

Minutes of the IESO Technical Panel Meeting

Meeting date: 14/June/2022

Meeting time: 9:00 a.m.

Meeting location: IESO Office, Toronto, MS Teams and
Teleconference

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
David Brown	Ontario Energy Board (Observer)	Attended
Jason Chee-Aloy	Renewable Generators	Regrets
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

Invitees	Representing	Attendance Status Attended, Regrets
Michael Lyle	Chair	Attended
Secretariat		
Agatha Pyrka	IESO	Attended
IESO Presenters		
Vipul Agrawal Adam Cumming Robert Doyle Jonathan Scratch		

Agenda Item 1: Introduction and Administration

Agatha Pyrka, IESO, welcomed everyone joining the meeting both in-person and online.

The meeting agenda was approved on a motion by Sarah Griffiths.

The minutes of the last meeting were approved on a motion by Joe Saunders.

The Chair indicated that the IESO Markets Committee has invited the Technical Panel to meet on June 23 to discuss the provisional vote to recommend process for the Market Renewal Program including the Market Power Mitigation batch and members' associated rationale related to their vote.

Agenda Item 2: Engagement Update

Ms. Pyrka drew participants' attention to the Prospective Technical Panel Schedule noting the three items on today's agenda and the one item scheduled for the July meeting – the Adjustments to Intertie Flow Limits. Next week's engagement days will include an engagement on the Market Renewal Program implementation, including thermal state transition, constraint violation pricing for hydroelectric units and the transmission rights transition. Additional June engagement day sessions include an overview of the supply outlook scenarios being considered for the 2022 Annual Planning Outlook as well as engagements on the Small Hydro Program, the DER Market Vision Project and the DER Potential Study.

Ms. Pyrka indicated that the monthly engagement update will be posted shortly and sent to the Technical Panel members.

Agenda Item 3: Enhancements to the 2022 Capacity Auction

Adam Cumming, IESO, reviewed that at the May Technical Panel meeting, members voted to post the capacity auction documents for an extended feedback period. The IESO received feedback from a number of stakeholders and posted an IESO response to feedback document. It was noted that no additional changes have been made to the proposed market rule amendments since the last posting,

however based on feedback received at the last technical panel meeting, new information has been posted on the mapping between the market rules and market manuals.

Mike Risavy, IESO, reviewed the three proposed enhancements:

1. Capacity qualification – moving from installed capacity to unforced capacity
2. Performance assessment modifications – incenting performance and availability at times of system needed
3. Expand participation to resource-backed capacity imports

The objectives of the enhancements include reliability (ensuring that the capacity acquired through the auctions are available at the times when needed), as well as fairness and equity between resource types participating in the auction and the broader resource adequacy framework. Capacity qualification seeks to achieve this by moving to unforced capacity which enables the IESO to consider the resources on a more level playing field. The performance assessment framework is part of a holistic design that works together with capacity qualification. The resource backed imports enable the IESO to seek additional resources beyond our borders in a time when the IESO is expecting increased needs.

Vipul Agrawal, IESO, provided greater detail on the three enhancements, starting with the third enhancement, expanding participation to resource-backed capacity imports, the implementation has been straight forward with the design focused primarily on the mechanics to ensure the correct information flows between the two Independent System Operators (ISOs) and the importer.

Mr. Agrawal noted that the first two enhancements are closely linked and need to be viewed holistically to achieve the objectives. Capacity qualification determines the resource adequacy value and the IESO is proposing to do this by incorporating two factors into the UCAP formulation – the availability derating of resources and the performance adjustment factor. Both factors are based on the historical operations of all participants, however the availability derate cannot be calculated for all resource types, primarily hourly demand response (HDR) resources. In lieu of not being able to calculate the availability derate, the IESO is proposing to have a standby availability charge for the purpose of incenting the HDR resources to self-qualify into the auction. Through multiple engagements and outreach sessions, the original 10 times proposal has been refined to a value that aligns the financial exposure of the charge to that of other resource types participating in the auction. Looking at comparable resources, such as dispatchable loads and dispatchable hydroelectric generators where the past 200 hours of operations is considered, when the two methodologies are side by side, the comparison yielded a similar outcome to a standly charge factor of five times the availability payments during the peak months of the six month obligation period. For the summer, this is three out of the six months, and for the winter, it will be two out of the six months. Additionally, there is a maximum cap of 25 instances that the standby charge would apply to HDR resources. Collectively, between the five times factor and the 25 instances cap over the peak months, this places the HDR resources on the same playing field as a dispatchable load, and as dispatchable hydro, which has similar qualification criteria.

Mr. Agrawal further noted that the standby availability charge is distinct from the augmented availability charge, which relates more directly to the second enhancement of performance assessment. The augmented availability charge is to incent capacity to be available during emergency conditions, or the potential for emergency conditions. The IESO has been asked for the basis for the 10 times factor and the IESO believes that the 10 times factor is appropriately set to achieve this incentive to make all capacity resources available in times of need. It sets the bar for the amplified seriousness of making the capacity available. Mr. Agrawal noted that feedback was also received on the augmented availability charge asking the IESO to consider providing an exemption to any

participant that is placed on any IESO approved planned outage. The IESO supports the comment, however at this time, not all resources eligible for the auction are integrated into the outage management approvals process, and until such time, the exemptions cannot be granted.

