

# Incremental Capacity Auction (ICA) – Stakeholder Feedback Form

Stakeholder Meeting: September 28<sup>th</sup>, 2017

<b>Feedback request by:</b> 2017/10/26 <b>Date Submitted:</b> 2017/10/31	<b>Feedback provided by:</b> Company Name: <u>Brookfield Renewable</u> Contact Name: <u>Julien Wu</u> Phone: [REDACTED] Email: [REDACTED]
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The IESO held the first meeting of the ‘Options Phase’ of the Market Renewal – Incremental Capacity Auction engagement on September 28<sup>th</sup>, 2017.

The presentation can be [found here](#).

In order to maximize the effectiveness of this stakeholder engagement process, the IESO requests that stakeholders use the template below to provide feedback on content presented as follows:

- Provide responses to the questions posed
- For options presented, indicate your preference along with applicable rationale/supporting arguments (reference slide numbers where applicable)
- Identify any aspects that you believe require further elaboration or discussion

Feedback received will be summarized and will help inform further discussions at future stakeholder engagement meetings.

Design Element	Features	Questions for Stakeholders	Stakeholder Feedback
<b>Participation Requirements</b>	(1) Organization Participation and Facility Registration (2) Fees & Deposits (3) Performance Security <i>Slides 15-26</i>	<p><b>QUESTION:</b> Are there any aspects of the proposed Participation Requirements that would pose an unreasonable barrier to entry for potential participants?</p> <p><b>QUESTION:</b> What considerations should be taken into account when establishing deposit/security amounts?</p>	<p>The IESO should further clarify how a Capacity Obligation’s actual delivery would be enforced, specifically when obligations have been transferred between participants. For example, the responsibility to deliver on a Capacity Obligation, that has been bought and sold between auction participants, should rest on the final party to have purchased the Obligation.</p>
<b>Resource Eligibility</b>	(1) Ineligible Resource Types <i>Slides 34-39</i>	<p><b>QUESTION:</b> Are there any concerns with the resource types that have been identified as ineligible?</p> <p><b>QUESTION:</b> Are there any other resource types that should be ineligible?</p>	<p>As expressed in our previous comments, the IESO should fully commit to expanding the “incremental” capacity auction to a full-fledged capacity auction, by incorporating all demand and supply of the Ontario electricity sector. This expansion should be carried out by gradually folding in currently contracted and regulated capacity, and the associated demand, in the auction parameters. A 4GW incremental capacity market is miniscule next to Ontario’s regulated installed capacity alone, and consequently will not have enough liquidity to achieve an efficient and effective market outcome by itself.</p> <p>The Capacity Auction should allow, on a voluntary basis, the export of contracted capacity. This mechanism would obviously involved contract negotiations that require additional attention and stakeholdering within the Market Renewal process, but would help to balance Ontario’s capacity demand and supply in the short- and</p>

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			<p>medium-timeframe. In addition, Capacity Obligations should be freely tradeable/transferrable between participants.</p> <p>It should also be noted that the Capacity Auction is a possible solution for Carbon Pricing implementation. The IESO should make it a priority to select flexible market mechanisms that can potentially accommodate Carbon Pricing and other future market changes.</p>
	<p>(2) General Requirements:</p> <p>- New vs Existing Resources  <i>Slides 42-43</i></p>	<p><b>QUESTION:</b> How should new vs. existing resources be defined under the capacity auction?</p> <p><b>QUESTION:</b> In addition to facilities that are still to be built, should new resources include:</p> <ul style="list-style-type: none"> <li>-Existing facilities that have never provided energy to the grid (e.g., previously Behind-the-Meter Generation/off-grid)?</li> <li>-Upgrades to existing facilities that have uprated by some minimum percentage of their existing capacity or that include capital expenditures of a minimum \$/MW amount?</li> <li>-Existing facilities that have not operated for a number of years and are brought back into operation?</li> </ul>	<p>External capacity should be allowed to fully participate in Capacity auctions and be treated equally, to the extent possible according to their deliverability, as internal capacity resources. In particular, the IESO would benefit from allowing external capacity resources to lock in multi-year capacity auction prices (multi-year lock-in is considered a possibility for internal resources in Capacity Auctions).</p> <p>This mechanism would eliminate the need for bilateral negotiations with external markets, such as Quebec, for multi year capacity and energy contracts, and allow market forces to set prices instead.</p>
	<p>(2b) Permits and Licensing  <i>Slides 46-49</i></p>	<p><b>QUESTION:</b> What permits should participants be required to provide to the IESO in advance of the auction?</p> <p><b>QUESTION:</b> If permits are not required prior to the auction, where should participants be in the permitting process prior to applying?</p>	<p>Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.</p>

