Minutes of the IESO Technical Panel Meeting

Meeting date: 21/February/2023
Meeting time: 9:00 a.m.-11:00
Meeting location: In-person and Video Conference

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

Please report any suggested comments/edits by email to engagement@ieso.ca.

Invitees	**Representing**	**Attendance Status Attended, Regrets**
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	Regrets
Joe Saunders	Distributors	Attended
Vlad Urukov	Market Participant Generators	Attended
David Short	IESO	Attended
Michael Lyle	Chair	Attended

Invitees	Representing	Attendance Status Attended, Regrets
Secretariat		
Trisha Hickson	IESO	Attended
IESO Presenters		
Dan Alexandru Phil Bosco Darren Byers Adam Cumming Patricia Murray Jessica Tang		

Agenda Item 1: Introduction and Administration

Trisha Hickson, IESO, welcomed everyone joining the meeting.

The meeting agenda was approved on a motion by David Short.

The December 13 meeting minutes were approved on a motion by Jason Chee-Aloy.

Introductory Remarks from the Chair:
Chair Lyle confirmed that the joint meeting between the Technical Panel and the IESO Board will be held on March 8. The Chair welcomed to the meeting Trisha Hickson, the new Technical Panel Secretariat and Paula Lukan, the new Supervisor, Market Rules.

Agenda Item 2: Engagement Update

Ms. Hickson reviewed the prospective Technical Panel schedule provided as part of the meeting materials and noted that a monthly engagement update was recently posted to the IESO website. There are three engagements taking place during the February engagement days including Capacity Auction Enhancements, the Hydrogen Innovation Fund Request for Proposals and the 2023 Annual Acquisition Report.

Agenda Item 3: Enabling the Co-located Hybrid Model

Adam Cumming, IESO, reviewed that members voted to post the enabling the co-located hybrid model item for broader stakeholder comment at the January meeting. No comments were received.

Vlad Urukov submitted comments prior to the meeting seeking clarification on the placement of section 3.5.6B.6.2. Mr. Cumming explained that the purpose of this rule is to stipulate the maximum amount a facility can offer or bid into the market where there are co-located facilities (generator and one or more storage facilities at the same connection point) and where one is potentially offering either ancillary services including participating in the operating reserve markets. The final bullet in this section references the maximum injection or withdrawal as specified in the connection agreement applicable to the registered facilities. It was further noted that when a facility is connected, they are required to go through an authorization to connect and sign a connection agreement with the transmitter. The agreement will specify the limit set for the facility between the facility owner/ operator and transmitter and it will specify the maximum injection/withdrawal, or the maximum temporary injection/withdrawal permitted by the relevant transmitter. The rule refers to the case where there is a partial outage or where the transmitter has informed the facility operator that they cannot inject up to their normal agreement amount and a temporary lower amount has been set for a maximum injection. This situation results in two numbers – the connection agreement and the lower transmitter amount. It will be the lesser of the two numbers and the sum of all energy offers and all energy bids from all facilities shall not exceed the limit.

Mr. Urukov indicated that the third point in the section now adds an obligation, asking what happens if the facility exceeds the limits. Mr. Cumming indicated that this will be similar to the existing rules where a facility cannot offer beyond the maximum or else they will be in breach of the market rules. It was further noted that since there are two facilities, the offers will be taken from both facilities. For example, if the sum of the connection limit is 50MW, then the sum of the two offers together cannot exceed 50MW.

Mr. Urukov noted that he is not disagreeing with the intent of the clause, but rather its placement. Mr. Cumming indicated that the clause was placed in this section because each bullet point refers to a separate line. For example, section 3.5.6B.6.1 refers to the capacity of the radial line connecting the registered facility where each facility will have a radial line to the connection point, therefore it is not the sum at that point. Section 3.5.6B.6.2 refers to the connection point limit where everything is fed together into one point and it is at that point where bids and offers are summed. Mr. Cumming indicated that for agreements currently being signed for co-located facilities there is sometimes only one connection agreement which includes the limit set for both facilities.

