



June 11, 2018

Alexandra Campbell
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Independent Electricity System Operator
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Dear Alexandra,

Power Advisory LLC (“Power Advisory”) and Compass Renewable Energy Consulting Inc. (“Compass”) have prepared this submission on behalf of the Distributed Energy Resources Advisory Committee (“DER AC”). The DER AC is an industry-led group that consists of energy service providers with interest developing resources that distribution-level to meet the needs of electricity customers, including solar PV, energy storage, demand response (“DR”), energy efficiency, electric vehicles, and other demand-side resources. The purpose of the DER AC is to coordinate well-informed stakeholders to contribute meaningfully to the Market Renewal Program (“MRP”) and the implementation of the Ministry of Energy’s 2017 Long-Term Energy Plan (“LTEP”).

The DER AC has decided to prepare a submission for IESO’s consideration in respect of the Incremental Capacity Auction (“ICA”), recognizing that this submission may be outside the current consultation framework that is being followed by the IESO. This submission also outlines several linkages to the MRP’s Energy Workstream.

As such, the DER AC is providing specific feedback on several design elements of the ICA which are relevant for DERs to demonstrate the linkages between design decisions and the ability of DERs to participate in the proposed ICAs. The intent of this submission is to provide helpful information to the IESO as it embarks on the next phase of the ICA design. This submission is consistent with previous submissions made by the DER AC, including our group submission to the IESO’s Phase 1 Non-Emitting Resources Request for Proposal (“NERs RFI”). Several members of the DER AC are also actively participating in the IESO’s DR Auction.

The following sections breakdown our recommendations as they relate to design considerations:

Participation Requirements

The DER AC recommends that, for distribution-connected resources, the participation requirements should be similar to the requirement as set out by the DR Auction, e.g., DR Action Participants (“DRAPs”). The establishment of DRAPs within the IESO Market Rules recognized the characteristics and



operations of resources at this scale, including participation and facility registration, pre-auction fees and deposits, and performance security.

Resource Eligibility and Locational Considerations

The DER AC agrees that financial incentives can be leveraged to provide assurance of availability during the Commitment Period rather than implementing an extensive review of potential eligibility requirements. This approach will help reduce administrative burdens to the IESO prior to the auction.

The IESO has stated that coal-fired generation, contracted and rate regulated generation would be ineligible to participate in ICAs, and that energy efficiency would likewise be ineligible to participate in ICAs (at least for the first few ICAs). While the DER AC agrees with this preliminary decision, we recommend that IESO continue to evaluate options for the inclusion of energy efficiency in ICAs, consistent with other jurisdictions (i.e., PJM, ISO-NE). We believe that there is enough evidence from these markets that energy efficiency can be incorporated and relied on.

With respect to smaller-scale resources, we recommend that the IESO consider two approaches in parallel:

- 1) Lowering the participation threshold from 1 MW to 100 kW (consistent with approach taken in other jurisdictions, such as ISO-NE, NYISO, PJM, CAISO, MISO, SPP); and
- 2) Continuing to permit aggregation of distribution-connected resources in a manner that is similar to the current DR Auction.

DER aggregation provides several benefits to both the IESO and customers participating in auctions:

- Helps ensure resource availability (e.g., sufficient load to provide response)
- Reduces burden on participating customers
- Outage management
- Improves reliability

The DR Auction has enabled aggregation of load within the IESO's ten prescribed electrical zones through special provisions of the Market Rules (Chapter 7, Section 18). These rules for DR supersede other IESO Market Rules pertaining to resource aggregation per Chapter 7, Section 2.3 (e.g., resource aggregation limited at the connection point).

The IESO is considering introducing two or more capacity zones for the ICA. Although the IESO has not yet outlined their approach with respect to the number and configuration of new capacity zones, we recommend that the IESO maintain the current ten electrical zones for DER aggregation:

- Larger capacity zones may pose operational challenges for the IESO with respect to the dispatch of aggregated DERs (e.g., modelling and visibility of DERs which are operating across a zone, etc.);
- Smaller zones (or nodal aggregation) will reduce the benefits of DER aggregation.

