ONTARIO ENERGY BOARD

In the Matter of the *Electricity Act, 1998*, s. 33;

And in the Matter of the *Ontario Energy Board Act, 1998*, s. 21*;*

And in the Matter of an application by Acciona Wind Energy Canada Inc., Brookfield Power Wind Prince LP, CP Renewable Energy (Kingsbridge) Limited Partnership, Erie Shores Wind Farm Limited Partnership, Greenwich Windfarm, LP, Talbot Windfarm, LP, Enbridge Renewable Energy Infrastructure Limited Partnership, Kruger Energy Port Alma LP, Suncor Energy Products Inc., Canadian Renewable Energy Corp., and Canadian Hydro Developers, Inc. (collectively the "RES Generators") for an order that the Independent Electricity System Operator ("IESO") prepare evidence that is relevant to a pending appeal of a Market Rule Amendment dated November 29, 2012.

APPLICATION

1. The Applicants, Acciona Wind Energy Canada Inc., Brookfield Power Wind Prince LP, CP Renewable Energy (Kingsbridge) Limited Partnership, Erie Shores Wind Farm Limited Partnership, Greenwich Windfarm, LP, Talbot Windfarm, LP, Enbridge Renewable Energy Infrastructure Limited Partnership, Kruger Energy Port Alma LP, Suncor Energy Products Inc., Canadian Renewable Energy Corp., and Canadian Hydro Developers, Inc. (collectively the "RES Generators") hereby apply to the Ontario Energy Board (the "OEB" or the "Board") requesting the Board to exercise its discretion under s. 21 of the *Ontario Energy Board Act, 1998* (the "*OEB Act*") to give directions requiring the IESO to prepare evidence that is relevant to a pending appeal (the "Pending Appeal") by the RES Generators of the Renewable Access Amendments (as defined in paragraph 4 below). The information requested is listed in Schedule B to these submissions.

2. The grounds for this application are as follows:

   (a) The RES Generators intend to appeal the Renewable Access Amendments to the OEB in accordance with s.33 (1) of the *Electricity Act* ("*EA*");[1]

[1] The Pending Appeal relates only to the dispatch and floor price provisions of the Renewable Access Amendments as they relate to renewable facilities. The Pending Appeal will not address any of these amendments as they relate to dispatch or floor prices for nuclear facilities.

(b) The RES Generators have advised the IESO of their intention to appeal and have requested that the IESO provide the information requested in Schedule B, all of which is relevant to the Pending Appeal. The information requested in Schedule B is necessary to prepare the Appeal. It is more narrow than the information that the Board has ordered the IESO to produce in its previous review of IESO market rules (EB-2007-0040, the "Ramp Rate Appeal") (See: Schedule C);

(c) The IESO has refused to provide any of the requested information;

(d) The statutory timelines for the Pending Appeal are very constrained. By ordering the production of this material now, the discovery process will be more timely and orderly, and the Board will have a better record upon which to make its determinations under s. 33 of the EA;

(e) Section 21 of the OEB Act, and

(f) Such further and other grounds as counsel may advise.

3. These grounds are set out in further detail below.

The Pending Appeal of the Renewable Access Amendments to the OEB

4. On November 29, 2012, the IESO Board passed five related market rule amendments (the "Renewable Access Amendments").[2] The Renewable Access Amendments were published on January 3, 2013.

5. The combined effect of the Renewable Access Amendments is to create a scheme under which the IESO can unilaterally, without regard to the economic impact of affected market participants, and without further consultation, determine which renewable generators may have access to the IESO-Controlled Grid.[3] This scheme includes the ability to set and reset minimum prices below which renewable electricity generators may not offer their electricity to the IESO-Administered Markets[4] (the "Floor Price")[5] and a system of choosing which generators can have access to the IESO-Controlled Grid in the event that generators bid the same price.[6] As a result, even if it is economic for a renewable generator to offer electricity below the Floor Price, their offer will be refused and their electricity cannot be delivered to the IESO-Controlled Grid. Further, even if generators all bid at the Floor Price, the IESO purports to claim the right to determine which of them should have access.

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[2] MR-00381-R02: Dispatching Variable Generation
MR-00381-R03: (Floor Prices for Variable and Nuclear Generation)
MR-00381-R04: (Market Schedule and Congestion Management Settlement Credits (CMSC) for Variable Generation)
MR-00381-R05: (Tie Breaking for Variable Generation)
MR-00381-R06: (Publication Requirements: 5-Minute Forecast for Variable Generation).
Copies of these Amendments are included at Schedule A

[3] Defined in the Electricity Act as "the transmission systems with respect to which, pursuant to agreements, the IESO has authority to direct operations."

[4] Defined in the Electricity Act as "the markets established by the market rules."

[5] MR-00381-R03: (Floor Prices for Variable and Nuclear Generation).

[6] MR-00381-R05: (Tie Breaking for Variable Generation).

6. The RES Generators are IESO market participants, all of whom are connected to the IESO–Controlled Grid and rely on access to the IESO-Controlled Grid for their commercial viability. All of the RES Generators have Renewable Energy Supply ("RES") procurement contracts with the Ontario Power Authority (the "OPA"). To the knowledge of the IESO, these contracts require the RES Generators to deliver their electricity to the IESO-Controlled Grid in order to receive payment under their RES procurement contracts. They do not get paid if they do not deliver electricity.

7. The consequence of Renewable Access Amendments is thus that, when the IESO floor price is met, the RES Generators will be denied access to the IESO-controlled grid and will be unable to deliver their electricity in accordance with the OPA procurement contracts.

8. It is difficult to estimate the full cost of this to RES generators because they do not have access to system planning or operational forecasts to estimate the number of hours that the minimum floor price will be met and thus the number of hours that they will be curtailed. Neither the IESO nor the OPA have been prepared to provide this information. The RES Generators estimate the potential cost of this change to them is in the order of $100 million over the next five years.[7] Without compensation, the direct consequence of the Renewable Access Amendments is a direct wealth transfer from RES Generators to the OPA.

The RES Generators have advised the IESO of the Pending Appeal and requested information, all of which is relevant to the issues in the Pending Appeal.

9. By letter dated November 20, 2012, the RES Generators advised the IESO Board that they consider these amendments to be discriminatory and inconsistent with the purposes of the *Electricity Act, 1998* ("EA").[8] By letter dated November 28, 2012, the RES Generators advised the IESO[9] that they intend to apply to the OEB for an order setting aside the amendments in accordance with s. 33 of the *Electricity Act, 1998* and that the grounds of appeal to the OEB are that the SE-91 Amendments, as proposed:

   i. Unjustly discriminate against the generators who are subject to it by selectively exposing them to uncompensated and involuntary curtailment in order to provide societal benefits that the IESO believes would result from a preferred dispatch order. Other market participants are not subject to uncompensated and involuntary curtailment to provide social benefits that allegedly arise from a preferred dispatch order;

   ii. Unjustly discriminate in favour of the OPA by transferring wealth directly from RES Generators to the OPA as their contractual counter-party; and

7 Costs beyond this period are difficult to estimate in that they are strongly dependent upon future government policies and decisions.
8 See letter from RES Generators to IESO Board of Directors, November 20, 2012: Schedule D.
9 See letter from RES Generators to IESO Board of Directors, November 28, 2012: Schedule E.

iii. Are inconsistent with the following purposes of the *EA*:

a) to promote the use of cleaner energy sources and technologies, including alternative energy sources and renewable energy sources, in a manner consistent with the policies of the Government of Ontario (*EA*, ss. 1(d));

b) to provide generators, retailers and consumers with non-discriminatory access to transmission and distribution systems in Ontario (*EA*, ss.1(e)); and

c) to facilitate the maintenance of a financially viable electricity industry (*EA*, ss.1(i)).

10. As appears from the above, the grounds for appeal relate to discrimination against renewable generators, discrimination in favour of the OPA, and consistency with the purposes of the *EA.* By letter dated November 28, 2012, the RES Generators requested the IESO to provide information specifically linked to these categories in preparation for the appeal of the Renewable Access Amendments. The specific information requested in that letter which is still requested in this application is attached at Schedule B hereto.

11. By letter dated December 27, 2012, counsel for the IESO refused to provide any of the requested information. The letter stated: "The view of the IESO has been and remains that contractual issues between your clients and the Ontario Power Authority are outside of the scope of MR-00381 and, therefore, of any appeal." Thus, the IESO's letter was clearly not responsive to the information requested and if this information is to be considered by the Board in a timely way, the RES Generators have no option but to request the Board to direct the IESO to provide it.

12. All of the information listed in Schedule B is relevant to the Pending Appeal and necessary to prepare the Appeal.

13. The range of information in Schedule B is more narrow than the information that the Board has ordered the IESO to produce in its previous review of IESO market rules (EB-2007-0040, the "Ramp Rate Appeal") (See: Schedule C). The RES Generators will request the information in Schedule C upon the commencement of the Appeal.

The statutory timelines for the Pending Appeal

14. As this Board is aware, the time for its review of an application under s. 33 is very constrained. An application for review must be filed within 21 days of notice of the rule being published and the Board must issue an order within 60 days of the application being filed.[10] This is the shortest decision making time frame under which the Board conducts a full hearing. By comparison, the Board's Performance Standards for Processing Applications indicate that the only hearings that can normally be resolved in these time frames are QRAM and FIT licence applications, both of which are somewhat

[10] *OEB Act*, s. 33(4) and (6).

mechanical and *pro forma*. For all other hearings, a time line of an oral hearing is typically 180 to 210 days.[11]

15. As a result, ensuring that relevant information is on the record for the Board to make a decision is a particular challenge, and one that requires a more proactive approach than is in the typical hearing process.

16. In this case, the notice was published on January 3, 2013 and the RES Generators must file their application with the OEB on January 24 and the Board must complete the discovery process, conduct a hearing and complete deliberations all within 60 days, i.e., by March 25, 2013.

17. The RES Generators are requesting the Board to move proactively in accordance with s. 21 of the *OEB Act* so that materials may be produced in an orderly and timely fashion and specifically in time for filing the Appeal on January 24, 2013. This section was invoked by the Board in its one previous review of an IESO Market Rule amendment.

18. In the Ramp Rate Appeal, the Board noted that it was not possible to hear motions on the adequacy of production of materials because of the short time frames of the review process. The RES Generators propose to better accommodate the discovery process by requesting the Board to exercise its discretion to order production of materials prior to formally commencing an appeal.

19. The RES Generators submit that no party is prejudiced by this request. The information requested is relevant to the appeal and must be provided in any event. Requiring the filing now simply puts the OEB in a better position to evaluate compliance of the Renewable Access Amendments with the statutory criteria in s. 33.

