



**Market Rule Amendment Proposal**

**PART 1 – MARKET RULE INFORMATION**

<b>Identification No.:</b> MR-00161-R00
<b>Subject:</b> Data, Scheduling, Dispatch, Prices
<b>Title:</b> Treatment of Cogeneration Facilities - Definitions
<b>Nature of proposal</b> (please indicate with X): <u>  </u> Alteration <u>  </u> Deletion <u>  X  </u> Addition
<b>Chapter:</b> 11 <span style="float: right;"><b>Appendix:</b></span>
<b>Sections:</b>
<b>Sub-sections proposed for amending:</b>

**PART 2 – PROPOSAL HISTORY**

Version	Reason for Issuing	Version Date
1.0	Submitted for Technical Panel Review (TP124)	April 16, 2003

**Approved Amendment *Publication* Date:**

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### PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IMO-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 *IMO-administered markets*.
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The purpose of this rule amendment is to enable a suitable treatment for cogeneration facilities within the IMO-administered market.

#### **Background:**

A cogeneration facility is defined as a facility that produces electric energy and another form of useful energy (such as steam) which is used for industrial, commercial, heating, or cooling purposes. Cogeneration facilities can use significantly less fuel to produce electricity and other forms of energy than would be needed to produce the two separately. By using fuels more efficiently, cogeneration facilities can make a significant contribution to energy conservation.

These facilities have the following characteristics:

- Their driving operating force is typically production of the other form of energy, with electricity as a by-product;
- In multi-unit facilities, when one generation unit fails, other units will adjust to meet the requirement for the other form of useful energy e.g. pick up the steam load, thus affecting electricity production; and
- Sizes currently typically range from 50 to 200 MW.

Stakeholders have conveyed to the IMO that the market rules do not appropriately address these unique characteristics and existing contractual commitments (e.g. for steam production) of these facilities.

Almost all existing non-utility generators (NUGs), of which cogenerators are a subset, in Ontario have power purchase agreements (PPAs) with the Ontario Electricity Financial Corporation (OEFC). These agreements limit the ability of these generators to operate effectively within the IMO-administered markets. While the expiry date for most of these PPAs is not until some time between 2010 and 2020, the OEFC and the NUGs are negotiating amendments to the agreements so as to permit NUGs to operate effectively within the IMO-administered markets

As it was clear that amendments to the PPAs would not be concluded by market commencement, the IMO worked with stakeholders to draft transitional provisions into the market rules for all the NUGs. These provisions allowed all NUGs having a PPA with the OEFC to register with the IMO as a “transitional scheduling generator” (TSG) to effectively self-schedule their energy supply into the IMO-administered markets. For each NUG facility, these transitional provisions expire one month after the NUG and the OEFC amend the applicable PPA. In order to facilitate effective PPA amending negotiations, the TSGs and the OEFC need to know under what “enduring” provisions the generators will be required to operate within the market. The TSGs represent approximately 1700 MW or approximately 6% of Ontario’s present generating capacity.

Since September 2002, the IMO has been working with a number of cogenerators and stakeholders to develop options for incorporating cogeneration facilities into the market once their TSG registration expires. This proposal describes three options resulting from those discussions.

### **Summary of Options:**

It is proposed that market participants have a choice of three options when they re-register their cogeneration facilities after their TSG status expires:

**Option 1** – Re-register as a dispatchable generation facility, with dispatch instruction compliance bands reflective of the impact that the production of other forms of useful energy within the facility has on electricity production.

**Option 2** – Re-register as a self-scheduling generation facility with an obligation to meet its current schedule and with compliance bands reflective of the impact that the production of other forms of useful energy within the facility has on electricity production. This option would be available to a cogeneration facility provided that the IMO is satisfied that there are no adverse impacts on the reliability of the IMO-controlled grid of the facility being self-scheduling. It should be noted that it is proposed that all cogeneration facilities greater than 10 MW choosing to be self-scheduling generation facilities would have the new obligation to meet their current schedule within specified compliance bands.

**Option 3** – Re-register as an intermittent generation facility, provided the facility meets the eligibility criteria currently specified in the market rules.

These three options would also be available for new cogeneration facilities in Ontario under the same conditions.

The options noted above do not preclude the ability of a market participant to apply for an exemption from any market rule requirement. A market participant may also choose to seek exemptions when its TSG registration expires.

