

Market Renewal – Energy Work Stream

July 2018: Response to Stakeholder Feedback

Following the July 18 and 19, 2018 Market Renewal - Energy Work Stream stakeholder meeting, the IESO invited stakeholders to provide comments and feedback on a wide range of design options and preliminary decisions associated with the Energy Work Stream.

The IESO received feedback from:

AMPCO

HQEM

MAG Energy Solutions

Nalcor

OPG

Workbench

This feedback has been posted on the IESO stakeholder webpage for these engagements.

Note on Feedback Summary

The IESO appreciates the feedback received from stakeholders. This stakeholder feedback, along with the comments provided at the stakeholder engagement sessions, is important to the collaborative approach the IESO has committed to under the Market Renewal Program and will help inform the design decisions. All feedback received has been noted and will be considered as the engagement moves toward making preliminary decisions. Stakeholders will have additional opportunities to provide feedback on these elements throughout the high level and detailed design phases of the engagement. Below, the IESO has provided a summary table which outlines responses in respect of specific feedback or questions for which an IESO response was required at this time.

Stakeholder comments and IESO responses

Design Element	Stakeholder	Feedback	IESO Response
Market Power Mitigation	AMPCO	AMPCO wants to confirm that the Market Power Mitigation provisions under consideration are not intended to be applied to Dispatchable Loads. Dispatchable Loads have no incentive to attempt to increase market prices.	<p>In general, dispatchable loads will not be subject to most MPM provisions.</p> <p>One exception that is currently being contemplated is related to uneconomic production/consumption. An illustrative example of this issue with respect to dispatchable loads is found in on slides 6&7 of the September 20, 2018 MPM materials.</p> <p>Consistent with the statement found on page 34 in the May 23, 2018 stakeholder session, the IESO continues to consider how to approach this issue in regards to loads.</p>
Pricing for Loads	AMPCO	AMPCO's position remains unchanged from what it was when it last submitted Load Pricing comments on June 21, 2018. AMPCO cannot currently support the IESO's preliminary recommendation of zonal pricing (with a nodal option) for non-dispatchable loads and nodal pricing for dispatchable loads. The current level of evidence that exists to support that preliminary recommendation is not sufficiently compelling to earn AMPCO's support.	<p>The IESO has revised the decision regarding disbursement of congestion rents and loss residuals - it is now a permanent decision.</p> <p>Rationale for this decision can be found in the Sept 20 SSM stakeholder engagement materials.</p>

Design Element	Stakeholder	Feedback	IESO Response
Pricing for Loads	AMPCO	<p>AMPCO would like to understand the IESO’s position on the need for competitive pricing versus the need for preservation of marginal incentives. Reiterating the June 21, 2018 AMPCO feedback, the IESO’s load pricing preliminary recommendation pits the need for competitive pricing against the need for preservation of marginal incentives, and places price subordinate to “market efficiency”. If too much weighting is placed on the need for preservation of marginal incentives (versus the need for competitive electricity pricing), participants in a market that cannot earn sufficient rents will (ultimately) exit the market.</p>	<p>Please note that the move to an SSM will provide cost savings to Ontario consumers regardless of the load pricing decisions described below.</p> <p>The IESO has proposed a nodal/zonal load pricing design for market participant loads in order to promote efficiencies and system cost savings not available through a market with a uniform price.</p> <p>These efficiencies stem from both short-term and long-term locational price signals which can enable more active demand-side participation and can help inform investment decisions.</p> <p>Efficiency, however, has not been the IESO’s sole consideration during the high level design process for load pricing. The IESO recognizes that, in addition to promoting efficient outcomes, the market design needs to be feasible and practical for Ontario consumers. This recognition is evident in the IESO’s decision regarding the distribution of the congestion rents and loss residuals (the residuals) that result from locational pricing in an SSM.</p>

Design Element	Stakeholder	Feedback	IESO Response
			<p>The disbursement methodology will allocate residuals to zones and loads that paid average quarterly prices that were higher than they would have been under a province -wide quarterly price.</p> <p>The allocation decision provides market participant loads with a measure of price protection against unforeseen congestion events, while still encouraging the efficiency benefits of zonal pricing. Loads in lower price zones will keep the benefit of those lower than average prices.</p> <p>The IESO recognizes that this method is not the most efficient way to allocate the residuals. However, the IESO has weighed the potential decrease in efficiency with the need for a practical and feasible solution that supports competitive pricing for all Ontario loads.</p> <p>This is an Ontario specific solution that is intended to address the impacts of moving from a uniform to a zonal price.</p>
Pricing for Loads	AMPCO	AMPCO would like to understand the IESO's position on the permanent versus temporary nature of disbursement of residuals.	The IESO has revised the decision regarding disbursement of congestion rents and loss residuals - it is now a

