



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00412		
Subject:	General		
Title:	Minor Amendment Omnibus 2014		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion	<input checked="" type="checkbox"/> Addition
Chapter:	Various	Appendix:	Various
Sections:	Various		
Sub-sections proposed for amending:	Various		

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Draft for Technical Panel Review	October 28, 2014
2.0	Publish for Stakeholder Review and Comment	November 6, 2014
3.0	Submitted for Technical Panel Vote	December 2, 2014
4.0	Recommended by Technical Panel; Submitted for IESO Board Approval	December 9, 2014
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 *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 a number of minor amendments to the market rules. These amendments correct typographical errors, cross-references, italicized defined terms, and other general amendments which are minor in nature. The amendments relate to a number of different areas of the market rules, and for efficiency, have been submitted as a single “omnibus” package.

Background

Minor market rule amendments are defined in Chapter 11 of the market rules as:

“.....an amendment to the market rules to correct a typographical or grammatical error, or to effect a change of a non-material procedural nature;”

A discussion of each amendment is below.

Discussion

Correct Typographical Errors

- Chapter 7 section 2.5.1.1: replace “identify of the transferee” with “identity of the transferee”
- Appendix 7.7, section 1.4.2: replace “export service” with “export transmission service”:
 - This section was intended to obligate registered market participants who are operating in a segregated mode of operation (SMO) to submit scheduling information to the IESO in order for the IESO to determine the amount of “export transmission service” owed. Currently, the market rules language is missing the word “transmission” between the words “export” and “service.”

Italicize Defined Terms

The following sections require the italicization of a defined term:

- Appendix 2.2 sections 1.2.2.1 and 1.2.5.1 italicize the terms “transmitter” and “distributor”
- Chapter 8, section 4.18.1.6 – italicize “transmission rights” and “settlement”
- Italicize “registered” as part of the defined term “registered market participant” in the following sections:
 - Appendix 7.7, section 1.3.2, 1.4.2, 1.4.3, and 1.4.4;
 - Chapter 9, section 2.1A.1; and

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

- Chapter 11 definition of “request for segregation”
- Italicize “settlement” in the following sections:
 - Chapter 8, section 2.1.1.1
 - Chapter 11 definitions:
 - “IESO adjustment account”
 - “physical bilateral contract data”
 - “settlement process”
- Chapter 9, section 2.6.3 – italicize “physical bilateral contract quantities”, “settlement hour”, “metering intervals”, “IESO”, and “settlement amounts”
- Chapter 9, section 3.1.6 – italicize “physical bilateral contract quantities”, “settlement hour”, IESO, “physical bilateral contract data”, “selling market participants”, “operating results”, “settlement amounts”, “metering interval”, and “settlement process”
- Chapter 9, section 6.6.11.4 – italicize “hourly Ontario energy price” and “settlement hour”
- Chapter 9, section 3.1.2B.7 (formula for OPCAP_{k,hm,t}) – italicize “market participant” and “settlement hour”
- Chapter 9 section 1.1.2, subsections 1.1.2.3 to 1.1.2.13 – italicize “operating reserve market”, “transmission rights”, “operating deviations”, “ancillary services and reliability must-run contracts”, “transmission service charges”, “connection charges”, “IESO administration charge”, and “debt retirement charge”
- Chapter 9 section 2.1A.1 – italicize “transmission station service” and “connection station service”
- Chapter 9 section 6.11.3 - italicize “transmission service charges”, “transmission services settlement account”, “transmitter” and “SSPC”
- Chapter 9 section 6.12.2 – italicize “transmitter’s” and “transmission services”
- Chapter 10 section 8.8.1.4 – italicize “transmitter’s”
- Chapter 11 definition of “connection request” italicize “transmitter”
- Chapter 11 definition of “interconnection” italicize “transmission system”
- Chapter 11 definition of “neighbouring electricity system” italicize “load facilities”

Remove Italics from Undefined Terms

The term “transmission” by itself is not defined in Chapter 11, but there are a number of instances in the market rules that incorrectly italicize the term. Italics from the term “transmission” will be removed in the following sections:

- Appendix 7.5 section 4.9.1- “transmission equipment”
- Appendix 7.5A section 4.6.1, 4.6.2.2 – “transmission facility”

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

- Chapter 11 definition of “market schedule” – “transmission constraints”
- Chapter 11 definition of “station service” - “transmission facilities”
- Chapter 11 definition of “transmission station service” - “transmission facility”

Add/Remove Italicization:

The term “congestion management settlement credit is not defined in Chapter 11. Only the term “settlement” should be italicized within the phrase “congestion management settlement credit.” The following sections require correction:

- Chapter 7 section 7.6.4 and 9.4.5
- Chapter 9 sections 3.5.1A, 3.5.1B, 3.5.2, 3.8A.2B, and 4.7D.4

Amend Incorrect Cross-References

Chapter 1, section 6.3.1:

- Section 6.3.1 of Chapter 1: replace the phrase which cross references the “Ontario Energy Board, 1998” with “Ontario Energy Board Act, 1998” (i.e. include the word “Act” to the reference).

