

Feedback Form

White Paper Part II: Exploring Expanded DER Participation in the IESO-Administered Markets – November 19, 2020

Feedback Provided by:

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Following the November 19, 2020 webinar to discuss Part II of the Exploring Expanded DER Participation in the IESO-Administered Markets white paper, the IESO is seeking feedback from participants on the draft paper, including on the participation options, which will inform planning for future work to enable DERs. The IESO will work to consider feedback and incorporate comments as appropriate and post responses on the engagement webpage.

The referenced presentation can be found under the November 19, 2020 entry on the [Innovation and Sector Evolution White Paper Series webpage](#).

Please provide feedback by December 10, 2020 to engagement@ieso.ca. Please use subject: *Feedback: DER White Paper*. To promote transparency, this feedback will be posted on the [Innovation and Sector Evolution White Paper Series webpage](#) unless otherwise requested by the sender.

Thank you for your time.

DER Participation in IAMs

Topic	Feedback
Which of the options would be most effective to encourage DER participation in the IAMs? Why?	<p>Tesla believes that clarifying aggregation rules & processes is key in encouraging DER participation. As DER technologies continue to evolve, it is important for the IESO to continuously evaluate the rules and regulations to ensure they remain current and relevant. Setting expectations and regulations for DERs specifically will help ensure that the technology has a fair opportunity to participate in the market and to provide beneficial grid services.</p> <p>Next, permitting alternative telemetry sources and allowing device level data could be vitally important to the growth of DERs in Ontario. Typically, metering and telemetry requirements are written for central-station generation, but aren't appropriate for distributed facilities. While metering infrastructure may present a trivial cost -- for facilities as small as 20MW -- that same solution for a 5kW distributed resource can quickly become prohibitively expensive. Many new DER technologies come with their own robust metering and telemetry solutions built-in. Requirements for DER to participate should be flexible enough to benefit from these built-in telemetry sources where they exist.</p> <p>Another method to increase DER participation is to provide an opportunity for a range of diverse business models to participate in the market. Reducing the minimum size threshold required for DER participation can help accomplish this. In many jurisdictions, the threshold has been lowered to 100KW. Tesla has seen first-hand how small DERs can provide many benefits to the grid when aggregated together in a Virtual Power Plant (VPP) model. Tesla views VPPs as critical in transitioning the world to sustainable energy. Behind the meter (BTM) storage has unique characteristics because it can both directly support consumer energy needs, while also being used in controlled market participation. Orchestration is critical to achieving this goal, as is proper market integration and the continued development of new and improved customer offerings. The data available from VPP assets can also help networks operate more safely and reliably. Power networks have low visibility on voltage issues and power imports and exports from residential properties. VPP assets can provide this valuable data to enable the identification of faults early and remedy network issues before a problem arises. An exemplary model of a virtual power plant can be found in South Australia. Phase 1 included 100 Powerwalls (1.35 MWh), phase 2 had 1,000 Powerwalls, and Tesla is now working towards 50,000 customers, totalling 660MWh. If the IESO is interested in learning more about this project, and others, contact [REDACTED] or [REDACTED]</p>

Topic	Feedback
	<p>In order to maximize the potential of VPP systems, however, the IESO should also modify aggregation boundaries to support multi-nodal aggregations. Allowing aggregations with contributors connecting to more than one point on the grid will provide the opportunity for a greater number of people to part-take in available programs.</p>

Potential Impacts to Stakeholders

Topic	Feedback
<p>Are there additional potential impacts to stakeholders that have not been explored in the white paper?</p>	<p>Tesla does not have any additional comments about this topic at this time.</p>

Implementation Considerations

Topic	Feedback
<p>Are there additional implementation considerations that have not been explored in the white paper?</p>	<p>See responses above to "Effective DER." Tesla does not have any additional comments about this topic at this time.</p>

Looking Ahead to Implementation

Topic	Feedback
<p>Which wholesale products/services would DER owners/aggregators seek to provide in the IAMs if these options were implemented in the future? Using what technologies? Are there specific options that would allow these products/services to be offered?</p>	<p>Tesla's energy storage products, Powerwall, Powerpack, and Megapack, provide a variety of services to fulfil diverse market needs, such as:</p> <ul style="list-style-type: none"> • Reserve energy capacity • Frequency regulation • Energy arbitrage • Transmission and distribution deferral <p>Tesla uses its optimization software, Autobidder, for products participating in wholesale markets. Autobidder is a human-assisted autonomous trading platform that optimally bids energy storage and executes ISO market transactions and dispatch in day-ahead and real-time operations.</p>