The DER AC also recommends that the IESO provide reasonable options for behind-the-meter resources (i.e., demand-side participation). More specifically, energy storage resources should have the option to participate either as a DR resource or generation resource.

For example, in New York, DERs can participate in the capacity market as a demand response resource – called a “Special Case Resource”. Special Case Resources are demand side resources whose load is capable of being interrupted at the direction of NYISO and/or demand side resources that have a local generator, which is not visible to NYISO’s market information system and is rated 100 kW or higher. Special Case Resources can be operated to reduce load from the transmission and/or distribution system at the direction of NYISO. Energy storage that are 1 MW or greater can participate as either an Energy Limited Resources (“ELRs”) or Limited Energy Storage Resources (“LESRs”). Alternatively, energy storage can participate as a Special Case Resource as explained above.

Finally, while the IESO has stated that contracted resources are not eligible to participate in ICAs, the DER AC asks that the IESO consider the potential for expansions or upgrades to existing contracted assets (e.g., the addition of energy storage to FIT contracted projects, etc.), particularly with respect to an aggregation model.

Qualified Capacity

The IESO’s approach to qualify capacity for the ICA needs to consider distribution-connected resources and energy limited resources, such as energy storage. The DER AC notes that per the February 2018 ruling of the Federal Energy Regulatory Commission (“FERC”), the applicable ISOs/RTOs must support the participation of energy storage facilities at their full physical and operating capabilities. We strongly encourage the IESO to similarly adopt this approach for the appropriate inclusion and consideration of energy storage within the IESO administered markets (“IAM”).

Other DERs, such as solar, are variable generators, and would not provide firm capacity on their own. Since the IESO is proposing to use UCAP as a metric for capacity qualification, solar is expected to earn significantly less capacity revenue compared to other resources and would therefore require other revenue streams to ensure revenue adequacy. This could be in the form of Renewable Energy Credits, tax credits, or other programs.



The DER AC also recommends that the IESO enhance coordination, and provide clear instructions to, local distribution companies (LDCs) with respect to capacity availability and deliverability assessments. DERs will need to be assessed for connection capability and resources deliverability at the distribution-level, which will require additional inputs from LDCs prior to the auction. Participants require this information for the consideration of capacity qualification, as well as for determining project economics and feasibility.

Length of Forward Period

The IESO is currently proposing a 3.5 year forward period. Many DERs can be developed within a shorter timeframe, as evidenced by the IESO's DR Auctions.

Resources that participate behind-the-meter, such as energy storage and DR, must coordinate with load customers. Lengthy forward periods are not advantageous as contractual relationships with customers must be maintained for a longer timeframe, adding additional complexity in the years leading up to the commitment period. Longer forward periods may be acceptable for DERs if there is an ongoing ability to participate in rebalancing auctions, provided there is a coordinated transition to ICAs for resources participating in annual DR Auctions. In this regard, we agree with the IESO's proposal for shorter forward periods in the early years of ICA implementation.

The DER AC also agrees with the IESO's preliminary decision to conduct the base auction at the end of the calendar year, which is consistent with the IESO's current DR Auction design.

Commitment Period, Multi-Year Commitments and Rebalancing Auctions

The DER AC agrees that there should be seasonal obligation periods, which is consistent with the DR Auction. This enables DERs, such as DR and energy storage, to tailor bids and reflect seasonal constraints of resources or customers.

While the IESO has indicated that their preliminary decision is for a one-year commitment period, which is consistent to the DR Auction, we noted that longer commitment periods would provide more financial security to participants and their customers, and potentially enable resources to provide capacity at lower cost.

Multi-year commitments should be available for certain resources, including DERs, particularly for new resources and expansions of existing facilities. Treatment should be consistent across different technology and resource types. Therefore, assuming multi-year commitments are available, all resource types should be eligible to receive multi-year commitments.



Resources should also be permitted to select length of a multi-year commitment (i.e., if the maximum length of a multi-year commitment is 7 years, then a resource should be able to select between 1 and 7 years) which is similar to the rules adopted by ISO-NE.

