

Declan Doyle/Jessica Tang  
Independent Electricity System Operator (IESO)  
120 Adelaide St W #1600  
Toronto, ON M5H 1T1

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**Re: Market Renewal Program (MRP) Implementation – Integration of Storage Design**

During the December 15, 2021, webinar IESO presented three design changes to the Interim Design to accommodate the post-MRP period:

1. Self-Scheduling Storage Model (i.e., <10 MW): Generator-side will register as self-scheduling generator and load-side will register as price responsive load (PRL);
2. Storage Prudential Support Obligation (PSO): Resource based PSO may place obligation on storage (e.g., net withdrawal); and
3. Feasible DAM Schedules: Dispatchable energy storage is encouraged to utilize a maximum Daily Energy Limit (DEL) to restrict their schedule injections in day-ahead market (DAM)

Changes to the Interim Storage Design were anticipated within the IESO’s Long-Term Storage Design Vision given the implementation of the MRP is expected prior to the implementation of the long-term storage design. Therefore, we understand that the post MRP period will be considered the “2<sup>nd</sup> Interim Storage Design.” As such, we offer the following comments on this 2<sup>nd</sup> Interim Storage design.

With respect to design consideration #1, ESC acknowledges that this is a departure from the interim storage design, however, we accept the IESO’s rationale for the change. IESO should clarify within the design documents that PRLs are not only subject to locational marginal prices (LMPs) but are also subject to the two-settlement process (e.g., DAM pricing plus real-time pricing as balancing). That said, it is uncertain how many storage facilities will register as self-scheduling, or if some will remain non-Market Participants (e.g., embedded generators/loads/storage subject to OEB’s Distribution System Code and Retail Settlement Code, etc.).

With respect to design consideration #2, we accept the IESO’s rationale for the change, being the need to calculate PSO based on a single resource given the introduction of LMPs. However, we request that the IESO provide specific calculation and examples for energy storage PSOs.

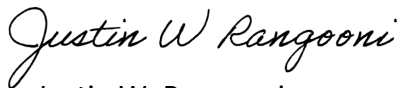
With respect to design consideration #2, the IESO should clarify what “encouraged” means. Per the Interim Storage Design, submitting a Max DEL is voluntary; however, there is concern that submitting a Max DEL could unduly limit the amount of energy scheduled for injection. During the webinar, the IESO explained that an energy storage facility could update its Max DEL to account for charging of energy

storage. It would be useful for IESO to provide a worked example of this process to ensure mechanisms are sufficient.

Overall, IESO's Interim Storage Design and "2nd Interim Storage Design" are temporary solutions ('band-aids') since real integration of energy storage requires updates to the IESO's DSO tool as outlined by IESO's Long-Term Design Vision. While it is not ideal for energy storage participation, IESO has prioritized MRP implementation before other major reforms to the wholesale market (e.g., per Enabling Resources stakeholder engagement). In the meantime, both Interim Storage Design and the "2nd Interim Storage Design" have real challenges for energy storage participation due to IESO's two-resource approach which does not factor in state-of-charge.

We thank you for your consideration of our suggestions and requests and look forward to next steps.

Sincerely,

A handwritten signature in black ink that reads "Justin W Rangooni". The signature is written in a cursive, flowing style.

Justin W. Rangooni  
Executive Director  
Energy Storage Canada