Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00270-R00			
Subject:	Day-Ahead Market			
Title:	DAM Settlement			
Nature of Proposal:	X Alteration	☐ Deletion	☐ Addition	
Chapter:	9	Appendix:		
Sections:	1,2,3,4,6			
Sub-sections proposed for amending:				

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Incorporated Technical Panel Comments and Posted for Review and Written Comments	November 1, 2004
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*.

Summary of Proposed Market Rule Amendments

It is proposed that Chapter 9, section 1 be amended as follows:

- Section 1.1.2.1 be amended by replacing the term energy forward market with the day-ahead market.
- Section 1.1.2.15 be inserted to include production cost guarantees.
- These amendments are intended to expand the scope of the settlement process to the DAM and DAM Transmission Rights.

GENERATION STATION SERVICE PROCESSING:

It is proposed that Chapter 9, section 2 be amended as follows:

- Section 2.1A.9 be amended to expand the scope of Generation Station Service Reimbursements to also apply to DAM uplift amounts.

COLLECTION OF DATA FOR SETTLEMENT PURPOSES:

It is proposed that Chapter 9, section 2 be amended as follows:

- Insert a new section 2.4B to add the concept of a load component ID which is used to separately identify price sensitive and price responsive load components below the same delivery point for settlement purposes (see also – MR-00286 – DAM Definitions).
- Insert a new section 2.4B to add the concept of a load component ID which is used to separately identify price sensitive and price responsive load components below the same delivery point for settlement purposes (see also – MR-00286 – DAM Definitions).
- Insert a new sub-section 2.5.4 to identify the collection of settlement-ready data from import or export transactions in the day-ahead market.
- Amend section 2.6.1 to include physical bilateral contract data from the day-ahead market for settlement purposes and insert a new subsection 2.6A.1 to specify that a market participant selling a physical bilateral contract to a load facility shall identify the load component identifier to which the contract applies.
- Section 2.7.1 be amended to specify the collection day-ahead transmission right data for settlement purposes.
- Amend section 2.10.1 to specify that the IMO shall submit to the settlement process all market prices for both the day-ahead market and real-time markets.

SPECIFIC LISTING OF SETTLENTS VARIABLES:

It is proposed that Chapter 9, section 3 be amended as follows:

In general it is proposed to add new provisions for specifying the nature of DAM-related settlement variables.

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These new day-ahead market settlement variables include the following:

- prices for energy and each class of operating reserve (new section 3.1A.2).
- physical transaction schedules for energy, including the separation of Pass 2 and Pass 3 import schedules (new section 3.1A.3).
- virtual transaction schedules for energy, (new section 3.1A.4).
- physical transaction schedules for each class of operating reserve, including the separation of Pass 2 and Pass 3 import schedules (new section 3.1A.5).
- forecast quantities used in Pass 2 of the DAM calculation engine (new section 3.1A.6).
- startup flags and shutdown flags denoting separate unit commitment events in Pass 1 and Pass 2 of the DAM calculation engine(new section 3.1A.7).
- de-commitment flags denoting intervention into day-ahead market schedules between the day-ahead market and real-time markets (new section 3.1A.8).
- physical bilateral contract quantities from the day-ahead market (new section 3.1A.9).
- the derivation of load reduction quantities using day-ahead market and bid data from price responsive load components (new section 3.1A.10).

CALCULATION OF SETTLEMENT AMOUNTS:

It is proposed that Chapter 9, sections 3 and 4 be amended as follows:

GENERALLY: Amend, delete or replace various real-time market settlement amounts as outlined in the DAM Detailed Design document "Settlements" [IMO_DES_0013][1]. This includes:

- Replacement of the Net Energy Market Settlement Credit (formerly, section 3.3) with the Hourly Physical Transaction Settlement Amount (sections 3.3B and 3.4B).
- Replacement of the Operating Reserve Settlement Credit (formerly, section 3.4) with the Hourly Operating Reserve Settlement Amount (sections 3.3D and 3.4D).
- Provisions to allow for the transition of between the settlement of transmission rights using real-time market prices to day-ahead market prices (sections 3.6.1 and 3.6A.1 respectively).
- Revisions to the Calculation of the Transmission Charge Reduction Fund (section 3.6.2) to account for congestion rents in both the real-time market and the day-ahead market.
- Expansion of Operating Reserve Shortfall Settlement Debit to account for any applicable day-ahead market schedules (section 3.8).
- Revisions to the Intertie Offer Guarantee and the Intertie Offer Guarantee Offset to account for any applicable day-ahead market schedules (section 3.8A).
- Revised the formulation of hourly uplift to include day-ahead market financial balancing components (section 3.9).
- Added restrictions on participation in the Hour Ahead Dispatchable Load Offer (HADL) Guarantee program for transactions already scheduled in the day-ahead market (section 4.7A). Specifically, insert a new sub-section 4.7A.1.3 to restrict the payment of any HADL settlement amount where the facility has been scheduled in the day-ahead market for any corresponding settlement hour.

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- Added restrictions on participation in the Generation Cost Guarantee program for transactions already scheduled in the day-ahead market (section 4.7A). Specifically, amend section 4.7B.1.2 to specify that a market participant will only be eligible to receive settlement amounts under the Generation Cost Guarantee program provided they did not accrue in any settlement hour in which a DAM production cost guarantee applies to same facility.

Add new provisions specifying DAM settlement amounts calculated in the first settlement process. These include the following:

- Section 3.3A – specific listing of settlement amounts calculated in the first settlement process.
- Section 3.3B - Hourly Physical Transaction Settlement Amount - HPTSA{1}.
- Section 3.3C - Hourly Virtual Transaction Settlement Amount – HVTSA.
- Section 3.3D - DAM Hourly Operating Reserve Settlement Amount - HORSA{1}.
- Section 3.3E - DAM Congestion Management Settlement Credits - D_CMSC{1}.
- Section 3.3F - DAM Production Cost Guarantee - PCG{1}.

Add new provisions specifying DAM settlement amounts calculated in the second settlement process. These include:

- Section 3.4A – specific listing of settlement amounts calculated in the second settlement process.
- Section 3.4B - Hourly Physical Transaction Settlement Amount - HPTSA{2}.
- Section 3.4C - Hourly Virtual Transaction Settlement Amount – HVTSA.
- Section 3.4D - DAM Hourly Operating Reserve Settlement Amount - HORSA{2}.
- Section 3.4E - DAM Congestion Management Settlement Credits - D_CMSC{1}.
- Section 3.4F - Second Settlement DAM CMSC balancing - D_CSMC{2}.
- Section 3.4G - DAM Production Cost Guarantee - PCG{1}.
- Section 3.4H - DAM Production Cost Guarantee Commitment Adjustment - PCGCA{2}.

Insert a new section 4.9 to specify the settlement of daily uplift amounts related to DAM production cost guarantees.

- Provide a preamble section to specify how costs related to production cost guarantees are divided between the DAM Bid Load Commitment Uplift and the DAM Forecast Load Commitment Uplift.
- Insert a new section 4.9A - DAM Bid Load Commitment Uplift -BLCU.
- Insert a new section 4.9B - DAM Forecast Load Commitment Uplift –FLCU.
- Insert a new section 4.9C - DAM Load Forecast Accuracy Uplift – LFAU.

Insert new sections to specify other necessary day-ahead market uplift amounts:

- Insert a new section 3.8A - DAM PASS 2 Import Uplift – DIU.
- Insert a new section 3.8B - Net DAM Balancing Allocation – NDBA.
- Insert a new section 3.8C - DAM Operating Reserve Uplift – DORU.

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- Insert a new section 3.8D - DAM CMSC Uplift – DCU

SETTLEMENT EVENTS:

It is proposed that Chapter 9, sections 6.2 and 6.3 be amended as follows:

- Amend sub-sections 6.2.1.2, 6.2.1.3, 6.2.1.4, 6.2.1.6, and 6.2.1.8 to expand applicability of the Settlement Schedule and Payments Calendar (SSPC) to the DAM.
- Amend sub-sections 6.2.1.1a, 6.2.1.5a, and 6.2.1.7a by striking all references to Energy Forward Market Settlement Events.
- Amend sub-sections 6.3.1, 6.3.3, 6.3.5, 6.3.6, 6.3.7, and 6.3.8 to specify that transmission rights settlement to apply to DAM financial transmission rights and remove the reference to the energy forward market.
- Add sub-section 6.3.8A to include the distribution of advisories from the first settlement process.
- Amend section 6.3.18 to extend the notice of disagreement filing deadline to 6 business days after the real-time market trading day – with the option to return this deadline back to 4 business days after the DAM is implemented and stabilized.
- Amend section 6.3.18 to extend the publication date of the second settlement, final settlement statement deadline to 24 business days after the real-time market trading day – with the option to return this deadline back to 20 business days after the DAM is implemented and stabilized.

FIRST SETTLEMENT ADVISORIES AND PRELIMINARY SETTLEMENT STATEMENTS:

It is proposed that Chapter 9, sections 6.4A be added as follows:

- Add new section 6.4A regarding advisories issued as part of the first settlement process

It is proposed that Chapter 9, sections 6.5 be amended as follows:

- Amend section 6.5.1.1, 6.5.2, 6.5.2.1, 6.5.2.2, and 6.5.2.5 by removing all references and all rules to settlement statement content related to the Energy Forward Market.
- Amend sections 6.5.2A, 6.5.2A.1, 6.5.2A.2, 6.5.2A.3, 6.5.3 and 6.5.3.2c to expand the content of preliminary settlement statements in the second settlement process to include DAM-related settlement amounts and data.

NOTICE OF DISAGREEMENT PROCESS:

It is proposed that Chapter 9, sections 6.6 be amended as follows:

- Amend sections 6.6, 6.6.1, 6.6.2,6.6.2.6, 6.6.2.5, 6.6.2.6, 6.6.2A.1, 6.6.4, 6.6.6.1, 6.6.6.2, 6.6.6.3, 6.6.6.4, 6.6.6.4a, 6.6.6.4b, 6.6.6.4c, 6.6.7, 6.6.8, 6.6.10, and 6.6.11.3 to expand scope of notice of disagreement (NOD) process to include all DAM settlement amounts reported in preliminary settlement statements issued from the second settlement process.

FINAL SETTLEMENT STATEMENTS:

It is proposed that Chapter 9, sections 6.7 be amended as follows:

- Amend section 6.7.1.1 by removing the reference to settlement statement content related to

the Energy Forward Market.

- Amend sub-sections 6.7.1, 6.7.1.2, 6.7.2, 6.7.3, 6.7.4, 6.7.5, 6.7.5.1, 6.7.6, 6.7.6.1, 6.7.6.2, and 6.7.7 to expand content of final settlement statements in the second settlement process to include DAM-related settlement amounts and data.

SETTLEMENT STATEMENT RECALCULATIONS:

It is proposed that Chapter 9, sections 6.8 be amended as follows:

- Amend section 6.8 to expand scope of the settlement statement recalculation process to include all second settlement DAM settlement amounts where settlement statement recalculation is ordered by an arbitrator.

IMO COUNTER-PARTY STATUS:

It is proposed that Chapter 9, sections 6.9 be amended as follows:

- Amend section 6.9.2 to expand restrictions on IMO counter-party status to the day-ahead market and remove references to the energy forward market.

AMENDMENTS ORIGINALLY PROPOSED UNDER MR-00271:

It is proposed that Chapter 9 section 6.10 be amended as follows:

Pursuant to the rule amendments identified in MR-00271-Q00: Day-ahead Market: Market Billing and Funds Administration the following two settlement market rule amendments are proposed:

- Amend section 6.10.1 to specify that only settlement amounts from the second settlement process for the associated billing period will be included on the monthly invoice. This amendment is necessary to specify that invoices issued will be based on the applicable combination of preliminary and final settlement statements from the second settlement process.
- Insert a new section 6.10.2.5 to include day-ahead market prepayments for virtual transactions on monthly invoices. This amendment is necessary to specify that where there has been a virtual transaction prepayment or margin call payment made within the billing period to which the invoice applies, this payment will be identified on the monthly invoice.

CONTINGENCY OPERATIONS OF THE IMO SETTLEMENT CLEARING ACCOUNT

It is proposed that Chapter 9, sections 6.14 be amended as follows:

- Amend section 6.14.4.1a to extend IMO short-term borrowing power to situations triggered by the DAM which might affect the operations of the IMO settlement clearing account.

It is proposed that Chapter 9, sections 6.16 be amended as follows:

- Amend section 6.16.1.1 and section 6.16.1.2 to extend IMO financial neutrality restrictions to DAM settlement amounts and amend section 6.16.2 by removing any references to the energy forward market.

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Background

The market rules in Chapter 9 specify certain rights and obligations for both the IMO and market participants with respect to the real-time market Settlement Process. The current market rules provide a scope and level of detail that allows the IMO and market participants to carry out their respective real-time market settlement obligations. This general framework includes:

- A list of any applicable statutory limitations on the authority of the market rules with respect to various, externally-regulated settlement amounts;
- A delineation of responsibility between the IMO and market participants concerning the preparation of metering data for settlement purposes;
- A description of all upstream Data Collection processes that are directly relevant to the Settlement process;
- A comprehensive listing of all settlement variables;
- A concise mathematical description of all major settlement amounts that can be prescribed by the market rules;
- A clear understanding of market participant rights and obligations with respect to receiving and paying settlement amounts.
- A acknowledgement of specific settlement amounts and obligations that are not directly under the authority of the market rules:
- Timelines of major market-facing events in the Settlement process;
- Contingency timelines in the event of a major disruption to the Settlement process or Funds Transfer process;
- The rights and obligations of market participants in raising a notice of disagreement or notice of dispute with respect to the Settlement process;
- Audit principles;
- Financial neutrality of the IMO with respect to the IMO-administered markets; and
- Payments and maintenance of accounts.

For the most part all of the above topic areas are relevant to the implementation of the DAM and therefore the subject of this market rule amendment MR-00270. Most portions of this general framework would be retained and largely be expanded in scope in order to accommodate the settlement of the real-time market, the Transmission Rights market and the day-ahead market. Given the interactions between the DAM and the real-time market for settlement purposes it is much more efficient and accurate to expand the existing settlement market rules to accommodate the DAM rather than to create a separate DAM settlements framework.

Market rule amendments regarding DAM settlements should be incorporated into the existing Chapter 9 rather than as a separate new section of the market rules document. DAM settlements are integrated with real-time market settlements as all physical transactions in the DAM have a balancing or corresponding transaction in the real-time market. The settlement of both the DAM physical transactions and the real-time market balancing transaction is a “net settlement” and so the market rules defining that settlement should be integrated as well**.** Virtual transactions are also integrated into the two-settlement settlement and are accommodated within the proposal outlined below

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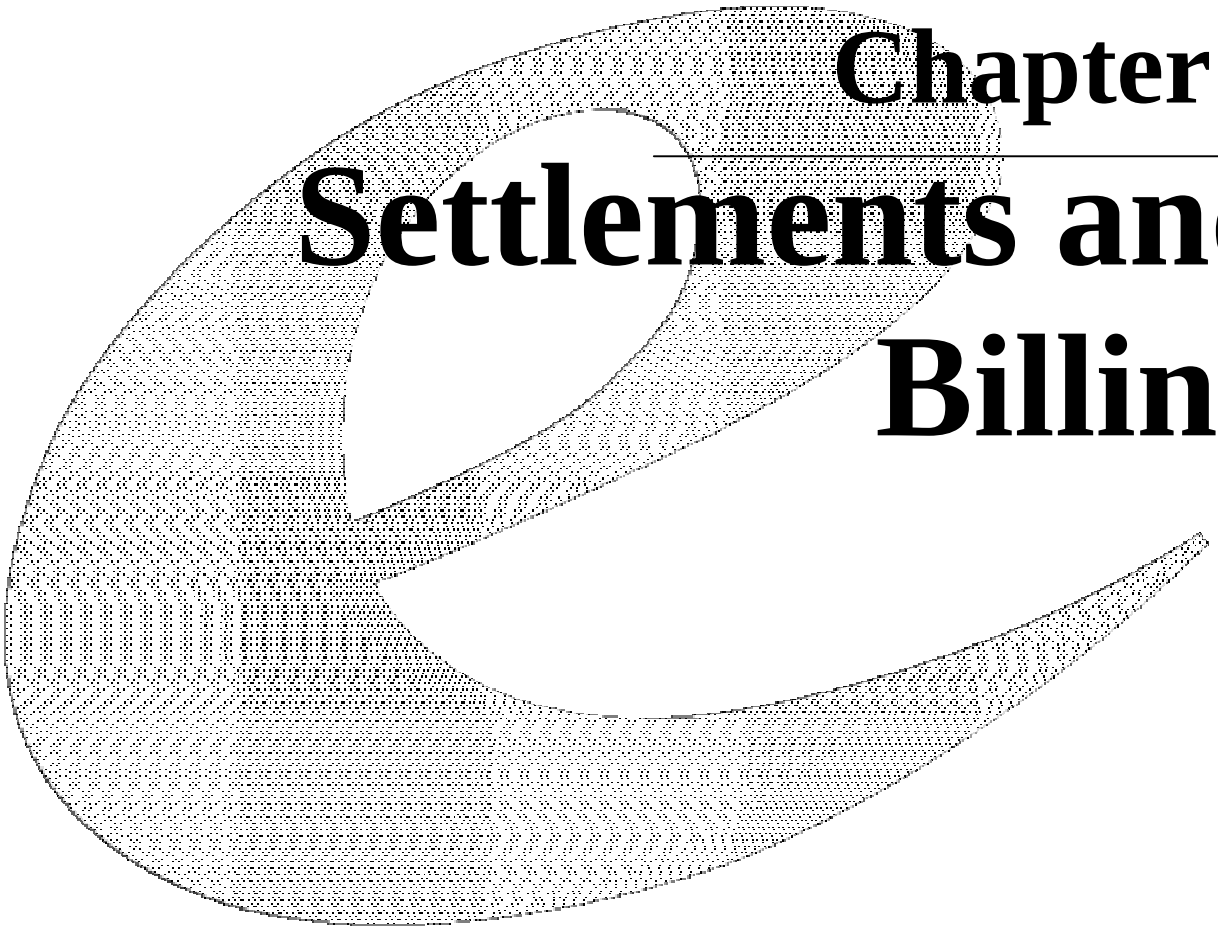
PART 4 – PROPOSED AMENDMENT

Market Rules



Chapter 9

Settlements and Billing

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1. Introductory Rules

1.1 Application and Purpose

1.1.1 This chapter applies to the *IMO* and *market participants*~~:~~.

~~1.1.1.1 the *IMO*; and~~

~~1.1.1.2 market participants.~~

1.1.2 This chapter sets out the respective rights and obligations of the *IMO* and of *market participants* in determining, billing ~~for and effecting payment in respect of~~and paying financial obligations arising from the *IMO-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 the ~~energy forward market~~*day-ahead market*;

1.1.2.2 the *energy market*;

1.1.2.3 the *operating reserve market*;

1.1.2.4 congestion management settlement credits;

1.1.2.5 *transmission rights (TRs)*;

1.1.2.6 ~~the *capacity reserve market* (if activated by the *IMO*);~~

1.1.2.7 *operating deviations*;

1.1.2.8 *ancillary services* and *reliability must-run contracts*;

1.1.2.9 *transmission service charges* and *connection charges* collected by the *IMO*;

1.1.2.10 rural rate protection;

1.1.2.11 the *IMO administration charge*;

1.1.2.12 penalties and fines;

1.1.2.13 any *debt retirement charge*; ~~and~~

1.1.2.14 rebates and other payments arising from market power mitigation measures; and

1.1.2.15 *production cost guarantees*.~~;~~

1.2 Regulated Settlement Amounts and Related Payment Charges

1.2.1 Notwithstanding any other provision within the *market rules*, the *IMO* shall determine *settlement amounts* and other payments as may be required under:

1.2.1.1 sections 79.1 to 79.5 and 79.14 of the *Ontario Energy Board Act, 1998*; and

1.2.1.2 any regulation made under section 88.0.1 of the *Ontario Energy Board Act, 1998.*

1.2.2 Notwithstanding any other provision within the *market rules*, the *IMO* shall collect from and remit to applicable *market participants* such *settlement amounts*, and shall do all other things and take all such actions as may be required under:

1.2.2.1 sections 32(9), 33(1.1) and (1.2) and 34(2.1) and (2.2) of the *Electricity Act, 1998*;

1.2.2.2 sections 79.1 to 79.5 and 79.14 of the *Ontario Energy Board Act, 1998*; and

1.2.2.3 any regulation made under section 88.0.1 of the *Ontario Energy Board Act, 1998.*

1.2.3 Notwithstanding any other provision within the *market rules*, *market participants* shall remit to the *IMO* such applicable *settlement amounts* and other payments as may be required under:

1.2.3.1 sections 79.1 to 79.5 and 79.14 of the *Ontario Energy Board Act, 1998*; and

1.2.3.2 any regulation made under section 88.0.1 of the *Ontario Energy Board Act, 1998.*

2. Settlement Data Collection and Management

2.1 Metering and Metering Responsibilities

2.1.1 Subject to section 2.1.1A, every *meter* utilised for determining *settlement amounts* according to this Chapter must be a *registered wholesale meter (RWM).*

2.1.1A Nothing in section 2.1.1 shall be construed as requiring the *IMO* to determine *settlement amounts* on the basis of an *RWM* in circumstances where it is permitted to use another *meter* for this purpose pursuant to section 3.1.4A.

2.1.2 A single *metered market participant* must be designated for each *RWM* that is not an *intertie metering point*.

2.1.3 The same *metered market participant* must be designated for all *primary RWMs,* other than *intertie metering points,* for which any *metering data* will be allocated to any single *registered facility.*

2.1.4 A *metered market participant* may, with respect to each *RWM* for which it is the *metered market participant,* submit *physical allocation data* to the *IMO* in accordance with section 2.4. If any quantity determined by *metering data* is not allocated to any other *market participant* by proper application of *physical allocation data* provided to the *IMO* by the *metered market participant* for that *RWM,* such quantity shall for *settlement* purposes be allocated by the *IMO* to that *metered market participant* as set forth in section 2.4.4.

2.1.5 The *IMO* shall be responsible for *metering data* and its allocation with respect to all *intertie metering points.* The *IMO,* in accordance with operating agreements with other *control areas,* shall:

2.1.5.1 to the extent required to fulfil its obligations under this Chapter, interpret and apply the protocols governing interchanges between the *IMO-controlled grid* and other *control areas*;

2.1.5.2 provide to the *settlement process* the *interchange schedule data* described in section 2.5; and

2.1.5.3 determine the allocated quantities called for by section 3.1.9 based on scheduled *intertie* flows even when these differ from actual flows as determined by *metering data*.

2.1.6 Each *market participant* registered as the *registered market participant* responsible for a *registered facility* within Ontario shall designate to the *IMO* a single *metered market participant* responsible for submitting to the *IMO* the

physical allocation data permitted by this Chapter with respect to that *registered facility*.

2.1.6.1 [Intentionally left blank]

2.1.6.2 [Intentionally left blank]

2.1A Station Service

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

2.1A.1.1 identify to the *IMO* the fraction of the *energy* withdrawn at that *facility* supplied from the *IMO-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.

2.1A.2 For *settlement* purposes, *transmission station service* shall be treated as a transmission loss.

2.1A.3 Where *connection station service* is not separately metered by an *RWM*, the *energy* consumption associated with *connection station service* shall be estimated by the *metered market participant* designated by the *registered market participant* for the relevant *connection facility* or, in the absence of such a *metered market participant*, by such *registered market participant*, in accordance with the equations and procedures described in the applicable *market manuals*, which estimate shall be stamped by a registered professional engineer and shall be subject to audit by the *IMO*.

2.1A.4 For settlement purposes, *connection station service* shall be treated as follows:

2.1A.4.1 where the *energy consumption* associated with *connection station service* is included in the *energy consumption* measured by an *RWM*, the sum of the *energy* associated with that *connection station service* and with site specific losses shall be apportioned:

a. amongst those *market participants* whose *facilities* are connected to the relevant *connection facility* in the proportions provided by the *metering service provider* for that *RWM*, and the provision of such proportions shall constitute certification by such *metering service provider* that such proportions have been agreed between the *metering service provider* and all *market participants* whose *facilities* are connected to the relevant *connection facility*; or

b. where the *metering service provider* has not provided the proportions referred to in section 2.1A.4.1(a), to the *metered market participant* for that *RWM* in accordance with section 2.4.4; or

2.1A.4.2 where the *energy consumption* associated with *connection station service* is not included in the *energy consumption* measured by an *RWM*, the sum of the *energy* associated with that *connection station service* and with site specific losses shall be apportioned:

a. amongst those *market participants* whose *facilities* are connected to the relevant *connection facility* in the proportions provided by the *metering service provider* for each *RWM* measuring the flow of *energy* taken from the *connection facility*. The proportions provided by each *metering service provider* shall reflect agreement amongst all applicable *metering service providers* and shall only be accepted by the *IMO* if the proportions provided by all applicable *metering service providers* sum to one. The provision of such proportions shall constitute certification by each such *metering service provider* that it has reached agreement with all other applicable *metering service providers* in respect of such proportions; or

b. where one or more of the *metering service providers* referred to in section 2.1A.4.2(a) has not provided the *IMO* with the proportions referred to in that section, amongst those *market participants* whose *facilities* are connected to the relevant *connection facility* on the basis of the number of *load serving breakers* serving each such *market participant.*

2.1A.5 A *metering service provider* who provides to the *IMO* factors for apportioning *connection station service* and site specific losses pursuant to section 2.1A.4.1(a) or 2.1A.4.2(a) may, no more than once in each calendar year or more frequently if required by the registration of a new *RWM*, submit to the *IMO* revised proportions for the purposes of apportioning the *energy* referred to in section 2.1A.4. The provision of such revised proportions shall constitute certification by such *metering service provider* as to the agreement referred to in section 2.1A.4.1(a) or 2.1A.4.2(a), as the case may be.

2.1A.6 For greater certainty, nothing in section 2.1A.4 shall be construed as permitting the apportionment of *connection service* and site specific losses to a *market participant* in respect of a *facility* that is an *embedded load facility* or an *embedded generation facility*.

2.1A.6A Where the sum of *energy* associated with *connection station service* and with site specific losses is apportioned by the *IMO* pursuant to sections 2.1A.4.1(b) or 2.1A.4.2(b) by reason of the failure of all applicable *metering service providers* to reach agreement as to the proportions referred to in sections 2.1A.4.1(a) or 2.1A.4.2(a) as the case may be, any *market participant* that is the subject of such apportionment may submit the matter to the dispute resolution process set forth in section 2 of Chapter 3 and shall, in the *notice of dispute*:

2.1A.6A.1 name all other *market participants* which are the subject of the same apportionment as *respondents*; and

2.1A.6A.2 request that the arbitrator determine an alternative apportionment.

2.1A.6B Where an *arbitrator* determines an alternative apportionment pursuant to section 2.1A.6A, the *metering service provider* for each applicable *RWM* shall, within 5 *business days* of the date of the award of the *arbitrator*, file with the *IMO* proportions for apportioning the sum of *energy* associated with *connection station service* and with site specific losses that reflect such alternative apportionment.

2.1A.7 Subject to section 2.1A.9, where *metering data* from a *metering installation* does not reflect the amount of *energy* injected by a *generation unit* passing through the *metering installation* net of all applicable *generation station service*, the costs associated with *generation station service* shall, for *settlement* purposes, be apportioned:

2.1A.7.1 amongst those *generation units* consuming such *generation station service* in the proportions provided by the *metering service provider* for the relevant *metering installation*; or

2.1A.7.2 where the *metering service provider* has not provided the proportions referred to in section 2.1A.7.1, equally amongst all such *generation units*,

provided that, in either case such apportionment results in a totalization of the applicable *RWMs* that is identical to the totalization of the *meters* required to meet

the monitoring requirements of section 7.3, 7.4, 7.5 or 7.6, as the case may be, of Chapter 4.

2.1A.8 A *metering service provider* who provides the *IMO* with proportions pursuant to section 2.1A.7.1 may submit up to two requests in a calendar year to the *IMO* to have such proportions revised, provided that the giving of effect to such revisions shall be subject to the mutual agreement of the *metering service provider* and the *IMO*.

2.1A.9 If the consumption of *generation station service* results in:

2.1A.9.1 an allocated quantity of *energy* withdrawn or AQEW, as described in section 3.1.9, accruing at the location of a *generation unit* which is part of an eligible *generation facility* within the meaning of section 2.1A.13 in circumstances where the injection of *energy* by that *generation facility* as a whole exceeds the withdrawal of *energy* by that *generation facility* as a whole during a given *metering interval*; and

2.1A.9.2 such accrual of AQEW results in *hourly uplift* or any other applicable *day-ahead market* or *real-time market settlement amounts* payable to the *IMO*, ~~non-hourly *settlement amounts*, or both~~, accruing at the location referred to in section 2.1A.9.1 during any *metering interval* within an *energy market billing period*,

the *metered market participant* for that *generation facility* shall, subject to section 2.1A.10, be entitled to request a reimbursement of any such ~~of the *hourly uplift* and non-hourly~~ *settlement amounts* referred to in section 2.1A.9.2 in accordance with the procedure referred to in section 2.1A.11.

2.1A.10 No reimbursement may be requested by a *metered market participant* pursuant to section 2.1A.9 in respect of amounts attributable to the following:

2.1A.10.1 transmission services charges;

2.1A.10.2 any applicable penalties, awards or adjustments reflected in the *invoice* issued to the *metered market participant*; or

2.1A.10.3 any other *settlement amounts* where such a reimbursement:

a. is prohibited by *applicable law*; or

b. where the *settlement amount* is collected by the *IMO* pursuant to an obligation imposed upon it by *applicable law,* is not permitted by such *applicable law.*

2.1A.11 A *metered market participant* that wishes to request a reimbursement pursuant to section 2.1A.9 shall, within five *business days* of the issuance of the *invoice* for the *energy market billing period* in which the allocated quantity of *energy*

withdrawn or AQEW accrued as described in section 2.1A.9.1, provide to the *IMO*:

2.1A.11.1 a fully reconcilable set of calculations of the amount for which reimbursement is requested, including the supporting ***settlement*** data used; and

2.1A.11.2 the amount for which reimbursement is requested,

in such form as may be specified in the applicable ***market manual.***

2.1A.12 Upon receiving a request for reimbursement pursuant to section 2.1A.11, the *IMO* shall:

2.1A.12.1 verify that the calculations have been provided in accordance with that section;

2.1A.12.2 either:

a. reimburse, as a credit on the applicable ***preliminary settlement statement***, the whole or a part of the amount requested to the ***metered market participant*** no later than the end of the next ***energy market billing period*** that commences following the day upon which the *IMO* notifies the ***metered market participant*** that the request or a part thereof has been provided in accordance with section 2.1A.11 or is ordered by an ***arbitrator*** to effect a reimbursement; or

b. where the *IMO* is not satisfied that the ***metered market participant*** has complied with section 2.1A.11 or that the ***generation unit*** in respect of which the reimbursement is being claimed is not part of an eligible ***generation facility*** within the meaning of section 2.1A.13, notify the ***metered market participant*** that its request for reimbursement has been denied; and

2.1A.12.3 recover any amount reimbursed pursuant to section 2.1A.12.2 at the end of the ***energy market billing period*** referred to in section 2.1A.12.2(a) in the manner described in section 4.8.1.6.

2.1A.13 For the purposes of section 2.1A.9.1, a ***generation facility*** may be designated by the *IMO* as an eligible ***generation facility*** where the ***generation facility***:

2.1A.13.1 is comprised of two or more ***registered facilities***:

a. whose ***metering data*** is not summed to a single value pursuant to the process described in section 2.4.3; and

b. that have the same ***metered market participant***;

2.1A.13.2 is located within the ***IMO control area***; and

2.1A.13.3 has associated with it *generation station service* that serves more than one *registered facility* included within that *generation facility*.

2.2 Metering Data Recording and Collection Frequency

2.2.1 All *metering data* must be recorded for each *metering interval* except as otherwise provided in section 2.2.2 or elsewhere in these *market rules.*

2.2.2 A RWM that serves only non-dispatchable load, self-scheduled generation facilities, transitional scheduling generators or intermittent generators need not record any metering data regarding energy (in MWh) or reactive energy (in MVARh) for metering intervals but must record such metering data for each settlement hour. Metering data regarding demand or power (in MW) shall be recorded by such RWMs for such intervals as the *IMO* may specify in the applicable market manual.

2.2.3 An *intertie metering point* shall record *metering data* in a manner consistent with the applicable interchange protocol.

2.2.4 *Metering data* shall be collected by or delivered to the *IMO* in accordance with Appendix 9.1 or in accordance with such other schedule as the *IMO* may determine from time to time.

2.3 Collection and Validation of Metering Data

2.3.1 The *IMO* shall collect or receive *metering data* directly from *RWM*s, in such other manner as may be specified in Appendix 9.1 and from such other processes as may be appropriate. Such *metering data* will initially be "raw" data that have not been validated or corrected by the *VEE process.*

2.3.2 The raw *metering data* collected by or delivered to the *IMO* shall be subjected to the *VEE process* described in Appendix 9.1. The *VEE process* shall:

2.3.2.1 convert raw *metering data* into validated, corrected or estimated "*settlement* ready" *metering data* suitable for use in determining *settlement amounts*;

2.3.2.2 operate according to the *settlement* schedule specified in section 6;

2.3.2.3 detect errors in *metering data* resulting from improper operational conditions and/or hardware/software malfunctions, including failures of or errors in metering or communication hardware, and from *metering data* exceeding pre-defined variances or tolerances; and

2.3.2.4 use operational system data, including historical generation and load patterns and data collected by or delivered to the *IMO*, as appropriate, for validating raw *metering data*, and for editing, estimating and correcting *metering data* found to be erroneous or missing.