Chapter 1, section 7.7.1:

- Section 7.7.1 details that the coming into force of any policy, guideline or other document shall not come into force until it has been adopted by the IESO Board, published and notice provided to market participants. Section 7.7.1 references section 3.3.5 to 3.3.7 of Chapter 3 which has been “[Intentionally deleted – section left blank]” as part of MR-00285-R03: Bill 100 Consequential Rule Amendments¹ - only section 3.3.5A remains. MR-00285-R03 amended section 3 of Chapter to 3 to reflect the change of authority for the Market Surveillance Panel from the IESO to the Ontario Energy Board, the IESO retained the Market Assessment Unit functionality. The remaining section 3.3.5A does not relate to the development of any policy, guideline or other document but rather details the obligation for market participants to provide the Market Assessment Unit data. As such it is proposed to remove reference to section 3.3.5 to 3.3.7 of Chapter 3 from section 7.7.1 of Chapter 1.

Chapter 8, section 4.18.1.2:

- Section 4.18.1.2 of Chapter 8 references section 4.19.7, which was deleted as part of MR-00088-R00-R01: TR - Recovering Financial Shortfalls from Market.² This deletion occurred

¹ [MR-00285-R00-R05: Bill 100 Consequential Rule Amendments](#)

² [MR-00088-R00-R01: TR - Recovering Financial Shortfalls from Market](#) – Excerpt of deleted section 4.19.7 “Where the *IMO* has borrowed short-term funds pursuant to section 4.19.6, any net revenues received from the sale of *transmission rights* in a subsequent *TR auction* shall be used first, to repay such short-term funds and second, shall be credited to the *TR clearing account*.”

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

prior to market opening. The IESO proposes to remove reference to section 4.19.7 and replace it with the correct reference to section 4.19.5 of Chapter 8, which details the sequence of payments to be made with the TR revenues in advance of crediting the TR clearing account. Rationale described below:

- Chapter 8 section 4.18.1.2 details the obligation of the IESO to credit the transmission rights (TR) clearing account with the net revenues from the sale of TR's in the TR auction; and
- Chapter 8 section 4.19.5 details that the IESO use the net revenues to:
 - First repay any short-term funds borrowed by the IESO;
 - Second, to reimburse market participants for any funds borrowed by the IESO;
 - Third, to replenish the reserve threshold; and
 - Fourth, place the remaining net revenues in the TR clearing account.

General Minor Amendments:

Chapter 11 definition “participant technical reference manual”

- The definition for the “participant technical reference manual”³ (PTRM) in Chapter 11 explicitly identifies the document identification number for the PTRM as “MSA_REQ_0002.” The document identification number was changed from “MSA_REQ_002” to “IMO_MAN_0024” in September of 2002. It is proposed to remove the document identifier from the definition of the PTRM altogether, in order to alleviate the need to amend the definition in the future should the document identifier change again.

Simultaneous Activation of Reserve

Section 4.5.6 of Chapter 5 allows the IESO to simultaneously activate 10-minute operating reserve to respond to contingency events based upon agreements held with nearby systems in NPCC and PJM. In order to facilitate potential, future agreements with other neighbouring ISO's other than those in NPCC and PJM, it is proposed to remove references to NPCC and PJM from section 4.5.6.

New Connection Assessment Data Form for Wind and Solar Farm Facilities

Each generator whose generation facility is connected to the IESO-controlled grid (section 7.1.3 of Chapter 4), must submit technical data to the IESO in order for the IESO conduct a connection assessment. The current form available for submission, Part A of Appendix 4.6, was designed for conventional generation units and does not provide a data structure suitable to collect the technical data for renewable generation sources.

The IESO has developed a new data form for wind and solar generation projects that facilitates the collection of data of a renewable generation facility in a more complete, clear and organized manner

³ http://www.ieso.ca/imoweb/pubs/ptrm/ptrm_ptrmManual.pdf -

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

that enables the IESO to verify the technical data. The IESO is proposing to include the new form in Appendix 4.6 (new – Part C) of the market rules.

PART 4 – PROPOSED AMENDMENT

Correct Typographical Errors

Chapter 7

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2.5 Transfer of Registration of Facilities

2.5.1 *A market participant* that wishes to transfer the registration of a *registered facility*, other than a *boundary entity*, as a result of the proposed transfer of the *registered facility* to another person by sale, assignment, lease, transfer of control or other means of disposition shall, not less than 10 *business days* prior to the date on which the transfer is proposed to take effect, file with the *IESO* and the relevant *transmitter* or *distributor*, a notice of request to transfer the registration of the *registered facility* in such form as may be specified by the *IESO*. Such notice shall specify:

2.5.1.1 the identify of the transferee and whether the transferee is or intends to be a *market participant*; and

.....