Facilities that would be afforded larger compliance bands, whether dispatchable or self-scheduling, on the basis of the impact of a steam host would need to meet the following technical criteria:

- i. Simultaneous generation of usable steam, heat or some other useable form of energy and electricity in a single process.
- ii. One or more prime movers usually driving electrical generators, where the heat (steam) generated in the process is utilized via suitable heat recovery equipment for a variety of independent purposes other than electricity production e.g. industrial processes.
- iii. Electricity production is dependent on the operation of the independent process e.g. the “steam host”.

### **Description of the Options and Proposed Market Rule Amendments:**

**Option 1** – Become a Dispatchable Generator with Compliance Bands Reflective of the impact that the production of other forms of useful energy within the facility has on electricity production.

Under this option, a market participant could re-register their existing cogeneration facility as a dispatchable generation facility once their TSG status expires. Similarly, a market participant could register a new cogeneration facility as a dispatchable generation facility.

The dispatch instruction compliance bands for such a facility would be the greater of:

- (i)  $\pm 10$  MW; or
- (ii)  $\pm 2\%$  of the dispatch instruction; or

- (iii) ±the MW impact that the production of other forms of useful energy within the facility has on electricity production.

The latter compliance band is available only if the market participant provides information to the IMO, at the time of facility re-registration/registration, of the MW impact that the production of other forms of useful energy within the facility (e.g. the steam host) is expected to have on electricity production. The IMO would have the right to audit that MW impact on a “random” basis. The IMO would also have the right to audit the facility’s operation to verify that an actual deviation was in fact due to the impact of the production of other forms of useful energy within the facility.

As a dispatchable generation facility, the market participant would need to meet all other applicable technical requirements, information monitoring, dispatch data submission requirements etc that apply to a dispatchable generator. The market participant would be eligible to provide any physical service in the IMO-administered markets, including energy, operating reserve and other ancillary services. The market participant would be compensated for energy provided at the 5-minute energy market price, and would receive other applicable market or contract prices for services provided. It would be eligible for CMSC payments if its operation is constrained by the IMO in accordance with the market rules, and it would be required to plan and coordinate its outages like any other facility under section 6 of chapter 5 (i.e. sections 6.2.2.A and 6.4.15A of chapter 5 would no longer be applicable).

This option has the following impacts upon the market participant applying to register their cogeneration facility as a dispatchable generation facility. Some as indicated below require rule amendments.

- Potential revenue streams from provision of ancillary services and CMSC payments.
- Dispatch instruction compliance bands reflective of the operational limitations of the facility due to the other cogeneration product (e.g. process steam) – rule amendment is required.
- Infrastructure, staffing, training may be required to become fully dispatchable.
- Potential for financial penalties for non-compliance with dispatch instructions.
- Being dispatchable may impact upon the relationship/contractual obligations to the steam host and OEFC e.g. compliance with dispatch instruction potentially may put a market participant in breach of its obligations to steam host or OEFC. If so, this issue may require addressing in the contracts between the market participant, the steam host and OEFC, and in the development of the compliance bands with the IMO.
- Subject to IMO dispatch instructions and the IMO-administered market’s outage planning requirements.

This option will have a positive impact on the market because it enables more price responsive generation within the market and therefore increases competition.

### **Market Rule Amendments Required for Option 1**

Chapter 7, sections 2.2 and 3.3.8:

- i. requirement for participant to re-register/register their cogeneration facility as a dispatchable generation facility, seeking compliance bands for its cogeneration facility reflective of the impact that the production of other forms of useful energy within the facility has on electricity production., and to provide IMO with information subject to ongoing audit regarding that MW impact. (See MR-00161-R05, new section 2.2.6.9); and
- ii. requirement for the submission of revised dispatch data if the participant expects that its cogeneration facility will be unable to deliver the currently scheduled quantity by more than the MW impact that the production of other forms of useful energy within the facility has on electricity production.. (See MR-00161-R05, amended section 3.3.8).

**Option 2** – Become a Self-Scheduling Generator with an Obligation to Meet Current Schedule with Compliance Bands Reflective of Steam Host Impact:

Under this option, a market participant could re-register their cogeneration facility, regardless of size, as a self-scheduling facility once their TSG status expires. Similarly, a market participant could register a new cogeneration facility as a self-scheduling facility. This option would be available to an existing or new cogeneration facility provided that the IMO is satisfied that there are no adverse impacts on the reliable operation of the IMO-controlled grid of the facility being self-scheduling.