2.3.2A While undergoing the *VEE process, metering data* from a given registered *metering installation* in respect of a given *trading day* or, where applicable, estimates thereof, shall bear appropriate flags and shall be accessible by electronic means by any person referred to in section 10.1.3 of Chapter 6 on the day following such *trading day.*

2.3.3 Subject to section 2.3.4, all *metering data* in respect of a given registered *metering installation* for a given *trading day* used for determining *settlement amounts* pursuant to this Chapter shall be "*settlement* ready" *metering data* that has been validated and corrected by the *VEE process*. Such "*settlement* ready" *metering data* shall be accessible by electronic means by any person referred to in section 10.1.3 of Chapter 6 no later than five *business days* following such *trading day*, providing that the applicable *metering service provider* has resolved any trouble call pertaining to such *metering data.*

2.3.4 *Metering data* used for determining *settlement amounts* pursuant to this Chapter shall, where applicable, be adjusted to reflect the estimation or deeming provisions set forth in sections 11.1.4.2 and 11.1.6, respectively, of Chapter 6.

2.4 Collection of Physical Allocation Data

Rule Note:

1. The *IMO Board* may elect to review these rules subject to the conclusion of an *OEB* examination into the issue of double settlement of *retailers* and like entities in the *retail* and wholesale markets.

2.4.1 Each *metered market participant* that is eligible to do so pursuant to section 2.4.5 may, for each *RWM* with respect to which it is the *metered market participant*, submit to the *IMO physical allocation data* for allocating *metering data* among *market participants*. Such *physical allocation data* shall be submitted in the form and on the schedule described in the applicable *market manual*.

2.4.1.1 [Intentionally left blank]

2.4.1.2 [Intentionally left blank]

2.4.1.3 [Intentionally left blank]

2.4.1.4 [Intentionally left blank]

2.4.2 The *IMO* shall be entitled to and shall rely on the *physical allocation data* received from a *metered market participant* for the purpose of allocating *metering data* and associated *settlement amounts* and, notwithstanding section 13 of Chapter 1:

2.4.2.1 the *IMO* shall not be liable to any person in respect of the allocation of:

a. any *metering data* when effected in accordance with such *physical allocation data*; or

b. any *settlement amounts* calculated on the basis of such *physical allocation data*; and

2.4.2.2 the *metered market participant* providing the *IMO* with such *physical allocation data* shall indemnify and hold harmless the *IMO* in respect of any and all claims, losses, costs, liabilities, obligations, actions, judgements, suits, costs, expenses, disbursements and damages incurred, suffered, sustained or required to be paid, directly or indirectly, by, or sought to be imposed upon, the *IMO* arising from the allocation by the *IMO* of *metering data* in accordance with such *physical allocation data* or from the allocation by the *IMO* of any associated *settlement amounts*,

provided that nothing in this section 2.4.2 shall be construed as affecting the liability of the *IMO* in respect of the conduct of the adjustment and summation activities referred to in section 2.4.3.

2.4.3 Prior to the application of any *physical allocation data* received from a *metered market participant*, the *metering data* from each *RWM* that is the subject of the *physical allocation data* shall be:

2.4.3.1 adjusted by the *IMO* in accordance with section 4.2.3 of Chapter 6; and

2.4.3.2 summed with *metering data* from all other applicable *RWMs* in accordance with the applicable totalization table comprised in the relevant *meter point* documentation submitted in respect of the *RWM* pursuant to section 1.3 of Appendix 6.5 of Chapter 6.

2.4.4 *Metering data* from one or more *RWMs*, adjusted and summed in accordance with section 2.4.3, shall be attributed to the *metered market participant* for the applicable *RWM* or *RWMs* unless the *metered market participant* submits to the *IMO physical allocation data* with respect to such *metering data*

2.4.5 A *metered market participant* for an RWM or RWMs shall not submit *physical allocation data* in respect of such RWM or RWMs unless:

2.4.5.1 the metered market participant for such RWM or RWMs is a distributor and submits physical allocation data providing for the allocation of such metering data to:

a. another *market participant* that is a *retailer*;

b. another *market participant* that is a *transmitter*;

c. an *embedded market participant* whose *facility* is embedded within the *metered market participant's distribution system*; or

d. another *market participant* that is a *distributor* whose *distribution system* is neighbouring on that of the *metered market participant*, provided that the *physical allocation data* represents the flow of *energy* between such *distribution system* and the *metered market participant's distribution system*; or

2.4.5.2 the RWM or RWMs are associated with a registered facility other than a distribution system and the metered market participant for such RWM or RWMs provides physical allocation data for the allocation of such metering data to another market participant,

and, subject to section 2.4.6, the *metered market participant* submitting the *physical allocation data* demonstrates to the *IMO*, in the manner described in the applicable *market manual*, that the other *market participant* to whom such *physical allocation data* relates has consented to the attribution to it of such *metering data*.

2.4.6 The last paragraph of section 2.4.5 shall not come into force until the date that is the first day of the seventh calendar month following the *market commencement*

date, calculated from the first day of the calendar month immediately following the month in which the *market commencement date* occurs.

2.4.7 A *metered market participant* that is eligible to submit *physical allocation data* pursuant to section 2.4.5 may, with respect to each *RWM* for which it is the *metered market participant*, submit a data file containing non-negative percentage values which are:

2.4.7.1 individually, each less than or equal to 100%; and

2.4.7.2 in the aggregate also less than or equal to 100%,

indicating the fraction of the *metering data*, adjusted and summed in accordance with section 2.4.3, that is to be allocated to each *market participant* in each *metering interval*. Such data file must be provided to the *IMO* in advance of operation, on the schedule described in the applicable *market manual*.

2.4.8 If all *metering data* in respect of a given *RWM* or *RWMs*, adjusted and summed in accordance with section 2.4.3, is to be attributed to a single *market participant*, the *metered market participant* for the applicable *RWM* or *RWMs* may submit to the *IMO* a standing declaration to that effect provided that such *metered market participant* is eligible to submit *physical allocation data* in accordance with section 2.4.5.

2.4.9 A *metered market participant* that is eligible to submit *physical allocation data* pursuant to section 2.4.5 may, with respect to each *RWM* for which it is the *metered market participant*, submit a data file indicating the absolute amount of each physical quantity included in the *metering data*, not exceeding the quantity resulting from the application of the processes described in section 2.4.3, to be allocated to each *market participant* Such data file shall be provided to the *IMO* in preliminary form within 2 *business days* after the *dispatch day* to which it applies, and in final form within 6 *business days* after such *dispatch day*. Where the aggregate quantity indicated in such data file is not equal to the quantity resulting from the application of the processes described in section 2.4.3, the *IMO* shall:

2.4.9.1 where the aggregate quantity indicated in such data file is less than the quantity resulting from the application of the processes described in section 2.4.3, attribute the difference to the *metered market participant*; or

2.4.9.2 where the aggregate quantity indicated in such data file is greater than the quantity resulting from the application of the processes described in section 2.4.3, disregard the data file and allow the *metered market participant* to resubmit it such that:

a. the resulting aggregate quantity is less than or equal to the quantity resulting from the application of the processes described in section 2.4.3; and

b. the resubmission of the file is consistent with the form and schedule described in section 2.4.1.

2.4.10 Any *settlement amount* that is realised or avoided by a *metered market participant* solely as a result of the submission of *physical allocation data* pursuant to this section 2.4 may be considered by the *IMO* as a benefit within the meaning of section 6.6.7 of Chapter 3 for purposes of the application of section 6.6.12 of that Chapter when fixing the amount of a financial penalty imposed in respect of the *metered market participant's* failure to follow *dispatch instructions* during such time as such *physical allocation data* was in effect.

2.4.11 Where the *IMO* issues a *default notice* to a *market participant* to which *metering data* has been allocated pursuant to section 2.4.5, the provisions of section 6.3.3B.2 of Chapter 3 shall apply. Where the *IMO* issues a *suspension order* against a *market participant* to which *metering data* has been allocated pursuant to section 2.4.5, the provisions of section 6.9.3A.2 of Chapter 3 shall apply.

2.4A Delivery Points

2.4A.1 The *delivery point* for a given *RWM* shall be determined by the *IMO* in accordance with:

2.4A.1.1 adjusting the *metering data* from that *RWM* in accordance with section 4.2.3 of Chapter 6; and

2.4A.1.2 summing the *metering data* from that *RWM* with *metering data* from all other applicable *RWMs* in accordance with the applicable totalization table comprised in the relevant *meter point* documentation submitted in respect of that *RWM* pursuant to section 1.3 of Appendix 6.5 of Chapter 6.

2.4A.2 For the purposes of the determination of the *settlement amounts* referred to in sections 3, 4 and 5, all references to an *RWM*, an *RWM* m or a *registered facility* k/m shall be deemed to be a reference to the *delivery point* associated with:

2.4A.2.1 the *RWM*; or

2.4A.2.2 the *RWM* or *RWMs* associated with the *registered facility*,

as the case may be.

2.4B Load Component Identifiers

2.4B.1 For the purposes of determining *settlement amounts*, any *delivery point* associated with a *load facility* shall have one or more of the following *load components* duly registered to it:

2.4B.1.1 one *price sensitive load component*; and/or

2.4B.1.2 one or more *price sensitive multiple block load components*; and/or

2.4B.1.3 one price *responsive load component*; and/or

2.4B.1.3 one or more *price responsive multiple block load components*;

where all applicable data used for *settlement* purposes for such *load facilities* shall each be identified with a unique *load component ID* assigned to each such *load component* for *settlement* purposes.

2.5 Collection of Interchange Schedule Data

2.5.1 The *IMO* shall, in co-operation with other *control area operators, security coordinators* and *interconnected transmitters* and in accordance with applicable interchange protocols, determine the following *interchange schedule data* for each *settlement hour*:

2.5.1.1 the total scheduled flows of *energy*, and of any other physical quantity or *physical service* traded in the *IMO-administered markets*, across each transmission interface between the *IMO-controlled grid* and an *intertie zone* in a *control area* outside Ontario; and

2.5.1.2 the allocation of each scheduled *intertie* flow among *market participants*.

2.5.2 The *IMO settlement process* shall use the *interchange schedule data* to determine *settlement amounts* even though the total scheduled flows on all *interties* may be either more or less than actual physical flows as measured by all *intertie metering points*. The *IMO* shall manage deviations between scheduled and actual *intertie* flows in accordance with interchange protocols with other *control areas* and the requirements of applicable *standards authorities*, with any resulting financial gains or losses ultimately accruing or charged to *market participants* through the *hourly uplift.*

2.5.3 The *IMO* shall *publish* the total scheduled and actual flows of *energy* between the *IMO-controlled grid* and each *intertie zone*.

~~2.5.4 For *settlement* purposes, an import or *export* transaction scheduled in the *day ahead market* shall be deemed to be independent of ("unassociated" with) any~~

~~*real-time market* transaction for a given *settlement hour* if it meets ALL of the following criteria:~~

~~2.5.4.1 the *day-ahead market import* or *export* transaction is bid or offered at a specific *intertie metering point* by *market participant* 'k' during sett*lement hour* 'h';~~

~~2.5.4.2 The *day-ahead market import* or *export transaction receives* a non-zero schedule in PASS 3 and/or PASS 5 of the *DAM calculation engine* during *settlement hour* 'h'; and~~

~~2.5.4.3 *Market participant* 'k' chooses not to *bid* or *offer* a corresponding *import* or *export* transaction at the same *intertie metering point* for the same *settlement hour* 'h' in the *real-time market*.~~

2.6 Collection of Physical Bilateral Contract Data

2.6.1 Any *selling market participant* may, under the provisions of Chapter 8, submit to the *IMO physical bilateral contract data* for:

2.6.1.1 the *real-time market*; and/or

2.6.1.2 the *day-ahead market*,

that define *physical bilateral contract quantities* of *energy* that it is selling to a specified *buying market participant* in specified hours and at specified ~~primary RWMs~~*delivery points* or *intertie metering points*.

2.6A.1 Where a *physical bilateral contract* for the *day-ahead market* is submitted by the *selling market participant* for a *delivery point* associated with a *load facility*, the *selling market participant* shall also specify the particular *load component ID* to which such *physical bilateral contract* applies.

2.6.2 *Physical bilateral contract quantities* shall not be included in the quantities of *energy* used to determine *settlement amounts* related to *energy*, although they may be used to determine other *settlement amounts* as provided in this Chapter.

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

2.6.4 The *IMO* shall submit directly to the *settlement process* the *physical bilateral contract quantities* submitted by each *market participant* for each *settlement hour* as provided in section 3.1.6.

2.7 Collection of Day Ahead Market Transmission Right (TR) Data

2.7.1 The *IMO* shall implement, in accordance with Chapter 8, *TR auctions* that will result in an allocation among *market participants* of *transmission rights)* associated with the transactions referred to in section 4.1.1.1 of Chapter 8 and conveying rights to *settlement amounts* based on differences in *market prices* for *energy* in the *day-ahead market* between the specified injection *TR zone* and the specified withdrawal *TR zone* with which each *TR* is associated.

2.7.2 The *IMO* shall submit to the *settlement process* by the sixth *business day* after each *dispatch day* the following data related to *TRs*:

2.7.2.1 the quantities, in MW, of *TRs* held by each *TR holder* with respect to each applicable pair of specified injection and withdrawal *TR* zones for each *settlement hour* of such *dispatch day*; and

2.7.2.2 the total proceeds from the sale of *TR*s in respect of all rounds of a *TR auction* that is concluded on such *dispatch day*.

2.8 Collection of Capacity Reserve Market Data

2.8.1 If the *capacity reserve market* is active, the *IMO* shall operate such *capacity reserve market* to determine the *capacity reserve quantity* (in MW) provided by each *registered market participant* and the *capacity reserve price* for each hour of the applicable *obligation period*.

2.8.2 [Intentionally left blank]

2.8.3 The price and quantity data from the *capacity reserve market* with respect to each *dispatch day* shall be provided by the *IMO* directly to the *settlement process*.

2.9 Collection of Ancillary Service Data

2.9.1 The *IMO* shall submit to the *settlement process* the data from *contracted ancillary service* contracts and from the daily *dispatch* process necessary to determine *contracted ancillary service* payments.

2.10 Collection of Market Price and Other Settlement Data

2.10.1 The *IMO* shall submit to the *settlement process* all *market prices* determined by the *IMO* according to the provisions of Chapter 7, and all *metering data* and other *operating results* available to the *IMO* as may be needed by the *settlement process* for determining *settlement amounts* pursuant to this Chapter.

2.11 Settlement Record Retention, Confidentiality, and Reliability

2.11.1 Subject to section 2.11.3, the *IMO* shall retain all *settlement* records for a period adequate to support the *settlement* audit referred to in section 6.17 and/or a *settlement statement re-calculation*, but in no case for less than seven years.

2.11.2 The *IMO* shall periodically review the period for which *settlement* records are retained and shall, if required and subject to section 2.11.3, take such steps as may be required to effect a change in such period.

2.11.3 The period for which *settlement* records are retained shall comply with the requirements of any regulatory authority having jurisdiction over the *IMO* or *market participants*.

2.11.4 *Settlement* and supporting data for each *trading day* of a *billing period* shall be made available by direct electronic means to the relevant *market participant* as soon as the data become available to the *IMO*. The data shall remain available via electronic access until the earlier of 60 days from the end of the *billing period* and the date on which invoicing and payment activities for that *billing period* have been completed.

2.11.5 The *IMO* shall safeguard any *settlement* information that is *confidential information* in accordance with section 5 of Chapter 3.

2.11.6 The *IMO* shall assure that back-up computer and communication systems are available for the *settlement process* and shall, in accordance with section 6.1, use such back-up systems in the event that equipment failure or an emergency evacuation makes the primary systems referred to in section 6.1.1 unavailable.

3. Determination of ~~Hourly~~ Settlement Amounts for the IMO-Administered Markets

3.1 Settlement Variables and Data

3.1.1 The *IMO* shall determine ~~hourly~~ various *settlement amounts* for the *day-ahead market* and *real-time markets* ~~the *hourly markets*~~ using the *real-time market* hourly price and quantity variables and data described in this section 3.1 and any applicable *settlement* variables for the *day-ahead market* and data described in section 3.1A.

3.1.2 ~~The *IMO* shall determine *energy forward market* prices and quantities as provided in Chapter 8, and shall provide the following data from the *energy forward market* directly to the *settlement process:*~~

~~$FMQS_{k,h}$ = *energy forward market* quantity cleared (positive if *offer* and negative if *bid*), in MWh, by *market participant* k in *settlement hour* h~~

~~FMP_{h} = *energy forward market* price, in $/MWh, in *settlement hour* h~~

[Intentionally left blank.]

3.1.3 The *IMO* shall determine *market prices* for *energy* in the *real-time market* and quantities as provided in Chapter 7 and shall provide the following variables and data from the *real-time market* for *energy*, determined in accordance with section 3.1.4A, directly to the *settlement process*:

$MQSI_{k,h}^{m,t}$ = market quantity scheduled for injection in the *market schedule* by *market participant* k at location m or *intertie metering point* m in *metering interval* t of *settlement hour* h

$MQSW_{k,h}^{m,t}$ = market quantity scheduled for withdrawal in the *market schedule* by *market participant* k at location m or *intertie metering point* m in *metering interval* t of *settlement hour* h

$DQSI_{k,h}^{m,t}$ = *dispatch* quantity scheduled for injection in the *real-time schedule* by *market participant* k at location m or *intertie metering point* m in *metering interval* t of *settlement hour* h determined on the basis of the *dispatch instructions* issued to *market participant* k for that *metering interval*

$DQSW_{k,h}^{m,t}$ = *dispatch* quantity scheduled for withdrawal in the *real-time schedule* by *market participant* k at location m or *intertie metering point* m in *metering interval* t of *settlement hour* h determined on the basis of the *dispatch instructions* issued to *market participant* k for that *metering interval*

$TMQSI_{h}^{m,t}$ = total market quantity scheduled for injection in the *market schedule* by all *market participant*s at location m or *intertie metering point* m in *metering interval* t of *settlement hour* h

= $\sum_{k} MQSI_{k,h}^{m,t}$, with k = all *market participant*s

$EMP_{h}^{m,t}$ = *energy market* price at delivery point m in *metering interval* t of *settlement hour* h

$ICP_{h}^{i,t}$ = *intertie congestion price* for *energy* at *intertie metering point* i in *metering interval* t of *settlement hour* h

where $i \in M$ such that M is the set of all *delivery points* m and *intertie metering points* m.

$EMP_h^{i,t}$ = *energy market* price at *intertie metering point* i in *metering interval* t of *settlement hour* h

= $ICP_h^{i,t} + EMP_h^{m,t}$ subject to the constraints outlined in sections 8.2.2.4 and 8.2.2.5 of Chapter 7.

where m is any *delivery point* within Ontario while uniform pricing exists.

where i ∈ M such that M is the set of all *delivery points* m and *intertie metering points* m.

$HOEP_h$ = *hourly Ontario energy price* in *settlement hour* h

= $\Sigma_{m,t} EMP_h^{m,t}/12$,

with t = all *metering intervals* in *settlement hour* h

m = all *primary RWM*s (within Ontario)

3.1.4 The *IMO* shall determine *market prices* and scheduled quantities for *operating reserve* in the *real-time market* ~~and quantities~~ in a process integrated with the *real-time energy market*, as provided in Chapter 7. For each of the two types "r" of *class r reserves*, the *IMO* shall provide directly to the *settlement process* the following variables and data, determined in accordance with section 3.1.4A:

$PROR_{r,h}^{m,t}$ = *market price* (in $/MW) of *class r reserve* in *metering interval* t of *settlement hour* h at *delivery point* m or *intertie metering point* m

$PROR_{r,h}^{i,t}$ = *market price* (in $/MW) of *class r reserve* in *metering interval* t of *settlement hour* h at *intertie metering point* i

where i ∈ M such that M is the set of all *delivery points* m and *intertie metering points* m.

= $ICP_{r,h}^{i,t} + PROR_{r,h}^{m,t}$ subject to the constraints outlined in sections 8.2.2.6 and 8.2.2.7 of Chapter 7.

where m is any *delivery point* within Ontario while uniform pricing exists.

$ICP_{r,h}^{i,t}$ = *intertie congestion price* for *class r reserve* at *intertie metering point* i in *metering interval* t of *settlement hour* h

where i ∈ M such that M is the set of all *delivery points* m and *intertie metering points* m.

$SQROR_{r,k,h}^{m,t}$ = scheduled quantity (in MW) of *class r reserve* for *market participant* k in *metering interval* t of *settlement hour* h at location m or *intertie metering point* m as described in the *market schedule*

$DQSR_{r,k,h}^{m,t}$ = *dispatch* quantity (in MW) of *class r reserve* for *market participant* k at location m in *metering interval* t or *intertie metering point* m of *settlement hour* h as determined on the basis of the *dispatch instructions* issued to *market participant* k for that *metering interval*

3.1.4A For the purposes of sections 3.1.3, 3.1.4 and 3.5.2, "location m" in respect of *market participant* k shall mean the location of:

3.1.4A.1 the relevant *meter* used by *market participant* k to meet the monitoring requirements of section 7.3, 7.4, 7.5 or 7.6, as the case may be, of Chapter 4 in respect of *registered facility* k/m, where such requirements apply in respect of *registered facility* k/m; or

3.1.4A.2 the *RWM* for *registered facility* k/m, where the monitoring requirements of section 7.3, 7.4, 7.5 or 7.6, as the case may be, of Chapter 4 do not apply in respect of *registered facility* k/m.

3.1.5 If the daily *capacity reserve market* is active, the *IMO* shall determine *capacity reserve prices* and *capacity reserve quantities* in the *capacity reserve market* and shall provide the following variables and data directly to the *settlement process*:

$QCAPR_{k,h}^{m}$ = *capacity reserve quantity* (in MW) sold by *market participant* k at *RWM* m for *settlement hour* h

$PCAPR_{h}^{m}$ = *capacity reserve price* (in $/MW/hr) at *RWM* m in *settlement hour* h

3.1.6 ~~*Real-time market p*~~*PPhysical bilateral contract quantities* for the *real-time market* shall be determined for each *settlement hour* by the *IMO* using *physical bilateral contract data* submitted by *selling market participants* and, where so required by the nature of the *physical bilateral contract data*, operating results. The *IMO* shall divide each hourly *physical bilateral contract quantity* into equal *physical bilateral contract quantities* if determination of *settlement amounts* requires *quantities* for each *metering interval* of each *settlement hour*. The *IMO* shall provide the following variables and data directly to the *settlement process*:

$BCQ_{s,b,h}^{m}$ = *physical bilateral contract quantity* of *energy* (in MWh) sold by *selling market participant* s *to buying market participant* b at *primary* or *intertie metering point* m in *settlement hour* h

$BCQ_{s,b,h}^{m,t}$ = *physical bilateral contract quantity* of *energy* (in MWh) sold by *selling market participant* s to *buying market participant* b at *primary* or *intertie metering point* m for each *metering interval* t in *settlement hour* h

=

$(1/12) \times BCQ_{s,b,h}^{m}$, for all 12 *metering intervals* t in *settlement hour* h

3.1.7 The *IMO* shall offer a service whereby the *selling market participant* in a *physical bilateral contract* or the selling *market participant* under a financial bilateral contract may assume responsibility for components of the buying or *buying market participant's settlement* obligations other than those for *energy*.

3.1.8 The *IMO* shall provide the following *TR* data directly to the *settlement process*:

$QTR_{k,h}^{m,n}$ = quantity of *TRs* (in MW) assigned to *market participant* k for transmission from *primary* or *intertie metering point* m to *primary* or *intertie metering point* n for *settlement hour* h

3.1.9 The *IMO* shall determine the following allocated physical quantities for each *market participant* for each primary RWM and each intertie metering point using *metering data*, operating results, *physical allocation data* submitted by *metered market participants* and *interchange schedule data*. If physical quantities are provided only for each *settlement hour* (as they may be for *interchange schedules*, *non-dispatchable loads*, self-scheduled *generation facilities*, transitional scheduling generators and intermittent generators), the *IMO* shall, if necessary for settlement purposes, determine the interval amounts defined below by dividing the hourly amounts into twelve equal interval amounts:

$AQEI_{k,h}^{m,t}$ = allocated quantity (in MWh) of *energy* injected by *market participant* k at *primary* or *intertie metering point* m in *metering interval* t of *settlement hour* h

$AQEW_{k,h}^{m,t}$ = allocated quantity (in MWh) of *energy* withdrawn by *market participant* k at *primary* or *intertie metering point* m in *metering interval* t of *settlement hour* h

$AQOR_{r,k,h}^{m,t}$ = allocated quantity (in MW) of *class r reserve* for *market participant* k at *primary* or *intertie metering point* m in *metering interval* t of *settlement hour* h

$AQCR_{k,h}^{m,t}$ = allocated *capacity reserve quantity* (in MW) for *market participant* k at *primary* or *intertie metering point* m in *metering interval* t of *settlement hour* h

3.1.10 The *IMO* shall provide the following information to the *settlement* process for each *market participant* for each *hour-ahead dispatchable load*:

$HADLR_{k,h}^{m}$ = *hour-ahead dispatchable load* reduction in *energy* withdrawals (in MWh) by *market participant* k, at *delivery point* m, in *settlement hour* h, scheduled pursuant to section 5.6 of chapter 7

BHA = a matrix of up to 4 *price-quantity pairs* offered by *market participant* k, at *delivery point* m in *settlement hour* h, for an *hour-ahead dispatchable load* as described in section 3.5.3 of chapter 7

3.1A Day-ahead Market Settlement Variables and Data

3.1A.1 The *IMO* shall determine various *settlement amounts* for both the *day-ahead market* and *real-time markets* using the price and quantity variables and data described in this section 3.1A and any applicable *real-time market* price and quantity variables and data described in section 3.1.

3.1A.2 The *IMO* shall determine *market prices* for *energy* and *operating reserve* in the *day--ahead market* as provided in Chapter 12 and shall provide the following variables and data from the *day-ahead market*~~,~~ directly to the *settlement process*:

DAM{5}_P_h^m = *Pass* 5 *market price* (in $/MWh) for *energy* applicable to *delivery point* 'm' in *settlement hour* 'h.'

DAM{5}_$PROR_{r,h}^m$ *Pass* 5 *market price* (in $/MW) of class *r* reserve in *settlement hour h* at *delivery point m* or *intertie metering point* m.

Where:

Class r = 1 is 10 minute *synchronized operating reserve*

Class r = 2 is 10 minute non-*synchronized operating reserve*

Class r = 3 is 30 minute *operating reserve*

3.1A.3 The *IMO* shall determine quantities related to *physical transactions* for *energy* in the *day--ahead market* as provided in Chapter 12 and shall provide the following variables and data directly to the *settlement process*:

DAM{2}_$QES_{k,h}^m$ = *Pass* 2 import constrained quantity of *energy* sold by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* at *intertie metering point* m.

In order to avoid the double-counting of the same import of *energy* within the *settlement process*, the *IMO* shall carry out the following calculation:

In any *settlement hour* where a non-zero quantity of *energy* from *Pass 2* is concurrent with a non-zero quantity of *energy* from *Pass 3* at the same *intertie metering point* for the same *market participant* k, the value used for *settlement* purposes shall be:

$DAM\{2\}\_QES_{k,h}^m = MAX(0, DAM\{3\}\_QES_{k,h}^m - DAM\{2^*\}\_QES_{k,h}^m)$

Where :

$DAM\{2^*\}\_QES_{k,h}^m$ is the value originally scheduled in *Pass 2* of the *DAM calculation engine*.

DAM{3}_$QES_{k,h}^m$ = *Pass* 3 constrained quantity of *energy* sold by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* at *delivery point* or *intertie metering point* m.

$DAM\{5\}\_QES_{k,h}^{m}$	=	*Pass* 5 unconstrained quantity of *energy* sold by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* at *delivery point* or *intertie metering point* m.
$DAM\{3\}\_QEB_{k,h}^{m,lcid}$	=	*Pass* 3 constrained quantity of *energy* bought by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* at *delivery point* or *intertie metering point* m for a specific *load component*.
$DAM\{5\}\_QEB_{k,h}^{m,lcid}$	=	*Pass* 5 unconstrained quantity of *energy* bought by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* at *delivery point* or *intertie metering point* m for a specific *load component*.

3.1A.4 The *IMO* shall determine quantities related to *virtual transactions* for *energy* in the *day--ahead market* as provided in Chapter 12 and shall provide the following variables and data from the *day-ahead market*, directly to the *settlement process*:

$DAM\{5\}\_QESV_{k,h}$	=	*Pass* 5 unconstrained quantity of *energy* sold by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* as part of a *virtual transaction*
$DAM\{5\}\_QEBV_{k,h}$	=	*Pass* 5 unconstrained quantity of *energy* bought by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* as part of a *virtual transaction*

3.1A.5 The *IMO* shall determine quantities related to *physical transactions* for *operating reserve* in the *day--ahead market* as provided in Chapter 12 and shall provide the following variables and data from the *day-ahead market*, directly to the *settlement process*:

$DAM\{2\}\_DQSR_{r,k,h}^{m}$ = *Pass* 2 constrained quantity of class r *operating reserve* sold by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* at *intertie metering point* m.

In order to avoid the double-counting of the same import of *operating reserve* within the *settlement* process, the *IMO* shall carry out the following calculation:

In any *settlement hour* where a non-zero quantity of *operating reserve* from *Pass 2* is concurrent with a non-zero quantity of *operating reserve* from *Pass 3* at the same *intertie metering point* for the same *market participant* k, the value used for *settlement* purposes shall be:

$DAM\{2\}\_DQSR_{r,k,h}^{m} = MAX(0, DAM\{3\}\_DQSR_{r,k,h}^{m, lcid} - DAM\{2^*\}\_DQSR_{r,k,h}^{m})$

Where :

$DAM\{2^*\}\_DQSR_{r,k,h}^{m}$ is the value originally scheduled in *Pass 2* of the *DAM calculation engine*.

$DAM\{3\}\_DQSR_{r,k,h}^{m, lcid}$ = *Pass* 3 constrained quantity of scheduled *class r reserve* sold by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* at *delivery point* or *intertie metering point* m or from a specific *load component*.

$DAM\{5\}\_SQROR_{r,k,h}^{m, lcid}$ = *Pass* 5 unconstrained quantity of *class r reserve* sold by *market participant* k on the *pre-dispatch day* for *settlement hour* h on the *dispatch day* at *delivery point* or *intertie metering point* m or from a specific *load component*.

3.1A.6 The *IMO* shall provide the following forecast load variable used in *Pass* 2 of the *DAM calculation engine* for each *settlement hour* directly to the *settlement process:*

$DAM\{2\}\_FORECAST_{h}$ = The forecast quantity of *energy* (in MWh) used in the *day-ahead market* to approximate *real-time market* consumption in *Pass* 2 of the *DAM calculation engine* for *settlement hour* h.

3.1A.7 The *IMO* shall provide the following *DAM calculation engine* event indicators signifying commitments made for *generation facility* start-up events and load reduction events for *price responsive load components* for each *settlement hour* directly to the *settlement process:*

DAM{1}_START$_{k,h}^{m}$	≡	The *DAM calculation engine Pass* 1 indicator in the *day-ahead market* to *market participant* k to start *generation facility k/m* during the corresponding *settlement hour* 'h' in the *real-time market*.
DAM{2}_START$_{k,h}^{m}$	≡	The *DAM calculation engine Pass* 2 indicator in the *day-ahead market* to *market participant* k to start *generation facility k/m* during the corresponding *settlement hour* 'h' in the *real-time market*.
DAM{1}_STOP$_{k,h}^{m, lcid}$	≡	The *DAM calculation engine Pass* 1 indicator in the *day-ahead market* to *market participant* k to reduce consumption at location 'm' for a specific *price-responsive load component* during the corresponding *settlement hour* 'h' in the *real-time market*.
DAM{2}_STOP$_{k,h}^{m, lcid}$	≡	The *DAM calculation engine Pass* 2 indicator in the *day-ahead market* to *market participant* k to reduce consumption at location 'm' for a specific *price-responsive load component* during the corresponding *settlement hour* 'h' in the *real-time market*.

3.1A.8 The *IMO* shall provide the following de-commitment event indicators signifying the de-commitment of g*eneration facility* start-up events as described in chapter 7, section 3.10 for each *settlement hour* directly to the *settlement process:*

DCOM_IMO$_{k,h}^{m}${Type 1}	≡	Indicates that a resource was de-committed between the *day-ahead market* and *real-time market* at the request of the *IMO* at *delivery point* 'm' during *settlement hour* 'h' This flag is used for situations where real-time *offers* or *bids* are removed at the request of the *IMO*
DCOM_IMO$_{k,h}^{m}${Type 2}	≡	Indicates that a *generation facility* was de-committed between the *day-ahead market* and *real-time market* at the request of the *IMO* at *delivery point* 'm' during *settlement hour* 'h' This flag is used for situations where the *IMO* constrains a *generation facility* below its *minimum generation level* for *reliability* purposes .

3.1A.9 *Physical bilateral contract quantities* shall be determined for each *settlement hour* in the *day--ahead market* by the IMO using *physical bilateral contract data* submitted by *selling market participants*. The *IMO* shall provide the following variables and data directly to the *settlement process*:

$DAM\_BCQ_{s,b,h}^{m,\ lcid}$ = *physical bilateral contract quantity* of *energy* (in MWh) sold by *selling market participant* 's' to *buying market participant* 'b' at *delivery point* or *intertie metering point* m or at a specific *load conmponent* for each *metering interval* 't' in *settlement hour* 'h'

3.1A.10 The *IMO* shall calculate the following quantities of load reduction *for price responsive load components* using data received from the *DAM calculation engine* as described in section 3.1A.3 and data elements from the corresponding *energy bid* data submitted in the *day--ahead market* by the *market participant:*

$DAM\{3\}\_QLR_{k,h}^{m,lcid}$ = The *DAM calculation engine* constrained ~~p~~*Pass* 3 load reduction quantity of energy (in MWh) provided by *market participant* 'k' ~~at~~ from a *price responsive load component* at *delivery point* 'm' in *settlement hour* h.

= $DAM\_BL\_MAX - DAM\{3\}\_QEB_{k,h}^{m,\ lcid}$

Where:

DAM_BL_MAX is the *maximum level of load reduction* indicated in the *bid* matrix 'BL' in the *day--ahead market* for a *price-responsive load component*

$DAM\{5\}\_QLR_{k,h}^{m,lcid}$ The *DAM calculation engine* constrained *Pass* 5 load reduction quantity of *energy* (in MWh) provided by *market participant* 'k' from a *price responsive load component* ('lcid') at *delivery point* m in *settlement hour* h.

