Demand Response Working Group (DRWG)
Meeting Notes - January 30, 2018

Meeting Notes

Date held: January 30, 2018	**Time held:** 9am-1:30pm	**Location held:** Four Points
Company Name	**Representative**	**Attendance Status** (A)ttended; (R)egrets; (S)ubstitute
AMP Energy	Luukkonen, Paul	A
City of Toronto	Koff, Chaim	A
Compass Energy Consulting	MacDougall, Jim	A
Ecobee	Houle, Jonathan	A
Ivaco Rolling Mills	Abdelnour, Francois	A
Nest Labs	Amaral, Utilia	A
Power Advisory	Simmons, Sarah	A
Powerful Solutions	Inman, Peter	A
Resolute Forest Products	Degelman, Cara	A
Rodan Energy Solutions	Goddard, Rick	A
Rodan Energy Solutions	Grod, Adrian	A
Voltus, Inc.	Strawczynski, Zygmunt	A
Registered to participate via teleconferencing		
Cpower Energy Management	Hourihan, Mike	TC
Customized Energy Solutions	Withrow, David	TC
Energy Hub	Kier, Laura	TC
Good Company Associates	King, Robert	TC
Hamilton Utilities Corporation	Crown, Mike	TC
Ministry of Energy	Tomlinson, Patrick	TC
NRG Curtailment Solutions, Inc.	Vukovic, Jennifer	TC
NRG Curtailment Solutions, Inc.	Popova, Julia	TC
OhmConnect	Kooiman, Brian	TC
Sussex Strategy Group	Hiltz, Bonnie	TC
Rayonier Advanced Materials	Laflamme, Serge	TC
Toronto Hydro-Electric Services	Marzoughi, Rei	TC
IESO	Agrawal, Vipul	A
IESO	Chapman, Tom	A
IESO	Chugh, Monique	A
IESO	Cowx, Christina	A
IESO	Desai, Shilpan	A
IESO	Fitzgerald, Dale	A
IESO	Grbavac, Jason	A
IESO	King, Ryan	A
IESO	Kwok, Jason	A
IESO	Trickey, Candice	A
Please report any corrections, additions or deletions to engagement@ieso.ca		

DRAFT

ieso
Connecting Today.
Powering Tomorrow.

All meeting material is available on the IESO web site at: http://www.ieso.ca/en/sector-participants/engagement-initiatives/working-groups/demand-response-working-group.

Item 1 – Update on Adding HDR Resources to EOSCA List

Monique Chugh provided an update on the proposal to include Hourly Demand Response (HDR) resources on the Emergency Operating State Control Actions (EOSCA) list. This proposal was presented to stakeholders at the DRWG meeting on November 16th, 2017 and includes allowing HDR resources to be activated "out-of-market" if an Energy Emergency Alert (EEA) Level 1 has been issued, to help maintain system reliability. The IESO is targeting this change to be in place for the start of the Summer 2018 commitment period.

Member Questions and Comments, *with the IESO's response in italics*:
A member asked if the IESO could provide background on the frequency with which EEA events occur.
These events typically occur about once a year. Looking back from 2014 to 2017, these events tended to occur in the summer when there were consecutive days of heat. The number of historical EEA-1 declarations was presented to stakeholders at the Nov 16, 2017 DRWG meeting. The presentation can be found here: http://www.ieso.ca/-/media/files/ieso/document-library/working-group/demand-response/drwg-20171116-improved-utilization.pdf?la=en

A stakeholder asked whether the IESO can take a control action on the EOSCA list before an EEA-1 is called.
Yes. The operators at the IESO are constantly monitoring the system to ensure reliable operation of the IESO-controlled grid, and may choose to implement a control action if system conditions require. The IESO will implement all available control actions in the EOSCA list prior to the step where an EEA-1 is issued. The IESO will only implement a control action if it provides a net benefit to the operating condition.

A member asked if there are circumstances where a resources' activation through an EEA would not be considered as a valid test.
If a resource successfully responds to an out-of-market activation, the IESO may choose to consider that activation as a valid test. However, the IESO maintains the ability to test resources with a DR capacity obligation up to two times per commitment period.