Appendix 7.7**1.4 Settlements**

1.4.1 The delivery of electricity or a *physical service* by a *registered facility* while operating in a *segregated mode of operation* shall be excluded from the *IESO*'s *settlement process* and in no event shall the *IESO* be required to effect payment in respect of any electricity or *physical service* so delivered.

1.4.2 Notwithstanding section 1.4.1, a registered *market participant* that operates a *registered facility* in a *segregated mode of operation* shall submit such scheduling information to the *IESO* as may be necessary to enable the *IESO* to determine the amounts payable by the registered *market participant* for export [transmission service](#) related to such operation.

Italicize Defined Terms**Appendix 2.2**

.....

1.2.2 Each *connected wholesale customer* shall, for the purposes of submitting to the energy management system referred to in section 12 of Chapter 5 the monitoring and control information required to be provided by a *connected wholesale customer* to the *IESO* pursuant to the provisions of Chapters 4 and 5:

1.2.2.1 provide, maintain and connect to:

- a. where directed by the *IESO* if ~~transmitter-transmitter~~ data is not adequate, each of its *non-dispatchable load facilities* that includes a *non-dispatchable load* rated at 20 MVA or higher or that comprises *non-dispatchable loads* the ratings of which in the aggregate equals or exceeds 20 MVA; and

.....

1.2.5 Each *embedded load consumer* shall, for the purposes of submitting to the energy management system referred to in section 12 of Chapter 5 the monitoring and control information required to be provided by the *embedded load customer* to the *IESO* pursuant to the provisions of Chapters 4 and 5:

1.2.5.1 provide, maintain and connect to:

- a. where directed by the *IESO* if ~~transmitter-transmitter~~ or ~~distributor-distributor~~ data is not adequate, each of its applicable *non-dispatchable load facilities* that include a *non-dispatchable load* rated at 20 MVA or higher or that comprises *non-dispatchable loads* the ratings of which in the aggregate equals or exceeds 20 MVA; and

.....

Chapter 8**4.18 TR Clearing Account**

4.18.1 The *IESO* shall establish and maintain a *TR clearing account* and shall:

.....

- 4.18.1.6 credit to the *TR clearing account* any ~~transmission rights~~*transmission rights settlement* credits adjusted under section 6.6.10A.2 of Chapter 3.

.....

Appendix 7.7 – Radial Intertie Transactions

- 1.3.2 If a ~~registered-registered~~ market participant wishes to revise the contents of a *Request for Segregation* it shall submit a new *Request for Segregation* and shall submit a new *outage* request to the *IESO* in accordance with section 1.3.1.
-
- 1.4.2 Notwithstanding section 1.4.1, a ~~registered-registered~~ market participant that operates a *registered facility* in a *segregated mode of operation* shall submit such scheduling information to the *IESO* as may be necessary to enable the *IESO* to determine the amounts payable by the ~~registered-registered~~ market participant for *export service* related to such operation.
- 1.4.3 Any costs incurred by a *transmitter* in complying with a direction issued pursuant to section 1.3.5 or 1.3.6 shall be borne by the ~~registered-registered~~ market participant or the *transmitter* in the manner specified in their *connection agreement*.
- 1.4.4 The ~~registered-registered~~ market participant shall be solely liable in respect of any positive or negative inadvertent accumulated while its *registered facilities* are operating in the *segregated mode of operation*.
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Chapter 9

2.1A Station Service

- 2.1A.1 The ~~registered-registered~~ market participant for a facility consuming transmission station service or connection station service shall:
- 2.1A.1.1 identify to the *IESO* the fraction of the *energy* withdrawn at that *facility* supplied from the *IESO-controlled grid* which is not such *station service*; and
- 2.1A.1.2 ensure that the consumption of the *energy* referred to in section 2.1A.1.1 is measured by an *RWM* that complies with the requirements of Chapter 6.
-

Chapter 11

Request for Segregation means a request from a ~~registered-registered~~ market participant for approval to operate its *registered facility* in a *segregated mode of*

operation;

Chapter 8

2.1.1 Any *market participant* (or any other person) may, subject to *applicable laws* and regulations, enter into, administer and settle *physical bilateral contracts* with another *market participant* (or any other person). Provided that such *physical bilateral contracts* are matters strictly between the parties and are not in any way to affect the operation of the *real-time markets* or the *physical markets* to be administered by the *IESO* pursuant to Chapter 7, such *physical bilateral contracts*:

2.1.1.1 may but need not be reported to the *IESO* for operational, ~~settlement~~ settlement or any other purposes; and