Conclusion

20. The RES Generators therefore respectfully request the Board to exercise its discretion under s. 21 of the *OEB Act* to give directions requiring the IESO to prepare evidence that is relevant to the Pending Appeal by the RES Generators of the Renewable Access Amendments.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

Dated: January 11, 2013

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[11] See, OEB Performance Standards for Processing Applications

EXHIBIT AND SCHEDULE LIST

Tab	Contents
A	Renewable Access Amendments: MR-00381-R02: Dispatching Variable Generation MR-00381-R03: (Floor Prices for Variable and Nuclear Generation) MR-00381-R04: (Market Schedule and Congestion Management Settlement Credits (CMSC) for Variable Generation) MR-00381-R05: (Tie Breaking for Variable Generation) MR-00381-R06: (Publication Requirements: 5-Minute Forecast for Variable Generation).
B	Materials Requested to be Produced by the IESO in Relation to the Pending Appeal of Renewable Access Amendments to the Ontario Energy Board.
C	Disclosure Ordered in EB-2009-0040.
D	Letter from RES Generators to Chair of IESO Board, November 20, 2012.
E	Letter from RES Generators to IESO General Counsel, November 28, 2012.
F	Letter from counsel for the IESO to counsel for RES Generators dated December 27, 2012.

Schedule A

Please see attached

Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00381				
Subject:	Renewable Integration Initiative				
Title:	Dispatching Variable Generation				
Nature of Proposal:	☒ Alteration	☒ Deletion	☒ Addition		
Chapter:	7, 11	Appendix:	7.5		
Sections:	Chapter 7, sections 3.4.1.1.1(new), 3.4.1.4, 3.4.1.4B, Appendix 7.5, section 4.3.2.9, Chapter 11 definitions				
Sub-sections proposed for amending:					

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Draft for Technical Panel review	July 10, 2012
2.0	Publish for Stakeholder Review and Comment	July 19, 2012
3.0	Submitted for Technical Panel Vote	September 21, 2012
4.0	Recommended by Technical Panel; Submitted for IESO Board Approval	October 16, 2012
5.0	Approved by IESO Board	November 29, 2012

Approved Amendment Publication Date:	January 3, 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

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

This amendment will:

- Integrate centralized forecasting as a limit in the dispatch scheduling and pricing process on offers submitted by variable generators once dispatchable;
- Exclude variable generators from the definition of intermittent generators upon the implementation of five-minute dispatch for variable 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). The amendments are based on SE-91 Renewable Integration Final Design Principle 7[1].

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 rapid influx of renewables in Ontario will fundamentally change the characteristics of the power system, challenging the IESO's ability to maintain reliable and cost-efficient operations. As part of the renewable integration design, the IESO will actively dispatch all variable generation[2] 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.

Discussion

Integrating Centralized Forecasts in the Dispatch Algorithm

Upon the implementation of five-minute dispatch for variable generators, the following changes are

[1] **Principle 7:** All variable resources 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.

[2] 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

proposed in order to incorporate the centralized forecasts for variable generators that are registered market participants in the market clearing and pricing process:

- Chapter 7, section 3.4.1.1.1 (new): Obligate variable generators that are registered market participants (and a subset of dispatchable generation facilities) to submit as the quantity component of their offer the generation facility's full capacity available for production (i.e. installed capacity less outages which will be specified in the applicable market manual). Once dispatchable on a five-minute basis, proposed section 3.4.1.4B which is part of MR-00381-R00 Centralized Forecasting Integration (which received IESO Board approval on Sept 7th, 2012 with an effective date of Oct 1st, 2012) will no longer be required and will be deleted.
- Appendix 7.5, section 4.3.2.9: Add forecasts of energy for variable generators that are registered market participants, produced by the forecasting entity. From an IESO systems perspective, the centralized forecast will be considered as a limit to be applied on offers submitted in the dispatch scheduling and pricing process.

Definition of Intermittent Generator

Upon the implementation of five-minute dispatch for variable generators (that are registered market participants) the following changes are proposed to the definition of "intermittent generator" in Chapter 11:

- Exclude variable generators. This will simplify the market rules and eliminate any ambiguity as to whether a variable generator is also an intermittent generator upon the implementation of five-minute dispatch. This change will also clarify that variable generators that are registered market participants who will be subject to five-minute dispatch are separate and distinct from intermittent generators who will not be subject to five-minute dispatch (as is the case today). As a consequence of this change, the existing text in section 3.4.1.4 of Chapter 7 "for an intermittent generator that is a variable generator…" will be deleted.
- Add "unless limited by dispatch" to clarify that intermittent generators today who are not dispatched on a five-minute basis, could respond and operate according to an IESO dispatch instruction sent for reliability related reasons when fuel sources, safety, legal and regulatory restrictions allow the generator to do so.

PART 4 – PROPOSED AMENDMENT

Chapter 7

3.4 The Form of Dispatch Data

3.4.1 *Dispatch data* shall relate to a specified *dispatch hour* of the *dispatch day* and to a specified *registered facility*, shall comply with the applicable provisions of this section and sections 3.5 to 3.9 and shall take one of the following forms:

3.4.1.1 for a *dispatchable generation facility*, an *offer* to provide a *physical service* to the appropriate *real-time market*. *Offers* accepted result in

sales in the *real-time market* only to the extent that, for the *registered market participant* submitting such *offers*, the total value of the *physical services* provided to the *real-time markets* is greater than the total value of the *physical bilateral contract quantities* notified to the *IESO* in respect of that *registered market participant* pursuant to Chapter 8;

3.4.1.1.1 for a *dispatchable generation facility* that is classified as *variable generation*, an offer to provide a *physical service* to the appropriate *real-time market* reflecting its *generation facility's* full capacity available for production, determined in accordance with the applicable *market manual.*

3.4.1.2 for a *dispatchable load facility*, a *bid* to take *energy* from the *energy market*. *Bids* accepted result in purchases in the *real-time market* only to the extent that, for the *registered market participant* submitting such *bids*, the total value of the *physical services* taken from the *real-time markets* is greater than the total value of *physical bilateral contract quantities* notified to the *IESO* in respect of that *registered market participant* pursuant to Chapter 8;

3.4.1.2A [Intentionally left blank – section deleted]

3.4.1.3 for a *self-scheduling generation facility*, a *self-schedule* for the provision of *energy* to the *energy* market. *Energy* actually provided by a *self-scheduling generation facility* results in sales in the *real-time market* only to the extent that, for the *registered market participant* designated for that *self-scheduling generation facility*, the total value of *energy* provided to the *real-time market* is greater than the total value of *physical bilateral contract* quantities notified to the *IESO* in respect of that *registered market participant* pursuant to Chapter 8;

3.4.1.4 for an *intermittent generator*, a forecast of *energy* expected to be provided to the *energy market*. *Energy* actually provided by an *intermittent generator* results in sales in the *real-time market* only to the extent that, for the *registered market participant* designated for such *intermittent generator*, the total value of *energy* provided to the *real-time market* is greater than the total value of *physical bilateral contract quantities* notified to the *IESO* by that *registered market participant* pursuant to Chapter 8~~.~~; ~~For an *intermittent generator* that is a *variable generator*, this section shall cease to have effect on a date to be determined by the *IESO* with such date to be *published* by the *IESO*;~~

3.4.1.4A for a *transitional scheduling generator*, a forecast schedule for the provision of *energy to the energy market*; and

~~3.4.1.4B for a *variable generator* that is a *market participant*, its *generation facility's* full capacity available for production determined in accordance with the applicable *market manual*; and~~[Intentionally left blank – section deleted]

3.4.1.5 if the capacity reserve market has been activated pursuant to section 10.1.3, for all registered facilities providing capacity reserve, an offer to provide capacity reserve.

Appendix 7.5 – The Market Clearing and Pricing Process

4.3 Fundamental Sets and Indices

4.3.2 *Offers*

4.3.2.1 An *offer* is represented by an element of the set OFFERS and is indexed by g.

4.3.2.2 An *offer* has associated with it an area and a node.

4.3.2.3 [Intentionally left blank]

4.3.2.4 [Intentionally left blank]

4.3.2.5 A subset of OFFERS called $OFFERS_{ENERGYLIMITED}$ represents the *offers* which have a daily *energy* limit in force in accordance with section 3.5.7 of this Chapter.

4.3.2.6 Each element of g of OFFERS has a set of offer blocks, $GENERATIONOFFERBLOCKS_{g.}$

4.3.2.7 $SECURITYGENERATIONGROUP_{v}$ is the group of *offers* constrained with security constraint v.

4.3.2.8 Each *energy offer* has associated with it a set of $GENERATIONRAMPUPBLOCKS_{g}$ and a set of $GENERATIONRAMPDOWNBLOCKS_{g}$. Each set may be used to specify not less than 1 and not more than 5 ramp rates associated with the *energy offer.*

4.3.2.9 The set ENERGYOFFERBOUNDS, which is indexed by g, describes the set of *energy offers* to which minimum and maximum output levels may be applied so as to represent transmission loading relief limits, *generation facility outages* as well as limits imposed by *contracted*

ancillary services contracts, and forecasts of *energy* for the *facilities* of *variable generators* that are *registered market participants* produced by the *forecasting entity*. These limits restrict both the *energy* and *operating reserve* output of a *generation facility*.

Chapter 11

1. Definitions

intermittent generator means a *generation facility* located within the *IESO control area* that generates on an intermittent basis as a result of factors beyond the control of the *generator* unless limited by *dispatch*, and excludes a *variable generator*;

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 reliability and market efficiency.

Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00381			
Subject:	Renewable Integration Initiative			
Title:	Floor Prices for Variable and Nuclear Generation			
Nature of Proposal:	☐ Alteration	☐ Deletion	☒ Addition	
Chapter:	7, 11	Appendix:		
Sections:	Chapter 7, section 3.5.4A (new), Chapter 11 definitions			
Sub-sections proposed for amending:				

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Draft for Technical Panel review	July 10, 2012
2.0	Publish for Stakeholder Review and Comment	July 19, 2012
3.0	Submitted for Technical Panel Vote	September 21, 2012
4.0	Recommended by Technical Panel; Submitted for IESO Board Approval	October 16, 2012
5.0	Approved by IESO Board	November 29, 2012

Approved Amendment Publication Date:	January 3, 2013
Approved Amendment Effective Date:	February 1, 2013

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

The IESO proposes to establish floor prices for variable generators (i.e. wind and solar) that are registered market participants, and flexible nuclear generation.

This proposal is based on stakeholder consultation as part of SE-91 Renewable Integration - the Floor Price Focus Group (FPFG). The amendment is based on SE-91 Renewable Integration Final Design Principle 10[1], and is the first set of rule amendments related to variable generation dispatch.

