Power Advisory LLC

Leonard Kula
Vice President, Planning, Acquisition and Operations, and Chief Operating Officer
Independent Electricity System Operator
1600-120 Adelaide Street West
Toronto, ON M5H 1T1

February 17, 2021

Dear Leonard,

This submission responds to the Independent Electricity System Operator (IESO) January 26, 2021 presentation, *Resource Adequacy Engagement* [1], that informed of IESO Board of Directors approval of the Resource Adequacy Framework within the IESO-Administered Markets (IAM), along with next steps and new concepts to be worked on within subsequent meetings within the Resource Adequacy Engagement.

Power Advisory LLC has coordinated this submission on behalf of a consortium of renewable generators, energy storage providers, and the Canadian Renewable Energy Association (the "Consortium"[2]).

The Consortium continues to support the high-level Resource Adequacy Framework (the "Framework"), and looks forward to working with IESO, market participants (MPs), and other stakeholders towards defining the details within the Framework through open and transparent engagements.

The subsections below provide comments and recommendations regarding key components that were presented by IESO during the January 26 stakeholder engagement meeting, followed by responses to IESO questions posed during that meeting.

General Comments Based on IESO Responses to Stakeholder Submissions Relating to the Framework

The Consortium offers the following comments and recommendations regarding IESO's feedback on the last round of stakeholder submissions.

- Many MPs and stakeholders have identified the need for IESO to be more transparent regarding identification of power system needs, identification of resources to meet these needs, and mechanisms used to procure identified resources. For example, IESO should have disclosed plans to re-contract the Lennox generation station (GS) much earlier than it was disclosed, along with providing clarity regarding what system needs Lennox GS will address, including assessment of resource options considered in lieu of re-contracting Lennox. Going forward, IESO should

[1] See https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Resource-Adequacy-Engagement

[2] The members of the Consortium are: Canadian Renewable Energy Association; Axium Infrastructure; BluEarth Renewables; Boralex; Capstone Infrastructure; Cordelio Power; EDF Renewables; EDP Renewables; Enbridge; ENGIE; Evolugen (by Brookfield Renewable); H2O Power; Kruger Energy; Liberty Power; Longyuan; NextEra Energy Canada; Pattern Energy; Suncor; and wpd Canada.

primarily rely on the developed Framework and the resource adequacy acquisition targets identified with MPs and stakeholders within Annual Acquisition Reports (AARs). The Consortium recommends that prior to consideration of any unsolicited project proposals, IESO should have already disclosed the aforementioned power system planning information and transparently solicited the market for potential solutions to address resource adequacy needs (e.g., via Request for Information (RFI) process well in advance of the timing to meet identified resource adequacy needs) prior to a pre-determined or closed process. This would allow for more cost competitive solutions to be brought forward and greater transparency relating to these matters.

- Building on the points above, if required, IESO should disclose a clear and transparent process to evaluate unsolicited project proposals, including the projects that have been, or are being, reviewed by IESO. The Consortium notes that at the January 26 engagement meeting, IESO stated they will "provide more information on its role and its review process for unsolicited proposals in February".[3] We also note that on February 5 IESO cancelled the planned Resource Adequacy Engagement meeting for February, but note that Unsolicited Proposals is an agenda item for the February 17 Stakeholder Advisory Committee (SAC) meeting (under Agenda Item #2: IESO Business Update).[4] The Consortium has reviewed the applicable meeting materials for this SAC meeting and believes more information is needed regarding IESO's evaluation of unsolicited project proposals. Therefore, we look forward to the upcoming discussion at the SAC meeting and hope it will provide additional information related to unsolicited project proposals (e.g., disclosure of proposals that have been or are being evaluated by IESO, any decisions IESO has made or expected to make regarding additional sole source procurements, as was done for Lennox GS, etc.).

- Regarding implementation of the Framework, during the January 26 engagement meeting, IESO stated that plans are to "fully implement the Resource Adequacy framework by the end of the decade".[5] As stated in previous Consortium submissions, this timeframe is simply much too late. Asset owners/operators and their investors, along with prospective project developers, require certainty of the Framework well in advance of making investment decisions regarding operating assets (e.g., generators, storage, etc.) and developing projects. Even though IESO projects supply needs to not emerge until the 2025 timeframe[6], and many contracts with generators are not due to expire until the late 2020s through the mid-2030s, the Framework should be fully defined in 2021 and implemented in 2022. This timeframe aligns with supply needs emerging around 2025, as it provides sufficient time for asset owners/operators and their investors, along with

[3] See p. 10 of the January 26, 2021 Resource Adequacy Engagement presentation

[4] See February 17, 2021 SAC meeting agenda located at https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Stakeholder-Advisory-Committee/Meetings-and-Materials

[5] See p. 12 of the January 26, 2021 Resource Adequacy Engagement presentation

[6] See p. 28 within IESO's *2020 Annual Planning Outlook Engagement* presentation located at https://www.ieso.ca/en/Sector-Participants/Planning-and-Forecasting/Engagement-Updates

prospective project developers, to make informed and timely investment decisions in accordance with meeting Ontario's power system needs.