Chapter 11 - Definitions

IESO adjustment account means the *settlement account* operated by the *IESO* which is used for adjustments in *settlement* payments after a preliminary market ~~settlement~~settlement has been made;

physical bilateral contract data means the data concerning a *physical bilateral contract* that a selling *market participant* provides to the *IESO* for purposes of ~~settlement~~settlement;

settlement process means any process administered by the *IESO* to effect ~~settlement~~settlement;

Chapter 9

2.6.3 ~~Physical bilateral contract quantities~~Physical bilateral contract quantities must specify total quantities for each ~~settlement hour~~ settlement hour, not quantities for ~~metering intervals~~metering intervals within a ~~settlement hour~~ settlement hour. The ~~IESO~~IESO shall divide hourly ~~physical bilateral contract quantities~~physical bilateral contract quantities into equal interval quantities when necessary for determining ~~settlement amounts~~settlement amounts as provided for in section 3.1.6.

3.1.6 ~~Physical bilateral contract quantities~~Physical bilateral contract quantities shall be determined for each ~~settlement hour~~settlement hour by the ~~IESO~~IESO using ~~physical bilateral contract data~~physical bilateral contract data submitted by

~~selling market participants~~ selling market participants and, where so required by the nature of the ~~physical bilateral contract data~~ physical bilateral contract data, ~~operating results~~ operating results. The ~~IESO~~ IESO shall divide each hourly ~~physical bilateral contract quantity~~ physical bilateral contract quantity into equal ~~physical bilateral contract quantities~~ physical bilateral contract quantities if determination of ~~settlement amounts~~ settlement amounts requires quantities for each ~~metering interval~~ metering interval of each ~~settlement hour~~ settlement hour. The ~~IESO~~ IESO shall provide the following variables and data directly to the ~~settlement process~~ settlement process:

6.6.11 No market participant may submit a *notice of disagreement* in respect of the calculation of:

6.6.11.1 the 5-minute *energy market price* for any *dispatch interval* in a given *settlement hour*;

6.6.11.2 the 5-minute price for any class of *operating reserve* for any *dispatch interval* in a given *settlement hour*; or

6.6.11.3 [Intentionally left blank – section deleted]

6.6.11.4 the ~~hourly Ontario energy price~~ hourly Ontario energy price for a given ~~settlement hour~~ settlement hour,

3.1.2B.7 the following information:

$DA_BE_{k,h}^{m,t}$ = *energy offers* submitted in day-ahead, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* ‘k’ at *delivery point* ‘m’ during *metering interval* ‘t’ of *settlement hour* ‘h’ arranged in ascending order by the offered price in each *price quantity pair* where offered prices ‘P’ are in column 1 and offered quantities ‘Q’ are in column 2

$DA_BE_{k,h}^{i,t}$ = *energy offers* submitted in day-ahead, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* ‘k’ at *intertie metering point* ‘i’ during *metering interval* ‘t’ of *settlement hour* ‘h’ arranged in ascending order by the offered price in each *price quantity pair* where offered prices ‘P’ are in column 1 and offered quantities ‘Q’ are in column 2

$DA_BL_{k,h}^{i,t}$ = *energy bids* submitted in day-ahead, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* ‘k’ at *intertie metering point* ‘i’ during *metering interval* ‘t’ of *settlement hour* ‘h’ arranged in ascending order by the offered

		price in each <i>price quantity pair</i> where offered prices ‘P’ are in column 1 and offered quantities ‘Q’ are in column 2
DA_SNL _{k,h} ^m	=	as-offered <i>speed-no-load cost</i> associated with <i>three-part offers</i> for a given <i>settlement hour</i> ‘h’ for <i>market participant</i> ‘k’ at <i>delivery point</i> ‘m’
DA_SUC _{k,h} ^m	=	as-offered <i>start-up cost</i> associated with <i>three-part offers</i> for a given <i>settlement hour</i> ‘h’ for <i>market participant</i> ‘k’ at <i>delivery point</i> ‘m’
MLP _{k,h} ^{m,t}	=	minimum output of <i>energy</i> the <i>market participant</i> ‘k’ at <i>delivery point</i> ‘m’ can maintain without ignition support in <i>metering interval</i> ‘t’ of <i>settlement hour</i> ‘h’
OPCAP _{k,h,m,t}	=	de-rated generation capacity submitted by market participant <i>market participant</i> ‘k’ at <i>delivery point</i> ‘m’ in <i>metering interval</i> ‘t’ of settlement hour <i>settlement hour</i> ‘h’

Chapter 9

1.1.2 This chapter sets out the respective rights and obligations of the *IESO* and of *market participants* in determining, billing for and effecting payment in respect of financial obligations arising from the *IESO-administered markets*, other provisions of the *market rules*, the *Electricity Act, 1998* and the *Ontario Energy Board Act, 1998*, including the following:

- 1.1.2.1 [Intentionally left blank – section deleted]
- 1.1.2.2 the *energy market*;
- 1.1.2.3 the ~~operating reserve market~~ *operating reserve market*;
- 1.1.2.4 congestion management;
- 1.1.2.5 ~~transmission rights~~ *transmission rights (TRsTRs)*;
- 1.1.2.6 [Intentionally left blank – section deleted]
- 1.1.2.7 ~~operating deviations~~ *operating deviations*;
- 1.1.2.8 ~~ancillary services~~ *ancillary services* and ~~reliability must-run contracts~~ *reliability must-run contracts*;
- 1.1.2.9 ~~transmission service charges~~ *transmission service charges* and ~~connection charges~~ *connection charges* collected by the *IESO*;
- 1.1.2.10 rural rate protection;

- 1.1.2.11 the ~~IESO administration charge~~ IESO administration charge;
- 1.1.2.12 penalties and fines;
- 1.1.2.13 any ~~debt retirement charge~~ debt retirement charge;
- 1.1.2.14 rebates and other payments arising from market power mitigation measures;
- 1.1.2.15 the day-ahead commitment process; and
- 1.1.2.16 forecasting services relating to *variable generation*.

2.1A Station Service

2.1A.1 The registered *market participant* for a facility consuming ~~transmission station service~~ transmission station service or ~~connection station service~~ connection station service shall:

6.11.3 With respect to ~~transmission service charges~~ transmission service charges, the *IESO* may instruct the bank where the *IESO settlement clearing account* is held to debit the *IESO settlement clearing account* and transfer to the relevant ~~transmitter's transmitter's transmission services settlement account~~ transmission services settlement account sufficient funds to pay in full the ~~transmission service charge~~ transmission service charges falling due to that ~~transmitter~~ transmitter on any *IESO* payment date specified in the ~~SSPC~~ SSPC or, where applicable, determined in accordance with any of sections 6.3.23, 6.3.27, and 6.3.29.

6.12.2 All payments by the *IESO* to *market participants* in respect of settlement matters shall be made to each *market participant's market participant settlement account* or to each ~~transmitter's transmitter's transmission services~~ transmission services settlement account via electronic funds transfer and shall be effected by the dates and times specified in this Chapter.

Chapter 10

8.8.1.4 the peak demand quantity applicable to the ~~transmitter's transmitter's~~ transmission system or the *IESO-controlled grid* as the case may be, to the extent that such quantities are relevant to the calculation of

transmission services charges as required by this Chapter and as established by the *OEB* from time to time pursuant to the *Ontario Energy Board Act, 1998*; and

.....

Chapter 11

connection request means a request submitted by a *market participant* or a *connection applicant* to a ~~transmitter~~transmitter for connection to the *IESO-controlled grid*;

interconnection means a connection between the *IESO-controlled grid* and a ~~transmission system~~transmission system outside the *IESO control area* that have one or more interconnecting *interties*;

neighbouring electricity system means a system comprising generation, transmission and ~~load facilities~~load facilities that is connected to the *electricity system* via one or more *interconnections*;

Remove Italics from Undefined Terms

Appendix 7.5

4.9 Security

4.9.1 Limits may be imposed on the output of *generation facilities*, *dispatchable load facilities* and flow on ~~transmission~~transmission equipment for *security* reasons.

Appendix 7.5A

4.6 Glossary of Sets, Indices, Variables and Parameters for Pass 1

4.6.1 Fundamental Sets and Indices

F The set of ~~transmission~~transmission *facilities* (or groups of ~~transmission~~transmission *facilities*) *f* in Ontario for which constraints have been identified.

.....

f A ~~transmission~~transmission *facility* for which a

constraint has been identified. This includes groups of ~~transmission~~ transmission facilities.

4.6.2 Variables and Parameters

4.6.2.2 Transmission and Security Inputs and Intermediate Variables

$PreConSF_{b,f,h}$	The fraction of <i>energy</i> injected at bus <i>b</i> which flows on transmission <u>transmission</u> facility <i>f</i> during hour <i>h</i> under pre-contingency conditions.
$AdjNormMaxFlow_{f,h}$	The maximum flow allowed on transmission <u>transmission</u> facility <i>f</i> in hour <i>h</i> as determined by the <i>security</i> assessment for pre-contingency conditions.
$SF_{b,f,c,h}$	The fraction of <i>energy</i> injected at bus <i>b</i> which flows on a transmission <u>transmission</u> facility <i>f</i> during hour <i>h</i> under post-contingency conditions.
$AdjEmMaxFlow_{f,c,h}$	The maximum flow allowed on transmission <u>transmission</u> facility <i>f</i> in hour <i>h</i> as determined by the <i>security</i> assessment for post-contingency condition <i>c</i> .