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 rapid influx of renewables in Ontario will fundamentally change the characteristics of the power system, challenging the IESO's ability to maintain reliable and cost-efficient operations. As part of the renewable integration design, the IESO will actively dispatch all variable generation[2] 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.

In order to better ensure efficient dispatches during periods of local and/or global surplus baseload generation (SBG) events, the IESO will establish floor prices for variable generators as well as for flexible nuclear generators. A dispatch order for baseload generation will produce real-time outcomes that:

- Better promote market efficiency and cost-effectiveness;
- Minimize environmental impacts.

Discussion

Subject to IESO Board approval, the IESO will establish floor prices for variable generators (wind and solar) and flexible nuclear generation. With a coordinated approach using nuclear and variable

[1] **Principle 10:** The IESO may establish various floor prices for offers from baseload generators (e.g. wind, must-run hydro, nuclear, etc.) to ensure efficient dispatches during periods of local and/or global surplus baseload generation (SBG) events.

[2] 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

resources, once a real-time dispatch is received, the IESO will make an assessment of surplus conditions and commit flexible nuclear based on technical requirements and forecasted needs. Other resources, including wind and solar, will fill in the remaining differences between the intervals through the five-minute economic dispatch.

Periodically, (for example, every 6 months – frequency to be determined) the IESO will assess the impact of the floor prices on system operations and the IESO-administered markets. Such assessment will include seeking input from all stakeholders, and the IESO will provide a recommendation to the IESO Board which will unilaterally determine whether any changes to the floor prices are warranted. The prices will be published in the applicable market manual (MM 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets) rather than being hardcoded into the market rules to allow for a more expedited change process.

The following changes are proposed in Chapter 7, section 3.5.4A (new) to specify that:

- The IESO Board will establish floor prices for energy offers from variable generators that are registered market participants, and flexible nuclear generators for flexible nuclear generation in accordance with the applicable market manual. This approach is consistent with section 4.4.6 of Chapter 7 where the IESO Board specifies the maximum market clearing price (MMCP) and negative MMCP.
- The prices in each energy offer submitted by the variable generator or by a flexible nuclear generator in respect of flexible nuclear generation for each dispatch hour shall not be less than the floor prices specified in the applicable market manual.

In addition, it is proposed to add defined terms in Chapter 11 for:

- "Flexible nuclear generation," meaning the component of a nuclear generation facility that has flexibility for reductions due to the operation of condenser steam discharge valves, and is made available at the sole discretion of the flexible nuclear generator to manoeuvre without requiring a unit to shutdown under normal operations, while respecting safety, technical, equipment, environmental and regulatory restrictions.
- "Flexible nuclear generator," meaning a generator whose generation facility has a component classified as flexible nuclear generation.

PART 4 – PROPOSED AMENDMENT

Chapter 7

3.5 Energy Offers and Energy Bids

3.5.1 A *registered market participant* may submit no more than one *energy offer* or one *energy bid* with respect to a given *registered facility* for any *dispatch hour*.

3.5.2 All *energy offers* and *energy bids* shall be submitted using such forms as may be specified by the *IESO*, which forms shall require, at a minimum, provision of all of the information specified in Appendices 7.1 and 7.2, respectively, except where

the *IESO* specifies an alternative means and/or an alternative simplified form pursuant to section 3.2.2.3.

3.5.3 Each *energy offer* or *energy bid* must contain at least 2 and, may contain up to 20 *price-quantity pairs* for each *dispatch hour*. The price in each such *price-quantity pair* shall be not more than the *Maximum Market Clearing Price* or *MMCP* and not less than the negative *Maximum Market Clearing Price* or negative *MMCP* and shall be expressed in dollars and whole cents per MWh. The quantity in each such *price-quantity pair* shall:

3.5.3.1 in the case of a *registered facility* other than a *boundary entity*, be expressed in MW (or MWh/hour) to one decimal place and shall not be less than 0.0 MW (or 0.0 MWh/hour); or

3.5.3.2 in the case of a *registered facility* that is a *boundary entity*, be expressed in whole MW (or MWh/hour) and shall not be less than 0 MW (or 0 MWh/hour).

The quantity in the first *price-quantity pair* shall be 0.0 MW (or 0.0 MWh/hour) or 0 MW (or 0 MWh/hour) as applicable. The price in the second *price-quantity pair* shall be the same as the price in the first *price-quantity pair*.

3.5.4 Prices in *energy offers* and *energy bids* may be negative and such negative price shall imply:

3.5.4.1 when in an *energy offer*, that the *registered market participant* is willing to pay up to that price for each MWh of *energy* it injects rather than reduce its output; and

3.5.4.2 when in an *energy bid*, that the *registered market participant* is willing to take or dispose of excess *energy*, but only if paid at least that price for each excess MWh taken or disposed of.

3.5.4A The *IESO Board* shall establish floor prices for *energy offers* from *variable generators* that are *registered market participants* and for *energy offers* from *flexible nuclear generators* for *flexible nuclear generation*, in accordance with the applicable *market manual*. The prices in each *energy offer* submitted by the *variable generator* or by a *flexible nuclear generator* in respect of *flexible nuclear generation* for each *dispatch hour* shall not be less than the floor prices specified in the applicable *market manual*.

Chapter 11

1. Definitions

flexible nuclear generation means the component of a nuclear *generation facility* that has flexibility for reductions due to the operation of condenser steam discharge valves, and is made available at the sole discretion of the *flexible nuclear generator* to manoeuvre without requiring a unit to shutdown under normal operations, while respecting safety, technical, equipment, environmental and regulatory restrictions;

flexible nuclear generator means a *generator* whose *generation facility* has a component classified as *flexible nuclear generation;*

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 reliability and market efficiency.

Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00381			
Subject:	Renewable Integration Initiative			
Title:	Market Schedule and Congestion Management Settlement Credits for Variable Generation			
Nature of Proposal:	☒ Alteration	☐ Deletion	☒ Addition	
Chapter:	7, 9, 11	Appendix:		
Sections:	Chapter 7, sections 6.4.2.9A (new), 7.1.1B1 (new), 7.1.2A1(new), Chapter 9, section 3.5.1E (new), 3.5.2, Chapter 11 definitions (new)			
Sub-sections proposed for amending:				

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Draft for Technical Panel review	August 14, 2012
2.0	Publish for Stakeholder Review and Comment	August 23, 2012
3.0	Submitted for Technical Panel Vote	September 21, 2012
4.0	Recommended by Technical Panel; Submitted for IESO Board Approval	October 16, 2012
5.0	Approved by IESO Board	November 29, 2012

Approved Amendment Publication Date:	January 3, 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 submission proposes to specify the use of a 5-minute forecast produced by the forecasting entity in the IESO's determination of the market schedule and price, and subsequently the market schedule quantity for each facility to be used for all settlement purposes, including congestion management settlement credits (CMSC) for variable generators that are registered market participants.

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

As part of the renewable integration design, 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.

This proposal specifies how the market schedule and corresponding CMSC for applicable variable generators will be determined. Variable generators are different from existing generators in that their ability to economically produce energy is a function of their available fuel, over which they have no control. As a result, the following changes are required:

- The IESO's dispatch algorithm must take into account a 5-minute forecast for each dispatch interval indicating available fuel when determining the market schedule for variable generators and the market clearing price for a given interval. The market schedule quantities determined by the dispatch algorithm will be inputs into the calculation of CMSC for variable generators.
- A new defined term, "release notification," which allows a variable generator to supply energy according to ambient fuel conditions once "released" by the IESO from a previously issued dispatch instruction.

[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

Discussion

Market Schedule for Variable Generation

The following change is proposed in Chapter 7, section 6.4.2.9A (new):

- Specify that for variable generators that are registered market participants, if the registered facility is issued a dispatch instruction by the IESO in accordance with section 7.1 ("IESO Dispatch Instructions"), the market schedule quantity for that dispatch interval shall:

    i. Be limited to reflect the least of offers, outage information, and 5-minute forecast for the generation facility for that dispatch interval. Similar to the mechanism used to integrate centralized forecasting into the pre-dispatch and Day-Ahead Commitment Process (DACP) via MR-00381-R00: Centralized Forecasting Integration, IESO systems will incorporate the 5-minute forecast produced by the forecasting entity for a dispatch interval as a limit to be applied on offers submitted by variable generators. The 5-minute forecasted quantity will be used in the pricing process.

    Section 7.1.1A of Chapter 7 specifies the current practice where the IESO only issues dispatch instructions for a given dispatch interval when there is a change in the quantity relative to the last dispatch instruction issued to the registered facility. For clarity, the mechanism limiting the quantity in the market scheduled (to reflect offers, outages, and the 5-minute forecast) will be used in all intervals during which a dispatch instruction is applicable (for example, if a dispatch instruction is received for 50MW and is applicable for five consecutive intervals, all five intervals will have the limiting mechanism apply).

In the absence of the requirement for a variable generator to follow a dispatch instruction sent by the IESO in a dispatch interval, the market schedule will be determined using a telemetry snapshot at the end of the dispatch interval, and this quantity will be used in the pricing process as is the case today for intermittent generators.

Release Notifications

The following change is proposed in Chapter 7, section 7.1.1B1 (new):

- Specify that for variable generators that are registered market participants, existing section 7.1.1B will apply until the registered facility is issued a release notification. Variable generators are the only subset of dispatchable generation facilities that will receive a release notification, and the last "instruction" from the IESO will be the last dispatch instruction or release notification.

In addition, the following changes are proposed in Chapter 7, section 7.1.2A1 (new):

- Specify that the IESO shall issue a release notification to a variable generator that is a registered market participant if the registered facility is not required to be at or below forecasted output. In other words, when issued a release notification, the registered facility may generate at any level which ambient fuel conditions allow until the next dispatch

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

instruction is sent by the IESO.

- Obligate each variable generator to acknowledge the receipt of a release notification using the systems and protocols defined in the applicable market manual (MM 4.3: Real-Time Scheduling of the Physical Markets). Similar to responding to a (mandatory) dispatch instruction, the market manual will specify that variable generators must acknowledge receipt of a release notification for each dispatch interval (when issued) within 60 seconds of receipt of the notification via an "ACCEPT" action through the IESO's Web-Based Message Exchange.

It is also proposed to add a defined term in Chapter 11:

- "release notification," meaning in respect of a variable generator that is a registered market participant, a notification issued by the IESO providing that energy may be supplied from the variable generation facility to the IESO-controlled grid as ambient fuel conditions allow until a dispatch instruction is sent.

When the security or economic constraints of a previous (mandatory) dispatch instruction no longer exist, and once the generator can ramp to the full level allowed by ambient fuel conditions, the variable generator will be issued a release notification whereby the generation facility may operate according to available wind/irradiance (note: any ramp-up limitations will generate a mandatory dispatch instruction). A release notification will only be issued in one interval following a (mandatory) dispatch instruction (i.e. there will be no instances of a release notification being issued in consecutive intervals).