$DAM\_BL\_MAX - DAM\{5\}\_QEB_{k,h}^{m,lcid}$

Where:

DAM_BL_MAX is the *maximum level of load reduction* indicated in the *bid* matrix 'BL' in the *day--ahead market* for a *price-responsive load component*

~~3.2~~3.2 Hourly Settlement Amounts in the Energy Forward Market

3.2.1 ~~The hourly net *energy forward market settlement* credit (debit if negative) for *market participant* k ("$NFMSC_{k,h}$") shall be determined by the following equation:~~

~~(c)$FMQS_{k,h}$ × (FMP_h – $HOEP_h$)~~

[Intentionally left blank]

3.2A The Two-Settlement System

3.2A.1 The *IMO* shall operate a *two settlement system* to support the *settlement* of:

3.2A.1.1 the *real-time market*;

3.2A.1.2 the *day-ahead market*; and

3.2A.1.3 *transmission rights* held by *TR holders*;

3.2A.2 The *two-settlement system* shall consist of:

3.2A.2.1 A *first settlement* process for the calculation of *settlement amounts* set out in section 3.3A; and

3.2A.2.2 A *second settlement* process for the calculation of *settlement amounts* enumerated in section 3.4A.

3.2A.3 The *two settlement system* does not apply to *settlement amounts* related to the *settlement* of the auction of *transmission rights* on the weekly *settlement* cycle described in section 6.3.

3.3 ~~Hourly Settlement Amounts in the Real-Time Energy Market~~[Intentionally left blank]

3.3.1 ~~The hourly net *energy market settlement* credit for *market participant* k in *settlement hour* h ("$NEMSC_{k,h}$") shall be determined by the appropriate equations set forth in section 3.3.2 and where applicable, in accordance with section 2.1.2 of Chapter 8.~~ [Intentionally left blank]

3.3.2 ~~For market participant k, $NEMSC_{k,h}$ shall be the sum, over all metering intervals t in settlement hour h and all RWMs and intertie metering points, of the settlement~~

amounts determined for each metering interval and RWMs or intertie metering point, as follows: [Intentionally left blank]

3.3.2.1 in respect of a *dispatchable facility* or *intertie metering point*: [Intentionally left blank]

$NEMSC_{k,h} = \Sigma_{t,m} (EMP_h^{m,t} \times ((AQEI_{k,h}^{m,t} - AQEW_{k,h}^{m,t}) + \Sigma_{s,b} (BCQ_{s,k,h}^{m,t} - BCQ_{k,b,h}^{m,t})))$

where:

t = all *metering intervals* in *settlement hour* h

m = all *RWMs* relating to a *dispatchable facility* and all *intertie metering points*

s = all *selling market participants*

b = all *buying market participants*

and

3.3.2.2 in respect of a non-dispatchable load facility, an hour-ahead dispatchable load, a self-scheduling generation facility, a transitional scheduling generator or intermittent generator. [Intentionally left blank]

$NEMSC_{k,h} = HOEP_h \times \Sigma_{t,m} (AQEI_{k,h}^{m,t} - AQEW_{k,h}^{m,t} + \Sigma_s BCQ_{s,k,h}^{m,t}) - \Sigma_{n,b,t} (EMP_h^{n,t} \times BCQ_{k,b,h}^{n,t})$

where:

m = all *RWMs* relating to a *non-dispatchable load facility*, an *hour-ahead dispatchable load*, a *self-scheduling generation facility*, a *transitional scheduling generator* or *intermittent generator*

n = all *RWMs* and *intertie metering points*

s = all *selling market participants*

b = all *buying market participants*

t = all *metering intervals* in *settlement hour* h

3.3.3 [Intentionally left blank]

3.3A ~~Hourly~~ First Settlement Amounts ~~in the Real-Time Energy Market~~

3.3A.1 The *first settlement* process shall involve the calculation of the following *settlement amounts*:

3.3A.1.1 the *first settlement* calculation of the Hourly Physical Transaction Settlement Amount (HPTSA);

3.3A.1.2 the *first settlement* calculation of the Hourly Virtual Transaction Settlement Amount (HVTSA);

3.3A.1.3 the *first settlement* calculation of the DAM Hourly Operating Reserve Settlement Amount (HORSA);

3.3A.1.4 the *first settlement* calculation of DAM Congestion Management Settlement Credit (CMSC{1}); and

3.3A.1.5 the *first settlement* calculation of DAM Production Cost Guarantees (PCG{1}).

3.3A.2 No *settlement amounts* calculated in the *first settlement* process shall be included on an *invoice* or otherwise represent an obligation for payment on the part of the *IMO* or a *market participant* unless such *settlement amounts* have been either:

3.3A.2.1 included on *preliminary settlement statements* issued as part of the *second settlement* process; or

3.3A.2.2 incorporated into the applicable *settlement amounts* from the *second settlement* process.

3.3A.3 The *IMO* may use any subsequent data corrections, refinements or other relevant information to refine any *settlement amounts* from the *first settlement* process~~,~~ before any *settlement amounts* that are based on *settlement amounts* from the *first settlement* process are included in the *second settlement* process.

3.3B First Settlement – Hourly Physical Transaction Settlement Amount

3.3B.1 The Hourly Physical Transaction Settlement Amount (HPTSA) calculated in the *first settlement* process reflects the intermediate *settlement* calculation of *physical transactions* for *energy* and any *physical bilateral contracts* from the *day*-~~-ahead~~ *market* as determined by schedules and prices. The calculation of the Hourly Physical Transaction Settlement Amount in the *first settlement* process does include any reconciliation of a *market participant's* activity in the *day*-~~-ahead~~ *market* for *energy* with actual activity in the *real-time market.* The integrated

settlement of *energy* between the *day-ahead market* and the *real-time market* shall be calculated by the *IMO* as part of the *second settlement* process within the *second settlement* HPTSA described in section 3.4B.

3.3B.2 The Hourly Physical Transaction Settlement Amount calculated in the *first settlement* process for *market participant* k in *settlement hour* h ("HPTSA$\{1\}_{k,h}$") shall be determined by the appropriate equations set out in section 3.3B.3.

3.3B.3 For *market participant* k, HPTSA$\{1\}_{k,h}$ shall be the sum of all *settlement amounts* determined for all *settlement hours* h and all *delivery points*, *load components*, and *intertie metering points* as follows:

3.3B.3.1 in respect of a *generation facility* or *intertie metering point* other than those import transactions listed in section 3.3B.3.2:

$$HPTSA\{1\}_{k,h} \equiv \sum^{M}[(DAM\{3\}\_QES_{k,h}^{m} - DAM\{3\}\_QEB_{k,h}^{m}) \times (DAM\{5\}\_P_{h}^{m})]$$

where:

M is the set of all *delivery points* associated with a *generation facility* and *intertie metering points* 'm'.

And,

3.3B.3.2 in respect of all import transactions scheduled in *Pass* 2 of the *DAM calculation engine* and not subsequently scheduled in *Pass* 3 or *Pass* 5 of the *DAM calculation engine*:

$$HPTSA\{1\}_{k,h} \equiv \sum^{M}[(DAM\{2\}\_QES_{k,h}^{m}) \times (DAM\{5\}\_P_{h}^{m})]$$

where:

M is the set of all *intertie metering points* 'm'

$DAM\{2\}\_QES_{k,h}^{m}$ does not intersect with the set of all *Pass* 3 and *Pass* 5 import transactions for *energy* in the manner described in section 3.1A.3

3.3B.3.3 in respect of all *price sensitive load components* and *price responsive load components*:

$HPTSA\{1\}_{k,h} = \sum^{M,LCID}[(DAM\{3\}\_QES_{k,h}^{m,lcid} - DAM\{3\}\_QEB_{k,h}^{m,lcid} - DAM\{5\}\_QEB_{k,h}^{m,lcid}) \times (DAM\{5\}\_P_h^m)]$

Where:

M is the set of all *delivery points* 'm' pertaining to *load facilities* containing any allowable combination of *price sensitive load components* and *price responsive load components*.

LCID is the set of all *load component IDs* 'lcid' associated with the set of *delivery points* 'M'

$DAM\{5\}\_QEB_{k,h}^{m,lcid}$ belongs to the set of quantities of *energy* bought by *price sensitive load components* in the *day-ahead market*

$DAM\{3\}\_QEB_{k,h}^{m,licd}$ belongs to the set of quantities of *energy* bought by *price responsive load components* in the *day-ahead market*

and,

3.3B.3.4 in respect of all *physical bilateral contracts* in the *day–ahead market*:

$HPTSA\_PBC\{1\}_{k,h} = \sum^{M,LCID}[DAM\{5\}\_P_h^{m,} \times (\sum_S DAM\_BCQ_{s,k,h}^{m,lcid} - \sum_B DAM\_BCQ_{k,b,h}^{m,lcid})]$

M is the set of all *delivery points* and *intertie metering points* 'm'

LCID is the set of all *load component IDs*, 'lcid' associated with any applicable *delivery points* within the set 'M' which are associated with a *load facility*

'S' is the set of all *selling market participants* 's'

'B' is the set of all *buying market participants* 'b'

3.3C First Settlement – DAM Hourly Virtual Transaction Settlement Amount

3.3C.1 The hourly Virtual Transaction Settlement Amount (HVTSA) calculated in the *first settlement* process reflects the intermediate *settlement* calculation of *virtual transactions* for *energy* as determined by schedules and prices from the *day-ahead market* and prices from the *real-time market*. The formulation of the *first settlement* and *second settlement* DAM Hourly Virtual Transaction Settlement Amount are identical.

3.3C.2 The DAM Hourly Virtual Transaction Settlement Amount calculated in the *first settlement* process for *market participant* k in *settlement hour* h ("$HVTSA\{1\}_{k,h}$") is formulated as follows:

$HVTSA\{1\}_{k,h}$ = $\sum^{M}(DAM\{5\}\_QESV_{k,h}^{m} - DAM\{5\}\_QEBV_{k,h}^{m}) \times (DAM\{5\}\_P_{h}^{m} - HOEP_{h})$

where:

M is the set of all *delivery points* and *intertie metering points* 'm'

3.3D First Settlement – DAM Hourly Operating Reserve Settlement Amount

3.3D.1 The Hourly Operating Reserve Settlement Amount calculated in the *first settlement* process reflects the value of *physical transactions* for *operating reserve* as determined by schedules and prices from the *day-ahead market*. The calculation of the Hourly Operating Reserve Settlement Amount in the *first settlement* process does not account for any reconciliation of a *market participant's* activity with respect to *operating reserve* in the *day-ahead market* with actual activity in the *real-time market*. The integrated *settlement* of *operating reserve* between the *day-ahead market* and the *real-time market* shall be calculated by the *IMO* as part of the *second settlement* process within the *second settlement* Hourly Operating Reserve Settlement Amount described in section 3.4D.

3.3D2 The Hourly Operating Reserve Settlement Amount calculated in the *first settlement* process for *market participant* k in *settlement hour* h ("$HORSA\{1\}_{k,h}$") shall be determined as follows:

3.3D.2.1 in respect of all *delivery points* and *intertie metering points*, other than import transactions scheduled in *Pass* 2 of the *DAM calculation engine* and not subsequently scheduled in *Pass* 3 or *Pass* 5 of the *DAM calculation engine*:

$HORSA\{1\}_{k,h}$ = $\sum^{M,LCID} DAM\{5\}\_PROR_{r,h}^{m} \times DAM\{3\}\_DQSR_{r,k,h}^{m,lcid}$

Where:

M is the set of all *delivery points* and *intertie metering points* 'm'

LCID is the set of all *load component ID's* associated with the set of *delivery points* 'M'

3.3D.2.2 in respect of all import transactions scheduled in *Pass* 2 of the *DAM calculation ~~E~~engine* and not subsequently scheduled in *Pass* 3 or *Pass* 5 of the *DAM calculation engine*:

$$HORSA\{1\}_{k,h} = \sum^{M} DAM\{5\}\_PROR_{r,h}^{m} \times DAM\{2\}\_DQSR_{r,k,h}^{m}$$

Where:

M is the set of all *delivery points* and *intertie metering points* 'm'

$DAM\{2\}\_DQSR_{r,k,h}^{m}$ Does not intersect with the set of all PASS 3 import transactions for *operating reserve* in the manner described in section 3.1A.5

3.3E First Settlement – DAM Congestion Management Settlement Credits

3.3E.1 The *constrained schedule* from *Pass* 3 of the *DAM calculation engine* issued by the *IMO* to *market participant* k will sometimes instruct k to deviate from its *unconstrained schedule* from *Pass* 5 of the *DAM calculation engine* in ways that, based on *market participant* k's *offers* and *bids*, imply a change to *market participant* k's net operating profits relative to the operating profits implied by *market participant* k's *unconstrained schedule*. When this occurs, *market participant* k shall, subject to the balancing of congestion management settlement credits in the *second settlement* process described in section 3.4F, receive as compensation a *settlement* credit equal to the change in implied operating profits resulting from such deviation in schedules, calculated in accordance with section 3.3E.2.

3.3E.2 The hourly Congestion Management Settlement Credit ($D\_CMSC\{1\}_{k,h}$) in the *day–ahead market* for *market participant* k for *settlement hour* h ("$CMSC\{1\}_{k,h}$") shall be determined by the following equation:

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

Let 'DAM_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 'DAM_BL' be either:

a matrix of n *price-quantity pairs* bid by *market participant* k to withdraw *energy* by means of an export transaction during *settlement hour* h; or

a matrix of n *price-quantity pairs* bid by *market participant* k to provide load reduction capability from a *price responsive load component* during *settlement hour* h;

as the case may be.

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, $Q_0=0$ and B is matrix BE, BR_r, or BL (see above) – except in the case *of price responsive load components* where all *price-quantity pairs* in *bid* matrix for *energy* DAM_ BL shall be arranged in reverse order such that they are monotonically increasing by the price in each *price-quantity pair* and maintaining the relationship: $Q_{s^*} \leq Q \leq Q_n$ where, $Q_0=0$

Using the terms below, let DAM $CMSC\{1\}_{k,h}$ be expressed as follows:

$$CMSC\{1\}_{k,h} = D\_OPE_{k,h} + D\_OPR_{k,h} + D\_OPL_{k,h} + D\_OPEX_{k,h}$$

Where:

$D\_OPE_{k,h}$ represents that component of the congestion management settlement credit from the *day–ahead market* for *market participant* k during *settlement hour* h attributable to a constraint on the provision of *energy*. In the case of a *generation facility* subject to a de-commitment pursuant to chapter 7, section 3.10, the value of the constrained schedule for *energy* will be set to the facility's offered, *minimum generation level* in order to ensure that this CMSC *settlement amount* does not duplicate any profit protection already afforded to the *market participant* through a production cost guarantee as outlined in section 3.3F. This portion of the *settlement amount* ~~and~~ is calculated as follows:

$D\_OPE_{k,h} = \sum^{M} [OP(DAM\{5\}\_P_h^m, DAM\{5\}\_QES_{k,h}^m, DAM\_BE) - OP(DAM\{5\}\_P_h^m, MAX[\textit{minimum generation level}, DAM\{3\}\_QES_{k,h}^m], DAM\_BE)]$

Where:

M is the set of all *delivery points* and *intertie metering points* 'm'.

$D\_OPR_{k,h}$ represents that component of the congestion management settlement credit from the *day-ahead market* for *market participant* k during *settlement hour* h attributable to a constraint on the provision of *operating reserve* and is calculated as follows:

$D\_OPR_{k,h} = \sum^{M} [OP(DAM\{5\}\_PROR_{r,h}^m, DAM\{5\}\_SQROR_{r,k,h}^m, DAM\_BR_r) - OP(DAM\{5\}\_PROR_{r,h}^m, DAM\{3\}\_DQSR_{r,k,h}^m, DAM\_BR_r)]$

Where:

M is the set of all *delivery points* and *intertie metering points* 'm'.

$D\_OPL_{k,h}$ represents that component of the congestion management settlement credit from the *day-ahead market* for *market participant* k during *settlement hour* h attributable to *price-responsive load components* that are registered to submit *multi-part bids* and are scheduled in the *day-ahead market* to provide load reduction calculated as follows:

$D\_OPL_{k,h} = \sum^{M,LCID} [OP(DAM\{5\}\_P_h^m, DAM\{5\}\_QLR_{k,h}^{m,lcid}, DAM\_BL) - OP(DAM\{5\}\_P_h^m, DAM\{3\}\_QLR_{k,h}^{m,lcid}, DAM\_BL)]$

Where:

For the purposes of this calculation, all *price-quantity pairs* in *bid* matrix for *energy* DAM_BL shall be arranged in reverse order such that they are monotonically increasing by the *price* in each *price-quantity pair*. and maintaining the relationship: $Q_{s^*} \leq Q \leq Q_n$ where, $Q_0=0$

M is the set of all *delivery points* 'm' pertaining to *price-responsive loads* that are eligible to submit *multi-part bids*.

LCID is the set of all *load component ID's* associated with the set of *delivery points*

$D\_OPEX_{k,h}$ represents that component of the congestion management settlement credit from the *day-ahead market* for *market participant* k during *settlement hour*

h attributable to export transactions scheduled in the *day-ahead market* calculated as follows:

$$D\_OPEX_{k,h} = \sum^{M} [OP(DAM\{5\}\_P_h^m, DAM\{5\}\_QEB_{k,h}^m, DAM\_BL) - OP(DAM\{5\}\_P_h^m, DAM\{3\}\_QEB_{k,h}^m, DAM\_BL)]$$

Where:

M is the set of all *intertie metering points* 'm'

3.3E.3 Subject to section 5.3.4 of Chapter 5, where $D\_CMSC\{1\}_{k,h}$ is calculated at an *intertie metering point* at which a *market participant* is conducting an import or export transaction for a *physical service* that is subject to a *constrained off event* that is reflected in a *constrained schedule* determined in *Pass* 3 of the *DAM calculation engine* and is issued by the *IMO* as a result of a request initiated by an entity other than the *IMO*, the *IMO* shall not calculate any portion of $D\_CMSC\{1\}_{k,h}$ pertaining to the affected transaction for those *settlement hours* h in which such conditions exist, and for greater certainty, during any *settlement hour* in which:

3.3E.3.1 $DAM\{5\}\_QES_{k,h}^m$ is not equal to $DAM\{3\}\_QES_{k,h}^m$ as a result of such a *constrained off event*;

3.3E.3.2 $DAM\{5\}\_SQROR_{r,k,h}^m$ is not equal to $DAM\{3\}\_SQROR_{r,k,h}^m$ as a result of such a *constrained off event*;

3.3E.3.3 $DAM\{5\}\_DAM\{5\}\_QEB_{k,h}^m$ is not equal to $DAM\{3\}\_QEB_{k,h}^m$ as a result of such a *constrained off event*;

and irrespective of whether or not a *constrained on event* or a *constrained off event* was affecting the transaction in any preceding *metering interval*.

3.3E.4 The *IMO* shall adjust, in the matrices specified in section 3.3E.2 and for the purposes of determining the applicable congestion management *settlement* credit payments in the *day-ahead market*, any *offer price* from the *day ahead market* that:

3.3E.4.1 is associated with a *generation facility* located within Ontario or is associated with an injecting *boundary entity*; and

3.3E.4.2 is less than a specified lower limit where such limit is the lesser of 0.00 $/MWh and the *market price* for *energy* for the applicable *settlement hour* in the *day-ahead market*;

to that lower limit.

3.3F First Settlement – DAM Production Cost Guarantees

3.3F.1 The calculation in the *first settlement* process of production cost guarantees is potentially available to any *physical transaction* in the *day-ahead market*, other than export transactions, *price sensitive load components* and *generation facilities* under any contractual relationships for the provision of certain *ancillary services* to the *IMO-administered markets* where the right to a production cost guarantee is waived. The purpose of the production cost guarantee is to guarantee that the activity of a given *facility*, *load component* or import transaction does not incur a financial loss over the course of the day to which each operation of the *DAM calculation engine* applies. This assessment as to whether or not a financial loss has occurred is based upon the various costs and revenues set out in sections 3.3F.2 to 3.3F.4

3.3F.2 In the case of *generation facilities* and import transactions, the following costs and revenues shall be considered in the calculation of *production cost guarantees*:

3.3F.2.1 all revenues associated with the provision of *energy* and *operating reserve* in the *day-ahead market*;

3.3F.2.2 congestion management settlement credits determined in the *first settlement* process; and

3.3F.2.2 all costs of production included in *multi-part offers.*

3.3F.3 In the case of *price-responsive load components*, such costs and revenues include:

3.3F.3.1 all revenues associated with the provision of *load reduction* and *operating reserve* in the *day-ahead market*;

3.3F.3.2 congestion management settlement credits determined in the *first settlement* process; and

3.3F.3.3 all costs of *load reduction* included in *multi-part bids.*

3.3F.4 *Production cost guarantees* may be reduced by the extent to which the *facility* or import transaction actually provides the scheduled~~,~~ minimum level of *energy* or *load reduction* during the corresponding hours in the *real-time market*. This reduction is called the DAM PCG Commitment Adjustment and is described in section 3.4H.

3.3F.5 That portion of the production cost guarantee that is applicable to all eligible *generation facilities* and import transactions, other than those import transactions committed in *Pass* 2 of the *DAM calculation engine*, is formulated as follows:

$PCG\{1\}_{k,h}^{m}$ = -1 x MIN [0, All revenues implied by *physical transactions* and congestion management settlement credits determined in the *first settlement* process associated with the *facility* over the course of the *trading day* – all costs associated with the *facility* over the course of the *trading day*]

$PCG\{1\}_{k,h}^{m}$ = -1 x MIN [0, (*energy* revenues) + (*operating reserve* revenues) – (incremental *energy* costs) – (incremental *operating reserve* costs) – (*start-up costs*) – (*minimum generation costs*) + (congestion management settlement credits determined in the *first settlement* process)]

$$PCG\{1\}_{k,h}^{m} = -1 \times MIN[0, \sum_{H}[DAM\{3\}\_QES_{k,h}^{m} \times (DAM\{5\}\_P_{h}^{m})$$
$$+ \sum_{R} DAM\{5\}\_PROR_{r,h}^{m} \times DAM\{3\}\_DQSR_{r,k,h}^{m,t}$$
$$- \sum_{i=1}^{s^*} P_i(Q_i - Q_{i-1}) - (DAM\{3\}\_QES_{k,h}^{m} - Q_{s^*}) \times P_{s^*+1}$$
$$- \sum_{i=1}^{s^*} P_i(Q_i - Q_{i-1}) - (DAM\_DQSR_{r,k,h}^{m,t} - Q_{s^*}) \times P_{s^*+1}]$$
$$- \sum_{a}(DAM\_BE\_SC_{h}) - \sum_{b}(DAM\_BE\_MGC_{h})$$
$$+ \sum_{H} D\_CMSC\{1\}_{k,h}^{m}]$$

Where:

s^* is the highest indexed row of matrix DAM_BE such that $Q_{s^*} \leq DAM\_QES \leq Q_n$ and where, $Q_0=0$ or s^* is the highest indexed row of matrix DAM_BR_r such that $Q_{s^*} \leq DAM\_DQSR_{r,k,h}^{m,t} \leq Q_n$ and where, $Q_0=0$

'a' is the set of start-up events for the *facility* or import transaction for each *settlement hour* where $DAM\{1\}\_START_{k,h}^{m}$ or $DAM\{2\}\_START_{k,h}^{m}$ is greater than zero

b is the set of *settlement hours* where the *facility* or import transaction was scheduled in the *trading day*

R is the set of all classes 'r' of *operating reserve*

H is the set of all *settlement hours* h in the *trading day*

$D\_CMSC_{k,h}^{m}$ is a congestion management settlement credit *settlement amount* from the *first settlement* process received by *market participant* 'k' at location 'm' during *settlement hour* 'h'

$DAM\_BE\_SC_h$ is any *startup cost* associated with a *multi-part offer* for a given *settlement hour* 'h'

$DAM\_BE\_MGC_h$ is any *minimum generation cost* associated with a *multi-part offer* for a given *settlement hour* 'h'

3.3F.6 That portion of the production cost guarantee applicable to import transactions committed in *Pass* 2 of the *DAM calculation engine* and not scheduled in any subsequent passes and is formulated as follows:

$PCG\{1\}_{k,h}^{m}$ = -1 x MIN [0, All revenues from *physical transactions* and congestion management settlement credit *settlement amounts* from the *first settlement* process associated with the transaction – all costs associated with the transaction]

$$PCG\{1\}_{k,h}^{m} = -1 \times MIN\left[0, \sum_{H}[DAM\{2\}\_QES_{k,h}^{m} \times DAM\{5\}\_P_{h}^{m} - \sum_{i=1}^{s^*} P_i(Q_i - Q_{i-1}) - (DAM\{2\}\_QES - Q_{s^*}) \times P_{s^*+1}]\right]$$

Where:

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

R is the set of all classes 'r' of *operating reserve*

H is the set of all *settlement hours* 'h' in the *trading day*

$D\_CMSC\{1\}_{k,h}^{m}$ is a CMSC *amount* from the *first settlement* process received by *market participant* 'k' at location 'm' during *settlement hour* h

3.3F.7 That portion of the production cost guarantee applicable to *price-responsive load components* is formulated as follows:

$PCG\{1\}_{k,h}^{m}$ = -1 x MIN [0, All avoided costs associated with the *price responsive load component* – all costs associated with the *price responsive load component*]

$PCG\{1\}_{k,h}^{m}$ = -1 x MIN [0, (value of load reduction quantity) + (*operating reserve* revenues) – (incremental *energy* costs) – (incremental *operating reserve* costs) – (fixed load reduction costs) – (ongoing cost of minimum load reduction) + (CMSC *settlement amounts* from the *first settlement* process)]

$$PCG\{1\}_{k,h}^{m} = -1 \times MIN\left[0, \sum_{H}[DAM\{3\}\_QLR_{k,h}^{m,lcid} \times (DAM\{5\}\_P_{h}^{m} + \sum_{R} DAM\{5\}\_PROR_{r,h}^{m,lcid} \times DAM\{3\}\_DQSR_{r,k,h}^{m,lcid,t} - \sum_{i=1}^{s^*} P_i(Q_i - Q_{i-1}) - (DAM\{3\}\_QLR_{k,h}^{m,lcid} - Q_{s^*}) \times P_{s^*+1}\right]$$

$$- \sum_{i=1}^{s^*} P_i(Q_i - Q_{i-1}) - (DAM\_DQSR_{r,k,h}^{m,lcid,t} - Q_{s^*}) \times P_{s^*+1}]$$

$$- \sum_a (DAM\_BL\_LRC_h) - \sum_b (DAM\_BL\_OLRC_h)$$

$$+ \sum_H D\_CMSC\{1\}_{k,h}^{m}]$$

Where:

For the purposes of this calculation, all *price-quantity pairs* in the *energy bid* matrix DAM_BL shall be arranged in reverse order such that they are monotonically increasing by the price in each *price-quantity pair*.

s* is the highest indexed row of matrix DAM_BL such that $Q_{s^*} \leq DAM\_QLR \leq Q_n$ and where, $Q_0=0$ or s* is the highest indexed row of matrix DAM_BR_r such that $Q_{s^*} \leq DAM\_DQSR_{r,k,h}^{m,t} \leq Q_n$ and where, $Q_0=0$

'a' is the set of load reduction events $DAM\{1\}\_STOP_{k,h}^{m}$ and $DAM\{1\}\_STOP_{k,h}^{m}$ as described in section 3.1A.7 for the *price-responsive load* in each *settlement hour* of the *trading day* where $DAM\{1\}\_STOP_{k,h}^{m}$ or $DAM\{2\}\_STOP_{k,h}^{m}$ is greater than zero.

'b' is the set of *settlement hours* the *price responsive load component* was scheduled to provide load reduction in the *trading day*

R is the set of all classes 'r' of *operating reserve*

H is the set of all *settlement hours* h in the *trading day*

$D\_CMSC\{1\}_{k,h}^{m}$ is a CMSC *settlement amount* from the *first settlement* process received by *market participant* 'k' at location 'm' during *settlement hour* 'h'

$DAM\_BL\_LRC_h$ is the *load reduction cost* for *settlement hour* h as provided by the *market participant* in *day-ahead market* bid 'DAM_BL'

$DAM\_BL\_OLRC_h$ is the *ongoing cost of minimum load reduction* for *settlement hour* h as provided by the *market participant* in *day-ahead market* bid 'DAM_BL'

3.4 Hourly Settlement Amounts for Operating Reserve

3.4.1 [Intentionally left blank] ~~The hourly *operating reserve settlement* credit for *market participant* k in *settlement hour* h ("$ORSC_{k,h}$") shall be determined by the following equation:~~

~~$ORSC_{k,h} = \Sigma_{m,t,r} PROR_{r,h}^{m,t} \times AQOR_{r,k,h}^{m,t}$,~~

~~where:~~

~~m = all *primary RWM's* and *intertie metering points*~~

~~t = all *metering intervals* in *settlement hour* h~~

~~r = 1 for *ten-minute reserve*,~~

~~= 2 for *thirty-minute reserve*~~

3.4A5 Second Settlement Amounts

3.4A.1 The *second settlement* process shall include the calculation of the following *settlement amounts*:

3.4A.1.1 the Hourly Physical Transaction Settlement Amount (HPTSA);

3.4A.1.2 restating the latest calculation of the Hourly Virtual Transaction Settlement Amount (HVTSA) from the *first settlement* process;

3.4A.1.3 the DAM Hourly Operating Reserve Settlement Amount (HORSA);

3.4A.1.4 restating the latest calculation of the DAM Congestion Management Settlement Credit (CMSC{1}) *settlement amounts* from the *first settlement* process;

3.4A.1.5 the amount required to balance congestion management settlement credit *settlement amounts* (CMSC{2}) from the *second settlement* process;

3.4A.1.6 restating the latest calculation of production cost guarantees (PCG{1}) from the *first settlement* process.

3.4A.1.7 the *DAM* Production Cost Guarantee Commitment Adjustment (PCG-CA).

3.4A.1.8 *Transmission Rights*

3.4A.1.9 A Transmission Charge Reduction Fund (TCRF) which accounts for congestion rents spanning both the *day-ahead market* and *real-time markets*;

3.4A.1.10 the *DAM* Bid Load Commitment Uplift

3.4A.1.11 the *DAM* Forecast Load Commitment Uplift

3.4A.1.12 the *DAM* Forecast Load Accuracy Uplift

3.4A.1.13 the *DAM Pass* 2 Import Uplift

3.4A.1.14 the Net *DAM* Balancing Allocation Uplift

3.4A.1.15 the Operating Reserve Uplift;

3.4A.1.16 the CMSC Uplift; and

3.4A.1.17 all other *settlement amounts* enumerated in these *market rules*, other than those calculated in the *first settlement* process and the *settlement* of auctions of *transmission rights*.

3.4A.2 All *settlement amounts* calculated as part of the *second settlement* process may be subject to the *notice of disagreement* provisions of section 6.6.

3.4B Second Settlement – Hourly Physical Transaction Settlement Amount

3.4B.1 The *second settlement* formulation of the Hourly Physical Transaction Settlement Amount provides for the integrated *settlement* of *physical transactions* for *energy* and combines:

3.4B.1.1 the position for *energy* taken by the *market participant* in the *day-ahead market* at all applicable locations for each *settlement hour*;

3.4B.1.2 the position for *energy* taken by the *market participant* in the *real-time market* at all applicable locations for each *settlement hour*;

3.4B.1.3 the value of all *physical bilateral contracts* from the *day--ahead market* bought and/or sold by the *market participant* at all applicable locations for each *settlement hour*; and,

3.4B.1.4 the value of all *physical bilateral contracts* from the *real-time markets* bought and/or sold by the *market participant* at all applicable locations for each *settlement hour*;

as described in sections 3.4B.2 to 3.4B.5. The sum of these components constitutes the total Hourly Physical Transaction Settlement Amount applicable to each *market participant* for a given *settlement hour*.

