

Market Renewal – Enhanced Real-Time Unit Commitment Stakeholder Engagement Plan

I. Introduction and Context

The IESO invites stakeholders to participate in and provide feedback on the design and development of an Enhanced Real-Time Unit Commitment Program (ERUC). An Enhanced Real-Time Unit Commitment Program will improve the efficiency of unit commitments in the intra-day timeframe by taking into account all resource costs in commitment decisions. An ERUC will also improve commitment decisions overall by optimizing over multiple hours rather than solving for each hour independently. The implementation of an ERUC -integrated with a Day-Ahead Market- is a key element under the Energy workstream of the IESO's Market Renewal Program.

Developing an ERUC program will be the third design engagement under the 'Energy' workstream for Market Renewal and is the focus of this Stakeholder Engagement Plan. This Plan outlines the background and key foundational elements, as well as proposed timelines related to this initiative. Prior to reviewing this in detail, it is important to outline how this initiative fits into the overall Market Renewal Program.

Market Renewal Program Overview

The Market Renewal Program (MRP) is a significant set of initiatives that will amount to a fundamental redesign of Ontario's electricity markets and prepare the sector for future structural and technological changes. The IESO began discussions with stakeholders in April 2016 about developing a Market Renewal Program. The MRP addresses known issues with the current design, recognize the significant changes that have taken place in the supply mix, new technologies and new participation frameworks in the sector and ensure that the market will support future change.¹ The proposed changes under Market Renewal are:

- Single Schedule Market
- Day-Ahead Market
- Enhanced Real-time Unit Commitment
- Incremental Capacity Auction
- More Frequent Intertie Scheduling
- Enabling System Flexibility
- Capacity Trade
- Other mechanisms to address emerging operability issues

¹ Please see Market Renewal Stakeholder Engagement for further details <http://www.ieso.ca/sector-participants/engagement-initiatives/engagements/market-renewal>

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Benefits Case

A key element in the first phase of engagement on Market Renewal was to develop a Benefits Case that looked at a suite of proposed market changes, considered the experience of other jurisdictions in making similar changes and their applicability to Ontario, and then estimated the range of potential net benefits that might accrue from these changes.

The IESO retained the Brattle Group to prepare the Benefits Case analysis which was developed over a period of 8 months and supported by extensive stakeholder consultations internally and externally. The analysis determined that the proposed changes would result in net benefits expected to reach \$3.4 billion over the 10-year study horizon, meaning that the estimated benefits of the initiative significantly outweigh estimated implementation costs of \$200-\$300 million. It would also result in a more efficient, stable marketplace with competitive and transparent mechanisms. The Benefits Case can be viewed [here](#).

Market Renewal Working Group

Early in the course of consultation, stakeholders identified a need for a focused stakeholder working group to support in depth discussion on technical, strategic and policy issues related to Market Renewal. In response, the IESO solicited nominations for participation in a Market Renewal Working Group (MRWG). Over the course of the initial engagement, the MRWG played a key role in providing input into the development of the Benefits Case and in identifying early strategic issues related to the Program.

The MRWG serves as a representative stakeholder forum to *guide, advise and inform the IESO on important issues that will impact the overall success of Market Renewal Program*. The MRWG is part of the IESO's enhanced framework for Market Renewal which is discussed further below. Information on membership and Terms of Reference are available on the MRWG [webpage](#).

Stakeholder Engagement Framework

The implementation of this Engagement Plan will be in accordance with the IESO's approved [engagement principles](#).

This is a public engagement process. All materials will be posted on the IESO engagement page for this initiative. In addition, any information supplied by interested parties will be posted (with consent) to the designated engagement webpage.

Market Renewal Engagement Framework

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The IESO together with stakeholders has developed an enhanced engagement framework for the Market Renewal Program.² The Market Renewal Engagement framework will be applicable to all engagements under the MRP.