Design Element	Stakeholder	Feedback	IESO Response
			<p>permanent decision.</p> <p>Rationale for this decision can be found in the Sept 20 SSM stakeholder engagement materials.</p>
Pricing for Loads	AMPCO	It is essential that market participants understand the permanent structure for the disbursement of residuals. AMPCO strongly recommends that this permanent structure be determined now, not at some future time.	See the response above.
Pricing for Loads	AMPCO	AMPCO would like to understand the IESO's position on factors to be considered in Ontario investment decisions. Much of the justification for migrating loads to a zonal/nodal construct was based on the need for an efficient long-run marginal price signal so that future investment can be situated where the electricity market requires it. The Ontario electricity market is not the only thing that is considered when investment decisions are made and other factors include: 1) availability of natural resources, 2) existing facility location, 3) availability of labour, 4) and availability of transportation to and from site. There are likely numerous other factors that would be considered before electricity pricing when making new investment decisions, which challenges the need for an efficient long-run marginal price signal. In the short run, it is true that better marginal price signals will drive	<p>The IESO acknowledges that electricity market prices are but one input into any given investment decision by large consumers of electricity.</p> <p>The proposal discussed at the Sept 20th SE session notes that the IESO's preferred method of disbursing the congestion rents and loss residuals is not the most efficient method. The IESO has weighed the need for an efficient way to allocate the residuals with the principal that market renewal decisions must also be practical and feasible in the Ontario context.</p> <p>Distributing the residuals to relatively higher priced zones provides market participant loads with a measure of</p>

Design Element	Stakeholder	Feedback	IESO Response
		<p>behaviours that encourage non-dispatchable loads to become dispatchable (where that is possible). However, one must consider the incremental benefits associated with this and compare those against the costs associated with less competitive prices.</p>	<p>protection from unforeseen congestion events, while still providing the efficiency benefits of zonal pricing. Such protection is not provided for by the more efficient allocation methods such as a volumetric distribution.</p>
Pricing for Loads	AMPCO	<p>AMPCO would like to understand the IESO's position on the interdependence of electricity markets with other markets. The June 21, 2018 AMPCO feedback notes that markets exist beyond the electricity market. The IESO tends to think of "loads" as just that - exclusively consumers of electricity. They are only "loads" within the context of the electricity market. These entities are also "suppliers" in their own markets (automotive, mining, petrochemical, etc.). If they cannot earn a normal profit from their supply of product (i.e. if their input costs increase beyond what they can charge for their product), then they will be forced to exit that product market - also exiting the Ontario electricity market at the same time. The IESO cannot consider the Ontario electricity market in isolation. An attempt to preserve electricity market marginal incentives may have unintended consequences on commodity or other markets - consequences that will create negative second order impacts for the very market whose marginal incentives it seeks to preserve.</p>	<p>The IESO appreciates this interdependence. As noted above, the IESO has considered factors other than efficiency in its load pricing decisions.</p> <p>The residual distribution methodology will sacrifice some efficiency in order to provide market participant loads with protection from unforeseen congestion events.</p>

Design Element	Stakeholder	Feedback	IESO Response
Pricing for Loads	AMPCO	<p>AMPCO has the following comments in response to the sensitivity analysis IESO presented at the July 18, 2018 meeting:</p> <ol style="list-style-type: none"> 1) As a result of discussions that took place during the July 18 meeting (and shown on slide 24), AMPCO understands that the IESO's comparison of Status Quo (HOEP + CMSC + Losses) is not a direct "apples-to-apples" comparison to its representation of SSM Uniform Pricing, since the SSM value does not contain an approximation of new Make Whole Payments that would partially replace CMSC payments. 2) The Sensitivity Analysis is shown in the IESO's presentation materials from the July 18 stakeholder session on slides 30-36. Due to the discrepancy pointed out in the above bullet point, the relative positioning of Status Quo versus SSM Uniform Pricing is questionable. 3) Further, because the four scenarios presented in the Sensitivity Analysis rely on a residual disbursement methodology that is temporary, the results shown cannot be relied upon. 	<p>The IESO has analyzed the amount of make-whole payments expected after SSM implementation.</p> <p>Considering make-whole payments for reliability commitments, multi-interval optimization, constraint violations and control actions, the IESO has estimated the make-whole cost to be approximately \$3M per year.</p>
Intertie Congestion Pricing	Hydro Quebec	<p>How will wheel-trough transactions be settled for the new proposal for Intertie Congestion Pricing Settlement? Will there be a specific treatment, or will both legs of a wheel-through transaction be treated differently, were congestion to occur?</p>	<p>By virtue of the decisions made through the SSM stakeholder engagement, the import and export legs of a linked wheel could be settled at different prices. This is true for both the internal and intertie congestion cost components for each leg of the wheel-through transaction.</p>