3.4B.2 That portion of the Hourly Physical Transaction Settlement Amount from the *second settlement* process applicable to *generation facilities*, import transactions and export transactions which are bound to the constrained *energy* schedule from *Pass* 3 of the *DAM calculation engine* is formulated as follows:

$HPTSA\{2\}_{k,h}$ = $HPTSA\{1\}$ + [*second settlement* balancing component for dispatchable *delivery points* and *intertie metering points*] + [*second settlement* balancing component for non-dispatchable *delivery points*]

$$HPTSA\{2\}_{k,h} = \sum^{M}\left[(DAM\{3\}\_QES_{k,h}^{m} - DAM\{3\}\_QEB_{k,h}^{m}) \times (DAM\{5\}\_P_{h}^{m})\right]$$
$$+ \sum^{MD,T}\left[EMP_{h}^{m,t} \times \left[(AQEI_{k,h}^{m,t} - DAM\{3\}\_QES_{k,h}^{m}/12) - (AQEW_{k,h}^{m,t} - DAM\{3\}\_QEB_{k,h}^{m}/12)\right]\right]$$
$$+ \sum^{MND}\left[HOEP_{h} \times \left[(\sum^{T} AQEI_{k,h}^{m,t} - DAM\{3\}\_QES_{k,h}^{m}) - (\sum^{T} AQEW_{k,h}^{m,t} - DAM\{3\}\_QEB_{k,h}^{m})\right]\right]$$

Where:

M is the set of all *delivery points* 'm' and *intertie metering points* 'm' OTHER THAN *load facilities* and *PASS* 2 import transactions

MD is the sub-set of all dispatchable *delivery points* and *intertie metering points* 'md' within the set 'M'

MND is the sub-set of all non-dispatchable *delivery points* 'mnd' within the set 'M'

T is the set of all *metering intervals* 't' in *settlement hour* 'h'

3.4B.3 That portion of the Hourly Physical Transaction Settlement Amount from the *second settlement* process applicable to all *Pass* 2 import transactions that were not subsequently scheduled in *Pass* 3 of the *DAM calculation engine* is formulated is as follows:

$HPTSA\{2\}_{k,h}$ = $HPTSA\{1\}_{k,h}$ + [*second settlement* balancing component applicable *intertie metering points*]

$$HPTSA\{2\}_{k,h} = \sum^{M}\left[(DAM\{2\}\_QES_{k,h}^{m}) \times (DAM\{5\}\_P_{h}^{m})\right]$$
$$+ \sum^{M,T}\left[EMP_{h}^{m,t} \times \left[(AQEI_{k,h}^{m,t} - DAM\{2\}\_QES_{k,h}^{m}/12)\right]\right]$$

Where:

M is the set of all *intertie metering points* 'm'

$DAM\{2\}\_QES_{k,h}^{m}$ Does not intersect with the set of all *PASS* 3 import transactions for *energy* in the manner described in section 3.1A.3

T is the set of all *metering intervals* 't' in *settlement hour* 'h'

3.4B.4 That portion of the Hourly Physical Transaction Settlement Amount from the *second settlement* process applicable to all *price sensitive load components* and *price responsive load components* at a given *load facility* is formulated as follows:

$$HPTSA\{2\}_{k,h} = HPTSA\{1\}_{k,h} - [\textit{second settlement} \text{ balancing component for dispatchable } \textit{delivery points}] - [\textit{second settlement} \text{ balancing component for non-dispatchable } \textit{delivery points}]$$

$$HPTSA\{2\}_{k,h} = \sum^{M,LCID}[(DAM\{3\}\_QES_{k,h}^{m} - DAM\{3\}\_QEB_{k,h}^{m,lcid} - DAM\{5\}\_QEB_{k,h}^{m,lcid}) \times (DAM\{5\}\_P_{h}^{m})]$$

$$- \sum^{MD,LCID,T}[EMP_{h}^{m,t} \times [(AQEW_{k,h}^{m,t} - DAM\{3\}\_QEB_{k,h}^{m,lcid}/12 - DAM\{5\}\_QEB_{k,h}^{m,lcid}/12)]]$$

$$- \sum^{MND,LCID}[HOEP_{h} \times [(\sum^{T} AQEW_{k,h}^{m,t} - DAM\{3\}\_QEB_{k,h}^{m,lcid} - DAM\{5\}\_QEB_{k,h}^{m,lcid})]]$$

Where:

M is the set of all *delivery points* pertaining to all *load facilties* participating in the *day*-*ahead market* containing any allowable combination of *price sensitive load components* and *price responsive load components*

MD is the sub-set of all dispatchable *delivery points* within the set 'M'

MND is the sub-set of all non-dispatchable *delivery points* within the set 'M'

'T' is the set of all *metering intervals* 't' in *settlement hour* 'h'

$DAM\{5\}\_QEB_{k,h}^{m,lcid}$ belongs to the set of quantities of *energy* bought by *price sensitive load components* in the *day*-*ahead market*

$DAM\{3\}\_QEB_{k,h}^{m,licd}$ belongs to the set of quantities of *energy* bought by *price responsive load components* in the *day*-*ahead market*

'LCID' is the set of all *load component ID's* associated with the set of *delivery points* 'M'

3.4B.5 That portion of the Hourly Physical Transaction Settlement Amount from the *second settlement* process applicable the *settlement* of all *day*-*ahead market* and *real-time market physical bilateral contract quantities* at all applicable locations during *settlement hour* h is formulated as follows:

$$HPTSA\_PBC\{2\}_{k,h} = HPTSA\_PBC\{1\}_{k,h} + [\textit{second settlement} \text{ balancing component for dispatchable } \textit{delivery points} \text{ and } \textit{intertie metering points}] + [\textit{second}$$

settlement balancing component for non-dispatchable *delivery points*]

$$HPTSA\_PBC\{2\}_{k,h} = \sum^{M,LCID} [DAM\{5\}\_P_h^m \times (\sum_S DAM\_BCQ_{s,k,h}^{m,lcid} - \sum_B DAM\_BCQ_{k,b,h}^{m,lcid})] + \sum^{MD} [\sum^{T} EMP_h^{m,t} \times (\sum_S BCQ_{s,k,h}^{md,t} - \sum_B BCQ_{k,b,h}^{md,t})] + \sum^{MND,T} [(HOEP_h \times \sum_S BCQ_{s,k,h}^{mnd,t}) - (EMP_h^{m,t} \times \sum_B BCQ_{k,b,h}^{mnd,t})]$$

Where:

M is the set of all *delivery points* and *intertie metering points* 'm'

'T' is the set of all *metering intervals* 't' in *settlement hour* 'h'

MD is the sub-set of all dispatchable *delivery points* and *intertie metering points* 'md' within the set 'M'

MND is the sub-set of all non-dispatchable *delivery points* 'mnd' within the set 'M'

'LCID' is the set of all *load component ID's* associated with the set of *delivery points* 'M'

'S' is the set of all *selling market participants* 's'

'B' is the set of all *buying market participants* 'b'

3.4C Second Settlement – Hourly Virtual Transaction Settlement Amount

3.4C.1 The Hourly Viritual Transaction Settlement Amount shall be calculated in the *second settlement* process:

3.4C.1.1 using the same formulation from the *first settlement* process as described in section 3.3C; and

3.4C.1.2 utlising *settlement data* reflecting any applicable refinements or corrections identified by the *IMO* between the *first settlement* process and the *second settlement* process.

3.4D Second Settlement – Hourly Operating Reserve Settlement Amount

3.4D.1 The *second settlement* formulation of the Hourly Operating Reserve Settlement Amount provides for the integrated *settlement* of *physical transactions* for *operating reserve* which combines:

3.4D.1.1 the position for each class r *operating reserve* taken by the *market participant* in the *day-ahead market* at all applicable locations for each *settlement hour*; and,

3.4D.1.2 the position for class r *operating reserve* taken by the *market participant* in the *real-time market* at all applicable locations for each *settlement hour*;

as described in the various portions of this the *settlement amount* set out in sections 3.4D.2 and 3.4D.3. The sum of these components constitutes the total Hourly Operating Reserve Settlement Amount applicable to each *market participant* in a given *settlement hour*.

3.4D.2 That portion of a *market participant's* Hourly Operating Reserve Settlement Amount from the *second settlement* process applicable to all eligible *operating reserve* transactions, other than *Pass* 2 import transactions, is formulated as follows:

$$HORSA\{2\}_{k,h} = HORSA\{1\}_{k,h} + [\textit{second settlement balancing component for dispatchable delivery points and intertie metering points}]$$

$$HORSA\{2\}_{k,h} = \sum^{M,LCID} \left[DAM\{5\}\_PROR_{r,h}^{m} \times DAM\{3\}\_DQSR_{r,k,h}^{m,lcid} + \sum^{T} PROR_{r,h}^{m,t} \times (AQOR_{r,k,h}^{m,t} - DAM\{3\}\_DQSR_{r,k,h}^{m,lcid}/12)\right]$$

Where:

M is the set of all *delivery points* and *intertie metering points* 'm'

T is the set of all *metering intervals* 't' in *settlement hour* 'h'

'LCID' is the set of all *load component ID's* associated with the set of *delivery points* 'M'

3.4D.3 That portion of a *market participant's* Hourly Operating Reserve Settlement Amount from the *second settlement* process applicable to all *Pass* 2 import transactions not subsequently scheduled by *Pass* 3 or *Pass* 5 of the *DAM calculation engine* is formulated as follows:

$$HORSA\{2\}_{k,h} = HORSA\{1\}_{k,h} + [\textit{second settlement balancing component for intertie metering points}]$$

$$HORSA\{2\}_{k,h} = \sum^{M} [DAM\{5\}\_PROR_{r,h}^{m} \times DAM\{2\}\_DQSR_{r,k,h}^{m} + \sum^{T} PROR_{r,h}^{m,t} \times (AQOR_{r,k,h}^{m,t} - DAM\{2\}\_DQSR_{r,k,h}^{m}/12)]$$

Where:

M is the set of all *intertie metering points* 'm'

$DAM\{2\}\_DQSR_{r,k,h}^{m}$ does not intersect with the set of all Pass 3 import transactions for *operating reserve* in the manner described in section 3.1A.5

T is the set of all *metering intervals* 't' in *settlement hour* 'h'

3.4E Second Settlement – DAM Congestion Mangement

3.4E.1 Congestion Management Settlement Credits for the *day–ahead market* shall be calculated in the *second settlement* process:

3.4E.1.1 using the same formulation from the *first settlement* process as described in section 3.3E; and

3.4E.1.2 utlizing *settlement data* reflecting any applicable refinements or corrections identified by the *IMO* between the *first settlement* process and the *second settlement* process.

3.4F Second Settlement - CMSC Balancing Amount

3.4F.1 In any *settlement hour* where a *market participant* receives a Congestion Management Settlement Credits *settlement amount* from the *first settlement* process pursuant to section 3.4E at an eligible *delivery point*, *load component* or *intertie metering point*, the *settlement amount* calculated by the *IMO* pursuant to section 3.4E may be partially or fully offset by a Congestion Management Settlement Credits balancing amount from the *second settlement* process. In the course of the assessment described in this section 3.4F, the Congestion Management Settlement Credits balancing amount from the *second settlement* process may consider:

3.4F.1.1 the nature of the Congestion Management Settlement Credit *settlement amount* from the *first settlement* process received by the *market participant* at the applicable *delivery point*, *load component*, import or export transaction;

3.4F.1.2 any Congestion Management Settlement Credit *settlement amounts* from the *real-time markets* calculated for the same *delivery point*, *load*

component or *intertie* transaction during each *metering interval* in the corresponding *settlement hour;* and

3.4F.1.3 the continuity of the *day-ahead market constrained-on event* or *day-ahead market constrained-off event* as the case may be, with the corresponding schedule for the same *delivery point*, *load component* or *intertie* transaction during each *metering interval* in the corresponding *settlement hour* in the *real-time market;*

where such considerations are further described in section 3.4F.2.

3.4F.2 Subject to section 3.4F.3, the Congestion Management Settlement Credit balancing amount from the *second settlement* process shall be assessed for any *market participant* in any *settlement hour* at a particular location where a DAM Congestion Management Settlement Credit *settlement amount* is calculated from the *first settlement* process. The Congestion Management Settlement Credit balancing from the *second settlement* process involves:

3.4F.2.1 In the case of *generation facilities*, export transactions and import transactions, a comparison of the events that triggered the Congestion Management Settlement Credit *settlement amount* with the prevailing conditions described in section 3.4F.4 to determine if the Congestion Management Settlement Credit balancing amount should be applied in the *second settlement* process;

3.4F.2.2 In the case of *price responsive load components*, a comparison of the events that triggered the CMSC *settlement amount* in the *first settlement* process with the prevailing conditions described in section 3.4F.4 to determine if the CMSC balancing should be applied in the *second settlement* process; and,

3.4F.2.4 The final determination of the CMSC balancing amount described in section 3.4F.6

3.4F.3 No *market participant* individually or in concert with another *market participant* shall submit *dispatch data* for import or export with that results in the circumvention of these rules governing Congestion Management Settlement Credit balancing in the *second settlement* process, whether intentionally or unintentionally.

3.4F.4 Subject to section 3.4F.3, this section describes the manner in which the *IMO* shall classify events in the *day-ahead market* and *real-time market* for the purposes of the balancing of Congestion Management Settlement Credit *settlement amounts* in the *second settlement* process. These classifications are then used in section 3.4F.5 to determine if the CMSC balancing amount should be applied in the *second settlement* process to a *physical transaction* where a Congestion Management Settlement Credit *settlement amount* has been applied in the *first settlement* process. This decision is based upon classifying each range of

energy and class r *operating reserve bid* or *offered* into the *day-ahead market* and *real-time market* into each of four categories and then comparing where these four ranges overlap with each other such that:

3.4F.4.1 in the case of the *day-ahead market*, each applicable location in each *settlement hour* is classified into:

a. a range of *energy* or *operating reserve* that was scheduled between zero and the lower of the *unconstrained schedule* from *pass* 5 of the *DAM calculation engine* or the *constrained schedule* from *pass* 3 of the *DAM calculation engine;*

b. a range of *energy* or *operating reserve* that was constrained-off;

c. a range of *energy* or *operating reserve* that was constrained-on; and

d. a range of *energy* or *operating reserve* that was *offered* or *bid* into the *day-ahead market*, but not scheduled;

such that a given quantity of *energy* or class r *operating reserve* can be expressed as a matrix of the above four ranges as follows:

Let DAM_EVENTS[4,2] be an order 8 matrix consisting of 4 rows and 2 columns where each row corresponds to each type of event described above, column 1 corresponds to the Lower Range (LR) where each event begins and column 2 corresponds to the Upper Range (UR) where each event ends. Each instance of the matrix DAM_EVENTS[4,2] is specific to a single *delivery point*, import or export transaction for each *metering interval* in the *settlement hour*. For *facilities* within Ontario, all entries in matrix DAM_EVENTS[4,2] will be divided by 12 and an instance of the matrix will be created for each of the twelve real-time market *metering intervals* in a given *settlement hour* h.

The row assignments in matrix DAM_EVENTS[4,2] for DAM event types involving *generation facilities*, import transactions, export transactions and any *physical transaction* involving *operating reserve* can be summarised follows:

Event Type	DAM_EVENTS Column 1 DAM event lower ranges (LR)	DAM_EVENTS Column 2 DAM event upper ranges (UR)
scheduled between 0 and the lower of the PASS 5 schedule or the PASS 3 schedule	$DAM\_EVENTS_{1,1} = 0$	$DAM\_EVENTS_{1,2}$ = MIN(Pass 3 Schedule, Pass 5 Schedule)
Constrained-OFF	$DAM\_EVENTS_{2,1} = DAM\_EVENTS_{1,2}$	$DAM\_EVENTS_{2,2}$ = Pass 5 Schedule

Event Type	DAM_EVENTS Column 1 DAM event lower ranges (LR)	DAM_EVENTS Column 2 DAM event upper ranges (UR)
Constrained-ON	$DAM\_EVENTS_{3,1}$= $DAM\_EVENTS_{2,2}$	$DAM\_EVENTS_{3,2}$ = MAX(Pass 3 Schedule, Pass 5 Schedule)
Not Scheduled	$DAM\_EVENTS_{4,1}$ = $DAM\_EVENTS_{3,2}$	$DAM\_EVENTS_{4,4}$= Maximum quantity of *energy* or *operating reserve offered* or *bid* at location 'm' during *settlement hour* 'h'

Where:

Pass 3 Schedule is $DAM\{3\}\_QES_{k,h}^{m}$, $DAM\{3\}\_QEB_{k,h}^{m}$, or $DAM\{3\}\_DQSR_{r,k,h}^{m}$ as applicable

Pass 5 Schedule is $DAM\{5\}\_QES_{k,h}^{m}$, $DAM\{5\}\_QEB_{k,h}^{m}$, or $DAM\{5\}\_SQROR_{r,k,h}^{m}$ as applicable

Location 'm' is the *delivery point* or *intertie metering point* of the *facility* or import or export transaction being evaluated.

The row assignments in matrix DAM_EVENTS[4,2] for DAM event types involving *physical transactions* for *energy* at *load facilities* involves an additional modification to each entry in the matrix to account for all *load components* that may be below the same *delivery point* and the fact that DAM CMSC for *price responsive load~~s~~ components* is based upon the quantity of load reduction provided (DAM_QLR) while *real-time market* CMSC for *energy* is based upon the quantity of *energy* withdrawn. The additional operations on each entry of DAM_EVENTS[4,2] for load *facilities* is as follows:

Event Type	DAM_EVENTS Column 1 DAM event lower ranges (LR)	DAM_EVENTS Column 2 DAM event upper ranges (UR)
scheduled between 0 and the lower of the Pass 5 schedule or the Pass 3 schedule	Additional Conversion Step for $DAM\_EVENTS_{1,1}$: Add the sum of all *pass* 5 *price-sensitive load components* ~~-~~schedules all *pass* 3 *price-responsive load components* schedules at *delivery point* 'm': $\sum^{LCID}[DAM\{5\}\_QEB_{k,h}^{m,lcid} + DAM\{3\}\_QEB_{k,h}^{m,lcid}]$	Additional Conversion Step for $DAM\_EVENTS_{1,2}$: Add the sum of all *pass* 5 *price-sensitive load components* schedules all *pass* 3 *price-responsive load components* schedules at *delivery point* 'm': $\sum^{LCID}[DAM\{5\}\_QEB_{k,h}^{m,lcid} + DAM\{3\}\_QEB_{k,h}^{m,lcid}]$
(Converted) Constrained-OFF classification	Additional Conversion Steps for $DAM\_EVENTS_{2,1}$: 1) Reciprocate the matrix entries $DAM\_EVENTS_{2,1}$ and $DAM\_EVENTS_{3,1}$	Additional Conversion Steps for $DAM\_EVENTS_{2,2}$: 1) Reciprocate the matrix entries $DAM\_EVENTS_{2,2}$ and $DAM\_EVENTS_{3,2}$

	2) Add the sum of all *pass* 5 *price-sensitive load components* schedules all *pass* 3 *price-responsive load components* schedules at *delivery point* 'm': $\sum^{LCID}$ [DAM{5}_QEB$_{k,h}^{m,lcid}$ + DAM{3}_QEB$_{k,h}^{m,lcid}$]	2) Add the sum of all *pass* 5 *price-sensitive load components* schedules all *pass* 3 *price-responsive load components* schedules at *delivery point* 'm': $\sum^{LCID}$ [DAM{5}_QEB$_{k,h}^{m,lcid}$ + DAM{3}_QEB$_{k,h}^{m,lcid}$]
(Converted) Constrained-ON classification	Additional Conversion Steps for DAM_EVENTS$_{3,1}$: 1) Reciprocate the matrix entries DAM_EVENTS$_{2,1}$ and DAM_EVENTS$_{3,1}$ 2) Add the sum of all *pass* 5 *price-sensitive load components* schedules all *pass* 3 *price-responsive load components* schedules at *delivery point* 'm': $\sum^{LCID}$ [DAM{5}_QEB$_{k,h}^{m,lcid}$ + DAM{3}_QEB$_{k,h}^{m,lcid}$]	Additional Conversion Steps for DAM_EVENTS$_{3,2}$: 1) Reciprocate the matrix entries DAM_EVENTS$_{2,2}$ and DAM_EVENTS$_{3,2}$ 2) Add the sum of all *pass* 5 *price-sensitive load components* schedules all *pass* 3 *price-responsive load components* schedules at *delivery point* 'm': $\sum^{LCID}$ [DAM{5}_QEB$_{k,h}^{m,lcid}$ + DAM{3}_QEB$_{k,h}^{m,lcid}$]
Not Scheduled	Additional Conversion Step for DAM_EVENTS$_{4,2}$: Add the sum of all *pass* 5 *price-sensitive load components* schedules all *pass* 3 *price-responsive load components* schedules at *delivery point* 'm': $\sum^{LCID}$ [DAM{5}_QEB$_{k,h}^{m,lcid}$ + DAM{3}_QEB$_{k,h}^{m,lcid}$]	Additional Conversion Step for DAM_EVENTS$_{4,2}$: Add the sum of all *pass* 5 *price-sensitive load components* schedules all *pass* 3 *price-responsive load components* schedules at *delivery point* 'm': $\sum^{LCID}$ [DAM{5}_QEB$_{k,h}^{m,lcid}$ + DAM{3}_QEB$_{k,h}^{m,lcid}$]

Where:

Pass 3 Schedule is DAM{3}_QES$_{k,h}^{m}$, DAM{3}_QEB$_{k,h}^{m}$, DAM{3}_QLR$_{k,h}^{m,lcid}$ or DAM{3}_DQSR$_{r,k,h}^{m}$ as applicable

Pass 5 Schedule is DAM{5}_QES$_{k,h}^{m}$, DAM{5}_QEB$_{k,h}^{m}$, DAM{5}_QLR$_{k,h}^{m,lcid}$ or DAM{5}_SQROR$_{r,k,h}^{m}$ as applicable

Location 'm' is the *delivery point* or *intertie metering point* of the *facility* or import or export transaction being evaluated.

'lcid' is the *load component ID* of the *price responsive load component* being evaluated

3.4F.4.2 in the case of the *real-time market*, each applicable location in each *metering interval* within each corresponding *settlement hour* is classified into:

a. a range of *energy* or *operating reserve* that was scheduled between zero and the lower of the *real-time market schedule* or the *real-time market constrained schedule*;

b. a range of *energy* or *operating reserve* that was constrained-off;

c. a range of *energy* or *operating reserve* that was constrained-on; and

d. a range of *energy* or *operating reserve* that was *offered* or *bid* into the *real-time market*, but not scheduled;

such that the four event classifications in the *real-time market* can be expressed as follows:

Let RTM_EVENTS[4,2] be an order 8 matrix consisting of 4 rows and 2 columns where each row corresponds to each type of event, column 1 corresponds to the Lower Range (LR) where each event begins and column 2 corresponds to the Upper Range (UR) where each event ends. Each instance of the matrix RTM_EVENTS[4,2] is specific to a single *delivery point*, import or export transaction for each *metering interval* in the *settlement hour*.

The row assignments in matrix RTM_EVENTS[4,2] for *real-time market* event types involving all types of *physical transactions* can be summarised follows:

Column 1: RTM event lower ranges (LR)	Column 2: RTM event upper ranges (UR)
$RTM\_EVENTS_{1,1} = 0$	$RTM\_EVENTS_{1,2}$ = MIN[(MAX(*Constrained Schedule*, Actual), Market Schedule]
$RTM\_EVENTS_{2,1} = RTM\_EVENTS_{1,2}$	$RTM\_EVENTS_{2,2}$ = Market Schedule
$RTM\_EVENTS_{3,1} = RTM\_EVENTS_{2,2}$	$RTM\_EVENTS_{3,2}$ = MAX[(MIN(*Constrained Schedule*, Actual), Market Schedule]
$RTM\_EVENTS_{4,1} = RTM\_EVENTS_{3,2}$	$RTM\_EVENTS_{4,4}$= Maximum quantity of *energy* or *operating reserve offered* or *bid* at location 'm' during *settlement hour* 'h'

Where:

Constrained Schedule is $DQSI_{k,h}^{m,t}$ $DQSW_{k,h}^{m,t}$ or $DQSR_{k,h}^{m,t}$ as applicable

Market Schedule is $MQSI_{k,h}^{m,t}$ $MQSW_{k,h}^{m,t}$ or $SQROR_{k,h}^{m,t}$ as applicable

Actual is $AQEI_{k,h}^{m,t}$ $AQEW_{k,h}^{m,t}$ or $AQOR_{k,h}^{m,t}$ as applicable

Location 'm' is the *delivery point* of the *facility* or *intertie metering point* of the import or export transaction being evaluated.

3.4F.5 This section describes the manner in which the *IMO* shall determine if the Congestion Management Settlement Credit balancing amount should be applied in the *second settlement* process to a *physical transaction* where a Congestion Management Settlement Credit *settlement amount* has been applied in the *first settlement* process, based upon the *day-ahead market* and *real-time market* events identified in section 3.4F.4. This decision is based upon combining the event classifications into a single matrix which assigns a range to each of the sixteen possible combinations of *day-ahead market* and *real-time market* events, where the single matrix may be described as follows:

Let COMPARISON[16,2] be an order 32 matrix consisting of 16 rows and 2 columns where each row corresponds to each type of *day-ahead market* and *real-time market* event combination, column 1 corresponds to the Lower Range (LR) where each *comparison range* begins and column 2 corresponds to the Upper Range (UR) where each *comparison range* ends.

Each entry in column 1 of matrix COMPARISON[16,2] can be defined as follows:

$COMPARISION_{r,1} = COMPARISON_{(r-1),2}$

Each entry in column 2 of matrix COMPARISON[16,2] can be defined as follows:

$COMPARISION_{r,2} = MIN[(DAM\_EVENT_{i,2}),MAX(RTM\_EVENT_{j,2}, DAM\_EVENT_{i,1})]$

Where:

i = 1 to 4 and is incremented by 1 for every 4 rows 'r' such that:

i = 1 for COMPARISION rows r = 1 to 4

i = 2 for COMPARISION rows r = 5 to 8

i = 3 for COMPARISION rows r = 9 to 12

i = 4 for COMPARISION rows r = 13 to 16

j = 1 to 4 and is incremented by 1 for every row 'r' such than

j = 1 to 4 for COMPARISION rows r = 1 to 4

j = 1 to 4 for COMPARISION rows r = 5 to 8

j = 1 to 4 for COMPARISION rows r = 9 to 12

j = 1 to 4 for COMPARISION rows r = 13 to 16

These entries may be summarized as follows:

Event Pairing Type	**Column 1: *Comparison Range* lower ranges (LR)**	**Column 2: *Comparison Range* upper ranges (UR)**
DAM Scheduled to RTM Scheduled	0	MIN[(DAM_EVENT$_{1,2}$),MAX(RTM_EVENT$_{1,2}$, DAM_EVENT$_{1,1}$)]
DAM Scheduled to RTM Constrained-OFF	COMPARISION$_{1,2}$	MIN[(DAM_EVENT$_{1,2}$),MAX(RTM_EVENT$_{2,2}$, DAM_EVENT$_{1,1}$)]
DAM Scheduled to RTM Constrained-ON	COMPARISION$_{2,2}$	MIN[(DAM_EVENT$_{1,2}$),MAX(RTM_EVENT$_{3,2}$, DAM_EVENT$_{1,1}$)]
DAM Scheduled to RTM not Scheduled	COMPARISION$_{3,2}$	MIN[(DAM_EVENT$_{1,2}$),MAX(RTM_EVENT$_{4,2}$, DAM_EVENT$_{1,1}$)]
DAM Constrained-OFF to RTM Scheduled	COMPARISION$_{4,2}$	MIN[(DAM_EVENT$_{2,2}$),MAX(RTM_EVENT$_{1,2}$, DAM_EVENT$_{2,1}$)]
DAM Constrained- OFF to RTM Constrained-OFF	COMPARISION$_{5,2}$	MIN[(DAM_EVENT$_{2,2}$),MAX(RTM_EVENT$_{2,2}$, DAM_EVENT$_{2,1}$)]
DAM Constrained- OFF to RTM Constrained-ON	COMPARISION$_{6,2}$	MIN[(DAM_EVENT$_{2,2}$),MAX(RTM_EVENT$_{3,2}$, DAM_EVENT$_{2,1}$)]
DAM Constrained- OFF to RTM not Scheduled	COMPARISION$_{7,2}$	MIN[(DAM_EVENT$_{2,2}$),MAX(RTM_EVENT$_{4,2}$, DAM_EVENT$_{2,1}$)]
DAM Constrained-ON to RTM Scheduled	COMPARISION$_{8,2}$	MIN[(DAM_EVENT$_{3,2}$),MAX(RTM_EVENT$_{1,2}$, DAM_EVENT$_{3,1}$)]
DAM Constrained- ON to RTM Constrained-OFF	COMPARISION$_{9,2}$	MIN[(DAM_EVENT$_{3,2}$),MAX(RTM_EVENT$_{2,2}$, DAM_EVENT$_{3,1}$)]
DAM Constrained- ON to RTM Constrained-OFF	COMPARISION$_{10,2}$	MIN[(DAM_EVENT$_{3,2}$),MAX(RTM_EVENT$_{3,2}$, DAM_EVENT$_{3,1}$)]
DAM Constrained- ON to RTM not Scheduled	COMPARISION$_{11,2}$	MIN[(DAM_EVENT$_{3,2}$),MAX(RTM_EVENT$_{4,2}$, DAM_EVENT$_{3,1}$)]
DAM not Scheduled to RTM Scheduled	COMPARISION$_{12,2}$	MIN[(DAM_EVENT$_{4,2}$),MAX(RTM_EVENT$_{1,2}$, DAM_EVENT$_{4,1}$)]
DAM not Scheduled to RTM Constrained-OFF	COMPARISION$_{13,2}$	MIN[(DAM_EVENT$_{4,2}$),MAX(RTM_EVENT$_{2,2}$, DAM_EVENT$_{4,1}$)]
DAM not Scheduled to RTM Constrained- ON	COMPARISION$_{14,2}$	MIN[(DAM_EVENT$_{4,2}$),MAX(RTM_EVENT$_{3,2}$, DAM_EVENT$_{4,1}$)]
DAM not Scheduled to RTM not Scheduled	COMPARISION$_{15,2}$	MIN[(DAM_EVENT$_{4,2}$),MAX(RTM_EVENT$_{4,2}$, DAM_EVENT$_{4,1}$)]

3.4F.6 This section describes the Congestion Management Settlement Credit balancing amount to be applied in the *second settlement* process to a *market participant* conducting a *physical transaction* where a CMSC *settlement amount* has been applied in the *first settlement* process, for all non-zero entries in rows 5,6, 11 and 12 of matrix COMPARISON[16,2] such that Congestion Management Settlement Credit balancing amount will be applied in the *second settlement* process in all instances where:

3.4F.6.1 a range of *energy* or *operating reserve* that received a *day-ahead market* Congestion Management Settlement Credit constrained-off *settlement amount* was scheduled in the *real-time market* (COMPARISON[16,2], row 5);

3.4F.6.2 a range of *energy* or *operating reserve* that received a *day-ahead market* Congestion Management Settlement Credit constrained-off *settlement amount* corresponds with a Congestion Management Settlement Credit constrained-off *settlement amount* in the *real-time market* as described in section 3.5 (COMPARISON[16,2], row 6);

3.4F.6.3 a range of *energy* or *operating reserve* that received a *day-ahead market* Congestion Management Settlement Credit constrained-on *settlement amount* was scheduled in *the real-time market* (COMPARISON[16,2], row 11); and/or

3.4F.6.4 a range of *energy* or *operating reserve* that received a *day-ahead market* Congestion Management Settlement Credit constrained-on *settlement amount* corresponds with a *real-time market* CMSC constrained-off *settlement amount* as described in section 3.5 (COMPARISON[16,2], row 12);

such that the *settlement amount* may be described in terms of the specific equations that should be used for each row of matrix COMPARISON[16,2] and any instances where the original Congestion Management Settlement Credit *settlement amount* from the *first settlement* process was either positive or negative. The set of formulae shall also observe the following *settlement data* input substitutions for the following types of *facilities*:

3.4F.6.5 In the case of *self-scheduled*, *intermittent* and *transitional scheduling generators*, such *facilities* do not submit *energy offers* into the *real-time market*. Therefore, the original *day-ahead market offers* submitted (upon which the original *DAM* Congestion Management Settlement Credit *settlement amount* was calculated in the *first settlement* process) will be used in such cases; and

3.4F.6.6 In the case of *price responsive load components* that are not dispatchable in the *real-time market*, the original *day-ahead market bids* submitted (upon which the original DAM Congestion Management Settlement Credit *first settlement* amount was calculated).

Given the above,

Let:

$D\_CMSC_{k,h}^{m,t}$ be the *day-ahead market* constrained-OFF or constrained-ON Congestion Management Settlement Credit *settlement amount*, as the case may be, received by the *market participant* ('k') for *metering interval* 't' of *settlement hour* 'h', at *delivery point* or *intertie metering point* 'm' for 'X_r' quantity of *energy* or class r *operating reserve*

'OP' be the Operating Profit Function as defined in Section 3.3E.2 of Chapter 9 of these *market rules*

'X_r' be the quantity of *energy* or *class r operating reserve* derived from the difference between the upper and lower ranges of the *day-ahead market* or the *real-time market* event comparison matrix (from row 'r' of matrix COMPARISON[16,2])

$EMP_h^{m,t}$ be the *market price* of *energy* from the *real-time market* for a given *settlement hour* at *delivery point* or *intertie metering point* 'm'.

$PROR_{r,h}^{m,t}$ be the *market price* of class r *operating reserve* from the *real-time market* for a given *settlement hour* at *delivery point* or *intertie metering point* 'm'.