A stakeholder asked if there are any instances or scenarios where activating an HDR resource would not improve the condition of the system.
It is possible that this may occur when there is a local reliability issue on the system. Also, IESO control room decisions are based on the timing with which a control action is needed. If IESO operators determine that an immediate control action is required to maintain system reliability, and the time frame is outside of the DR resources' availability window, the operators may choose to constrain on/off another resource that can provide a more immediate response to alleviate system conditions.

DRAFT

A member asked what the compensation for a load activated out-of-market would be.
The compensation for an out-of-market activation will be the same as compensation for in-market activations (i.e. there is no additional compensation being proposed under this plan).

Another stakeholder asked whether the compensation would be an energy payment or availability payment.
An HDR resource does not receive an energy (utilization) payment. The resource would only be eligible for an availability payment. Costs incurred for test activations can be factored into a participant's DR auction offer price.

Item 2 – 2018 DR Work Plan

Ryan King presented an outline of the 2018 DR work plan to the members of the Working Group. This included reviewing the 2018 goals for the DRWG, the criteria in the framework to evaluate priority items to be included in the 2018 DR work plan, and a review of the priority feedback items the IESO received for the work plan. The objective of the presentation was to ensure that all stakeholder priority items are documented accurately, and to gain feedback on how the priority items align with the stated goals for 2018.

Member Questions and Comments, *with the IESO's response in italics*:

A member asked if there will be an effort to align any developments with the RFI for non-emitting resources that was issued with proposals for the DR Auction.
Alignment within and between initiatives is an important goal for the IESO. The DRWG will continue to be the forum to have discussions and/or raise issues as it pertains to potential implications for demand response or related items. However, stakeholders should continue to participate and provide feedback directly into each particular engagement or process.

In response to the priority item "Dispatchable Loads in Aggregated Resources", a member commented this priority item should not be evaluated solely against the goals and framework of the DRWG for 2018. This item has been on the table for more than a year and has still not been addressed so it should be afforded additional consideration for it being a priority item.

A stakeholder asked if the IESO could provide some background on the distributed energy resources (DER) framework process and what role stakeholders will have in this process.
IESO committed as an action item to get back to the DRWG with more information on this project.

A member asked if the IESO is planning to integrate DERs into the DRWG as well as the Market Renewal forum.
Stakeholders with an interest in DERs are represented in Market Renewal in a number of ways. First, as with all stakeholders, they are encouraged to participate in the stakeholder engagements for each of the Market Renewal initiatives (Incremental Capacity Auction, Single Schedule Market, Day-Ahead Market, and Enhanced Real-Time Unit Commitment). Second, through storage, demand response and other

resource types, DERs are represented on the Market Renewal Working Group, a stakeholder forum that provides strategic advice on Market Renewal as a whole. Finally, the non-emitting resource subcommittee (which is a subcommittee to the Market Renewal Working Group) is exploring how non-emitting resources, including DERs, will participate in Ontario's future electricity market.

A member asked the IESO could provide of what is meant by a 'weather-sensitive load.'
Weather-sensitive loads can be aggregators with residential contributors whose DR capability can come from interruptible air conditioning.

Another member added that it can also apply to commercial consumers where a large part of their load is HVAC.

A stakeholder commented that the flexibility of weather-sensitive loads does not fit into the IESO's current participation and performance requirements for HDRs and supported the idea of allowing weather-sensitive loads to be included into the ICA.
To clarify, in the current energy market, participants have the ability to manage changes in their capabilities through their hourly energy bid quantities. The IESO believes the current market participation structure offers sufficient flexibility to accommodate weather-sensitive load participation and requests additional clarification from stakeholders on this topic.

A member commented that when they adjust their bids to reflect availability, they are not only losing their availability payment but an additional non-performance charge is applied due to the non-performance factor.
The IESO noted that the penalty charge does vary and its structure is meant to demonstrate the particular importance of being able to provide capacity during time of seasonal peaks. The availability requirement for a DR capacity obligation is the same for all types of DR and is assessed on an hourly basis. Currently in the ICA stakeholder engagement there is discussion of utilizing a capacity qualification process that accounts for average availability and assessment at an average level rather than hourly. The IESO encouraged participants to raise these issues at the ICA where these issues are currently being reviewed and discussed.