A new market rule obligation is proposed that self-scheduling generation facilities with a name-plate rating of 10 or more MW would be required to meet their current schedule<sup>1</sup> within specified compliance bands. The obligation to operate within compliance bands is necessary in order to address the reliability and market impacts of self-scheduling facilities not meeting their schedule. Market experience to date has demonstrated that market participants not meeting their schedules increase the frequency of occurrences where market resources cannot meet market demands and the IMO is required to use out-of-market sources of operating reserve. The compliance bands for a self-scheduling facility meeting its current schedule would be the same as for a cogeneration facility that chooses to be dispatchable; namely, the greater of:

- (i)  $\pm 10$  MW; or
- (ii)  $\pm 2\%$  of the dispatch instruction; or
- (iii)  $\pm$  the MW impact that the production of other forms of useful energy within the facility has on electricity production.

As in the case for a cogeneration facility that chooses to be dispatchable, the latter compliance band is available only if the market participant provides information to the IMO, at the time of facility re-registration/registration, on the MW impact that the production of other forms of useful energy within the facility (e.g. the steam host) is expected to have on electricity production. The IMO would have the right to audit that MW impact on a “random” basis. The IMO would also have the right to audit the facility’s operation to verify that an actual deviation was in fact due to the impact of the production of other forms of useful energy within the facility.

The current market rules only permit self-scheduling generation facilities that are less than 10 MW, whereas, a number of existing cogeneration facilities are larger than 10 MW. Because of its potential impact on the reliable operation of the IMO-controlled grid, a cogeneration facility that is 10 MW or more in size that wishes to register as a self-scheduling facility, would need to meet the applicable technical requirements for major, significant, or minor generation facility that they are required to meet now as a TSG. These requirements are greater than those required of existing self-scheduling generators.

As per the market rules a self-scheduling facility is only eligible to provide energy and reactive power and voltage support. These facilities are not eligible for CMSC payments. As a self-scheduling facility, the market participant would be compensated for energy provided at the hourly Ontario energy price (HOEP). It would be required to plan and coordinate its outages like any other facility under section 6 of chapter 5 (i.e. sections 6.2.2.A and 6.4.15A of chapter 5 would no longer apply).

Choosing to be a self-scheduling cogenerator would have the following impacts upon the market participant:

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<sup>1</sup> Current schedule is meant to be the most current schedule submitted to the IMO by the market participant as dispatch data for a self-scheduling facility pursuant to sections 3.3.8 and 3.7 of chapter 7 of the market rules.

- Potential for financial penalties for non-compliance with current schedule. However, compliance bands allow for the impact that the production of other forms of useful energy within the facility has on electricity production.
- Subject to IMO-administered market's outage planning requirements.
- Need to provide additional information (e.g. impact of steam host) to IMO upon facility re-registration/registration to determine compliance bands – rule amendment required.
- As a “price taker”, the market participant is only eligible to receive payments for energy and, if applicable, payments for provision of reactive power and voltage support.

While being self-scheduling does not increase price responsiveness, if market rule changes facilitate the entry of new resources into the market whose economics depend upon the ability to be self-scheduling, it would have a favourable impact on the market by attracting new cogeneration to Ontario and thereby increasing supply and competition.

### **Market Rule Amendments Required for Option 2**

Chapter 11: definition of a cogeneration facility (See MR-00161-R00).

Chapter 7, sections 2.2 and 3.3.8:

- i. requirement for market participant to re-register/register their cogeneration facility as a self-scheduling generation facility, seeking compliance bands for its cogeneration facility reflective of the impact upon electricity production of the production of other forms of useful energy within the facility, and to provide the IMO with information subject to audit regarding that impact upon electricity production.. (See MR-00161-R05, new section 2.2.6.9);
- ii. enabling amendment allowing cogenerators 10 MW or more in size to be self-scheduling. (See MR-00161-R05, amended section 2.2.9.1);
- iii. requirement for market participant to submit monthly forecasts of energy production and to update the forecasts when the forecasts change to assist the IMO in the outage planning process and in the preparation of security and adequacy assessments. (See MR-00161-R05, amended section 3.7) ; and
- iv. requirement for the submission of revised dispatch data (i.e. revised self-schedules). (See MR-00161-R05, amended section 3.3.8).