Another aspect of the performance assessment enhancements is the testing framework, where based on stakeholder feedback, the IESO is proposing to allow participants the flexibility to schedule their own test to demonstrate their full capability within a defined window. Feedback was also received from the demand response community that an energy payment should be offered for the capacity test. The IESO does not agree with this since no capacity auction participant will receive an additional capacity test payment. However, the IESO recognizes that there are costs related to testing and these costs can be added to the capacity auction offers. Another change made to the testing framework is a revision to the performance thresholds to close the gap between the expected performance levels of the various resource types to make it a level playing field.

Mr. Agrawal lastly referred Panel members to the mapping document where the IESO has laid out all of the proposed enhancements, how they are structured, how they fit together and how they are mapped to the market rules and market manuals.

David Forsyth noted that Mr. Agrawal indicated that payments for tests are the same across all resources types, however there is a discrepancy since generators are paid for energy (market clearing price for the energy market) during testing while loads are not. With regards to adding the testing costs to the capacity auction offers, a link was made to a previous argument by AMPCO about the fairness of the capacity auction. With regards to outages, it was noted that if the 10 times penalty does not apply for generators on an approved outage there is a question of fairness since there is no outage provision for loads, despite AMPCO advocating for this for the past five years. Mr. Forsyth asked if there is a plan for this. Mr. Agrawal noted that there have been extensive engagements on energy payments for demand response resources since 2019, further noting that none of the current proposals are contradictory to the conclusions of those engagements, including the third party report by Brattle on the appropriateness of the energy payments for test activation. The current change is an added flexibility for participants to schedule their own tests and demonstrate their full capability. With this added flexibility, participants will now have better insight into the expected cost of the tests and these costs can be taken into consideration in the capacity auction offers. On a question from Mr. Forsyth, Mr. Agrawal confirmed that generators also schedule their own tests. Sarah Griffiths noted that generators are paid for the test while the demand response resources are not, further noting that she disagrees with the Brattle report findings. In response to the outages question, Mr. Agrawal noted that work has begun to engage on this item.

Emma Coyle noted that while the issue on whether a dispatchable load gets paid energy has been settled, she is hearing a concern about whether a dispatchable load is kept whole since the way to keep generators whole is through the energy market in that generators offer as pricetaker and receive a generator cost guarantee (GCG) payment. Mr. Agrawal indicated that the IESO is proposing that any costs not recovered by the energy market constructs be submitted as part of the capacity auction offers up-front instead of being compensated through the energy market as a separate payment. Ms. Coyle shared that she thought that generators received a cost guarantee when out of market through the GCG program. Ms. Coyle also noting that she is trying to understand the objection from the dispatchable loads and HDR resources and she is not sure if the disagreement is on the line item or the principle that the resource should be kept economically whole, sharing the example that if generators offer in very low, they would be dispatched and would get the energy price and a generator cost guarantee payment out of market, but not be fully topped up. Mr. Agrawal noted that this aspect is untouched with these changes, further noting that all of these considerations were taken into account as part of engagement on the energy payments for the HDR resources, and

none of the current proposals are contrary to the engagement outcome. Ms. Coyle indicated she is not looking to relitigate the issue, but rather trying to understand what principle is being applied to the resources with respect to their ability to recover costs for performing tests. Mr. Agrawal noted that as a result of offering the flexibility to schedule tests, the participant is being given the benefit to decide how much of that cost needs to be addressed through the capacity auction offers relative to all of the other payments received in the energy market.

Mr. Forsyth indicated that up until this set of market rules, there has been a \$250/MWh payment for tests, also noting that because the tests are now being self-scheduled, this is likely causing an issue in the dispatch algorithm or the settlements. Mr. Forsyth indicated that he does not understand why this payment is not being made, noting that everyone is scheduling their own tests, and that generators are getting paid, while loads are not. If they are asked to now add the cost to their bid, they are being prejudiced on the bid since they have to add this cost when others do not. Mr. Agrawal noted that this is related to whether an energy payment is warranted, further explaining that from a capacity auction perspective, the playing field is being leveled so that everyone can self-schedule their own tests. This offers the flexibility for resources to manage bids to demonstrate their full capability in the defined window, noting that this is a driver from a capacity auction perspective. With respect to whether there should be energy payments for HDR resources versus generators, Mr. Agrawal noted that this has been addressed through a separate engagement. Mr. Forsyth noted that the \$250/MWh still exists. Mr. Agrawal indicated that the \$250/MWh is based on when the IESO takes an action to constrain a resource off, but the IESO is not constraining on a demand response resource or any resource under the proposed capacity auction test. Mr. Forsyth noted that when the IESO tests a resource, that is a constraint. Mr. Agrawal noted that the IESO is looking to simplify the administration of the auction by offering the flexibility to resources on managing their costs. If a resource manages their bids and they are lower than the cost that can be recovered from the energy market, then it is suggested through the proposed framework that this cost can be added to the capacity auction offer.

