LIST

Connecting Today.
Powering Tomorrow.

IESO Charge Types and Equations

Issue 79.0

This *market manual* is provided for stakeholder engagement purposes. Proposed changes, to be effective for the 2023 *capacity auction*, are indicated based on the current version of the *market manual*. Please note that additional changes to this document may be incorporated as part of future engagement on design enhancements to the *capacity auction* or other *IESO* activities prior to this *market manual* taking effect.

This document enumerates the various charge types and equations used in the IESO settlements process for IESO-Administered markets that are subject to a functional deferral, and those that are NOT subject to a functional deferral.

Disclaimer

The posting of documents on this Web site is done for the convenience of *market participants* and other interested visitors to the *IESO* Web site. Please be advised that, while the *IESO* attempts to have all posted documents conform to the original, changes can result from the original, including changes resulting from the programs used to format the documents for posting on the Web site as well as from the programs used by the viewer to download and read the documents. The *IESO* makes no representation or warranty, express or implied, that the documents on this Web site are exact reproductions of the original documents listed. In addition, the documents and information posted on this Web site are subject to change. The *IESO* may revise, withdraw or make final these materials at any time at its sole discretion without further notice. It is solely your responsibility to ensure that you are using up-to-date documents and information.

This document may contain a summary of a particular *market rule*. Where provided, the summary has been used because of the length of the *market rule* itself. The reader should be aware, however, that where a *market rule* is applicable, the obligation that needs to be met is as stated in the "Market Rules". To the extent of any discrepancy or inconsistency between the provisions of a particular *market rule* and the summary, the provision of the *market rule* shall govern.

See also "Notice to *Electricity Storage Participants"* in Section 2.2.

Document ID	IMP_LST_0001
Document Name	IESO Charge Types and Equations
Issue	Issue 79.0
Reason for Issue	Issued in advance of Baseline 48.1
Effective Date	September 19, 2022

Document Change History

Issue	Reason for Issue	Date
• For change history prior to Issue 22.0, see Issue 29.0 of the CT&E. • For change history for Issue 22.0 to Issue 29.0, see Issue 38.0 of the CT&E. • For change history for Issue 30.0 to Issue 49.0, See Issue 59.0 of the CT&E		
50.0	Updated for Baseline 30.0	September 11, 2013
51.0	Updated for Baseline 30.1	December 4, 2013
52.0	Update for Baseline 31.1	June 4, 2014
53.0	Update for Baseline 32.0	September 10, 2014
54.0	Updated for Baseline 33.0	March 4, 2015
55.0	Updated for Baseline 34.0	September 9, 2015
56.0	Updated for Baseline 34.1	December 2, 2015
57.0	Updated for Baseline 35.0	March 2, 2016
58.0	Updated for Baseline 35.1	June 1, 2016
59.0	Updated for Baseline 36.0	September 14, 2016
60.0	Updated for Baseline 36.1	December 7, 2016
61.0	Updated for Baseline 37.0	March 1, 2017
62.0	Updated for Baseline 38.1	December 6, 2017
63.0	Updated for Baseline 39.0	March 7, 2018
64.0	Updated for Baseline 40.0	September 12, 2018
65.0	Updated for Baseline 41.0	March 6, 2019
66.0	Updated for Baseline 41.1	June 5, 2019
67.0	Updated for Baseline 42.0	September 11, 2019
68.0	Updated for Baseline 42.1	December 4, 2019
69.0	Updated in advance of Baseline 43.1	April 23, 2020
70.0	Updated in advance of Baseline 43.1 for the *commitment period* beginning May 1, 2021	May 4, 2020
71.0	Updated for Baseline 44.0	September 16, 2020
72.0	Updated in advance of Baseline 44.1	November 25, 2020
73.0	Updated for Baseline 44.1	December 2, 2020

Issue	Reason for Issue	Date
74.0	Updated to meet accessibility requirements pursuant to the *Accessibility for Ontarians with Disabilities Act.*	December 18, 2020
75.0	Issued in advance of Baseline 45.0. Updated to include electricity storage participation.	February 26, 2021
76.0	Updated for Baseline 45.1	June 2, 2021
77.0	Updated for Baseline 46.0	September 15, 2021
78.0	Updated for Baseline 47.0	March 2, 2022
79.0	Issued in advance of Baseline 48.1	September 19, 2022

Related Documents

Document ID	Document Title
MDP_PRO_0033	Market Manual 5: Settlements, Part 5.5: Physical Markets Settlement Statements

Table of Contents

List of Figures

Table of Changes

Reference (Section and Paragraph)	Description of Change
2.1	New definition of RAC_k, $CARC_k^m$, and $CICAP^m_k$ added as a result of 2023 Capacity Auction Enhancements; general clean-up for clarification purposes.
2.2	New charge types 1323, 1324, and 1325 as a result of 2023 Capacity Auction Enhancements; general clean-up for clarification purposes. Modified charge type 1314 to calculate payments at a daily level. Change needed to accommodate calculation of in-period and true-ups

1. Introduction

1.1 Purpose

The purpose of this document is to provide the reader with the formulas and variable definitions behind each different *charge type* implemented in the *IESO Settlements* process including tax treatment. Furthermore, this document relates each *charge type* to the high-level description of the *settlement amount* within the *IESO market rules* and, where applicable, notes any aspects of the implementation of the *charge type* itself.