- IESO should provide a set schedule of Resource Adequacy Engagement meeting dates for the balance of 2021, including topics to be discussed at each meeting (see Appendix A for topical suggestions regarding organization of future meetings). This stakeholder engagement structure will provide greater assurances that the Framework will be developed and implemented within a timely manner resulting from robust engagement with MPs and stakeholders.

Resource Adequacy Framework and Annual Acquisition Report

As described in the January 26 presentation, the Consortium agrees with the following three components to operationalize the Framework: i) clear articulation of power system needs (i.e., planning and operational), including timing and locational considerations; ii) integrating needs and translate them into acquisition targets (i.e., MWs); and identify acquisition mechanism(s) (e.g., Capacity Auctions (CAs), Request for Proposals (RFPs)/contracts, etc.). Therefore, we support IESO's plans to develop a new report – the AAR that will define these three components in needed details on an annual basis (and more frequently if required) following the release of the Annual Planning Outlook (APO).

The Consortium generally agrees with the direction IESO has proposed regarding key considerations for the content and scope of AARs along with important linkages to APOs.

Listed below are data/information that should be included within APOs, needed to help inform asset owners/operators, project developers, other MPs and stakeholders of Ontario's power system needs, including future supply needs.

- Gross, net, and grid energy demand forecasts (all-of-Ontario, zones)
- Inputs and variables used to forecast energy demand
- Methodologies and models used to forecast energy demand
- Methodologies and models used to determine reserve margins (all-of-Ontario, zones)
- Methodologies and models used to determine transmission zones and capacity zones (if different to transmission zones)
- Supply capacity by individual resource facilities and other resources as applicable (e.g., distribution-connected)
- Total supply capacity (all-of-Ontario, zones)
- Schedules for refurbishment of nuclear generating units, with updates as applicable
- Schedule for retirement of nuclear generating units, with updates as applicable

- Schedules for generating units applied and approved to de-register from IAM, with updates as applicable
- Schedule of contract expiries for generation facilities and other resources (e.g., storage, etc.)
- Schedules and in-service dates for resources in development, with updates as applicable
- Supply adequacy/resource capability assessments by individual facilities and units and other resources (e.g., demand response (DR), etc.), and projects being developed
- IESO-Controlled Grid (ICG) security constraints and transfer capability impacting energy production by individual facilities and units, with updates as applicable
- Transmission upgrades and expansion projects, with updates as applicable
- Transfer capabilities of all interconnections, with updates as applicable
- Import and export capabilities, with updates as applicable

The following are additional points to work through within the Resource Adequacy Engagement relating to scope and content of AARs (additional to what IESO had proposed in the January 26 presentation). Further, the Consortium recommends that important linkages between key components (e.g., temporal, resource adequacy mechanisms) within the Framework, including AARs, and key decision points need to be discussed.

- Clear, transparent, and timely data and information from IESO power system planning documents (e.g., APOs) to be used towards determining Ontario's power system needs (e.g., supply needs), which will assist with determining investment decisions for existing assets and potential new projects to meet these needs
- Potential evolution of CAs regarding meeting short-term resource adequacy needs
- Options for operating generation facilities post expiry of contracts, including projections of revenue adequacy from IAM (not including any potential revenues from contracts or other sources outside of IAM (e.g., regulated rates, funding programs, etc.))
- Decisions when to administer RFPs/contracts towards meeting medium- and long-term resource adequacy needs, including when to use specific mechanisms (e.g., RFI, surveys, etc.) to help determine selection of resource adequacy mechanisms
- Clear descriptions of what "short-term", "medium-term", and "long-term" timelines are and how they will be defined relative to determining timeframes of resource adequacy needs and selection of mechanisms to meet needs

- Process to review and design RFPs/contracts towards making improvements to previously administered RFPs, other potential procurement programs (e.g., standard offers), and contracts
- Circumstances and conditions where sole source project negotiations may be appropriately used towards executing contracts, including any framework to assess unsolicited project projects
- Eligibility rules for participation within Capacity Auctions, RFPs, and other procurement programs
- Governance, decision-making, and recourse regarding design/rules of resource adequacy mechanisms and their results

IESO Plans to Evolve Capacity Auction Design and Rules

The January 26 presentation referenced plans to develop unforced capacity (UCAP) metrics to determine resource adequacy supply contributions for all asset types (e.g., generators by fuel-type, storage, DR, etc.).