Design Element	Stakeholder	Feedback	IESO Response
			<p>There are not currently any plans to provide specific pricing treatment for linked wheels. The IESO will continue to further examine all HLD decisions, including linked wheels, in the detailed design phase of Market Renewal.</p>
Intertie Congestion Pricing	Hydro Quebec	<p>How will virtual transactions be settled for the new proposal for Intertie Congestion Pricing Settlement? Will they be settled using the same mechanism if there is congestion affecting imports and exports?</p>	<p>As reflected in slide 26 of the IESO presentation on the DAM dated July 19, 2018, virtual transactions will not be able to be scheduled sinking or sourcing from a location outside Ontario. IESO has determined that virtual transactions at the interties would not provide additional functionality or liquidity to the DAM.</p>
Intertie Congestion Pricing	Hydro Quebec	<p>On which basis does the IESO makes the following statement: "With the implementation of SSM and the associated shift to constrained pricing, coupled with the reliance on the new PD optimization, there may no longer be predictable differences between PD and RT prices"?</p>	<p>The IESO was communicating that changes such as the enhanced-real-time unit commitment project, the introduction of locational pricing and/or improvements to load or VG forecasting, may reduce the predictable difference between PD and RT prices.</p> <p>The basis being that better alignment of the inputs for PD and RT should result in better aligned prices between the two timeframes.</p>
Intertie	Hydro	Can the IESO share or publish an example of	Option 1 (static ICP) can result in

Design Element	Stakeholder	Feedback	IESO Response
Congestion Pricing	Quebec	how load would be affected if option 1 is chosen for import congested transactions? HQEM recalls having an example presented in this webinar, but it is not available through the SSM documentation.	<p>increased costs to loads relative to Option 2 (dynamic ICP) due to the interactions between a day-ahead market (DAM), the real-time import offer guarantee (RT-IOG), and a static ICP determined in pre-dispatch.</p> <p>The RT-IOG supports Ontario reliability by protecting imports from downside settlement risk in RT. If prices clear below the offer of an import, that import is topped up to its offer price.</p> <p>Under MRP, the RT-IOG will continue to be available for eligible RT imports not already guaranteed by the DAM. Imports with a DAM schedule and no RT schedule may be able to buy back at lower RT prices.</p> <p>With Option 1 for intertie settlement, Ontario consumers would more often be in a position of guaranteeing the same import MW twice - once through the DAM and again through a RT-IOG.</p> <p>With a static ICP, which is a feature of option 1, RT settlement prices on an import congested intertie will always be</p>

Design Element	Stakeholder	Feedback	IESO Response
			<p>lower than the intertie nodal price in real-time.</p> <p>As stakeholders have noted, if RT prices are consistently lower than those in PD, and a static ICP is always subtracted from the RT intertie price, then that static ICP will drive increased RT-IOG costs.</p> <p>RT-IOG costs are less of an issue under Option 2. This is because there is no static ICP to subtract from the RT price. Transactions on an import congested intertie are settled on the lower of the RT or PD price. This will limit the cost of IOGs.</p> <p>In addition to the IOG concerns above, A dynamic ICP (option 3 for import congested interties) will settle imports in line with the incremental value of imports on a congested intertie. This will encourage imports to offer at prices that reflect the expected marginal value of the transaction, increasing efficiency.</p>
Intertie Congestion Pricing	Hydro Quebec	HQEM would like to comment on the new Intertie Congestion Pricing proposal made to stakeholders. Looking at the overview of imports per jurisdiction, it is shown that 87% of all	The choice of using a dynamic ICP at import congested interties is intended to encourage import offers that reflect the expected marginal value of each

Design Element	Stakeholder	Feedback	IESO Response
		<p>Ontario imports are coming from Québec. Hydro-Québec (HQ), being the largest electric utility in the province, is providing a large share of these imports, through HQEM. The treatment of imports in the new proposal is aiming directly at a few stakeholders, HQEM being the largest of them. HQEM would like to point out that in a neutral market, all stakeholders should have the same treatment, without discrimination. HQEM understands that the percentage of hours which are import congested is low in recent years, but this reality can change in the upcoming years. Imports in the market should be treated on the same basis as exports. It is also important to mention that imports coming in Ontario have a purpose to help cover the energy needs and reliability of the system.</p>	<p>transaction. It is not aimed directly at a few stakeholders.</p> <p>This decision will also better align how internal suppliers and importers are settled during periods of congestion. The real-time import offer guarantee (RT-IOG) will continue to be available to eligible imports.</p> <p>A dynamic ICP can also reduce the cost to consumers associated with RT-IOGs and buyouts through a financially binding day-ahead market.</p>
Intertie Congestion Pricing	MAG Energy Solutions	<p>Regarding option 3, it is a step in the good direction as it will take care of the problems stated in the previous documents we submitted June 12 for RT exports in an export congested intertie. Method 3 is definitely a better choice than method 2. In the current state of the IESO, export congested interties happen more often than import congested interties. If it stays this way in the extended future, then method 3 would solve the majority of the issues.</p>	<p>Thank you for your feedback.</p>
Intertie Congestion	MAG Energy Solutions	<p>For import congested lines, MAG has remaining concerns with method 3. We feel there are issues</p>	<p>A dynamic ICP (method 3 for import congested interties) is intended to</p>