1.2 Scope

This document provides the formulas and the HST Tax treatment for each *charge type* implemented in the *IESO Settlements* System and those *charge types* which are currently the subject of a Functional Deferral. This document does not, however, provide the format of the information provided to *market participants* on *settlement statements* with respect to each *charge type*. For more information on these topics, the reader is directed to the following Technical Interface Document - "Format Specification for Settlement Statement Files and Data Files".

1.3 Tax Treatment

The *IESO* is a registrant for purposes of the *Excise Tax Act* and all or substantially all of the supplies made by the *IESO* are taxable for GST/HST purposes.

The *IESO* administers the *IESO-administered markets* in compliance with the current provisions of the *Excise Tax Act* and the published rulings, administrative policies, and assessing practices of the Canada Revenue Agency. The *IESO* conducts regular tax reviews with its advisors to ensure that transactions within the *IESO-administered markets* comply with the foregoing.

Market participants should consult their own legal and tax advisors for advice with respect to the tax consequences of transactions in the *IESO-administered markets*.

1.4 Who Should Use This Document

This document is intended for *market participants* in the *IESO-administered markets* who are seeking information regarding the calculations of *settlement amounts* related to each *charge type*. Depending on the activity of the *market participant* in the various *IESO-administered markets*, these *charge types* may have varying degrees of relevance to each *market participant* with respect to their financial settlements.

1.5 Conventions

Usage of an italicized term shall take on the meaning ascribed to that term in the *IESO market rules*.

Unless otherwise noted, usage of variable subscripts and superscripts within this document shall mirror the same usage with in Chapter 9 of the *IESO market rules*. One notable exception is the

usage of notation to sum across *settlement amounts* for *charge type* "c". This is further noted in Section 2.2 of this document.

1.6 How This Document is Organized

This document is divided in 6 major subsections as follows:

Section 2.1: A table containing a description of each variable used within **Section 2.2**.

Section 2.2: A table describing *IESO charge types* and equations that are part of an active *IESO-administered market*.

Section 2.3: This section contains a description of rounding conventions for variables described in **Section 2.1**.

Section 2.4: This section contains a description of rounding conventions for *charge type* calculations described in **Section 2.2**.

Section 2.5: This section provides a description of *physical bilateral contract quantities*, their usage by the settlements system, and their use by *market participants* as a vehicle for transferring components of *hourly uplift.*

Section 2.6: This section describes how Day-Ahead import, export and linked wheel transactions are subject to an "Offer Price Test" in order to determine if they are exempt from the Day-Ahead Failure Charges (*charge types*, 1135, 1136 and 1134).

– End of Section –

2. IESO Charge Types and Equations that are Part of an Active IESO-Administered Market

2.1 Variable Descriptions

The following table contains descriptions of each variable used within Section 2.2, describing *IESO charge types* and equations that are part of an active *IESO-administered market*.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
This column denotes the abbreviated name of each variable used within Section 2.2.	The full name of each variable used within Section 2.2.	A brief description of each variable used within the formulas illustrated within Section 2.2.	The relevant reference to the variable in question within the *IESO market rules.* The format of each reference is: [Chapter] [Section no.] e.g. Chapter 9 Section 3.1.6 would appear as: 9.3.1.6	This section notes any aspects of the implementation of the variable within the *IESO settlements* process which are otherwise not described in the *IESO market rules* – OR – refers the reader to the appropriate documentation.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
AAD	Adjustment Account Disbursement	The total dollar value of all disbursements from the *IESO adjustment account* authorized by the *IESO Board* in the current *energy market billing period*.	9.6.18.6	Same as *IESO* market rules.
$AQEI_{k,h}^{m,t}$	Allocated Quantity of Energy Injected	Allocated quantity in MWh of *energy* injected by *market participant* 'k*'* at *RWM* 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.9	Represents only those quantities derived from loss-adjusted and totalized *metering data*. Quantities derived from *interchange schedule data* is captured in the variable SQEI (see below).
$AQEW_{k,h}^{m,t}$	Allocated Quantity of Energy Withdrawn	Allocated quantity in MWh of *energy* withdrawn by *market participant* 'k*'* at *RWM* 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.9	Represents only those quantities derived from loss-adjusted and totalized *metering data*. Quantities derived from *interchange schedule data* is captured in the variable SQEW (see below).
$AQOR_{r,k,h}^{m,t}$	Allocated Quantity of Operating Reserve	Allocated quantity in MW of *class r reserve* for *market participant* 'k' at *RWM* 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.9	Same as *IESO market rules* and equivalent to DQSR (see below).
BE	Energy Offers	A matrix of 'n' *price-**quantity** pairs* offered by *market participant* 'k' to supply *energy* during *settlement hour* 'h'. *Offer prices* in this matrix may be altered to a **"lower limit"** for the purposes of calculating	9.3.5.2, 9.3.5.6 and 9.3.5.7	Same as *IESO market rules*.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		charge type 105 (Congestion Management *Settlement* Credit for *Energy)* where any such *offer price*: 1) Is associated with a *generation facility* located within Ontario; or imports and 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*. The situational criteria and threshold for applying such adjustments are further described in *IESO market rules* section 9.3.5.6. and 9.3.5.7.		
BL	Energy Bids	A matrix of 'n' *price-quantity pairs* bid by *market participant* 'k' to withdraw *energy* by a *dispatchable load* during *settlement hour* 'h'.	9.3.5.2	Same as *IESO market rules*.
BR_r	Operating Reserve Offers	A matrix of n *price-quantity pairs* offered by *market participant* 'k' to supply class r *operating reserve* during *settlement hour* 'h'.	9.3.5.2	Same as *IESO market rules*.
$BCQ_{s,k,h}^{m,t}$	Physical Bilateral Contract Quantity of Energy bought	*Physical bilateral contract quantity* of *energy* in MWh bought by *buying market*	9.3.1.6	Same as *IESO market rules*.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		participant 'k' from *selling market participant* 's' at *RWM* or *intertie metering point* 'm' for each *metering interval* 't' in *settlement hour* 'h'.		
$BCQ_{k,b,h}^{m,t}$	Physical Bilateral Contract Quantity of Energy sold	*Physical bilateral contract quantity* of *energy* in MWh sold by *selling market participant* 'k' to *buying market participant* 'b' at *RWM* or *intertie metering point* 'm' for each *metering interval* 't' in *settlement hour* 'h'.	9.3.1.6	Same as *IESO market rules*.
CACP	Capacity Auction Clearing Price	The *capacity auction clearing price* for the *obligation period* and *capacity auction resource.*	N/A	Refer to Market Manual 5.5
$CACP^{z}_{h}$	Hourly Capacity Auction Clearing Price	The *capacity auction clearing price* for the *obligation period* and *capacity auction resource* divided by the hours of availability for the day.	~~N/A~~9.3.1.10	Refer to Market Manual 5.5
$CAEO^{m}_{hk}$	Capacity Auction Energy Offer	The quantity of auction capacity for *settlement hour* 'h' (in MWh) made available by capacity auction resource for capacity market participant 'k' at delivery point 'm' in the relevant settlement hour of the availability window determined as the lesser of the *resource's energy offers* submitted in the day-ahead commitment process, pre-dispatch, and *real-time energy market*, as applicable.~~The *energy offer* quantity calculated for *capacity market participant* 'k' as the quantity of~~	9.3.1.10~~N/A~~	Refer to Market Manual 5.5

