



CanREA Feedback on UCAP for Energy Storage Resources

July 9, 2021

Introduction

The IESO hosted a session to present a proposed methodology for energy storage participation in the capacity market. The concept for all capacity supply resources is based on an Unforced Capacity (UCAP) methodology. The idea is that the Installed Capacity of a resource is reduced by the rate of forced (unplanned) outages. This methodology is used in other capacity markets, most notably PJM.

For energy storage the IESO proposes that the resource capacity level (before including the unplanned outage rate) depend on the volume of energy that can be supplied for a four-hour period. Effectively, a one-hour storage resource would only be eligible to offer 25% of the installed capacity into the capacity market. The IESO justified the requirement by stating that peak conditions tend to last for about four hours. No data or analysis was presented.

CanREA objects to the 4-hour requirement for two reasons:

- 1) The “four-hour peak duration” assertion is not supported by the data.
- 2) Performance should be at the risk of the market participant, not dictated by the IESO.

Peak Demand periods do not last for four hours.

CanREA collected Ontario load data for 2019 from the IESO zonal load report. 2019 was used because it is the most recent full calendar year that was not affected by the COVID-19 pandemic. The annual peak demand of 21,791 MW occurred on July 29. We collected all days that had a peak demand within 500 MW of the annual peak, which resulted in a sample of eight days. Figure 1 illustrates Ontario demand on each of the eight high-demand days for a period of +/- 3 hours around the daily peak.

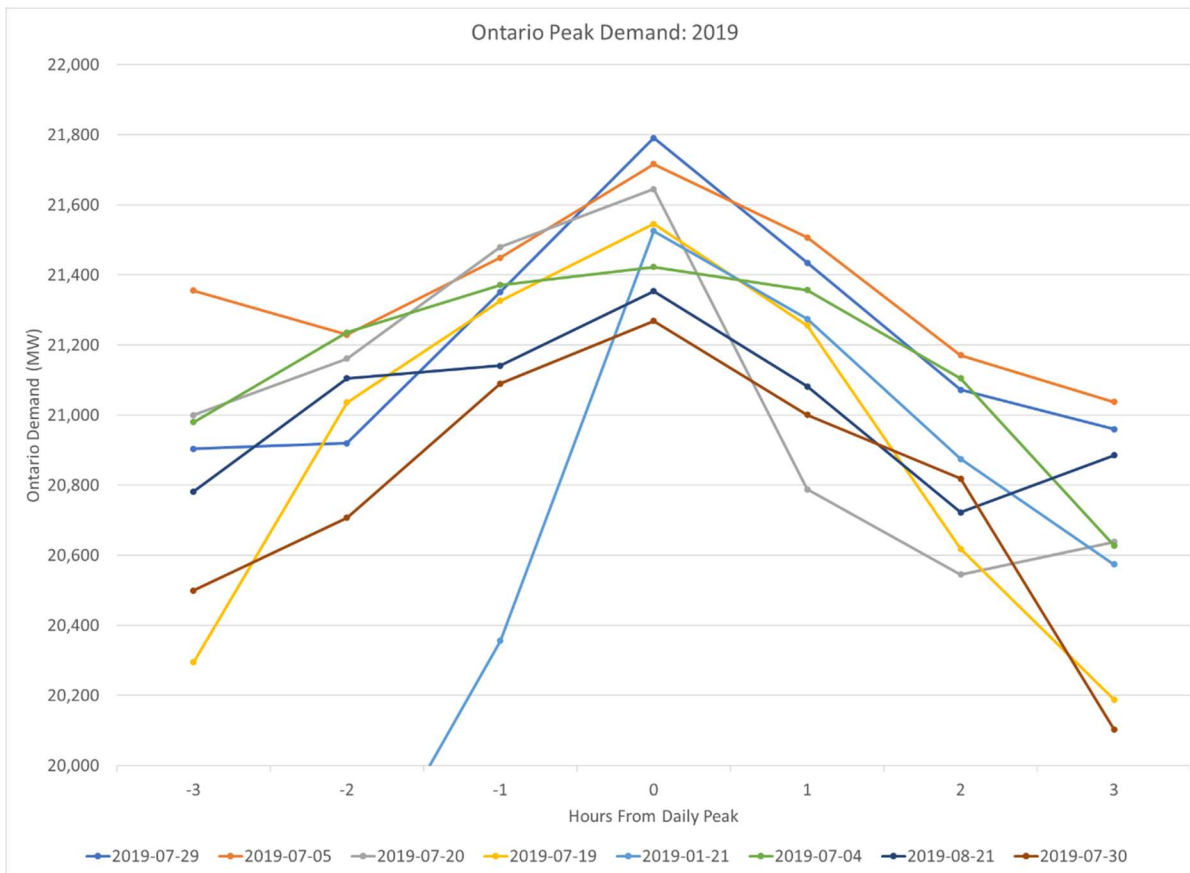


Figure 1: Demand near daily peak

The data show that demand tends to fall off quickly away from the peak hour. No non-peak hour had a demand within 200 MW of the annual peak. The only day with a flat profile in the hours before and after the daily peak was July 4 (green line), but the peak demand on July 4 was almost 400 MW below the annual peak.

