Feedback Form

Ramp Rates for Battery Energy Storage System Facilities – July 22nd, 2026

Feedback Provided by:

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Date: July 27, 2026

To promote transparency, feedback submitted will be posted on the Ramp Rates for Battery Energy Storage System Facilities page unless otherwise requested by the sender. If you wish to provide confidential feedback, please mark "Yes" below:

- ☐ **Yes – there is confidential information, do not post**
- x **No – comfortable to publish to the IESO web page**

Following the posting of Ramp Rates for Battery Energy Storage System Facilities, the Independent Electricity System Operator (IESO) is seeking feedback from stakeholders on the proposed changes.

Please submit feedback to engagement@ieso.ca **by July 31st, 2026.** Please use subject: *Feedback: Ramp Rates for Battery Energy Storage System.*

General Comments/Feedback

Workbench Energy provides this feedback as a service provider to IESO market participant facilities for which this proposed market rule change applies. Our work includes energy management and technical operations services to dispatchable BESS, both transmission- and distribution-connected, participating in IESO's energy, OR and ancillary service markets.

Workbench appreciates the IESO's detailed explanation of the interconnection with neighbouring BAs and ACE regulation in the session held on July 22, 2026. The problem is well understood, and stakeholders understand and agree that the reliable operation of our resilient grid is a top priority for IESO.

The flexibility and capability of BESS facilities provide significant opportunities for the IESO grid to manage reliability, though not without some growing pains. As outlined in the IESO's presentation, the IESO's renewed market design and its supporting dispatch tools do not reflect the immediate nature of BESS dispatch response. As the penetration of BESS grows across the grid, managing the disparity between the 5-minute dispatch and the quick response of this technology becomes more critical to address.

The IESO has presented an approach to the resolution of this disparity that requires no market, system or tool evolution at IESO. Instead, the proposed solution imposes a market rule change that artificially restricts the technical response time of BESS facilities by introducing a facility-level ramp rate limitation of 100 MW/minute. This solution is easy to implement at the IESO side, but introduces some complexity to market participants, both technically and financially.

Approach to Problem Solving

IESO is in parallel to this process, redesigning a participation model for electricity storage. A new participation model design is an appropriate opportunity to enable the flexibility of resource capability rather than to carry forward less efficient constraints.

It would be helpful for IESO to consider in its ERP SRSM engagement, alternative approaches that enable the DSO to expect and solve for true ramp capability, whether through more frequent dispatch or ancillary products, unlocking flexibility to the benefit of ratepayers, participants, and IESO's grid operations.

Technical Complexity on BESS Design

Technically, the imposition of a facility-level ramp limitation ***only for energy dispatch*** requires changes in the controller logic. Many large facilities are designed and constructed with multiple connection points to the grid, each with a distinct resource (set). These sub-facilities are dispatched independently of one another, and will each have independent controllers. Each sub-facility will have its own dispatch data, including daily and hourly ramp rates. IESO dispatch will consider this dispatch data in dispatch instructions. However, in responding to IESO dispatch,

a facility-level ramp limitation will require a higher-level site controller to align response across resources and across dispatch instructions to soften the response to facility level, only for ENG dispatches.

Financial Impact on BESS Facilities

Financially, the imposition of a facility-level ramp limitation limits the revenue earned on real-time dispatch intervals where market conditions have led to strong LMPs. IESO has acknowledged the lost cost opportunity imposed by this framework but has assessed the impact is not financially material. IESO's initial analysis suggested 6% of intervals required movement, of which 97% of instructions were under 100 MW, therefore, only 0.24% of BESS compensation was affected. This analysis and its conclusion is not representative of the impact of this proposal on BESS facilities.

The financial impact of this ramp constraint will apply to all E-LT1, LT1 and LT2-contracted BESS facilities, though the dataset studied included three months, August through October 2025. In this period, according to the IESO's Active Contracted Generation List, there were 6 BESS facilities totaling 420 MW of contract capacity operating of which only two exceed 100 MW of capacity. This represents less than 15% of the BESS capacity under contract by 2030.

To illustrate the financial constraint applied by this ramp rate, we have provided a hypothetical facility example in Appendix A of this submission. In our example, we use a 400 MW resource operating across 10 minutes, with RTM LMP of $250/MWh[1] in a ramp up interval and $75/MWh in a ramp down interval. The example illustrates that the ramp constraint does limit energy revenue for resources responding to dispatch, and while the same application on a ramp down interval does mitigate that loss to some extent, there remains exposure to financial loss in every ramp-up interval where the resource's response time is constrained.

It is important to understand the frequency of intervals where a facility can expect to see this impact. The ramp constraint applies in any start-up interval, but the scale of financial impact is directly dependent on the exposure to and level of RTM LMP on discharge, and the cost of charge. Exposure to RTM LMP exists whether there is a DAM schedule for the hour that the ramp constraint keeps a resource from meeting in that first interval, or whether the resource is responding to real-time market conditions.

Acknowledging there is an impact is helpful, but the financial materiality to participants requires further assessment. It is unclear why IESO has not proposed a make-whole payment construct to hold BESS facilities whole to their capability where this capability is constrained due to IESO's imposition of ramp limitations.

[1] A review of the RTM LMPs at the Oneida node from May 1/25 through June 30/26, there were >4,600 intervals on 247 unique calendar days where LMP exceeded $250/MWh.