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		~~capacity provided by the associated *capacity auction resource* delivering the *auction capacity*.~~		
$CARC_k^m$	Capacity Auction Registered Capability	The quantity of *energy* (in MW) of the *hourly demand response resource's demand response contributors* total registered capability for *capacity market participant 'k'* at *delivery point* 'm', as registered with the *IESO* in accordance with the applicable *market manual*	9.3.1.10	Refer to Market Manual 5.5
$CBOC_k$	Buy-out Capacity	The buy-out capacity is an amount that is being reduced from the *capacity obligation* for *capacity market participant* 'k'.	N/A	Refer to Market Manual 5.5
$CBMP_k$	Total net volume of electricity withdrawn from the *IESO-controlled grid* by applicable Class B market participant or licensed distributor that is also a *market participant* for the month	The total net volume of electricity withdrawn from the *IESO-controlled grid* by applicable Class B market participant (as that term is defined in the regulation) or licensed distributor that is a *market participant* 'k' for the month.	N/A	N/A – See regulations.
CBRR	Global adjustment Class B recovery rate	Global Adjustment Class B recovery rate for the month per Ontario Regulation 429/04.	N/A	N/A – See regulations.
$CCO^m_{k,h}$	Capacity Obligation (MW)	The *capacity obligation* (in MW) for the *obligation period* per *capacity auction resource* for *capacity market participant* 'k' at *delivery point* 'm' in the relevant *settlement hour 'h'*, as may be adjusted pursuant to the	~~N/A~~9.3.1.10	Refer to Market Manual 5.5

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		market rules. ~~. The initial *capacity obligation* is acquired through a *capacity auction* and subject to being increased/reduced via transfer/ the buy-out process.~~		
CGC	Submitted Combined Guaranteed Costs	A financial amount consisting of fuel cost components defined on a *per-start* basis for a given *generation unit* calculated in a manner consistent with the applicable *market manual*, and encompassing the following elements: 1) Fuel and operation and maintenance (O&M) costs associated with unit synchronization to the *IESO-controlled grid* for a given start-up event (costs submitted via Online *IESO*). 2) Fuel and O&M costs associated with moving the *generation unit* from a valid start to its *minimum loading point* (costs submitted via Online *IESO*).	9.4.7B	Same as *IESO market rules*.
$CICAP^{m}_{k}$	Capacity Auction *Cleared ICAP*	The *Cleared ICAP* (in MW) for *capacity auction resource* at *delivery point* 'm' for *capacity market participant* 'k' in the applicable *obligation period*, as determined in accordance with the applicable *market manual*	9.3.1.10	Refer to Market Manual 5.5
$CNPF_{tm}$	Capacity Auction Non-Performance Factor	for a given *energy market billing period* 'tm', ~~T~~the non-performance factor as listed in Section 7.1 of Market Manual 12. ~~that~~	~~N/A~~9.3.1.10	Refer to Market Manual 5.5

