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Market Renewal Energy Project Detailed Design | Engagement Days

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Today's Objective

- Support stakeholders in their review of the Pre-Dispatch (PD) Calculation Engine draft detailed design document that is open for feedback until December 2nd

- Review specific areas of stakeholder interest contained in the design document that may require further clarification or explanation from the IESO, with the intention to better inform written stakeholder feedback on the detailed design document

Engagement Process – Energy Detailed Design

Detailed Design Release Schedule

Date	Design Document
November 28, 2019	• Overview • Authorization and Participation • Prudential Security • Facility Registration • Revenue Meter Registration • Market Billing and Funds Administration
March 26, 2020	• Publishing and Reporting Market Information
May 5, 2020	• Grid and Market Operations Integration • Offers, Bids and Data Inputs • Market Power Mitigation
May 11, 2020	• Market Settlement
July 27, 2020	• Day-Ahead Market Calculation Engine
August 31, 2020	• Real-Time Calculation Engine
September 30, 2020	• Pre-Dispatch Calculation Engine

Draft Detailed Design Documents

- Stakeholders continue to review draft detailed design documents (v1.0) and provide feedback
  - All draft detailed design documents were published as of Sept 30th
  - The IESO will post responses to stakeholder feedback for each design document
- The IESO will publish final versions (v2.0) of detailed design documents in early 2021, along with a document to track all changes made as the result of stakeholder feedback (v1.0 to v2.0)

Implementation Phase

- The IESO has commenced engagement on the Implementation phase, specifically on topics that would benefit from additional discussion with stakeholders (e.g. reference levels) and market rules and manuals
- Items raised by stakeholders during Detailed Design that are best addressed in Implementation will be incorporated in this phase of work

Pre-Dispatch Calculation Engine

Pre-Dispatch Calculation Engine

Highlights:

- The PD calculation engine will produce advisory schedules, locational marginal prices (LMPs) and zonal prices
  - Look-ahead period of up to 27 hours
  - Engine will continue to produce binding intertie schedules for the next hour

Pre-Dispatch Calculation Engine

Highlights Cont'd:

- The PD calculation engine will have a single pass, the Pre-Dispatch Scheduling Process. This pass will include the following steps:
  - Pre-Dispatch Scheduling
  - Pre-Dispatch Pricing
  - Market Power Mitigation

Pre-Dispatch Calculation Engine

Highlights Cont'd:

- In addition to producing advisory schedules and prices, the PD calculation engine will perform enhanced unit commitment for NQS resources and will utilize new inputs from market participants and the IESO:
  - Market participants: New dispatch data parameters for pseudo unit and hydroelectric generation resources
  - IESO: Ontario demand forecasts produced as the sum of four separate area demand forecasts

Pre-Dispatch Calculation Engine

Highlights Cont'd:

- The PD calculation engine will have significantly more functional capability than today, including:
  - Multi-hour optimization
  - Evaluation of three-part offers
  - Additional dispatch data for pseudo units and hydro resources
  - Market power mitigation
- It must still produce advisory schedules within by 15 minutes after the hour
- Further enhancements may be limited by these run-time requirements

Pre-Dispatch Calculation Engine

Questions?

Next Steps

- **October 30**: Deadline for stakeholder feedback on the Real-Time Calculation Engine design document
- **December 2**: Deadline for stakeholder feedback on the Pre-Dispatch Calculation Engine design document, plus any new feedback on earlier design documents based on calculation engine content

Thank You

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