

# Minutes of the IESO Technical Panel Meeting

Meeting date: 13/December/2022  
Meeting time: 9:00 a.m.  
Meeting location: Video Conference

Chair/Sponsor: Michael Lyle  
Scribe: Luisa Da Rocha, IESO

Please report any suggested comments/edits by email to [engagement@ieso.ca](mailto:engagement@ieso.ca).

<b>Invitees</b>	<b>Representing</b>	<b>Attendance Status Attended, Regrets</b>
Jason Chee-Aloy	Renewable Generators	Attended
Ron Collins	Energy Related Businesses & Services	Attended
Rob Coulbeck	Importers/Exporters	Attended
Emma Coyle	Market Participant Generators	Attended
Dave Forsyth	Market Participant Consumers	Attended
Sarah Griffiths	Demand Response	Attended
Jennifer Jayapalan	Energy Storage	Attended
Indra Maharjan	Market Participant Consumers	Attended
Nick Papanicolaou	Market Participant Consumers	Attended
Forrest Pengra	Residential Consumers	Attended
Robert Reinmuller	Transmitters	Attended
Joe Saunders	Distributors	Attended
Vlad Urukov	Market Participant Generators	Attended
David Short	IESO	Attended
Michael Lyle	Chair	Attended

Invitees	Representing	Attendance Status Attended, Regrets
<b>Secretariat</b>		
Agatha Pyrka	IESO	Attended
<b>IESO Presenters</b>		
Devon Huber Pat Kamstra Patricia Murray Jessica Tang		

## Agenda Item 1: Introduction and Administration

Agatha Pyrka, IESO, welcomed everyone joining the meeting.

The meeting agenda was approved on a motion by Indra Maharjan.

The minutes from the October 11 meeting were approved on a motion by Indra Maharjan.

### Chair's Remarks:

The Chair, Michael Lyle welcomed Panel members to the final meeting of the year and shared that Rob Coulbeck was re-appointed to a second term by the IESO Board of Directors. An update was provided that the Replacement of the IESO Settlement System (RSS) go-live date is May 1, 2023. The item will come back to the Technical Panel during the January meeting for the vote to post for broader stakeholder feedback and updated milestones dates will be provided shortly through the stakeholder communication channel in regards to testing and training. With respect to the Operating Reserve Accessibility (ORA) market rule amendments recommended to the IESO Board earlier this year, work continues on the details of the related exemptions. It is intended that these market rules will be implemented concurrently with the RSS amendments and it is therefore anticipated the Board will review them together in the new year.

Vlad Urukov asked if both the RSS and ORA are targeted for May. Mr. Lyle confirmed that was correct and that they will both come into effect at the same time.

## Agenda Item 2: Engagement Update

Agatha Pyrka, IESO reviewed the prospective Technical Panel schedule, starting with the Market Renewal Program (MRP) where following today's second and final Q&A session on the Interim Alignment batch, the item will return in February for a vote to post. The first Q&A session related to the MRP Settlements batch will take place at the January meeting. Panel members were encouraged to listen to the MRP engagement session taking place on December 14, with a recording to be provided afterwards for those not able to attend.

Following an education session at today's meeting, the Enabling Co-located Hybrid Resources item will return for a vote to post at the January meeting and a vote to recommend in February. Also at the January meeting, there will be a vote to post for the RSS rule amendments and a vote to recommend for the Technical Panel Terms of Reference.

The December engagement update has been posted to the IESO website and a link will be sent.

### Agenda Item 3: Enabling Co-located Hybrid Resources

Pat Kamstra, IESO, provided information in advance of the upcoming market rule amendment proposal to implement co-located hybrid participation in the current IESO-administered market (IAM). Hybrid participation consists of generation and storage facilities participating at the same connection point to the grid under the same registered market participant. Enabling hybrid resources is part of the IESO's enabling resources program focused on enabling emerging resources to provide electricity services that they may not be able to fully provide at this time.

Over the last year, the IESO worked with stakeholders to develop the foundational design for hybrid participation to unlock near-term capability. Two models were presented to stakeholders – co-located and integrated – which were finalized in early September. The IESO intends to enable both models of participation, however stakeholders have requested that the IESO enable the co-located hybrid participation model as soon as possible. The integrated hybrid model, while not requiring calculation engine changes, requires changes to other IESO systems and processes to accommodate a new type of resource model that combines injections from generation and storage. This cannot be completed until after MRP is implemented due to impact on MRP changes already underway. As a result, the integrated hybrid participation model will be implemented as soon as possible following MRP implementation.

The co-located participation model uses the existing resource models for generation and storage resulting in limited impacts on market rules and no tool impacts to implement. For this reason, the IESO is able to implement the co-located model in the current market ahead of MRP. The market rule amendment proposal coming in January is specific to co-located hybrid participation.