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		~~corresponds and applies to the month 'm' being settled.~~		
$DA\_BE_{k,h}^{m,t}$	*Energy Offer* submitted into the *schedule of record at a delivery point*	*Energy offers* submitted in day-ahead, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *delivery point* 'm' during *metering interval* 't' of *settlement hour* 'h' arranged in ascending order by the offered price in each *price-quantity pair* where offered prices 'P' are in column 1 and offered quantities 'Q' are in column 2.	9.3.1.2B.7	Same as *IESO market rules.*
$DA\_BE_{k,h}^{i,t}$	*Energy Offer* submitted into the *schedule of record at a intertie metering point*	*Energy offers* submitted in day-ahead, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h' arranged in ascending order by the offered price in each *price-quantity pair* where offered prices 'P' are in column 1 and offered quantities 'Q' are in column 2.	9.3.8A.2B and 9.3.8B.2	Same as *IESO market rules*
$DA\_BL_{k,h}^{i,t}$	*Energy* Bids submitted into the *schedule of record*	Energy bids submitted in day-ahead, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h' arranged in ascending order by the offered price in each *price-quantity pair* where offered prices 'P'	9.3.1.2B.7 and 9.3.8D.2	Same as *IESO market rules*

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		are in column 1 and offered quantities 'Q' are in column 2.		
DA_CGC	Submitted Day-Ahead Combined Guaranteed Costs	EFFECTIVE OCTOBER 13, 2011, THIS VARIABLE IS NO LONGER USED IN THE CALCULATION OF ANY SETTLEMENT. A financial amount consisting of fuel cost components defined on a *per-start* basis for a given *generation unit* calculated in a manner consistent with the applicable *market manual*, and encompassing the following elements: 1) Fuel and operation and maintenance (O&M) costs associated with unit synchronization to the *IESO-controlled grid* for a given start-up event (costs submitted via *IESO* Gateway). 2) Fuel and O&M costs associated with moving the *generation unit* from a valid start to its *minimum loading point* (costs submitted via *IESO* Gateway).	9.4.7D.1	Same as *IESO market rules*
$DA\_DQSI_{k,h}^{m,t}$	*Schedule of Record* Dispatch Quantity of Energy Scheduled for Injection at a delivery point	Day-ahead constrained quantity scheduled for injection by *market participant* 'k' at *delivery point* 'm' during *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2A	Same as *IESO market rules.*
$DA\_DQSI_{k,h}^{i,t}$	*Schedule of Record* Dispatch Quantity of Energy Scheduled for	Day-ahead constrained quantity scheduled for injection by *market participant* 'k' at *intertie*	9.3.1.2A	Same as *IESO market rules.*

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
	Injection at an intertie metering point	*metering point* 'i' during *metering interval* 't' of *settlement hour* 'h'.		
$DA\_DQSW_{k,h}^{i,t}$	*Schedule of Record* Dispatch Quantity of Energy Scheduled for Withdrawal	Day-ahead constrained quantity scheduled for withdrawal by *market participant* 'k' at *intertie metering point* 'i' during metering interval 't' of settlement hour 'h'.	9.3.1.2A	Same as *IESO market rules.*
$DA\_ELMP_{h}^{m,t}$	*Pre-dispatch* constrained schedule price for an *intertie metering point* in the export zone	Day-ahead constrained schedule intertie price at the *delivery point* 'm' of the sink for the export transaction during *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2A	Same as *IESO market rules.*
$DA\_ILMP_{h}^{m,t}$	*Pre-dispatch* constrained schedule price for an *intertie metering point* in the import zone	Day-ahead constrained schedule intertie price at the *delivery point* 'm' of the source for the import transaction during *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2A	Same as *IESO market rules.*
$DA\_SNLC_{k,h}^{m}$	Speed-no-load costs submitted into the *schedule of record at a delivery point*	As-offered *speed-no-load cost* associated with *three-part offers* for a given *settlement hour* 'h' for *market participant* 'k' at *delivery point* 'm'.	9.3.1.2B.7	Same as *IESO market rules.*
$DA\_SNLC_{k,h}^{p}$	Speed-no-load costs submitted into the *schedule of record at a pseudo-unit*	As-offered *speed-no-load cost* associated with *three-part offers* for a given *settlement hour* 'h' for *market participant* 'k' at *pseudo-unit* 'p'.	9.3.1.2B.7	Same as *IESO market rules.*
$DA\_SUC_{k,h}^{m}$	Start-up costs submitted into the *schedule of record at a delivery point*	As-offered *start-up cost* associated with *three-part offers* for a given *settlement hour* 'h' for *market participant* 'k' at *delivery point* 'm'	9.3.1.2B.7	Same as *IESO market rules.*