Design Element	Stakeholder	Feedback	IESO Response
Pricing		<p>with creating the right market incentives because:</p> <ol style="list-style-type: none"> 1) Importers will have an incentive to reduce volume at the interties. If RT prices are higher than PD prices, they can receive higher payment if the line is not fully scheduled. 2) Importers will have an incentive to increase their offer price. They may receive exactly their price as a payment if the line is fully scheduled, hence the incentive to bid higher. 3) Importers will have a greater risk in most situations. <p>For more details, please refer to our previous document for a complete example.</p>	<p>encourage imports to offer at prices in line with the expected marginal value of the transaction. Encouraging such offers increases market efficiency.</p> <p>Low offer prices that are submitted with the expectation of accessing higher real-time prices do not promote the most efficient market outcomes.</p> <p>The RT-IOG will still be available to importers to protect against downside risk.</p>
Intertie Congestion Pricing	MAG Energy Solutions	<p>Even after the presentation of method 3, MAG would still suggest that the IESO opt for method 1. This option has seen good results in other markets such as NYISO and CAISO and is offering efficient market dynamics that could optimize intertie efficiency, i.e. bring energy from the lower priced market to the higher priced market. This can be achieved by implementing good incentives for intertie transaction and method 1 seems to be the best method to reach this objective.</p>	<p>Thank you for your feedback.</p>
Intertie Congestion Pricing	MAG Energy Solutions	<p>MAG would like to understand, either with method 1 or 3, what will happen with the intertie congestion that is collected in RT? This money will not be distributed to TR holders as it is</p>	<p>The IESO will examine how to account for and disburse intertie congestion rents through a Transmission Rights stakeholder engagement that will be</p>

Design Element	Stakeholder	Feedback	IESO Response
		today since there will be no such product. This could represent huge amounts that need to be thought of at this time in the process	launched in Q4 2018 and the detailed design phase of market renewal.
Intertie Congestion Pricing	MAG Energy Solutions	MAG would like to know how wheel-through transactions would be treated if the import in IESO is made at a fully scheduled intertie under method 3?	<p>Based on decisions made through the SSM stakeholder engagement, the import and export legs of a linked wheel could be settled at different prices. This is true for both the internal and intertie congestion cost components for each leg of the wheel-through transaction.</p> <p>The import leg of the linked wheel on an import congested intertie would be settled using a dynamic ICP.</p> <p>The IESO will continue to further examine all HLD decisions, including linked wheels, in the detailed design phase of market renewal.</p>
Intertie Congestion Pricing	MAG Energy Solutions	MAG thinks that method 3 is a good idea since it is the same as method 1 for exports, while for imports our concerns remain even while the IOG payments bring a different dynamic. Method 1 seems to be a better all-around solution but method 3 would be the secondary option.	Thank you for your feedback.
Congestion Rents & Loss	MAG Energy Solutions	Regarding Congestion Rents and Loss Residuals in the SSM presentation, MAG would like to	The IESO will disburse the internal congestion rents and loss residuals

Design Element	Stakeholder	Feedback	IESO Response
Residuals		<p>have the IESO's input regarding the document we submitted on June 15th related to the Market Renewal presentation from May. In the IESO's response to stakeholder feedback available mid-August for the May meeting, it is written "response forthcoming". MAG would like to make more comments on this subject of congestion rents and Loss Residual after we see IESO's response on our original document in order to come up with constructive comments.</p>	<p>resulting from locational pricing to Ontario loads. Exports will not be eligible to receive these disbursements.</p> <p>The transmission system in Ontario serves to enable the reliable supply of electricity to Ontario consumers. Investments in, and maintenance of, this network must be made regardless of export demand. Ontario consumers pay for the development and maintenance of this system. They should therefore receive the congestion rents and loss residuals that result from including congestion and losses in nodal/zonal prices.</p> <p>Any residuals remaining after any quarterly disbursement will be carried over and disbursed in the next quarterly period.</p> <p>Congestion rents and loss residuals will be returned to Ontario loads in the manner described in the Sept 20 stakeholder engagement materials.</p> <p>The IESO does not intend to create an internal FTR market at this time.</p>
Intertie	Nalcor Energy	We believe that the proposed change in	Thank you for your feedback.