The current market rules for self-scheduling generation facilities apply only to generation facilities with a name-plate rating of less than 10 MW. In addition to the above amendments, the following list of amendments is consequential in order to limit many of the existing market rules to self-scheduling generation facilities with name-plate ratings of no more than 10 MW. For these amendments there are no special requirements for cogeneration facilities regardless of whether or not they re-register/register as dispatchable, self-scheduling or intermittent. They are treated like any other generation facility under the market rules.

MR-00161-R01: Appendix 2.2, technical requirements for voice communications.

MR-00161-R02: Chapter 4 section 7.3.2.2, generator monitoring information.

MR-00161-R03: Appendix 4.15, generator monitoring requirements.

MR-00161-R04: Chapter 6 section 10.3.2, collation of metering data into 5 or 15 minute intervals; and Appendix 6.2 sections 1.1A.1.5 and 1.5.1.5, alternative metering installation standards.

MR-00161-R05: Chapter 7 section 5.7, information used to determine pre-dispatch schedules; and section 11.1.2, generator synchronization.

**Option 3 - Become an Intermittent Generation Facility as Currently Defined in the Market Rules**

Under this option, a market participant could re-register their existing cogeneration facility as an intermittent generation facility once their TSG status expires, provided the facility meets the eligibility criteria specified in the market rules. Similarly, a market participant could register a new cogeneration facility as an intermittent generation facility, provided the facility meets the eligibility criteria specified in the market rules.

There are no enabling rule changes required under this option. It is presented here for the sake of completeness.

The existing eligibility criteria specified in the market rules are:

- Chapter 11 definition of intermittent generation facility: a generation facility located within the IMO control area that generates on an intermittent basis as a result of factors beyond the control of the generator.
- Chapter 7 section 2.2.13: a market participant may apply to register an intermittent generator if it has a name-plate rating of not less than 1 MW.
- Chapter 7 section 2.2.14: an intermittent generator may not be registered to provide any physical service other than energy and reactive support service and voltage control service.
- An intermittent generation facility would not be eligible for CMSC payments.
- Chapter 7 section 2.2.15: the IMO shall approve an application for registration as an intermittent generator if the information required by this section 2.2 is provided and the IMO determines that intermittent operation of the facility will not have a material adverse impact on power system security.
- The market participant would need to meet all other applicable technical requirements, information monitoring, dispatch data submission requirements etc. that apply to an intermittent generator.
- As an intermittent facility, the market participant would be compensated for energy provided at the hourly Ontario energy price (HOEP).

A market participant that qualifies and chooses to be an intermittent generator is a “price taker”.

## PART 4 – PROPOSED AMENDMENT

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1.1.1.xx *cogeneration facility* means a *generation facility* that produces both electric energy and either steam or other forms of useful energy (such as heat), which are used for industrial, commercial, heating, or cooling purposes.

**PART 5 – IMO BOARD COMMENTS**





**Market Rule Amendment Proposal**

**PART 1 – MARKET RULE INFORMATION**

<b>Identification No.:</b> MR-00161-R01
<b>Subject:</b>
<b>Title:</b> Treatment of Co-generation Facilities – Voice Communication Requirements
<b>Nature of proposal</b> (please indicate with X): <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Deletion <input type="checkbox"/> Addition
<b>Chapter:</b> 2 <span style="float: right;"><b>Appendix:</b> 2.2</span>
<b>Sections:</b> 1.1
<b>Sub-sections proposed for amending:</b> 1.1.1.4

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### PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IMO-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 *IMO-administered markets*.

See MR-00161-R00

There are no special voice communications requirements for cogeneration facilities regardless of whether or not they re-register/register as dispatchable, self-scheduling or intermittent. They are treated like any other generation facility under the market rules and would need to meet the applicable voice communication requirements on the basis of their MVA size, whether or not they are attended, are a black start facility etc. Section 1.1.1.4 b. is amended limiting the requirement for one commercially available telephone to *self-scheduling generation facilities* with name-plate ratings of less than 10 MW. This requirement is unchanged from the present requirements for self-scheduled generation facilities, which are defined to be less than 10 MW under the current market rules.