Ms. Griffiths noted that some responses provided in the IESO response to feedback document need to be further expanded. Referring to Chapter 7, section 18.2.1.2a "A balanced assessment of the relative merits and feasibility of this approach was beyond the scope of the present amendment proposal", Ms. Griffiths noted that this impacts the resource and adds to the issues that have been brought forward with the proposals being made. Referring to Chapter 9, section 4.7J.1.1D "The IESO is not aware of any reasons warranting the assertions that the design of the proposed Standby Availability Charge is fundamentally flawed or that it will provide an incentive for undesirable behaviour", Ms. Griffiths noted that this issue has been brought up numerous times by members of the Technical Panel and by a number of participants in meetings with the IESO, noting that they were perhaps not written down based on the presence of Market Assessment and Compliance Division (MACD) within the IESO, which is raised in every discussion. Referring to Market Manual 12, section 5.3.3 where it is stated that "Demand response resources are currently able to provide outage information at a resource level", Ms. Griffiths noted that it has been raised multiple times that there is an impact when only one resource is allowed per zone, further explaining that if there is a large contributor on outage, the entire resource has to be moved out as opposed to the MWs on outage. Since outage has been a topic of discussion, it was suggested that the comment needs to be expanded to get the full picture.

Mike Risavy, IESO, indicated that for the first item on UCAP/ICAP losses (that referenced Chapter 7, section 18.2.1.2a), it was deemed out of scope because it is related to a number of IESO processes including the planning processes and how resources contribute to the system and the zonal nature of the auction, further noting that it is not set up so that the UCAP value for the demand response resources reflects the loss savings. With regards to the standby availability charge, similar comments

have been received through stakeholdering, however the IESO fundamentally disagrees that the structure will incent the behaviour being described. With regards to the outage management feedback, Mr. Agrawal indicated that through the proposals, the IESO has maintained that the relation is between the IESO and aggregator at the resource level. The IESO will not look at the individual performance level, but rather the aggregated performance, since that is the product the IESO is buying. This has been the existing participation model for the aggregators and it is not being changed as a result of the proposals. Ms. Griffiths indicated that the response to feedback document does not tell the whole story related to the outage management process, that it does not include requests by Ms. Griffiths and AMPCO over the past five years, and requested that it be changed. Ms. Griffiths expressed concerns with the language in the document, and as an example, suggested that the statement "The IESO is not aware of any reason warranting the assertions..." be changed to "Despite the fact that participants have brought forward their views...". Ms. Griffiths asked if it was necessary for her to write a response to the response document so that this information is reflected, noting that the IESO could add that there is a disagreement on some items. Ms. Griffiths asked that the language be expanded in the package of materials to be provided to the Board, noting that she disagrees with the items noted above.

Ms. Griffiths shared that she does not support the proposed amendments indicating that work needs to be done to bring the proposals in line with industry standards. Ms. Griffiths further noted that the IESO does not understand the impact of the proposed changes, including those that are out of scope since it is a holistic package, and that the DR participation model has fundamentally changed since October. Ms. Griffiths proposed in her May comments that the capacity test would satisfy the Market Surveillance Panel, suggesting that this change be reviewed first and a pause be taken to see if the need is satisfied. It was noted that the current proposals are the same as those brought forward in May, with the exception of the 5x and the true-up and that since that time they have worked with the IESO, but were at loggerheads. It was noted that this adds to the investor confidence issue facing the energy sector in the province and the unknown changing risks. Ms. Griffiths described the changes as massive, indicating that they cannot be made all at once. They, and other market participants, will need to determine if they understand, and can model the risk, and whether this is a place where they want to do business based on whether it will fundamentally be changed again next year. Ms. Griffiths indicated that her company is struggling with whether they should continue to participate in Ontario and noted that with the amount of changes and the stakeholdering process, she doesn't understand how any supplier and market participant would feel comfortable recommending the proposed market rule amendments.

In response to Ms. Griffiths feedback, Mr. Risavy provided the standby availability charge as an example of how the proposals fit together, how they reflect the changes to the broader framework and how the IESO has worked closely with the demand response community. One of the points raised in feedback was the \$100 notice for charges and changes to the market getting more standby notices. As part of this, the IESO looked at how other resources will be treated on a UCAP basis and the impairment those resources would receive, to find an equivalent for a demand response resource. Various aspects of the demand response framework were reviewed to develop an approach where the resource could self-qualify by looking at the level of risk from the standby availability charge. It was determined that by capping it at 25 times in a year and then five times the daily availability payment on the amount of capacity that is not available, if the cap is reached, it will be the equivalent to how other resources are treated on a UCAP basis, thereby placing all resources on a level playing field. While this will be a different model for demand response resources, there are tools to manage the risk, such as the amount offered into the auction to better reflect the amount available at system need. Currently, as the IESO plans the system, about 69% of the demand response capacity will be available when needed, however when the transition is made to UCAP, there is expected to be an impact on that amount of capacity. Another mechanism available to