The co-located hybrid participation model consists of generation and electricity storage facilities including at least three dispatchable resources:

1. A generation resource
2. A storage injecting/generation resource for discharging storage
3. A storage withdrawing/load resource for charging storage from the grid

The facilities and associated resources will be located behind a single connection point to the grid, but the resources will participate separately in capacity, energy and operating reserve markets depending on the technology type.

Mr. Urukov asked for confirmation that at least one of each resource is required, and that there can be multiples of any of the resources. Ms. Kamstra confirmed this is correct.

Mr. Maharjan asked whether waste water plants with emergency diesel generators (that they are looking to switch to natural gas and biogas) would be considered a generation resource if they run in addition to energy storage. Water and waste water systems are subject to environmental permit approvals where the generators are defined as emergency back-ups and are not permitted to operate unless there is a power failure. However, they are currently embarking on multiple updates to change the definition so that they can operate in the market as an energy resource backed by a storage product. Mr. Maharjan indicated that they would like to see these resources eligible under the new

model. Ms. Kamstra indicated that these resources don't currently operate in the market and until they do, won't be eligible to participate since the model considers only generator resources operating in the market.

David Forsyth asked if the co-located model applies to a load behind a connection point, in addition to the three dispatchable resources. Ms. Kamstra indicated that the co-located participation model is specifically focused on generation with storage. Hybrid participation has not been expanded to include loads other than the storage load and this would require additional design work. It is possible that loads could be included in future models.

Mr. Urukov flagged that there is a history of Congestion Management Settlement Credits (CMSC) presenting undesirable outcomes and encouraged the IESO to consider the possible CMSC implications. Ms. Kamstra indicated that the IESO spent a significant amount of time calculating over 50 CMSC scenarios and is confident that the possibilities have been captured. The IESO also worked with the Market Assessment and Compliance Division (MACD) to help ensure the market rules reflect and manage any issues they could see arising. The IESO concluded that there is one possible inappropriate CMSC scenario that is fully addressed under the market rule allowing clawback of CMSC resulting from constraints applied for SEAL reasons (to prevent endangering the safety of any person, equipment damage or violation of any applicable law).

Robert Reinmuller shared his excitement in pursuing this model, and also expressed concerns about the technical assessments needed to requalify the connection point to integrate the new resources, noting that applications are expected for the new connections including a System Impact Assessment and likely a Connection Impact Assessment by Hydro One to determine if there are local impacts. Mr. Reinmuller noted that he is not concerned with the maximum allowed quantity, but rather any dynamic impact the resources might bring to the grid, or any short circuit injection that may change as a result of the connections. This has been seen with recent assessments, where there are short circuit implications from changing resources, which have resulted in possible changes to the assets on the grid.

Mr. Reinmuller encouraged the IESO to also consider operational modes and emergency response/restoration of the corridors. Even though the IESO will direct market participants to reconnect to the grid, these questions should be asked early because the controls that will need to be implemented will need to match the restoration requirements. Lastly, Mr. Reinmuller noted that all connection agreements will need to be revised and therefore market participants introducing hybrid resources will need to return to their transmitter/distributor. This is similar to the requirement to return to the Ontario Energy Board for a new agreement when new storage was introduced in Ontario. The implementation steps cannot be underestimated to ensure new connections have all the required assessment, documentation and registration.

Jennifer Jayapalan asked if there is any allowance in the model for the generator to charge energy storage. Ms. Kamstra noted that the resources will operate separately in the market and cannot charge storage directly from the generator behind the meter; however the generator could be scheduled to inject at the same time as the storage resource is scheduled to withdraw/charge, which would result in a "netting" of the prices for the injections and the withdrawals. It was noted that, when storage withdraws from the grid, it is a load subject to uplift and global adjustment. With respect to uplift, the IESO is working on a project (likely after the completion of MRP) to exempt storage from uplifts that are under IESO control. With respect to global adjustment, as per the regulation, storage is reimbursed upon reinjection into the grid if they make withdrawals and are charged the Class B rate. After the initial base period, storage can be class A where they have control of their peak demand factor and can reduce global adjustment if peak hours are avoided.

Ms. Jayapalan further asked about the current regulatory exemptions for storage and how this will be managed for uplifts and the class B exemption; whether it will be dealt with as two separate resources. Ms. Kamstra indicated that there will be separate settlements for the resources.

Mr. Forsyth indicated there are many different scenarios for Operating Reserve (OR) and whether it is allowed, while at the same time it is known that generation is not going to follow dispatch to the MW. It was asked whether the market rule amendments to be implemented in May for the Improving Accessibility of OR will cover all of the scenarios. Ms. Kamstra replied yes, all scenarios are covered. Work was undertaken with the team that will implement OR accessibility, as well as with IESO operations staff, and it was determined that there are no impacts that are not addressed through the existing market rules or the rules and manuals that will be implemented.