<u>CMSC for Variable Generation</u>

The following change is proposed in Chapter 9, section 3.5.1E (new):

- Specify that for the purpose of calculating CMSC for variable generators that are registered market participants:
  i. If the registered facility is required to follow dispatch instructions issued by the IESO for any given dispatch intervals, the corresponding CMSC for those dispatch intervals will be calculated using the market schedule quantity determined in accordance with section 6.4.2.9A of Chapter 7 (i.e. represent the estimated amount of energy the generation facility could have produced considering offers, outages, and the 5-minute forecast for the interval).
  ii. In cases where the registered facility is not required to follow dispatch instructions issued by the IESO, the market participant will not be eligible for CMSC in that interval.

PART 4 – PROPOSED AMENDMENT

Chapter 7

6. The Real-Time Scheduling Process

6.4 Market Schedules and Market Prices

6.4.1 Subject to section 8.4A the *IESO* shall, within five minutes after the end of each *dispatch interval*, use the *dispatch algorithm* to determine a *market schedule* and *market prices* for that *dispatch interval* based on the most recent *real-time schedule* for such *dispatch interval.*

6.4.2 Subject to section 8.4A for the purpose of determining the *market schedule* and *market prices* for any *dispatch interval*, the *IESO* shall use the same information and data used for determining the *real-time schedule* for that *dispatch interval*, except that:

6.4.2.1 the unconstrained *IESO-controlled grid* model shall be used;

6.4.2.2 subject to section 3.1.2 of Appendix 7.5, the initial conditions to be used for any *dispatch interval* in the *market schedule* shall be the final conditions of the *market schedule* for the preceding *dispatch interval*;

6.4.2.3 the total demand (including losses) to be satisfied within a *dispatch interval* in the *market schedule* shall be set at the *IESO's* best estimate of its actual value, as determined from real-time system data;

6.4.2.4 total system *energy* losses determined in the *real-time schedule* shall be represented as an increase in *non-dispatchable load* within the *IESO control area*;

6.4.2.5 any *registered facility* in respect of which a *forced outage* has been detected during a *dispatch interval* shall be recognized by an adjustment to the input data;

6.4.2.6 subject to section 6.4.2A, the estimated deviations between scheduled quantities and actual quantities shall be represented as a change in *non-dispatchable load* in the *IESO control area*;

6.4.2.7 subject to section 6.4.2A, the *market schedule* shall reflect dispatch adjustments computed using scheduled injections from the *constrained schedule*, outlined in Appendix 7.5;

6.4.2.8 in accordance with section 4.13.1 of Appendix 7.5, the *market schedule* may use different trading period length to that of the *real-time schedule*; ~~and~~

6.4.2.9 in accordance with section 2.11.2 of Appendix 7.5, the *market schedule* may use a different ramp rate for *operating reserve* to that of the *real-time schedule*; and.

6.4.2.9A for a *variable generator* that is a *registered market participant*, if the *registered facility* is issued a *dispatch instruction* by the *IESO* in accordance with section 7.1, the quantity of *energy* scheduled for injection in the *market schedule* for the applicable *dispatch intervals* shall be limited to reflect the least of *energy offers, outages, and the* forecast of *energy* produced by the *forecasting entity* for the *registered facility*.

6.4.2A Until such time that locational pricing is implemented in the *IESO-administered markets*, in determining the *market schedule* and *market prices* for any *dispatch interval*, the *IESO* shall not have regard to the estimated deviations referred to in section 6.4.2.6 or to the dispatch adjustments referred to in section 6.4.2.7.

6.4.3 The *IESO* shall determine for *registered facilities* that are *boundary entities* a *market schedule* for each *dispatch hour* using the outcome of the projected *market schedule* determined as at the preceding *dispatch ho*ur and modified as required by the *IESO.*

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7. IESO Dispatch Instructions

7.1 Purpose and Timing of Dispatch Instructions

7.1.1 The *IESO* shall determine *dispatch instructions* for each *registered facility* as described in this section 7, as the primary means of co-ordinating the *real-time operation* of the *electricity system*.

7.1.1A The *IESO* shall only issue *dispatch instructions* for a *physical service* to a *registered facility* other than a *boundary entity* for a given *dispatch interval* when there is a change in the quantity of a *physical service* to be scheduled from that *registered facility* during that *dispatch interval* relative to the last *dispatch instruction* issued to the *registered facility* and with which the *registered market participant* has confirmed compliance in accordance with section 7.1.2 and 7.1.2A.

7.1.1B Where the *IESO*:

7.1.1B.1 is not required to issue a *dispatch instruction* at a *registered facility* other than a *boundary entity* for a given *dispatch interval* by virtue of section 7.1.1A; or

7.1.1B.2 for any reason fails to issue a dispatch instruction to a *registered facility* other than a *boundary entity* for a given *dispatch interval*,

subject to section 7.1.1B1, the last *dispatch instruction* issued to the *registered facility* and with which the *registered market participant* has confirmed compliance in accordance with sections 7.1.2 and 7.1.2A shall, for all purposes under these *market rules* but subject to section 7.1.4 and 7.4.3, be deemed to be the *dispatch instruction* issued for that *dispatch interval* for that *registered facility*.

7.1.1B1 For a *variable generator* that is a *registered market participant*, section 7.1.1B shall apply until the *registered facility* is issued a *release notification*.

7.1.1C Notwithstanding the identification of a portion of the consumption at a *registered facility* under section 3.3.18 as *non-dispatchable load*, the *IESO* shall issue *dispatch instructions* in accordance with the applicable *market manual* to that *registered facility* including that portion that has been identified pursuant to section 3.3.18 as *non-dispatchable load*.

7.1.2 Subject to section 7.1.1A, the *IESO* shall issue *dispatch instructions* for each *registered facility*, other than a *boundary entity*, for which a *dispatch instruction* is required no later than the start of each *dispatch interval* or, where section 7.1.4 or 7.4.3 applies, within a *dispatch interval*. The *IESO* shall:

7.1.2.1 [Intentionally left blank]

7.1.2.2 issue such *dispatch instructions* using the systems and protocols defined in the applicable *market manual*; and

7.1.2.3 record and time-stamp all such *dispatch instructions*, store such records for at least seven years and make such records available for purposes of audit and dispute resolution in accordance with these *market rules*.

7.1.2A Each *registered market participant* shall:

7.1.2A.1 acknowledge receipt of; and

7.1.2A.2 confirm its intention to comply or not to comply with,

each *dispatch instruction* issued to it in accordance with section 7.1.2 in respect of each of its *registered facilities*, other than a *boundary entity*, using the systems and protocols defined in the applicable *market manual* and within the time

required by such *market manual*.

7.1.2A1 The *IESO* shall issue a *release notification* to a *variable generator* that is a *registered market participant* if the *registered facility* is not required to be at or below forecasted output. Each *variable generator* shall acknowledge receipt of each *release notification* using the systems and protocols defined in the applicable *market manual* and within the time required by such *market manual*.

Chapter 9

3.5 Hourly Settlement Amounts for Congestion Management

3.5.1 The *dispatch instructions* provided by the *IESO* to *market participant* 'k' will sometimes instruct k to deviate from its *market schedule* in ways that, based on *market participant* 'k's *offers* and *bids*, imply a change to *market participant* 'k's net operating profits relative to the operating profits implied by *market participant* 'k's *market schedule*. When this occurs and *market participant* 'k' responds to the *IESO*'s *dispatch instructions*, *market participant* 'k' shall, subject to Appendix 7.6 of Chapter 7, receive as compensation a *settlement* credit equal to the change in implied operating profits resulting from such response, calculated in accordance with section 3.5.2. If *market participant* 'k' does not fully or accurately respond to its *dispatch instructions* from the *IESO*, the compensation paid to *market participant* 'k' shall be altered as set forth in this section 3.5, or as otherwise specified by the *IESO*.

3.5.1A A *registered market participant* for a *registered facility* that is a *dispatchable load* is not entitled to a congestion management settlement credit determined in accordance with section 3.5.2 where that *registered facility's* DQSW is less than the corresponding MQSW at that location for the same *metering interval* as the result of that *registered facility's* own equipment or operational limitations, if:

3.5.1A.1 that *registered facility* does not fully or accurately respond to its *dispatch instructions*; or

3.5.1A.2 the ramping capability of that *registered facility*, as represented by the ramp rate set out in the *offers* or *bids*, is below the threshold for the *IESO* to modify *dispatch instructions* and thereby prevents changes to the *dispatch*;

and then the *IESO* may withhold or recover such congestion management settlement credits and shall redistribute any recovered payments in accordance with section 4.8.2 of Chapter 9.

3.5.1B A *market participant* shall not be *invoiced* congestion management settlement credits for an export transaction if that transaction attracted the congestion management settlement credits under the following conditions:

3.5.1B.1 the net *interchange schedule* limit is binding in the *market schedule* on an economic export transaction in pre-dispatch, and subsequently, in accordance with section 6.1.3 of Chapter 7, the *IESO* increases the quantity of that transaction in the *real-time schedule*; or

3.5.1B.2 the net *interchange schedule* limit is binding in the *market schedule* on an uneconomic export transaction in pre-dispatch, and subsequently, in accordance with section 6.1.3 of Chapter 7, the *IESO* decreases the quantity of that transaction in the *real-time schedule*.

The amount of congestion management settlement credits referred to in this section is limited to the portion of the transaction that is modified by the *IESO*.

3.5.1C [Intentionally left blank – section deleted]

3.5.1D A *registered market participant* for a *registered facility* that is a *dispatchable load* shall not be entitled to a congestion management *settlement* credit determined in accordance with section 3.5.2 for *settlement hour* 'h' where:

3.5.1D.1 the *price-quantity pairs* contained in the *energy bid* associated with that *registered facililty* for *settlement hour* 'h' are not identical to the *price-quantity pairs* in the *energy bid* associated with the same *registered facility* for the applicable preceding *settlement hour* or following *settlement hour*;

3.5.1D.2 the change in *energy bid* as referred to in section 3.5.1D.1 results in a change in the quantity scheduled in the *market schedule* for that *registered facility* as described in the applicable *market manual*;

3.5.1D.3 the change in *energy bid* as referred to in section 3.5.1D.1 results in the ramping of the that *registered facility* as described in the applicable *market manual*; and

3.5.1D.4 that *registered facility's* DQSW is less than the corresponding MQSW at that locaton for any *metering interval* falling within *settlement hour* 'h'.