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		where *settlement hour* 'h' is the initial hour in the DACP start event.		
$DA\_SUC_{k,h}^{p}$	Start-up costs submitted into the *schedule of record at a pseudo-unit*	As-offered *start-up cost* associated with *three-part offers* for a given *settlement hour* 'h' for *market participant* 'k' at *pseudo-unit* 'p' where *settlement hour* 'h' is the initial hour in the DACP start event.	9.3.1.2B.7	Same as *IESO market rules.*
$DIPC_{k,h}^{m,t}$	Derived Interval Price Curve	*Energy price curves* derived per interval from submitted hourly day-ahead PSU *energy offers*, represented as a N by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *delivery point* 'm' (where 'm' is a CT or ST delivery point) during *metering interval* 't' of *settlement hour* 'h' arranged in ascending order by the offered price in each *price quantity pair* where offered prices 'P' are in column 1 and offered quantities 'Q' are in column 2.	9.3.1.11	Same as *IESO market rules.* Refer to Market Manual 9.5, Appendix B for a detailed description of DIPC.
$DIGQ_{k,h}^{m,t}$	Derived Interval Guaranteed Quantity	Portion of the day-ahead constrained quantity scheduled for injection that is eligible for DA-PCG for *market participant* 'k' at *pseudo unit* 'p' during *metering interval* 't' of *settlement hour* 'h'	9.3.1.11	Same as *IESO market rules.* Refer to Market Manual 9.5, Appendix C for a detailed description of DIGQ.
$DQSI_{k,h}^{m,t}$	Dispatch Quantity of Energy Scheduled for Injection	Dispatch quantity of *energy* scheduled for injection in the *real-time schedule* by *market*	9.3.1.3 and 9.3.1.4A	Same as *IESO market rules*. N.B. Location m is further subject to the functional deferral described

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		participant 'k*'* at location 'm' in *metering interval* 't' of *settlement hour* 'h'.		in Section 3.1.4A of Chapter 9 of the *market rules* (ref. 9.3.1.4A).
$DQSR_{r,k,h}^{m,t}$	Dispatch Quantity Schedule of Operating Reserve	Dispatch quantity schedule of *class r reserve* for *market participant* 'k' at location 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.4 and 9.3.1.4A	Same as *IESO market rules*. N.B. Location m is further subject to the functional deferral described in Section 3.1.4A of Chapter 9 of the *market rules* (ref. 9.3.1.4A).
$DQSW_{k,h}^{m,t}$	Dispatch Quantity of Energy Scheduled for Withdrawal	Dispatch quantity of *energy* scheduled for withdrawal in the *real-time schedule* by *market participant* 'k*'* at location 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.3 and 9.3.1.4A	Same as *IESO market rules*. N.B. Location m is further subject to the functional deferral described in Section 3.1.4A of Chapter 9 of the *market rules* (ref. 9.3.1.4A).
DRACP	Demand Response Auction Clearing Price	The *demand response auction clearing price* for the *commitment period* and zone.	N/A	Refer to Market Manual 5.5
$DRACP_h$	Hourly Demand Response Auction Clearing Price	The *demand response auction clearing price* for the *commitment period* and zone divided by the hours of availability for a day.	N/A	Refer to Market Manual 5.5
$DRBOC_k$	Demand Response Buy-Out Capacity	The buy-out capacity is an amount that is being reduced from the *demand response capacity obligation* for *demand response market participant* 'k'.	N/A	Refer to Market Manual 5.5

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
$DRCO_k$	Demand Response Capacity Obligation (MW)	The *demand response capacity obligation* amount for the *commitment period* and zone for *demand response market participant* 'k'. The initial capacity obligation is acquired through the *demand response auction* and subject to being reduced via the buy-out process.	N/A	Refer to Market Manual 5.5
$DREBQ^{m}_{k, h}$	Demand Response Energy Bid Quantity	The quantity (in MW) of *auction capacity* made available by an *hourly demand response resource* for *capacity market participant* 'k' at *delivery point* 'm' in *settlement hour* 'h' of the *availability window*, determined as the lesser of he *resource's energy bids* submitted in the day-ahead commitment process, pre-dispatch, and *real-time energy market*, as applicable, and where such value exceeds the $CARC_k^m$ for the resource in the relevant *energy market billing*, the $DREBQ^m_{k,h}$ shall equal such $CARC_k^m$.~~The *demand response energy bid* quantity calculated for *demand response market participant* 'k' as the sum of the quantity of *demand response capacity* provided by all participating demand response resources.~~	N/A	Refer to Market Manual 5.5
DRNPF	Demand Response Non-Performance Factor	The non-performance factor as listed in Section 7.1 of Market Manual 12 that corresponds and applies to the month being settled.	N/A	Refer to Market Manual 5.5