manage the risk is that the resource can choose the price to offer into the auction. It was acknowledged that the framework is changing and the IESO will continue to work with the demand response sector. Mr. Agrawal noted that with regards to the comment about investor risk and whether the IESO will continue to make changes moving forward, no certainty has been taken away on the market rules and any additional changes will go through a stakeholdering process. Ms. Griffiths responded to the comment that the IESO gets 69% of the resource, noting that feedback was submitted in the in-day adjustment and baseline discussions that they still do not feel that they are being measured correctly and that the IESO is not paying for all MWs received, also noting that they do not agree with the audit results. It was noted that all of these items matter when discussing the demand response resource, not just the market amendment changes. Mr. Risavy noted that the baseline process does not contribute to how the IESO looks at how capacity meets demand from a planning or operations perspective. Ms. Griffiths noted that the capacity auction cannot be viewed separately from the energy market and suggested that when moving forward with the new procurements mechanisms with blended payments, that the holistic picture needs to be viewed. It was further noted that when all factors are considered, including those not in scope, there is an impact on the resource which has been brought up for years. Mr. Risavy noted that the 69% figure is used when assessing what HDR resources are available and can deliver when needed. The standby availability charge, along with the performance enhancements, enables the framework where resource capacity can be offered into the auction to better reflect the resources available at the time of need and what can contribute to the capacity needs of the system. It was noted that the IESO may see it all fit together differently as the system operator. Ms. Griffiths recommended that step changes be used to see if the initial proposals achieved the desired objectives, and then implement more. Otherwise, the amount of changes completely alter the participation model where they do not understand how they will participate or what their risk is. Ms. Griffiths noted that they are pushing back on the changes as a whole package and not as individual pieces. Mr. Risavy responded that the changes work together for this framework and the broader Resource Adequacy framework. For example, the capacity qualification permeates through all of the IESO's resource mechanisms and to integrate this into the capacity auction, the IESO needs to look at how the resources participate in the auction. It was noted that there are a number of changes because they need to fit holistically together with how the resources participate in the auction, how they deliver capacity to the system and how capacity is treated in the other resource adequacy mechanisms through the Resource Adequacy framework. Ms. Griffiths indicated that she disagrees, noting that this could be done through step changes which would be better for the market, participants and rate payers.

Rob Reinmuller noted that the implementation details seem to be the issue in that the IESO has a vision for the process but market participants don't see how they will get there. It was asked that if the framework does not work in a year or 18 months, how the IESO will adjust for changes, such as those raised by Ms. Griffiths? Mr. Reinmuller added that how we plan on responding to changes in the long run will help inform the decisions being made now. Mr. Risavy indicated that the framework needs to be implemented in order to have the capacity performance adjustment factors as these concepts run through the Resource Adequacy framework. However, there are aspects that can be adjusted over time, if market conditions change and when implementation starts and adequate data are available. As part of normal business processes, the IESO reviews how aspects of the design are performing in the market. An example was provided for the augmented availability charge in that the IESO has not had an EEA notice in approximately two years, and if one is issued when implementation is begun, then it can be evaluated whether the 10 times daily payment is an appropriate level of charge that is incenting the behaviour that is needed or whether it needs to be higher or lower.

Mr. Reinmuller asked how the IESO will account for the risk of market participants not entering the auction because of the unknowns, noting that there may be less than the desired participation. Mr.

Reinmuller agrees with participants being accountable for their bids, but questioned whether participation is being risked and people will shy away from bidding into the market. Mr. Risavy noted that the IESO has received this feedback and has offered sessions for any market participant that would like to understand the rules, indicating that question and answer sessions have been held with the demand response community. There have been some misunderstandings with participants and having the sessions has helped.

Mr. Reinmuller asked Ms. Griffiths whether she is disagreeing with the framework because she feels it will not work, or whether the change is too difficult to implement. Ms. Griffiths responded that some of the aspects are incenting the wrong behaviour and are not achieving what the IESO needs, further noting that the changes made on the MSP recommendations will satisfy what the IESO wants from their resource. Ms. Griffiths explained that their energy markets team is trying to figure out how to bid, but are finding it difficult since how they bid into the auction is fundamentally changing due to the unknown risks and the compounding nature of each change. Ms. Griffiths also noted that they are looking to see if they will bid into the auction, as they need approval to do so. Mr. Reinmuller observed that it is not that the framework is fundamentally broken, but rather that there is an implementation gap that is sufficient enough that they do not know how to bridge it. Ms. Griffiths noted that their comments in the engagement up until November, were asking questions and supportive. The resource has demonstrated over the last few years throughout the creation of Demand Response Auction, the transitional capacity auction and the capacity auction that they have not disagreed with being penalized and being put on standby, and wanted to be ready so that the IESO could use their resource. It was noted that they were the only resource that was in favour of the pay for performance methodology under the ICA, further indicating that they are not a resource that complains, but want to be treated fairly, have the right tools and understand the impacts. Ms. Griffiths indicated that the IESO can get there with some of the proposals, but the compounding nature is the risk and the issue.