Chapter 11

market schedule means the *dispatch* schedule which would have resulted in the absence of ~~transmission~~ transmission constraints on the *IESO-controlled grid*;

station service means *energy* withdrawn from the *IESO-controlled grid* to power the on-site maintenance and operation of ~~transmission~~ transmission facilities, *generation facilities* and *connection facilities* located within the *IESO control area* but excludes *energy* consumed in association with activities which could be ceased or moved to other locations without impeding the normal and safe operation of the *facility* in question;

transmission station service means *station service* associated with transformers, capacitors, switchgear, protection systems and control systems that are part of a ~~transmission~~ transmission facility and that do not *connect generation facilities, load facilities* or *distribution facilities* to the *IESO-controlled grid*;

Correct Italicization of the Term Congestion Management Settlement Credit(s)**Chapter 7**

7.6.4 Any amount determined by an *arbitrator* or by the *IESO*, as the case may be, pursuant to section 7.6.3 or 7.6.5 shall be assessed in accordance with section 13.1.4 of Chapter 1 and shall exclude such amount as may be required to account for any ~~congestion management~~ *congestion management settlement credit-credit* triggered by the relevant *dispatch scheduling error* and already credited to the *market participant*.

.....

9.4.5 If the *IESO* directs a *registered facility* to provide *reactive support* within the range required by the *connection* requirements provided for in Chapter 4 or as stipulated in the applicable *contracted ancillary service* contract, and that *registered facility* has to reduce its active power output in order to comply with the *IESO*'s direction, that *registered facility* shall not be entitled to a ~~congestion management~~ *congestion management settlement credit-credit* for that reduction in active power output.

.....

Chapter 9

3.5.1A A *registered market participant* for a *registered facility* that is a *dispatchable load* is not entitled to a congestion management ~~settlement-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-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~~ *settlement* credits for an export transaction if that transaction attracted the

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

.....

3.5.2 Subject to sections 3.5.1A, 3.5.1D, 3.5.1E, 3.5.1F, 3.5.6, 3.5.6A, 3.5.6B, 3.5.6C, 3.5.6D, 3.5.6F, 3.5.9 and 3.5.10 and subject to Appendix 7.6 of Chapter 7, the hourly congestion ~~management~~management ~~settlement~~ credit~~credit~~ for market participant ‘k’ for settlement hour ‘h’ (“CMSC_{k,h}”) shall be determined by the following equation:

Let ‘BE’ be a matrix of n *price-quantity pairs* offered by market participant ‘k’ to supply energy during settlement hour ‘h’

Let ‘BR_r’ be a matrix of n *price-quantity pairs* offered by market participant ‘k’ to supply class r *operating reserve* during settlement hour ‘h’

Let ‘BL’ be a matrix of n *price-quantity pairs* bid by market participant ‘k’ to withdraw energy by a *dispatchable load* during settlement hour ‘h’

Let OP(P,Q,B) be a profit function of Price (P), Quantity (Q) and an n x 2 matrix (B) of offered *price-quantity pairs*:

$$OP(P,Q,B) = P \cdot Q - \sum_{i=1}^{s^*} P_i \cdot (Q_i - Q_{i-1}) - (Q - Q_{s^*}) \cdot P_{s^*+1}$$

Where:

s* is the highest indexed row of B such that $Q_{s^*} \leq Q \leq Q_n$ and where, $Q_0=0$

B is matrix BE, BR_r, or BL (see above)

Using the terms below, let CMSC be expressed as follows:

$$CMSC_{k,h} = OPE_{k,h} + OPR_{k,h} + OPL_{k,h}$$

Where:

$OPE_{k,h}$ represents that component of the ~~congestion management~~ congestion management settlement credit for market participant 'k' during settlement hour 'h' attributable to a constraint on energy production subject to section 3.5.1 and is calculated as follows:

$$OPE_{k,h} = \sum_{m,t} \left[\begin{array}{l} OP(EMP_h^{m,t}, MQSI_{k,h}^{m,t}, BE) - \\ \text{MAX}(OP(EMP_h^{m,t}, DQSI_{k,h}^{m,t}, BE), OP(EMP_h^{m,t}, AQEI_{k,h}^{m,t}, BE)) \end{array} \right]$$

Where:

$\text{MAX}[X,Y]$ = Maximum of X or Y

During any metering interval 't' within settlement hour 'h' in which the mathematical sign of $DQSI_{k,h}^{m,t} - MQSI_{k,h}^{m,t}$ is not equal to the mathematical sign of $AQEI_{k,h}^{m,t} - MQSI_{k,h}^{m,t}$, the component of $OPE_{k,h}$ at location m, determined in accordance with section 3.1.4A, or *intertie metering point* 'm' for that metering interval 't' shall equal zero.