Ms. Kamstra concluded by sharing that the details and draft market rules were presented to stakeholders on October 24 where the information was well received and no major concerns raised. Next steps include the IESO bringing the draft market rules to the Technical Panel in January, with the target date for the vote to recommend to the IESO Board of Directors in February 2023. Implementation is targeted for April 2023 or May 1, 2023 to align with the Replacement of the IESO Settlement System baseline.

## Agenda Item 4: Market Renewal Program

Jessica Tang, IESO, shared upcoming items for the Market Renewal Program (MRP), including the Settlements batch engagement sessions that will start in December. With regards to interim alignment, the vote to post is scheduled for the February Technical Panel meeting, at which time the IESO response to stakeholder feedback summary document will be shared.

Patricia Murray, IESO, reviewed the Interim Alignment Q&A session #2 deck, focussing on how "facility," "resource," "units," "load equipment" and "sets of loads" terminology is applied throughout the Interim Alignment batch. It was noted that the IESO reviewed and intentionally updated instances of the use of these terms across the market rules and manuals that were updated as part of the Interim Alignment batch.

Mr. Urukov asked that additional consideration be given to two items related to the generation terminology draft language. In Section 4.4.4 of chapter 5, it was asked whether the replacement of "registered facility" with "resource" is appropriate within the context of Area Control Error (ACE) and regulation. Mr. Urukov noted that the term "facility" is the more appropriate terminology as "resource" is too specific given that Ontario Power Generation has the option of choosing which resources provide regulation. In Section 6.3.1. related to compliance aggregation, it was noted that replacing "facilities" with "resource" appears to be applying aggregation at the resource level, which seems like a deviation from the current practice of applying aggregation at the facility level. Ms. Murray noted that these two items will be reviewed.

Sarah Griffiths asked how a price responsive load (PRL) will participate in MRP. If a PRL is an active consumer in the day-ahead market, but a passive consumer in the real-time market, why are they not able to participate in a demand response aggregation. It was noted that when the market is looking for as many MWs as possible in the coming decade, the restriction does not make sense. Ms. Murray indicated that the PRL interaction with virtual portfolios has been previously discussed with the Technical Panel and it is seen as a closed item from an MRP perspective, but it can be discussed as part of the enabling resources program. PRL participation in the day-ahead and passive

participation in real time is not the contributing factor in these decisions, but instead it is a technical limitation based on settlements and the granularity of locational marginal price.

Next steps for the Interim Alignment batch include publishing the IESO response to stakeholder feedback document, as well as the updated market rule amendment packages and updated market manuals on December 20, with the vote to post scheduled for February 14, 2023.

## Agenda Item 5: Annual Review of Panel Effectiveness

Mr. Lyle noted that the Technical Panel has had a busy year on a diverse set of issues and noted three themes with regards to the annual review of Panel effectiveness:

- *Direct access to the IESO Board* – This request by the Technical Panel led to an April meeting with the Markets Committee to discuss the Market Power Mitigation batch. The meeting was very well received by the committee and as a result, there have been discussions about adding additional access to the IESO Board in the Panel’s Terms of Reference (discussed in agenda item #6).
- *Development of IESO materials and agenda items for Technical Panel meetings* – Panel members expressed concerns earlier in the year on the execution of the IESO’s engagement for the Capacity Auction. To respond to this concern, the IESO included an agenda item at the last meeting to discuss how the stakeholder engagement approach has evolved for the current round of changes. With respect to the Market Renewal Program (MRP), members requested additional time to review materials as well the inclusion of examples/scenarios, and an understanding of stakeholder feedback issues. The IESO has tried to incorporate this into subsequent materials, both in MRP and other files.
- *Participation in the engagement process* – IESO staff has highlighted the importance of Panel members participating in stakeholder engagement processes, in particular the MRP engagement meetings. Members have attended an increasing number of engagement meetings and the IESO encourages continued attendance in 2023 as engagements will take place on matters coming before the Panel in the form of market rule amendments.

Ms. Griffiths expressed her appreciation for the extra work from the IESO on the improvements and flexibility, citing the example that the MRP materials are clearer. Engagement on the Capacity Auction Enhancements has improved from meeting scheduling to capturing the discussions occurring in the engagements along with the issues and then sharing this back to the Panel. Ms. Griffiths noted that this is very important because the materials reflect the discussion at engagement sessions and show that not only Panel members are raising the issues.