### PART 4 – PROPOSED AMENDMENT

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## Appendix 2.2 – Technical Requirements: Voice Communication, Monitoring and Control, Workstations and Re-Classification of Facilities

### 1.1 Voice Communications

1.1.1 Each *generator* that participates in the *IMO-administered markets* or that causes or permits electricity to be conveyed into, through or out of the *IMO-controlled grid* shall, subject to section 1.1.11, provide and maintain the following voice communication facilities for purposes of communicating with the *IMO*:

1.1.1.1 one high priority path facility and one normal priority path facility at the dispatch centre, control center and authority centre for each of its generation facilities provided that either:

- a. the *IMO* has determined that a *high priority path facility* and a *normal priority path facility* are required to enable the *IMO* to maintain *reliable* operation of the *IMO-controlled grid*; or
  - b. one of the applicable *generation facilities* is a *major generation facility*; or
  - c. the aggregate rated size of applicable *generation facilities* is 100 MVA or greater; or
  - d. any one of the applicable *generation facilities* is a *certified black start facility*;
- 1.1.1.2 subject to section 1.1.1.1, one *normal priority path facility* at the *dispatch centre, control center* and *authority center* for each of its *generation facilities* provided that the aggregate rated size of applicable *generation facilities* is less than 100 MVA;
- 1.1.1.3 one high priority path facility and one normal priority path facility for each of its major generation facilities that are attended generation stations;
- 1.1.1.4 one commercially available telephone for each of:
- a. its *major generation facilities, significant generation facilities* and *minor generation facilities* that are *unattended*; and
  - b. its *self-scheduling generation facilities* with name-plate ratings of less than 10 MW,
- the telephone number of which shall be provided by the *generator* to the *IMO*;

**PART 5 – IMO BOARD COMMENTS**





**Market Rule Amendment Proposal**

**PART 1 – MARKET RULE INFORMATION**

<b>Identification No.:</b> MR-00161-R02
<b>Subject:</b>
<b>Title:</b> Treatment of Cogeneration Facilities – Monitoring Information
<b>Nature of proposal</b> (please indicate with X): <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Deletion <input type="checkbox"/> Addition
<b>Chapter:</b> 4 <span style="float: right;"><b>Appendix:</b></span>
<b>Sections:</b> 7.3.2.2
<b>Sub-sections proposed for amending:</b>

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### PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

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- Alternative solutions considered
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IMO-administered markets*.

See MR-00161-R00

There are no special monitoring information requirements for cogeneration facilities regardless of whether or not they re-register/register as dispatchable, self-scheduling or intermittent. They are treated like any other generation facility under the market rules and would need to meet the applicable monitoring information requirements on the basis of their name-plate rating. Section 7.3.2.2 is amended limiting its application to *self-scheduling generation facilities* with name-plate ratings of less than 10 MW. This is unchanged from the present requirements for self-scheduled generation facilities, which are defined to be less than 10 MW under the current market rules.

### PART 4 – PROPOSED AMENDMENT

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## 7.3 Monitoring Information Provided by Generators to the IMO

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

7.3.1.1 generator (i) whose generation facility is connected to the *IMO-controlled grid*, or (ii) that is participating in the *IMO-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 *IMO* for the purposes of this section 7.3.1 as being required to provide such data in order to enable the *IMO* to maintain the reliability of the *IMO-controlled grid*,

shall provide the *IMO* 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 *IMO* at the time of registration as affecting the *reliability* of the *IMO-controlled grid*.
- 7.3.3 The *IMO* shall *publish* on a calendar month time-frame, six months from the end of each subject month, the monthly *energy* production (in MWh) for each generating station based on information provided to it by *market participants*. *Energy* production for generating stations with ratings less than 20 MVA can be aggregated by area.

**PART 5 – IMO BOARD COMMENTS**







**Market Rule Amendment Proposal**

**PART 1 – MARKET RULE INFORMATION**

<b>Identification No.:</b> MR-00161-R03
<b>Subject:</b>
<b>Title:</b> Treatment of Cogeneration Facilities – Monitoring Requirements
<b>Nature of proposal</b> (please indicate with X): <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Deletion <input type="checkbox"/> Addition
<b>Chapter:</b> 4 <b>Appendix:</b> 4.15
<b>Sections:</b>
<b>Sub-sections proposed for amending:</b>

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**PART 3 – EXPLANATION FOR PROPOSED AMENDMENT**

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- Alternative solutions considered
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IMO-administered markets*.