$OPR_{k,h}$ represents that component of the ~~congestion management~~ congestion management settlement credit for market participant 'k' during settlement hour 'h' attributable to a constraint on the provision of operating reserve subject to section 3.5.1 and is calculated as follows:

$$OPR_{k,h} = \sum_{m,t,r} \left[\begin{array}{l} OP(PROR_{r,h}^{m,t}, SQROR_{r,k,h}^{m,t}, BR_r) - \\ \text{MAX}(OP(PROR_{r,h}^{m,t}, DQSR_{r,k,h}^{m,t}, BR_r), OP(PROR_{r,h}^{m,t}, AQOR_{r,k,h}^{m,t}, BR_r)) \end{array} \right]$$

During any metering interval 't' within settlement hour 'h' in which the mathematical sign of $DQSR_{r,k,h}^{m,t} - SQROR_{r,k,h}^{m,t}$ is not equal to the mathematical sign of $AQOR_{r,k,h}^{m,t} - SQROR_{r,k,h}^{m,t}$, the component of $OPR_{k,h}$ at location m, determined in accordance with section 3.1.4A, or *intertie metering point* 'm' for that metering interval 't' shall equal zero.

$OPL_{k,h}$ represents that component of the ~~congestion management~~ congestion management settlement credit for market participant 'k' during settlement hour 'h' attributable to a constraint on the withdrawal of energy by a dispatchable load subject to section 3.5.1. $OPL_{k,h}$ utilizes the negative of each output from each component Operating Profit (OP) function so as to correct for negative revenue streams (owing to withdrawals of energy).

.....

3.8A.2B The day-ahead *intertie offer* guarantee *settlement* credit for *market participant* ‘k’ for *settlement hour* ‘h’ (“DA_IOG_{k,h}”) shall be determined by the following equation:

.....

The principles for the settlement of the day-ahead *intertie offer* guarantee are as follows:

1. Component 1: Any shortfall in payment on the real-time import flow of the *schedule of record* will be based upon the real-time revenue received for that amount of *energy* in comparison with the costs submitted in the importer’s day-ahead *offer*;
 2. Component 2: For the portion of *schedule of record* that is not implemented in the real-time *dispatch* schedule, the day-ahead *intertie offer* guarantee will guarantee the cost incurred of arranging the import (where the real-time *offer* price is less than day ahead *offer* price) or subtract any revenue gained (where the real-time *offer* price is greater than the day-ahead *offer* price)⁴; and
 3. Component 3: Any income from real-time congestion management ~~settlement~~*settlement* credit (CMSC) included in an importer’s *schedule of record* delivered in real-time will be used to reduce the day-ahead *intertie offer* guarantee payment.
-

Component 3

The DA-IOG payment for an import will be reduced by the income received from real time ~~congestion management~~*congestion management* ~~settlement~~*credit* (CMSC) for the importer’s *schedule of record* delivered in real-time.

.....

Component 3 is calculated as follows :

$$DA_IOG_COMP3_{k,h}^{i,t} = \text{Income received from real time congestion management } \del{settlement} \i{settlement} \text{ credits (CMSC) for the importer’s } \i{schedule of record} \text{ delivered in real-time over the interval}$$

⁴ Where the real-time *offer* is equal to the day-ahead *offer*, the cost/gain is equal to zero (0).

.....

Scenario 5

$DA_IOG_COMP3_{k,h}^{i,t}$ = Congestion management ~~settlement~~settlement credit calculated as per Section 3.5.

Scenario 6

$DA_IOG_COMP3_{k,h}^{i,t}$ = Congestion management ~~settlement~~settlement credit calculated as per Section 3.5.

.....

4.7D.4 The IESO shall calculate the day-ahead production cost guarantee components based on the type of schedule described in Section 4.7D.2 as follows:

.....

Component 3 – Variants 1, 2, and 3

.....

Component 3 is calculated as follows :

$PCG_COMP3_{k,h}^{m,t}$ = Income received from real time congestion management ~~settlement~~settlement credits (CMSC) for the *generator's schedule of record* delivered in real-time over the interval

.....

Scenario 5

$PCG_COMP3_{k,h}^{m,t}$ = Congestion management ~~settlement~~settlement credit calculated as per Section 3.5.

Scenario 6

$PCG_COMP3_{k,h}^{m,t}$ = Congestion management ~~settlement~~settlement credit calculated as per Section 3.5.

Component 3 Clawback – Variant 2

Component 3 Clawback – Variant 2 recovers the congestion management ~~settlement~~*settlement* credits (CMSC) paid up to the *minimum loading point* for the remaining hours of MGBRT. Component 3 Clawback – Variant 2 is calculated as follows :

PCG_COMP3_CB_{k,h}^{m,t} = $\frac{\text{Income received from real time congestion management } \del{settlement} \textit{settlement} \text{ credits (CMSC) from the minimum of generation units minimum loading point and the allocated quantity of energy injected to the real-time unconstrained schedule over the interval}}{\dots\dots\dots}$

Amend Incorrect Cross-References

Chapter 1

6.3 Compliance with Market Rules

6.3.1 Subject to the terms of its *licence* and to the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998* and to any regulations enacted under those *Acts*, each *market participant* is bound to comply with, observe and perform any duties and obligations imposed on the *market participant* by the *market rules*.