3.5.1E For the purpose of calculating congestion management *settlement* credits for *variable generators* that are *registered market participants*:

3.5.1E.1 if the *registered facility* is required to follow *dispatch instructions* issued by the *IESO* for any given *dispatch intervals*, the corresponding congestion management *settlement* credits for those *dispatch intervals* shall be calculated using the *market schedule* quantity determined in accordance with section 6.4.2.9A of Chapter 7; and

3.5.1E.2 the *market participant* shall not be eligible for congestion management *settlement* credits in *dispatch intervals* where the *registered facility* is not required to follow *dispatch instructions* issued by the *IESO*.

3.5.2 Subject to sections 3.5.1A, 3.5.1D, 3.5.1E, 3.5.6, 3.5.6A, 3.5.6B, 3.5.6C, 3.5.6D and 3.5.9 and subject to Appendix 7.6 of Chapter 7, the hourly congestion *management settlement credit* for *market participant* 'k' for *settlement hour* 'h' ("$CMSC_{k,h}$") shall be determined by the following equation:

Chapter 11

1. Definitions

release notification means in respect of a *variable generator* that is a *registered market participant*, a notification issued by the *IESO* providing that *energy* may be supplied from the *variable generation facility* to the *IESO-controlled grid* as ambient fuel conditions allow until a *dispatch instruction* is sent;

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 reliability and market efficiency.

Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00381			
Subject:	Renewable Integration Initiative			
Title:	Tie Breaking for Variable Generation			
Nature of Proposal:	☒ Alteration	☐ Deletion	☒ Addition	
Chapter:		Appendix:	7.5	
Sections:	Appendix 7.5, sections 2.4.5, 2.4.6 (new), 2.8.1, 2.8.4 (new), 2.8.5 (new)			
Sub-sections proposed for amending:				

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Version	Reason for Issuing	Version Date
1.0	Draft for Technical Panel review	August 14, 2012
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5.0	Approved by IESO Board	November 29, 2012

Approved Amendment Publication Date:	January 3, 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 submission proposes to obligate the IESO to apply a uniform penalty factor and to randomly determine a daily dispatch order for variable generators that are registered market participants. In addition, the IESO will be required to regularly update and publish this daily dispatch order report.

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

As part of the renewable integration design, 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.

As part of MR-00381-R03: Floor Prices for Variable and Nuclear Generation, the IESO is proposing to establish floor prices for variable generators that are registered market participants. In the absence of transmission constraints, given the proposal to implement a uniform floor price for all variable generators, if all variable generators were to offer at the floor price the existing tie breaking methodology would dispatch them in the same order every time based on their loss penalty factors[2].

In consultation with stakeholders through the DTWG/SE-91, the IESO's intent is to achieve a more equitable solution regarding the dispatch order for variable generators over the long-term via the following mechanism:

- Set all variable generator loss penalty factors at a uniform number (e.g. 1.00 for all variable generators);
- In order to address operational concerns caused by setting a uniform loss penalty factor (for example if a large number of generators each receive a dispatch within their compliance

[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.*

[2] Loss penalty factors are the determining factor in tie breaking, and are assigned to each generator and published on the IESO website. Effective Cost = Offer Price x Loss Penalty Factor

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

deadbands), it is proposed to:

- Obligate the IESO to randomly generate a daily dispatch order for a specified period (e.g. the daily report will detail the dispatch order for the upcoming 3 calendar months);
- This 3-month dispatch order will be updated regularly (e.g. on a monthly basis);
- The randomly generated dispatch order report will be published on the IESO website.

Discussion

Uniform Penalty Factor for Variable Generation

The following changes are proposed in Appendix 7.5, sections 2.4.5 and 2.4.6 (new) to specify that:

- 2.4.6 (new): The IESO shall apply a uniform penalty factor to variable generators that are registered market participants. As a result, in the absence of any transmission constraints, all variable generators will proportionately share the dispatch requirement. Operational concerns related to this result are addressed by the randomly determined dispatch order below.
- 2.4.5: A cross reference to section 2.4.6 (new) is proposed in this section as a consequence of the addition above.

Tie Breaking

The following change is proposed in Appendix 7.5 to specify that:

- 2.8.4 (new): The IESO shall randomly determine a daily dispatch order for variable generators that are registered market participants, and shall regularly update and publish such daily dispatch order in accordance with the applicable market manual (Market Manual 4.3: Real-Time Scheduling of the Physical Markets). The market manual will detail the process, time horizon of the report (e.g. a 3 month time horizon), and the frequency that the report will be updated (e.g. every network model build which typically occurs monthly). New months will be appended to the existing list, and new generators will be placed at the bottom of the order until a new month is published. The new daily order will take effect for HE16 (to coincide with the first run of pre-dispatch), and will apply to the Day-Ahead Commitment Process (DACP), pre-dispatch and real-time schedules.

- 2.8.1: A cross reference to section 2.8.4 (new) is proposed in this section to specify that the tie-breaking mechanism for variable generators will be modified from that of other generators.
- 2.8.5 (new): For variable generators that are registered market participants, if two or more energy offers have the same offer price resulting in no differences in the cost to the IESO-administered market of utilizing any of the offers, the IESO will break the tie by using the daily dispatch order determined in accordance with section 2.8.4.

PART 4 – PROPOSED AMENDMENT

Appendix 7.5 – The Market Clearing and Pricing Process

2.4 The IESO-Controlled Grid

2.4.1 The *dispatch* scheduling and pricing process shall represent power flow relationships between locations on the *IESO-controlled grid* and between the *IESO control area* and adjoining *control areas*.

2.4.2 The *dispatch* scheduling and pricing process shall utilise a security-constrained optimal power flow with explicit representation of electrical flows on each transmission element.

2.4.3 Limits on transmission flows in either direction of flow shall be explicitly represented.

2.4.4 Security constraints may limit *generation facility* output and *dispatchable load* or any other variable so as to represent the *security limits* applicable to the *IESO-controlled grid*.

2.4.5 Subject to section 2.4.6, t~~T~~he *IESO* shall estimate static transmission losses and model transmission losses using penalty factors. The *IESO* shall adjust *bid* and *offer* prices using the applicable penalty factor. The *IESO* shall notify *market participants* in a timely manner of any changes to the applicable penalty factors.

2.4.6 The *IESO* shall apply a uniform penalty factor to *variable generators* that are *registered market participants*.

2.8 Tie-Breaking

2.8.1 Except as otherwise noted in section 2.8.5, i~~I~~f two or more *energy offers* have the same *offer* price and interactions with the *operating reserve market* do not create differences in the cost to the market of utilising each *offer*, the schedules from these *offers* shall be prorated based on an adjusted amount of *energy offered* at that *offer price*. The adjustment shall reflect the current capability of the *facility* by including any current limitations on the *facility* e.g. ramping, deratings.

2.8.2 If two or more *energy bids* have the same *bid* price and interactions with the *operating reserve market* do not create differences in the cost to the market as a whole of utilising each *bid*, the schedules from these *bids* shall be prorated based on an adjusted amount of *energy bid* at that *bid* price. The adjustment shall reflect

the current capability of the *facility* by including any current limitations on the *facility* e.g. ramping, deratings.

2.8.3 If two or more *offers* for a given class of *operating reserve* have the same *offer* price and provided that interactions with the *energy* market and markets for other classes of *operating reserve* do not create differences in the cost to the market as a whole of utilising each *offer*, then the schedules from these *offers* shall be prorated based on an adjusted amount of *operating reserve offered* at that *offer* price. The adjustment shall reflect the current capability of the *facility* by including any current limitations on the *facility* e.g. ramping, deratings.

2.8.4 The *IESO* shall randomly determine a daily *dispatch* order for *variable generators* that are *registered market participants*, and shall regularly update and publish such daily *dispatch* order in accordance with the applicable *market manual*.

2.8.5 For *variable generators* that are *registered market participants*, if two or more *energy offers* have the same *offer* price resulting in no differences in the cost to the *IESO-administered market* of utilising any of the *offers*, the schedules for these *offers* shall be determined utilising the daily dispatch order determined in accordance with section 2.8.4.

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 reliability and market efficiency.

Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00381			
Subject:	Renewable Integration Initiative			
Title:	Publication Requirements: 5-Minute Forecast for Variable Generation			
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Approved Amendment Publication Date:	January 3, 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 submission proposes to obligate the IESO to provide a confidential, 5-minute forecast for all intervals of the previous dispatch hour to each registered market participant operating variable generation facilities directly connected to the IESO-controlled grid and those embedded variable resources that are registered market participants, following each dispatch hour.

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

As part of the renewable integration design, 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.

The IESO's forecasting vendor will provide the IESO with a 5-minute energy forecast for all variable generators that are registered market participants. This forecast will be updated on a 5-minute basis and will contain forecasts for the end of each 5-minute interval. The 5-minute forecast will be used as an input to real-time dispatch, the market schedule and to calculate congestion management settlement credits (CMSC) for variable generators.

The IESO proposes to make the new 5-minute forecast report privately available for all variable generators that are registered market participants.

Each report will:

- Contain the forecast for all 12 intervals of the previous dispatch hour;
- Be published at the end of the hour.

Forecasts will be:

- Confidential to the market participant;

[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

- Made available with the other private reports;
- Provided for informational purposes only.

Discussion

The IESO proposes to amend Chapter 4, section 7.3.6 (new) to obligate the IESO to provide a confidential, 5-minute forecast to each registered market participant operating variable generation facilities subject to 5-minute dispatch. The forecast relates to the production capability level at the end of the interval to align with our current market scheduling process. The report will be available after the dispatch hour and will contain all 12 intervals of the previous dispatch hour. Details on the report will be outlined in the applicable market manual (Market Manual 4.3: Real-Time Scheduling of the Physical Markets).

PART 4 – PROPOSED AMENDMENT

Chapter 4

7.3 Monitoring Information Provided by Generators to the IESO

7.3.1 Subject to section 7.3.2, in order to permit the *IESO* to direct the operations of the *IESO-controlled grid*, each:

7.3.1.1 *generator* (i) whose *generation facility* is *connected* to the *IESO-controlled grid*, or (ii) that is participating in the *IESO-administered markets*; and

7.3.1.2 *embedded generator* (i) that is not a *market participant* or whose *embedded generation facility* is not a *registered facility*; (ii) whose *embedded generation facility* includes a *generation unit* rated at greater than 20 MVA or that comprises *generation units* the ratings of which in the aggregate exceeds 20 MVA; and (iii) that is designated by the *IESO* for the purposes of this section 7.3.1 as being required to provide such data in order to enable the *IESO* to maintain the *reliability* of the *IESO-controlled grid*,

shall provide the *IESO* with the data listed in Appendix 4.15 on a continual basis. Such data shall not be modified by the *generator* and shall be provided:

7.3.1.3 with equipment that meets the requirements set forth in Appendix 2.2 of Chapter 2; and

7.3.1.4 subject to section 7.6A, in accordance with the performance standards set forth in Appendix 4.19.