See MR-00161-R00

There are no special monitoring requirements for cogeneration facilities regardless of whether or not they re-register/register as dispatchable, self-scheduling or intermittent. They are treated like any other generation facility under the market rules and would need to meet the applicable monitoring requirements on the basis of their name-plate rating (i.e. depending for example on whether they are major, minor or significant). Appendix 4.15 is amended limiting its application to *self-scheduling generation facilities* with name-plate ratings of less than 10 MW. This is unchanged from the present requirements for self-scheduled generation facilities, which are defined to be less than 10 MW under the current market rules.

PART 4 – PROPOSED AMENDMENT

## Appendix 4.15 – IMO Monitoring Requirements: Generators

The following information, as a minimum, shall be available on a continual basis to the *IMO* from (a) any generator (i) whose *generation facility* is *connected* to the *IMO-controlled grid*, or (ii) that is participating in the *IMO-administered markets*; and (b) any *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 *IMO* for the purposes of section 7.3.1 of this Chapter as being required to provide such data in order to enable the *IMO* to maintain the *reliability* of the *IMO-controlled grid*.

.....

<i>Self-scheduling generation facility with a name-plate rating of less than 10 MW</i>	None
<i>Intermittent and transitional scheduling generator</i>	<ul style="list-style-type: none"> <li>• if a <i>major generation facility</i>, as described above for a <i>major generation facility</i></li> <li>• if a <i>significant generation facility</i>, as described above for a <i>significant generation facility</i></li> <li>• if a <i>minor generation facility</i>, as described above for a <i>minor generation facility</i> if designated by the <i>IMO</i> at the time of registration as affecting the reliability of the <i>IMO-controlled grid</i></li> <li>• if a <i>small generation facility</i>, none</li> </ul>
<i>Small generation facility</i>	None

**PART 5 – IMO BOARD COMMENTS**



**Market Rule Amendment Proposal**

**PART 1 – MARKET RULE INFORMATION**

<b>Identification No.:</b> MR-00161-R04
<b>Subject:</b>
<b>Title:</b> Treatment of Cogeneration Facilities – Wholesale Metering
<b>Nature of proposal</b> (please indicate with X): <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Deletion <input type="checkbox"/> Addition
<b>Chapter:</b> 6 <span style="float: right;"><b>Appendix:</b> 6.2</span>
<b>Sections:</b> 10.3
<b>Sub-sections proposed for amending:</b> 10.3.2

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See MR-00161-R00

There are no special metering requirements for cogeneration facilities regardless of whether or not they re-register/register as dispatchable, self-scheduling or intermittent. They are treated like any other generation facility under the market rules. Section 10.3.2 and Appendix 6.2, Alternative Metering Standards, sections 1.1A.1.5 and 1.5.1.5 are amended limiting there application to *self-scheduling generation facilities* with name-plate ratings of less than 10 MW. This is unchanged from the present requirements for self-scheduled generation facilities, which are defined to be less than 10MW under the current market rules.

### PART 4 – PROPOSED AMENDMENT

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## 10.3 Periodic Energy Metering

10.3.1 Subject to section 10.3.2, *metering data* relating to the amount of active *energy* and, where relevant, reactive *energy* passing through a *metering installation* shall be collated by *dispatch intervals*.

10.3.2 *Metering data* may be collated into 5 or 15 minute intervals by a *metering installation* that was in service on the date of coming into force of this section 10.3.2 and that is used in respect of a *non-dispatchable load facility*, a *self-scheduling generation facility* with a name-plate rating of less than 10 MW, a *transitional scheduling generator* or an *intermittent generator*.

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## Appendix 6.2 – Alternative Metering Installation Standards

## 1.1A Metering Installation Not Comprised of Two Meters

- 1.1A.1 Each *metering installation* for which registration is being sought pursuant to section 4.4.1 that does not comply with the dual *meter* requirement referred to in section 4.1.1.2 of this Chapter shall meet the following conditions:
- 1.1A.1.1 the *meter* within the *metering installation* is one in respect of which Measurement Canada has granted approval of type;
  - 1.1A.1.2 a person that is an accredited meter verifier within the meaning of the *Electricity and Gas Inspection Act* (Canada) has verified and sealed the *meter* within the *metering installation*;
  - 1.1A.1.3 the seal period for the *meter*, including the seal period for the *data logger* if sealed separately from the remainder of the *meter*, within the *metering installation* has not expired;
  - 1.1A.1.4 the *metering installation* shall, subject to section 1.1A.1.5, be capable of collating *metering data* into *dispatch intervals*;
  - 1.1A.1.5 the metering installation shall, if used in respect of a non-dispatchable load facility, a self-scheduling generation facility with a name-plate rating of less than 10 MW, a transitional scheduling generator or an intermittent generator, be capable of collating metering data into 5 or 15 minute intervals; and

.....