'BE' be that portion of the *energy offer* in the *real-time market* matrix (or, DAM offer matrix in the case of *self-scheduled*, *intermittent* and *transitional scheduling generators*) that corresponds to 'X_r' and is bounded by to the Lower Range (LR) and Upper Range (UR) selected from Row 'r' of the matrix COMPARISON[16,2]

'BR_r' be that portion of the class r *operating reserve offer* in the *real-time market* matrix that should correspond to 'X_r' and is bounded by to the Lower Range (LR) and Upper Range (UR) selected from row 'r' of the matrix COMPARISON[16,2]

'BL' is that portion of the *energy bid* from the *real-time market* matrix as defined in Section 3.5.2 of Chapter 9 of the *Market Rules* (or, *day-ahead market* bid matrix in the case of non-dispatchable *price responsive load components*) that should correspond to 'X_r' and is bounded by to the Lower Range (LR) and Upper Range (UR) selected from row 'r' of the matrix COMPARISON[16,2]

such that,

3.4F.6.7 In the case of CMSC Balancing in the *second settlement* process for event pairings involving a *constrained-off event* in the *day-ahead market* (COMPARISON[16,2] rows 5 and 6) where the *day-ahead market* constrained-off event was a POSITIVE amount owing to the *market participant*:

The formula for *generators* and import transactions where the type of product being assessed is *energy*, the *settlement amount* owing to the *IMO* for a given *settlement hour* ('h') is be defined as:

$$D\_CMSC\{2\}_{k,h}^{m} = -1 \times \sum^{T} MIN[D\_CMSC_{k,h}^{m,t}, MAX[OP(EMP_h^{m,t}, X_r, BE), 0]]$$

In the case of all *facilities* where the type of product being assessed is class r *operating reserve*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

$$D\_CMSC\{2\}_{k,h}^{m} = -1 \times \sum^{T} MIN[D\_CMSC_{k,h}^{m,t}, MAX[OP(PROR_{r,h}^{m,t}, X_r, BR_r), 0]]$$

In the case of *price responsive loads components* and export transactions where the type of product being assessed is *energy*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

$$D\_CMSC\{2\}_{k,h}^{m} = -1 \times \sum^{T} MIN\ [D\_CMSC_{k,h}^{m,t}, MAX\ [-1xOP(EMP_{h}^{m,t}, X_r, BL), 0]]$$

3.4F.6.8 In the case of CMSC Balancing from the *second settlement* process for event pairings involving a *constrained-off event* in the ~~*day ahead*~~*day-ahead market* (COMPARISON[16,2] rows 5 and 6) where the *constrained-off event* was a NEGATIVE amount:

The formula for *generators* and import transactions where the type of product being assessed is *energy*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

For the each *metering interval* 't' in *settlement hour* 'h':

IF $OP(EMP_{h}^{m,t}, X_r, BE) < 0$:

$$D\_CMSC\{2\}_{k,h}^{m,t} = -1 \times OP(EMP_{h}^{m,t}, X_r, BE)$$

Otherwise:

$$D\_CMSC\{2\}_{k,h}^{m,t} = MIN[0, OP(EMP_{h}^{m,t}, X_r, BE)]$$

The formula for all *facilities* where the type of product being assessed is class r *operating reserve*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

For the each *metering interval* 't' in *settlement hour* 'h':

IF $OP(PROR_{r,h}^{m,t}, X_r, BR) < 0$:

$$D\_CMSC\{2\}_{k,h}^{m,t} = -1 \times OP(PROR_{r,h}^{m,t}, X_r, BR)$$

Otherwise:

$$D\_CMSC\{2\}_{k,h}^{m,t} = MIN[0, OP(PROR_{r,h}^{m,t}, X_r, BR)]$$

The formula for *price-responsive load components* and export transactions where the type of product being assessed is *energy*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

For the each *metering interval* 't' in *settlement hour* 'h':

IF: $-1 \times OP(EMP_{h}^{m,t}, X_r, BL) < 0$:

$D\_CMSC\{2\}_{k,h}^{m,t} = OP(EMP_h^{m,t}, X_r, BL)$

Otherwise:

$D\_CMSC\{2\}_{k,h}^{m,t} = MIN[0, -1 \times OP(EMP_h^{m,t}, X_r, BL)]$

3.4F.6.9 In the case of Congestion Management Settlement Credit balancing in the *second settlement* process for event pairings involving a *constrained-on event* in the *day-ahead market* (COMPARISON[16,2] rows 11 and 12) where the *day-ahead market* constrained-on event was a POSITIVE amount:

The formula for *generators* and import transactions where the type of product being assessed is *energy*, the *settlement amount* for a given *metering interval* 't' in *settlement hour* ('h') is defined as:

$D\_CMSC\{2\}_{k,h}^{m} = -1 \times \sum^{T} MIN[D\_CMSC_{k,h}^{m,t}, MAX [-1OP(EMP_h^{m,t}, X_r, BE), 0]]$

The formula for all *facilities* where the type of product being assessed is class r *operating reserve*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

$D\_CMSC\{2\}_{k,h}^{m} = -1 \times \sum^{T} MIN [D\_CMSC_{k,h}^{m,t}, MAX [-1OP(PROR_{r,h}^{m,t}, X_r, BR_r), 0]]$

The formula for *price responsive load components* and export transactions where the type of product being assessed is *energy*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

$D\_CMSC\{2\}_{k,h}^{m} = -1 \times \sum^{T} MIN [D\_CMSC_{k,h}^{m,t}, MAX [OP(EMP_h^{m,t}, X_r, BL), 0]]$

3.4F.6.10 In the case of Congestion Management Settlement Credit balancing in the *second settlement* process for event pairings involving a *constrained-on event* in the *day-ahead market* (COMPARISON rows 11 and 12) where the *constrained-on event* in the *day-ahead market* was a NEGATIVE amount:

The formula for *generators* and import transactions where the type of product being assessed is *energy*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

For the each *metering interval* 't' in *settlement hour* 'h':

IF: $OP(EMP_h^{m,t}, X_r, BE) > 0$:

$D\_CMSC\{2\}_{k,h}^{m,t} = OP(EMP_h^{m,t}, X_r, BE)$

Otherwise:

$D\_CMSC\{2\}_{k,h}^{m,t} = MIN[0, -1 \times OP(EMP_h^{m,t}, X_r, BE)]$

The formula for all *facilities* where the type of product being assessed is class r *operating reserve*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

For the each *metering interval* 't' in *settlement hour* 'h':

IF: $OP(PROR_{r,h}^{m,t}, X_r, BR) > 0$:

$D\_CMSC\{2\}_{k,h}^{m,t} = OP(PROR_{r,h}^{m,t}, X_r, BR)$

Otherwise:

$D\_CMSC\{2\}_{k,h}^{m,t} = MIN[0, -1 \times OP(PROR_{r,h}^{m,t}, X_r, BR)]$

The formula for *price-responsive load components* and export transactions where the type of product being assessed is *energy*, the *settlement amount* for a given *settlement hour* ('h') is defined as:

For the each *metering interval* 't' in *settlement hour* 'h':

IF: $-1 \times OP(EMP_h^{m,t}, X_r, BL) > 0$:

$D\_CMSC\{2\}_{k,h}^{m,t} = -1 \times OP(EMP_h^{m,t}, X_r, BL)$

Otherwise:

$D\_CMSC\{2\}_{k,h}^{m,t} = MIN[0, OP(EMP_h^{m,t}, X_r, BL)]$

3.4G Second Settlement – DAM Production Cost Guarantees

3.4G.1 Production cost guarantees will be calculated in the *second settlement* process:

3.4G.1.1 using the same formulation from the *first settlement* process as described in section 3.3F; and

3.4G.1.2 utilising *settlement data* reflecting any applicable refinements, corrections and adjustments identified by the *IMO* between the *first settlement* process and the *second settlement* process.

3.4H Second Settlement – Produciton Cost Guarantee Commitment Adjustment

3.4H.1 Where a *market participant* receives a production cost guarantee at an eligible *delivery point* or *intertie metering point*, the *settlement amount* calculated by the

IMO pursuant to section 3.4F may be offset by a Production Cost Guarantee Commitment Adjustment during any *settlement hour* in which:

3.4H.1.1 the applicable *generation facility* fails to reach its *minimum generation level* as committed by the *DAM calculation engine* and reflected in the corresponding *day-ahead market offer*; or

3.4H.1.2 the applicable *price responsive load component* fails to provide a *minimum level of load reduction* as committed by the *DAM calculation engine* and reflected in the corresponding *day-ahead market bid*.

3.4H.2 The *IMO* shall not calculate the Production Cost Guarantee Commitment Adjustment for any *delivery point* or *intertie metering point* for any *settlement hour* in which the *IMO* has de-committed the underlying *physical transaction* and has so noted this by the applicable market integration flag set out in section 3.1A.8.

3.4H.3 The Production Cost Guarantee Commitment Adjustment applicable to any *delivery points* associated with a *generation facility* or any import transaction eligible to receive a production cost guarantee in the *day-ahead market* is formulated as follows:

$$PCGCA_{k,H}^{m} = PCG_{k,H}^{m} (n-x)/n$$

Where:

'H' is the set of all 24 *settlement hours* 'h' in the *real-time trading day*

'n' is the number of hours that the *facility* or import transaction received a constrained schedule for *energy* in the *day-ahead market* greater than 0 MW. For all *generation facilities* and import transactions other than those committed in *PASS* 2, this will be determined by the variable $DAM\{3\}\_QES_{k,h}^{m}$. For all import transactions committed in *PASS* 2 but not committed in any subsequent passes, this will be determined by the variable $DAM\{2\}\_QES_{k,h}^{m}$.

Let 'x' be the number of *settlement hours* within set 'H' where the *market participant* delivered sufficient *energy* in the *real-time market* to fulfil its *day-ahead market* schedule or where the *IMO* de-committed the import below its *day-ahead market* scheduled level. This determination will be made on the basis of Allocated Quantities of Energy Injected (AQEI). Therefore: 'x' will be incremented by a value of one twelfth for each *metering interval* 't' in which:

$$\Sigma^{T} AQEI_{k,h}^{m,t} \geq$$ [offered *minimum generation level* for *settlement hour* 'h' at location 'm']/12 minus an allowable tolerance level ("dead band") *for generation facilities* published in the applicable *market manual*.

or, in the case of PASS 2 import transactions:

$$\Sigma^{T} AQEI_{k,h}^{m,t} \geq DAM\{2\}\_QES_{k,h}^{m}/12$$

3.4H.4 The Production Cost Guarantee Commitment Adjustment applicable to any *delivery points* associated with all *price responsive load components* at the same *delivery point* that are eligible to receive a production cost guarantee in the *day-ahead market* is formulated as follows:

$$PCGCA_{k,H}^{m} = \sum^{LCID} PCG_{k,H}^{m,lcid} (n-x)/n$$

Where:

$\sum^{LCID} PCG_{k,H}^{m,lcid}$ is the sum of all production cost guarantee payments to all *load components* at location 'm' across all *settlement hours* 'H'.

LCID is the set of all *load component IDs* associated with the set of *delivery points* 'M'

'H' is the set of all 24 *settlement hours* 'h' in the *real-time trading day*

'n' is the number of *settlement hours* that one or more *price-responsive load components* at location 'm' received a *constrained schedule* for load reduction greater than 0 MW. This will be determined by the variable $DAM\{3\}\_QLR_{k,h}^{m}$.

Let x be the number of *settlement hours* within set h where the transaction delivered sufficient quantity of load reduction in the *real-time market* to fulfil the *minimum load reduction* quantities *bid* into the *day-ahead market* or where the *IMO* de-committed or de-rated the load reduction quantity below its scheduled level in the *day-ahead market*. This determination will be made on the basis of Allocated Quantities of Energy Withdrawn (AQEW) from the *real-time market* compared to:

a. the total scheduled quantity of all *load components* scheduled in the *day ahead market* at the same *facility* in the same *settlement hour*; and,

b. whether or not load reduction capability was offered into the *day-ahead market* during the same *settlement hour*.

Therefore:

'x' will be increased by a value of one twelfth for each *metering interval* 't' in which:

$$\sum^{LCID} (TERM\ 1 + DAM\_BL^{lcid})/12 \geq \sum^{T} -AQEW_{k,h}^{m,t}$$

where:

TERM 1 = MAX(DAM{3}_$QEB_{k,h}^{m,lcid}$, *minimum level of load reduction* bid parameter specified in *price responsive load* bid DAM_BL^{lcid})/12

such that:

$\sum^{LCID}$ (TERM 1 + DAM_BL^{lcid}) is the sum of all schedules for *price- responsive load components* and all quantities of *price sensitive load components* that are bid in the *day-ahead market* at the same load *facility* plus an allowable tolerance level ("dead band") for *load facilities* published in the applicable *market manual*.

3.5 Second Settlement - Hourly Settlement Amounts for Real-time Market Congestion Management

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

3.5.1A A *registered market participant* for a *constrained off facility* is not entitled to a congestion management settlement credit determined in accordance with section 3.5.2 as the result of the *facility's* own equipment or operational limitations, if

3.5.1A.1 a *dispatchable load facility* does not fully or accurately respond to its *dispatch instructions*; or

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

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

3.5.2 Subject to sections 3.5.6 and 3.5.7 and subject to Appendix 7.6 of Chapter 7, the hourly congestion *management settlement credit* for *market participant* k for *settlement hour* h ("$CMSC_{k,h}$") shall be determined by the following equation:

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 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:

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

Where:

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 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:

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

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 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*).

$OPL_{k,h}$ is calculated as follows:

$$OPL_{k,h} = \sum_{m,t} \left[\begin{array}{l} -1 \times OP(EMP_h^{m,t}, MQSW_{k,h}^{m,t}, BL) - \\ MAX\left(-1 \times OP(EMP_h^{m,t}, DQSW_{k,h}^{m,t}, BL), -1 \times OP(EMP_h^{m,t}, AQEW_{k,h}^{m,t}, BL)\right) \end{array} \right]$$

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

3.5.3 [Intentionally left blank]

3.5.4 Subject to section 5.3.4 of Chapter 5, during instances where $CMSC_{k,h}$ is calculated at an *intertie metering* point at which a *market participant* is conducting an import or export transaction for a *physical service* that is subject to a *constrained off event* that is reflected in *dispatch instructions* issued by the *IMO* as a result of a request initiated by an entity other than the *IMO*, the *IMO* shall not calculate any portion of $CMSC_{k,h}$ pertaining to the affected transaction for those *metering intervals* within *settlement hour* h in which such conditions exist, and for greater certainty, during any *metering interval* in which:

3.5.4.1 $MQSI_{k,h}^{m,t}$ is not equal to $DQSI_{k,h}^{m,t}$~~$_{k,hm,t}$~~ as a result of such a constrained off event;

3.5.4.2 $MQSW_{k,h}^{m,t}$~~$_{k,hm,t}$~~ is not equal to $DQSW_{k,h}^{m,t}$~~$_{k,hm,t}$~~ as a result of such a constrained off event; or

3.5.4.3 $SQROR$~~$_{r,}$~~$_{r,k,h}^{m,t}$~~$_{k,hm,t}$~~ is not equal to $DQSR$~~$_{r,}$~~$_{r,k,h}^{m,t}$~~$_{k,hm,}$~~t as a result of such a constrained off event;

and irrespective of whether or not a *constrained on event* or a *constrained off event* was affecting the transaction in any preceding *metering interval*.

3.5.5 A DQSI, DQSW or DQSR, quantity as the case may be, that departs from its corresponding *market schedule* quantity due to the circumstances described in section 3.5.4 shall be denoted as such within the supporting data provided to the affected *market participant* as part of the content of *settlement statements* described in sections 6.5.3.1 and 6.5.3.2.

3.5.6 Subject to section 3.5.7, the *IMO* shall adjust, in the matrices specified in section 3.5.2 and for the purposes of determining the applicable congestion management *settlement* credit payments, any *offer price* that:

3.5.6.1 is associated with a *generation facility* located within Ontario or is associated with an injecting *boundary entity*; and

3.5.6.2 is less than a specified lower limit where such limit is the lesser of 0.00 $/MWh and the *energy market price* for the applicable *dispatch interval*;

to that lower limit.

3.5.7 Until such time that the *IMO* has the software capability to make the adjustments specified in section 3.5.6 at the time of the determination of the CMSC payments, the *IMO* shall, at the end of each *billing period*, for all circumstances where an applicable *facility's* DQSI quantity and AQEI quantity are at least 1 MW less than the corresponding MQSI quantity, adjust the applicable *market participant's* CMSC payments for the previous *billing period* to the amount that would have been determined had section 3.5.6 been applied in first instance. This section shall cease to have effect and shall be noted as "[intentionally left blank]" when such software capability has been put into service.

3.6 Second Settlement - Hourly Settlement Amounts for Transmission Rights and Charges

3.6.1 ~~The~~Subject to chapter 8, sections 4.4.2.2, 4.4.1 and 4.4.1a, any TR settlement credits based upon *prices* from the *real-time market* for *market participant* k in *settlement hour* h ("$TRSC_{k,h}$") shall~~, other than where section 4.4.2.2 of Chapter 8 applies,~~ be determined by the following equation:

$$TRSC_{k,h} = \max[0, \Sigma_{j,i} (1/12) \times QTR_{k,h}^{i,j} \times \Sigma_t (EMP_h^{j,t} - EMP_h^{i,t})]$$

where:

j = all *delivery points* ~~*primary RWM's*~~ and *intertie metering points*

i = all *delivery points* ~~*primary RWM's*~~ and *intertie metering points*

3.6A.1 Subject to chapter 8, sections 4.4.2.2, 4.4.1 and 4.4.1a, any TR settlement credits based upon *prices* from the *day-ahead market* for *market participant* k in *settlement hour* h ("$D\_TRSC_{k,h}$") shall be determined by the following equation:

$$D\_TRSC_{k,h} = \max[0, \Sigma_{j,i} DAM\_QTR_{k,h}^{i,j} \times (DAM\{5\}\_P_h^j - DAM\{5\}\_P_h^i)]$$

where:

j = all *delivery points* and *intertie metering points*

i = all *delivery points* and *intertie metering points*

$QTR_{k,h}^{i,j}$ = the quantity of *transmission rights* from the *day-ahead market* following the path from injection *TR zone* 'i' to withdrawal *TR zone* 'j' held by *market participant* k for *settlement hour* 'h'

$DAM\{5\}\_P_h^i$ is the price in injection *TR zone* 'i' from the *day-ahead market* (Ontario zone or intertie *zone*) for *settlement hour* 'h'

$DAM\{5\}\_P_h^j$ is the price in withdrawal *TR* zone 'j' from the *day-ahead market* (Ontario zone or intertie zone) for *settlement hour* 'h'

3.6.2 The hourly contribution to the *transmission charge reduction fund* in *settlement hour* h ("DAM_TCRF_h") shall be the net congestion ~~rentals~~ rents collected by the *IMO* (the negative of the net Hourly Physical Transaction Settlement Amount

~~*settlement* credit~~ paid to *market participants*) across both the *day-ahead market* and *real-time markets,* less the net payments from the *IMO* to *market participants* under *day-ahead market* or *real-time market TRs*, or:

DAM_TCRF_h = [**term 1:** congestion rents accrued in the *day-ahead market* due to the *settlement* of all *physical transactions* other than *Pass* 2 imports]

+ [**term 2:** congestion rents accrued in the *day-ahead market* due to the *settlement* of *PASS* 5 *virtual transactions*]

+ [**term 3:** congestion rents accrued in the *real-time market* net of any positions taken in the *day ahead market*]

- [**term 4:** congestion rents distributed through TRs from the *day-ahead market*]

- [**term 5:** congestion rents distributed through TRs from the *real-time market*]

$DAM\_TCRF_h = \sum_K^{M,LCID}[(DAM\{5\}\_QEB_{k,h}^{m,lcid} + DAM\{3\}\_QEB_{k,h}^{m,lcid} - DAM\{3\}\_QES_{k,h}^{m}) \times (DAM\{5\}\_P_h^{m} - DAM\{5\}\_P_h^{REF})]$

$+ \sum_K^{V}[(DAM\{5\}\_QEBV_{k,h}^{v} - DAM\{5\}\_QESV_{k,h}^{v}) \times (DAM\{5\}\_P_h^{v} - DAM\{5\}\_P_h^{REF})]$

$+ \sum_K^{M,T}[(EMP_h^{m,t} - EMP_h^{REF,t}) \times [(AQEW_{k,h}^{m,t} - DAM\{3\}\_QEB_{k,h}^{m}/12 - DAM\{5\}\_QEB_{k,h}^{m}/12) - (AQEI_{k,h}^{m,t} - DAM\{3\}\_QES_{k,h}^{m}/12)]]$

$- \sum_K D\_TRSC_{k,h} - \sum_K TRSC_{k,h}$

where:

M is the set of all *delivery points* and *intertie metering points* 'm'

V is the set of all *delivery points* 'v' associated with *virtual transactions.*

LCID is the set of all *load component IDs* associated with the set of *delivery points* 'M'

T is the set of all *metering intervals* 't' in *settlement hour* 'h'

$DAM\{5\}\_P_h^{REF}$ is the *market price* for *energy* from the *day-ahead market* at the *reference bus* for *settlement hour* 'h'. While *uniform pricing* is in place, this price shall equal the uniform price for *energy* in the *day-ahead market* within Ontario. In the event that *locational marginal prices* are implemented, this *price* shall correspond to the *reference bus* price used for *nodal pricing* purposes.

$EMP_h^{REF,t}$ is the *market price* for *energy* from the *real-time market* at the *reference bus* for *metering interval* 't' of *settlement hour* 'h'

DAM{3}_$QEB_{k,h}^{m,lcid}$ are the quantities of *physical transactions* to buy *energy* that result from *PASS* 3 of the *DAM calculation engine*, other than *price sensitive load components*)

DAM{5}_$QEB_{k,h}^{m,lcid}$ are the quantities of *physical transaction* to buy *energy* that result from *PASS* 5 of the *DAM Ccalculation Eengine* by *price sensitive load components*

DAM{3}_$QES_{k,h}^{m}$ are *physical transactions* quantities to sell *energy* that are financially bound to PASS 3 of the *DAM calculation engine* (i.e. – other than *price sensitive* loads)

~~$TCRF_h = \Sigma_{t,m}(EMP_h^{m,t} - EMP_h^{REF,t}) \times \Sigma_k(AQEW_{k,h}^{m,t} - AQEI_{k,h}^{m,t}) / \Sigma_k TRSC_{k,h}$~~

~~where:~~
~~t = all *metering intervals* in *settlement hour* h~~
~~m = all *primary* RWMs and *intertie metering points*~~
~~k = all *market participants*~~

~~$EMP_h^{REF,t}$ = *energy market price* at the *reference bus* in *metering interval* t of *settlement hour* h. If there is only a single *energy market price* in Ontario, that price is the *energy market price* at the *reference bus*.~~

3.6.3 Disbursements from the *TR clearing account* authorised by the *IMO Board* pursuant to section 4.18.2 of Chapter 8 shall be used by the *IMO* in accordance with section 4.7.

3.6.4 Any net revenues received from the sale of a *TR* in a *TR auction,* along with the hourly balance accrued in the *transmission charge reduction fund,* shall be credited to the *TR clearing account* and shall be used in accordance with the provisions of section 3.6.3 and of Chapter 8.

3.7 Second Settlement - Hourly Settlement Amounts in the Capacity Reserve Market

3.7.1 This section 3.7 is applicable only if the *capacity reserve market* has been activated by the *IMO Board* and has not been deactivated.

3.7.2 The hourly *capacity reserve settlement* credit to *market participant* k for providing *capacity reserve* in *settlement hour* h is $CAPRSC_{k,h}$ defined by the following equation:

$CAPRSC_{k,h} = \Sigma_m QCAPR_{k,h}^{m} \times PCAPR_h^{m}$,

where:

m = all *primary RWM's* and *intertie metering points*

3.8 Second Settlement - Hourly Settlement Amounts for Operating Deviations

3.8.1 The *IMO* may adjust by means of a debit the *settlement statement* of any *market participant* who is compensated for providing *operating reserve* from a specific *registered facility* that operates in a way that does not provide the service for which it has been paid in either the *day-ahead market* or *real-time market*. Such debits in any *settlement hour* may represent either the decreased value of services provided in that same *settlement hour*, or the value of *operating reserve* services deemed not to have been provided in earlier *dispatch hours* as a result of failure to perform when called in the later *dispatch hour* associated with that *settlement hour*. The hourly *settlement* debits for failure to provide *energy* from *operating reserve* and *capacity reserve* when it is called are set forth in this section 3.8.

3.8.2 An *operating reserve* shortfall *settlement* debit may be assessed on any *market participant* k responsible for a *registered facility* at *RWM* m, which will be *registered facility* "k/m" for the purpose of this section 3.8.2 and of section 3.8.4, that is scheduled by the *IMO* to provide *class r reserve* of class 1or 2 (i.e., *ten-minute reserve* or *thirty-minute reserve*) and then fails to provide *energy* from that class of *operating reserve* when instructed to do so by the *IMO* according to these *market rules*. The amount of *market participant* k's *operating reserve* shortfall *settlement* debit for *class r reserve* for *settlement hour* h ("$ORSSD_{k,r,h}$") is determined as follows:

3.8.2.1 the *energy* shortfall fraction for *class r reserve* for *registered facility* k/m in *metering interval* t of *settlement hour* h ("$ORESF_{k,r,h}^{m,t}$") is defined as follows:

where *operating reserve* is provided from a *generator*:

$$ORESF_{k,r,h}^{m,t} = MAX\left[(SE_{k,h}^{m,t} - AQEI_{k,h}^{m,t})/SE_{k,h}^{m,t}, 0\right]$$

where *operating reserve* is provided from a *dispatchable load*:

$$ORESF_{k,r,h}^{m,t} = MAX\left[(AQEW_{k,h}^{m,t} - SE_{k,h}^{m,t}) / AQEW_{k,h}^{m,t}, 0\right]$$

in either of the above cases:

$ORESF_{k,r,h}^{m,t}$ shall be 0 if:

a. $SE_{k,h}^{m,t}=0$;

b. no *class r reserve* is activated for *registered facility* k/m, at *RWM* m during *metering interval* t of *settlement hour* h; or

c. $ORESF_{k,r,h}^{m,t}$ is less than the value established by the *IMO Board* and *published* in accordance with section 3.8.2.4.

Where:

$SE_{k,h}^{m,t}$ = total scheduled *energy*, including activated *operating reserve*, from *registered facility* k/m at *RWM* m, determined on the basis of the *dispatch instructions* for *metering interval* t of *settlement hour* h.

3.8.2.2 define $\Sigma_{T,H}\ ORRSC_{k,r,H}^{m,T}$ = total *settlement* credits for *class r reserve* (including congestion management *settlement* credits related to *class r reserve*) during the lesser of:

a. where *registered facility* k/m has not been activated to provide *operating reserve* during the 719 *settlement hours* preceding the current *settlement hour*, all *metering intervals* during the current *settlement hour* and all of the *metering intervals* within the 719 *settlement hours* preceding the current *settlement hour*; or

b. where *registered facility* k/m has been activated to provide *operating reserve* during the 719 *settlement hours* preceding the current *settlement hour* all *metering intervals* between the current *metering interval*, including the current *metering interval* and the most recent *metering interval* preceding the current *metering interval*, in which the *market participant* k received a *dispatch instruction* for the activation of *class r reserve* from *registered facility* k/m.

3.8.2.3 $ORSSD_{k,r,h}$ is defined as follows:

a. where the most recent *dispatch instruction* issued to the *market participant* for the activation of *class r reserve* prior to the current *metering interval* was issued within the 719 *settlement hours* preceding the current *settlement hour* and resulted in $ORESF_{k,r,h}^{m,t}$ that exceeded the value referred to in section 3.8.2.4,
$ORSSD_{k,r,h} = \sum_{m,t} [ORESF_{k,r,h}^{m,t} \times \sum_{T,H} (ORRSC_{k,r,H}^{m,T})]$; or

b. in all other cases,
$ORSSD_{k,r,h} = \sum_{m,t} [ORESF_{k,r,h}^{m,t} \times \sum_{T,H} (ORRSC_{k,r,H}^{m,T})/2]$

where:

t = all *metering interval*s in *settlement hour* h in which $ORESF_{k,r,h}^{m,t}$ exceeds the value referred to in section 3.8.2.4

T = all *metering intervals* referred to in section 3.8.2.2 (a), or 3.8.2.2 (b) as the case may be

H = all *settlement hours* referred to in section 3.8.2.2 (a), or 3.8.2.2 (b) as the case may be

m = all *RWMs* serving *market participant* k's *registered facilities*

3.8.2.4 For the purposes of section 3.8.2.1(c), the *IMO Board* shall establish, and the *IMO* shall *publish,* a value below which $ORESF_{k,r,h}^{m,t}$ shall be set at zero. Where the *IMO Board* revises such value:

a. any such revised value shall be *published* by the *IMO*; and

b. the revised value shall not be used for the purposes of calculating $ORESF_{k,r,h}^{m,t}$ until 31st *trading day* following the date of publication.

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3.8A Second Settlement - Hourly Settlement Amounts for Intertie Offer Guarantees

3.8A.1 The *market prices* determined by the *real-time market schedule* provided by the *IMO* used for the *settlement* of a *boundary entity* associated with an *intertie metering point* will sometimes deviate from its accepted *offer* prices in the *pre-dispatch market schedule* (the "*projected market schedule*") in ways that, based on the *real-time dispatch process,* imply a change to *market participant* k's net operating profits relative to the operating profits implied by *the pre-dispatch market schedule* for that *boundary entity*. When this occurs but subject to section 3.8A.3, *market participant* k associated with that *boundary entity* for *settlement hour* h shall receive as compensation, an *intertie offer* guarantee

settlement credit for that portion of its import of *energy* into the *IMO-administered markets* that was not scheduled in the *day--ahead market,* equal to the cumulative losses resulting from a negative change in implied operating profits over the course of each *settlement hour*, resulting from such *settlement*, calculated in accordance with section 3.8A.2.

3.8A.2 The hourly *intertie offer* guarantee *settlement* credit for *market participant* k for *settlement hour* h ("$IOG_{k,h}$") 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* from a particular *boundary entity* associated with an *intertie metering point* in the ~~*IMO-administered markets*~~*real-time market*, 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 *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 (see above)

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

$IOG_{k,h} = EIM_{k,h}$

Where:

$EIM_{k,h}$ represents that component of the *intertie offer* guarantee *settlement* credit for *market participant* k during *settlement hour* h attributable to import of *energy* into the *IMO-administered markets* at all relevant *intertie metering points* i in accordance with the rationale referred to in section 3.8A.1 and is calculated as follows:

$$EIM_{k,h} = \sum_{I} (-1) \bullet MIN\left[0, \sum_{T} OP(EMP_h^{i,t}, MQSI_{k,h}^{i,t}, BE)\right]$$

$$EIM_{k,h} = \sum_{I} (-1) \bullet MIN\left[0, \sum_{T} OP(EMP_h^{i,t}, \left[MQSI_{k,h}^{i,t} - \frac{DAM\{2\}\_QES_{k,h}^{i} + DAM\{3\}\_QES_{k,h}^{i}}{12}\right], BE)\right]$$

Such that:

I is the set of all relevant *intertie metering points* i

T is the set of all *metering intervals* t in *settlement hour* h

3.8A.3 The cumulative hourly *intertie offer* guarantee *settlement* credit payable to a *market participant* for any and all applicable *settlement hours* in the *real-time energy market billing period* shall be adjusted by the *IMO* in accordance with section 3.8A.4 to nullify such credits where the *market assessment unit* has determined that:

3.8A.3.1 that *market participant* has submitted one or more *offers* of *energy* in the *real-time market* and one or more *bids* for *energy* in the *real-time market* as contemplated by section 3.5.8.1 of Chapter 7 for the same *dispatch interval*; or

3.8A.3.2 that *market participant* has an agreement or arrangement to share the *intertie* offer guarantee *settlement* credit with one or more other *market participants* and they have submitted one or more *offers* of *energy* and one or more *bids* for *energy* as contemplated by section 3.5.8.1 of Chapter 7 for the same *dispatch interval*;

and, in either case, at least one of such *energy offers* and one of such *energy bids* is scheduled. For certainty, any *market participant* shall have recourse to the dispute resolution provisions of section 2 of Chapter 3 if it believes that the *market assessment unit* did not have reasonable grounds for making the determination that the *market participant* had any such agreement or arrangement with another *market participant*.

3.8A.4 Any adjustment made by the *IMO* under section 3.8A.3 shall be applied to any export transaction in the *market schedule* for *market participant* k in each *settlement hour* for which *market participant* k is entitled to receive an *intertie offer* guarantee *settlement* credit. The total amount offset shall be limited by the cumulative quantity of the export transactions expressed in the *market schedule* for that *settlement hour* and shall not exceed the total *intertie offer* guarantee *settlement* credits received for the *settlement hour*. Where the cumulative quantity of the export transactions expressed in the *market schedule*, net of any corresponding *day-ahead market* schedules for the *settlement hour*, is less than the cumulative quantity of imports triggering *intertie offer* guarantee *settlement* credits for that same *settlement hour*, the *intertie offer* guarantee *settlement* credits will be offset in ascending order from the import transaction attracting the smallest *intertie offer* guarantee *settlement* credit to the import transaction attracting the largest and only up until the point at which the total quantity of import transactions equals the total quantity of export transactions, and may be expressed as follows:

Let MI be a matrix of X pairs of *market schedule* quantities scheduled for injection by *market participant* k, net of any associated *day-ahead market* schedule for the same transaction, at all *intertie metering points* i in *metering interval* t of *settlement hour* h ($MQSI_{k,h}^{i,t}$) paired with the corresponding component of the *intertie offer* guarantee *settlement* credit for each *intertie metering point* i as given by the equation

(-1)MIN[0,$\sum_T$OP(EMP$_h^{i,t}$, ~~M~~QSI$_{x^*,k,h}^{i,t}$,BE)]

~~,~~ in ascending order of such calculations.

Where:

x*∈ X, such that ~~M~~QSI$_{x^*,k,h}^{i,t}$ denotes the value ~~:of~~

MQSI$_{k,h}^{i,t}$ – DAM{2}_QES$_{k,h}^{i}$/12- DAM{3}_QES$_{k,h}^{i,t}$/12

in row x* of matrix MI

For each unique row x* in matrix MI, the adjusted *market schedule* quantities scheduled for injection by *market participant* k at an *intertie metering point* i in *metering interval* t of *settlement hour* h (MQSI{adj}$_{k,h}^{i,t}$) shall be calculated as follows:

$$\text{MQSI}\{\text{adj}\}_{k,h}^{i,t} = \text{MIN}\left[\text{MQSI}_{x^*,k,h}^{i,t}, \text{MAX}\left[0, \left(\sum_{x=1}^{x=x^*} \text{Q}_{x^*,k,h}^{i,t} - \sum^{I}\left(\text{MQSW}_{k,h}^{i,t} - \textit{DAM}\{3\}\_\textit{QEB}_{k,h}^{i,t}\right)\right)\right]\right]$$

MQSI{adj}$_{k,h}^{i,t}$ is each, and where applicable, adjusted quantity scheduled for injection in the *market schedule* by *market participant* k at an *intertie metering point* i in *metering interval* t of *settlement hour* h corresponding with each quantity MQSI$_{x^*,k,h}^{i,t}$ in matrix MI, row x*.;

I is the set of all relevant *intertie metering points* i; and,

all other variables are as defined in section 3.8A.2 such that:

$$\text{IOG}_{k,h}\text{OFFSET} = \text{EIM}_{k,h} - \sum_{I}(-1) \bullet \text{MIN}\left[0, \sum_{T}\text{OP}(\text{EMP}_h^{i,t}, \text{MQSI}\{\text{adj}\}_{k,h}^{i,t}, \text{BE})\right]$$

where function OP and variable EIM$_{k,h}$ are as defined in section 3.8A.2

3.8A.5 The cumulative IOG$_{k,h}$OFFSET *settlement amounts* received from *market participants* for each *real-time energy market billing period* shall be distributed to *market participants* in accordance with section 4.8.2.3.

3.8A.6 $IOG_{k,h}OFFSET$ *settlement amounts* shall be aggregated or disaggregated on *settlement statements* in such manner as shall be determined by the *IMO*.