Nick Papanicolaou asked whether yesterday, at 17,300MW, would be considered a time of need. Mr. Agrawal indicated that this would be determined as part of a historic review to see if the peak was in the top 200 hours, and if it was, then it would be considered a time of need. Mr. Papanicolaou indicated that the standby \$100 threshold references time of need, therefore being available at the time of need is how they draw conclusions. Mr. Papanicolaou further noted that as someone managing a facility and planning outages, he is trying to balance all activities and be available during a time of need, however it is very difficult to forecast the needed outage periods when looking at the peak and having standby notifications issued on a daily basis. It was also noted that he is not sure how to be available and in alignment between the trigger and what they are seeing. Mr. Agrawal noted that the base availability expectation has not changed with the availability window defined as 12 – 9 p.m. in the summer and 4 – 9 p.m. in the winter. Participants are expected to make their entire obligation available during the window in each of the obligation periods. The \$100 threshold is the trigger for the standby notice to put a resource on standby to be activated on the activation day. Mr. Papanicolaou noted that the trigger brings a penalty and asked for confirmation that the trigger is related to a time of need, and whether it is appropriate, indicating that penalties for standby availability are a concern. Mr. Papanicolaou indicated that if it could be demonstrated that yesterday was a time of need, then it was appropriate. Mr. Risavy indicated that the \$100 standby notice was decided prior to the enhancements being designed and was one of the key inputs into the review of the standby availability charge. The IESO has made two changes as a result: (1) the standby availability charge only happens during the five peak months of the year when there are the higher prices that evoke the standby notice, and (2) a cap of 25 notices is applicable to the five times daily payments which is 125 days, which is the equivalent cap charge for a resource that would have the derate applied every day of the year. Mr. Forsyth added that resources do not have a problem with being on standby, but noted that the five times augmented penalty per day doesn't make sense. Mr.

Risavy referred to the UCAP methodology where resources have this applied every day of the year regardless of the system need and that having the standby notices triggered during peak months and the price trigger is more aligned than for other resource types. Mr. Forsyth indicated that this does not make sense for the HDR resources where a proxy is being used to get to a preconceived concept of trying to make all the resources even, noting that he does not agree with this.

Jennifer Jayapalan, in reference to aligning resources and fairness, asked about the expectation for the demand response resource and the quantity it should be offering, noting that the piece that does not make sense are the penalties to line up demand response with other resources such as generators that have two parts (availability de-rate & performance adjustment factor), therefore the demand response resources have to have two parts. Assuming a demand response resource that is 100MW with a 25% derate and therefore offering 75MW of capacity. Ms. Jayapalan asked about the IESO's expectation on what the demand response resource should offer into the capacity auction knowing that they will have outages over the summer. Whether the expectation was that they should offer 100% because the only way they will be kept equal is if they offer 100% to get paid 100MW the entire time and they will be kept equal through the penalties, or if the expectation is that they should be offering into the capacity auction what they can deliver. Mr. Cumming indicated that all resources are required to offer in their actual physical capability into the energy market. On days where there is an outage and a lower physical capability, they should offer their lower physical capability. On days when fully available, they should offer full capability. Mr. Cumming also noted that HDR resources do not have a derate so their ICAP and UCAP are the same. Ms. Jayapalan indicated that if the outage goes long, the risk becomes high because the resources will have to pay out, noting this as a misalignment. It was further noted that the standby trigger was implemented when gas prices were lower and that there will be standbys the entire summer. Mr. Agrawal clarified that there is a difference between what resources are expected to offer in the energy market, which is the true capability, versus what resources are expected to offer into the capacity auction. In the above example, this becomes a question of whether the demand response resource should offer 100MW into the auction or if they should self-qualify the value that they can reasonably make available during the peak times. The IESO's expectation is the same across all resource types, which is that the resource will offer capacity into the auction that they expect to make available at times of need. It was further explained that this is the basis for the methodology, that for some resource types that get qualified based on the past top 200 demand hours, they are naturally incented to make themselves as available as possible in the top 200 demand hours of that obligation period to get the higher UCAP rate in subsequent auctions. In the case of HDRs, they will want to self-qualify to a value that they can reasonably make available such that they avoid the standby charge. Mr. Agrawal indicated that this is how the framework works, that there is an incentive to avoid the standby charge by putting in capacity that can be made reasonably available in times of need. Ms. Jayapalan recapped that the expectation in her example is that in times of need in the summer, as defined by a standby trigger, the HDR resource can produce 75MW, so they should offer 75MW and they are the same as a dispatchable load and a generator. Where Ms. Jayapalan noted a fundamental issue is that when a resource goes off-line, the HDR will then be receiving an additional five times penalty even though they are receiving the same payment as another resource. Mr. Agrawal noted that all resource types are able to true-up their availability charges to account for the general cycle of planned and forced outages that all resources will face. The availability concept is for managing the day-to-day operations, the standby is in lieu of the availability derate on the qualification side, and the augmented is a separate concept.