In response to the priority item "Quantify the true financial value of Demand Response to the system," a stakeholder clarified that in this request they are encouraging the IESO to look at how to demonstrate the value of DR resources in response to recommendations made in the last Market Surveillance Panel (MSP) Report.
In April 2017, the IESO published a commissioned independent report assessing the potential benefits of Market Renewal, including the potential costs-savings from an incremental capacity action. The document does not look into DR as a standalone product; however, it does estimate the costs-savings and efficiency benefits to the system by incorporating DR and other capacity-types into an incremental capacity auction mechanism to procure capacity to meet Ontario's adequacy needs. The document can be found here: http://www.ieso.ca/-/media/files/ieso/document-library/engage/me/benefits-case-assessment-market-renewal-project-clean-20170420.pdf?la=en.

DRAFT

A member commented that DR resources could be utilized to avoid high market prices and also demonstrate the value of DR to the system.
The IESO responded that in general, it is not in favour of using out-of-market actions which may utilize more expensive resources to displace lower cost resources. While this may have the impact of lowering the energy price for that hour, it could also increase market inefficiencies, lead to higher uplift and capacity costs.

In response to the priority item "Update the DR baseline methodology" in particular a re-evaluation of the in-day adjustment (IDA), a stakeholder commented that their concern is that the sampling period of the IDA is outside of the hours of availability for DR resources. This means that the current methodology may not accurately reflect availability for some resource types.
The IESO encouraged the member to submit additional feedback to help better understand the particular issue. At the same time, there will be a need to balance this concern with the need to facilitate alignment with the ICA –and avoid the creation of new 'seams' issues. The IESO noted that dispatch compliance is currently being reviewed as part of the ICA SE design process.

A stakeholder asked for more clarity on the proposal of a consistent percentage dead-band for all resources for compliance with dispatch instructions in the ICA.
The ICA is proposing to use a percentage-based dead-band alone, rather than utilizing an absolute value MW dead-band as well. This change is being contemplated due to the increasing number of smaller resources on the system (sometimes smaller than the absolute MW dead-band). The current percentage dead-band is ±2% and will need to be assessed for the smaller resources.

In response to the priority item "Construct a webpage that lists DRAPs/DRMPs", a stakeholder commented that their initial vision of the webpage request was to have something more DR-centric, however, they would review the Registered Participants webpage to see if it addresses any immediate concerns they had. *The webpage can be found here: http://www.ieso.ca/sector-participants/registration/organization-registration-and-participant-authorization/registered-participants*

Item 3 – Utilization Payment

Ryan King facilitated a discussion with DRWG members on the key arguments and observations from the Utilization Payments discussion paper. Members were also encouraged to make representations for IESO to better understand perspectives, concerns and rationales on this issue, and to determine whether and how to best proceed. It was made clear the Paper does not include formal conclusions or recommendations, and that the arguments provided in the presentation are the ones from the Paper; they are not necessarily the views of the IESO.

DRAFT

Member Questions and Comments, *with the IESO's response in italics*:

A member commented that as a resource that produces a product and is required to stop production in order to fulfil an activation, they are in favour of utilization payments since they have fixed costs that continue when they are required to stop producing.

A member commented that the issue of price-responsiveness makes sense for a single contributor or entity; however, it is more complicated for aggregated load since the price responsiveness of every member of the aggregate is not the same.
In the current energy bid structure, a resource can have multiple bid laminations (up to 20). Therefore, the sensitivity of each resource within an aggregate can be placed in a separate lamination.

A member commented that many loads are insensitive to high prices because they have costs that need to be paid whether they are producing products or not. For them, that price sensitivity can be well above the maximum market clearing price.
The IESO is seeking clarification on this issue. If DR participants want to consume at any price, it is not clear that a utilization payment will impact this behaviour.

A member commented that in order to incent increased utilization, utilization payments may need to be a multiple(s) of the locational marginal price to incentivize behaviour change.

The IESO asked members of the DRWG, how applicable is the market price versus regulated price plan (RPP) issue to HDR resources?
A stakeholder answered that exposure to market prices and RPP varies within their aggregate which makes it difficult to respond at the zonal level with price responsiveness. They also commented that one of the arguments in the paper against utilization payments is that the avoided cost is payment enough for an activation. However, if a resource is not exposed to those costs, then the argument loses merit.

A member commented that if a resource does not curtail its load, then the IESO will have to pay for a generator to supply the MWs needed in the system. They stated that the IESO will have to buy the energy either way whether it is from a generator or a load.