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		Should the IESO: (a) Establish a specific milestone in the permitting process that projects should have reached prior to the auction, or (b) Require that projects have commenced any required permitting process with the onus on the participant to have this completed prior to the commitment period?  <b>QUESTION:</b> How should delays related to project permitting be addressed?	
	(2c) Project Milestones <i>Slides 50-52</i>	<b>QUESTION:</b> What type of information should the IESO require related to project milestones?	Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.
	(2d) Connection Assessment <i>Slides 53-56</i>	<b>QUESTION:</b> What other considerations should the IESO take into account related to connection of new projects?  <b>QUESTION:</b> What information, if any, do participants require from the IESO related to connection availability prior to offering into the auction?	New interconnection studies and assessments should be conducted in a transparent manner, and openly published. They should not adversely affect existing interconnected resources.
	(2e) Project Financing <i>Slides 57-59</i>	<b>QUESTION:</b> To minimize risk of the project not being developed, should the IESO require participants to provide project financing information, or rely on prudentials and/or other	Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.

Incremental Capacity Auction – Stakeholder Feedback Form  
 Stakeholder Meeting: September 28th, 2017

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		deposits?  <b>QUESTION:</b> If required, what type of information should participants be required to provide?	
	(2f) Project Development Experience <i>Slides 60-61</i>	<b>QUESTION:</b> Should the IESO require participants to demonstrate project development experience? For all projects or only projects over a certain size?  <b>QUESTION:</b> How should this experience be demonstrated?	Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.
	(2g) Site Access <i>Slides 62-63</i>	<b>QUESTION:</b> To minimize risk of the project not being developed, should the IESO: (a) Require participants provide information regarding site access, or (b) Rely on non-performance implications to provide the necessary incentives (e.g. loss of deposit, damage charges, etc.) for developers to ensure they only offer in projects that can be developed on time?	Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.
	(2h) Project Support <i>Slides 64-65</i>	<b>QUESTION:</b> Should project support be a mandatory (i.e., pass/fail) requirement?  <b>QUESTION:</b> If an optional requirement, how should it factor into resource selection? <i>(noting that resource selection would otherwise be based solely on offer price and system constraints)</i>  <b>QUESTION:</b> If so, what should participants be required to provide to demonstrate project support	Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.

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		(e.g., council resolution)?	
	(2) General Requirements:  - Questions for Discussion <i>Slide 66</i>	<b>QUESTION:</b> Are there any other general requirements that stakeholders believe participants should be required to meet?  <b>QUESTION:</b> Any foreseeable issues as a result of requiring all participants (i.e., various technology types, new vs. existing) to meet the requirements outlined in this feature?	Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.
	(3) Resource Specific Requirements:  (3a) Energy Storage <i>Slides 68-70</i>	<b>QUESTION:</b> What factors should be considered related to the treatment of energy storage resources in the ICA?	Energy storage should be treated equally as all other resources; i.e. based on the ability to deliver Qualifying Capacity. The Capacity Auction should respect the principle of product neutrality, and Qualifying Capacity calculation methodologies for all resources should be carefully considered and stakeholdered.
	(3b) Demand Response <i>Slides 71-72</i>	<b>QUESTION:</b> How does eligibility need to evolve as resources are transitioned from the DR Auction to the ICA? <i>(recognizing that the ICA will likely procure a different product than the DR Auction)</i>  <b>QUESTION:</b> Is there anything else the IESO should consider related to the transition of DR resources from the DR Auction to the ICA?	See response above.  It should be noted that the current DR Auction does not result in ‘dispatchable’ products, as DR participants simply react to a price trigger set by the IESO. The IESO should carefully involve stakeholders to determine how the DR Auction’s capacity product will transition as the ICA’s capacity product, because their delivery definitions are fundamentally different.