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
DRSQty	Demand Response Scheduled Quantity	Calculated as (Total Bid Qty – Schedule) where 'Total Bid Qty' is the maximum quantity of the *demand response energy bid* and where 'Schedule' is the real-time constrained schedule quantity.	N/A	Refer to Market Manual 5.5
EEQ	Excluded Energy Quantity	The total volume of *energy* (MWh) supplied to Fort Frances Power Corporation Distribution Inc. by Abitibi-Consolidated Inc. during the month.	N/A – subject to regulations made pursuant to Bill 100.	N/A – See regulations.
$EGEI_k$	Embedded Generator Energy Injection	The total volume of *energy* (MWh) supplied by *embedded generator*s during the month to *distributors* who are *market participants* and to all embedded distributors to whom the *market participant* 'k' is the host *distributor*, adjusted for losses as required by the *OEB*, Retail Settlement Code.	N/A – subject to regulations made pursuant to Bill 100.	N/A – See regulations.
$EIM_{k,h}$	Operating Profit Function for the IMPORT of Energy under the Intertie Offer/Bid Guarantee Settlement Credit	This Operating Profit function is used for the calculation of the Intertie Offer/Bid Guarantee Settlement Credit (IOBG) with respect the IMPORT of *energy*.	9.3.8A	$EIM_{k,h}$ IS NOT A VARIABLE $EIM_{k,h}$ is the output of a particular usage of the Operating Profit (OP) function defined within Chapter 9, Section 3.8A. $EIM_{k,h}$ Input variables into the Operating Profit (OP) Function include: MQSI, EMP, and BE.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
$EMP_h^{i,t}$	5-minute Energy Market Price at the Interties	Energy *market price* applicable to *intertie metering point* 'i' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.3	Same as *IESO market rules*.
$EMP_h^{m,t}$	5-minute Energy Market Price within Ontario	Energy *market price* applicable to *RWM* 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.3	Same as *IESO market rules*.
$EMP_h^{REF,t}$	5-minute Energy Market Reference Price	Reference energy *market price* used to value losses in the calculation of the *Transmission Charge Reduction Fund*[1] during in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.3 and 9.3.6.2	Same as *IESO market rules*.
ETS	Export Transmission Service Tariff Rate	Export Transmission Service Tariff Rate in units of $/MWh.	N/A	Subject to the OEB "Ontario Transmission Rate Order".
FP_h^m	Fixed Energy Rate	A fixed *energy* rate for all *metering intervals* in *settlement hour* 'h'.	N/A – subject to regulations made pursuant to *Ontario Energy Board Act, 1998* until March 31, 2005 and by the *OEB* under such regulations commencing April 1, 2005.	N/A – See regulations.

[1] *Market Rules* ref.: Section 3.6.2 of Chapter 9.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
FPC_h^m	Rate for a designated group of *charge types* (see description of *charge type* 141)	This variable is reserved for *charge type* 141 and applies with respect to charges for the period commencing December 1, 2002 and ending March 31, 2005. See Ontario Regulation 436/02 and Ontario Regulation 98/05.	N/A – subject to regulations made pursuant to *Ontario Energy Board Act, 1998*.	N/A – See regulations
$GA\_AQEW_{g,k,h,Mm,t}$	Allocated Quantity of Energy Withdrawn for elements of the Global Adjustment distribution	Allocated quantity in MWh of *energy* withdrawn by *market participant* or Distributor 'k*'* at *RWM* 'm' in *metering interval* 't' of *settlement hour* 'h' in month 'M' for element "g" Where 'g' is 1 for Class A Market Participant or Consumer load, and 2 for *energy* withdrawn by Generator 'k' in the course of providing Ancillary Services.		
GAR_B	Global Adjustment Rate for Class B	GA Class B Rate.	N/A	N/A – See regulations.
GRP	Generator Regulated Price	A regulated price ($/MWh) with respect to output of OPG's regulated generating stations, set by the *OEB*.	N/A – subject to regulation by the Ontario Energy Board.	N/A – See regulations
$HDRDC_h$	Measured hourly *demand response capacity*	Min (Min (Total Bid Qty, Resource Capability, *Capacity Obligation*) – Schedule, Delivered Capacity) Where Delivered Capacity: For C&I HDR resources calculated as:	Chapter 9: Section 4.7J.5	Refer to Market Manual 5.5, Section 1.6.26.2A

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		• Max (0, HDR Baseline$_h$ – Actual consumption$_h$) For residential HDR resources calculated as: • Max (0, No. of contributors in Treatment Group$_m$ X (Adjusted Control Group Load$_h$ – Treatment Group Load$_h$)) Where *h* is an hour within the activation window and *m* is the month of activation, and Total Bid Qty' is the maximum quantity of the *demand response energy bid*, 'Schedule' is the real-time constrained schedule quantity, and Resource Capability is the HDR resource's registered capability.		
HDRBP$_h$	HDR Bid Price	The price from *real-time DR energy bid* submitted by an HDR resource Where *h* is an hour within the activation window.	Chapter 9: Section 4.7J.5	Refer to Market Manual 5.5
HDRTAPR	Out of Market Test Activation Payment Rate	$250 per MWh.	Chapter 9: Section 4.7J.5	Refer to Market Manual 5.5
HOEP$_h$	Hourly Ontario Energy Price	*Hourly Ontario Energy Price* in *settlement hour* 'h'.	9.3.1.3	Same as *IESO market rules*.
IOG_FV$_{k,h}^{i}$	IOG Floor Value	EFFECTIVE OCTOBER 13, 2011, THIS VARIABLE IS NO LONGER USED IN THE CALCULATION OF ANY SETTLEMENT.	9.3.8A.8	Same as *IESO market rules*

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		The IOG_FVk,hi is a floor value (in dollars to the nearest cent) derived from: • The day-ahead offer prices for the import transaction submitted by the *market participant* over the range of the *pre-dispatch of record* constrained quantity scheduled for that import transaction; and • *Real-time* offer prices for the import transaction at the corresponding location in the corresponding *settlement hour* for any additional *energy* scheduled above and beyond the *pre-dispatch of record* constrained quantity scheduled for that import transaction: **NOTE:** The $IOG\_FV_{k,h}^{i}$ is formulated in the manner described in Chapter 9, Section 3.8A.8 of the *IESO market rules* and is used in the formulation of the intertie offer guarantee adjustment (see also, Section 2.2 entry for *charge type* 1137 within this document).		See Chapter 9, Section 3.8A.8 for details concerning its formulation.
$LCD_{k,h}^{m}$	Line Connection Demand (KW)	Billing Demand for Line Connection Transmission Service (KW) for *transmission customer* 'k' at transmission delivery point 'm' during *settlement hour* 'h' in which	N/A	Subject to the OEB "Ontario Transmission Rate Order".

