Market Rule Amendment Submission

This form is used to request an amendment to, or clarification of, the *Market Rules*. Please complete the first four parts of this form and submit the completed form by email or fax to the following:

Email Address: Rule.Amendments@ieso.ca
Fax No.: (416) 506-2847 Attention: Market Rules Group
Subject: Market Rule Amendment Submission

All information submitted in this process will be used by the *IESO* solely in support of its obligations under the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, the *Market Rules* and associated policies, standards and procedures and its license. All submitted information will be assigned the *confidentiality classification* of "Public" upon receipt. You should be aware that the *IESO* will *publish* this *amendment submission* if the *Technical Panel* determines it warrants consideration and may invite public comment.

Terms and acronyms used in this Form that are italicized have the meanings ascribed thereto in Chapter 11 of the *Market Rules*.

PART 1 – SUBMITTER'S INFORMATION

Please enter contact information in full.

Name: IESO Staff

(if applicable) *Market Participant* / *Metering Service Provider* No.[1]: N/A

Market Participant Class: N/A

Telephone: 905-855-4128

Fax: 905-855-6371

E-mail Address: Rule.amendments@ieso.ca

PART 2 – MARKET RULE AMENDMENT SUBMISSION INFORMATION

Subject: Renewable Integration Initiative

Title: Renewable Integration – Centralized Forecasting Integration, Dispatching Variable Generation

Nature of Request (please indicate with x)

☒ Alteration ☐ Deletion ☒ Addition ☒ Clarification

Chapter: _____ Appendix: _____ Sections: _____

Sub-sections proposed for amending/clarifying: _____

[1] This number is a maximum of 12 characters and does not include any spaces or underscore.

PART 3 – DESCRIPTION OF THE ISSUE

Provide a brief description of the issue and reason for the proposed amendment. If possible, provide a qualitative and quantitative assessment of the impacts of the issue on you and the *IESO-administered markets.* Include the Chapter and Section number of the relevant *market rules*.

Summary

The IESO proposes to amend the market rules in order to integrate centralized forecasting for variable generation into IESO operations, and to incorporate the dispatch of all variable generators that are market participants on a five-minute, economic basis.

Specifically, this amendment will address:

- Centralized forecasting: publication requirements
- Centralized forecasting integration: additional amendments
- The dispatch of variable generators that are market participants on a five-minute, economic basis
- Congestion management settlement credits (CMSC) for variable generation
- A floor price mechanism for offers from baseload generators

This proposal is based on stakeholder consultation as part of SE-91 Renewable Integration which includes the Dispatch Technical Working Group (DTWG) and the Floor Price Focus Group (FPFG).

Further information on SE-91 can be found on the IESO's website at:

http://www.ieso.ca/imoweb/consult/consult_se91.asp

Background

The Green Energy Act ("GEA") and the Ontario Power Authority's implementation of the feed-in tariff ("FIT") program will accelerate the introduction of renewable generation, which will soon represent a significant portion of the province's baseload fleet. In order to meet the challenges of integrating the influx of renewables, the IESO will actively dispatch all variable generation[1] directly connected to the IESO-controlled grid and those embedded variable resources that are registered market participants through the five-minute security constrained economic dispatch.

Centralized Forecasting:

The IESO Board approved MR-00362-R00: Centralized Forecasting - Cost Recovery and MR-00362-R01: Data Obligations on June 16, 2011 to implement a centralized forecasting service for variable generation in Ontario. The next phase of market rule amendments related to centralized forecasting will specify the publication requirements of such forecasts, and allow for the integration of centralized forecasting into IESO operations for the following period: the date when centralized forecasting goes live to the date when the IESO begins the dispatch of variable generators that are market participants on a five-minute basis.

[1] Market Rules, Chapter 11 Definition: *variable generation* means all wind and solar photovoltaic resources with an installed capacity of 5MW or greater, or all wind and solar photovoltaic resources that are directly connected to the *IESO-controlled grid.*

PART 4 – PROPOSAL (BY SUBMITTER)

Provide your proposed amendment. If possible, provide suggested wording of proposed amendment.

