Feedback Form

Enabling Resources Program (ERP) - Storage and Co-located Hybrid Integration Project

Meeting Date: February 5, 2026

Feedback Provided by:

Name: Travis Lusney

Title: Director, Power Systems

Organization: Power Advisory on behalf of the ESR Consortium

Email: [redacted]

Date: February 19, 2026

Following the **February 5, 2026**, webinar, the Independent Electricity System Operator (IESO) is seeking feedback on the items discussed during the webinar. The presentation and recording can be accessed from the engagement web page.

Please submit feedback to engagement@ieso.ca by **February 19, 2026**. If you wish to provide confidential feedback, please submit it as a separate document, marked "**Confidential**." Otherwise, to promote transparency, feedback that is not marked "Confidential" will be posted on the engagement webpage.

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February 19, 2026

Maral Kassabian
Senior Manager, Enabling Resources Program Implementation
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ATTN: Enabling Resource Program Engagement Team

Dear Maral,

This submission responds to the Independent Electricity System Operator's (IESO's) invitation for feedback in relation to the February 5, 2026, webinar (the "webinar") on the Enabling Resource Program (ERP) and the associated Phase 1 Batch 2 Design Memos.[1] In total, the IESO published four design memos as well as a presentation summarizing the proposed changes and rationale.

Power Advisory has coordinated this submission on behalf of a consortium of energy storage providers under contract with the IESO through multiple procurement initiatives (the "Consortium"[2]).

We would like to thank the IESO for its continued outreach to stakeholders during the ERP engagement process. The Consortium generally supports the direction and objectives of the ERP for storage resources participation in the IESO-Administered Market (IAM). Establishing a single resource model for energy storage will enhance the capabilities of energy storage resources in the Ontario electricity market.

The Consortium continues to request that the IESO establish a voluntary opt-out mechanism for the energy storage resource participation in the IAM including specifically the State-Of-Charge (SoC) management. Unforeseen challenges or outcomes may require storage resources to manage their own SoC to maintain warranty and facility economics.

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[1] See https://www.ieso.ca/-/media/Files/IESO/Document-Library/engage/erp/erp-schip-20260205-connection-registration-design-memo.pdf

https://www.ieso.ca/-/media/Files/IESO/Document-Library/engage/erp/erp-schip-20260205-dispatch-data-other-inputs-memo.pdf

https://www.ieso.ca/-/media/Files/IESO/Document-Library/engage/erp/erp-schip-20260205-settlements-design-memo.pdf and

https://www.ieso.ca/-/media/Files/IESO/Document-Library/engage/erp/erp-schip-20260205-mpm-design-memo.pdf

[2] The members of the Consortium are Alectra Energy Solutions, Atura Power, Compass Energy, Capital Power, Convergent Energy+Power. EDP Renewables, AYPA, Brookfield Renewables, Neoen, Northland Power, Boralex, and Potentia.

Based on the design memos and information presented in the webinar we have the following comments.

Connection and Registration Design Element for Storage Resources

- The design memo states that storage participants may request a reassessment of their physical market prudential obligation if they've demonstrated to be a net creditor. Can the IESO provide guidance on how long or what type of record is required to demonstrate the storage participant is a net creditor?

- The IESO states that Daily Cycles will not be used by the DSOS but will be collected to help IESO understand cycling expectations of resources to help plan system operations. The consortium is seeking a clear understanding how the Daily Cycles value at registration will be used for system operations. This will inform final design decisions for the storage resources as well as ensure the appropriate information is submitted to the IESO at registration.

- The IESO states that Internal Service Load (ISL) submitted at registration is the maximum hourly forecast energy consumption of the storage resource. For clarity, is the IESO seeking the technical capability for ISL or is the IESO seeking the storage participants estimate of the maximum consumption?