Design Element	Stakeholder	Feedback	IESO Response
Congestion Pricing	Marketing	<p>methodology as regards export congestion (Option 3) will:</p> <ol style="list-style-type: none"> 1) allow intertie traders to export energy from Ontario in real-time without the added discriminatory downside risk that existed in Option 2 2) Result in more real-time trading/liquidity on the interties. 3) Assist the IESO in managing generation and load: If there is a disincentive for intertie traders to execute real-time export transactions as there is in Option 2, then this will lead to less exporting on the interties, and the IESO will therefore have less operational flexibility with respect to internal generators. This can result in an uneconomic dispatch decision, such as the IESO being forced to shut down a nuclear generator in the off-peak period and then having to meet load with a more expensive thermal generator in the subsequent on-peak period. Option 3 will result in more exporting on the interties, and this will provide the IESO with i) more flexibility in managing internal generators and ii) more ability to economically dispatch units. Overall, this will provide more value to ratepayers. 	
Intertie Congestion Pricing	Nalcor Energy Marketing	With respect to import congestion, Option 3 is the same as Option 2, and NEM believes that this will discourage intertie trading on the import	A dynamic ICP (option 3 for import congested interties) will settle imports in line with the incremental value of imports

Design Element	Stakeholder	Feedback	IESO Response
		side due to the lack of upside potential for intertie traders when the intertie is import congested.	<p>on a congested intertie. This will encourage imports to offer at prices that reflect the expected marginal value of the transaction, increasing efficiency.</p> <p>The RT-IOG will continue to be available to protect importers from downside risk. The RT-IOG supports Ontario reliability.</p>
Intertie Congestion Pricing	Nalcor Energy Marketing	NEM believes Option 3 makes more sense and is less discriminatory than Option 2.	Thank you for your feedback.
Timing & Frequency of Run	Nalcor Energy Marketing	NEM supports the preliminary decision to execute the DAM between ~ 10:00 and 13:30 EPT. This option is generally aligned with gas nomination deadlines and market deadlines for neighbouring jurisdictions/RTOs	Thank you for your feedback.
Congestion Rents & Loss Residuals	OPG	<p>On slide 12 of the SSM presentation, the IESO states that the proposed Zonal Pricing structure versus the status quo provides an annual average reduction in energy costs of \$246M (between 2014-2017). OPG would appreciate additional details regarding this value. Specifically:</p> <p>a) What floor prices and ceiling prices were used in the analysis?</p> <p>b) Of the total \$246 M in savings, the breakdown by source from which savings were achieved (e.g. CMSC reduction, lower prices, etc.)</p> <p>c) What is the impact to the \$246 M value net of</p>	<p>a) The IESO used a floor price of - \$50/MWh and a maximum price of \$2,000/MWh. These values are consistent with pricing information provided to participants throughout the SSM stakeholdering process.</p> <p>b) The IESO is able to provide the following breakdown. Please note that such numbers are derived from historical prices and do not account for any potential behavioural changes as a result of moving from an SSM.</p>

Design Element	Stakeholder	Feedback	IESO Response
		Global Adjustment?	<p>\$209 million – differences between locational prices and the current MCP</p> <p>\$37 million –reduction in constrained-off CMSC</p> <p>c) More than half of the cost savings are retained even after considering the offsetting increase to global adjustment.</p>
Constraint Violations	OPG	<p>The IESO provided 7 guidelines for pricing constraint violations on slide 45-46. OPG supports guidelines 1-3 and 6-7 which are methodical guiding principles. However, OPG reiterates its views submitted on January 19, 2018 that prices should be consistent with the reliability value even if it is determined to exceed \$2000. As is the case with NYISO, this supports transparent price signals to the market rather than utilizing an artificial price cap and also encourages the market to solve constraints rather than relying on uplifts. Based on this rationale, OPG does not agree with the guidelines 4 and 5.</p>	<p>Thank you for your feedback.</p> <p>As reflected on slide 39 of the SSM presentation dated July 18, 2018, the IESO has determined that constraint violation pricing will not result in settlement prices outside the bounds of MMCP.</p> <p>Utilizing a \$2,000/MWh constraint violation price for reliability-based constraints supports a signal of scarcity that is consistent with a need for more relief.</p>
Intertie Congestion Pricing	OPG	<p>OPG continues to have concerns with the proposed Option 2 price treatment under import congestion. OPG would appreciate additional clarification on bullet two on page 58 from the July 28, 2018 presentation that Option 1 can lead</p>	<p>Option 1 (static ICP) can result in increased costs to loads relative to Option 2 (dynamic ICP) due to the interactions between a day-ahead market (DAM), the real-time import offer guarantee (RT-</p>

Design Element	Stakeholder	Feedback	IESO Response
		to inflated costs for loads when import congested.	<p>IOG), and a static ICP determined in pre-dispatch.</p> <p>The RT-IOG supports Ontario reliability by protecting imports from downside settlement risk in RT. If prices clear below the offer of an import, that import is topped up to its offer price.</p> <p>Under MRP, the RT-IOG will continue be available for eligible RT imports not already guaranteed by the DAM. Imports with a DAM schedule and no RT schedule may be able to buy back at lower RT prices.</p> <p>With Option 1 for intertie settlement, Ontario consumers would more often be in a position of guaranteeing the same import MW twice - once through the DAM and again through a RT-IOG.</p> <p>With a static ICP, which is a feature of option 1, RT settlement prices on an import congested intertie will always be lower than the intertie nodal price in real-time.</p> <p>As stakeholders have noted, if RT prices</p>

