Feedback Form

Hybrid Integration Project – June 23, 2021

Feedback Provided by:

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Following the June 23, 2021 webinar on the Hybrid Integration Project, the IESO is seeking feedback from participants on the types of Hybrid pairings most likely to be developed in Ontario, as well as on the appropriateness of the proposed Vision questions. 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 June 23, 2021 entry on the Hybrid Integration Project webpage.

Please provide feedback by July 14, 2021 to engagement@ieso.ca. Please use subject: *Feedback: Hybrid Integration Project.* To promote transparency, this feedback, if provided in an AODA-compliant format (e.g. using this form) will be posted on the Hybrid Integration Project webpage unless otherwise requested by the sender.

Thank you for your time.

Hybrid Pairings

Topic	Feedback
What types of Hybrid pairings (technology and storage-to-generation ratios) are most likely to be developed in Ontario? Why?	ESC anticipates that the following types of pairs are most likely based on project economics, existing connection capacity, desire to see reduced emissions: • Existing distributed-connected solar or wind projects with storage, pre-contract expiry depending on contract/commercial terms with IESO • Existing transmission-connected solar or wind projects with storage, pre-contract expiry depending on contract/commercial terms with IESO • Existing gas-fired generation, pre contract expiry depending on contract/commercial terms with IESO (See for example, ENMAX's Crossfield project in Alberta) • New renewable + storage projects, both transmission and distribution connected, pending procurement mechanisms enabling new development • Hydrogen solutions – for example, pairing electrolyzers with baseload generation (e.g., nuclear) to offset surplus energy; or pairing variable renewable generation with CHP using hydrogen fuel

Draft questions for Hybrid Vision Phase

Topic	Feedback
Are the Vision questions appropriate given IESO's intent to pursue a foundational participation model?	ESC suggests that the IESO's Vision questions can help justify and communicate to stakeholders the rationale for enabling hybrid participation. That said, ultimately, the IESO should be asking "are the IESO's market rules just and reasonable, in light of

Topic	Feedback
	barriers that prevent hybrid resource participation and reduce market competition?"

General Comments/Feedback

Energy Storage Canada continues to be very supportive of this initiative and we look forward to next steps of the consultation. At this time, ESC wishes to make the following comments:

- Based on experience our members have operating in other North American jurisdictions, we recommend removing the subcategories of "hybrid" vs "co-located". While these subcategories are used in other ISOs (e.g., CAISO and NYISO) it quickly becomes challenging when the overall topic ("hybrid") has the same name as one of the subcategories. The latest FERC whitepaper keeps "hybrid" as the overall topic and then differentiates the subcategories into "co-located" or "integrated".
- IESO should plan early on to distinguish between AC-coupled and DC-coupled hybrids in the rules. Therefore, hybrids have four main sub-categories: AC-co-located; DC-co-located; AC-integrated; DC-integrated. We suggest, however, that market participation rules should be consistent across all configurations (e.g., participation model reflecting energy delivered/consumed at the POI, and potential variations on how the resources are modelled from forecasting/resource perspective).
- ESC acknowledges that IESO will consider DER aggregation as part of the DER Roadmap. For example, this would include the coordination of multiple, separately-connected DERs located on a single feeder. That said, IESO should acknowledge that DER aggregation is effectively a "hybrid solution" that may consist of a multiple supply, storage, and load-control resources. As IESO moves forward with HIP & DER Roadmap, it would be appropriate for IESO to acknowledge these linkages to ensure equitable treatment of DER Aggregations and Hybrid Resources.