

Energy Storage Design Project – Feedback Form

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Feedback Provided By:

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Following the May 20, 2020 Energy Storage Advisory Group (ESAG) meeting to discuss the Energy Storage Design Project, the IESO is seeking feedback from participants on whether the design proposals captured within the presentation offer pragmatic solutions for the participation of energy storage in the IESO Administered Markets in the long-term. The IESO will work to consider feedback and incorporate comments as appropriate and post responses on the engagement webpage.

The referenced presentation and design document can be found under the May 20, 2020 entry on the [ESAG webpage](#).

Please provide feedback by June 10, 2020 to engagement@ieso.ca. Please use subject: *Feedback: Energy Storage Design Project*. To promote transparency, this feedback will be posted on the [ESAG webpage](#) unless otherwise requested by the sender.

Thank you for your time.

Topic	Feedback
<p>State-of-Charge (SOC) Management: The IESO has proposed an SoC Management Lite approach that will provide the the same market access as a generator and account for the practical operating realities of a storage facility</p>	<p>The SoC Management Lite approach provides energy storage resources the ability to bid/offer in a manner that would achieve either control of the resources operation by limiting offered capacity through price or quantity or ceding scheduling control to the algorithm based on the IESO forecasts and current bids/offers. Energy Storage Canada is supportive of this approach.</p> <p>While SoC-Lite provides the bid/offer construct, energy storage facilities’ flexibility will still be subjected to SoC constraints within the Dispatch Scheduling and Optimization (DSO) engine that may restrict the resource’s flexibility in day-ahead, pre-dispatch and real-time. The constraints placed on the resources ability to receive energy and operating reserve schedules could unduly restrict the resources market participation.</p>
<p>Market and Facility Registration: Storage facilities may either register as a dispatchable facility or, if less than 10 MW, a self-scheduling facility Storage facilities will be modelled as a single resource with the capability to inject, store and withdraw energy</p>	<p>The modelling of a storage facility as a single resource will provide the resource to bid/offer with greater flexibility and increase the efficiency of the wholesale market.</p> <p>These resources are inherently different from ‘generators’ and ‘loads’, and this new resource model will allow them to be accurately reflected in the market.</p> <p>Additional efficiency would be gained by permitting storage facilities to modify their bids/offers within the mandatory window. Storage resources due to their flexibility will be responding to conditions not anticipated in the forecasted dispatch. As a result, their forecasted SoC will be impacted by real-time dispatches that may not resemble predispatch schedules. Market efficiency would be gained by giving storage resources the ability to accurately reflect their capabilities in response to real-time events specifically when the market participant utilizes SoC Lite in the Self-Managed mode.</p>

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	<p>Issues with integrating these new resource models after the first iteration of Market Renewal is that the DSO would need to recognise that resources cannot receive a conflicting DAM/RT financially binding schedule for both generators and loads in the same hour. Therefore, these Storage Design Project (SDP) design features should be incorporated concurrently with upcoming planned DSO design upgrades to avoid running the risk of potentially facing barriers and additional costs in the future.</p>
<p>Offer Curve: Energy storage offer curves will be continuous over the charging and discharging range</p>	<p>This enhancement will increase market efficiency by permitting the entire resources capabilities to be dispatched every 5-minutes.</p> <p>However, the interim solution proposed would benefit greatly if the continuous offer curve were included. Energy Storage Canada would like IESO to investigate the potential for how continuous offer curves can be implemented effectively in the interim design period as well.</p>
<p>Price Setting: Dispatchable electricity storage resources should be able to set the market clearing prices for energy and operating reserve</p>	<p>Dispatchable energy storage resources should be able to set the market clearing prices for energy and operating reserve. As energy storage resources will have the option of offering energy, operating reserve, and other ancillary services, they should therefore be able to set prices.</p>
<p>Regulation Service: Similar to generators, storage resources will be enabled to provide multiple services including regulation, energy, and operating reserve</p>	<p>The ability to seamlessly provide energy, operating reserve, and regulation a major advancement from the current restrictions.</p> <p>ESC believes further benefits would be gained through tri-optimization of energy, operating reserve, and regulation services within all market timeframes.</p>

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	<p>ESC is looking forward to the proposed SCADA EMS Upgrade and the enhancements it will provide to the regulation services dispatch. But these enhancements should be synchronized with MRP to ensure proper integration to both the DSO and AGC tool. Without the integration, the DSO will model energy storage as two physical resources while the AGC tool will properly model energy storage as a single resource, which will ultimately lead to inefficiencies, and the inability to take full advantage of the AGC tool enhancements.</p>

General Comments/Feedback:

Energy Storage Canada appreciates the opportunity to participate and provide feedback on this important initiative. The Storage Design Project is a positive move for the IESO wholesale market.

That being said, with the decision being made to not integrate the Long-term SDP within the first iteration of market renewal, Energy Storage Canada strongly believes that it will undoubtedly lead to barriers when making the necessary changes to ensure appropriate design criteria for ESRs in the future.

Although supportive of the Long-Term SDP, the lack of integration between certain IESO initiatives (SDP, EPOR-E, EMS SCADA Upgrade etc.) and MRP causes significant concerns around the effectiveness and the ability to make these changes to enhance ESRs ability to participate fairly, on a level playing field, in the IAM.

We look forward to engaging with the IESO on an alternate path that will fully unlock the potential of energy storage in Ontario.

