

Barbara Ellard  
Director, Markets  
Independent Electricity System Operator  
1600-120 Adelaide Street West  
Toronto, ON M5H 1T1

July 28, 2017

Dear Barbara,

On behalf of our Renewable Consortium of generators and associations<sup>1</sup>, we thank you once again for permitting us to present to the Independent Electricity System Operator's (IESO's) Market Renewal Working Group (MRWG) at their July 19, 2017 meeting. At that meeting our Consortium proposed formation of a MRWG Sub-Committee. In support of that proposal, listed in the sections below are recommendations for a draft Terms of Reference (TOR) for the Sub-Committee<sup>2</sup>, including the Sub-Committee's objective and scope.

### **Sub-Committee Overview and Context**

As listed in the MRWG TOR (see Terms of Reference at <http://www.ieso.ca/en/sector-participants/market-renewal/market-renewal-working-group>), the Market Renewal Program (MRP) proposes an ambitious set of initiatives that will amount to a fundamental re-design of Ontario's wholesale electricity market in part to prepare the sector for future changes. The MRWG was established to assist the IESO and stakeholders, by providing valuable insight, technical expertise, and advice to support the development and implementation of the MRP.

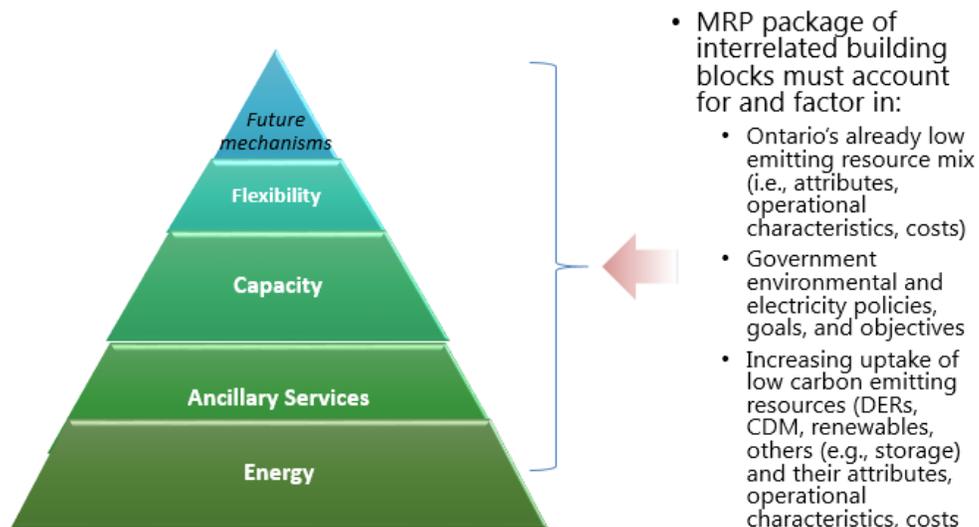
The MRP needs to explicitly account for and factor in Ontario's present and future electricity resource mix. The specific attributes (e.g., non-emitting) and characteristics (e.g., very low to no fuel costs resulting in very low and at times \$0/MWh marginal costs), combined with Ontario Government climate change policies and objectives, rapid technological advances, declining production costs of many resources, (e.g., renewable generation, distributed energy resources (DERs) (e.g., energy storage, etc.), conservation and demand management (CDM) (e.g., demand-

---

<sup>1</sup> Consortium membership to date: BluEarth Renewables; Boralex; Brookfield Renewable Power; EDF EN; EDPR; Enbridge; ENGIE; H2O Power; Kruger Energy; NextEra Energy; Pattern Energy; Suncor; Canadian Wind Energy Association; and Canadian Solar Industries Association.

<sup>2</sup> Organized similarly to the IESO's original draft TOR for the MRWG dated June 21, 2016 (see Terms of Reference (Draft) at <http://www.ieso.ca/en/sector-participants/market-renewal/market-renewal-engagement>)

response, etc.), all need to be accounted for. The graphic below depicts how the MRP 'building blocks' should explicitly account for and factor in Ontario's present and future electricity resource mix.



In Ontario and around the world, the mix of electricity resources has been changing and is projected to continue to evolve within all electricity markets; therefore, resulting in future changes to wholesale electricity market design. For example, the three northeast U.S. wholesale electricity markets have recently initiated stakeholder consultations to better address needed market design changes resulting from increasing uptake of low carbon resources.

- New England
  - New England Power Pool (NEPOOL) Integrating Markets and Public Policy (IMAPP) exploring potential changes to the Independent System Operator New England (ISO-NE) wholesale electricity market through changes to the Forward Capacity Market (FCM) to better integrate renewable generation, etc. that have been contracted and/or subsidized outside of the wholesale electricity market
    - IMAPP stakeholder discussions initiated in mid-2016
    - In April 2017, ISO-NE published a Competitive Auctions with Subsidized Policy Resources (CASPR) proposal which is meant to incorporate state-mandated renewable generation into the FCM while preventing oversupply and addressing objections to a regional carbon tax
      - CASPR proposal introduces a new two-stage, two-settlement process by adding a secondary market known as a substitution auction to the FCM