3.8B Second Settlement - Net DAM Balancing Allocation

3.8B.1 The *IMO* shall calculate the Net DAM Balancing Allocation ($NDBA_{k,h}$) on an hourly basis as the accumulation of the net financial imbalance in the *IMO-administered markets* owing to:

3.8B.1 quantity differences between injections and withdrawals of *energy* scheduled by the *DAM calculation engine* in *Pass* 3;

3.8B.2 quantity differences associated with settling *virtual transactions* using *Pass* 5 quantities from the *DAM calculation engine* and settling *physical transactions* using *Pass* 3 quantities from the *DAM calculation engine*;

3.8B.3 quantity differences associated with settling *physical transactions* for *price sensitive loads* using *Pass* 5 quantities from *DAM calculation engine* and settling other *physical transactions* using *Pass* 3 quantities from the *DAM calculation engine*; and

3.8B.4 any financial differences owing to the *settlement* of *energy* in *the real-time market* net of any applicable congestion rents;

and is formulated as follows:

$$NDBA_{k,h} = [\sum_{K}^{M} (HPTSA\{2\}*_{k,h}^{m} + DAM\_TCRF_{h} + \sum_{K} (HVTSA_{k,h} + D\_TRSC_{k,h} + TRSC_{k,h})] x [(AQEW_{k,h}^{m,t} + RQ_{k,h}^{m,t}) / \sum_{K}^{M,T} (AQEW_{k,h}^{m,t})]$$

Where:

$HPTSA\{2\}*_{k,h}^{m}$ is the set of all *second settlement* Hourly Physical Transaction Settlement Amounts for *energy* other than those scheduled in *PASS* 2 of the *DAM calculation engine* as described in section 3.4B.3.

$RQ_{k,h}^{m,t}$ is the net sum of any applicable PBC Reallocate Quantities at location 'm' during *settlement hour* 'h' as indicated in all relevant *physical bilateral contract data* in which the transfer of this *hourly uplift* has been agreed to between the *selling market participant* and the *buying market participant* such that:

$$RQ_{k,h}^{m,t} = \sum_{s,b} [DAM\_BCQ_{k,b,h}^{m,t} + BCQ_{k,b,h}^{m,t} - DAM\_BCQ_{s,k,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$$

K is the set of all *market participants* 'k'

T is the set of all *metering intervals* 't' in *settlement hour* 'h'

M is the set of all *delivery points* and *intertie metering points* 'm'

$D\_TRSC_{k,h}$ is any amounts paid to *TR holders* during *settlement hour* 'h' for *TRs*.

$D\_TCRF_{k,h}$ is the *transmission charge reduction fund* during *settlement hour* 'h' described in section 3.6.2.

$TRSC_{k,h}$ is any amounts paid to *TR holders* during *settlement hour* 'h' for *TRs* during any transition period in which *transmission rights* determined in the *real-time market* continue to be valid after the *day-ahead market* is activated.

3.8B.2 The Net DAM Balancing Allocation ($NDBA_h$) shall be considered as a component of *hourly uplift* pursuant to section 3.9.

3.8C Second Settlement – Operating Reserve Uplift

3.8C.1 The *IMO* shall calculate the DAM Operating Reserve Uplift ($DORU_{k,h}$) on an hourly basis as the accumulation of the net financial imbalance in the *IMO-administered markets* owing to the settlement of *physical transactions* for all classes 'r' of *operating reserve* spanning the *day- ahead market* and *real-time market* and is formulated as follows:

$$DORU_{k,h} = \sum_K (HORSA\{2\}_{k,h}) \times [\sum^{M,T} (AQEW_{k,h}^{m,t} + RQ_{k,h}^{m,t\,t}) / \sum_K^{M,T} (AQEW_{k,h}^{m,t})]$$

Where

$HORSA\{2\}_{k,h}$ is the Hourly Operating Reserve Settlement amount from the *second settlement* process for all classes r of *operating reserve* as described in section 3.4D

'K' is the set of all *market participants* 'k'

'T' is the set of all *metering intervals* 't' in *settlement hour* 'h'

$RQ_{k,h}^{m,t}$ is the net sum of any applicable PBC Reallocate Quantities at location 'm' during *settlement hour* 'h' as indicated in all relevant *physical bilateral contract data* in which the transfer of this *hourly uplift* has been agreed to between the *selling market participant* and the *buying market participant* such that:

$$RQ_{k,h}^{m,t} = \sum_{s,b} [DAM\_BCQ_{k,b,h}^{m,t} + BCQ_{k,b,h}^{m,t} - DAM\_BCQ_{s,k,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$$

3.8C.2 The DAM Operating Reserve Uplift ($DORU_{k,h}$) shall be considered as a component of *hourly uplift* pursuant to section 3.9.

3.8D Second Settlement – Congestion Management Settlement Credit Uplift

3.8D.1 The *IMO* shall calculate the DAM Congestion Management Settlement Credit Uplift ($DCU_{k,h}$) on an hourly basis as the accumulation of the net financial imbalance in the *IMO-administered markets* owing to:

3.8D.1.1 *settlement amounts* for congestion management settlement credits from the *first settlement* process that are reported in the *second settlement* process for *settlement hour* 'h' as described in section 3.4E.1;

3.8D.1.2 *settlement amounts* for balancing congestion management settlement credits between the *day-ahead market* and *real-time market* in the *second settlement* process for *settlement hour* 'h' as described in section 3.4F; and

3.8D.1.3 *settlement amounts* for congestion management settlement credits from the *real-time market* reported in the *second settlement* process for *settlement hour* 'h' as described in section 3.5.

and is formulated as follows:

$$DCU_{k,h} = \sum_{K,}(D\_CMSC\{1\}_{k,h} + D\_CMSC\{2\}_{k,h} + CMSC_{k,h}) \times [(\sum^{M,T} AQEW_{k,h}^{m,t} + RQ_{k,h}^{m,t}) / \sum_{K}^{M,T} (AQEW_{k,h}^{m,t})]$$

Where:

$D\_CMSC\{1\}_{k,,h}$ are *settlement amounts* for congestion management settlement credits from the *first settlement* process are described in section 3.4E

$D\_CMSC\{2\}_{k,,h}$ *settlement amounts* for balancing congestion management settlement credits between the *day-ahead market* and *real-time market* in the *second settlement* process described in section 3.4F

$CMSC_{k,h}$ are *settlement amounts* for congestion management settlement credits from the *real-time market* described in section 3.5

$RQ_{k,h}^{m,t}$ is the net sum of any applicable DAM PBC Reallocate Quantities at location 'm' during *settlement hour* 'h' as indicated in all relevant *physical bilateral contract* in which the transfer of this *hourly uplift* has been agreed to between the *selling market participant* and the *buying market participant* such that:

$RQ_{k,h}^{m,t} = \sum_{s,b} [DAM\_BCQ_{k,b,h}^{m,t} + BCQ_{k,b,h}^{m,t} - DAM\_BCQ_{s,k,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$

K is the set of all *market participants* 'k'

T is the set of all *metering intervals* 't' in *settlement hour* 'h'

3.8D.2 The DAM Congestion Management Settlement Credit Uplift ($DCU_{k,h}$) shall be considered as a component of *hourly uplift* pursuant to section 3.9.

3.9 Second Settlement - Hourly Uplift Settlement Amounts

3.9.1 The hourly *settlement amounts* determined on an hourly basis from the *second settlement* process defined by the preceding provisions of this section 3 ~~will~~ may result in a~~n hourly *settlement*~~ deficit that shall be recovered from *market participants* as a whole through the *hourly uplift*~~.~~. The total *settlement amount* for *hourly uplifts* for *settlement hour* h ("$HUSA_h$") shall be determined according to the following equation:

$$HUSA_h = \sum_K (NDBA_{k,h} + DORU_{k,h} + CAPRSC_{k,h} + DCU_{k,h} + IOG_{k,h}) - \sum_k (CRSSD_{k,h} + \sum_r ORSSD_{k,r,h})$$

over the set 'K' of all *market participants* 'k'

$NDBA_{k,h}$ = net DAM balancing allocation for *market participant k* in *settlement hour h* which already accounts for the removal of the *transmission charge reduction fund* described in section 3.6.2.

$DORU_{k,h}$ = *operating reserve* uplift for *market participant k* in *settlement hour* h

$DCU_{k,h}$ = congestion management *settlement* credit uplift for *market participant k* in *settlement hour* h

$IOG_{k,h}$ = *intertie offer* guarantee *settlement* credit for the *market participant* associated with that *boundary entity* k in *settlement hour* h

$ORSSD_{k,r,h}$ = *operating reserve settlement* debit for *operating deviations* for *class r reserve* for *market participant k* in *settlement hour* h

~~$HUSA_h$ = Σ_k($NEMSC_{k,h}$ + $ORSC_{k,h}$ + $CAPRSC_{k,h}$ + $CMSC_{k,h}$ + $TRSC_{k,h}$ + $IOG_{k,h}$) + $TCRF_h$ – Σ_k ($CRSSD_{k,h}$ + Σ_r $ORSSD_{k,r,h}$)~~

~~over all k *market participants*~~

~~$NEMSC_{k,h}$ = net *energy market settlement* credit for *market participant k* in *settlement hour h*~~

~~$ORSC_{k,h}$ = *operating reserve market settlement* credit for *market participant k* in *settlement hour h*~~

~~$CAPRSC_{k,h}$ = *capacity reserve market settlement* credit for *market participant k* in *settlement hour h*~~

~~$CMSC_{k,h}$ = congestion management *settlement* credit for *market participant k* in *settlement hour* h~~

~~$TRSC_{k,h}$ = *transmission rights settlement* credit for *market participant k* in *settlement hour h*~~

~~$IOG_{k,h}$ = *intertie offer* guarantee *settlement* credit for the *market participant* associated with that *boundary entity* k in *settlement hour* h~~

~~$TCRF_h$ = transmission charge reduction fund contribution in *settlement hour* h~~

~~$CRSSD_{k,h}$ = *capacity reserve settlement* debit for *operating deviations* for *market participant k* in *settlement hour* h~~

~~$ORSSD_{k,r,h}$ = *operating reserve settlement* debit for *operating deviations* for *class r reserve* for *market participant k* in *settlement hour* h~~

3.9.2 The *IMO* shall allocate *hourly uplift* on a pro-rata basis across all allocated quantities of *energy* withdrawn at all ~~*RWMs*~~ *delivery points* and at all *intertie metering points* during all *metering intervals* within each *settlement hour* in which an *hourly uplift settlement amount* accrues.

3.9.3 *Hourly uplift* and non-hourly *settlement amounts* shall be disaggregated on *settlement statements* in such manner as shall be determined by the *IMO.*

3.9A Second Settlement – DAM Pass 2 Import Uplift

3.9A.1 The *IMO* shall calculate the DAM *Pass* 2 Import Uplift ($DIU_{k,h}$) on an hourly basis as the accumulation of the net financial imbalance in the *IMO-administered markets* owing to the *settlement* of import transactions which are scheduled in *Pass* 2 of the *DAM calculation engine* and not subsequently scheduled in *Pass* 3 or *Pass* 5 of the *DAM calculation engine* and therefore are not financially offset in the *day-ahead market*. If the resulting financial imbalance from the *settlement* of these transactions under the provisions of section 3.4B.3 in any given *settlement hour* is:

3.9A.1.1 a deficit amount owing to the *IMO administered markets*, then this amount shall be allocated on a pro-rata basis across allocated quantities of *energy* withdrawn at all *delivery points* and at all *intertie metering points* during all *metering intervals* within each *settlement hour* in which this *settlement amount* accrues for all *real-time market* loads and exports that were not scheduled in the *day-ahead market* and to *virtual transactions* to sell *energy;* or

3.9A.1.2 a surplus amount owing to the *market participants*, then this amount shall be allocated on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *delivery points* and at all *intertie metering points* during all *metering intervals* within each *settlement hour* in which this *settlement amount* accrues.

3.9A.2 A deficit amount for the *settlement* of *Pass* 2 import transactions shall be deemed to have accrued for the *settlement hour* 'h' in which:

$$\sum_K HPTSA\{\text{Pass 2 import component}\}_{k,h} > 0$$

where:

$HPTSA\{\text{Pass 2 import component}\}_{k,h}$ is that portion of the Hourly Physical Transaction Settlement Amount calculated in the *second settlement* process that is attributable to import transaction scheduled in *Pass 2* transactions as described in section 3.4B.3.

In which case, the following formula shall be applied:

$$DIU_{k,h} = [[HOEP_h - DAM\{5\}\_P_h^i] \times [\sum_K DAM\{2\}\_QES_{k,h}^i]]$$

$$\times [\sum^{M,T}(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + DAM\{5\}\_QESV_{k,h}^{m,t} - DAM\{5\}\_QEB_{k,h}^{m,t} + RQ_{k,h}^{m,t}) / \sum_K^{M,T}(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + DAM\{5\}\_QESV_{k,h}^{m,t} - DAM\{5\}\_QEB_{k,h}^{m,t})]$$

3.9A.3 A surplus amount for the *settlement* of *Pass* 2 import transactions shall be deemed to have accrued for the *settlement hour* 'h' in which:

$\sum_K HPTSA\{Pass\ 2\ import\ component\}_{k,h} < 0$

where:

$HPTSA\{Pass\ 2\ import\ component\}_{k,h}$ is that portion of the Hourly Physical Transaction Settlement Amount calculated in the *second settlement* process that is attributable to import transaction scheduled in *Pass 2* transactions as described in section 3.4B.3.

in which case, the following formula shall be applied:

$$DIU_{k,h} = [[HOEP_h - DAM\{5\}\_P_h^i] \times [\sum_K DAM\{2\}\_QES_{k,h}^i]] \times [\sum^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_K^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$$

3.9A.4 The DAM *Pass* 2 Import Uplift (DIUk,h) shall not be considered as a component of *hourly uplift* pursuant to section 3.9.1.

4. Non-hourly Settlement Amounts

4.1 Transmission Tariff Charges

4.1.1 The *IMO* shall collect from *transmission customers*, and distribute to *transmitters*, *transmission service charges* approved by the *OEB* in accordance with Chapter 10.

4.2 Ancillary Service Payments

4.2.1 The *IMO* shall have the authority to negotiate *reliability must-run contracts* with *registered market participants* or prospective *registered market participants* regarding the operation of *reliability must-run resources* in accordance with section 9 of Chapter 7. Where such *reliability must-run contracts* provide both for payments from the *energy market* and *operating reserve market* pursuant to section 3 and additional payments for making *physical services*, other than *contracted ancillary services*, available to those markets, any such additional payments required to be made in a given *energy market billing period* shall be recovered from *market participants* through a uniform charge, in $/MWh, imposed on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and at all *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*.

4.2.2 The *IMO* shall contract for *certified black start facilities* adequate to permit the *IMO* to meet its obligations under Chapter 5. The costs to the *IMO* of contracting for such *certified black start facilities* in a given *energy market billing period* shall be recovered from *market participants* through a uniform charge, in $/MWh,

imposed on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and at all *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*.

4.2.3 The *IMO* shall contract for *regulation* adequate to permit the *IMO* to meet its obligations under Chapter 5. The costs to the *IMO* of contracting for *regulation* in a given *energy market billing period* shall be recovered from *market participants* through a uniform charge, in $/MWh, imposed on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and at all *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*.

4.2.3A Subject to section 4.8A.2 of Chapter 5, the *IMO* shall have the authority to contract for emergency demand response load to permit the *IMO* to meet its obligations under Chapter 5. The costs to the *IMO* of contracting for emergency demand response load in a given *energy market billing period* shall be recovered from *market participants* through a uniform charge, in $/MWh, imposed on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and at all *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*.

4.2.4 The *IMO* shall contract for *reactive support service* and *voltage control service* adequate to permit the *IMO* to meet its obligations under Chapter 5. The costs to the *IMO* of contracting for such *reactive support service* and *voltage control service* in a given *energy market billing period* shall be recovered in accordance with the following:

4.2.4.1 *market participants* shall pay for such costs through a uniform charge, in $/MWh, imposed on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and at all *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*;

4.2.4.2 there shall be no power factor requirements or penalties associated with electrical power flowing out of Ontario through *intertie metering points*; and

4.2.4.3 there shall be no separate compensation from the *IMO* for *reactive support service* and *voltage control service* from equipment such as capacitor banks, reactor banks, and synchronous condensers owned by *transmitters*. Any compensation for providing such *ancillary services* shall be included in the *transmission services charges* to the extent provided by the *OEB*.

4.2.5 Subject to sections 9.4.2 and 9.4.4 of Chapter 7, no compensation shall be paid for *ancillary services* provided pursuant to the *connection* requirements of Chapter 4.

4.2.6 [Intentionally left blank]

4.3 [Intentionally left blank]

4.4 Rural and Remote Settlement

4.4.1 The *IMO* shall collect and distribute payments relating to *rural and remote settlement* in accordance with directions of the *OEB* and any regulations made under the *Ontario Energy Board Act, 1998*.

4.5 IMO Administration Charge, Penalties, and Fines

4.5.1 The *IMO* shall determine a methodology for calculating and allocating an *IMO administration charge.*

4.5.2 The *IMO* shall develop and *publish* a schedule of penalties and fines and describe how these will be implemented.

4.6 Debt Retirement Charge

4.6.1 The *IMO* shall collect and remit payments relating to the *debt retirement charge* from such *market participants,* at such times and in such amounts as may be required by any regulations made pursuant to the *Electricity Act, 1998.*

4.7 TR Clearing Account Disbursements

4.7.1 Disbursements from the *TR clearing account* ordered by the *IMO Board* pursuant to section 4.18.2 of Chapter 8 shall be distributed to each *market participant* k as a non-hourly *settlement amount* according to its allocated quantity of *energy* withdrawn at all *RWMs* and *intertie metering points* during the *energy market billing period* immediately preceding the current *energy market billing period* in the manner described in section 4.7.2.

4.7.2 The portion of any disbursement from the *TR clearing account* payable to *market participant* k in the current *energy market billing period* shall be calculated as follows:

$$TRCAC_k = \frac{TRCAD}{\sum_{K,H}^{M,T} AQEW_{k,h}^{m,t}} \times \sum_{H}^{M,T} AQEW_{k,h}^{m,t}$$

Where:

$TRCAC_k$ = the *TR clearing account* credit payable to *market participant* k in the current *energy market billing period*

TRCAD = the total dollar value of all disbursements from the *TR clearing account* authorised by the *IMO Board* in the current *energy market billing period*

M = the set of all *RWMs* m and *intertie metering points* m during the *energy market billing period* immediately preceding the current *energy market billing period*

K = the set of all *market participants* k during the *energy market billing period* immediately preceding the current *energy market billing period*

T = the set of all *metering intervals* t in the *energy market billing period* immediately preceding the current *energy market billing period*

H = the set of all *settlement hours* h in the *energy market billing period* immediately preceding the current *energy market billing period*

4.7A Settlement Amounts for Hour-Ahead Dispatchable Load Offer Guarantee

4.7A.1 A *market participant* for an *hour-ahead dispatchable load* shall receive compensation in the form of an *hour-ahead dispatchable load offer* guarantee, determined in accordance with section 4.7A.2, for a given *dispatch hour* under the following circumstances:

4.7A.1.1 the *IMO* issued a *dispatch instruction* to the *registered market participant* for the *hour-ahead dispatchable load* for the applicable *settlement hour* pursuant to section 7.1.3B of Chapter 7; ~~and~~

4.7A.1.2 the calculation of the operating profit function defined in section 4.7A.2 determines a negative value for that *hour-ahead dispatchable load* scheduled to provide an *energy* reduction for that *settlement hour*; and

4.7A.1.3 the *energy* that is subject to the *hour-ahead dispatchable load* offer guarantee has not been scheduled in the *day-ahead market* for any corresponding *settlement hour*.~~,~~

4.7A.2 If the conditions specified in section 4.7A.1 exist, then the *IMO* shall determine the *hour-ahead dispatchable load offer* guarantee ("$HADLOG_{k,h}^{m}$") for *market participant* k at *delivery point* m for *settlement hour* h as follows:

Let OP(P,Q,B) be a profit function of Price (P), Quantity (Q) and a 4 x 2 matrix (BHA) of offered *price-quantity pairs* as defined in section 3.1.10 such that:

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

Where:

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

Given the above, $HADLOG_{k,h}^{m}$ may be expressed as follows:

$$HADLOG_{k,h}^{m} = (-1) \bullet MIN\left[0, OP(HOEP_h, HADLR_{k,h}^{m}, BHA)\right]$$

4.7B Generation Cost Guarantee Payments

4.7B.1 The *IMO* shall determine on a *per-start* basis, for each *generation facility* that has met the eligibility criteria for the generation cost guarantee specified in sections 2.2, 5.7 and 6.3A of Chapter 7, the following:

4.7B.1.1 the sum of the following revenues earned in each *dispatch interval* during the period from synchronisation to the end of the *minimum run-time*:

a. *energy market* prices times the sum of the applicable AQEI and any applicable *physical allocation data*, for *energy* injected up to and including the *minimum loading point*; and

b. hourly *settlement amounts* for *operating reserve*; and

c. any congestion management *settlement* credit payments resulting from the *facility* being constrained on in order to meet its *minimum loading point*; and

4.7B.1.2 the applicable *combined guaranteed costs* submitted by the *market participant* for the specified *generation facility* for the start to which the revenues determined in accordance with 4.7B.1.1 apply which are not accrued in any *settlement hour* in which a production cost guarantee is already covering any start-up costs or minimum generation costs for the same *facility*.

4.7B.2 If the sum of the revenues calculated pursuant to section 4.7B.1.1 for each eligible *generation facility* is greater than or equal to the *combined guaranteed costs* referred to in section 4.7B.1.2, then no additional payments are made in respect of the eligible *generation facility* by the *IMO*.

4.7B.3 If the sum of the revenues calculated pursuant to section 4.7.1.1 is for each eligible *generation facility* less than the *combined guaranteed costs* referred to in section 4.7B.1.2, then the *IMO* shall calculate that difference and shall include that amount in the form of additional payments made in respect of the eligible *generation facility*.

4.7C Transitional Demand Response Payments

4.7C.1 A *market participant* participating in the Transitional Demand Response Program shall provide *settlement* data to the *IMO* in the time and manner specified in the applicable *market manual*. The *IMO* may audit any submitted *settlement* data and supporting information.

4.7C.2 The *IMO* shall remit Transitional Demand Response Program payments, if any, to the applicable *market participant* in the time and manner specified in the applicable *market manual*.

4.7C.3 The *IMO* may recover from a *market participant* any previous Transitional Demand Response Program payment or portion thereof if the audit of the *market participant's settlement* data and supporting information indicates an overpayment was made to the *market participant*.

4.8 Additional Non-Hourly Settlement Amounts

4.8.1 The *IMO* shall, at the end of each *energy market billing period*, recover from *market participants*, on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*, the following amounts:

4.8.1.1 any compensation paid in that *energy market billing period* by the *IMO* pursuant to section 5.3.4 of Chapter 4;

4.8.1.2 any compensation paid in that *energy market billing period* by the *IMO* pursuant to section 5.3.4 of Chapter 5;

4.8.1.3 any out-of-pocket expenses paid in that *energy market billing period* by the *IMO* pursuant to section 6.7.4 of Chapter 5;

4.8.1.4 any compensation paid in that *energy market billing period* by the *IMO* pursuant to section 13.6.3 of Chapter 7;

4.8.1.5 any costs incurred in that *energy market billing period* by the *IMO* to acquire *emergency energy* pursuant to section 2.3.3A of Chapter 5; and

4.8.1.6 any reimbursement paid in that *energy market billing period* by the *IMO* pursuant to section 2.1A.12.2(a);

4.8.1.7 any funds borrowed by the *IMO* and any associated interest costs incurred by the *IMO* in the preceding *energy market billing period* pursuant to section 6.14.5.2;

4.8.1.8 any compensation paid in that *energy market billing period* by the *IMO* pursuant to section 4.7A;

4.8.1.9 any compensation paid in that *energy market billing* period by the *IMO* pursuant to section 4.7B.3; and

4.8.1.10 any compensation paid in that *energy market billing period* by the *IMO* pursuant to section 4.7C.

4.8.2 The *IMO* shall, at the end of each *energy market billing period*, distribute to *market participants*, on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and *intertie metering points* during all *metering intervals* and *settlement hours* within that *energy market billing period*, the following amounts:

4.8.2.1 any compensation received by the *IMO* for the provision of *emergency energy* pursuant to section 4.4A.1 of Chapter 5;

4.8.2.2 any compensation received by the *IMO* as a result of a local market power investigation as set out in sections 1.7.1 and 1.7.2 of Appendix 7.6;

4.8.2.3 any adjustments to *intertie offer* guarantee *settlement* credits for wheeling through transactions, in accordance with section 3.5.8.1 of Chapter 7, calculated pursuant to section 3.8A.3;

4.8.2.4 any adjustment to *hour-ahead dispatchable load offer* guarantee payments calculated pursuant to section 6.2.7.7 of chapter 3;

4.8.2.5 any payments recovered by the *IMO* in accordance with section 3.5.1A of chapter 9;

4.8.2.6 any adjustments made by the *IMO* in accordance with section 3.5.7 of Chapter 9; and

4.8.2.7 any adjustments to Transitional Demand Response Program payments pursuant to section 4.7C.

4.9 Second Settlement - Daily Uplift Amounts related to DAM Production Cost Guarantees

4.9.1 The *IMO* shall calculate various uplift amounts on a daily basis as an accumulation of the net financial imbalance in the *IMO-administered markets* owing to the *settlement* of production cost guarantee under the provisions of section 3.4G where such uplift amounts distinguish between:

4.9.1.1 production cost guarantee costs incurred as a result of commitments made within *pass* 1 of the *DAM calculation engine*, which shall be distributed under the Bid Load Commitment Uplift;

4.9.1.2 production cost guarantee costs incurred as a result of commitments made within *pass* 2 of the *DAM calculation engine* which were not a result of an over-forecast of the next day's aggregate load, which shall be distributed under the Forecast Load Commitment Uplift; and

4.9.1.3 production cost guarantee costs incurred as a result of commitments made within *pass* 2 of the *DAM calculation engine* which are a result of an over-forecast of the next day's aggregate load, which shall be distributed under the Load Forecast Accuracy Uplift.

4.9.2 PCG costs recovered through the Bid Load Commitment Uplift shall include all production cost guarantee costs incurred over the course of the *trading day* less any Production Cost Guarantee Commitment Adjustments, and less any "Deemed PASS 2 PCG costs" which are defined as follows:

$$\text{Deemed PASS 2 PCG costs} = \sum_{K,H}^{M} PCG\{2\}_{k,h}^{m} - PCGCA\{2\}$$
$$+ \sum_{K,H}^{N} \left[PCG\{1\ and\ 2\}_{k,h}^{m} - PCGCA\{1\ and\ 2\}_{k,h}^{m} \right] \times \frac{\sum_{K,H}^{N} \left[DAM\{2\}\_START_{k,h}^{\ m} + DAM\{2\}\_STOP_{k,h}^{\ m} \right]}{\sum_{K,H}^{N} \left[DAM\{1\}\_START_{k,h}^{\ m} + DAM\{1\}\_STOP_{k,h}^{\ m} + DAM\{2\}\_START_{k,h}^{\ m} + DAM\{2\}\_STOP_{k,h}^{\ m} \right]}$$

Such that the total cost to be recovered by the Bid Load Commitment Uplift equals:

$= \sum_{K,H,}^{M} PCG_{k,h,}^{m} - \sum_{K,H,}^{M} PCGCA\{1\}_{k,h,}^{m}$ - Deemed Pass 2 PCG Costs

Where:

'M' is the set of all *delivery points* and *intertie metering points* 'm' where *facilities*, *load components* and *intertie* transactions received production cost guarantee payments based solely on *PASS* 2 commitments.

'N' is the set of all *delivery points* and intertie metering points 'm' where *facilities* and import transactions received production cost guarantee payments based on both *PASS* 1 and *PASS* 2 commitments during the same *trading day*.

$PCG\{2\}_{k,H}^{m}$ are PCG costs incurred exclusively within *Pass* 2 of the *DAM calculation engine* over the course of the *trading day* at the same location.

$PCG\{1\ and\ 2\}_{k,H}^{m}$ are production cost guarantee costs incurred in both *Pass* 1 and *Pass* 2 of the *DAM calculation engine* over the course of the *trading day* at the same location.

PCGCA{1}$_{k,h,}^{m}$ are PCG Commitment Adjustments applied to production cost guarantees related to *unit commitments* made in *Pass 1* of the *DAM calculation engine.*

PCGCA{2} are PCG Commitment Adjustments applied to production cost guarantees related to *unit commitments* made in *Pass 2* of the *DAM calculation engine.*

PCGCA{1 and 2} are PCG Commitment Adjustments applied to Production Cost Guarantees related to *unit commitments* made in *Pass 1* and *Pass 2* of the *DAM calculation engine.*

4.9.3 Production cost guarantee costs recovered through the Forecast Load Commitment Uplift shall include all production cost guarantee costs meeting the definition of "Deemed PASS 2 PCG costs" as described in section 4.9.2 less the portion of such costs which are allocated under the Load Forecast Accuracy Uplift.

4.9.4 Production cost guarantee costs recovered through the Load Forecast Accuracy Uplift shall include that portion of production cost guarantee costs meeting the definition of "Deemed PASS 2 PCG costs" proportional to the amount by which the forecast aggregate load used in *Pass* 2 of the *DAM calculation engine* exceeds the actual amount of *energy* consumed in the *real-time market* over the course of each *settlement hour* in the *trading day*.

4.9A Second Settlement – Bid Load Commitment Uplift

4.9A.1 The Bid Load Commitment Uplift ($BLCU_k$) described in section 4.9.2 shall be recovered on a pro-rata basis from all *real-time market* loads and exports over all *settlement hours* in the *trading day* and is formulated as follows:

$$BLCU_k = \sum_{H,c}^{M,T} TD_c \times [(AQEW_{k,h}^{m,t} + RQ_{k,h}^{m,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t})]$$

Where:

M is the set of all *delivery points* 'm' and *intertie metering points* 'i'

T is the set of all *metering intervals* 't' in *settlement hour* 'h'

H is the set of all *settlement hours* 'h' in the *trading day*

$RQ_{k,h}^{m,t}$ is the net sum of any applicable PBC Reallocate Quantities at location 'm' during *settlement hour* 'h' as indicated in all relevant *physical bilateral*

contract data in which the transfer of this *hourly uplift* amount has been agreed to by the *selling market participant* and the *buying market participant* such that:

$$RQ_{k,h}^{m,t} = \sum_{s,b} [DAM\_BCQ_{k,b,h}^{m,t} + BCQ_{k,b,h}^{m,t} - DAM\_BCQ_{s,k,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$$

TD_c is the total dollar value of PCG costs to be recovered through the Bid Load Commitment Uplift described in section 4.9.2

4.9A.2 The Bid Load Commitment Uplift ($BLCU_k$) shall not be included as a component of *hourly uplift* described in section 3.9.1.

4.9B Second Settlement – Forecast Load Commitment Uplift

4.9B.1 The Forecast Load Commitment Uplift ($FLCU_k$) described in section 4.9.3 shall be recovered on a pro-rata basis from all *real-time market* loads and exports on an hourly basis that were not scheduled in the ~~*day-ahead*~~*day-ahead market* and to *virtual transactions* to sell *energy* and is formulated as follows:

$$FLCU_k = \sum_{H,C}^{M,T} [\text{Deemed PASS 2 PCG costs} \times (1- DIFF)] \times [(AQEW_{k,h}^{m,t} + DAM\{5\}\_QESV_{k,h}^{m,t} - DAM\{5\}\_QEB_{k,h}^{m,t} + RQ_{k,h}^{m,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + DAM\{5\}\_QESV_{k,h}^{m,t} - DAM\{5\}\_QEB_{k,h}^{m,t})]$$

Where:

$RQ_{k,h}^{m,t}$ is the net sum of any applicable DAM PBC Reallocate Quantities at location 'm' during *settlement hour* 'h' as indicated in all relevant *physical bilateral contract data* in which the transfer of this *hourly uplift* has been agreed to by the *selling market participant* and the *buying market participant* such that:

$$RQ_{k,h}^{m,t} = \sum_{s,b} [DAM\_BCQ_{k,b,h}^{m,t} + BCQ_{k,b,h}^{m,t} - DAM\_BCQ_{s,k,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$$

"Deemed PASS 2 PCG Costs" is as defined in section 4.9.2.

DIFF is a value derived from the calculation of the Load Forecast Accuracy Uplift and represents that portion of production cost guarantees committed in *Pass* 2 of the *DAM calculation engine* that need to be allocated back to all withdrawals of *energy* from the *day-ahead market*:

$$DIFF = MAX[0, [DAM\{2\}\_FORECAST_h - \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t})] / DAM\{2\}\_FORECAST_h]$$

4.9B.2 The Forecast Load Commitment Uplift ($FLCU_k$) shall not be a component of the grouping of *settlement amounts* known as *hourly uplift* described in section 3.9.1.

4.9C Second Settlement –Load Forecast Accuracy Uplift

4.9C.1 The Load Forecast Accuracy Uplift ($LFAU_k$) described in section 4.9.4 shall be recovered on a pro-rata basis from all *real-time market* loads and exports over the ~~all~~ *settlement hours* in the *trading day* and is formulated as follows:

$$LFAU_k = DIFF \times \sum_{K,H}(FLCU_k) \times [\sum_H^{M,T}(AQEW_{k,h}^{m,t} + RQ_{k,h}^{m,t}) / \sum_{K,H}^{M,T}(AQEW_{k,h}^{m,t})]$$

Where

$$DIFF = MAX[0, DAM\{2\}\_FORECAST_h - \sum_{k,H}^{M,T}(AQEW_{k,h}^{m,t}) / DAM\{2\}\_FORECAST_h]$$

'K' is the set of all *market participants* 'k'

'H' is the set of all *settlement hours* 'h'

$\sum_K (FLCU_{k,h})$ is the total dollar value of the Forecast Load Commitment Uplift for all *market participants* for the *trading day*

$RQ_{k,h}^{m,t}$ is the net sum of any applicable DAM PBC Reallocate Quantities at location 'm' during *settlement hour* 'h' as indicated in all relevant *physical bilateral contract data* in which the transfer of this *hourly uplift* has been agreed to by the *selling market participant* and the *buying market participant* such that:

$$RQ_{k,h}^{m,t} = \sum_{s,b}[DAM\_BCQ_{k,b,h}^{m,t} + BCQ_{k,b,h}^{m,t} - DAM\_BCQ_{s,k,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$$

4.9C.2 The Load Forecast Accuracy Uplift ($LFAU_k$) shall not be a component of the grouping of *settlement amounts* known as *hourly uplift* described in section 3.9.1.