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		$LCD_{k,h}^{m}$ denotes the non-coincident peak demand for the month.		
MDCAA	Monthly deferred Class A amount to be recovered	The monthly deferred Class A amount to be recovered which equals one twelfth of the total Global Adjustment allocated to Class A customers that was deferred in April, May and June of 2020.	N/A	N/A – See regulations.
MDCBA	Monthly deferred Class B amount to be recovered	The monthly deferred Class B amount to be recovered equals one twelfth of the total Global Adjustment allocated to Class B customers that was deferred in April, May and June of 2020.	N/A	N/A – See regulations.
MC_{h}^{m}	Minimum Consumption	Calculation of the self-induced dispatchable load CMSC clawback under Business Rule 2. The minimum consumption is equal to the quantity in the price quantity pair where the bidding price is MMCP (i.e., $2000) at *RWM metering point* 'm' for settlement hour 'h'.	9.3.5.1A	
MI	Ordered matrix of $MQSI_{k,h}^{i,t}$ and corresponding IOG *settlement amounts*	Used for the calculation of the IOG OFFSET *settlement amount.* A matrix of X pairs of *market schedule* quantities scheduled for injection by *market participant* 'k' 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'. See	9.3.8A.4	Same as *IESO market rules*.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		equation in Chapter 9, Section 3.8A.4 of the *IESO market rules* for further details.		
$MLP_{k,h}^{m,t}$	Minimum Loading Point	Minimum output of *energy* the *market participant* 'k' at *delivery point* 'm' can maintain without ignition support in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2B.7	Same as *IESO market rules.*
$MLP\_CONS_{k,h}^{m,t}$	Minimum Loading Point for a steam turbine resource or a combustion turbine resource associated to a pseudo unit	Minimum output of *energy* the *market participant* 'k' at *delivery point* 'm' can maintain without ignition support in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2B.7	Same as *IESO market rules.* Refer to Market Manual 9.4, Section 4.1.2.2 for a detailed description of constraints applied for PCG eligible combined cycle plants.
$MQSI_{k,h}^{m,t}$	Market Quantity Scheduled for Injection	Market quantity scheduled for injection in the *market schedule* by *market participant* 'k' at *RWM* or *intertie metering point* 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.3	Same as *IESO market rules*.
$MQSI\{adj\}_{k,h}^{m,t}$	Adjusted Market Quantity Scheduled for Injection	EFFECTIVE OCTOBER 13, 2011, THIS VARIABLE IS NO LONGER USED IN THE CALCULATION OF ANY SETTLEMENT. Used for the calculation of the IOG OFFSET *settlement amount.* $MQSI\{adj\}_{k,h}^{i,t}$ is each (and where applicable, adjusted) quantity of *energy* scheduled for injection in the *market schedule* by *market participant* 'k' at an	9.3.8A.4	Same as *IESO market rules*.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		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*.		
$MQSW_{k,h}^{m,t}$	Market Quantity Scheduled for Withdrawal	Market quantity scheduled for withdrawal in the *market schedule* by *market participant* 'k' at *RWM* or *intertie metering point* 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.3	Same as *IESO market rules*.
$NSD_{k,h}^{m}$	Network Service Demand (KW)	The Billing Demand for Network Transmission Service (KW) is defined as the higher of: transmission customer coincident peak demand (KW) in the hour of the month when the total hourly demand of all PTS customers is highest for the month; and 85% of the customer peak demand in any hour during the peak period 7 AM to 7 PM (local time) on *business days* defined by the *IESO*. For the purposes of determining business days for calculating transmission charges, the *IESO* uses the holidays identified by the Ontario Energy Board. The peak period hours will be between 0700 and 1900 hours Eastern Standard Time during winter (i.e. during standard time) and 0600 to	N/A	Subject to the OEB "Ontario Transmission Rate Order".

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		1800 hours during summer (i.e. during daylight savings time), in conformance with the meter time standard used by the *IESO* settlement systems.		
$OCMW_k$	Over committed MWs	Represent the *over committed capacity* of a *generator-backed capacity import resource* used by *capacity market participant* 'k' to satisfy its *capacity obligation*.	Chapter 11, and Chapter 9, section 4.7J.2.8	Same as *IESO market rules*.
ONPAO	Ontario Power Generation Non-Prescribed Assets Output	OPG's Non-Prescribed Assets are those generation assets operated and controlled by Ontario Power Generation in service as of January 1, 2006, excluding Lennox Generating Station, that are not prescribed assets under section 78.1 of the *Ontario Energy Board Act, 1998* as amended by the "Electricity Restructuring Act, 2004". ONPAO refers to the generation output from OPG's Non-Prescribed Assets, over each hour of the quarter adjusted to take account of volumes sold through forward contracts in effect as of January 1, 2005. For greater certainty, any output from ONPA resulting from fuel conversion by Ontario Power Generation in ONPA, or incremental output from ONPA resulting from refurbishment or expansion is to be excluded from ONPAO. Incremental Output is defined as:	N/A	The formula for calculating the OPG Rebate is subject to Ministerial Directive made under Order-in-Council 1062/2006 (May 17, 2006).