7.3.2 Section 7.3.1 does not apply to:

7.3.2.1 a *small generation facility*;

7.3.2.2 a *self-scheduling generation facility* that has a name-plate rating of less than 10 MW; or

7.3.2.3 an *intermittent generator* or *a transitional scheduling generator* that is comprised solely of a *generation unit* rated at less than 20 MW or of *generation units* the ratings of which in the aggregate is less than 20 MW unless designated by the *IESO* at the time of registration as affecting the *reliability* of the *IESO-controlled grid*.

7.3.2A Each *variable generator* not otherwise subject to any communication requirements specified in this chapter shall at a minimum, meet the medium performance standards set forth in Appendix 4.19 for the purposes of providing data in accordance with section 7.1.6.

7.3.3 [Intentionally left blank – section deleted]

7.3.4 The *IESO* shall *publish*, as soon as practicable following each *dispatch hour*, the actual *generation capacity* (in MW) and hourly *energy* production (in MWh) for each *generation unit* based on information provided to it by *market participants*. *Generation capacity* and *energy* production for *generation units* with rating less than 20 MVA can be aggregated by station.

NOTE: Proposed section 7.3.5 is part of MR-00381-R01 Centralized Forecasting Publication, and was approved by the IESO Board on September 7, 2012.

7.3.6 The *IESO* shall, as soon as practicable following each *dispatch hour*, provide the confidential forecast produced by the *forecasting entity* for each *dispatch interval* in the preceding *dispatch hour*, to each *registered market participant* for each of their *variable generation facilities* as specified in the applicable *market manual*.

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 reliability and market efficiency.

Schedule B

Materials Requested to be Produced by the IESO in Relation to the Pending Appeal of Renewable Access Amendments to the Ontario Energy Board.

a) Information relating to discrimination against Affected Generators by exposing them to uncompensated and involuntary curtailment, including:

- All Materials (defined as including internal correspondence and modelling, and all communications with Government Agencies (defined as including the OPA and Ontario Electricity Finance Corporation ("OEFC")), and all Market Participants) with respect to how the IESO or any other government agency compensates market participants for curtailing or manoeuvring their facilities to address actual or forecasts instances of surplus energy or for other purposes;

- All Materials with respect to the expectations that market participants, including but not limited to Affected Generators, would be compensated with respect to the SE-91 Amendments; and

- For greater certainty, satisfying this request includes the requirement that the IESO specifically request Government Agencies to provide all of their Materials with respect to:

    - compensation of market participants for curtailing or manoeuvring their facilities to address actual or forecasts instances of surplus energy; and

    - with respect to the expectations that market participants, including but not limited to Affected Generators, would be compensated with respect to the SE-91 Amendments.

b) Information relating to discrimination in favour of the OPA:

- All Materials relating to the way in which the SE-91 Amendments may impact the extent of curtailments to which the Affected Generators may be subject, and, in particular, all forecasts, projections or estimates of curtailments under ranges of scenarios, identifying who prepared them, and including the underlying methodology, assumptions and calculations of such forecasts, projections or estimates;

- All Materials respecting the way in which the SE-91 Amendments may have an impact on amounts owing by the OPA to Affected Generators in respect of their procurement contracts; and

- For greater certainty, satisfying this request includes the requirement that the IESO specifically request Government Agencies to provide all of their Materials with respect to:

    - the way in which the SE-91 Amendments may impact the amount that the Affected Generators may be subject to curtailment, and, in particular, a forecast of curtailments; and

    - the expectations that market participants, including but not limited to Affected Generators would be compensated with respect to the SE-91 Amendments.

c) Information relating to the consistency of the SE-91 Amendments with the purposes of the *EA*, including:

- All Materials considered by the IESO in respect of the matters addressed in ss. 1(d), (e) and (i) of the *EA* in the SE-91 Amendment process, including all Materials relating to the development and consideration of options that involved alternatives to imposing dispatch and floor price requirements on wind generators.

Schedule C – Disclosure Ordered in EB-2009-0040

Disclosure Ordered in Procedural Order #1 (February 16, 2007)

i. the Market Rule Amendment Submission relating to the Amendment, including the covering memorandum;

ii. all written submissions received by the IESO in relation to the Amendment;

iii. minutes or meeting notes of all meetings of the Market Pricing Working Group or the Stakeholder Advisory Group at which the Amendment or the subject matter of the Amendment was discussed [with necessary modifications to refer to the stakeholdering processes related to the Renewable Access Amendments], including those meetings or notes, etc. of the Technical Panel];

iv. a list of all materials related to the Amendment or the subject matter of the Amendment tabled before the Market Pricing Working Group or the Stakeholder Advisory Group [with necessary modifications to refer to the stakeholdering processes related to the Renewable Access Amendments, including materials tabled before the Technical Panel];

v. a list of all materials tabled before the Board of Directors of the IESO in relation to the Amendment or the subject matter of the Amendment, and a copy of all such materials other than those already captured by items i to iv above;

vi. a copy of the decision of the Board of Directors of the IESO adopting the Amendment;

vii. any written material on the impact of the Amendment on the price, reliability and quality of electricity service; and

viii. all materials prepared by the IESO in relation to the Amendment or the subject matter of the Amendment, other than materials already captured by items i to vii above.

Disclosure Ordered in Procedural Order #2 (March 9, 2007)[12]

- copies of all e-mail exchanges and other written communication between the IESO, stakeholders and their associations in relation to the Amendment or the subject matter of the Amendment; and
- internal memos, e-mail and other written communication among IESO staff and between staff and the IESO Technical Panel and/or Board of Directors, stakeholders, their respective associations, the Ontario Energy Board, the Ontario Power Authority and the Province of Ontario.

[12] Note, in that Procedural Order, the Board also ordered production to address the issue it described as follows: "In seeking the production referred to in this item, AMPCO noted that it is clear from both its own materials and from materials prepared by the IESO that generators or their association have linked their support for the IESO's DACP initiative to the removal of the 12x ramp rate. Generator support for the Amendment having been linked to the DACP, material prepared by the IESO in the context of the DAM and/or the DACP initiative that relates to ramp rate should also be produced. In response, the IESO denied the existence of a "conspiracy" in which the IESO has proposed the Amendment as a quid pro quo for generator support on another initiative, and further stated that the IESO has no materials in connection with the DAM or DACP 'that are relevant to this proceeding'".

This issue involved a consideration of the fairness of the IESO stakeholdering process which the Board ultimately ruled was out of scope See Appendix A to Ramp Rate Appeal Decision dated April 10, 2007. The RES Generators are not seeking production of materials relating to the fairness of the process in this application.

Schedule D

Please see attached

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November 20, 2012

Mr. Tim O'Neill
Chair, Independent Electricity System Operator
Board of Directors
Suite 410
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Toronto, ON M5G 2K4

Dear Mr. O'Neill:

RE: MR-00381
Non-Discriminatory Treatment

Introduction

We are counsel to the RES group of generators (The "Res Group") with respect to the Market Rule Amendments resulting from the SE-91 Process (the "SE-91 Amendments") as they relate to the dispatch and floor price requirements for renewable facilities[1]. The RES Group consists of generators who have entered into RES I and RES II contracts with the Ontario Power Authority (the "OPA"). The RES Group members are: Acciona Energy North America Corporation, Brookfield Renewable Energy Group, Capital Power Corporation, Capstone Infrastructure Corporation, Enbridge Inc., Kruger Energy Port Alma LP, Suncor Energy Products Inc. and TransAlta. RES Group members own and operate the majority of presently operating wind generation affected by these proposed rule amendments.

The RES Group has serious concerns respecting the consistency of the SE-91 Amendments with the IESO's obligations respecting non-discriminatory treatment of generation market participants, and appreciates the opportunity to bring these to the Board's attention. The RES Group sought to address these types of concerns with the IESO Technical Panel. However, the

[1] MR-00381. These submissions relate only to the dispatch and floor price provisions of the SE-91 Amendments as they relate to renewable facilities. The RES Group is not addressing any of these amendments as they relate to dispatch or floor prices for nuclear facilities.

Chair of the Technical Panel instructed the panel that its role was to provide technical advice only. As a result, the Technical Panel's decision to approve the amendment was not informed by policy issues relating to the legality and fairness of the SE-91 Amendments. The IESO Board thus has both the opportunity and the responsibility to consider these matters without consideration of the Technical Panel's recommendations in this process.

Obligations of IESO Board Respecting Discrimination

The IESO has the legal obligation to ensure that market rules are consistent with the purposes of the *Electricity Act, 1998* and that market rules do not unjustly discriminate against or in favour of a market participant or class of market participants.[2] The RES Group respectfully submits that the SE-91 Amendments are inconsistent with both of those obligations because they discriminate against the generators who are subject to it by exposing them to uncompensated and involuntary curtailment in order to provide societal benefits that IESO staff believes would result from a preferred dispatch order.[3]

As far as the members of the RES Group are aware, no other market participants are exposed to systematic involuntary and uncompensated contributions to meet societal benefits.[4] To the contrary, the practice for other IESO economic curtailment obligations has been voluntary and compensated. More generally, when the IESO or other Ontario energy agencies have determined that market clearing prices are insufficient to achieve what are considered to be socially desirable outcomes, market participants have not been required to internalize the costs of achieving those outcomes. Rather, the cost of achieving them has been socialized across the system – an approach which reflects how the benefits are realized. If the SE-91

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[2] These obligations arise from s. 5(1)(c) of the *Electricity Act, 1998* ("EA") which provides that the objects of the IESO include directing the operation of the IESO-controlled grid in accordance with the purposes of the EA and s. 33(8) of the EA which provides that the OEB may revoke a market rule amendment "if it finds that the amendment is inconsistent with the purposes of this Act or unjustly discriminates against or in favour or a market participant or class or market participants." The relevant purposes of the EA include providing generators with non-discriminatory access to transmission systems.

[3] The generators that are subject to the SE-91 Amendments are "variable" and a "flexible nuclear generator". A "variable generator" is defined in the Market Rules as meaning "all wind and solar photovoltaic resources that are directly connected to the IESO-controlled grid." (See Chapter 11 Definitions). The RES Group is not aware of the compensation arrangements for the "flexible nuclear generator" or other "variable generators" referred to in the SE-91 Amendments. These submissions are therefore made on behalf of the RES Group members only, all of whom, as renewable generators directly connected to the IESO grid are subject to the SE-91 Amendments.

[4] The facts with respect to the way in which other generators and compensated and the reasons why the IESO has never publicly requested the OPA to compensate generators for SE-91 curtailment are obviously within the control of the IESO and not the RES Group members. If the issue of unjust discrimination is addressed by the OEB in a review under s. 33 of the EA, documentary production of all materials respecting compensation of generators for curtailment from the IESO and the OPA will provide more information in this regard.

