



Market Rule Amendment Submission

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

Email Address: Rule.Amendments@ieso.ca

Fax No.: (416) 506-2847 Attention: Market Rules Group

Subject: Market Rule Amendment Submission

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

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

PART 1 – SUBMITTER’S INFORMATION

Please enter contact information in full.	
Name: <u>IESO Staff</u>	
(if applicable) <i>Market Participant / Metering Service Provider</i> No. ¹ : <u>N/A</u>	<i>Market Participant Class</i> : <u>N/A</u>
Telephone: <u>905 403-6955</u>	Fax: _____
E-mail Address: <u>rule.amendments@ieso.ca</u>	

PART 2 – MARKET RULE AMENDMENT SUBMISSION INFORMATION

Subject: <u>Generation Cost Guarantees</u>	
Title: <u>Interim Changes to Real-Time and Day-Ahead Generation Cost Guarantee Program</u>	
Nature of Request (please indicate with x)	
<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion
<input type="checkbox"/> Addition	<input type="checkbox"/> Clarification
Chapter: <u>7 and 9</u>	Appendix: _____ Sections: <u>Various</u>
Sub-sections proposed for amending/clarifying: _____	

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

PART 3 – DESCRIPTION OF THE ISSUE

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

Background

In the Ontario market where pre-dispatch prices can differ from real-time prices, it is rational for generators with units that require long start-up times and who must make costly decisions to bring their units on-line well in advance of receiving dispatch schedules, to offer in such a way to minimize potential losses or not to start up at all unless they are confident of covering their costs.

To address these reliability and efficiency concerns, the IESO introduced real-time (in 2003) and day-ahead (in 2006) guarantee programs for generation resources that commit to economic hourly schedules in advance of real-time dispatch and prices. These guarantee programs provide assurance to generating resources that that certain costs will be guaranteed in exchange for access to their generation capacity.

The current real-time guarantee program is called Spare Generation On-Line (SGOL). This program provides a commitment to eligible and economically selected generators who declare their start under the SGOL program, that they will be scheduled to at least its minimum loading point (MLP) for at least its minimum run time (MRT). To be eligible for such a guarantee, the generation unit must not be a quick-start generation unit and must be scheduled for at least one MW for at least one hour in the pre-dispatch schedule issued three hours before that hour. The program guarantees that the all fuel costs of start-up, ramping to the MLP and operation during its minimum generation block run time (MGBRT) will be covered if Total Market Revenue received (energy and CMSC revenues associated with the MLP plus operating reserve revenues) fails to cover these costs. The generator submits the fuel costs as a single value, after the fact. These submitted fuel costs are the Combined Guaranteed Costs (CGC) for the real-time program. The SGOL guarantee payment is the lesser of zero and Total Market Revenues minus the submitted CGC.

The current day-ahead guarantee program is the Day-Ahead Generation Cost Guarantee (DA-GCG). This program provides a commitment to eligible generators who are economically scheduled for at least their full MLP and MGBRT in the pre-dispatch of record for the dispatch day. All fuel costs plus operations and maintenance costs of start-up and operation at the minimum loading for the MGBRT will be covered if real-time market revenue (energy and CMSC revenues associated with the MLP plus operating reserve revenues) received fails to cover these costs. The generator submits the fuel and operating maintenance costs (CGC) as a single value, after the fact. These submitted fuel and O&M costs are the Combined Guaranteed Costs (CGC) for the day-ahead program. The DA-GCG guarantee payment is the lesser of zero and Total Market Revenues minus the submitted CGC.

The IESO committed to review the current real-time commitment and generation cost guarantee program, Spare Generation on Line (SGOL), in light of changes to the day-ahead guarantee program being implemented in 2011 with the new Enhanced Day Ahead Commitment (EDAC) design.

Outcome of Guarantee Review

In our initial review of the SGOL program, it has become evident that certain aspects of both the existing real-time generator cost guarantee and the existing day-ahead generator cost guarantee are resulting in economically inefficient market outcomes: market demand is being met by a resource with

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higher incremental cost than the incremental cost of other available resources.

The first inefficiency relates to both real-time and day-ahead programs. Eligible generators, in anticipation of cost guarantees, may offer at a price lower than the expected market price and their incremental energy cost. Since the scheduling of resources is based on offers, a generator with higher incremental energy costs may be scheduled while the lower cost resource may not be scheduled. This is economically inefficient. Generator A may recover the part of its incremental energy costs that was not included in its offer price by including all allowed costs in its submitted CGC; the generator has no financial risk associated with offering below incremental energy cost. In order to reduce this inefficiency, there must be a direct relationship between the offer price and the CGC.

