



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00402		
Subject:	Renewable Integration Initiative		
Title:	Communications for Variable Generation Dispatch – Market Rules True-Up		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion	<input checked="" type="checkbox"/> Addition
Chapter:	5	Appendix:	
Sections:	12.1.2, 12.1.2A (new), 12.1.6		
Sub-sections proposed for amending:			

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Draft for Technical Panel review	March 19, 2013
2.0	Publish for Stakeholder Review and Comment	March 28, 2013
3.0	Submitted for Technical Panel Vote	April 23, 2013
4.0	Recommended by Technical Panel; Submitted for IESO Board Approval	April 30, 2013
5.0	Approved by IESO Board	June 13, 2013
Approved Amendment Publication Date:		June 13, 2013
Approved Amendment Effective Date:		The effective date is anticipated to be in the third/fourth quarter of 2013, and shall be specified by the Chief Executive Officer of the IESO in a notice to all market participants.

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IESO-administered markets* if the amendment is not made.
- Alternative solutions considered.
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IESO-administered markets*.

Summary

This amendment proposal obligates variable generators that are registered market participants to provide and maintain, at their own cost, an internet based communication line dedicated to receiving dispatch instructions from the IESO.

This proposal is based on stakeholder consultation as part of SE-91 Renewable Integration.

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

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

Background

As part of the renewable integration design, the IESO will actively dispatch all variable generation¹ 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.

Dispatchable generators in the IESO-administered markets are required to have a physical communication line dedicated to receive dispatch instructions located at the generation facility or control centre. Each dedicated line provides availability backed by a vendor service-level agreement.

Challenges for Variable Generators

The IESO has surveyed existing variable generators to determine the location where they expect to install their dispatch workstations. All of the existing generators surveyed plan to manage dispatch instructions through control centres outside of Ontario, which is expected to create the following issues:

- Longer expected lead times for infrastructure installation, more effort to establish;
- Difficulty in managing and monitoring availability in multi-telecom supplier situations;
- Significant additional costs (up to four times) to extend the circuit out-of-province.

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 3 – EXPLANATION FOR PROPOSED AMENDMENT

Internet-Based Dispatch

In order to address the challenges noted above, the IESO proposes to send dispatch instructions to dispatchable variable generators through an encrypted, secure path on the internet. This solution is expected to yield the following benefits:

- Less lead time in establishing a dedicated line;
- Ability to locate dispatch workstations anywhere in North America with no additional infrastructure costs (subject to meeting IESO security requirements);
- Increased Efficiency:
 - Throughput and latency equivalent to dedicated circuits;
 - Infrastructure required to support this functionality is already in place at the IESO;
 - Only incremental cost to the variable generator will be the cost of maintaining a commercial-grade internet service (if not already in place);
 - Lower communication costs.

Pending the successful implementation of internet-based dispatch for variable generators, the IESO will investigate using the same internet-based approach for all dispatchable market participants.

Discussion

The following changes are proposed in Chapter 5:

- Section 12.1.2A (new): obligate variable generators that are registered market participants to provide and maintain at their own cost, a dedicated internet based communication network between the IESO and their dispatch workstation. In circumstances where the registered market participant already has a dedicated communication network provided by the IESO in accordance with section 12.1.2, a second internet based network is not required. The internet based communication must meet the applicable specifications and other requirements set forth in the participant technical reference manual.
- Section 12.1.2: the IESO obligations specified in existing section 12.1.2 and 12.1.1 will remain applicable, except for variable generators that are registered market participants as noted above.
- Section 12.1.6: extend the existing provisions of section 12.1.6 to internet based communication for variable generators. Where problems exist with internet connectivity (e.g. should a market participant's internet connection prove unreliable or not meet performance requirements), the IESO shall select an alternative communications method.

PART 4 – PROPOSED AMENDMENT

Chapter 5

12. Communications**12.1 Communication Methods**12.1.1 Communication between the *IESO* and:

12.1.1.1 market participants;

12.1.1.2 *embedded generators* required by Appendix 2.2 of Chapter 2 to provide or install and maintain voice communication facilities, facilities relating to monitoring and control or both; and12.1.1.3 *embedded load consumers* required by Appendix 2.2 of Chapter 2 to provide or install and maintain voice communication facilities, facilities relating to monitoring and control or both,

shall take place through a combination of methods as identified in Appendix 2.2 of Chapter 2 and as directed by the *IESO* pursuant to section 12.2.3.2.

12.1.2 For the purposes of section 12.1.1 and with the exception of section 12.1.2A, the *IESO* shall provide and maintain, at its cost, a dedicated, real-time communication network from the *IESO*'s facilities to the communication terminal point between such network and:

12.1.2.1 the monitoring and control devices; and

12.1.2.2 where applicable, the *dispatch workstation*

of the persons referred to in sections 12.1.1.1 to 12.1.1.3 to enable communication between the *IESO* and such persons.

12.1.2A Subject to section 12.1.6, for a *variable generator* that is a *registered market participant*, the *registered market participant* shall, if a dedicated communication network in accordance with section 12.1.2 is not already in place, provide and maintain, at its cost, a dedicated, internet based real-time communication network from the *IESO*'s facilities to the communication terminal point between such network and a *dispatch workstation*. Any such internet based real-time communication network shall meet the applicable specifications and other requirements set forth in the *participant technical reference manual*.

12.1.3 The *IESO* shall provide real-time communication network channels to the persons referred to in sections 12.1.1.1 to 12.1.1.3 as follows:

- 12.1.3.1 one communication channel and, where available and justified for *reliable* operation of the *IESO-controlled grid* and efficient operation of the *IESO-administered markets*, a redundant physically diverse communication channel, for:
 - a. each *facility* to which the high performance information monitoring standard applies in accordance with Appendices 4.19 to 4.23 of Chapter 4, and
 - b. each *facility* that is providing monitoring information for two or more *facilities*;
- 12.1.3.2 one communication channel for each *facility* to which the medium performance information monitoring standard applies in accordance with Appendices 4.19 to 4.23 of Chapter 4.
- 12.1.3.3 [Intentionally left blank]
- 12.1.3.4 [Intentionally left blank]
- 12.1.3.5 [Intentionally left blank]
- 12.1.4 The *IESO* may, in respect of a given *facility*, provide additional real-time network communication channels in addition to those referred to in section 12.1.3 where the *IESO* considers, based on the size and location of the *facility*, and, where applicable, the number of *facilities* monitored at a single *facility*, that such additional channels are desirable for purposes of maintaining the *reliability* of the *IESO-controlled grid*.
- 12.1.5 Where a market participant wishes to submit dispatch data, physical bilateral contract data, EFM bids or EFM offers in the day-ahead energy forward market or TR bids or TR offers in the TR market using private network dedicated communication links, all costs associated with such use, including but not limited to the cost of the provision and maintenance of the required communication channel, shall be borne by the market participant.
- 12.1.6 Where problems exist which require methods of communication other than those referred to in section 12.1.1 or 12.1.2A, such alternative communication capabilities as shall be selected by the *IESO*, including facsimile capability, shall be used.

PART 5 – IESO BOARD DECISION RATIONALE

As part of the renewable integration design, this amendment is a component of the IESO's ability to actively dispatch all variable generators that are registered market participants through the five-minute security constrained economic dispatch, which is an essential tool for the IESO to maintain system

PART 5 – IESO BOARD DECISION RATIONALE

reliability and market efficiency.