Amendments are passed, then this will apparently be the *only* occasion where a discrete group of market participants – the RES Group – have been systematically singled out and required to internalize the cost of system wide benefits. The SE-91 Amendments are thus a dramatic departure from current practice and discriminatory towards uncompensated generators. This is what makes the SE-91 Amendments inconsistent with the anti-discrimination provisions of the *Electricity Act, 1998*.

The RES Group therefore requests that the IESO Board should not pass the proposed rule or, in the alternative, if it does pass the SE-91 Amendments, condition their passage or implementation on satisfactory compensation arrangements being made with generators who are subject to it.

The Purpose and Effect of the Proposed SE-91 Amendments

In summary, the SE-91 amendments empower the IESO Board to establish floor prices, i.e., prices below which selected generators cannot bid their power. This power is virtually unlimited – the Board may impose or change a floor price at any time and, at no time, is there any right of compensation. As a result, even if it is economic for a generator to bid below the price that is selected by the IESO, it cannot do so. All other generators can choose the price at which they bid their power.

The purpose and effect of the proposed SE-91 amendments is to curtail renewable generators to produce a dispatch order that IESO staff considers to be socially optimal because it would reduce overall system costs and environmental impacts. The RES Group members are expected to bear the cost of achieving these system wide benefits, despite the fact that there is no suggestion that RES Group members:

- Use generation technology that uniquely causes surplus generation (to the contrary, their technology is proposed as an unpaid solution to the problem of excess generation curtailment by less flexible resources);
- Have acted inappropriately in the market or not complied with Market Rules; or
- Played any role in the market or contract design flaws that IESO staff believes are responsible for inefficient dispatch.

Curtailing Renewable Power to make up for Flawed Market Design

According to the position taken by the IESO staff[5] in the SE-91 process, the reasons for curtailing renewable power are as follows:

- Under the current rules, the IESO has addressed surplus generation by requesting nuclear operators to curtail their generation.[6] Presumably, nuclear generators have been compensated for this curtailment.[7]

- This practice leads to "over-curtailment" of generation because nuclear facilities require considerable time to start up and shut down. As a result, nuclear facilities are curtailed in periods that go beyond the periods of surplus generation.[8]

- During those "over-curtailment" periods, gas generators are dispatched on, which leaves to an "inefficient dispatch outcome" and results in other societal harm, namely, increased system wide costs and environmental impacts.[9]

- According to IESO staff, this inefficient dispatch outcome is a consequence of Ontario's market design, i.e., the combination of Ontario's two-schedule pricing system and OPA contract structure. In their view, the current market design does not create the proper incentives for efficient dispatch outcomes. As a result, the bids offered by wind and solar resources (as well as other resources that are used to meet base-load demand, including nuclear, base-load hydro and Non-Utility Generation ("NUGs")) do not respond to IESO generated prices. However, only flexible nuclear and wind and solar resources are subject to SE-91.[10]

- No corrections have been proposed by the IESO staff to address the inadequate incentives.

    - With respect to the two-scheduled pricing system, IESO staff stated that, "If Ontario had LMP [i.e., locational marginal pricing] settlement, there likely would be no need for floor prices", but that "implementing LMP (or a comparable mechanism) in Ontario in a timely fashion is not possible."[11] The IESO has been

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[5] For the purposes of this letter, the propositions put forward by the IESO staff are accepted at face value. In fact, many of these propositions are contestable assertions with questionable empirical support. If the issue of unjust discrimination is addressed by the OEB in a review under s. 33 of the EA, all of those assertions will be tested.

[6] IESO Floor Price Focus Group Presentation, May 3, 2102, slide 5.

[7] As noted above, the facts with respect to the way in which other generators and compensated and the reasons why the IESO has never publicly requested the OPA to compensate generators for SE-91 curtailment are obviously within the control of the IESO and not the RES Group members. If the issue of unjust discrimination is addressed by the OEB in a review under s. 33 of the EA, documentary production of all materials respecting compensation of generators for curtailment from the IESO and the OPA will provide more information in this regard.

[8] IESO Floor Price Focus Group Presentation, May 3, 2102, slide, 11; IESO responses to stakeholder questions, April 26, 2012, p. 1.

[9] IESO Floor Price Focus Group Presentation, May 3, 2102, slides 6 and 8.

[10] IESO Floor Price Working Group, Minutes of Meeting, February 8, 2012, p. 5.

[11] IESO Floor Price Working Group, Minutes of Meeting, February 8, 2012, p. 5.

asked by the Market Surveillance Panel ("MSP") to consider implementing LMP or a comparable mechanism since 2003.[12] The IESO has presumably been studying this issue since that time.

- With respect to contract design, the RES contracts were developed by the Ministry of Energy and its advisors, including the IESO. The RES Group members played no part in structuring the way in which revenues are paid under those contracts.

- Because of the inadequacy of market design, IESO staff proposes to establish floor prices for renewable generators; these floor prices are said to result in what IESO staff considers to be more efficient dispatch outcomes.

- IESO staff has determined that the system wide net economic benefit from moving from the current system to the system contemplated by the SE-91 Amendments is approximately $180-225 million.[13] This net benefit results from not running gas generators during periods of "over curtailment".

- This is a *net* benefit because it assumes renewable generators will be compensated for curtailment.[14] Needless to say, to the extent that any savings are not net of compensation, they do not constitute efficiency – such savings would be a direct wealth transfer from RES generators to their contractual counter-party, the OPA.[15]

- Nevertheless, it would appear that no consideration was given to whether generators should be compensated for bearing the cost of achieving the societal benefits that they believe would result from their preferred dispatch order. Staff ruled that any consideration of compensation is out of scope for SE-91 considerations and proposes to move ahead with the SE-91 Amendments regardless of whether RES Generators are compensated or not.[16]

- In the absence of compensation, the cost of economic and environmental benefits of this change will be borne by renewable generators. The IESO staff has been unwilling or unable to provide any projection or forecast of impact. In the absence of this information, the RES Group estimates the potential cost of this change to them is in the order of $100 million over the next five years.[17] This amount would effectively be transferred from RES Group members to the OPA.

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[12] See: MSP, Congestion Management Settlement Credits in the IESO Administered Markets, February, 2003.

[13] IESO Floor Price Focus Group SE-91 Renewables Integration, January 24, 2012, slide 9

[14] IESO responses to stakeholder questions, April 28, 2012, p. 2.

[15] As noted above, s. 33 of the EA prohibits discrimination both "against or *in favour* or a market participant or class or market participants." The OPA is a market participant. The SE-91 Amendments' uncompensated curtailment may thus work to the OPA's benefit. If so, that too is discriminatory and inconsistent with s. 33 of the EA.

[16] IESO Floor Price Working Group, Minutes of Meeting, February 8, 2012, p. 3.

[17] Costs beyond this period are difficult to estimate in that they are strongly dependent upon future government policies and decisions.

As a result of the foregoing, in the absence of compensation, the RES Group members are expected to bear the cost of the economic and environmental benefits said to result from the preferred dispatch order, despite the fact that there is no suggestion that RES Group members:

- Use generation technology that uniquely causes surplus generation (to the contrary, their technology is proposed as an unpaid solution to the problem of excess generation curtailment by less flexible resources);
- Have acted inappropriately in the market or not complied with Market Rules; or
- Played any role in the market or contract design flaws that the IESO believes are responsible for inefficient dispatch.

Examples of Paid Curtailment to Address Limitations of Market Design

The area of surplus generation is not the only area of the Ontario market where market design has led to what the IESO considers to be uneconomic dispatch. In these other cases, generators and loads have been subject to "out of market" practices that incent them to participate in a manner that leads to dispatch decisions designed to achieve societal benefits. However, in *every other instance* they have done so on a voluntary and compensated basis. In other words, every other time that required market participants have been required to provide societal benefits, the cost of achieving societal benefits has been socialized across the system – an approach which reflects how the benefits are realized. If the SE-91 Amendments are passed, then this will be the *only* occasion where a discrete group of market participants – the RES Group – has been singled out and required to internalize the cost of societal benefits.

Examples of where the cost of achieving societal benefits has been socialized across the system include the following:

- Under the current rules described above, the IESO addresses surplus generation by requesting nuclear operators to curtail their generation. As indicated, the RES Group understands that the nuclear operators are compensated for this curtailment.
- NUGs are currently classified as "self-scheduling" market participants, thus permitting them to operate outside of the dispatch order. IESO staff has advised that "the IESO, OEFC and OPA have had many conversations and have a NUG protocol in place, which is a first step in NUG curtailment." IESO staff is not prepared to include NUG generators in the minimum floor price regime of the SE-91 Amendments.[18] The RES Group

[18] IESO Floor Price Working Group, Minutes of Meeting January 24, 2012, p.3

understands that NUG generators are only curtailed on a voluntary basis and compensated for their curtailment.

- The revenues for base-load hydro facilities are set by the Ontario Energy Board, which has established a deferral account to allow the recovery for revenue impacts caused by surplus generation.[19]

There are also examples outside of generator curtailments where market price signals are insufficient to achieve societal benefits, in particular:

- For reliability purposes, the IESO requires generators to commit to start up facilities. Because market signals are insufficient to compensate generators for the cost of making this commitment, the IESO pays a generator cost guarantee.[20]

- Also for reliability purposes, the IESO can require generators to produce electricity even when it is uneconomic for them to do so through reliability must run contracts. The Ontario Energy Board has held that a generator under reliability must run contract is entitled to its costs plus a return.[21]

- For environmental and economic purposes, provincial policy is to achieve both conservation and demand management targets, especially when electricity market price signals are considered to be inadequate to provide sufficient incentives to reduce or manage demand.

Again, in all of these examples, generators and loads are compensated for their contributions to making contributions to societal goals.

Further, these examples are only the most directly comparable instances of compensating market participants for contributing to meet societal goals. It is also worth noting that the service being acquired from the RES Group members is essentially is a form of flexibility to the system. There are a number of potential forms of system flexibility, including:

- Exporting power;

- Electricity storage; and

- Regulation services.

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[19] See OEB Decision and Order setting payment amounts for Ontario Power Generation, for 2011-2012, March 10, 2011 (EB-2010-0008), p. 27.

[20] See market Rules, Chapter 7, Section 2.2B1.4.

[21] See Ontario Energy Board, Decision and Order regarding Reliability Must-Run Contract for the Lennox Generating Station< March 13, 2006 (EB-2005-0490), pp. 9-10.

All of these types of services are available in the market place. All of these services are purchased from willing suppliers, not ordered on an involuntary and uncompensated basis.

The SE-91 Amendments are thus a dramatic departure from current practice and discriminatory towards uncompensated generators. To repeat, if the SE-91 Amendments are passed, then this will be the *only* occasion where market participants – the RES Group – have been systematically required to internalize the cost of system wide benefits. This is what makes the SE-91 Amendments discriminatory and inconsistent with the *Electricity Act, 1998*.