- CASPR proposal will be discussed at NEPOOL Markets Committee throughout remainder of Q3 and into Q4 2017, Participants Committee vote, and U.S. Federal Energy Regulatory Commission (FERC) filing around January 2018, and target implementation of February 2019
- New York
  - New York ISO (NYISO) has been discussing integrating public policy (e.g., RPS, etc.) and wholesale electricity market design in their Market Issues Working Group with a focus on New York's decarbonization goals (e.g., 50% renewable supply by 2030) and carbon costs, and NYISO is expected in the near future to consult on potentially adding carbon constraints to energy scheduling/dispatch along with potentially implementing carbon pricing within the wholesale energy market
    - NYISO (by way of a consultant's report) currently comparing the costs and efficiencies of internalizing carbon costs or utilizing a cap-and-trade mechanism or other alternatives or additions to a Renewable Energy Certificates (REC)/Zero Emissions Credit (ZEC) mechanism
- Pennsylvania-New Jersey-Maryland Interconnection (PJM)
  - PJM formed the Capacity Construct/Public Policy Senior Task Force (CCPPSTF) to conduct an assessment of PJM's Reliability Pricing Model (RPM) (i.e., forward capacity market) in an effort to ensure state public policy initiatives (e.g., RPS, etc.) and capacity market objectives (e.g., resource adequacy) are not at odds, and PJM is expected to consult on changes to RPM and changes to calculation of negative energy prices within the wholesale energy market
    - Following development of the CCPPSTF in early 2017, PJM and stakeholders have released four proposals including implementation of a two-stage approach to determining cleared commitments and clearing prices within each RPM capacity auction
    - CCPPSTF meetings will continue with intensity throughout Q3 2017 with results expected to be delivered by the end of 2017 in order to implement RPM design and rule changes in time for the 2018 capacity auction

The MRWG Sub-Committee will explicitly address the above issues by assisting the MRWG, the IESO, and stakeholders, by providing valuable insight, technical expertise, and recommendations to support the development and implementation of the MRP and to prepare the sector for continual changes to Ontario's low carbon resource mix.

### **Sub-Committee Objective and Scope**

The objective and scope of the Sub-Committee will be to explore potential future mechanisms to effectively assist in developing (including maintenance and uprates of existing facilities) and

integrating low carbon resources including renewables, DERs, CDM, and other non-emitting resources (e.g., energy storage, etc.) within the re-design of Ontario's wholesale electricity market (as presently being done through the MRP). Potential future mechanisms may include components within the re-design of Ontario's electricity market through the MRP and/or include complementary components outside of the re-design of Ontario's electricity market (e.g., Ontario Government policies, programs, initiatives, etc.).

The Sub-Committee will also provide advice and recommendations to the MRWG and the IESO, and where applicable provide inputs to forthcoming high-level and detailed designs and market rules for the MRP's Single Schedule Market (SSM) and Incremental Capacity Auction (ICA) workstreams and other forthcoming MRP workstreams (e.g., operability).

In addition to the above listed objective and scope, the Sub-Committee should be an important stakeholder forum to deliberate over the following emerging major long-term wholesale electricity market issues within all competitive electricity jurisdictions without present consensus.

- Are wholesale electricity markets adequately accommodating public policy goals (e.g., RPS, etc.), and what potential wholesale market design changes would further enable deployment of resources that achieve goals of reliability, affordability, and specific resource mix (e.g., non-emitting)?
- What are the wholesale electricity market impacts of environmental regulations that further constrain deployment of fossil fueled generation?
- What are the wholesale electricity market impacts of integrating higher levels of renewable generation with very low marginal costs?
- Are today's wholesale market designs adequate to acquire flexible resources needed to better integrate increasing levels of variable (wind and solar) generation at reasonable costs?

### **Sub-Committee Membership Composition**

Sub-Committee members are expected to be able to commit time to support the objective, scope, and deliverables. Member expectations include attending meetings, reviewing information and meeting materials, providing constructive feedback and insight which may include formal presentations and proposals of a technical nature.

The MRWG and the IESO will seek a balance of different types of market participants and stakeholders to ensure feedback from multiple segments of Ontario's electricity market and different points of view.

Because the objective and scope of the Sub-Committee is necessarily broad, Sub-Committee meetings should not be closed and be open to all market participants and stakeholders.

### **Sub-Committee Organization and Administration**

The Sub-Committee Chair will be either appointed by the MRWG or nominated by the Sub-Committee members. The Chair will act as the facilitator for meetings or a separate independent facilitator may be used. The Chair will also strive to achieve 'substantial consensus' regarding recommendations from the Sub-Committee to the MRWG and the IESO. The Chair will provide regular update reports to the MRWG and the IESO. In this role, the Chair may also become a member of the MRWG.

The IESO will appoint an IESO staff individual to be the liaison between the Sub-Committee and the IESO and be the subject matter expert and resource relating to the MRP.

The Chair will work with the IESO liaison to prepare meeting agendas, ensure meeting materials are available in advance of meetings, and finalize meeting minutes and action items.

The Sub-Committee will meet at least on a monthly basis. Sub-Committee member attendance is strongly encouraged and preferred to be in person, however teleconferencing and webcast (as applicable) facilities will be made available for each meeting.

Thank you for your consideration and please do not hesitate to contact us if you wish to discuss formation of the Sub-Committee including its TOR.



Jason Chee-Aloy  
Managing Director  
Power Advisory LLC

cc:

JoAnne Butler (IESO)

Ryan King (IESO)

Rob Coulbeck – Market Renewable Working Group Co-Chair (Goreway Power Station)

Paul Dottori – Market Renewable Working Group Co-Chair (Tembec)  
Robert Hornung (CanWEA)  
Brandy Giannetta (CanWEA)  
Roslyn McMann (BluEarth Renewables)  
Adam Rosso (Boralex)  
Jack Burkom (Brookfield Renewable Power)  
Julien Wu (Brookfield Renewable Power)  
David Thornton (EDF EN)  
Tom LoTurco (EDPR)  
Ian MacRobbie (Enbridge)  
Bonnie Hiltz (ENGIE)  
Stephen Sommerville (H2O Power)  
JJ Davis (Kruger Energy)  
Jennifer Tuck (NextEra Energy)  
Kellie Metcalf (Pattern Energy)  
Chris Scott (Suncor)  
John Gorman (CanSIA)  
Wes Johnston (CanSIA)