Mr. Urukov indicated that this clause should reside outside of this section as its own obligation, rather than being embedded within a sub-bullet intended on calculating a number. Mr. Cumming indicated that the only time the sum is applicable is to sub-bullet 3.5.6B.6.2, as it is not applicable to a radial line (sub-bullet 3.5.6B.6.1). There are three different maximums – the radial line maximum, the connection agreement maximum, and the transmitter limit maximum. Two of these are applicable to the sum of two facilities together and this is why these are included in the sum in sub-bullet 3.5.6B.6.2, whereas the radial line is individual to each facility connected to it.

Mr. Urukov asked what happens if this clause is violated, further asking if the only time that this needs to be followed is when the maximums are binding in relation to section 3.5.6B.6.2. Mr. Cumming indicated that the format of this section is similar to section 3.5.6 of the existing set of market rules where sections 3.5.6.3.1, 3.5.6.3.2 and 3.5.6.3.3 refer to the capacity of the radial line, the maximum injection/withdrawal in the connection agreement and the maximum injection/ withdrawal permitted by the transmitter. Similar to the existing rules, if the amount offered is greater than the radial line, the connection agreement or what is allowed by the transmitter, this is a breach of the market rules. The new clause indicates that in the future, when operating co-located facilities, the sum of the offers cannot be in excess of the two other points. The onus is on the market participant to ensure they are managing their bids in a way that does not breach the market rules.

Mr. Urukov asked if the two limits refer to the two maximums above. Mr. Cumming indicated that in sections 3.5.6A and 3.5.6B, the limits are the same for all cases. However, when there are co-located facilities, these are being added together and their joint outputs cannot exceed the connection agreement amount or the transmitter maximum. It was further clarified by David Short that the limits referred in section 3.5.6B.6.2 only refer to that clause, not the sub-bullets above it. Mr. Cumming added that each individual facility needs to respect the radial line, but also needs to take into account that their combined offers for the facilties cannot exceed the amount set forth in the connection agreement or any other maximum set by the transmitter.

Mr. Urukov asked if this is only bidding if the "lesser of" resides within section 3.5.6B.6.2, otherwise it can be exceeded. Mr. Cumming reviewed the clauses of section 3.5.6B individually and indicated that up until the final bullet, all of the limits are for individual facilities. The final bullet, section 3.5.6B.6.2, only applies when looking at the combined capabilities of two or more facilities, where the sum cannot exceed the connection agreement limit and the amount specified by the transmitter. Mr. Urukov noted the section includes the word "or" which is confusing, adding that this is a very nested condition and the obligation it imposes seems out of place. Mr. Urukov added that he accepts the explanation assuming it has been reviewed. Mr. Cumming shared that this has been discussed with IESO Legal and the Market Assessment and Compliance Division Legal and the proposed market rules are the resulting concensus. Mr. Short added that examples were presented in the stakeholder materials to support the different clauses.

On a motion by Indra Maharjan, Technical Panel voted to recommend the package of market rule amendments to the IESO Board of Directors. Members were instructed that they could provide their rationale in writing by end of day Thursday.

Agenda Item 4: Replacement of the IESO Settlement System

Dan Alexandru, IESO, reviewed that members voted to post the Replacement of the IESO Settlement System materials for broader stakeholder feedback at the January Technical Panel meeting. No comments were received. It was noted that three minor editorial corrections have been made to Chapter 9, sections 6.9 and 6.10 since posting of the rules for feedback. Mr. Alexandru also shared that training sessions have been scheduled for March and April in preparation for the May 1 implementation date.

Joe Saunders, in reference to the training opportunities, requested that the market manuals be updated to ensure wholesale market settlement systems are ready. Phil Bosco, IESO, confirmed that this will be done, and that the website will be updated shortly. Updates were posted as of February 3, and will continue to be made as work continues with stakeholders. Mr. Bosco confirmed that this will be completed by the implementation date.

Mr. Urukov asked about the testing status for Operating Reserve (OR) accessibility. Mr. Bosco indicated that meetings have been scheduled with Mr. Urukov's team to review the OR charges in the sample files and are also working on feedback from the team on the samples for dispatchable generators. The OR team is participating in these meetings.

Mr. Urukov asked about the expected publication date for the charge codes and equations companion document. Mr. Bosco indicated that this information is currently posted on the pending changes portion of the website.