Figure 2 illustrates the drop off in demand for 2,3 and 4-hour windows around the daily peak on each of the eight high demand days. The data show that the demand decrease in any observed four hour window exceeds 500 MW.

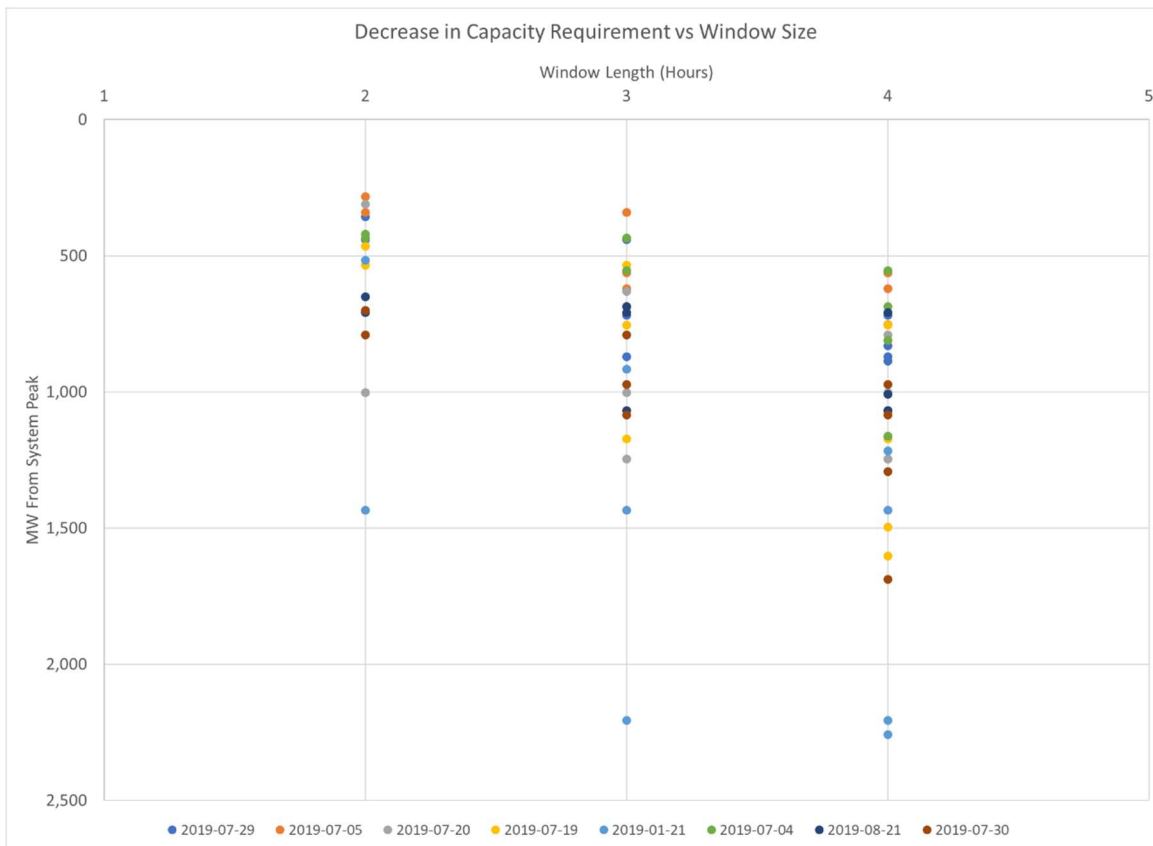


Figure 2: Demand decrease in windows around daily peak

The data do not support the IESO assertion that four hours of capacity capability is required. CanREA requests that the IESO identify a shorter requirement for the energy storage UCAP and provide analysis to justify the selected value.

Capacity Market Performance is at the risk of the Market Participant.

The capacity market places an obligation on successful participants to submit energy market offers during specific hours, with penalties for non-performance. The performance requirement and penalty mechanism incentivize two behaviours from market participants:

- 1) Maintain and operate the capacity resource so that the resource is capable of meeting the contracted capacity obligation, and,
- 2) Submit offer volumes and prices into the capacity market auction that can be confidently met by the capacity resource.

Through their operating and offer behaviour, market participants are able to manage the risk associated with their capacity market obligations. Economic theory states that the most efficient outcome is to assign risk to the party best able to manage it, which in this case is the market participant, not the IESO. The IESO has presented a UCAP mechanism for supply resources based on installed capacity and forced outage rate. The IESO should apply the same methodology to energy storage resources and allow market participants to manage the risks.

CanREA is available to discuss potential analysis to identify a more appropriate methodology for the calculation of an energy storage UCAP and looks forward to continued discussion with the IESO on this important issue.

Thank you again for the opportunity to provide comments,

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