Ms. Coyle asked when the \$100 trigger was set and whether it was set to communicate system need. Mr. Agrawal indicated that it was part of the first Demand Response Auction and confirmed that was the intent at the time. Ms. Griffiths added that the purpose was to have the resources available during times of system need, which the HDR resources supported. Ms. Coyle noted her agreement

with Ms. Jayapalan's points, adding that she does not agree with all of the points made by the DR community about the capacity auction, even though some are compelling. Ms. Coyle indicated that this speaks to a broader concern on how market rules are designed, noting that if the goal is to incent a resource to be available for a system need, why is the price based on a marginal resource at that time which was gas when it was \$2 and today it will go higher than \$10. Mr. Agrawal acknowledged the fairness of the question on the suitability of the \$100 threshold especially looking at market conditions moving forward, noting that the framework does not speak to the \$100 threshold. Rather, the risk of the \$100 not being appropriate is being managed through the cap on the standby charge. If in the future, the \$100 is not appropriate, an engagement can take place at that time. Ms. Coyle noted that if this was being applied to a generator, it would be an inadequate mechanism and that if the trigger is not well designed, then capping it is of no help. Mr. Risavy added that the \$100 trigger is not directly part of the proposed capacity auction rules, however it was an input when looking at the standby availability charge enhancements. Given that energy prices were increasing and that there was concern with financial exposure for participants, the data were reviewed to see how the standby availability charge could match the UCAP calculation. The purpose of the 25 times cap was to address the financial exposure to the generator or other resource and it was limited to the peak months of the year.

Paul Luukkonen, an observer, expressed support for some of the comments related to the inappropriate process to develop a new participation model for HDR through minor amendments to the capacity auction, noting that Mr. Forsyth expressed it well at the last Technical Panel meeting by indicating that the standby price was introduced a couple of years ago without pushback since it was a good idea to have a resource available in a time of need. It was noted that whether resources were aware of the potential availability charge up to the total revenue opportunity based on availability payments, is a different conversation. Mr. Luukkonen noted that it is fundamentally linked to the participation model and that it is not an appropriate way to reassess the model since we are hearing that the decision is being made on whether participation will proceed with demand response, noting that it is the backbone of the capacity auction in Ontario. The process was clearly a modification to the participation model. Introducing a standby price trigger has value in having resources available at times of need, but then adding the risk of uncertainty is inappropriate. Mr. Luukkonen noted that allowing the price trigger a couple of years ago without this risk being identified is not appropriate and would have been identified in a more appropriate participation model discussion. Mr. Agrawal indicated that the issue seems to be more about the participant's ability to forecast when a standby is to be triggered, noting that this is part of understanding the markets and the onus is being put on participants to understand the market they are offering into. With regards to risk and uncertainty, the IESO has taken measures to address the financial risk in the capacity auction. Feedback was received on the need for a cap on all of the charges, and as a result, a six month cap was introduced where no participant will be faced with a financial exposure greater than their availability charges. Each of the charges have been carefully designed to level the playing field across the resource types and to align the capacity qualification with that of the assessment reporting. Mr. Luukkonen noted that the level of the standby trigger was introduced without the availability charge and it does not seem to be set at an appropriate level, which would be closer to \$150 or \$200. Mr. Agrawal indicated that the \$100 threshold will be reviewed as part of a separate engagement. Mr. Risavy explained that all of the pieces fit together and if the threshold is changed and there are less standby notices, then it will need to be determined if the five times charge makes sense. If there are less standby notices, the calculation of the charge with the cap will need to be reviewed since it was designed based on \$100. Ultimately, the capacity auction is about acquiring availability and capacity resources and the standby notice is to have the capacity available. If some portion is not available during the standby notice, then there is a penalty. If the cap is reached during this period, the maximum exposure is the same as another resource that has a similar derate for all 125 business days during the obligation period.

Ms. Coyle noted that since the resource is supposed to consider the impact of the rule changes when making their bid in to the capacity auction, and if the risk is not manageable and predictable, then the IESO should consider whether to assume the maximum. Mr. Agrawal indicated that the design is meant to incent a resource to avoid the standby charge and self-qualify up front. Ms. Coyle indicated that the IESO proposals do not reflect what the resources see day-to-day and what they can do to manage risk. Price is not a meaningful signal in the Ontario market and it is difficult to see why price is governing the application of some of the charges.

Vlad Urukov asked whether the IESO looked at the forward price expectation when designing the \$100 threshold and cap, or whether it was based on history. Mr. Risavy noted that the analysis is based on history, but recognizes we are in a rising price environment. For example, there are roughly 125 business days in a season, therefore the product of the cap and the charge multiplier has to be 125 – five times payment for 25 notices is 125 days in the obligation period equalling 50 standby days throughout the year. When looking at the previous year where there were lower energy prices, there were about 35 standby notices. If the cap is reached because of rising energy prices, it keeps the demand resource on an equal playing field to another resource being derated on all 125 days. If there are significantly more standby notices, the demand response resources will have the same potential exposure. If energy market prices drop and there are rarely standby notices, then demand response resources will be treated more favourably than other resources that are being treated on a UCAP basis for 125 days. It was designed so that with rising energy prices, it is not worse than having a derate on all 125 business days.

Mr. Forsyth asked how prices help with reliability. Mr. Risavy indicated that reliability is affected by incenting resources to be available at times of system need. Having a standby notice during the peak incents the resource to avoid the standby availability charges and have capacity available. Going into the auction with self-qualification, underwriting the capacity available and the ability to meet demand is integral to operations.