The second inefficiency is specific to eligibility for the SGOL cost guarantee. Minimum eligibility for the SGOL guarantee requires a pre-dispatch schedule based on the generator's offer for any number of MWs and for as little as one hour. The generator is then guaranteed to run at its minimum loading point (MLP) for its minimum generation block run time (MGBRT). In many instances, this unit will be scheduled for some hours when it is not economic, displacing generation with lower priced offers. This is also economically inefficient. In order to reduce this inefficiency, we must "raise the bar" on the minimum eligibility requirement. The generator's offer must be economic for a greater number of MWs and hours in order to be constrained on for its MLP and MRT and in order to receive a guarantee of costs.

A third concern relates to the impact of the guarantee programs on Operating Reserve (OR) offers by participating generators. OR payments are included in the existing determination of the guarantees: OR payments are included in the generator's total market revenue and this increases the instance of generator revenues exceeding their guaranteed costs. This may be a disincentive for generators eligible for guarantees to offer OR, especially if the generator incurs a cost to provide OR (OR related costs are not included in the guaranteed generation costs). In order to eliminate this potential disincentive, the OR revenue should be removed from the calculation of the guarantee payment.

Information presented to the Technical Panel on February 24, 2009 can be found at:

http://www.ieso.ca/imoweb/pubs/icms/tp/2009/02/IESOTP_222_3b_RT_GCG_and_DA_GCG_Discussion_Paper.pdf

http://www.ieso.ca/imoweb/pubs/icms/tp/2009/02/IESOTP_222_3c_Presentation_Interim_Changes_to_Generator_Cost_Guarantee.pdf.

Correcting these inefficiencies aligns with the Market Surveillance Panel (MSP) January 2009 Report (http://www.oeb.gov.on.ca/OEB/Documents/MSP/msp_report_200901.pdf), which recommended that the IESO to consider changes to the method of calculating guarantees to improve the effectiveness of day-ahead scheduling decisions and increase Operating Reserve offers by gas fired generators.

Market Efficiency Impact Analysis

The impact analysis involves identifying resources with a GCG which appear to have been over-committed then determining the costs of replacing the MWs associated with the over-committed starts. (A resource is considered over-committed if the nodal real-time shadow price is lower than inferred incremental costs for a scheduled resource over total constrained hours.) In 2008, there were approximately 400 starts that are considered to be over-committed. This represents about half of all starts under the guarantee programs.

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The difference between the costs of the over-committed generation and the costs of the available replacement resources represent potential efficiency gains.

The following event from the 2008 sample illustrates the potential efficiency gains:

June 2008 DA-GCG start of natural gas fired generation resource

- Dawn price * Heat Rate = \$87/MWh
- O&M = \$3.10/MWh, total cost \$90/MWh
- Replacement cost ranged from \$4 to \$89/MWh
- Efficiency gains ranged from \$86 to \$1/MWh

- Total efficiency gain = \$116,000

The IESO cost of making these proposed changes to the GCG programs is relatively small; a one-time expense of roughly \$50,000. The changes can also be made within 10 weeks.

Further analysis is required to estimate overall efficiency gains but preliminary results suggest that the efficiency gains realized by making the proposed changes to the GCG programs will likely be materially in excess of \$50,000 and hence would represent a material net benefit to the market.

Making these changes now would allow enough time to evaluate the improvements and the need for, or value of, the SGOL program and make any long-term changes in time for the implementation of the EDAC process.

The IESO will study, under a separate stakeholder initiative, the potential interaction of the existing real-time guarantee program (SGOL) with the future day-ahead guarantee program of EDAC. Any long term changes to the guarantee program will be implemented at the same time as EDAC, in June 2011.

PART 4 – PROPOSAL (BY SUBMITTER)

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

We recommend modifying the market rules to reflect the proposals, as follows.

Modification #1 – Change Determination of Combined Generation Costs

In order to reduce the inefficiency related to day-ahead and real-time scheduling of resources whose offer prices do not reflect their incremental energy costs, there must be a direct relationship between the offer price and the CGC. By including the MLP offer price in the CGC calculation, there will be an incentive for generators to submit offer prices more reflective of their true incremental energy costs.