Incremental Capacity Auction – Stakeholder Feedback Form  
 Stakeholder Meeting: September 28th, 2017

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	(3c) Aggregated Resources <i>Slides 73-77</i>	<p><b>QUESTION:</b> Are existing obligations in the Market Rules regarding aggregation sufficient to facilitate desired participation in the ICA?</p> <p><b>QUESTION:</b> If the IESO was able to upgrade the necessary tools and processes to be able to accommodate smaller resources, what would be a reasonable threshold? (e.g., 100 kW?)</p> <p><b>QUESTION:</b> Are there any other resource aggregation issues stakeholders would like the IESO to consider?</p>	<p>As mentioned, the Capacity Auction should respect the principle of product neutrality, and Qualifying Capacity calculation methodologies for all resource types should be carefully stakeholdered. However, there should be a minimum capacity participation limit, especially given that the ‘incremental’ auction is currently limited to 4GW in demand.</p>
	(3d) Contracted Resources  Issue #1 (Uprates) <i>Slides 80-82</i>	<p><b>QUESTION:</b> What are potential options for dealing with this issue while ensuring no additional costs to ratepayers under the PPA?</p>	<p>The IESO should commit to high-level principles surrounding Contract negotiations in the Market Renewal process, to ensure that supplier economics are maintained in a fair and transparent process.</p> <p>‘Uprates’ from contracted resources with a proven operating history in Ontario can be a valuable and economical capacity product. Ratepayers would not benefit if the Capacity Auctions simply procured new resources to needlessly replaced reliable existing resources. In this scenario, existing resources would become stranded, while ratepayers would take on unnecessary reliability and cost risks associated with new participants and new builds.</p> <p>That said, design options in the Energy and Ancillary markets (e.g. nodal or zonal pricing configurations) need to be finalized before resources can soundly forecast and determine their total revenue requirements.</p>

Incremental Capacity Auction – Stakeholder Feedback Form  
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	(3d) Contracted Resources  Issue #2 (Determining Incremental Capacity) <i>Slides 83-88</i>	Please identify preferred option and provide supporting rationale. <b>OPTIONS:</b> <ol style="list-style-type: none"> <li>1. <math>IC = QC - CC</math></li> <li>2. <math>IC = QF * (NC - CC) = QF * MC</math></li> </ol> <b>QUESTION:</b> Which Option provides a solution that is fair to both participants and ratepayers and ensures resource adequacy needs are met? <ul style="list-style-type: none"> <li>- Are there any additional options that should be considered?</li> <li>- How would this change if the uprated MW were separately metered?</li> </ul>	As mentioned in the answer above. Contract protection and design options in the Energy and Ancillary markets need to be finalized for existing resources to answer this question.
	(3d) Contracted Resources:  Additional Questions for Discussion <i>Slide 90</i>	<b>QUESTION:</b> Are there any other items/issues that should be considered related to the participation of incremental capacity from contracted facilities?	See answer above.
	(3e) Regulated Entities <i>Slides 91-92</i>	<b>QUESTION:</b> Are there any specific participation requirements or issues to be considered associated with the participation of Regulated Entities?	Regulated entities and their affiliates should be allowed to participate. However, the IESO should first commit to expanding the ‘incremental’ auction into a full-fledged market to cover all demand and supply needs of the province. In this context, regulated entities’ capacity should be gradually integrated in the capacity auction, and an increase in demand should match the supply thus introduced to avoid flooding the market.



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			<p>In addition, the introduction of regulated capacity carries two specific considerations. First, Ontario’s regulated capacity is largely non-emitting in nature. Carbon Pricing in the Capacity Auction context should fully recognize this fact to avoid double paying for non-emitting, regulated resources. Second, regulated capacity accounts for the lion’s share of total installed capacity in the province, market power mitigation measures should therefore be a top priority. For example, a minimum offer price could be a solution to avoid undue impact on Auction pricing.</p>
	<p>(3f) Imports  <i>Slides 93-95</i></p>	<p><b>QUESTION:</b> Should the import of both new and existing resources be eligible?</p> <p><b>QUESTION:</b> Are there specific fuel types that should not be eligible to provide imported capacity?</p> <ul style="list-style-type: none"> <li>- Coal is not permitted to be used to generate electricity in Ontario, should this restriction be extended to importing generators/jurisdictions?</li> <li>- Can imports backed by intermittent generation be counted on to meet system adequacy needs?</li> </ul> <p><b>QUESTION:</b> Should system-backed imports be eligible?</p>	<p>Firm physical transmission rights should not be a consideration, in order to: a) avoid introducing an unnecessary cost to participants that would be passed on to rate-payers, and b) avoid barriers to entry to marketers.</p> <p>Intermittent resources should be allowed participation in the ICA. However, as mentioned in previous comments, Qualifying Capacity calculations should be carefully stakeholdered. And again, imported capacity should be treated like internal capacity in accordance to their deliverability.</p> <p>Brookfield continues to recommend the implementation of a Generation Attributes Tracking System to both enable monetizing renewable attributes and to manage carbon-shuffling issues.</p>