Dispatch Data and Other Inputs Design Element

- The IESO states that Initial State of Charge (ISoC) is a mandatory submission used by Day-Ahead Market (DAM) only. As discussed in previous feedbacks, ISoC will be an estimated value when submitted into the DAM since it is forward looking and therefore a storage participant cannot be certain they will have that SoC when reaching real-time. The DAM schedule is financially binding and exposes storage participants to costs if the SoC in real-time does not align with the ISoC estimate. In addition, the proposed physical withholding requirements of Market Power Mitigation (MPM) requires storage participants to make their capacity available up to HE23.[3] This means that storage participants have limited flexibility to attempt to ensure their ISoC matches their real-time SoC since there is a potential real-time dispatch to inject energy up to an hour before the day-ahead schedule. The consortium believes the combination of mandatory submission of ISoC in DAM and physical withholding requirements up to HE23 are unacceptable risks and must be adjusted. The consortium's recommendation for physical withholding is that the requirement should only apply for the total MWh of storage capacity (i.e., MaxSoC) and not maximum capacity on an hour-by-hour basis. This would ensure that a storage participant can manage their exposure to DAM while still ensuring their facility is not physically withholding capacity from the IAM.

- The consortium is confused by the proposed hourly range adjustments allowed for MaxSoC, MinSoC, AbsoluteMaxSoC and AbsoluteMinSoC. Can the IESO please clarify how much a storage participant can change each value without requiring a valid reason code. Further, can the IESO

[3] Note that the consortium has specific feedback on physical withholding later in our submission

please confirm that the storage participant can remove all values during planned or unplanned outage events.

- In addition, it is unclear to the consortium if there are any scheduling or dispatch instructions the IESO is intending to issue if any of the SoC parameters are adjusted on an hourly basis. Take the following example. A storage facility has SoC at 100 MWh and that matches MaxSoC (i.e., the facility is fully charged). Storage participant submits a reduction of MaxSoC from 100 MWh to 80 MWh. The submitted reduction means there is 20 MWh of charge that is moved offline. Is the IESO expecting to force a discharge of that energy? In the consortium's view, that is inappropriate and instead a storage participant should be able to decide whether they want that storage energy discharged or not through their energy offers and bids.

- The ability for a storage participant to take an outage for their storage facility, whether planned or unplanned, is critical for maintaining effective operational capabilities. The consortium is seeking the IESO's confirmation that the ERP design will allow storage participants to take a full or partial outage of their storage facilities for two capabilities. The first capability is injection capacity, that is the amount of energy that can be injected or withdrawn in any given moment (i.e., 100 MW can be reduced all the way down to 0 MW under an outage situation). The second capability is SoC or duration of energy storage, that is the amount of energy that can be withdrawn or injected in total (i.e., 100 MWh of SoC can be reduced all the way down to 0 MWh under an outage situation). The consortium believes that the adjustments to SoC parameters and Capacity parameters would allow those outages but is seeking confirmation.

Settlement

- The consortium appreciates the attempt of the IESO to begin addressing settlement design options and criteria. Without further details on Make-Whole Payments and other critical settlement demand elements, the consortium does not believe enough information is available to make informed feedback on the settlement design memo. The consortium wants to ensure that the IESO will revisit the design decisions in the settlement design memo when the additional design elements are published.

MPM Design Element

- The consortium believes that parts of the existing MPM design for storage participants must be addressed in parallel with the proposed changes discussed in the MPM design element memo. Specifically, the consortium believes changes are required to the Financial Reference Level (FRL) calculation for storage resources specifically how charging costs and opportunity costs are calculated. Currently, charging costs are based on the simple average of the same month from the previous year. By using previous year prices, the storage participant is significantly exposure to weather and environmental impacts that would not match the reality of DA energy offer dynamics (e.g., previous year was mild winter with low prices while current year is extreme cold with high charge costs). For charging costs, the consortium recommends that charge costs be linked to immediate or recent market price outcomes to FRL reflect actual market dynamics as much as possible. The consortium recommends that the IESO determine charge costs for a storage participant in DAM based on the maximum price of either the current operating day's maximum DAM or the current operating day's maximum pre-dispatch prices. The concept of maximum hourly is similar to how the RT reference levels are set automatically after DA clearing

to the maximum cleared price. This approach also provides added protections during periods where demand is increasing day over day. Further, the information is based on market data the IESO has direct access to without any additional calculations or analysis. For RT reference levels, the charging cost should be adjusted automatically based on the maximum current day's pre-dispatch prices or next day pre-dispatch prices once published. This avoid requiring the storage participant from needing to update charging cost on an hourly basis. Finally, the IESO should notify all stakeholders that a MPM design changes are being considered and arrange a separate focused engagement process.