Ms. Griffiths said that if the rules are implemented, the IESO will have the most complicated structure for demand response in the world, noting that her company participates in almost every open market and utility program that exists and this structure has the most risk, the most complication and is the most confusing. Ms. Griffiths indicated that it is shocking that the IESO has gone down this path, noting that it is not in line with industry standards. It was further noted that the market renewal program was supposed to simplify the market and it has been overcomplicated with these market rule amendment processes.

Ms. Griffiths asked about the process to take rule amendments to the Board, more specifically the timing for the materials and whether they would be provided to the Technical Panel in advance. The Chair shared that the normal process is to provide the materials to the Board, subject to legal advice, and they are made public and posted to the IESO website, also noting that it has not been practice to date to share the materials in advance for comments. The materials before the Technical Panel are the basis for the materials for the Board with the addition of the rationale provided by Panel members. Rob Doyle added that the materials are posted to IESO website three to five business days in advance of Board meetings. The next Board meeting will take place on June 23.

Mr. Luukkonen noted that one of the items he keeps hearing in comparison to other generators is the five times availability payment to adjust for HDR. He noted his understanding that the IESO has stakeholdered the standby availability charge in an effort to have HDR proponents self-register their capacity. For the first long-term RFP (LT1 RFP), the IESO is proposing that proponents register their own values and there is no pending five times availability payments for those resources, noting that this means it can be removed if the proponents self-register, and having a standby price trigger and

incenting resources to be available at times of need remains. Mr. Luukkonen noted that forcing this in lieu of a derate to a UCAP is having unintended market consequences while the IESO is also okay with proponents registering their capacity value in the LT1 RFP. He noted that there are tools that the IESO accepts in some circumstances that can be repackaged without the tremendous market risk that comes to this set of resources. Mr. Agrawal indicated that in comparing the RFP to the capacity auction, it is important to understand the purpose of the mechanisms. In the RFP, the IESO is putting a lot of effort into the performance assessment to ensure the capacity continues to deliver for the identified system needs, and one of the reasons resources need to submit their capacity is when the IESO does not have information on a new facility to do a full qualification. However, in the capacity auction, these are largely existing resources where the IESO has the data and can conduct the analysis upfront. When comparing the two mechanisms, it is necessary to compare the capacity qualification and performance assessments and assess them holistically to see if they will get to the same point. Both mechanisms are designed to only procure capacity that can be delivered in times of need.

Joe Saunders asked, in follow-up to Ms. Griffiths' comments on this being an overly complicated process compared to other locations, whether the IESO looked at models used by other ISOs, and whether this is a continuation of the previous auction or a new model. Mr. Agrawal indicated that the process of qualifying participants is an industry standard in that all capacity markets undertake a qualification of their resources and every market needs to account for the unique participation of their resource types in that market. While some ISOs have access to information for qualification, some do not, and there are different structures in place. The underlying participation model is that an ISO will only secure capacity that can be made available in times of need – this is consistent across the major markets and this is what the IESO model is based on. Mr. Agrawal noted that the IESO model is not new, and the change being brought forward from previous versions is the introduction of a qualification piece where participants bring their own capacity to be assessed so that the IESO can be sure it is available during times of need.

On a motion by David Short, the Technical Panel voted not to recommend the package of market rule amendments to the IESO Board of Directors. As part of the recorded vote shown below, members were instructed that they could provide their rationale in writing following the meeting.

In favour: Mr. Collins, Mr. Short

Against:, Mr. Forsyth, Ms. Griffiths, Ms. Jayapalan, Mr. Papanicolaou, Mr. Maharjan, Mr. Pengra, Mr. Saunders

Abstained: Mr. Coulbeck, Ms. Coyle, Mr. Reinmuller, Mr. Urukov

Absent: Mr. Chee-Aloy¹

Agenda Item 4: Improving Accessibility of the Operating Reserve

Adam Cumming recapped that since this item was last in front of the Technical Panel in July of 2021, the IESO has de-scoped the changes to the operating reserve dispatch tool. As such, the IESO has removed language from the proposed market rule amendments that would have enabled changes to the operating reserve dispatch tool. Mr. Cumming reminded Panel members that the settlement charge relates to when a resource has been scheduled to provide operating reserve (OR) but they do not have enough unused capacity to provide the full amount of scheduled OR should that OR be

¹ A proxy vote was submitted by Mr. Chee-Aloy after the meeting as against.

activated. An example was provided of a 200MW generator currently scheduled for 100MW of energy and 100MW of OR. If they are currently off dispatch by 5MW, and are producing 105MW, then the generator does not have the physical capability to provide 100MW of reserve energy. The proposed market rule amendments would automatically claw back the OR payment for the 5MW of unavailable OR.

The proposed market rule amendments were posted for broader stakeholder comment in July. Feedback was received from Ontario Power Generation who requested expanding the formula for each class of OR. Based on this feedback, the proposed formula has been expanded to three formulas. The clerical changes provided by Mr. Urukov were implemented for sections 7.4.2, 7.4.2.1, 7.4.6, 7.5.9 and to one of the variables in the formula in section 3.9.1.