## 1.5 Functional Requirements

- 1.5.1 Each *metering installation* for which registration is being sought pursuant to section 4.4.1 that does not comply with the functional requirements set forth in this Chapter and in any policy or standard established by the *IMO* pursuant to this Chapter shall meet the following conditions:

.....

- 1.5.1.5 the *metering installation* shall, if used in respect of a *non-dispatchable load facility*, a *self-scheduling generation facility* with a name-plate rating of less than 10 MW, a *transitional scheduling generator* or an *intermittent generator*, be capable of collating *metering data* into 5 or 15 minute intervals; and

**PART 5 – IMO BOARD COMMENTS**





**Market Rule Amendment Proposal**

**PART 1 – MARKET RULE INFORMATION**

<b>Identification No.:</b> MR-00161-R05
<b>Subject:</b>
<b>Title:</b> Treatment of Cogeneration Facilities – System Operations and Physical Markets
<b>Nature of proposal</b> (please indicate with X): <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Deletion <input type="checkbox"/> Addition
<b>Chapter:</b> 7 <span style="float: right;"><b>Appendix:</b></span>
<b>Sections:</b> 2.2, 3.3.8, 5.7 and 11.1.2
<b>Sub-sections proposed for amending:</b>

**PART 2 – PROPOSAL HISTORY – REFER TO MR-00161-R00**

Version	Reason for Issuing	Version Date

**Approved Amendment *Publication* Date:**

**Approved Amendment *Effective* Date:**

### PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IMO-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 *IMO-administered markets*.

See MR-00161-R00

Amendments are required to the following sections in Chapter 7:

Section 2, Registration for Physical Operations:

- a new section 2.2.6.9 requires cogeneration facilities to submit information when registering their facilities on the expected impact of the production of other forms of energy on electricity production, so that the IMO may determine compliance bands.
- A new section 2.2.9.3 is added to enable cogenerators with name-plate ratings of 10 or more MW to become self-scheduling.

Section 3, Data Submissions for the Real-Time Market:

- A new section 3.7.2 requires self-scheduling cogeneration facilities with a name-plate rating of 10 or more MW to provide the IMO with forecast production data and to revise this production data when the forecast is no longer accurate. Since it is the production of other forms of energy at the facility that may dictate electricity production and the IMO has no knowledge of the operations of those aspects of the facility, the IMO lacks information on the expected electricity production levels from self-scheduling generation facilities. It needs this information for the planning of outage schedules and the carrying out of adequacy assessments.
- Section 3.3.8 is amended to include the impact on electricity production of the other forms of energy within the cogeneration facility as one of the compliance bands for dispatchable or self-scheduling generation facilities.

Section 5, The Predispatch Scheduling Process:

- Section 5.2.1.2 has been amended to indicate that the IMO will continue to use its own forecasts for self-scheduling generation facilities with name-plate ratings of less than 10 MW.

Section 11, Generator Synchronization Procedures:

- Section 11.1.2 has been modified to qualify that only self-scheduling generation facilities with name-plate ratings of less than 10 MW are not subject to the synchronization provisions of section 11.

PART 4 – PROPOSED AMENDMENT

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## 2.2 Registered Facilities

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- 2.2.6 Where the *facility* sought to be registered is within the *IMO control area*, the information required for registration as a *registered facility* shall, subject to any lesser requirements that may be *published* by the *IMO* in respect of the information required for registration of a given class or size of *facility*, include, but not be limited to:

.....

2.2.6.9— for cogeneration facilities choosing to be either dispatchable or self-scheduling generation facilities, and the registered market participant wishes the compliance bands used to determine whether or not the facility is in compliance with its dispatch instructions or its current schedule, information as outlined in the applicable market manual concerning the impact that the production of the other forms of useful energy within the facility have on energy production. The IMO may audit this information, which is to be used to determine appropriate compliance bands as outlined in section 3.3.8, at any time.

.....