The IESO noted that load has the ability to demonstrate their price sensitivity through their bids –which indicate the price at which it is more efficient for a load to avoid this cost than consume. In this example, the IESO clarified that the comparison in the comment is problematic because the load does not ever take title –nor incur a cost related to - the production of energy. As noted in one of the arguments in the paper, adding a utilization payment on top of avoided cost negatively impacts wholesale price efficiency and may provide a disproportionate benefit to load.

The IESO went on to note however that there may be other more dynamic efficiency considerations over the longer term related to the utilization payments issue (which is one of the areas the IESO is interested in hearing feedback from DRWG members).

The IESO asked the members of the DRWG to comment on how value of lost load (VOLL) considerations are currently reflected in bids into the energy market?
A member responded it varies by load type. For instance, when looking at a residential customer their VOLL might be very small if their curtailment is air conditioning, however, for a commercial customer their VOLL might be very high if their production of widgets is being interrupted.

The IESO asked the members of the DRWG, if there were utilization payments how would this impact energy bid prices and the utilization of resources?
A member responded that due to the varying price sensitivities of their resources, they are unable to provide a single energy bid price. They also commented that the magnitude of the utilization payment amount will impact any change to bid prices and utilization.

A stakeholder commented that for them, the utilization payment amount varies on a daily basis. However, they believe that with a utilization payment it will improve the utilization of DR resources.
The IESO encouraged the member to provide additional detail and rationale noting that –in order to move forward –the IESO will need to provide some justification in the time, resources, effort, cost (and expected benefit) associated with implementing this change.

A member raised the concern that DR resources will no longer receive availability payments if DR is incorporated into the ICA.
IESO clarified that with the ICA, there would no longer be an auction for DR resources only. Instead there will be an auction for capacity resources, which DR would be required to compete with other supply. Resources that are successful would then receive capacity payments which may differ in form and structure than the current availability payments.

Another member commented that in other markets, load resources in capacity markets receive both capacity and energy payments.

A member commented that the IESO needs to be mindful that there are two types of customers, ones exposed to the market price and others on the regulated price plan. It is encouraged that the IESO looks at the differences between those customers exposed to different prices.
The IESO is encouraging stakeholders to provide feedback or information on portfolios on this topic in order for the IESO to gain a better understanding of why this is an important change to stakeholders.

A member commented that from the IESO's standpoint, financially speaking if utilization payments do not incent a behaviour change then there is no additional cost to the IESO.
The IESO clarified that time, effort, and resources are necessary to implement the change; in addition, there needs to be an assessment of the expected benefits to warrant proceeding.

DRAFT

A stakeholder commented that the goal of the DRWG is to improve utilization of DR resources. They believe that the only priority item on the 2018 work plan that will enable this is utilization payments.
The IESO notes that it is currently working on initiatives that will increase utilization of DR resources. Starting in the 2018 Summer commitment period, the IESO will be adding HDR resources to the EOSCA list so that HDR resources can be utilized to help avoid or mitigate emergency conditions. The IESO is also continuing to work with stakeholders on improving utilization of HDR resources through the DRWG as a priority work plan item.

Item 4 – 2017 DR Auction Results

Shilpan Desai presented an overview of the IESO's 3rd annual DR Auction results which occurred in December 2017. In this auction there was an increase in participation including the clearing of six new participants. The IESO was able to successfully maintain and transition all previously contracted capacity under CBDR and DR Pilot via an auction procurement mechanism. Reasons for the increase in target capacity were explained and the majority of the increase in cleared quantities can be attributed to Virtual resources. Shilpan also noted that the Ontario DR Auction Clearing Price has been decreasing over previous DR auctions; this demonstrates the cost effectiveness of the DR Auction mechanism.

Member Questions and Comments, *with the IESO's response in italics*:
No comments were provided.

Item 5 – Improving Utilization of HDR

Jason Kwok provided the Working Group with an update on improving utilization of Hourly Demand Response (HDR) resources. The IESO has been working with stakeholders to discuss ways to increase utilization of HDR resources and is targeting additional improvements for the 2018 DR auction. A major focus of the presentation was to ensure that changes made align with Market Renewal, and more specifically, recommendations from the Incremental Capacity Auction (ICA) stakeholder engagement. A historical price analysis on standby notices was presented and demonstrated that the value of HDR resources could have been enhanced by their increased availability at times of system need if certain variables were modified.