- The consortium requests that the IESO update and republish the MPM Design Element memo to clarify and correct some of the examples and discussion points. First, the IESO needs to be clear in diagrams (e.g., Figure 1 and Figure 2) that these references are for DAM and Pre-Dispatch (PD) and are not applicable to real-time energy offers. Second, the energy offer reference level for storage is a static daily value. The calculation (shown in Figure 4) produces a single $/MWh value for each hour. Figure 2 and Figure 3 show mitigated offer rising with different Price-Quantity (P-Q) laminations. The consortium does not believe this is correct and must be fixed. Further, the mitigation offer shows mitigate levels for withdrawal of energy which the consortium also believes is not correct and should also be removed. The design memos are important reference materials stakeholders and the IESO will refer to throughout the ERP process and into the market rules/manual amendment process. Accurate examples and representations of market rule implementations must be established.

- With respect to the edge-case example shown in Table 3 and Figure 2, the consortium disagrees with the IESO design decision. First, there is an energy bid higher (i.e., both $20/MWh and $30/MWh) than the mitigated offer level (i.e., ~$10/MWh) which represents the opportunity cost the storage facility is seeking. This means no economic withholding is occurring since the storage participant is offering energy below the opportunity cost. Second, the mitigation changes the energy bid for withdrawal of energy. The IESO firmly states, and the consortium agrees, that no mitigation is required for withdrawal lamination. The example conflicts with these states and with the general approach to dispatchable loads that have no mitigation for energy bids (i.e., loads can pay as much as they would like for energy). Finally, the mitigation fundamental changes to structure of the laminations so that the storage facility will be forced to inject at a price lower than the price they had requested to withdraw energy at. This switch from withdrawal to injection will have severe negative impacts on the storage facility summarized below. The consortium recommends the IESO correct the example so that the mitigate offer cannot be below the highest withdraw offer.

    - The storage participant had indicated a need to withdraw above the mitigate offer; the missed opportunity to withdraw represents an economic loss

    - The storage participant bid-offer limitations for the example hour were determined based on future hours, future obligations and future opportunities.

    - Injecting at a price lower than the withdraw bids means the storage participant is reducing the storage facilities SoC at a price they were seeking to increase the SoC at. The reduction of SoC instead of increase in SoC could mean the facility is now unable to meet future hours where they have a DAM schedule. Not being able to inject for their DAM schedules means the storage participant my buy-back its position at a loss. Further, contract obligations of the storage participant may have requirements to

ensure they can inject in future hours and the shift from withdraw to injection means they are no longer able to meet those obligations with potential economic penalties.

- The IESO states that physical withholding conduct tests are for each hour of the dispatch day and that is what exists under the current rule for energy storage resources. The consortium's understanding is different and that to pass physical withholding conduct test storage participants must make their Reference Quantity available for at least one hour each day. This is reinforced by other statements in the MPM design element memo where the IESO discusses when a market participant only offers withdrawal laminations and therefore is not offering their Reference Quantity.

- If the IESO is proposing to evolve physical withholding conduct test to be an hourly assessment to see if the storage participant makes the Reference Quantity available in each other hour (except for the special rule for overnight hours), then the IESO must provide justification for this change including consideration of the negative impact to storage participants.

- The negative impact of requiring the Reference Quantity to be offered in every hour includes the inability for storage participants to prioritize hours for withdrawal to meet future obligations (e.g., a DAM schedule). Even with the special rule for overnight hour exemptions, there is still a potential that a storage participant could have its SoC driven to MinSoC by HE23 and not have an ability to withdraw energy to bring their SoC to meet their ISoC by the start of the next day.

- This issue of potentially receiving injection dispatches when the storage facility is trying to manage its SoC to meet future market operation will become severely more challenging as the Long-Term 2, capacity window 1 (LT2(c-1)) storage facilities are developed. Under LT2(c-1), storage facilities must have a minimum duration of 8-hours, double the current 4-hour requirement in the Expediated Long-Term (E-LT), Long-Term 1 (LT1) and Oneida contracts. With 8-hour storage entering the IAM in the next few years, even the special rule for overnight hours will not provide protection for withdrawal requirements to reach MaxSoC on a daily basis. Due to RTE, 8-hour storage facility will need to withdrawal energy for greater than 8-hours which exceeds the special rule for overnight hours.

