispatchable hydro. • With the Industrial Conservation Incentive (ICI), industries will make use of the program by not running at peak. It is not known when a large load will decide not to run on a particular day. Once this occurs and the large load is not running at peak, this will shift the peak hour to a different hour than was previously anticipated, thus rendering some of the 200 peak hours incorrect. If the peak was anticipated to be at hour 17, but now due to ICI, the most expensive hour becomes hour 21, the UCAP calculation would be artificially lower. This will unnecessarily decrease the value of hydroelectric resources.

Topic	Feedback
	• For the 18-month Reliability Outlook, the proposed changes have the potential to make it more difficult to schedule planned generation outages when there is less capacity available as a result of the UCAP calculation. Given forecasted challenges in coming years, we are cautious about exacerbating this. • In the future, the Market Renewal design will optimize assets across multiple intervals. In a given day, the highest priced hour might be hour 22, but if the IESO deems that a station is required to run in an earlier hour to reduce system costs, then the window for that station to run at peak is gone. Further, the hydroelectric parameters proposed by the Market Renewal Program may also affect the contribution over the peak hour. Again, the UCAP method will unnecessarily decrease the value of hydroelectric units and would not be an accurate reflection of their true capability. • What is the IESO's proposal for establishing a UCAP value for new facilities? A new facility will not have the required amount of historical data to calculate the UCAP. Will UCAP numbers be submitted by the new facility and then tested by the IESO over the next couple of years? • In the recent past, the IESO has stated that aligning resource adequacy methodologies between the planning and operational planning timeframes remains a priority. The treatment of dispatchable hydro units should be consistent in all planning document timeframes. **Dispatchable Storage** • OPG would like to have additional information on how the 4-hour delivery requirement was determined. The IESO has stated that the 4 hours is a good balance between stakeholder and system needs however, the analysis behind this decision has not been shared. This requirements should be flexible to change in the future as the system evolves. • A 5% EFORd is a reasonable metric since this value can be changed as more historical data becomes available. **Dispatchable Load** • OPG would like an example calculation to better illustrate this proposed methodology. • In order to measure availability, the UCAP equation takes bid data from the top 200 hours of Ontario demand per season. Dispatchable loads often plan to take outages during peak demand hours. Will the IESO account for planned/forced outages in the UCAP calculation?

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	## Dispatchable Thermal Slide 21 of IESO's Resource Adequacy Engagement Presentation from July 22, 2021, identifies that the EFORd parameter calculation will generally align with the planning resources adequacy assessment. Will EFORd therefore be calculated according to IEEE Std 762-2006? Regarding "demand", IEEE Std. 762-2006 states: *"Demand can be defined as the traditional demand for the generating unit for economic or reliable operation of the system, or it can be any other user-defined condition, such as specific weather condition, load level, or energy price."* Which method does the IESO use for calculating demand periods, including generating units with low capacity factors? Can the IESO share an example of a resource's EFORd calculation, including calculation of the demand factor? At the June 25th stakeholder session, the IESO confirmed that the EFORd calculation would be based on an unweighted, five-year rolling average. An unweighted average may not reflect the true unforced capacity of peaking facilities with low capacity factors. The EFORd calculation should be structured to reflect the availability of facilities during periods of high demand, rather than the average availability over a historical period."
What questions or feedback do you have on the proposed QC methodology for hourly demand response resources?	## Hourly Demand Response • In the IESO's slide deck of the July 22nd webinar, the IESO displays that the PAF (performance adjustment factor) will be adjusted based on capacity test check results. However, on slide 36 of the July 22nd webinar, the IESO states that PAF can also be determined based on the resource's "activations from the previous obligation periods". Please provide an illustrative scenario of how a PAF would be adjusted based on resource activation. Is the PAF eligible to be adjusted after every activation? • If a PAF is adjusted from a capacity test check, does that change a resource's availability payments during the current obligation period?

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	• Will participants be able to improve their PAF? The PAF reduces the UCAP available and is determined by testing and past performances. A higher PAF will result in lower UCAP. If a market participant has registered new loads or has made facility modifications, could that reset or improve the PAF/UCAP? Can participants request for a redo of the capacity test check? • More clarification is required on what level of PAF will be assigned. For example, will a PAF be assigned for each market participant or each virtual/physical resource?

Resource-Backed Imports

Topic	Feedback
What questions or feedback do you have on the proposed resource-backed import framework?	Click or tap here to enter text.

General Comments/Feedback

Comments for the IESO related to the Annual Acquisition Report:

- There is a concern that the IESO is not buying sufficient capacity to address the capacity shortfall in 2026 with Pickering closure under Scenario 1 where there seems to be a considerable shortfall of 1500MW. See Figure 15 (Summary of Planned Actions to Address Resource Adequacy needs) found in IESO's Annual Acquisition Report released on July 19, 2021.
- There is a discrepancy in 2026 where the IESO mentions in Figure 13 (Scenario 1 Acquisition Strategy: Summer Delivery Between 2026-2029) of the AAR, that approximately 800MW is not addressed, however, this amount becomes approximately 1500MW in Figure 15 (Summary of Planned Actions to Address Resource Adequacy needs). This is a result of the extra 1000MW missing from the Long Term RFP in 2026. It would be useful to know what the IESO is contemplating for this extra 1000MW's and how it relates to Pickering and Darlington retirement dates and refurb schedules, respectively.
- In the long-term commitment procurement mechanism, 7-10 years is insufficient to recover the capital costs of a hydroelectric facility. Further, the lead time for certain technologies for long term procurements is insufficient. The long-term RFP is slated to start in 2026 / 2027 which is approximately 4-5 years away. Certain projects may need at least 4 years to seek approvals, conduct design, develop, secure financing and construct. Specifically a hydro project will require environmental approvals and may not have enough lead time for in-service in 2027.