7.7 Other Documents

7.7.1 Subject to section 7.7.4 ~~and to sections 3.3.5 to 3.3.7 of Chapter 3~~, and unless the context otherwise requires, where reference is made in the *market rules* to the design, creation, development, establishment or implementation of policies, guidelines and other documents by the *IESO* or a panel established by the *IESO*, such policies, guidelines and other documents shall not come into force until adopted by the *IESO Board*, *published* and notice thereof provided in accordance with section 7.7.2. The *IESO Board* may enter into such consultations, seek such advice and assistance and request such input from one or more persons as the *IESO Board* determines appropriate prior to adopting such policies, guidelines and other documents provided that the *IESO Board* retains the sole discretion to adopt such policies, guidelines and other documents in such form as the *IESO Board* determines appropriate. For certainty, any reference to “other documents” in section 7.7 shall not include forms or *market manuals*.

.....

Chapter 8

4.18 TR Clearing Account

- 4.18.1 The *IESO* shall establish and maintain a *TR clearing account* and shall:
- 4.18.1.1 credit to the *TR clearing account*, in respect of each *settlement hour*, the net congestion rents calculated in accordance with section 3.6.2 of Chapter 9;
 - 4.18.1.1A credit to the *TR clearing account* the amounts referred to in sections 4.20.1A and 4.20.1B;
 - 4.18.1.2 subject to section ~~4.19.7~~ 4.19.5, credit to the *TR clearing account* the net revenues received from the sale of *transmission rights* in a *TR auction* in accordance with section 4.19.4;

General Minor Amendments

.....

Chapter 11

participant technical reference manual means the document entitled “Participant Technical Reference Manual”, ~~identified as MSA_REQ_0002~~ and *published by the IESO*;

.....

Simultaneous Activation of Reserve

Chapter 5

- 4.5.6 The *IESO* may simultaneously activate with nearby systems ~~in NPCC and PJM~~ its *ten-minute operating reserve* to respond to *contingency events* in accordance with agreements between the *IESO* and such systems. Similarly, such systems may activate their *operating reserve* when requested to meet *contingency events* in the *IESO control area* in accordance with agreements between the *IESO* and such systems. Such simultaneous activation of *operating reserve* is solely for the purpose of maintaining the *reliability* of *interconnection systems* and shall not alter the *operating reserve* requirements of the *IESO*.
-

New Connection Assessment Data Form for Wind and Solar Facilities

Appendix 4.6

Part C Variable Generation (Directly Connected)

Wind Farm (WF) or Solar Farm (SF) Facilities

<u>Wind Turbine/ PV Inverter</u>			<u>Type 1</u>	<u>Type 2</u>
	<u>Manufacturer</u>			
	<u>Model</u>			
	<u>Technology</u>			
	<u>Rated Voltage</u>			
	<u>Rated MVA</u>			
	<u>Rated MW</u>			
	<u>Qmax (MVAr)</u>			
	<u>Qmin(MVAr)</u>			
	<u>Xd''/Id''(pu)</u>			
	<u>Reactive Capability Curve</u>		<u>Please Attach File</u>	<u>Please Attach File</u>
	<u>Voltage Protection</u>		<u>Please Attach File</u>	<u>Please Attach File</u>
	<u>Frequency Protection</u>		<u>Please Attach File</u>	<u>Please Attach File</u>
	<u>GSU Transformer</u>			
	<u>Voltage Ratio</u>			
	<u>MVA</u>			
	<u>R(%)</u>			
	<u>X(%)</u>			

<u>Collector System</u>	<u>ID</u>	<u>Total MW</u>	<u># of Type 1</u>	<u># of Type 2</u>	<u>Equivalent Positive-Sequence Impedance*</u>			<u>Equivalent Zero-Sequence Impedance **</u>		
					<u>R1</u>	<u>X1</u>	<u>B1</u>	<u>R0</u>	<u>X0</u>	<u>R0</u>
					<u>C1</u>					
<u>C2</u>										
<u>C3</u>										

*Reduction approach is based on equal loss criteria.

** Optional upon request.

<u>Functional description of voltage control system</u>	<u>Please Attach File</u>
<u>Functional description of frequency control system</u>	<u>Please Attach File</u>
<u>Parameters for WF/SF dynamic model</u>	<u>Please Attach File</u>
<u>Block diagram for WF/SF dynamic model (if user defined)</u>	<u>Please Attach File</u>
<u>Source code for WF/SF dynamic model (if user defined)</u>	<u>Please Attach File</u>

PART 5 – IESO BOARD DECISION RATIONALE

Insert Text Here