Mr. Urukov asked a question with respect to the uplift equation, specifically whether the HUSA is a positive term and if the ORSCB is negative in the calculation. Mr. Cumming indicated he would confirm this².

Mr. Urukov asked if revenue meters will be used for the calculation. Jonathan Scratch, IESO, indicated that data from revenue meters will be used to assess this particular charge. Mr. Urukov asked if the IESO has analysed how very small charges will be handled since there could be a charge of a couple of cents many times over, noting that some rounding is appropriate otherwise there will be a high number of small charges and only a small number of meaningful charges. Mr. Cumming confirmed that the charges will be to the cent. Mr. Urukov asked if the IESO has analysed how many times this will happen to see if it is appropriate. Mr. Scratch noted that there is no threshold of materiality to when the charge will apply. Mr. Urukov asked that even though this will not be used as the basis for compliance, how will market participants know that MACD will not use this information? Mr. Cumming indicated the compliance processes are not changing and how compliance is assessed today will be how compliance will be assessed going forward.

Ms. Coyle said that she understands the reasons for the rule amendment, but asked for confirmation that the rule amendment will not alter rules related to compliance with dispatch instructions. Mr. Scratch indicated that this initiative is not introducing any changes to the rules related to compliance with dispatch instructions.

Mr. Urukov noted that this was once coupled with the settlements system change. Mr. Cumming confirmed that the goal is have this change 'go-live' with the RSS implementation in early November. Mr. Urukov strongly encouraged that sandbox testing take place soon and that the IESO work with participants to meet the deadline, further noting that the IESO may overlook the difficulty that participants may have implementing these changes on their site. Mr. Urukov further noted that similar to the settlement system, there has been no communication since the last Technical Panel meeting.

Mr. Forsyth noted that there are at least 2-3 loads with market rule exemptions that participate as dispatchable loads in the IESO-administered market. He asked if the new rules will introduce any barriers and whether anyone will be disallowed from participating in the operating reserve market. Mr. Cumming indicated that these proposed market rules amendments will not restrict participation in the operating reserve market. Mr. Cumming noted that that there are discussions taking place with some market participants with exemptions. Proposed reconsidered terms and conditions have been posted to the IESO exemptions website and are available to be reviewed by any interested parties.

² The IESO confirms that the signs in the Hourly Uplift Settlement Amounts formula are correct in the amendment proposal. ORSCB can only result in either a negative value (\$ owed to the IESO) or zero (no claw back).

Ms. Jayapalan, referring to the settlement charges equation in Chapter 7, Appendix 7.5, asked where the max cap on a generator is defined and whether it is a new term. Mr. Cumming noted that the max cap is a new application in this context, but it is not a new term. Mr. Scratch noted that it refers to what was offered by a market participant for a specific resource and it is the most the IESO can dispatch the resource to. Mr. Scratch added that applicable de-rates submitted on the resource can also lower the max cap of the resource. Ms. Jayapalan suggested that the term be better defined because it is difficult to find.

Mr. Urukov, building on Ms. Jayapalan's comments, indicated that section 2.2.1.15 in Appendix 7.5 lists six items that can further reduce the offer, but it is not readily apparent to participants. Mr. Scratch indicated that these items will affect how the engine will dispatch, not what it can dispatch. To Mr. Urukov's question about the ramp rate limitation, Mr. Scratch noted that this reflects the output that the resource can reach in a given period of time, not what the maximum capability of the resource is, which is the max cap.

Ms. Coyle asked where the max cap is defined. Mr. Scratch noted that it is not a defined term, noting that it is described in the amendments as the lesser of the offer and known de-rates or other resource specific constraints.

Mr. Scratch confirmed with the Panel members that they would like to be informed of the max cap value that was used for each instance of the automated settlement charge. The Panel members confirmed that such information would be helpful when assessing settlement statements. Mr. Scratch indicated that he will discuss including this information with the settlements team.

On a motion by Emma Coyle, the Technical Panel unanimously voted to recommend the package of market rule amendments to the IESO Board of Directors.

Agenda Item 5: MRP – Calculation Engine Batch (Education item)

This education item has been moved to July 12 Technical Panel meeting.

Other Business

Mr. Reinmuller noted that a common theme in the discussions has been implementation, adding that the upcoming Long-Term RFQ is going to have similar issues with requests by proponents to connect new resources. One of the issues Mr. Reinmuller is seeing is that market participants are not fully consulted to see if they can support this direction, further explaining that the proponents will be given a May 2025 date and will go to the LDC to connect saying that the IESO gave them a contract. LDCs will not be able to guarantee this as they are not aware of the project before the contract is issued and then have an obligation to connect, noting that everyone will want to do their best. Referring back to the theme of implementation, it was noted that there is a gap between what the IESO wants people to do and what people can do, not because they do not want to, but rather they cannot achieve this with the time, tools and resources they have. Mr. Reinmuller recommended that the IESO bring market participants in sooner and pay attention to the implementation challenges as this could affect the success of the initiatives. Mr. Saunders added that there are lots of items on the system, such as constraints, that can limit an LDC in being able to move forward.

The meeting adjourned at 11:54 a.m. The next meeting will be held on July 12.

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.