Highlights of the proposed rule amendments at this time, which are subject to change pending further stakeholdering and finalization of work through SE-91: Renewable Integration, the Dispatch Technical Working Group and Floor Price Focus Group include (but are not limited to) the following:

Centralized Forecasting - Publication Requirements:

- Specify obligations requiring the IESO to publish energy forecasts for the following:

  Individual forecasts
  - A 48-hour confidential, market participant specific report for each of their variable generators available prior to the dispatch hour
  - No earlier than one hour after the dispatch hour, actual generation capability (i.e. the centralized forecast) (MW) and energy production (MWh) for each generation facility with a maximum output capability of 20MW or greater will be made publicly available via the Hourly Generator Output & Capability Report

Centralized Forecasting Integration – Additional Amendments:

Existing market rules, IESO systems and interfaces require intermittent generators to submit their best forecast of the amount of energy that will be injected for each dispatch hour, as well as providing a price (in $/MWh) at and below which the market participant reasonably expects to reduce their energy output to zero. In order to minimize IESO system changes and costs, the IESO proposes to maintain this "price/quantity" mechanism, which is inputted by the market participant. With the implementation of centralized forecasting, the centralized forecast will be used as an input in the scheduling algorithms.

- During the transition from centralized forecasting to dispatch: obligate market participants subject to centralized forecasting (i.e. are classified as intermittent and variable generators) to submit as its quantity component the generation facility's full capacity available for production (i.e. installed capacity less outages)

- The available capacity may be submitted as standing dispatch data when the intermittent/variable generator specifies a price, in $/MWh, at and below which the market participant reasonably expects to reduce their energy output to zero (existing market rule requirement under Chapter 7, section 3.4.4A)

- Similarly, once dispatchable on a five-minute basis, obligate market participants that are variable generators to submit as the quantity component of their offer the generation facility's full capacity available for production (i.e. installed capacity less outages)

- Add as an input to the dispatch scheduling and pricing process (Dispatch Algorithm) forecasts of energy for variable generation produced by the forecasting entity

- Clarify that the centralized forecasts for variable generators that are market participants will be the quantity inputs into:

PART 4 – PROPOSAL (BY SUBMITTER)

(i) the DACP calculation engine when committing resources to meet forecast demand for the next day;
(ii) the determination of pre-dispatch schedules;
(iii) the five-minute multi-interval optimization (MIO) process.

The price component will continue to be indicated via the market participant's offer.

Dispatch of Variable Generators that are Market Participants:

- Specify that all variable generators connected to the IESO-Controlled Grid, and embedded variable resources that are registered market participants, will be actively dispatched on a five-minute economic basis

Congestion Management Settlement Credits (CMSC):

- Define how quantities are derived in the market schedule

Floor Prices:

- Establish a floor price mechanism for offers from baseload generators, i.e. wind, must-run hydro and nuclear, to ensure efficient dispatches during periods of local and/or global surplus baseload generation (SBG) events
- Floor price options include the potential for:

(i) multi-technology floor prices (i.e. establishment of floor price(s) for nuclear, wind and solar generation;
(ii) floor prices for variable generators (i.e. wind and solar)

PART 5 – FOR IESO USE ONLY

Technical Panel Decision on Rule *Amendment Submission:* Warrants consideration

MR Number: MR-00381

Date Submitted to *Technical Panel*: May 8, 2012

Accepted by *Technical Panel* as: (please indicate with x) Date:

☒ General ☐ Urgent ☐ Minor May 15, 2012

Criteria for Acceptance: The amendment submission identifies means to better enable the market to satisfy the market design principles of reliability and efficiency when integrating renewable generation.

Priority: High

PART 5 – FOR IESO USE ONLY

Criteria for Assigning Priority: Significant commitments of variable generation projects have been made to date with 10,700MW targeted for 2015, a substantial portion of which is expected to be on-line by 2014.

Not Accepted (please indicate with x): ☐

Clarification/Interpretation Required (please indicate with x): ☐

Technical Panel Minutes Reference: IESOTP260-1

Technical Panel Comments: _____