The Consortium understands why existing U.S. Capacity Markets[7] utilize the UCAP metric. However, the Consortium recommends that IESO work to define UCAP, or a similar metric, for variable (i.e., wind and solar) generators based on different parameters to more effectively capture the true capacity value of these generators. For example, the Consortium recommends that the proper way to determine capacity values for variable generators is to perform an Effective Load Carrying Capability (ELCC) study.[8]

The Consortium also recommends that capacity values should be determined on a seasonal basis and not an annual basis. This will result in a more efficient market and consistent with existing IESO practice of establishing separate summer and winter capacity targets within CAs.

Responses to IESO Questions from January 26, 2021 Resource Adequacy Engagement Webinar

Below are the questions posed by IESO during the January 26 presentation followed by the Consortium's responses.

1. *Does the proposed process to set acquisition targets and select competitive mechanisms align with stakeholder needs?*

As stated in the sections above, the Consortium agrees with setting acquisition targets and selection of competitive mechanisms as components within the Framework and inclusion within AARs. However, as also stated in the sections above with suggestions in Appendix A, IESO needs to schedule set meetings organized by key topics towards defining all components within the Framework, including when non-competitive procurement mechanisms may be used (e.g., sole source procurement), etc.

[7] e.g., NYISO, ISO-NE, PJM

[8] For further rationale see pp. 27-29, *Customer Focused and Clean Power Markets for the Future* (November 2018), see https://windsolaralliance.org/wp-content/uploads/2018/11/WSA_Market_Reform_report_online.pdf

2. *Is there any additional information that the IESO should consider including in the AAR to help participants make investment decisions?*

Yes – see applicable recommendations in the section above

3. *What are the timing considerations from a stakeholder perspective with respect to the AAR?*

The Consortium supports AARs being released subsequent to APOs being released, and agrees with IESO that additional AARs per year may be required.

4. *Are there any concerns with the proposed Capacity Auction enhancements*?

Overall, the Consortium is supportive of IESO's proposed enhancements to CAs. However, as noted in the applicable above section, ELCC should be the metric used to determine the capacity values for variable generators, along with seasonal values for all resources eligible to participate within CAs.

The Consortium will be happy to discuss the contents of this submission with you at a mutually convenient time.

Sincerely,

Jason Chee-Aloy
Managing Director
Power Advisory LLC

cc:
Chuck Farmer (IESO)
Candice Trickey (IESO)
Barbara Ellard (IESO)
Dave Devereaux (IESO)
Brandy Giannetta (Canadian Renewable Energy Association)
Elio Gatto (Axium Infrastructure)
Roslyn McMann (BluEarth Renewables)
Adam Rosso (Boralex)
Greg Peterson (Capstone Infrastructure)

Paul Rapp (Cordelio Power)
David Thornton (EDF Renewables)
Ken Little (EDP Renewables)
Lenin Vadlamudi (Enbridge)
Carolyn Chesney (ENGIE)
Julien Wu (Evolugen by Brookfield Renewable)
Stephen Somerville (H2O Power)
JJ Davis (Kruger Energy)
Deborah Langelaan (Liberty Power)
Jeff Hammond (Longyuan)
David Applebaum (NextEra Energy)
John O'Neil (Pattern Energy)
Chris Scott (Suncor)
Ian MacRae (wpd Canada)

Appendix A – Topics for Future Resource Adequacy Engagement Meetings and Structure of Meetings

The following Resource Adequacy Engagement topics are recommended by the Consortium regarding the organization of stakeholder engagement meetings for the balance of 2021 (and through 2022 if required).