Dave Forsyth asked if the Accessibility of OR materials have gone to the Board. The Chair noted that this item will be brought to the Board shortly, adding that the implementation of the item is tied to the implementation of the RSS in May 2023.

On a motion by Sarah Griffiths, Technical Panel voted to recommend the package of market rule amendments to the IESO Board of Directors. Members were instructed that they could provide their rationale in writing by end of day Thursday.

Agenda Item 5: Market Renewal Project: Interim Alignment Batch

Jessica Tang, IESO, introduced the interim alignment batch item and a new stakeholder summary document, inviting panel members to provide their feedback on any changes they would like to see. Ms. Tang also noted that a second settlements batch Q&A session will be held at the March meeting and panel members were asked to send questions in advance.

Ms. Tang reviewed key changes to the interim alignment batch since it was introduced last fall:

- Conforming change – the term "resource" was introduced as a defined term in the first batch and was introduced to more market rules and manuals for consistency;
- Conforming change – storage was introduced into the MRP market rules and manuals;
- Conditions related to price responsive load registration were clarified; and
- Some market manual content was moved to the market rules.

Darren Byers, IESO, reviewed proposals for the Interim Alignment Batch amendment package:

1. R00 – inter-batch alignment and alignment with market rules and manuals
2. R01 – integrating load resource and other load definitions into the market rules
3. R02 – introducing storage resources and other changes
4. R03 – amendments related to the newly defined term "resource"
5. 461-R03 – all amendments related to defined terms to support integration

Mr. Byers noted that the amendments are all red-lined against the MRP consolidated draft available on the IESO website. The MRP consolidated draft includes all of the provisionally approved previous batches. The amendment proposals integrate feedback received from stakeholders and the previous Technical Panel information sessions.

Patricia Murray, IESO, reviewed the stakeholder feedback summary document and indicated that it had been posted on the IESO's website and included key noteworthy open feedback items. Ms. Murray highlighted an open item related to some new and updated defined terms using circularity or non-intuitive language. Ms. Murray noted that the IESO had reviewed these terms and was of the view that the definitions accurately reflect the intended purpose of the terms. Ms. Murray also noted that this item would remain open as the terms would be reviewed and refined in future batches.

Ms. Murray reviewed three noteworthy closed items:

1. Examples were requested to better understand terms such as "facility", "resource" and "unit". These examples were brought to the Technical Panel and were posted on the IESO website.
2. Stakeholders had requested a better understanding of the rationale as well as impacts or authority changes in moving content from the market rules to the market manuals. Ms. Murray noted that the edits made for the interim alignment batch did not change any obligations or authorities and that this content had been moved to conform with the MRP drafting approach established in February 2020.
3. Some stakeholders continued to be concerned that the price responsive load (PRL) resource type would not be able to register as a demand response (DR) contributor in the future market. Ms. Murray noted that the non-dispatchable load resource type that exists in today's market will still be available for loads and this resource type will continue to be eligible to register as a DR contributor. Ms. Murray further noted that the PRL resource type is a new participation opportunity for loads that expands load resources' participation bidding capabilities and offers different financial outcomes. This is an optional change for load registration where loads can weigh the risks and benefits of different load participation types and determine the best registration for them.

Mr. Forsyth indicated that there was a significant issue with regards to price responsive loads that needed to be reviewed. He stated that this issue was brought up some time ago and there has been time to develop options for these customers that were more in the style of "a-la-carte". Instead, this would require a large work around with a virtual market participant taking part in a virtual market rather than becoming a price responsive load and part of a contributor with an aggregation pool. Mr. Forsyth asserted that this would lead to problems with resources going in and out of different products, including the need to give notice and timing on registrations for the Capacity Auction. Ms. Murray indicated that the virtual resource model would be available to everyone and loads would be able to use the model. However, the model was different from the PRL model. PRLs would still be eligible to participate in DR as a physical HDR and would need to participate on their own instead of being part of a portfolio. There are participation options in the models. When moving this issue forward, the IESO will have design consultations to look at how the load participation models evolve. Mr. Forsyth noted that virtual traders need lots of prudentials and other requirements and questioned why they would need to do this when a PRL does not. Ms. Murray indicated that a PRL also needs to fulfill its prudential obligations, however as a NDL there are some slight differences in the calculations. She noted that Mr. Forsyth was correct in saying that virtual traders have a separate prudential obligation and the prudential piece is the main part of the authorization, however Ms. Murray questioned if it is a large barrier to entry. Ms. Murray further noted that virtual participation happens at the zonal level and NDL settlement happens for all of Ontario. From a financial perspective, a NDL participating as virtual is looking at Ontario-wide price exposure and zonal price exposure if they are participating using NDL plus virtuals. A price responsive load is purely nodal. If looking for nodal participation, this will not be achieved through an NDL plus virtual approach.