Source of Compensation

As indicated, apart from the SE-91 Amendments, individual market participants have not been required to bear the costs of providing societal benefits. Those costs have been socialized across the system. It should be noted that the agencies through which rate payers have paid the cost of system benefits vary considerably without any discernible pattern. For example, while the IESO pays market participants to provide generation guarantee and regulation services, the OPA compensates some generators and loads to curtail production or reduce or manage consumption, the OEB fixes revenues to reduce exposure to surplus base load for prescribed base-load hydro assets, and OEFC pays the NUG generators to curtail production. The variety of sources of compensation is in part attributable to the fact that Ontario has a complex agency structure. The point is not which agency is required to provide compensation; rather the point is that the costs of societal benefits are socialized across the system and not borne by individual market participants.

Practice in Other Jurisdictions

Compensating generators for economic curtailment is also the practice in other North American jurisdictions. For example:

- In Alberta, the AESO offers a dispatch down service "whereby eligible generators receive a payment for reducing generation levels or dispatching off."[22]
- In the United States, various state authorities have addressed the curtailment issue resulting from low demand and relatively inflexible supply resources. In a situation like the one considered here, the Bonneville Power Administration (the "BPA"), was appealed to the FERC for restricting access of wind resources to transmission networks

[22] http://www.aeso.ca/gridoperations/19608.html

> "to curtail wind generators in an unduly discriminatory manner in order to protect its preferred power customer base from costs it does not consider socially optimal." The FERC found that the practice of dispatching off wind resources to provide preferential access to other resources was discriminatory and ordered the BPA to develop a new approach to this issue.[23]

IESO staff's position is that comparisons to other jurisdictions are irrelevant because "Ontario is the only jurisdiction with a two schedule system and the contract structures that incent non-marginal behaviour. As such, there has been no valid precedent to consider for adoption."[24] It is true that it is difficult to compare jurisdictions by reference to market design, but the principle of compensation for curtailment is more straight-forward and generally applicable.

Conclusion

In conclusion, The RES Group respectfully submits that the SE-91 Amendments are inconsistent with the IESO Board's obligation not to pass discriminatory market rules. The SE-91 Amendments discriminate against the generators who are subject to it by exposing them to uncompensated and involuntary curtailment in order to provide societal benefits that IESO staff believes would result from a preferred dispatch order. No other market participants are required to make uncompensated contributions to meet societal benefits

The RES Group therefore requests that the IESO Board should either not pass the proposed rule or, in the alternative, condition the passage of the rule on satisfactory compensation arrangements being made with generators who are subject to it.

We trust that the Board has found this helpful and we look forward to providing any further assistance.

Sincerely,

George Vegh

[23] FERC Environmental Redispatch Order, 137 FERC ¶ 61,185, December 7, 2011.

[24] IESO responses to stakeholder questions, January 17, 2012, p. 5).

Schedule E

Please see attached

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November 28, 2012

Mr. Roy Stewart,
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Dear Mr. Stewart:

RE: MR-00381
Non-Discriminatory Treatment

Introduction

We are counsel to the RES group of generators (The "Res Group") with respect to the Market Rule Amendments resulting from the SE-91 Process (the "SE-91 Amendments") as they relate to the dispatch and floor price requirements for renewable facilities[1]. The RES Group consists of generators who have entered into RES I and RES II contracts with the Ontario Power Authority (the "OPA"). The RES Group members are: Acciona Energy North America Corporation, Brookfield Renewable Energy Group, Capital Power Corporation, Capstone Infrastructure Corporation, Enbridge Inc., Kruger Energy Port Alma LP, Suncor Energy Products Inc. and TransAlta.

On November 20, 2012, I advised Mr. O'Neill, Chair of the IESO Board, that the RES Group has serious concerns respecting the consistency of the SE-91 Amendments with the IESO's obligations respecting non-discriminatory treatment of generation market participants and requested that the IESO Board either not pass the SE-91 Amendments or, in the alternative, if it

[1] MR-00381. These submissions relate only to the dispatch and floor price provisions of the SE-91 Amendments as they relate to renewable facilities. The RES Group is not addressing any of these amendments as they relate to dispatch or floor prices for nuclear facilities.

does pass the SE-91 Amendments, condition their passage or implementation on satisfactory compensation arrangements being made with generators who are subject to it.

The RES Group remains hopeful that the IESO Board will meet this request. However, should it pass the SE-91 Amendments as proposed, the tight timelines for an appeal of the SE-91 Amendments to the Ontario Energy Board ("OEB") under the *Electricity Act, 1998* ("*EA*") requires a planned and orderly approach to the production of materials for the hearing. The purpose of this letter is to propose a time table for such production.

Background and Context

By way of background, as you are aware, ss 33(8) of the *EA* provides that the OEB may revoke a market rule amendment "if it finds that the amendment is inconsistent with the purposes of this Act or unjustly discriminates against or in favour of a market participant or class or market participants."

As you are also aware, in my November 20 letter, I advised Mr. O'Neill that the RES Group has serious concerns respecting the consistency of the SE-91 Amendments with the IESO's obligations respecting non-discriminatory treatment of generation market participants. In particular, the grounds of appeal to the OEB are that the SE-91 Amendments, as proposed:

- Unjustly discriminate against the generators who are subject to it ("Affected Generators") by exposing them to uncompensated and involuntary curtailment in order to provide societal benefits that IESO staff believes would result from a preferred dispatch order;
- Unjustly discriminate in favour of the Ontario Power Authority ("OPA") by transferring wealth directly from RES Group Members to the OPA as their contractual counter-party; and
- Is inconsistent with the following purposes of the EA:
    - to promote the use of cleaner energy sources and technologies, including alternative energy sources and renewable energy sources, in a manner consistent with the policies of the Government of Ontario (*EA*, ss. 1(d));

- to provide generators, retailers and consumers with non-discriminatory access to transmission and distribution systems in Ontario (*EA*, ss.1(e)); and
- (i) to facilitate the maintenance of a financially viable electricity industry (*EA*, ss.1(i)).

To address these claims, the OEB will require evidence relating to the issue of discrimination against RES Group members and in favour of the OPA as well as how the purposes of the *EA* were taken into account at the time of the development of the SE-91 Amendments.

Request for Preparation of Materials

The timelines for the OEB's consideration of an appeal are very constrained: an applicant must file an application within 21 days of the IESO's publication of notice of a rule amendment,[2] and the OEB must issue an order within 60 days of the application being filed.[3]

In order to ensure that these timelines do not interfere with the OEB's ability to review the evidence necessary to conduct the appeal, it is incumbent upon all parties to co-operate in the preparation of evidence. As advised in my letter to Mr. O'Neill, the facts with respect to discriminatory treatment of Affected Generators in comparison to other market participants generally and the OPA in particular, are within the control of the IESO, not the RES Group Members. Those facts are relevant to, and may be incorporated into the RES Group's evidence in the appeal.

In order to ensure a timely and orderly production of material, we ask that you produce the requested materials in time for the preparation of an application for appeal. Specifically, I request that you provide the information set out in Schedule A no later than seven days after the IESO's publication of the SE-91 Amendments.

Conclusion

Thank you for your consideration in this regard. I am hopeful that we will be in a position to come to an arrangement with respect to the production of materials on a voluntary basis. Given

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[2] *EA*, ss. 33(4)

[3] *EA*, ss. 33(6).

the tight time frames that we are all operating within, I would ask that you provide a response to this request by December 3, 2012.

Sincerely,

George Vegh

CC: Paul Murphy
Bruce Campbell

Schedule A

Materials Requested to be Produced by the IESO in Relation to Appeal of SE-91 Amendments to the Ontario Energy Board.

- Information relating to discrimination against Affected Generators by exposing them to uncompensated and involuntary curtailment, including:
    - All Materials (defined as including internal correspondence and modelling, and all communications with Government Agencies (defined as including the OPA and Ontario Electricity Finance Corporation ("OEFC")), the Ministry of Energy and all Market Participants) with respect to how the IESO or any other government agency compensates market participants for curtailing or manoeuvring their facilities to address actual or forecasts instances of surplus energy or for other purposes;
    - All Materials with respect to the expectations that market participants, including but not limited to Affected Generators, would be compensated with respect to the SE-91 Amendments; and
    - For greater certainty, satisfying this request includes the requirement that the IESO specifically request Government Agencies and the Ministry of Energy to provide all of their Materials with respect to:
        - compensation of market participants for curtailing or manoeuvring their facilities to address actual or forecasts instances of surplus energy; and
        - with respect to the expectations that market participants, including but not limited to Affected Generators, would be compensated with respect to the SE-91 Amendments.
- Information relating to discrimination in favour of the OPA:

- All Materials relating to the way in which the SE-91 Amendments may impact the extent of curtailments to which the Affected Generators may be subject, and, in particular, all forecasts, projections or estimates of curtailments under ranges of scenarios, identifying who prepared them, and including the underlying methodology, assumptions and calculations of such forecasts, projections or estimates;

- All Materials respecting the way in which the SE-91 Amendments may have an impact on amounts owing by the OPA to Affected Generators in respect of their procurement contracts; and

- For greater certainty, satisfying this request includes the requirement that the IESO specifically request Government Agencies and the Ministry of Energy to provide all of their Materials with respect to:

    - the way in which the SE-91 Amendments may impact the amount that the Affected Generators may be subject to curtailment, and, in particular, a forecast of curtailments; and

    - the expectations that market participants, including but not limited to Affected Generators would be compensated with respect to the SE-91 Amendments.

- Information relating to the consistency of the SE-91 Amendments with the purposes of the *EA*, including:

    - All Materials considered by the IESO in respect of the matters addressed in ss. 1(d), (e) and (i) of the *EA* in the SE-91 Amendment process, including all Materials relating to the development and consideration of options that involved alternatives to imposing dispatch and floor price requirements on wind generators.

Schedule F

Please see attached

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December 27, 2012

Sent By E-mail

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Our reference
01006736-0122

Dear Mr. Vegh:

MR-00381: Proposed Market Rule Amendments to Integrate Renewable Generation into Economic Dispatch

We write further to our letter of December 4, 2012 and your letter of November 28, 2012, enclosing a list of materials requested to be produced by the Independent Electricity System Operator ("IESO") in relation to a possible appeal of MR-00381.

The view of the IESO has been and remains that contractual issues between your clients and the Ontario Power Authority are outside of the scope of MR-00381 and, therefore, of any appeal.

I suggest that we have a call in early January to discuss a possible timetable.

Yours very truly,

Alan Mark

AHM/dm

Copy to: Jennifer Teskey, *Norton Rose Canada LLP*

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