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		<p><b>QUESTION:</b> Should imports backed by a proponent’s portfolio of resources be eligible?</p> <p><b>QUESTION:</b> Are there any other considerations that should be considered in relation to the eligibility of imported resources for Ontario?</p>	<p>Capacity Obligations, including Obligations from imports and exports should be tradeable by marketers to help balance supply and demand.</p> <p>Capacity backed by a portfolio of resources should be allowed, as is current practice in many US markets.</p> <p>In the context of capacity trades, curtailment rules and deliverability criteria should be made clear and public. In addition, the IESO should coordinate with external jurisdictions to make public seller markets’ curtailment rules. Non-deliverability of a Capacity Obligation, due to curtailment actions of an external jurisdiction, should not be the responsibility of the Obligation holder.</p> <p>Regarding System-backed capacity: The IESO should make clear how it plans to account for the existing Ontario-Quebec capacity exchange Agreement, where a high volume of both capacity and energy are exchanged. There is currently no clear understanding of how said capacity and energy are scheduled and settled according to <u>market rules and manuals</u>. Without a clear understanding of how the Agreement works, the IESO also risks double-buying the same capacity and energy from Hydro-Quebec, even though Ontario has already paid for the electricity as per the Agreement.</p>
<b>Qualified Capacity</b>	(1) Planned / Maintenance Outages	Please identify preferred option and provide supporting rationale. <b>OPTIONS:</b>	Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.

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	<i>Slides 109-114</i>	<ol style="list-style-type: none"> <li>1. Include planned/maintenance outages implicitly as part of the “Intermittent and Energy Limited” resource’s historical production data</li> <li>2. Exclude planned/maintenance outages implicitly as part of the “Intermittent and Energy Limited” resource’s historical production data</li> </ol> <p><b>QUESTION:</b> What other considerations should be taken into account for how planned &amp; maintenance outages impact Qualified Capacity?</p>	
	(2) Forced Outages <i>Slides 116-122</i>	<p>Please identify preferred option and provide supporting rationale.</p> <p><b>OPTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Exclude OMC outages from EFORd calculation for “Thermal Resources”</li> <li>2. Include OMC outages from EFORd calculation for “Thermal Resources”</li> </ol> <p><b>QUESTION:</b> What type of forced outages should be excluded, if any, when determining EFORd for Qualified Capacity?</p>	<p>Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.</p>
	(3) Seasonal Capability <i>Slides 124-130</i>	<p>Please identify preferred option and provide supporting rationale.</p> <p><b>OPTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Annual test and/or historical production data for “Thermal Resources”</li> <li>2. Seasonal test and/or historical production data for “Thermal Resources”</li> </ol>	<p>Brookfield supports seasonal capacity commitment periods. See (6b) for details. Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with adequate stakeholdering from Ontario participants.</p>