5. Market Power Mitigation

5.1 Settlement of Market Power Mitigation Rebate

5.1.1 Any payment received by the *IMO* pursuant to the terms of any agreement:

5.1.1.1 to which the *IMO* is required by its *licence* to be a party;

5.1.1.2 which incorporates the terms of a directive issued by the *Minister* to the *Ontario Energy Board* pursuant to subsection 28(1) of the *Ontario Energy Board Act, 1998*; and

5.1.1.3 which provides for the payment to the *IMO* of a rebate of certain *settlement amounts*,

shall be distributed in accordance with the *IMO licence*, as amended from time to time.

5.1.2 [Intentionally left blank]

5.1.3 [Intentionally left blank]

5.1.4 [Intentionally left blank]

5.1.5 [Intentionally left blank]

5.1.6 [Intentionally left blank]

6. Settlement Statements

6.1 Communication of Settlement Information

6.1.1 All communications between *market participants* and the *IMO* relating to the *settlement* process shall be effected using the *electronic information system* and other such means of communication as may be specified in applicable *market manuals*.

6.1.2 If there is a failure of a communication system and it is not possible to communicate in accordance with the *electronic information system* or where applicable, the means of communication specified in the applicable *market manuals*, then the *IMO* or the *market participant*, as the case may be, shall communicate information relating to the *settlement process* by facsimile or other alternative means specified by the *IMO*.

6.2 Settlement Schedule and Payments Calendar

6.2.1 At least 60 days prior to the *market commencement date*, and by October 15 of each year subsequent to the *market commencement date*, the *IMO* shall *publish* a draft *IMO Settlement Schedule & Payments Calendar* or *SSPC* for the following calendar year (or, in the case of the calendar year in which the *market commencement date* occurs, for the remainder of the calendar year) showing the following dates, fixed, subject to sections 6.3.20 to 6.3.29, in accordance with the relevant provisions of this section 6:

6.2.1.1 the dates by which the *IMO* shall issue to each applicable *market participant*, a *preliminary settlement statement* for each *trading day* for:

a. ~~charges or payments incurred in the day-ahead *energy forward market;* and~~ [Intentionally left blank.]

b. charges or payments incurred in respect of all rounds of any *TR auction* that is concluded on such *trading day*;

6.2.1.2 the dates by which the *IMO* shall, subject to sections 6.3.20 and 6.3.21.1, issue to each applicable *market participant*, a *preliminary settlement statement* from the *second settlement* process for each *trading day* for:

a. charges or payments incurred in the *day-ahead market* and *real-time markets;* and

b. charges or payments incurred in the *TR market* other than those referred to in section 6.2.1.1 (b);

6.2.1.3 the dates by which the *IMO* shall be notified of any errors or omissions in each *preliminary settlement statement* from the *second settlement* process referred to in section 6.2.1.1*;*

6.2.1.4 the dates by which the *IMO* shall be notified of any errors or omissions in each *preliminary settlement statement* from the *second settlement* process referred to in section 6.2.1.2 must, subject to sections 6.3.21.2 and 6.3.22.2;

6.2.1.5 the dates by which the *IMO* shall issue to each applicable *market participant*, a *final settlement statement* for each *trading day* for:

a. ~~the day-ahead *energy forward market;* and~~[Intentionally left blank.]

b. all rounds of any *TR auction* that is concluded on such *trading day*;

6.2.1.6 the dates by which the *IMO* shall, subject to sections 6.3.20 and 6.3.21.1, issue to each applicable *market participant*, a *final settlement statement* from the *second settlement* process for each *trading day* for:

a. the *day-ahead market* and *real-time markets*; and

b. the *TR market* other than in respect of the element referred to in section 6.2.1.5 (b);

6.2.1.7 the dates by which the *IMO* shall issue to each applicable *market participant*, an *invoice* for each *billing period* of a *trading week* for:

a. ~~the day-ahead *energy forward market;* and~~ [Intentionally left blank.]

b. all rounds of a *TR auction* that is concluded during such *billing period*;

6.2.1.8 the dates by which the *IMO* shall, subject to sections 6.3.20, 6.3.21.1, 6.3.23 and 6.3.29, issue to each applicable *market participant* an *invoice* for each *billing period* of a calendar month for:

a. the *day-ahead market* and *real-time markets*; and

b. the *TR market* other than in respect of the element referred to in section 6.2.1.7 (b);

6.2.1.9 the dates by which *market participant*s shall, subject to sections 6.3.23, 6.3.27 and 6.3.29, be required to make payments into the *IMO settlement clearing account* in *settlement* of *invoice*s; and

6.2.1.10 the dates by which *market participant*s shall, subject to sections 6.3.23, 6.3.27 and 6.3.29 receive payments from the *IMO settlement clearing account* of amounts owing to them.

6.2.2 The *IMO* shall make the draft *SSPC* available to *market participant*s.

6.2.3 *Market participants* shall have two weeks from the date of *publication* referred to in section 6.2.1 to submit comments and objections regarding the draft *SSPC* to the *IMO.*

6.2.4 No later than 30 days prior to the *market commencement date*, and by November 15 of each year subsequent to the *market commencement date*, the *IMO* shall, after considering any comments and objections received pursuant to section 6.2.3, *publish* the final *SSPC* for the following calendar year (or, in the case of the calendar year in which the *market commencement date* occurs, for the remainder of the calendar year).

6.2.5 The final *SSPC* shall, subject to sections 6.3.20 to 6.3.29, be binding on the *IMO* and on *market participant*s.

6.3 Settlement Cycles

6.3.1 The *preliminary settlement statement* for each *trading day* ~~in the day-ahead *energy forward market* and~~ for all rounds of any *TR auction* that is concluded on such *trading day* shall be issued 2 *business days* after the *trading day*.

6.3.2 After the *preliminary settlement statement* referred to in section 6.3.1 is issued, each *market participant* shall have 2 *business days* in which to notify the *IMO* of errors or omissions in the *preliminary settlement statement* in accordance with section 6.6.

6.3.3 The *final settlement statement* for each *trading day* ~~in the day-ahead *energy forward market* and~~ for all rounds of any *TR auction* that is concluded on such

trading day shall be issued 6 *business days* after the *trading day*. The *final settlement statement* shall, subject to section 6.10.1, constitute the basis for invoicing and billing in respect of that *trading day*.

6.3.4 The *IMO* shall issue one invoice to each *market participant*, covering all *trading days* within a *billing period*, on the same *business day* it issues the *final settlement statement* for the last *trading day* of that *billing period*.

6.3.5 The *market participant payment date* ~~for each day-ahead *energy forward market billing period* and~~ for all rounds of any *TR auction* that is concluded during such *billing period* shall occur on the second *business day* after the *invoice* is issued.

6.3.6 Each *market participant* shall initiate the *electronic funds transfer* process in accordance with the provisions of section 6.12 so as to ensure that the *market participant's* payments for ~~day-ahead *energy forward market* transactions and in respect of~~ all rounds of any *TR auction* that is concluded in each ~~day-ahead *energy forward*~~weekly ~~*market*~~ *billing period* reach the *IMO settlement clearing account* no later than the *close of banking business* (of the bank at which the *IMO settlement clearing account* is held) on the *market participant payment date*.

6.3.7 The *IMO payment date* for ~~each day-ahead *energy forward market billing period* and for~~ all rounds of any *TR auction* that is concluded during such *billing period* shall be the second *business day* after the corresponding *market participant payment date*.

6.3.8 The *IMO* shall initiate the *electronic funds transfer* process in accordance with the provisions of section 6.12 so as to ensure that the sums owing to each *market participant* for ~~day-ahead *energy forward market* transactions and in respect of~~ all rounds of any *TR auction* that is concluded in ~~each day-ahead *energy forward market*~~ weekly *billing period* reach each *market participant's settlement account* no later than the *close of banking business* (of the bank at which the *market participant's settlement account* is held) on the *IMO payment date*.

6.3.8A The *IMO* shall, subject to section 6.4A, issue *first settlement* advisories to *market participants* four *business days* after the *trading day*. *First settlement* advisories are not applicable to the *notice of disagreement* process outlined in section 6.6, nor do they constitute the basis for initial invoicing and billing.

6.3.9 Subject to sections 6.3.20 and 6.3.21.1, the *preliminary settlement statement* from the *second settlement* process for each *trading day* in the *day-ahead market*, *real-time markets* and in the *TR market*, other than in respect of the element referred to in section 6.3.1, shall be issued ten *business days* after the *trading day*. The *preliminary settlement statement* shall, subject to section 6.3.23, constitute the basis for initial invoicing and billing.

6.3.10 After the *preliminary settlement statement* referred to in section 6.3.9 is issued, each *market participant* shall, subject to sections 6.3.18.1, 6.3.21.2 and 6.3.22.2, have four *business days* to notify the *IMO* of errors or omissions in that *preliminary settlement statement* in accordance with section 6.6.

6.3.11 Subject to sections 6.3.18.2, 6.3.20 and 6.3.21.1, the *final settlement statement* from the *second settlement* process for each *trading day* in the *real-time markets* and in the *TR market*, other than in respect of the element referred to in section 6.3.3, shall be issued ten *business days* after the issuance of the *preliminary settlement statement* for that *trading day* and shall, in the case of the *real-time markets*, reflect the outcome of the validation procedure undertaken in accordance with section 6.6.

6.3.12 The *final settlement statement* referred to in section 6.3.11 shall, subject to sections 6.3.23 and 6.10.1, be the basis for final invoicing and billing.

6.3.13 The *IMO* shall, subject to section 6.3.23 and 6.3.29, issue one *invoice* to each *market participant*~~,~~ covering all *trading days* within a *billing period* on the same day it issues the *preliminary settlement statement* from the *second settlement* process for the last *trading day* of that *billing period*.

6.3.14 The *market participant payment date* for each ~~*real-time*~~monthly *billing period* and for each *TR market billing period* shall, subject to section 6.3.23, 6.3.27 and 6.3.29, be the second *business day* following the issuance of the *invoice*.

6.3.15 Each *market participant* shall initiate the *electronic funds transfer* process in accordance with the provisions of section 6.12 so as to ensure that the *market participant's* payments for each ~~*real-time market*~~ monthly *billing period* and for each *TR market billing period* reach the *IMO settlement clearing account* no later than the *close of banking business* (of the bank at which the *IMO settlement clearing account* is held) on the *market participant payment date*.

6.3.16 The *IMO* payment date for each ~~*real-time*~~monthly ~~*market*~~ *billing period* and for each *TR market billing period* shall, subject to sections 6.3.23, 6.3.27 and 6.3.29, be the second *business day* after the *market participant payment date*.

6.3.17 The *IMO* shall initiate the *electronic funds transfer* process in accordance with the provisions of section 6.12 so as to ensure that the sums owing to each *market participant* and to each *transmitter* for each ~~*real-time market*~~monthly *billing period* and for each *TR market billing period* reach the *market participant's settlement account* or the *transmitter's transmission services settlement account*, as the case may be, no later than the *close of banking business* (of the bank at which the *market participant's settlement account* or the *transmitter's transmission services settlement account* is held) on the *IMO payment date*.

6.3.18 Until such time as this section 6.3.18 ceases to have effect in accordance with section 6.3.19:

6.3.18.1 each *market participant* shall have ~~five~~ six *business days* in which to notify the *IMO* of errors or omissions in a *preliminary settlement statement* from the *second settlement* process in lieu of the period referred to in section 6.3.10; and

6.3.18.2 *final settlement statements* from the *second settlement* process for each *trading day* shall be issued ~~twelve~~ fourteen *business days* after the issuance of the preliminary settlement statement from the *second settlement* process for that *trading day* in lieu of the period referred to in section 6.3.11.

6.3.19 Section 6.3.18 shall cease to have effect on a date determined by the *IMO* and published in the *Settlement Schedule and Payments Calendar*, such date to be no later than 2 years following the implementation of the *day-ahead market*.~~:~~

6.3.19.1 [Intentionally left blank.] ~~where the *market commencement date* occurs between January 1 and June 30, on January 1 of the calendar year immediately following the calendar year in which the *market commencement date* occurs; or~~

6.3.19.2 [Intentionally left blank.] ~~where the *market commencement date* occurs between July 1 and December 31, on July 1 of the calendar year immediately following the calendar year in which the *market commencement date* occurs.~~

6.3.20 The *IMO* may delay the issuance of *preliminary settlement statements* from the *second settlement* process for a *trading day* to a date later than that provided for in section 6.3.9 where, in the *IMO's* opinion significant inaccuracies exist in the *preliminary settlement statements* from the *second settlement* process such as to justify such delay.

6.3.21 Where the *IMO* delays the issuance of *preliminary settlement statements* from the *second settlement* process for a *trading day* pursuant to section 6.3.20:

6.3.21.1 the issuance of *preliminary settlement statements* from the *second settlement* process for any immediately succeeding *trading days* that would otherwise be required pursuant to section 6.3.9 to be issued prior to the date referred to in section 6.3.22.1 shall be delayed to that date or to such later date or dates as may be determined and *published* by the *IMO* having regard to the number of such *trading days*; and

6.3.21.2 the date by which *market participants* must notify the *IMO* of errors or omissions in any *preliminary settlement statements* from the *second settlement* process for each of the *trading days* referred to in section 6.3.21.1 shall be delayed:

a. while section 6.3.18.1 is in effect, to the date that is five *business days* from the date on which the corresponding *preliminary settlement statements* from the *second settlement* process were issued in accordance with section 6.3.21.1; or

b. when section 6.3.18.1 ceases to have effect, to the date that is four *business days* from the date on which the corresponding

preliminary settlement statements from the *second settlement* process were issued in accordance with section 6.3.21.1.

6.3.22 Where the *IMO* delays the issuance of *preliminary settlement statements* from the *second settlement* process for a *trading day* pursuant to section 6.3.20, the *IMO* shall *publish* notice of such delay, which notice shall indicate:

6.3.22.1 the date on which such *preliminary settlement statements* from the *second settlement* process shall be issued in lieu of the date referred to in section 6.3.9;

6.3.22.2 the date by which *market participants* must notify the *IMO* of errors or omissions in such *preliminary settlement statements* from the *second settlement* process, determined in accordance with section 6.3.10 or 6.3.18.1, as the case may be;

6.3.22.3 the date by which the *final settlement statements* from the *second settlement* process for such *trading day* shall be issued in lieu of the date referred to in section 6.3.11 or 6.3.18.2, as the case may be; and

6.3.22.4 whether the *IMO* intends to invoke the estimated *invoice* procedure referred to in section 6.3.23.

6.3.23 Where the *IMO* determines that it will be unable to issue *invoices* calculated in accordance with section 6.10.1 in respect of a given *energy market billing period* on or within 1 *business day* of the applicable date specified in the *SSPC* by reason of the delay in issuance of *preliminary settlement statements* from the *second settlement* process referred to in section 6.3.20 or 6.3.21 or for any other reason, the *IMO* shall, within two *business days* of the applicable date specified in the *SSPC*, issue to each *market participant* an estimated *invoice* for such *energy market billing period* in a net amount determined in accordance with section 6.3.25.

6.3.24 Where the *IMO* intends to invoke the estimated *invoice* procedure referred to in section 6.3.23 or to delay the issuance of *invoices* pursuant to section 6.3.29, the *IMO* shall:

6.3.24.1 issue:

a. *invoices* calculated in accordance with section 6.10.1 in respect of a given *energy market billing period* within 1 *business day* of the applicable date specified in the *SSPC*; or

b. estimated *invoices* within 2 *business days* of the applicable date specified in the *SSPC*,

as the case may be; and

6.3.24.2 *publish* a notice indicating whether the *IMO* intends, in accordance with section 6.3.27, to delay each of the *market participant payment*

date and the *IMO payment date* associated with such *invoices* or estimated *invoices.*

6.3.25 The amount of an estimated *invoice* issued to a *market participant* pursuant to section 6.3.23 shall, subject to section 6.3.26, be equal to the aggregate of:

6.3.25.1 the net total for that *market participant* for all *trading days* that occurred during the *energy market billing period* prior to the date on which the issuance of *preliminary settlement statements* from the *second settlement* process commenced to be delayed pursuant to section 6.3.20 or 6.3.21.1, as the case may be; and

6.3.25.2 for each *trading day* in the *energy market billing period* that occurred subsequent to the date referred to in section 6.3.25.1, the net total for that *market participant* as set forth in the *final settlement statements* from the *second settlement* process issued to that *market participant* in the preceding *energy market billing period*, commencing with the *final settlement statement* from the *second settlement* process issued for the last *trading day* of such preceding *energy market billing period* and using a number of *final settlement statements* from the *second settlement* process equal to the number of *trading days* in the current *energy market billing period* occurring subsequent to the date referred to in section 6.3.25.1.

6.3.26 Where the data required to determine the amount of an estimated *invoice* in accordance with section 6.3.25 is not readily available at the relevant time, the *IMO* shall issue to each applicable *market participant* an estimated *invoice* in an amount equal to:

6.3.26.1 the net amount of the *invoice* issued to the *market participant* for the preceding *energy market billing period*; or

6.3.26.2 zero, if no *invoice* was issued to the *market participant* for the preceding *energy market billing period.*

6.3.27 Where the *IMO* issues estimated *invoices* pursuant to section 6.3.24 or delays the issuance of *invoices* pursuant to section 6.3.29 in respect of a given *energy market billing period*, the *IMO* may, where the delay resulting in the need to issue an estimated *invoice* or to delay the issuance of the *invoices* has or is likely to have an adverse effect on the operation of the *IMO settlement clearing account*, delay each of the *market participant payment date* and the *IMO payment date* associated with such estimated *invoice* or delayed *invoice* by one *business day* relative to the periods referred to in section 6.3.14, or 6.3.16 respectively.

6.3.28 Where the *IMO* issues to a *market participant* an estimated *invoice* in respect of a given *energy market billing period* pursuant to section 6.3.23, the *IMO* shall adjust the *invoice* issued to the *market participant* for the next *energy market billing period* to reflect any net difference between the amount of the estimated *invoice* and the amount that would have been set forth on the *market participant's*

invoice had the *invoice* been calculated in accordance with section 6.10.1 rather than estimated in accordance with section 6.3.23.

6.3.29 Where the *IMO* determines that:

6.3.29.1 it will be unable to issue *invoices* calculated in accordance with section 6.10.1 in respect of a given *energy market billing period* on the applicable date specified in the *SSPC* by reason of the delay in issuance of *preliminary settlement statements* referred to in section 6.3.20 or 6.3.21.1, or for any other reason; and

6.3.29.2 it is able to issue such *invoices* within 1 *business day* of the applicable date specified in the *SSPC* such that the estimated *invoice* procedure referred to in sections 6.3.23 to 6.3.28 does not apply,

the *IMO* may delay the issuance of such *invoices* for such *energy market billing period* for a period of up to 1 *business day* relative to the applicable date specified in the *SSPC*.

6.4 Settlement Statement Process

6.4.1 The *IMO* shall issue:

6.4.1.1 *first settlement* advisories to each *market participant* to cover each *trading day* in accordance with section 6.5 and section 6.7 and subject to section 6.4A; and

6.4.1.2 *settlement statements* from the *second settlement* process to each *market participant* for each *trading day* in accordance with section 6.5 and section 6.7, and shall provide *settlement* data in accordance with section 6.5.2 and section 6.5.3.

6.4.2 For each *settlement statement* from the second *settlement process*, the *IMO* shall calculate a net *settlement amount* for each *market participant* for the *trading day*. The net *settlement amount* shall be comprised of:

6.4.2.1 the aggregate of the trading amounts from each transaction in each *settlement hour* in the *trading day*; and

6.4.2.2 the aggregate of the amounts for the purchase or sale of *TR*s in all rounds of any *TR auction* that is concluded on the trading day,

adjusted to reflect any fees payable by the *market participant* and any other adjustment amounts payable or receivable pursuant to these *market rules.*

6.4.3 The net *settlement* amount referred to in section 6.4.2 shall be a positive or negative dollar amount for each *market participant* and:

6.4.3.1 where the net *settlement* amount for a *market participant* is negative, the absolute value of the *settlement* amount shall be an amount payable by the *market participant* to the *IMO*; or

6.4.3.2 where the net *settlement* amount for a *market participant* is positive, the *settlement* amount shall be an amount receivable by the *market participant* from the *IMO*.

6.4.4 *Settlement statements* shall be considered issued to *market participant*s when released in accordance with the applicable *market manuals.*

6.4.5 It is the responsibility of each *market participant* to notify the *IMO* if it fails to receive a *settlement statement* on the date specified for issuance of such *settlement statement* in the *SSPC* or, where applicable, on any of the dates referred to in section 6.3.21.1 and 6.3.22. Each *market participant* shall be deemed to have received a given *settlement statement* on the relevant date specified in the *SSPC* or, where applicable, on any of the dates referred to in sections 6.3.21.1 and 6.3.22, unless it notifies the *IMO* to the contrary.

6.4.6 In the event that a *market participant* notifies the *IMO* that it has failed to receive a *settlement statement* from the *second settlement* process on the date specified for that *settlement statement* in the *SSPC* or, where applicable, on any of the dates referred to in sections 6.3.21.1 and 6.3.22, the *IMO* shall re-send the *settlement statement*, in which case the *settlement statement* shall be considered to have been received on the date the re-sent *settlement statement* is sent to the *market participant.*

6.4A Settlement Advisories Issued from the First Settlement Process

6.4A.1 The *IMO* shall, at the request of *market participants* to which *settlement amounts* apply from the *first settlement* process, issue to such *market participants*, *settlement* advisories from the *first settlement* process to cover any *settlement amounts* set out in section 3.3A for each *trading day*.

6.4A.2 The form and content of *settlement* advisories issued from the *first settlement* process shall be determined in the applicable *market manuals*.

6.4A.3 *Settlement* advisories issued from the *first settlement* process shall not form the basis of:

6.4A.3.1 preliminary or final invoicing of any *IMO-administered market;*

6.4A.3.1 any payments between the *IMO's settlement clearing account* and a *market participant*;

6.4A.3.1 a *notice of disagreement*; or,

6.4A.3.1 a *notice of dispute*.

6.5 Second Settlement Preliminary Statement Coverage

6.5.1 The *IMO* shall issue to each *market participant* separate preliminary *settlement statements* to cover:

6.5.1.1 ~~transactions in the day-ahead *energy forward market* and~~ all rounds of any *TR auction* that ~~is~~ concluded on a given *trading day*; and

6.5.1.2 transactions in the *day-ahead market*, *real-time markets* and in the *TR market*, other than in respect of the element referred to in section 6.5.1.1,

in accordance with the timelines set forth in:

6.5.1.3 section 6.3.1; or

6.5.1.4 any of sections 6.3.9, 6.3.20 and 6.3.21.1, as may be applicable.

6.5.2 *Preliminary settlement statements* related to each *market participant* for ~~the day-ahead *energy forward market* and for~~ all rounds of any *TR auction* that is concluded on a given *trading day* shall include, in electronic format, for each *settlement hour* of the relevant *trading day* or for each such *TR auction*, as the case may be, referenced by applicable *charge type*:

6.5.2.1 ~~the net quantity (in MWh) of *energy* bought or sold by the *market participant* in the *energy forward market* for that *settlement hour*~~[Intentionally left blank.];

6.5.2.2 [Intentionally left blank.];~~the energy forward market price in that settlement hour~~;

6.5.2.3 [Intentionally left blank.];~~the hourly Ontario energy price in that settlement hour~~;

6.5.2.4 the payment for the *settlement hour*, either from the *market participant* to the *IMO*, or from the *IMO* to the *market participant*;

6.5.2.4A all fees, charges, credits and payments applicable to the *market participant* in respect of the purchase or sale of a *TR* in all rounds of such *TR auction*;

6.5.2.5 [Intentionally left blank.];~~all *energy forward market* fees, charges and payments applicable to that *market participant* and the basis for deriving those fees, charges or payments~~; and

6.5.2.6 for each type of charge listed, the total *trading day's* charges and a *billing period*-to-date total.

6.5.2A *Preliminary settlement statements* from the *second settlement* process ~~related to~~for each *market participant* for the *day-ahead market*, *real-time markets* and for the *TR market*, other than in respect of the element referred to in section 6.5.2, shall include the *settlement amounts*, prices and quantities described in section 6.5.3, presented as follows:

6.5.2A.1 for each hourly *settlement amount* referred to in section 3, by *metering interval* or *settlement hour*, as the case may be, depending upon the manner of calculation of the *settlement amount* as described in section 3;

6.5.2A.2 for each non-hourly *settlement amount* referred to in section 4 or 5 that is required to be calculated over or in respect of a given *billing period*, by *billing period*, provided that such non-hourly *settlement amounts* shall be included only in the *preliminary settlement statement* issued in respect of the last *trading day* of a *billing period*; and

6.5.2A.3 for each non-hourly *settlement amount* other than those referred to in section 6.5.2A.2, by *metering interval*, *settlement hour*, or *trading day*, as the case may be, depending upon the time period over or with respect to which the relevant *settlement amount* is required to be calculated pursuant to section 4, or 5.

6.5.3 The *preliminary settlement statements* referred to in section 6.5.2A shall be in electronic format and shall set forth, for the *market participant* to whom the *preliminary settlement statement* from the *second settlement* process is issued and referenced by applicable *charge type*:

6.5.3.1 the *energy* injected or withdrawn by each of that *market participant's registered facilities* as determined in each of:

a. the *market schedule* from the *real-time market*; ~~and~~

b. the *real-time schedule*; and

c. ~~[Intentionally left blank]~~any applicable *day-ahead market* schedules;

6.5.3.1A the allocated quantities of *energy* withdrawn or injected by each of that *market participant's registered facilities* to the extent that such quantities have not otherwise been allocated to another *market participant* through the allocation process described in section 2.4, where applicable;

6.5.3.1B the allocated quantities of *energy* withdrawn or injected which have been allocated to that *market participant* through the allocation process described in section 2.4, where applicable;

6.5.3.2 the aggregate quantity of each class of *operating reserve* provided by each of that *market participant's registered facilities* as determined in each of:

a. the *market schedule* from the *real-time market*; ~~and~~

b. the *real-time schedule*; and

c. any applicable *day-ahead market* schedules~~[Intentionally left blank]~~

6.5.3.3 the aggregate quantities or capacities, as the case may be, of each *contracted ancillary service* scheduled and provided from each of that *market participant's registered facilities;*

6.5.3.4 the aggregate capacity reserve quantity provided by each of that market participant's registered facilities;

6.5.3.5 the *day-ahead market* and *real-time market physical bilateral contract quantities* for each *market participant*;

6.5.3.6 the availability payments to be made in each *billing period* under *reliability must-run* contracts to each of that *market participant's reliability must-run resources*;

6.5.3.7 details of performance incentive payments or penalties applicable to the *market participant*;

6.5.3.8 the hourly *day-ahead market* and *real-time market energy price* applying to each of that *market participant's registered facilities;*

6.5.3.9 the applicable *real-time market* 5-minute price for each class of *operating reserve* for each of that *market participant's registered facilities;*

6.5.3.10 detailed calculations of applicable *transmission services charges*, and the *market participant's* share of these;

6.5.3.11 the total of each type of *contracted ancillary service* charges, and the *market participant's* share of these;

6.5.3.12 all *day-ahead market* and *real-time market* fees, charges and payments applicable to the *market participant* and the basis for deriving those fees, charges or payments;

6.5.3.13 for each type of charge listed, the total *trading day's* charges and a *billing period*-to-date total; and

6.5.3.14 [Intentionally left blank]

6.5.3.15 [Intentionally left blank]

6.5.3.16 all *TR market* fees, charges, credits and payments applicable to the *market participant*, other than in respect of the elements referred to in section 6.5.2.5.

6.6 Validation of Preliminary Settlement Statement Issued from the Second Settlement Process

6.6.1 Each *market participant* shall have the opportunity to review its *preliminary settlement statements*. A *market participant* may register a disagreement with the *IMO* with respect to such *preliminary settlement statements* from the *second settlement* process in accordance with the timelines set forth in:

6.6.1.1 section 6.3.2; and

6.6.1.2 section 6.3.10, 6.3.18.1, 6.3.21.2 or 6.3.22.2, as the case may be.

6.6.2 Subject to sections 6.6.9 and 6.6.11, if a *market participant* disagrees with any item or calculation set forth in a *preliminary settlement statement* from the *second settlement* process that it has received, or considers that there is an omission in such *preliminary settlement statement*~~,~~ from the *second settlement* process it may provide the *IMO* with a *notice of disagreement* in such form as may be established by the *IMO* which shall clearly state, with supporting material, the nature of the disagreement and a proposed resolution of it. Such *notice of disagreement* shall relate to only one *preliminary settlement statement* from the *second settlement* process and shall include at least the following information:

6.6.2.1 the date of issuance of the *preliminary settlement statement* from the *second settlement* process in question;

6.6.2.2 the *dispatch day* in question;

6.6.2.3 the item(s) or omission(s) in question;

6.6.2.4 the reasons for the disagreement;

6.6.2.5 where applicable, the proposed adjustment to the data used to calculate any relevant *settlement amount* on the *preliminary settlement statement* from the *second settlement* process; and

6.6.2.6 where applicable, the proposed correction to any calculation of the relevant *settlement amount* on the *preliminary settlement statement* from the *second settlement* process.

6.6.2A Where a *notice of disagreement* includes a proposed adjustment to:

6.6.2A.1 *day-ahead market* or *real-time market physical bilateral contract data*;

6.6.2A.2 *physical allocation data*; or

6.6.2A.3 any data of a comparable nature which may be identified by the *IMO* from time to time,

the *IMO* shall notify any other *market participant* to whom items 6.6.2A.1, 6.6.2A.2, or 6.6.2A.3 relates of such proposed adjustment prior to taking any action under section 6.6.6.

6.6.3 The *notice of disagreement* issued by the *market participant* shall be acknowledged by the *IMO* upon receipt.

6.6.4 The issuance of a *notice of disagreement* shall not remove the obligation of the *market participant* to settle any *invoice* based on the *preliminary settlement statement* from the *second settlement* process in accordance with section 6.3.7 or section 6.3.14.

6.6.5 Subject to section 6.6.9 the *IMO* shall use the information provided in and with a *notice of disagreement*, and any other information available to the *IMO*, to investigate the subject-matter of the disagreement.

6.6.6 The *IMO* shall, based on its investigations, propose one of the actions described in sections 6.6.6.1 to 6.6.6.3. After informing the *market participant* of its intended actions and providing the *market participant* an opportunity to respond, the *IMO* shall do one of the following:

6.6.6.1 if the *IMO* concludes that no error has occurred in the *preliminary settlement statement*~~,~~ from the *second settlement* process it will so inform the *market participant* and take no further action;

6.6.6.2 if the *IMO* concurs fully with the *market participant's* proposed adjustment or correction, it shall adjust the corresponding *final settlement statement* from the *second settlement* process accordingly;

6.6.6.3 if the *IMO* does not concur fully with the *market participant's* proposed adjustment or correction but does conclude that some adjustment is required, it shall so advise the *market participant* of the changes that the *IMO* proposes to make and it shall adjust the corresponding *final settlement statement* from the *second settlement* process accordingly; or

6.6.6.4 if the *IMO* concludes that some adjustment may be required but requires additional time to complete its investigation, it shall so advise the *market participant* and shall, within 15 *business days* of the issuance of the corresponding ~~*final settlement statement,*~~ from the *second settlement* process do one of the following:

a. if the *IMO* concludes that no error has occurred in the *preliminary settlement statement,* from the *second settlement* process it will so inform the *market participant* and take no further action;

b. if the *IMO* concurs fully with the *market participant's* proposed adjustment or correction, it shall, subject to such delay as may be engendered by the application of section 6.3.20 or 6.3.21.1, adjust the next available *preliminary settlement statement* from the *second settlement* process accordingly; or

c. if the *IMO* does not concur fully with the *market participant's* proposed adjustment or correction but does conclude that some adjustment is required, it shall so advise the *market participant* of the changes that the *IMO* proposes to make and it shall, subject to such delay as may be engendered by the application of section 6.3.20 or 6.3.21.1, adjust the next available *preliminary settlement statement* from the *second settlement* process accordingly.

6.6.7 If the *IMO* and the *market participant* are unable, with reasonable efforts, to resolve the disagreement before the date for issuing the corresponding *final settlement statement* from the *second settlement* process or the next available *preliminary settlement statement,* from the *second settlement* process as the case may be, the *IMO* shall issue the corresponding *final settlement statement* from the *second settlement* process or the next available *preliminary settlement statement* from the *second settlement* process without taking into account the disagreement and the disagreement may be pursued through the dispute resolution procedure described in section 6.8.2A or 6.8.2B.

6.6.8 Any changes required to be made in the final *settlement amounts* as a result of the validation process described in this section 6.6 shall, subject to section 6.16.3, be included as a debit or credit in the *final settlement statement* from the *second settlement* process or as a *current period adjustment* to the *preliminary settlement statement,* from the *second settlement* process as the case may be, issued for each affected *market participant* on the date on which the *final settlement statement* or the *preliminary settlement statement* from the *second settlement* process that reflects an adjustment made pursuant to section 6.6.6 is issued.

6.6.9 No *market participant* may submit a *notice of disagreement*, and the *IMO* shall not investigate the subject-matter of a *notice of disagreement* unless the *notice of disagreement* is submitted to the *IMO* within the time specified in:

6.6.9.1 section 6.3.2; or

6.6.9.2 section 6.3.10 or 6.3.18.1, as the case may be.