Chapter 9, Section 4.7B.1.2 Real-Time Generation Cost Guarantee Payments

This section will be changed such that the IESO uses the offer price and MLP plus fuel cost information submitted by the generator after the fact to calculate the CGC: CGC equals the generator's

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MLP (MWh) times its MLP offer price (\$/MWh) during MGBRT plus fuel costs submitted by the generator.

Chapter 9, Section 4.7D.1.2 Day-Ahead Generation Cost Guarantee Payments

This section will be changed such that the IESO uses the offer price and MLP plus the fuel and incremental O&M cost information submitted by the generator after the fact to calculate the CGC: CGC equals the generator's MLP (MWh) times its MLP offer price (\$/MWh) during MGBRT plus fuel costs and O&M costs submitted by the generator.

Modification #2 – Change eligibility requirements for RT-GCG

In order to reduce the real-time scheduling inefficiency related to constraining on resources whose offers are economic for only short period, we must “raise the bar” on the minimum eligibility requirement.

Chapter 7, Section 5.7.1.3**Pre-Dispatch Scheduling of Generation Facilities Eligible for the Generation Cost Guarantee**

This section will be changed such that the generator's offer must be economically scheduled for a fraction of the MW of their MLP for a fraction of the hours of their MGBRT in the three-hour ahead pre-dispatch schedule in order to be constrained on to MLP for MGBRT and receive a guarantee of costs.

Chapter 7, Section 2.2B.1.3**Generation Facility Eligibility for the Real-Time Generation Cost Guarantee**

This section will be changed such that the minimum generation block run-time (MGBRT) must be submitted to the IESO for each facility, along with the combined guaranteed costs, MRT and MLP.

Modification #3 – Remove Operating Reserve Revenues from Guarantee Calculation

In order to eliminate the potential disincentive for generators that are eligible for guarantees to provide OR, the OR revenue should be removed from the calculation of the guarantee payment.

Chapter 9, Section 4.7B.1.1b Real-Time Generation Cost Guarantee Payments

This will be deleted.

Chapter 9, Section 4.7D.1.1b Day-Ahead Generation Cost Guarantee Payments

This will be deleted.

Modification #4 – Revise definitions of Minimum Generation Block Run-Time

In order to correctly reflect the meaning of Minimum Generation Block Run-Time (MGBRT), revisions are needed. MGBRT is currently used to determine whether or not a resource is eligible for the day-ahead generator cost guarantee. The current definition of MGBRT is the following:

minimum generation block run-time means the time difference, specified by the *market participant*, between the *minimum run-time* and the minimum time required for a *generation facility* to ramp from synchronization to *minimum loading point*;

PART 4 – PROPOSAL (BY SUBMITTER)

If the resource is economically scheduled for its entire MGBRT at its minimum loading point, it receives a commitment day-ahead and is eligible for the guarantee. The current definition results in a number of MGBRT hours that is greater than the technical requirements of the facility.

For example, assume the registered minimum run-time (MRT) of a resource is determined to be 11 hours. This is based on a 5 hour cold ramp time plus the 6 hours that the facility must be operating at its minimum loading point for technical reasons. The hot ramp time, which is the fastest ramp time for this facility, is 2 hours. Therefore, using the current definition, MGBRT would be the difference between the MRT of 11 hours and the hot ramp time of 2 hours which equals 9 hours. The actual MGBRT for this facility is 6 hours. In order to correctly determine eligibility for day-ahead commitment, the definition of MGBRT should be changed to: “the number of hours that a *generation facility* must be operating at *minimum loading point* in accordance with the technical requirement of the facility. (This is a static number of hours and should be registered as such with the IESO.)

PART 5 – FOR IESO USE ONLY

Technical Panel Decision on Rule Amendment Submission: Warrants consideration

MR Number: MR-00356

Date Submitted to *Technical Panel*: April 17, 2009

Accepted by *Technical Panel* as: (please indicate with x) Date:
 General Urgent Minor April 22, 2009

Criteria for Acceptance: It identifies means to better enable the market to satisfy the market design principle of efficiency. The proposed changes would likely improve market economic efficiency by reducing the total cost of meeting market demand.

Priority: High

Criteria for Assigning Priority: Preliminary analysis suggests that the proposed changes to the GCG programs could result in significant savings to the market over the next few years.

Not Accepted (please indicate with x):

Clarification/Interpretation Required (please indicate with x):

Technical Panel Minutes Reference: IESOTP 225-1

Technical Panel Comments: _____