Design Element	Stakeholder	Feedback	IESO Response
			<p>are consistently lower than those in PD, and a static ICP is always subtracted from the RT intertie price, then that static ICP will drive increased RT-IOG costs.</p> <p>RT-IOG costs are less of an issue under Option 2. This is because there is no static ICP to subtract from the RT price. Transactions on an import congested intertie are settled on the lower of the RT or PD price. This will limit the cost of IOGs.</p> <p>In addition to the IOG concerns above, A dynamic ICP (option 3 for import congested interties) will settle imports in line with the incremental value of imports on a congested intertie. This will encourage imports to offer at prices that reflect the expected marginal value of the transaction, increasing efficiency.</p>
Intertie Congestion Pricing	OPG	<p>Regarding wheel-through transactions in the future:</p> <p>a) Will the ‘implied wheel’ concept continue to exist in the RTM. that is, if a marketer has scheduled an import for 50 MW in HE8 at intertie A and in the same hour has independently scheduled an export for 80 MW at intertie B, will the IESO imply a 50 MW wheel-</p>	<p>a) The IESO intends to continue used the implied wheel through concept once market renewal is implemented. Implied wheels prevent paying import offer guarantees to imports when no net power was provided to Ontario by the participant.</p>

Design Element	Stakeholder	Feedback	IESO Response
		<p>through?</p> <p>b) Will the IESO adopt the NYISO model of "congestion bidding" or the MISO model of "Up to TUC (Transmission Usage Charge) bidding" for wheel-through transactions?</p>	<p>b) At this time, the IESO is not contemplating adopting either of the scheduling mechanisms noted.</p>
Intertie Congestion Pricing	OPG	<p>How does the IESO expect moving to an LMP market will affect Ontario's current structure of physical bilateral contracts? Will the ability for bilateral contracts to be conducted between two different locations be available as opposed to the status quo of a single location?</p>	<p>The IESO expects to continue settling physical bilateral transactions in the new LMP market.</p> <p>Bilateral settlement would include settlement of transacted bilateral energy between two different locations at the applicable energy price difference and in quantities applicable to the respective exchange in the day-ahead and the real-time markets. Further details related to physical bilateral settlement will be provided during the detailed design stage.</p>
Virtual Transactions	OPG	<p>The IESO presented that virtual transactions would not be allowed at intertie zones on the basis that intertie transactions are already in effect virtual transactions and would not provide additional functionality or liquidity to the DAM. OPG believes implementing virtual transactions at intertie zones rather than utilizing intertie transactions to achieve the same result would be beneficial to the IESO by providing greater visibility (and certainty) of expected flows across</p>	<p>Virtual offers and bids allow market participants without physical capability to provide or consume energy in the DAM.</p> <p>Intertie transactions already provide any non-physical market participant with the ability to provide sufficient visibility and certainty of expected intertie flows. A separate category of virtual transactions</p>

Design Element	Stakeholder	Feedback	IESO Response
		the inerties.	would therefore be redundant.
Reporting Obligations	OPG	The table on slide 48 indicates the IESO will publish hourly offered and cleared virtual transactions in aggregate form. OPG understands this to mean the hourly offered and cleared virtual transactions will be published for each aggregate node. OPG would appreciate confirmation that this is the case.	Slide 48 does not refer to publishing this information at each aggregate node. It refers to providing this information in aggregate form to avoid publishing confidential information.
Market System Failure	OPG	On slide 57, the IESO provides three methods that can be used to provide an approximation of what the market price should have been absent a RTM Failure (no suspension). While all three methods address price determination, only method 3 addresses determination of schedules. OPG would appreciate clarification on how the IESO would determine schedules if prices are determined using methods 1 and 2.	Method 3 is the only method that describes a determination of schedules because it implies re-calculating prices using offline studies. Under methods 1 and 2, schedules are already available from the most recent results of the real-time dispatch and the previous day's DAM.
Look Ahead Period	OPG	The IESO has investigated four options to facilitate an 18:00 publishing of ERUC that would span the following day and has determined that none of the options are workable. OPG understands that software capabilities may be a limiting factor but recommends that the IESO consider delaying this preliminary decision until the software vendor has been acquired and there is greater certainty of actual software capabilities.	The IESO notes that this feedback was submitted prior to the September stakeholder meeting, during which the IESO addressed stakeholder feedback on July meeting materials for ERUC. The IESO provided the following response, as well as additional background information, at the September meeting. Software limitations were not the deciding factor for this decision. The