This framework is comprised of:

- individual stakeholder engagements as the vehicle for design discussion and development;
- technical sub-committees, if and when needed, for focused discussion on specific issues
- the Market Renewal Working Group (MRWG) to support overarching strategic and policy issues
- the CEO Roundtable to share information, issues and create alignment at the executive level

Within the stakeholder engagement, there will be opportunities to provide input through various channels such as face-to-face meetings, webinars, information sessions, conference calls and/or written feedback. As outlined above, the IESO may, in consultation with stakeholders, develop one or more smaller sub-groups to examine a particular issue or set of issues in further detail. The sub-group would report back to the larger stakeholder engagement on findings and any recommendations.

The IESO will consider all relevant input and illustrate how feedback was considered to shape the stated objectives.

MRWG and Discussion of Issues

The IESO anticipates that in the course of design discussions there may be instances of disagreement between and among stakeholders on the preferred option for one or more design elements. In cases where this is not resolved in the engagement, this would be brought forward to the MRWG for focused discussion and review with the goal of arriving at some kind of ‘substantial consensus’ on how to proceed by the membership and inform the IESO’s final decision. This additional step in the process is intended to instill greater confidence in the governance of this engagement and ensure that it continues to be a stakeholder-driven initiative.

The Design Phase

With the completion of the Benefits Case, the IESO and stakeholders are now in the ‘Design Phase’ of Market Renewal. The goal is to develop high level designs for each of the elements within the workstreams discussed above.

² [Market Renewal Stakeholder Presentation April 12](#) p.3-6

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II. Enhanced Real-Time Unit Commitment

The Evolution of Real-Time Unit Commitment

Shortly after Market Opening, the IESO identified the need for a mechanism that would ensure that generators with long start-up times were available to meet reliability needs in real-time. The IESO introduced a cost guarantee program in 2003. The program 'guaranteed' recovery of certain start-up and minimum generation costs to eligible generators to the extent these costs were not covered by the revenues they received from the energy market.

The Real-Time Generator Cost Guarantee (RT-GCG) program has evolved over the years in terms of its eligibility criteria and the cost recovery framework and methodology. However, there remain a number of systemic issues with the design of the current program.

- **Inefficiency:** Resources under the program are committed solely on the basis of their energy offers; start-up, speed no load and other costs are not included in this calculation and are recovered under the pre-approved cost recovery framework. This means that the IESO may not have scheduled the least cost resource for a given need because certain costs were not considered.
- **Lack of competition:** Within the program, the lack of consideration of start-up costs means generators in the program do not have to compete on those costs to get a commitment.
- **Misalignment with Day-Ahead:** The day-ahead and intra-day commitment programs use different optimization both in terms of the inputs considered and the optimization timeframe (day-ahead commitments are based on three-part offers and 24 hour optimization whereas RT-GCG commitments are based on energy offers only and each hour is optimized independently). This lack of alignment can result in the 'over-commitment' of resources that are actually needed in real-time.
- **Administration and Oversight:** Historically, cost submissions have been subject to review and audit creating a high administrative burden for both the IESO and market participants. Although administration/oversight is reduced under the pre-approved cost recovery framework, there are still impacts due to the current program.

The design of the RT-GCG program has also been criticized in several Market Surveillance Panel reports due to its inefficiency, cost and lack of transparency.

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Why an Enhanced Real-Time Unit Commitment Program?

The introduction of financially-binding commitments under a Day-Ahead Market (DAM) will significantly improve production and operational certainty for dispatchable resources and the IESO respectively. However, even with a DAM, improvement of the current RT unit-commitment program is required to align with DAM and to manage the changes in system conditions and requirements that can take place between day-ahead and real-time. Under ERUC, the current commitment program can be improved to one that facilitates greater competition and efficiently commits resources anticipated to be needed for reliability in real-time. This will be achieved by:

- Allowing participants to competitively submit offers reflecting incremental energy, start-up and speed-no-load costs respectively
- Including all costs associated with offers in the IESO's optimization tools
- Making commitment decisions based on the total efficiency of all hours across the commitment period

Together with a DAM and Single Schedule Market, these initiatives collectively will improve the dispatch, commitment and pricing of resources in the energy market.