Mr. Urukov also expressed his appreciation for the improvement in the Panel materials, indicating that examples are vital to force the IESO to undertake the level of analysis needed to ensure proper implementation. This was illustrated through the Replacement of the Settlement System where discussions needed to get into a high level of detail, otherwise implementation challenges emerge. Mr. Urukov encouraged the IESO to continue to dedicate the time and resources to “get into the weeds” and ensure market rules are well evaluated and analyzed when they are taken to the Panel.

Jason Chee-Aloy expressed his thanks to the IESO, particularly for the joint Technical Panel and Markets Committee meeting which had taken place for the first time. The meeting went well from the perspective of the Panel members and he was pleased to know it was mutually beneficial.

Forrest Pengra echoed previous comments about the efforts of IESO staff, and his appreciation for staff reaching out directly on individual files to ensure there is solid understanding. Mr. Pengra expressed that he was very appreciative of this outreach and the personal care that has been provided.

Joe Saunders thanked IESO staff and noted that the materials have been improved with the use of examples and impacts on the proposed rules.

Mr. Forsyth shared that the IESO has done a great job assisting Panel members in understanding the market rules and upcoming changes. Mr. Forsyth also thanked his fellow panel members who have helped by sharing their perspectives on the files and initiatives. The Chair echoed these comments and also thanked the Technical Panel members for all of their hard work.

Mr. Maharjan noted that being a first year member, there was a lot of content to digest such as the activation of passive capacity, conservation and generation files, as well as supply and market participation. While a lot of information has been provided, IESO staff presented it in a very effective way which has been helpful in taking back and sharing the information.

## Agenda Item 6: Terms of Reference

Devon Huber, IESO, introduced proposed changes to the Technical Panel Terms of Reference resulting from an in-camera discussion between the Panel and the IESO Markets Committee. The changes include:

- Addition of a second in-camera meeting between the Technical Panel and the IESO Board or a Committee of the Board to allow Panel members to raise concerns in regards to market rule amendments
- the allowance of the IESO Board or a Committee of the Board to invite Panel members to attend meetings where it would be of assistance to directly hear their views on market rule amendments or to be able to ask questions

Under Section 9 of the Terms of Reference, any changes require consultation with the Technical Panel including a vote to post for broader stakeholder input, and a vote to recommend to the IESO Board along with each members rationale.

Mr. Urukov flagged the proposed language in Section 5.4.2. where the inclusion of "...to receive Technical Panel member views..." suggests that all Panel members will be required to attend the meeting. Mr. Urukov recommended removing the word "member" to manage the expectation that all members will be able to attend the meeting with the IESO Board. Mr. Huber indicated this would be taken back for review.

Mr. Reinmuller, in relation to Section 2.2.1.3., suggested that "technical writing" be changed to "technical rationale" as the Panel is not limited to reviewing the writing and instead provides feedback on the rationale. The Chair indicated that the Panel's mandate has historically been focused on the language of the market rule amendments, and whether the language reflects the design intent. Mr. Reinmuller noted that he has additional grammatical changes on Sections 3.2.3. and 4.5.3. that he will email directly to Mr. Huber.

On a motion by Ms. Griffiths, the Technical Panel voted to post the Technical Panel Terms of Reference for broader stakeholder comment until January 6, 2023.

## Other Business

Mr. Urukov asked about the November 10 email from Customer Response regarding the Market Compliance and Assessment Division (MACD) Statement of Approach on Compliance with Dispatch Instructions within the Deadband. It was noted that this is an important item for generators and loads and it was sent to only one individual at his company and was not included in the weekly Bulletin. Mr. Urukov asked the IESO to review the communication process to determine if it was accurately distributed, and whether the communication was properly elevated with the industry and Technical Panel. Secondly, Mr. Urukov asked for confirmation that the IESO has reviewed the content of the email in relation to the 2009 Interpretation Bulletin. The IESO noted that they would investigate and respond to the questions.

On a separate note, Mr. Reinmuller shared information on regulation for siting battery storage near critical infrastructure. The only current document is the U.S. National Fire Protection Association Regulation 855 stipulating that battery storage should be at a certain distance from buildings, and provided additional information on a 200-foot radius evacuation zone for battery fires. Mr. Reinmuller noted that this will become a major issue as battery storage starts to be connected throughout Ontario and particularly where it is located in close proximity to hydro corridors. This issue is currently being reviewed by the Electric Power Research Institute (EPRI) and will escalate through the industry since there are currently no regulations or siting guidance for proponents. It was also noted that environmental approvals will be impacted by these fire prevention and emergency response activities.

The meeting adjourned at 10:49 a.m. The next meeting will be held on January 24, 2023.

### Action Item Summary

<b>Date</b>	<b>Action</b>	<b>Status</b>	<b>Comments</b>
March 23, 2021	In relation to MR-0448-R00 market rule amendments, the IESO will periodically review the availability of error and omissions insurance for negligence.	Open	Update provided during November 2021 meeting.