Design Element	Stakeholder	Feedback	IESO Response
			<p>decision on the LAP was based on ensuring that Ontario reliability is addressed, by considering morning ramp requirements and daily energy limits. No change to the preliminary decision is recommended.</p>
Look Ahead Period	OPG	<p>The IESO believes the 20:00 timeframe will be adequate for participants to plan for the next day on the basis that DAM is expected to result in greater certainty of schedules compared to today's DACP combined with the improved scheduling of the PD engine. While greater scheduling certainty should be expected due to improved participation and engine enhancements, there remains other contributing factors that may have a greater impact on inhibiting the ability for participants to adequately plan for the next day. The IESO recognizes in its design element "Timing and Frequency of Runs" that there may be significant changes to system conditions between publishing of DAM at 13:30 EPT and 20:00 which may require additional operational commitments. Unanticipated outages or revised demand forecasts due to changing conditions (to an extent) are unavoidable. Capturing these changes in an earlier ERUC run would improve planning for participants and also facilitate</p>	<p>Noting that this feedback was submitted prior to the September stakeholder meeting, the IESO provided the following response at that time.</p> <p>In addition to improved operational certainty under DAM financially binding schedules, changes in the modelling of CCP and ELR resources during the DAM and PD timeframes will provide more feasible schedules to support participant planning and risk management.</p> <p>The IESO also recommended a process to evaluate the need for additional commitments under the "Timing and Frequency" design element. The new process for additional commitments will address the rare events where significant changes in system conditions occur before 20:00 that cannot be addressed by PD.</p>

Design Element	Stakeholder	Feedback	IESO Response
		greater transparency for the additional operational commitments that are required.	
Timing & Frequency of Run	OPG	<p>A secondary preliminary decision was presented stating that the IESO may evaluate whether additional operational commitments are needed between DAM publishing and the first ERUC run extending into the next day and if required, would result in additional commitments based on a resource’s submitted lead time. OPG would appreciate additional clarification on this decision:</p> <p>a) What criteria will the IESO use to evaluate whether additional commitments are required if it does not have the engine capability to run a parallel ERUC run during this period?</p> <p>b) As the rationale for additional commitments is reliability, will lead time be the only factor considered in determining which resource is committed?</p>	<p>Noting that this feedback was submitted prior to the September stakeholder meeting, the IESO provided the following response at that time.</p> <p>Detailed Design will identify consistent and transparent criteria for determining if additional commitments are required. The purpose of this Design Element is to ensure reliability under the rare circumstance when a significant change in system conditions for the next day occurs that cannot be addressed by the 20:00 pre-dispatch. Additional commitments will only be issued if required to meet Ontario demand and/or reserve requirements.</p>
Intertie Transactions	OPG	Since non-DAM intertie bids and offers will not be considered in PD runs outside of the T+2 timeframe and Ontario is generally a net exporter, how does the IESO expect its planning for SBG situations to change?	<p>Noting that this feedback was submitted prior to the September stakeholder meeting, the IESO provided the following response at that time.</p> <p>SBG is well anticipated day-ahead because it results from a combination of high baseload generation and relatively low levels of Ontario demand. SBG will</p>

Design Element	Stakeholder	Feedback	IESO Response
			<p>be addressed through the DAM because the IESO expects more exports to participate in the DAM as compared to DACP. Similar to today, intertie bids and offers can change prior to the mandatory window; therefore, non-DAM exports are uncertain and cannot be relied upon for managing SBG.</p>
Market Power Mitigation	OPG	<p>The IESO intends to notify participants prior to the designation of uncompetitive interties. Would the IESO please clarify how much advanced notice would be given?</p>	<p>Designation of uncompetitive interties will be reviewed on at least an annual basis. In addition, it is currently contemplated that these designations would be revisited on an ongoing basis as appropriate.</p>
Energy Reference Price	OPG	<p>There are advantages to using a distributed reference bus (PJM, MISO model) as the reference price versus using a single reference node (NYISO's Marcy Bus). Is Richview considered a single reference node? With a distributed load reference bus, the energy component is a load-weighted system price. There is no congestion or losses included in the load weighted reference bus price, unlike the case with a single node reference bus.</p>	<p>Richview is considered a single reference node.</p> <p>However, by definition the congestion and loss components are zero at the reference bus, whether this is a single reference node or a distributed reference bus. The reason that this is the case is that the congestion and loss components are calculated relative to the reference location (single or distributed). The choice of location of the reference bus (whether single or distributed) has no</p>

Design Element	Stakeholder	Feedback	IESO Response
			impact on the value of LMPs.
Offer Obligations; Market Power Mitigation of Physical Withholding	Workbench Corp.	By allowing virtual transactions, IESO enables making participation in the DAM voluntary. Voluntary DAM participation allows more simple management of issues regarding the development of flexible processes to identify and mitigate physical withholding of energy. Workbench continues to hold the position that there be no obligation to offer Operating Reserve, that OR remain a voluntary product and should not be subject to physical withholding mitigation.	The IESO confirms that there will be no obligation to offer operating reserve into the DAM or real-time balancing markets. However, operating reserve will be subject to physical withholding because resources with market power can physically withhold their capacity to drive both energy and operating reserve prices higher.
Market System Failure	Workbench Corp.	Discussions around the management of DAM delays or failures bring up some concerns. Where a market delay results in the publication of financially-binding schedules after the gas market's timely window has passed, a gas-fired generator's ability to secure fuel at the offered price may be compromised. It is suggested that the IESO consider the application of cost compensation were market delays impact legitimate cost recovery of generators.	IESO will not be pursuing a cost compensation mechanism specific to DAM delays given the rarity of the event.
Look Ahead Period	Workbench Corp.	The interaction between the look-ahead period, the advisory schedule, the binding commitment and the physical operation remains cloudy. It would be helpful for the IESO to provide specific examples of resource scheduling within the ERUC. For example, it is unclear how a generator	Noting that this feedback was submitted prior to the September stakeholder meeting, the IESO provided a detailed response at that time. Please refer to the presentation located at the link below for an overview of the future PD process and