- Following components within the Framework require specific streams of stakeholder engagement
    - Potential CA design enhancements and eligibility for participation within CAs relative to other resource adequacy mechanisms
    - Scope, structure, and design of RFPs/contracts, so as to use 'lessons learned' from previous RFPs/contracts used within Ontario and other jurisdictions towards improving the structure and design of RFPs/contracts going forward, including eligibility for participation within RFPs/contracts relative to other resource adequacy mechanisms
    - Scope, structure, and design of specific programs (e.g., standard offers, etc.), so as to use 'lessons learned' from previous programs used within Ontario and other jurisdictions towards improving the structure and design of programs going forward
    - Define any circumstances and conditions where sole source negotiations may be appropriately used towards executing contracts (e.g., Reliability Must-Run (RMR) contracts), including any framework to assess unsolicited project proposals, and establishment of principles (e.g., transparency, etc.) when sole source negotiations will be used to execute contracts
    - Reforms to governance, decision-making, and recourse framework within IAM relating to resource adequacy, as Appendix B clearly shows recent examples (e.g., previous Incremental Capacity Auction (ICA) initiative, etc.) and resource adequacy mechanisms (e.g., December 2020 CA, RMR contracts) that should be kept in mind when developing details within the Framework[9]
- Clearly define what is meant by "transition", which existing facilities and projects will be included within any such categorization that has been used by IESO in previous Resource Adequacy Engagement meetings, what resource adequacy mechanisms may be used within the "transition"

[9] Needed reforms to the governance, decision-making, and recourse framework within IAM are broader than resource adequacy, therefore distinct stakeholder engagement outside of the Resource Adequacy Engagement is also recommended. However, concerning resource adequacy, this issue still requires specificity within the Resource Adequacy Framework.

category, and identify how future resource adequacy needs may change if any of the identified facilities and/or projects are procured[10]

[10] For example, on November 18, 2020, IESO announced that the Lennox GS (approx. 2,100 MW) will maintain operations post 2022 contract expiry through a contract extension or new contract (not clear which one). IESO should disclose if there are other resources that are being considered for contract extensions or new contracts.

Appendix B – IAM Governance, Decision-Making, and Recourse: Resource Adequacy Examples of Issues and Needed Reforms

	Examples Relating to Resource Adequacy			
	ICA	**CA Winter Capacity – Dec 2020**	**Manitoba Hydro RMR Contract**	**Consortium Observations and Commentary**
Present Process/Steps within Governance, Decision-Making, and Recourse within IAM				
Pre-Stakeholder Engagement / Engagement Warranted	None – no engagement whether ICA preferred/sole resource adequacy mechanism Previous attempts to design Capacity Market had failed	None – no engagement prior to announcing 0 MW winter capacity target	None – no engagement prior to determining need for RMR contract	Lack of transparency and inclusiveness, as IESO solely made preliminary and directional decisions Not clear which stakeholders, if any, were engaged towards IESO making final decisions
Stakeholder Engagement / Consultation	Yes – many engagement meetings leading to draft High-Level Design (HLD) Majority of stakeholder submissions did not fully support ICA	Limited – only after winter capacity target announced, IESO explained rationale	None – no engagement planned to disclose why RMR contract with Manitoba Hydro is preferred solution	Lack of transparency and inclusiveness, after IESO solely made preliminary/directional decisions, IESO continued to not formally engage stakeholders (e.g., RMR contract) Lack of effectiveness and efficiency, as months/years of engagement meetings (including costs to IESO, MPs, stakeholders) towards not progressing past draft ICA HLD – even though it was clear majority of stakeholders did not fully support ICA
Amendments to IESO Market Rules / Market Manuals	None – ICA abandoned due to lack of stakeholder support	None – amendments to IESO Market Rules not required Yes – amendments to applicable Market Manual (listing capacity targets) No details specified in any Market Manuals, re: how capacity targets will be determined	None – IESO has authority under Market Rules to execute RMR contracts	Questions regarding criteria of when initiatives need to undergo stakeholder engagement, along with framework of engagement relating to governance, decision-making, and recourse When amendments to IESO Market Rules are not required, only recourse available to MPs and stakeholders is dispute resolution within IESO Market Rules or litigation through court
IESO Board of Directors (BOD) Approval	Not clear – presumably IESO BOD endorsed draft HLD	Not clear – presumably IESO BOD endorsed winter capacity target	Not clear – presumably IESO BOD endorsed RMR contract, including discussion of options	Lack of transparency, as MPs and stakeholders have little visibility regarding IESO BOD agenda items, IESO Management recommendations/supporting materials, and discussions
OEB Oversight / Approval	None – Ontario Energy Board (OEB) only has some oversight over amendments to IESO Market Rules	None – OEB only has some oversight over amendments to IESO Market Rules	None – OEB only has some oversight over amendments to IESO Market Rules	Lack of effectiveness, as OEB does not have oversight regarding many aspects of IAM (i.e., OEB has oversight over IESO Business Plan/revenue requirement, amendments of IESO Market Rules but does not exercise full authority, and somewhat through Market Surveillance Panel (MSP) investigations and outcomes of investigations)