Member Questions and Comments, *with the IESO's response in italics*:

A member asked if feedback provided in the DRWG would be passed onto the ICA.
The IESO advised that it strives to ensure effective coordination between engagements but encouraged stakeholders to attend ICA stakeholder engagements to participate in those discussions and directly provide feedback.

DRAFT

A stakeholder asked if participants in the Operating Reserve (OR) market are being paid for their availability or only paid for when they are scheduled.
The IESO clarified that participants are compensated for OR when they are scheduled not activated.

A stakeholder commented that the bid price threshold is a barrier to dispatch as it filters out ICI curtailments. However, if there was no bid price threshold, then resources would lower their bids in order to be dispatched.
At the moment the IESO does not have a fully-developed capacity qualification process for the DR auction that assesses a capacity factor for resources. However, the IESO is working on a qualification process for the ICA which would account for availability during times of system peak. The IESO recommended to the working group to participate in the capacity qualification discussion at the ICA SE. The IESO noted that observed energy bid prices are well above the $100 bid price threshold and questioned whether the elimination of the bid price threshold would change bid prices.

With respect to slide 26 in the presentation Improving Utilization of HDR Resources, a member asked whether the data presented used the uniform or nodal price for the dispatch price.
The price was based on the virtual resources' pre-dispatch nodal price for pre-dispatch runs starting at 3 pm day-ahead up to 7 am of the dispatch day.

With respect to the Historical Price Information presented in Improving Utilization of HDR Resources, a member asked whether the IESO was looking at the DR resource's energy bid that goes into the system during the given hour.
This information is not based off of the participants' energy bid, but rather what the price of that zone for that DR resource would have been.

A stakeholder then asked for confirmation if the price that would lead to a DR activation is compared to an energy offer.
The pre-dispatch clearing price for the zone in which a DR resource is participating in will determine the activation of that resource.

A stakeholder commented that the analysis on pre-dispatch prices and the historical number of standby notices is important to them. It allows them to better plan and what decisions to make in the future.

Item 6 – Testing HDR

Jason Kwok provided an update on the HDR testing procedure which was a priority work plan item in 2017. The purpose of the presentation was to summarize the HDR testing process that was provided to DRWG members at the November 16th, 2017 meeting and discuss stakeholder feedback. This priority item was to provide greater clarity on the HDR test dispatch process for stakeholders, and the IESO is recommending closing this item and removing it from the 2018 DR work plan.

DRAFT

Member Questions and Comments, *with the IESO's response in italics*:

A member asked why the testing procedure requires HDR resources to be down for 4 hours instead of only 1 hour.
The testing process for HDR resources mimics in-market activation process. HDR resources are required to curtail their load for a 4 hour block when activated.

A stakeholder asked if the testing process would be changed from 4 hours down to 1 hour if the activation process was changed to an up-to 4 hour activation time.
That element of the testing process could be reviewed if the proposal to move to a one up to four hour activation duration for HDR resources is adopted.

A member raised their concern that having to curtail for 4 hours for testing is unfair. They stated that the IESO receives the same benefit if a resource curtails for 1 hour versus a 4 hour block for testing purposes and a change from 4 hours to 1 hour of testing would reduce lost production costs associated with the test.

A stakeholder asked if there is a possibility of allowing resources to not be tested annually if they have proven in the past that they are reliable.
The IESO currently has the ability to test resources twice a commitment period, or up to four times a year. The purpose of testing resources is to ensure that DR resources are capable of delivering on their capacity obligation. If in the future there are more activations of DR resources, which demonstrate their ability to meet their dispatch, the need for out-of-market testing is less acute.

In response to the priority item "Greater clarity in test dispatch structure of HDR resources", a stakeholder commented that their concern has been addressed and they suggest that this priority item should be closed.

Next Steps

Members are asked to send any feedback from the January 30 meeting by **February 13** to engagement@ieso.ca. The next scheduled DRWG is an in-person session on March 1.

Note: The next in-person ICA meeting is scheduled for March 7.

Member Questions and Comments, *with the IESO's response in italics*:

A stakeholder asked if it would be possible to group more IESO meetings together.
The IESO is committed and mindful of stakeholders' time. The IESO will make the best effort to combine meetings in the future and ensure that agendas are valuable.

DRAFT