Design Element	Stakeholder	Feedback	IESO Response
		<p>would communicate synchronization, ramp-up and ramp-down outside of the advisory schedule. An advisory schedule may show a combined cycle model unit with a financially binding ERUC commitment 4 hours out. The resource's lead time may vary over the day, depending on the hot/ warm/ cold status. The lead time of the physical resources that make up that scheduled combined cycle model unit will vary from one another.</p>	<p>an example of how a CCP resource may become committed in that timeframe: http://www.ieso.ca/-/media/Files/IESO/Document-Library/engage/eruc/eruc-20180920-presentation.pdf?la=en.</p> <p>For synchronization, generators will communicate similar to today's approach.</p> <p>With respect to generator ramp-up lead time varying throughout the day, a lead time data curve will provide the necessary information for PD evaluation at all operating states. CCP resources will be required to provide lead time, which is the notice required to reach MLP from CCP being offline or not injecting, considering number of hours offline. CC modelling will be implemented in all timeframes (i.e., DA, PD, and RT) for consistency.</p> <p>For ramp down to come offline, if PD does not extend the commitment, a generator will notify the CRO of expected de-sync time. When a generator gets a first dispatch below MLP, the generator will advise the CRO of estimated shut</p>

Design Element	Stakeholder	Feedback	IESO Response
			<p>down time. Generators that need to plan shut down further in advance may offer at higher prices to indicate intent to come offline, noting that offers will be assessed for market power.</p>
Look Ahead Period	Workbench Corp.	<p>Will the advisory schedule include assumptions on synchronization and ramp, or will the resource will need to schedule its physical units to synchronize and ramp to meet that obligation?</p>	<p>Noting that this feedback was submitted prior to the September stakeholder meeting, the IESO provided the following response at that time.</p> <p>Pre-Dispatch advisory schedules will include synchronization and ramp assumptions. Given complex interactions between lead time, synchronization time and ramp rates, the method for determining PD advisory schedules for ramp to MLP will be determined in Detailed Design.</p> <p>For RT dispatch schedules, the IESO expects that generators will continue to offer into the market to manage ramp to MLP.</p>
Look Ahead Period	Workbench Corp.	<p>Will mandatory window offer submissions for ramp be permitted for the purpose of meeting a schedule?</p>	<p>As presented in the September stakeholder meeting, the IESO does not intend to routinely allow offer changes during the mandatory window for</p>

Design Element	Stakeholder	Feedback	IESO Response
			ensuring a ramp schedule since this would create uncertainty and impact efficiency of the commitment.
Look Ahead Period	Workbench Corp.	Where synchronization happens mid-hour to meet an hourly schedule MLP requirement, is the commitment period determined after synchronization?	As presented in the September stakeholder meeting, the time of synchronization will not impact the determination of the commitment period. The beginning of the commitment period is established when the PD evaluation issues a binding start-up instruction with an initial operational constraint for MGBRT hours.
Look Ahead Period	Workbench Corp.	How will these ramp-up and ramp-down offers, price and quantity, impact the mitigation criteria?	<p>Noting that this feedback was submitted prior to the September stakeholder meeting, the IESO provided the following response at that time.</p> <p>Thresholds for mitigating uneconomic production will be determined during Detailed Design. For lower priced ramp-up offers: If there is interaction between a low offer during ramp-up and mitigation thresholds, IESO will engage with stakeholders to address this issue. For higher priced ramp-down offers: A higher offer will be subject to assessment for market power. If no market power, a</p>

Design Element	Stakeholder	Feedback	IESO Response
			<p>generator will be able to ramp-down. If there is market power, a generator may continue to operate or may submit outage information.</p> <p>Any exercise of market power in the DAM or pre-dispatch timeframe through physical withholding (not offering a portion or all available capacity into the market) can be effectively managed through enabling virtual transactions and implementing after-the-fact assessment and response processes.</p>

Please note that the information and responses provided by the IESO herein are for information and discussion purposes only and are not binding on the IESO. This document does not constitute, nor should it be construed to constitute, legal advice or a guarantee, representation or warranty on behalf of the IESO. In the event that there is any conflict or inconsistency between this document and the Market Rules, Market Manuals or any IESO contract, including any amendments thereto, the terms in the Market Rules, Market Manuals or contract, as applicable, govern.