- 2.2.9 A market participant may apply to register as a self-scheduling generation facility any generation facility:

2.2.9.1 with a name-plate rating of 1 MW or more but less than 10 MW; ~~or~~

2.2.9.2 that is a *commissioning generation facility* of any name-plate rating and that is sought to be registered pursuant to section 2.2A.1; ~~or-~~

2.2.9.3 a cogeneration facility of a name plate rating of 10 MW or more provided that the IMO determines that there are no adverse impacts on the reliable operation of the IMO-controlled grid of the facility being registered as a self-scheduling generation facility.

.....

- 3.3.8 Notwithstanding any other provision of this section 3.3, a *registered market participant* shall as soon as practical submit to the *IMO* revised *dispatch data* for any *registered facility* in respect of which it is the *registered market participant*

if, for any *dispatch hour* in the current *pre-dispatch schedule*, the quantity of any *physical service* scheduled for that *registered facility* differs from the quantity the *registered market participant* reasonably expects to be delivered or withdrawn by more than the greater of (i) 2 percent, ~~and~~ (ii) such absolute amount as may be determined by the *IMO* based on considerations of *reliability* and *facility* specific characteristics, and (iii) in the case of a cogeneration facility that is either a dispatchable or self-scheduling generation facility, such amount based on the impact that the production of the other forms of useful energy within the facility has on energy production based on the information outlined in section 2.2.6.9, and the *IMO*:

- 3.3.8.1 shall, unless the change in quantity poses risks in relation to the *reliability* or *security* of the *electricity system*, include such change as an input in respect of any subsequent *market schedules* determined following receipt of the change; and
- 3.3.8.2 may refer such changes or revision of *dispatch data* to the *market surveillance panel*.

.....

### 3.7 Self-Scheduling Generators

3.7.1 A *registered market participant* for a *registered facility* that is a *self-scheduling generation facility* shall submit *dispatch data* indicating the amount of *energy* that the *registered market participant* reasonably expects to be provided by that *self-scheduling generation facility* in each *dispatch hour*. Such *dispatch data* shall:

- 3.7.1.1 be submitted to the *IMO* in such form as may be specified by the *IMO*, which form shall require, at a minimum, provision of all of the information specified in Appendix 7.1; and
- 3.7.1.2 comply with section 3.4.4A.

3.7.2 To assist the *IMO* in the outage planning process described in section 6.2 of Chapter 5 and in accordance with its information requirements described in section 7.5 of Chapter 5, a *registered market participant* for a *registered facility* that is a *self-scheduling generation facility* with a nameplate rating of 10 MW or more shall submit to the *IMO*, no later than the beginning of each month, its forecast of *energy production* for the subsequent month, and update its forecast in the event that forecast production levels change by more than 20% or such other value to be agreed upon by the *IMO*.

.....

## 5.2 Information Used to Determine Pre-dispatch Schedules

5.2.1 The *IMO* shall use the following information for determining and updating the *pre-dispatch schedule* in accordance with section 5.3, using in each case the most current valid information:

5.2.1.1 dispatch data submitted by registered market participants;

5.2.1.2 the *IMO*'s own forecasts of non-dispatchable load and of generation by intermittent generators, transitional scheduling generators and self-scheduling generation facilities with name-plate ratings of less than 10 MW;

# 11. Generator Synchronisation Procedures

## 11.1 Introduction

11.1.1 No *generator*:

11.1.1.1 may physically *connect* and synchronise to the *IMO-controlled grid* or de-synchronise and *disconnect* from the *IMO-controlled grid*; or

11.1.1.2 if an *embedded generator*, may physically *connect* and synchronise to the *embedding facility* or de-synchronise and *disconnect* from the *embedding facility*, except as provided in Chapter 4 and in this section 11.

11.1.2 All *generation facilities* located within the *IMO control area* are subject to the provisions of this section 11 except for *self-scheduling generation facilities* with name-plate ratings of less than 10 MW, *intermittent generators*, any *generators* classified as *minor generation facilities* or as *small generation facilities*, *generation facilities* that, for the purposes of the application of the provisions of this section 11, have been designated by the *IMO* as not impairing the ability of the *IMO* to maintain the *security* or adequacy of the electricity system, and any *generators* exempt from the provisions of the *Electricity Act, 1998* by regulation made thereunder.

**PART 5 – IMO BOARD COMMENTS**