- The consortium believes that parts of the existing MPM design for storage participants must be addressed in parallel with the proposed changes discussed in the MPM design element memo. Specifically, the consortium believes changes are required to the Financial Reference Level (FRL) calculation for storage resources specifically how charging costs and opportunity costs are calculated. Currently, charging costs are based on the simple average of the same month from the previous year. By using previous year prices, the storage participant is significantly exposure to weather and environmental impacts that would not match the reality of DA energy offer dynamics (e.g., previous year was mild winter with low prices while current year is extreme cold with high charge costs). For charging costs, the consortium recommends that charge costs be linked to immediate or recent market price outcomes to FRL reflect actual market dynamics as much as possible. The consortium recommends that the IESO determine charge costs for a storage participant in DAM based on the maximum price of either the current operating day's maximum DAM or the current operating day's maximum pre-dispatch prices. The concept of maximum hourly is similar to how the RT reference levels are set automatically after DA clearing to the maximum cleared price. This approach also provides added protections during periods where demand is increasing day over day. Further, the information is based on market data the IESO has direct access to without any additional calculations or analysis. For RT reference levels,

the charging cost should be adjusted automatically based on the maximum current day's pre-dispatch prices or next day pre-dispatch prices once published. This avoid requiring the storage participant from needing to update charging cost on an hourly basis. Finally, the IESO should notify all stakeholders that a MPM design changes are being considered and arrange a separate focused engagement process.

- Similar to the consortium's issues with the charging cost calculation in the Financial Reference Level, the consortium does not believe it is appropriate that Auxiliary Energy Consumption calculation uses average electricity purchase price from previous year. As discussed in previous submissions, previous year electricity prices can range widely compared to current year due to different market, environment and weather conditions among other impacts. A more near-term view of purchased price should be used.

Transparent and Accessible Market Data Publication

The Consortium wishes to restate its comments related to transparent and accessible market data publication by the IESO from the July 24, 2025, feedback. The comments are critical and the IESO has not responded to the request as part of the ERP process.

> *There are a number of areas where further information and action is required from the IESO. First, the changes being considered as part of the ERP will influence scheduling, dispatch, pricing and settlement for energy storage resources in addition to all market participants. The complexity of energy storage resource operations will result in different market outcomes and changing dynamics in the power system. For the benefit of Ontario consumers and market participants, addressing market inefficiencies and determining future market design changes (including potential power system planning and procurement actions) will require broader stakeholder participation and analysis. This cannot happen if market data and information are restricted and withheld by the IESO. The launch of the renewed market should have occurred with a revamping of IESO market data publication standards. In particular, the IESO has failed to adhere to best practices of sharing detailed information on scheduling and dispatch outcomes including the inputs on a nodal basis for i) energy offers, ii) energy bids, iii) non-dispatchable load assumed by IESO, and iv) load assigned and observed at each node. This information is critical to understanding the market outcomes and determining if they align with what was expected from the IESO's scheduling and dispatch tool (e.g., are the changes for the ERP playing out as expected). Further, the market data discloser is required for Market Participants to learn how the market is operating and determine optimal energy bid and offer strategy by back-testing against actual market data. In the ESR Consortium's opinion, this component must be included as part of the ERP or as a parallel process. The IESO's own jurisdictional review (https://www.ieso.ca/-/media/Files/IESO/Document-Library/corporate/applications/PA-IESO-Markets-and-Planning-Data-JR-Report-20230623.pdf) demonstrates that the IESO is a laggard compared to other RTOs/ISOs.*[4]

We will be pleased to meet with IESO about this submission at a mutually convenient time.

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[4] ESR Consortium Submission - https://www.ieso.ca/-/media/Files/IESO/Document-Library/engage/erp/erp-20250821-feedback-form-ESR-Consortium.pdf

Sincerely,

[redacted]

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