III. Interested Parties

The IESO encourages all stakeholders in Ontario's electricity sector, or their representatives, with an interest in this initiative to participate in this engagement. This initiative will involve the redesign of the IESO's current intra-day unit commitment program and will be of particular interest to all IESO market participants and related stakeholders who currently are eligible to participate in this program.

Early in 2017, the IESO held a number of education sessions on the key initiatives for Market Renewal. The recorded session of the ERUC meeting can be found here [link].

IV. Approach

The goal of this engagement is to work collaboratively with stakeholders in the design and development of an Enhanced Real-Time Unit Commitment program. This engagement will be informed by the overall Mission for the Market Renewal Program which is *to deliver a more efficient, stable marketplace with competitive and transparent mechanisms that meets system and participant needs at lowest cost*. In support of this mission, Market Renewal will be guided by the following agreed-upon principles:

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- Efficiency
- Competition
- Implementability
- Certainty
- Transparency

For all of these engagements, the IESO takes as given the need to ensure reliability and to work within and in support of government policy.

The ERUC engagement will proceed in a series of phases with stakeholders.

Phase I: Introduction and Design Element Fundamentals

The design, development and implementation of an ERUC program will be an ambitious undertaking and will require discussions with stakeholders on a wide range of issues; some with very broad impacts, others more specific or affecting a small subset of participants. The first phase of the engagement will consist of multiple sessions to review and develop a comprehensive list of design elements organized by issue area. This will include topics related to the parameters for the optimization engine, participation and input data, market power mitigation, outputs and settlement. During Phase I, the IESO will work with stakeholders to develop the particular design strategic objectives for an ERUC program.

Phase II: Options and Preliminary Decisions

In the second phase of the engagement, the IESO will review and discuss the relevant options applicable to the design elements. During these sessions, the IESO's aim will be to ensure that stakeholders understand the range of options available, along with some of the considerations and trade-offs associated with each. Where and when possible, preliminary decisions will be made based upon feedback from the SE and the MRWG (if an issue was escalated for further discussion).

Phase III: Final Decisions and Publish HLD

After reviewing and discussing all of the options, the IESO will work with stakeholders to arrive at final decisions for the design elements. The goal of this phase will be to develop a complete high-level design for an ERUC that:

- identifies all elements of the design;
- identifies elements of the current design that will be removed;
- identifies all interface points between the new design and the market elements that remain

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- identifies assumptions regarding expected interface points between the DAM and other MRP streams; and
- is consistent with stated objectives.

Note on the Feedback Process

Given the scope and breadth of issues, the IESO is proposing a slightly altered feedback process than is typically used in engagement initiatives. In past stakeholder engagements, the IESO would typically respond to feedback in the meeting immediately following. In this engagement, the process will allow for stakeholders to provide comments and feedback throughout the engagement as design elements are introduced and issues revisited and refined while not making introduction of one element contingent on the completion of another. This is intended to allow the design discussion to move forward within a reasonable timeline. This process will be outlined in further detail at the first stakeholder session.

V. Engagement Schedule

Engagement Schedule	
Activity	Expected Date
Post and communicate draft Engagement Plan	September 22, 2017
PHASE I	
Stakeholder Meeting –Introduction to Engagement, High Level Overview of Design Elements and Scope	October 11, 2017
Stakeholder Meeting –Design Elements Fundamentals	October 31, 2017
Stakeholder Meeting –Design Elements Fundamentals	November 27, 2017
PHASE II – Options and Preliminary Decisions	
PHASE III – Final Decisions and High Level Design	
	Q1-Q3, 2018
	Q3-Q4, 2018

VI . Contact

This Stakeholder Engagement Plan may be subject to review and update as the process evolves.

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