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		<p><b>QUESTION:</b> What other considerations need to be taken into account related to Seasonal Capability when determining Qualified Capacity?</p>	
	<p>(4) Locational Constraints  <i>Slides 132-135</i></p>	<p><b>QUESTION:</b> What other considerations should be taken into account with respect to Locational Constraints?</p>	<p>Locational constraints, as well as zonal and nodal considerations cannot be determined until Energy Market designs are finalized.</p>
	<p>(5) New Resources  <i>Slides 137-145</i></p>	<p>Please identify preferred option and provide supporting rationale.</p> <p><b>OPTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Similar class average values (NERC GADS or CEA)</li> <li>2. Obtain simulated data from a provider</li> <li>3. Similar existing unit(s) in Ontario</li> </ol> <p><b>QUESTION:</b> What other considerations should be taken into accounting when establishing the Qualified Capacity of a new resource?</p>	<p>Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.</p>
	<p>(6) Methodology                      (6a) Aggregation Level  <i>Slides 148-149</i></p>	<p><b>QUESTION:</b> What other considerations for aggregation level should be taken into account when determining Qualified Capacity?</p>	<p>Considerations should be given to existing rules in NYISO, ISO-NE, and PJM, with continuing stakeholder input from Ontario participants.</p>
	<p>(6b) Calculation Method  <i>Slides 150-156</i></p>	<p>Please identify preferred option and provide supporting rationale to calculate Qualified Capacity for “Intermittent and Energy Limited” Resources.</p> <p><b>OPTIONS:</b></p> <ol style="list-style-type: none"> <li>1. Capacity Contribution</li> <li>2. Effective Load Carrying Capability (ELCC)</li> </ol>	<p>Brookfield supports the Capacity Contribution methodology for intermittent resources, as it is the established best practice in US markets. It should be noted that hydro resources’ calculation methodology should be given special consideration relative to wind and solar resources, as even run-of-river hydro facilities have some storage/pondage capability. For example,</p>

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		<p><b>QUESTION:</b> What calculation method should the IESO adopt to qualify capacity from Thermal or Intermittent and Energy Limited resources?</p>	<p>Qualifying Capacity for hydro assets can be determined by reviewing capacity volumes that are derived from long-term average inflows, plus taking into account storage capacity (i.e. number of hours) on a limited basis. From examining historical inflows, a flow duration curve can be constructed and then converted to an energy duration curve.</p>

**General Comments/Feedback:**

1. The IESO should immediately commit to transitioning the Incremental Capacity Auction to a full-fledged Capacity Auction, in order to reap the full benefits of Capacity Auctions. A limited, ‘incremental’ auction lacks the liquidity to function effectively and efficiently to achieve a least-cost outcome.
2. Carbon Pricing can potentially be incorporated in the Capacity Auction. The IESO should be mindful of future ‘tweaks’ that will undoubtedly arise, therefore flexible design options that can be modified with ease should be prioritized.
3. Evolving Capacity Auctions would require fulsome participation from stakeholders. The IESO should commit to rigorous stakeholdering principles and create standing committees with real influence on design options (e.g. qualifying capacity calculation methodology or demand curve).
4. Given the complexity of Market Renewal, disputes and disagreements with other jurisdictions, between participants, between the IESO and participants would no doubt arise. The curtailment of imported and exported capacity can be contentious in particular. The IESO should therefore enhance its Governance structure and processes, with full engagement of institutions such as the Ministry of Energy, the Ontario Energy Board, the Technical Panel, and the Market Surveillance Panel.
5. As the Ontario electricity market is currently fully contracted outside of regulated assets, Contract Protection and the maintenance of supplier economics should be a top priority in the Market Renewal process.
6. Many design options cannot be adequately evaluated until relevant Energy and Ancillary Market Renewal choices, such as the implementation of nodal or zonal energy pricing, are finalized. A Capacity Auction solves for the ‘missing money’ problem. It is thus unrealistic for participants and the IESO to evaluate what the ‘missing money’ should be if potential revenue streams and relevant market changes are yet to be determined.
7. As the IESO currently plays the dual role of System Operator and only Load-Serving Entity in Ontario, conflicts of interest can arise between the IESO’s system dispatch and settlement function and its procurement function. The IESO should commit to principles of transparency, fairness,

and competition by relying on independent, external analysis and arbitration whenever possible. Such a role is typically played by an Independent Market Monitor in other jurisdictions.

8. Transmission capacity, both internal to the Ontario Balancing Area and between markets, is a critical factor for Capacity Obligation delivery, new project development, as well as updates. An independent and unaffiliated third party should review and update the transmission deliverability study of Ontario's external ties and internal network, with full collaboration from Hydro One. A clear, public, and updated understanding of Ontario's transmission grid would provide the necessary information to marketers, generators, and developers to fully participate in the Capacity Auction. Similarly, the IESO interconnection queue should be scheduled in a 'first-come-first-served' and transparent manner, to provide assurance and confidence to developers and update projects