Sarah Griffiths asked about the reference to the IESO working with stakeholders on the model design. Ms. Murray noted that for PRLs to participate as DR contributors, work will need to be undertaken with stakeholders on the design of the model. Ms. Griffiths indicated that DR aggregators and loads have been asking for this for years, asking why this wasn't done with the design since it had been raised. Ms. Griffiths also asked when the model would be determined for aggregated resources to access operating reserve, as well as the resolution of other issues that have been raised over the past eight years, noting that these issues seem to be continuously pushed back to after MRP. Ms. Tang acknowledged the history of this issue, noting that when MRP was designed, PRL was a concept put in place to give non-dispatchable loads an opportunity to be charged based on the LMPs from the day-ahead market. This was an opportunity, not taking away an option, however the design could only go so far with the tools currently in place. Ms. Tang noted that this issue was not within the scope of MRP, and the project did not have the time or resources to address the issue. The IESO sees PRLs as an opportunity for non-dispatchable loads and the current ways to participate in the capacity auction still exist. Mr. Forsyth expressed his disappointment given that this was raised some time ago. Ms. Tang noted that the load aggregation model was a much bigger issue than could be solved by MRP. The NDL model that exists today will continue to exist in the future and the PRL model would be optional.

On the issue of tool development, Ms. Griffiths added that in the Distributed Energy Resources and Market Vision project, stakeholders asked for an explanation of the tools that were required and were given the response that the IESO could not identify the needed tools, as it did not have the resources and could not explain it to stakeholders. Ms. Griffiths expressed frustration at once again hearing that something could not be done because it was a tool issue, summarizing that this was now the term being used to get stakeholders to stop asking questions. Ms. Griffiths added that stakeholders had been asking to understand this issue for some time and this was the third instance where they were hearing that it is a tool issue. Ms. Tang noted that she would follow-up with the DER team on this matter.

Jennifer Jayapalan asked for clarification on electricity storage resources noting that historically dispatchable resources bid into the market, and now storage resources would need to bid and offer as two different resources. Ms. Murray indicated that the interim storage project made an intentional decision to define electricity storage as its own facility and unit type, and it was built in the market rules in this way. When looking at how to introduce the resource concept for electricity storage, the previous decisions were reviewed and intentionally indicated the obligation of electricity storage resources versus using the existing rules for generation and loads. Recognizing this is a two-resource model, where the obligation applies to both resources, it is indicated that the obligation is for the electricity storage resource. When referring to injections, it is indicated as the electricity storage resource that intends to inject. When referring to the load side, it is indicated as the electricity storage resource that intends to withdraw. The focus is on the load or generation side and the related obligations. The language has been designed so that the obligations are the same whether it is a single or multiple resources, and so that it could more easily evolve. Ms. Jayapalan summarized this as a stepping stone into future, where storage is represented as a single resource in IESO's tools. Ms. Murray noted that the market registration procedures in Market Manual 1.5 indicate that electricity storage resources that intend to inject will follow the procedures of a generation resource, and when they intend to withdraw, they will follow the procedures of a load. It was noted that there are no procedural changes resulting from this, but the language was updated to more easily move to a single-resource model and specifically identify what applies to electricity storage.

Ms. Jayapalan asked about the reference in the materials to Phase 2 of the interim storage design. Mr. Byers indicated that Phase 1 was the introduction of storage in to the market rules, and Phase 2 is integrating storage into market renewal. It did not introduce any changes to functionality, but rather was a "truing up" of previous MRP batches to reflect storage, which did not exist when the market renewal design commenced.