6.6.10 The amount of any adjustment in respect of a *preliminary settlement statement* from the *second settlement* process that has not been the subject of a *notice of disagreement* filed within the time referred to in section 6.6.9 shall be deemed not to constitute an underpayment or an overpayment by or to any *market participant.*

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;*

6.6.11.3 the ~~energy forward~~ *market* ~~market~~ *price* from the *day-ahead market* for *energy* or for any class of *operating reserve* in a given *settlement hour*; or

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

and the *IMO* shall not investigate the subject-matter of a *notice of disagreement* to the extent that it relates to any of the elements noted in sections 6.6.11.1 to 6.6.11.4.

6.6.12 Nothing in section 6.6.11 shall prevent a *market participant* from submitting, or the *IMO* from investigating, a *notice of disagreement* that relates to the manner in which any of the elements noted in sections 6.6.11.1 to 6.6.11.4 have been applied for purposes of the calculation of the *market participant's* net *settlement amount.*

6.7 Second Settlement - Final Settlement Statement Coverage

6.7.1 The IMO shall issue to each market participant separate *final settlement statements* from the *second settlement* process to cover:

6.7.1.1 ~~transactions in the day-ahead *energy forward market* and~~ all rounds of any *TR auction* that is concluded on a given *trading day*; and

6.7.1.2 transactions in the *day-ahead market* and *real-time markets* and in the *TR market*, other than in respect of the element referred to in section 6.7.1.1,

in accordance with the timelines set forth in:

6.7.1.3 section 6.3.3; and

6.7.1.4 any of sections 6.3.11, 6.3.18.2, 6.3.21.1 and 6.3.22.3, as may be applicable.

6.7.2 The final settlement statement from the *second settlement* process shall be in the same form as the preliminary settlement statement from the *second settlement* process and shall include all of the information provided in the preliminary settlement statement from the *second settlement* process~~,~~ as amended following the validation procedure set forth in section 6.6 where applicable.

6.7.3 In accordance with the provisions of sections 6.6.6 and 6.6.8, *final settlement statements* from the *second settlement* process shall include any required adjustments as a credit or debit to each affected *market participant* resulting from *settlement* disagreements that have been resolved prior to the issue date of the *final settlement statements* from the *second settlement* process.

6.7.4 Each *market participant* that receives a *final settlement statement* from the *second settlement* process is required to pay any net debit on the corresponding *market participant payment date* and shall be entitled to receive any net credit shown in the *final settlement statement* from the *second settlement* process on the corresponding *IMO payment date*, whether or not there is any outstanding disagreement regarding the amount of the debit or credit.

6.7.5 If a *market participant* disagrees with an item or calculation set forth on a *final settlement statement* from the *second settlement* process that:

6.7.5.1 consists of an adjustment to the corresponding *preliminary settlement statement* from the *second settlement* process made pursuant to section 6.6.6.2; and

6.7.5.2 that does not reflect the agreement between the *IMO* and the *market participant* as to the adjustment,

the *market participant* may attempt to resolve the disagreement with the *IMO*. If the *IMO* and the *market participant* are unable to resolve the disagreement, the provisions of section 6.8.2A or 6.8.2B shall apply.

6.7.6 If a *market participant* disagrees with an item or calculation set forth on a *final settlement statement* from the *second settlement* process that:

6.7.6.1 differs in amount from the same item or calculation set forth on the corresponding *preliminary settlement statement* from the *second settlement* process; and

6.7.6.2 is not an item or calculation identified on the *final settlement statement* from the *second settlement* process as associated with an adjustment flag indicating that an adjustment has been made,

the *market participant* may attempt to resolve the disagreement with the *IMO*. If the *IMO* and the *market participant* are unable to resolve the disagreement, the provisions of section 6.8.2A or 6.8.2B shall apply.

6.7.7 If a *market participant* disagrees with an item or calculation set forth on a *final settlement statement* from the *second settlement* process other than one referred to in section 6.7.5 or 6.7.6, the provisions of section 6.8.9 shall apply provided that the *notice of dispute* is filed within twenty *business days* of the date of issuance of the *final settlement statement* from the *second settlement* process.

6.8 Second Settlement - Settlement Statement Recalculations

6.8.1 The *IMO* shall *publish* each year the standard charge that it will levy for each *settlement statement re-calculation* it undertakes in respect of a single *trading day*. The charge for each such *settlement statement re-calculation* shall be borne by the *market participant* requesting it unless an error in the disputed *settlement statement* is identified as a consequence of the *settlement statement re-calculation*, in which event the cost shall be recovered via the *IMO administration charge*.

6.8.2 [Intentionally left blank]

6.8.2A If a *market participant*, after having made reasonable efforts to resolve with the *IMO* any disagreement:

6.8.2A.1 relating to a *notice of disagreement* that complies with section 6.6.9; or

6.8.2A.2 referred to in section 6.7.5 or 6.7.6,

requires a *settlement statement re-calculation*, it shall, subject to section 6.8.8, submit the matter to the dispute resolution process set forth in section 2 of Chapter 3 and shall request, in the *notice of dispute*, that the *arbitrator* order that the *IMO* effect a *settlement statement re-calculation.*

6.8.2B If a *market participant*, after having made reasonable efforts to resolve with the *IMO* any disagreement referred to in section 6.8.2A does not require a *settlement statement re-calculation*, it shall, subject to section 6.8.8, submit the matter to the dispute resolution process set forth in section 2 of Chapter 3 and shall indicate, in the *notice of dispute*, the contested amount.

6.8.3 The *arbitrator* shall, in considering whether to approve a request for a *settlement statement re-calculation*, determine in its reasonable discretion, whether there is good cause to justify the performance of a *settlement statement re-calculation*, potentially using modified data.

6.8.4 If a *settlement statement re-calculation* is ordered by the *arbitrator*, the *IMO* shall arrange to have the *settlement statement re-calculation* carried out as soon as is reasonably practicable following the *arbitrator's* order, subject to the availability of data and of the *IMO's* resources.

6.8.5 Subject to section 6.8.6 where a *settlement statement re-calculation* indicates that the *settlement accounts* of *market participant*s should be debited or credited to reflect alterations to payments due on a previous *final settlement statement*, the *IMO* shall:

6.8.5.1 for the *market participant* that originally filed *the notice of dispute* that resulted in the *settlement statement re-calculation*, reflect the amounts to be debited or credited in a subsequent *preliminary settlement statement* issued for the *market participant* as soon as practicable after the *settlement statement re-calculation* has been effected. Any credit adjustment made to such *market participant*, being a refund of payments already made, shall include interest at the *default interest rate* from the date the overpayment was received to the time that the repayment is credited to the relevant *market participant settlement account*;

6.8.5.2 arrange to have all net adjustments for each *market participant*, and any interest on such net adjustments, placed into the *IMO adjustment account*; and

6.8.5.3 for any other *market participant* affected by the *settlement statement re-calculation*, reflect the amounts to be debited or credited in a subsequent *preliminary settlement statement* issued for the *market participant* by means of applying the incremental dollar amount determined in section 6.8.5.1 as a *current period adjustment* to all such *preliminary settlement statements.*

6.8.6 The *IMO* may, in lieu of the mechanism referred to in section 6.8.5, give effect to an order to conduct a *settlement statement re-calculation* referred to in section 2.7.27 of Chapter 3 by making a *current period adjustment* to a subsequent *preliminary settlement statement* belonging to the *market participant* that originally filed the *notice of dispute* and for any other *market participant* whose *settlement amounts* are affected by such action, if:

6.8.6.1 any adjustments required to be made to give effect to the *settlement statement re-calculation* pertain to one or more *billing periods* falling within the time designated by the *IMO* as the adjustable *billing period* range for purposes of the application of a *current period adjustment;* or

6.8.6.2 the total dollar value of any adjustments required to be made to give effect to the *settlement statement re-calculation* is less than the threshold amount prescribed by the *IMO* for purposes of the application of a *current period adjustment;*

6.8.6.3 [Intentionally left blank]

and the *IMO* shall arrange to have all net adjustments for each *market participant*, and any interest on such net adjustments, placed into the *IMO adjustment account.*

6.8.7 The *IMO* shall *publish* the designated adjustable *billing period* range referred to in section 6.8.6.1 and the threshold amount referred to in section 6.8.6.2.

6.8.8 No *market participant* may submit, and the *secretary* shall not accept or take any action with respect to, a *notice of dispute* if:

6.8.8.1 the *notice of dispute* relates to a *notice of disagreement* in respect of a disagreement other than the one to which section 6.7.5 applies and more than twenty *business days* has elapsed since the date of issuance of the *final settlement statement* referred to in section 6.6.6.3;

6.8.8.2 the *notice of dispute* relates to a *notice of disagreement* in respect of a disagreement to which section 6.7.5 applies and more than twenty *business days* has elapsed since the date of issuance of the *final settlement statement* referred to in that section; or

6.8.8.3 the *notice of dispute* relates to a disagreement to which section 6.7.6 applies and more than twenty *business days* has elapsed since the date of issuance of the *final settlement statement* referred to in that section.

6.8.9 If a *market participant* wishes to dispute a *final settlement statement* referred to in section 6.7.7, it shall submit the matter to the dispute resolution process set forth in section 2 of Chapter 3 and shall indicate, in the *notice of dispute*, the contested amount and whether a *settlement statement re-calculation* is requested.

6.8.10 No *market participant* may submit, and the *secretary* shall not accept or take any action with respect to, a *notice of dispute* filed pursuant to section 6.8.9 if more than twenty *business days* has elapsed since the date on which the *final settlement statement* to which the *notice of dispute* relates was issued.

6.8.11 Where a *notice of dispute* is one to which section 6.8.9 applies, the *arbitrator* shall dismiss the *notice of dispute* and shall not take any further action with respect to the *notice of dispute* if the element of the *final settlement statement* that is the subject-matter of the *notice of dispute* is identical to the same element in the corresponding *preliminary settlement statement* unless the *market participant* demonstrates that it could not, with the exercise of due diligence, have filed a *notice of disagreement* in respect of that *preliminary settlement statement.*

6.8.12 Sections 6.8.3 to 6.8.7 apply in respect of any *settlement statement re-calculation* requested in or ordered in response to a *notice of dispute* to which section 6.8.9 applies.

6.9 Responsibility of the IMO

6.9.1 In carrying out its *settlement* responsibilities, the *IMO* shall operate in a non-discriminatory manner.

6.9.2 The *IMO* shall not be a counter-party to any trade transacted through the *real-time markets* or the *day-ahead ~~energy forward~~ market*.

6.9.3 [Intentionally left blank]

6.10 Settlement Invoices

6.10.1 Unless the *IMO* has invoked the estimated *invoice* procedure pursuant to section 6.3.23, each *invoice* issued by the *IMO* to a *market participant* shall be based on any *final settlement statements* from the *second settlement* process available at that time, with *preliminary settlement statements* from the *second settlement* process used for the balance of the *billing period*. The *invoice* shall also include any outstanding adjustments between the *preliminary settlement statements* from the *second settlement* process and the *final settlement statements* from the *second settlement* process for the previous *billing period*. In each *invoice*, other than an estimated *invoice* issued pursuant to section 6.3.23:

6.10.1.1 each line item shall correspond to a distinct commodity or service bought or sold over the *billing period*; and

6.10.1.2 the *charge type* appearing on the *invoice* shall allow *invoice* line items to be cross-referenced to the relevant *settlement statements.*

6.10.2 The *IMO* shall, on the days specified in the *SSPC* or, where applicable, on either of the dates referred to in section 6.3.24.1, issue an *invoice* to each *market participant* showing:

6.10.2.1 the dollar amounts which are to be paid by or to the *market participant*, according to *settlement statements* as specified in section 6.10.1 or as estimated pursuant to section 6.3.23;

6.10.2.2 the *market participant payment date* by which such amounts (if any) are to be paid by the *market participant* no later than the *close of banking business* (of the bank at which the *IMO settlement clearing account*);

6.10.2.3 the *IMO payment date* by which the *IMO* is to make payments (if any) to the *market participant* no later than the *close of banking business* (of the bank at which the *market participant settlement account* is held); ~~and~~

6.10.2.4 details of the *IMO settlement clearing account*, including the bank name, account number and *electronic funds transfer* instructions, to which any amounts owed by the *market participant* are to be paid in accordance with section 6.10.2.2; and~~.~~

6.10.2.5 any prepayment or *margin call* payment made within the *billing period* for a *virtual transaction.*

6.10.3 *Invoices* shall be considered issued to *market participants* when released by the *IMO* in accordance with the applicable *market manuals*.

6.10.4 It is the responsibility of each *market participant* to notify the *IMO* if it fails to receive an *invoice* on the date specified for the issuance of such *invoice* in the *SSPC* or, where applicable, on either of the dates referred to in section 6.3.24.1. Each *market participant* shall be deemed to have received its *invoice* on the relevant date specified in the *SSPC* or, where applicable, on either of the dates referred to in section 6.3.24.1, unless it notifies the *IMO* to the contrary.

6.10.5 In the event that a *market participant* notifies the *IMO* that it has failed to receive an *invoice* on the relevant date specified in the *SSPC* or, where applicable, on either of the dates referred to in section 6.3.24.1, the *IMO* shall re-send the appropriate *invoice* and the *invoice* shall be considered received on the date the re-sent *invoice* is sent to the *market participant.*

6.11 Payment of Invoices

6.11.1 Subject to section 6.11.2 and section 11.5 of Chapter 2, each *market participant* shall pay the full net *invoice* amount by the *market participant payment date* specified in the *SSPC* or, where applicable, determined in accordance with any of sections 6.3.23, 6.3.27 and 6.3.29, regardless of whether or not the *market participant* has initiated or continues to have a dispute respecting the net amount payable.

6.11.2 A *market participant* may pay at an earlier date than the *market participant payment date* specified in the *SSPC* or, where applicable, determined in accordance with any of sections 6.3.23, 6.3.27, and 6.3.29 in accordance with the following:

6.11.2.1 notification must be given to the *IMO* before submitting such prepayment or before converting an existing overpayment by the *market participant* into a prepayment;

6.11.2.2 the prepayment notification shall specify the dollar amount prepaid;

6.11.2.3 a prepayment shall be made by the *market participant* into the *IMO prepayment account* designated by the *IMO*;

6.11.2.4 on any *market participant payment date*, the *IMO* may initiate the transfer of necessary funds from the *IMO*'s *prepayment account* to the *IMO settlement clearing account* to discharge, up to the amount of the prepayment, that *market participant*'s outstanding payment obligations arising in relation to that *market participant payment date;* and

6.11.2.5 [Intentionally left blank]

6.11.2.6 [Intentionally left blank]

6.11.2.7 subject to section 5.6.3 of Chapter 2, and notwithstanding section 4.18.1.2 of Chapter 8, funds held in an *IMO prepayment account* on behalf a *market participant* may be applied by the *IMO* to any outstanding financial obligations of that *market participant* to the *IMO* for transactions carried out in the *IMO-administered markets.*

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

6.11.4 With respect to the *IMO administration charge*, the *IMO* may instruct the bank where the *IMO settlement clearing account* is held to debit the *IMO settlement clearing account* and transfer to the relevant *IMO* operating account sufficient funds to pay in full the *IMO administration charge* falling due on any *IMO payment date* specified in the *SSPC* in priority to any other payments to be made on that *IMO payment date* or on subsequent days out of the *IMO settlement clearing account.*

6.11.5 The *IMO* shall, on the *IMO payment date* specified in the *SSPC* or, where applicable, determined in accordance with any of sections 6.3.23, 6.3.27, and 6.3.29, determine the amounts available in the *IMO settlement clearing account* for distribution to *market participant*s, and shall, if necessary, borrow funds in accordance with the provisions of section 6.14 if necessary to enable the *IMO settlement clearing account* to clear no later than 11:00 am on the *IMO payment date*.

6.12 Funds Transfer

6.12.1 All payments by *market participant*s in respect of *settlement* matters shall be made to the *IMO settlement clearing account* via *electronic funds transfer* and shall be effected by the dates and times specified in this Chapter.

6.12.2 All payments by the *IMO* 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 transmission services *settlement account* via electronic funds transfer and shall be effected by the dates and times specified in this Chapter.

6.12.3 In the event of failure of any *electronic funds transfer* system affecting the ability of either a *market participant* or the *IMO* to make payments, the affected party

shall arrange for alternative means of payment so as to ensure that payment is effected by the dates and times specified in this Chapter.

6.12.4 No *market participant* shall include in any *electronic funds transfer* amounts attributable to more than one *invoice* or prepayment, unless such *electronic funds transfer* is in such form as may be specified in the applicable *market manual*.

6.12.5 The *IMO* shall be entitled to and shall rely on the information contained in or accompanying an *electronic funds transfer* received pursuant to section 6.12.4 for the purpose of allocating the aggregate amount of an *electronic funds transfer* referred to in that section and, notwithstanding section 13 of Chapter 1:

6.12.5.1 the *IMO* shall not be liable to any person in respect of the allocation of:

a. the aggregate amount of an *electronic funds transfer* when effected in accordance with such information or with section 6.12.6.1; or

b. the amount of any associated overpayment or underpayment effected in accordance with section 6.12.6.2; and

6.12.5.2 the *market participant* providing the *IMO* with such information shall indemnify and hold harmless the *IMO* in respect of any claims, losses, liabilities, obligations, actions, judgements, suits, costs, expenses, disbursements and damages incurred, suffered, sustained or required to be paid, directly or indirectly, by, or sought to be imposed upon, the *IMO* arising from the allocation by the *IMO* of:

a. the aggregate amount of an *electronic funds transfer* when effected in accordance with such information or with section 6.12.6.1; or

b. the amount of any associated overpayment or underpayment effected in accordance with section 6.12.6.2.

6.12.6 Where a *market participant* that initiates an *electronic funds transfer* to which section 6.12.4 applies fails to provide the information contained in or accompanying an *electronic funds transfer* referred to in section 6.12.4, the *IMO* shall allocate:

6.12.6.1 the aggregate amount of the *electronic funds transfer;* and

6.12.6.2 the entire amount of any associated overpayment or underpayment,

to that *market participant*.

6.13 Confirmation Notices

6.13.1 At the end of each calendar month, the *IMO* shall issue a *monthly confirmation notice* to each *market participant* which shall contain statements of the amounts received from or paid out to the *market participant* on each *market participant*

payment date and *IMO payment date* in that month and any payments outstanding.

6.14 Payment Default

6.14.1 Subsequent to the *close of banking business* (of the bank at which the *IMO settlement clearing account* is held) on the *market participant payment date* referred to in the *SSPC* or, where applicable, determined in accordance with any of sections 6.3.23, 6.3.27, and 6.3.29, the *IMO* shall ascertain if the full amount due by any *market participant* has been remitted to the *IMO settlement clearing account*.

6.14.2 A *market participant* shall notify the *IMO* immediately if it becomes aware that a payment for which it is responsible will not be remitted to the *IMO settlement clearing account* on time and shall provide the reason for the delay in payment.

6.14.3 If the full amount due by a *market participant* has not been remitted after accounting for any prepayments made by the *market participant* pursuant to section 6.11.2**,** the provisions of section 6.3 of Chapter 3 shall apply and *default interest* shall accrue on all amounts outstanding.

6.14.4 The *IMO* shall be authorised to borrow short-term funds to clear the credits in any settlement cycle only if the following conditions are met:

6.14.4.1 there are insufficient funds remitted into the *IMO settlement clearing account* to pay all *market creditors* due for payment from the funds in the *IMO settlement clearing account*, and clear the *IMO settlement clearing account* on a given *IMO payment date*, due to:

a. payment default by one or more *market participants* in the *day-ahead ~~energy forward~~ market* or the *real-time markets*; or

b. the circumstances referred to in section 4.19.2 or 4.19.6 of Chapter 8;

6.14.4.2 [Intentionally left blank]

6.14.5 If the *IMO* borrows short-term funds pursuant to section 6.14.4, it shall recover this borrowing:

6.14.5.1 where the insufficient funds were due to a payment default referred to in section 6.14.4.1 (a) by taking all steps against the *defaulting market participant* as provided for in these *market rules* and as referred to in section 8.1.2.2 and then, if necessary, by imposing the *default levy* in accordance with section 8 of Chapter 2; or

6.14.5.2 where the insufficient funds were due to the circumstances referred to in section 6.14.4.1 (b), in the manner referred to in sections 4.19.3 and 4.19.5 of Chapter 8 and then, if necessary, by recovering from *market*

participants, on a pro-rata basis across all allocated quantities of *energy* withdrawn at all *RWMs* and *intertie metering points* during all intervals and *settlement hours* within the *energy market billing period* in which the *IMO* invoices the *market participants*.

6.14.6 If there are insufficient funds remitted into the *IMO settlement clearing account* to pay all *market creditors* due for payment from the funds in the *IMO settlement clearing account*, and clear the *IMO settlement clearing account* on a given *IMO payment date* due to default by one or more *market participant*s or to the circumstances referred to in section 6.14.4.1 (b), the *IMO* shall borrow funds in accordance with section 6.14.4 in order to clear the *IMO settlement clearing account* no later than the *close of banking business* (of the bank at which the *IMO settlement clearing account* is held) on that *IMO payment date*.

6.14.7 If the *IMO* has exhausted credit availability contemplated by section 6.14.4, then the *IMO* shall pay *real-time market creditors* on a pro rata basis in proportion to the amounts owed to each *real-time market creditor*. Any amounts that remain owing to *real-time market creditors* shall bear interest at the *default interest rate* until paid.

6.14.8 Upon receipt of any payments by the *IMO*, either from or on the behalf of one or more *defaulting market participants* including any *prudential support* held by the *IMO*, or on behalf of *non-defaulting market participants* pursuant to a *default levy*, the *IMO* shall first repay all existing lines of credit and other banking facilities, including the portion of the *deferred payment plan line of credit* applicable to such *defaulting market participants*, and following repayment of such lines of credit and banking facilities, the *IMO* shall then repay on a pro-rata basis all *real-time market creditors* owed amounts pursuant to section 6.14.7.

6.15 Payment Errors, Adjustments, and Interest

6.15.1 If a *market participant* receives an overpayment on any *IMO payment date:*

6.15.1.1 the *market participant* shall notify the *IMO* of such overpayment within two *business days* of the overpayment or immediately as soon as the *market participant* thereafter becomes aware of the situation;

6.15.1.2 if the *IMO* determines or becomes aware of the overpayment prior to being notified by the *market participant*, the *IMO* shall notify the *market participant* of the overpayment;

6.15.1.3 the *market participant* receiving the overpayment shall, until it has refunded the overpayment to the *IMO*, be deemed to be holding the amount of such overpayment in trust for any other *market participant*s that may have been underpaid in consequence of such overpayment, pro rata to the amount of the underpayment;

6.15.1.4 the *IMO* shall be entitled to treat the overpayment and any interest accruing thereon as an unpaid amount to which section 6.14 applies; and

6.15.1.5 if not repaid fully within 2 *business days* of receiving the overpayment, the unpaid amount of any overpayment shall bear interest at the *default interest rate* from the date of overpayment until the date on which repayment is credited to the *IMO's* relevant *settlement account*.

6.15.2 The *IMO* shall be responsible for identifying any *market participant*s who have been underpaid as a result of an overpayment to another *market participant*.

6.15.3 The *IMO* shall pay any underpaid *market participant* for the amounts of their underpayment, including interest calculated from the date the *market participant* should have been paid, as soon as practicable following repayment by the overpaid *market participant*.

6.15.4 If a *market participant* has overpaid the *IMO* on any *market participant* payment date:

6.15.4.1 the *market participant* shall notify the *IMO* of such overpayment within two *business days* or immediately as soon as the *market participant* thereafter becomes aware of the situation;

6.15.4.2 if the *IMO* determines or becomes aware of such overpayment prior to being notified by the *market participant*, the *IMO* shall notify the *market participant* accordingly;

6.15.4.3 the *market participant* may request that the overpaid amount be either refunded or treated as a prepayment pursuant with section 6.11.2; and

6.15.4.4 any related administration and transaction costs incurred by the *IMO* in managing and resolving the over-payment shall be charged to the account of the *market participant* involved.

6.15.5 If the *IMO* underpays any *market participant* on any *IMO payment date*:

6.15.5.1 the *market participant* shall notify the *IMO* of such underpayment within two *business days* or immediately as soon as the *market participant* thereafter becomes aware of the situation;

6.15.5.2 if the *IMO* determines or becomes aware of the underpayment prior to being notified by the *market participant*, the *IMO* shall notify the *market participant* accordingly; and

6.15.5.3 the *IMO* shall use all reasonable endeavours to promptly correct any underpayments, including interest thereon at the *default interest rate*.

6.15.6 If the *IMO* is underpaid by a *market participant* on any *market participant payment date*, the provisions of section 6.14 or of section 4.20 of Chapter 8 shall apply.

6.15.7 If the *IMO* borrows funds in accordance with section 6.14.4 because a payment due from a *market participant* was received too late to be credited to the *IMO settlement clearing account* by close of banking business (of the bank at which the *IMO settlement clearing account* is held) on the *market participant payment date* when such payment was due, then such remittance when it does arrive shall be used to repay the borrowed funds. Any such late payments shall be charged the *Canadian prime interest rate* plus 2%.

6.15.8 If the *IMO* holds or has under its control after five *business days* from receipt in the *IMO settlement clearing account* amounts which it ought properly to have paid to *market participant*s, such *market participant*s shall be entitled to interest on such amounts at the *default interest rate* from the date on which the *IMO* commenced to improperly hold or have such amounts under its control to the date on which such amounts are paid to the relevant *market participants.*

6.15.9 Monies in the *IMO settlement account*s at the end of each year which have been earned from interest on funds in the *IMO settlement account*s and which are not attributable to any incomplete *settlement process* or outstanding *settlement* dispute shall be used to off-set the *IMO administration charge* in the following year.

6.16 Settlement Financial Balance/Maximum Amount Payable by IMO

6.16.1 The *IMO* shall provide and operate a *settlement* control process to monitor the financial balance of the calculated charges and payments so as to ensure that, subject to section 6.16.3:

6.16.1.1 for hourly *day-ahead market* and *real-time market* transactions, other than transactions in the *TR market*, the sum of all payments for all *market creditors* involved in such *hourly market* transactions exactly equal the sum of all charges for *market debtors* involved in such *hourly market* transactions for each *trading day* of a *billing period*; and

6.16.1.2 for all other transactions, other than transactions in the *TR market* including daily charges, monthly charges, adjustment charges and payments, the sum of all payments to *market creditors* of those transactions exactly equals the sum of all charges to *market debtors* of those transactions for each *billing period*.

6.16.2 Subject to the provisions of section 6.14, the *IMO* shall not be liable to make payments in excess of the amount it receives for transactions in the *day-ahead* ~~*energy forward*~~ *market* or the *real-time markets*.

6.16.3 If there is an aggregate imbalance for all transactions for a given *trading day* or *billing period*, the *IMO* shall, in accordance with section 6.16.4 or by such other means as the *IMO* determines appropriate, recover that portion of the imbalance that arises by virtue of the rounding of *settlement amounts* or of an adjustment to the *settlement statement* of one *market participant* that is too small to be reflected in corresponding *settlement statement* of other *market participants* provided that:

6.16.3.1 the manner of calculation of that portion of the imbalance can be evidenced in a manner satisfactory for purposes of the audit referred to in section 6.17; and

6.16.3.2 that portion of the imbalance has accumulated to an amount which is sufficient to permit recovery.

6.16.4 The *IMO* may recover the portion of an aggregate imbalance referred to in section 6.16.3 by means of an adjustment to a *settlement statement* applied:

6.16.4.1 to *market participants* to whom *hourly uplift* may be allocated pursuant to these *market rules*;

6.16.4.2 in the same manner as *hourly uplift;* and

6.16.4.3 in respect of all *settlement hours* of the last day of the *billing period* in which the portion of such aggregate imbalance is determined to arise and be recoverable pursuant to section 6.16.3.

6.17 Audit

6.17.1 The audit of *settlement* functions referred to in this section 6.17 shall serve to examine and evaluate compliance with management control objectives and operational effectiveness of *settlement process*es and procedures.

6.17.2 The audits referred to in section 6.17.3 shall be performed by an external, independent auditing firm.

6.17.3 Unless otherwise directed by the *IMO Board*, the *IMO* shall every two years, on the anniversary of the *market commencement date*, direct a comprehensive external audit on the *settlement process*es and procedures. The audit shall include the following tasks:

6.17.3.1 gauge the performance of the *settlement process* in meeting the objectives of these *market rules;*

6.17.3.2 review the accuracy and timeliness of the production of *settlement statements*, including *settlement* calculations and financial allocations;

6.17.3.3 review the accuracy and timeliness of the production of *invoice*s and supporting market and system information;

6.17.3.4 review the *reliability* and integrity of the market and system operational data used in the *settlement process*es and procedures;

6.17.3.5 review the *reliability* and security of the information technology system infrastructure used to measure, validate, classify, compute and report *settlement* information;

6.17.3.6 review the adequacy of *settlement processes* and procedures to safeguard *confidential information*; and

6.17.3.7 review the adequacy and effectiveness of risk management controls of the *settlement process*es and tools, including the effectiveness of the *disaster recovery plan.*

6.17.4 *Settlement statements*, financial *settlement* records and any documentation pertaining to the *IMO's settlement* activities shall, subject to sections 2.11.1 to 2.11.3, be kept in secure storage for a period of at least seven years and made available for auditing purposes.

6.17.5 An audit report shall be prepared by the auditors in respect of each audit conducted pursuant to this section 6.17 and shall be commissioned on the basis that the audit report must be provided to the *IMO* within one month after completion of the audit activities.

6.17.6 Each audit report prepared pursuant to this section 6.17 shall be made available to a *market participant* upon request, subject to such measures as may be required to be taken to safeguard any *confidential information* contained in such audit report.

6.18 Settlement Accounts

6.18.1 The *IMO* shall establish and maintain the *settlement accounts* described in this section 6.18 for the operation of its *settlement* and billing systems.

6.18.2 The *IMO* shall obtain lines of credit and other banking facilities it deems necessary for the operation of the *settlement accounts* described in this section 6.18, which lines of credit and other banking facilities shall not exceed an aggregate amount approved by the *IMO Board*.

6.18.3 The *IMO* may establish *settlement accounts* in addition to those referred to in this section 6.18 as may be necessary to implement the *settlement* and billing processes outlined in this Chapter. *Market participant*s shall be notified 60

business days prior to any such additional *settlement accounts* becoming *operational*.

6.18.4 The *IMO* shall open and maintain the *IMO settlement clearing account* as a single bank account to and from which all *settlement* payments shall be made in accordance with the provisions of this Chapter and the details of which shall appear in the *invoice*s sent by the *IMO* to *market participant*s as provided in section 6.10.2.4**.**

6.18.5 [Intentionally left blank]

6.18.5.1 [Intentionally left blank]

6.18.5.2 [Intentionally left blank]

6.18.5.3 [Intentionally left blank]

6.18.6 The *IMO* shall open and maintain the *IMO adjustment account*, which *account* shall operate as follows:

6.18.6.1 the *IMO adjustment account* shall be a single bank account established to receive and disburse payments related to penalties, damages, fines and payment adjustments arising from resolved *settlement* disputes, and to reimburse the *IMO* for any associated costs or expenses;

6.18.6.2 any amounts paid into the *IMO adjustment account* by *market participant*s shall first be applied to reimburse the *IMO* in respect of any costs or expenses described in section 6.18.6.1 which it has or will incur. Any remaining amount shall be credited to the *IMO adjustment account;* and

6.18.6.3 the *IMO Board* shall review, at least annually, the allocation of any credit balance of the *IMO adjustment account*, and may:

a. establish an amount to be retained in the *IMO adjustment account*;

b. direct that some or all of the credit balance be applied to special education projects or initiatives; and/or

c. direct that some or all of the balance be used to reduce the *IMO administration charge* in the following year.

6.18.7 The *IMO* shall open and maintain the *IMO prepayment account*, which *account* shall operate as follows:

6.18.7.1 the *IMO prepayment account* shall be a bank account established for *market participants* to deposit prepayments at an earlier date than the specified *market participant payment date*; and

6.18.7.2 the arrangements for making the prepayment and transferring funds from the *IMO prepayment account* to the *IMO settlement clearing account* shall be in accordance with the provisions of section 6.11.2.

6.18.7A The *IMO* shall open and maintain the *TR clearing account*, which *account* shall operate in the manner described in sections 4.18 and 4.19 of Chapter 8.

6.18.8 Unless otherwise specified, the *IMO* shall recover all banking costs reasonably incurred in opening and operating the *IMO's settlement accounts* through the *IMO administration charge.*

6.18.9 The *IMO* shall maintain its *settlement accounts* at a bank or financial institution in the Province of Ontario approved by the *IMO Board*.

6.18.10 Each *transmitter* shall be required to open and maintain a *transmission services settlement account* at a bank named in a Schedule to the *Bank Act*, S.C. 1991, c. 46, located in the Province of Ontario, and capable of performing electronic funds transfers.

6.18.11 Each *transmitter* shall inform the *IMO* of all applicable information required for the *IMO* to make payment into the *transmitter's transmission services settlement account*.

6.18.12 Each *market participant* shall be required to open and maintain a *market participant settlement account* at a bank named in a Schedule to the *Bank Act*, S.C. 1991, c. 46, located in the Province of Ontario, and capable of performing electronic funds transfers.

6.18.13 Each *market participant* shall inform the *IMO* of all applicable information required for the *IMO* to make payment into the *market participant's market participant settlement account*.

6.18.14 [Intentionally left blank]

6.18.15 The *settlement accounts* referred to in this section 6.18 may be changed or closed as follows:

6.18.15.1 the *IMO* may change the bank or the details of any of its *settlement accounts*, on the condition that the bank or financial institution is reasonably acceptable to the *IMO Board* and that all *market participant*s are notified by the *IMO* in writing at least 60 *business days* before the change takes effect; and

6.18.15.2 any *transmitter* or *market participant* may change its bank or the details of its *settlement account*, on the condition that the *IMO* is notified in writing at least 60 *business days* before the change takes effect.

PART 5 – IMO BOARD COMMENTS

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