The DER AC is generally supportive of approach to implement one or more rebalancing auctions within the forward period. If there is a 3.5 year forward period, the DER AC would recommend at least 3 rebalancing auctions. The rebalancing auctions provide an opportunity for resources with shorter development timeframe to contribute to meeting resource adequacy requirements. The last rebalancing auction should take place as close as possible to the beginning of the commitment period.

Target Capacity and Demand Curve Components

The IESO needs to ensure that there is sufficient planning transparency and regulatory oversight with respect to determining target capacity to ensure investor confidence in ICAs. We note that there are certain complexities with respect to forecasting capacity requirements given uptake of DERs, many of which are not participating in the IAM and may be participating as a behind-the-meter resource, leading to resource forecasting uncertainty. Therefore, it is essential for the IESO to work with stakeholder and LDCs to ensure accuracy and robustness of IESO forecasts.

With respect to the cost of new entry ("CONE"), the IESO should ensure that the reference resource matches expectation for new resource development within the auction. We agree with the IESO's preliminary decision with respect to the need for informed stakeholder engagement and regulatory oversight.

The DER AC also recommends that the IESO provide further consideration for the "net" part of Net CONE, which may not be accessible all DERs. For example, in today's DR Auction mechanism, hourly demand response resources are not compensated for energy and are not permitted to provide other ancillary services (such as Operating Reserve).

Resource Obligations within Forward Period, Resource Performance Obligations and Performance Assessment

For distribution-connected resources, the security requirements should be consistent with the current DR Auction.

With respect to project milestones during the forward period, the DER AC agrees with the IESO's recommended approach, which would minimize administrative burden on IESO - milestone updates may be more applicable for larger facilities, but not necessary for smaller resources. Overall, the approach needs to also consider reducing administrative burden on load customer, as opposed to other resources

with very large capacity obligations. We also recommend that the IESO ensure alignment with capacity check tests that maybe required during the obligation period.

Consistent with the comments presented earlier in this submission, the DER AC notes that aggregation is essential for DERs to meet must offer requirements as it helps reduce the administrative burden for smaller-scale resources. The DER AC agrees with approach that is consistent with DR Auction (e.g., Pay for Availability), however the DER AC could also support an approach that considers average assessment rather than an assessment within each hour. Capacity check tests should be planned in such as way to minimize disruption to load customers and should occur during the commitment period. The IESO may not need to perform checks for resources that have proved capability or history of good performance.

We also note that there is a need to discuss further visibility and control with respect to aggregated resources participating in ICAs.

Cost Recovery

DERs can provide value to customers, distribution systems, and the IESO. As it pertains to value to customers and value to distribution systems, the DER AC is very interested in cost recovery mechanisms for the ICA. Cost recovery approaches and methodologies will impact customer behaviour and participation in market mechanisms. Therefore, the DER AC recommends that cost recovery mechanisms continue to incent consumers to reduce consumption during peak periods (i.e., similar to the Industrial Conservation Incentive).

Linkage to Energy Workstream

While this submission has focused on the ICA, the DER AC this submission also provides feedback with respect to linkages to MRP's Energy Workstream. As such, offer the following for the IESO's consideration:

- There needs to be a better understanding with respect impacts and opportunities for distribution-connected projects, in terms of the ability to participate in the IAM, data and technical requirements to integrate within the dispatch/scheduling models.
- With respect to the day-ahead market (DAM), for embedded variable generators, there is a need for clarity with respect to expectations for participation and risk management with respect to forecasting.
- For DR resources, a day-ahead schedule can minimize the risks to participants in a portfolio by providing time to prepare for the dispatch instruction.
- The IESO has proposed a new Price Responsive Load customer to increase participation in the DAM, which could provide additional opportunities for behind-the-meter DERs.



Thank you for the consideration of our submission, and we look forward to future discussions. We welcome the opportunity to meet at discuss this submission if that would be of interest to the IESO.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sarah Simmons".

Sarah Simmons
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