On a motion by Jason Chee-Aloy, Technical Panel voted to post the market rule amendment proposals for broader stakeholder comment.

Agenda Item 6: Joint Technical Panel/Board Meeting Topics

The Chair shared that the annual Techical Panel/IESO Board meeting will take place on March 8, highlighting this as an opportunity to discuss with the full board items that are working well and any areas of concern. The Chair highlighted the following as working well:

- Changes to the Technical Panel Terms of Reference giving the panel more access to the Board, specifically the Markets Committee. The Terms of Reference package will be going to the Board for approval in March.
- With respect to the Market Renewal Project, there have been significant learnings in the development of the materials and how they can be prepared more effectively using examples, and helping to provide extra education sessions for the panel members.

Jason Chee-Aloy indicated that there is a need to understand how nexus integration issues are opined upon, expressing concern about a misalignment between projects. Acknowledging that this is not in the purview of the Technical Panel, an example was provided of the interim storage design project where there are currently few projects operating under the market rules, but there will be hundreds of MWs of storage contracted with phase 2 for MRP and under the procurement. In looking at the rules, some battery storage projects will not be what is already contracted under the 20MW range, but rather could be single resources/facilities in the hundreds of MWs. Mr. Chee-Aloy indicated that there is a tension between the market rules and the contracts, noting that there is a need to ensure the resources are operating efficiently to accomplish the market rule goals of obligations, market efficiency and maintaining reliability. It was noted that while the Technical Panel should not be discussing contracts, Ontario is a contract market and participants are bound by market rules. An example was provided that there is a procurement consultation separate from the market rule amendments consultation. Another example was also shared that there is a chance that the storage resources to be procured under the Expedited Long-Term Request for Proposals may not be withdrawing and injecting at optimal times in real time, based on the MRP market rules and design.

Ms. Jayapalan agreed with Mr. Chee-Aloy, adding that there is a lot of risk and it is challenging to understand what will happen with the larger resources given the smaller size of the current resources, and how this will work together in MRP. Ms. Jayapalan indicated that the bigger concern is that the contracts and the markets do not align.

Mr. Chee-Aloy noted that the Markets Committee opines on market rules, market design, procurements and contracts, adding that they are the only body that is looking at this succinctly since it is not being presented to stakeholders in this way. It was further added that it is not known what is being opined upon at the Markets Committee meetings.

Ms. Jayapalan asked if the contract requirements/obligations are being meaningfully considered in the design of market rules, further questioning whether there will be a fleet of storage that will sit and hold capacity because of the market risk, versus using their flexibility.

Mr. Urukov asked if the MRP implementation extension date is firm, noting the potential to create suboptimal outcomes due to insufficient time for market trials under a live system drawing similarities to the implementation of the replacement of the settlement system. It was noted that the inability to test could lead to an over reliance on idealized examples and artificial constructs since it is hard to replicate a sophisticated optimizer. Mr. Urukov expressed concern about the lack of testing time with a rigid MRP date and asked what actions will be taken if something unexpected happens once the DSO is live. It was suggested that this be considered since there is still time to proactively address this concern.

With respect to the effectiveness of the panel, Mr. Chee-Aloy noted positive changes in the process to gauge the panel relative to how MRP is being stakeholdered given the volume and complexity, pointing to the learnings from the Market Power Mitigation batch. Ms. Griffiths noted that the previous governance issues have been addressed with the updates to the Terms of Reference and meetings with the Markets Committee, also noting that the concerns from the last few years have been resolved and it is working well.

Other Business

Ms. Griffiths asked for IT support prior to the start of meetings to assist with connecting online.

Adjournment

The meeting adjourned at 10:13 am. The next meeting will be held on March 21, 2023.

Action Item Summary

Date	Action	Status	Comments

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.
February 21, 2023	In relation to the discussion on price responsive load (PRL) participating as DR contributors Sarah Griffiths stated that other tools issues have been raised during Distributed Energy Resources and Market Vison Project engagements and stakeholders have yet to receive an explanation on the required changes. The IESO will provide a response on this issue raised.	Open	Response to be provided during the April 18 Technical Panel Meeting