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		generation output x (new total installed capacity – installed capacity as of January 1, 2006) / new total installed capacity.		
OP	Operating Profit Function	The Operating Profit function is used for the calculation of the Congestion Management Settlement Credit (CMSC) with respect to constrained on/off payments for *energy*, *operating reserve*. It is also used for the calculation of the Day-Ahead Production Cost Guarantee components, the Day-Ahead Generator Withdrawal Charge, the Day-Ahead Import and Export failure charges, and the Import Offer Guarantee Settlement Credit.	9.3.5.2 and 9.3.8A.2	OP IS NOT A VARIABLE OP is a mathematical function defined within Chapter 9, section 3.5.2. of the *IESO market rules* Input variables include: MQSI, MQSW, SQROR AQEI, AQEW, AQOR SQEI, SQEW, DSQI, DSQW, DSQR DA_DQSI, DA_DQSW, PD_DQSI, PD_DQSW BE, BL, BR_r PD_BE, PD_BL DA_BE, DA_BL EMP MLP, MLP CONS DIPC OPCAP

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
				OP is also used within Chapter 9, Section 9.8A.2 of the *IESO market rules* to derive the Energy Import ($EIM_{k,h}$) sub-component of the Intertie Offer Settlement Credit (IOG) using the following input variables: MQSI BE EMP
$OPCAP_{k,h}^{m,t}$	Operating Capacity	De-rating of the generation unit by *market participant* 'k' at *delivery point* 'm' in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2B.7	Same as *IESO market rules*.
$OPE\{adj\}_{k,h}^{i}$	Adjusted CMSC component for *energy* used in the DA-Ahead IOG	EFFECTIVE OCTOBER 13, 2011, THIS VARIABLE IS NO LONGER USED IN THE CALCULATION OF ANY SETTLEMENT. This congestion management *settlement* credit *settlement amount* (CMSC) component is specifically used in the calculation of the Day-Ahead IOG for import transactions that are subject to a *constrained-on event* in the *real-time market*. $OPE\{adj\}_{k,h}^{i}$ is an adjusted component of The congestion management *settlement* credit *settlement amount* (CMSC) for *market participant* 'k' at *intertie metering point* 'i' for *settlement hour* 'h' in which the constrained	9.3.8A.2A	'OP' is a mathematical function used within Chapter 9, Section 9.3.8A.2A of the *IESO market rules* to derive Day-Ahead Intertie Offer Guarantee. Please see the *market rules* for information regarding its formulation.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		schedule is the lesser of $PDR\_DQSI_{k,h}^{i,t}$ or $DQSI_{k,h}^{i,t}$ but in all instances, greater than or equal to $MQSI_{k,h}^{i,t}$.		
ORL	Ontario Power Generation Revenue Limit	For the period May 1, 2006 to April 30, 2007 ORL is equal to $46/ MWh. For the period May 1, 2007 to April 30, 2008 ORL is equal to $47/ MWh. For the period May 1, 2008 to April 30, 2009 ORL is equal to $48/ MWh.	N/A	The formula for calculating the OPG Rebate is subject to Ministerial Directive made under Order-in-Council 1062/2006 (May 17, 2006).
PAA	Pilot Auction Amount	Refers to the Pilot Auction administered by the *Ontario Power Authority* in the first half of 2006. The volume in MWh over each hour in the quarter that is sold by Ontario Power Generation through the PA.	N/A	The formula for calculating the OPG Rebate is subject to Ministerial Directive made under Order-in-Council 1062/2006 (May 17, 2006).
PAORL	Pilot Auction Ontario Power Generation Revenue Limit	For the period May 1, 2006 to April 30, 2007 PAORL is equal to $51/ MWh. For the period May 1, 2007 to April 30, 2008 PAORL is equal to $52/ MWh. For the period May 1, 2008 to April 30, 2009 PAORL is equal to $53/ MWh.	N/A	The formula for calculating the OPG Rebate is subject to Ministerial Directive made under Order-in-Council 1062/2006 (May 17, 2006).

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
PAP	Pilot Auction Price	The weighted average auction price in $/MWh over each hour of the quarter realized for the PAA by Ontario Power Generation.	N/A	The formula for calculating the OPG Rebate is subject to Ministerial Directive made under Order-in-Council 1062/2006 (May 17, 2006).
$PB\_IM_h^t$	Price bias adjustment factor for import transactions	Price bias adjustment factor for import transactions in effect during *metering interval* 't' of *settlement hour* 'h'.	9.3.8C.3	Same as *IESO market rules*
$PB\_EX_h^t$	Price bias adjustment factor for export transactions	Price bias adjustment factor for export transactions in effect during *metering interval* 't' of *settlement hour* 'h'.	9.3.8C.5	Same as *IESO market rules*
$PD\_BE_{k,h}^{i,t}$	*Energy Offer* submitted into the Pre-dispatch	*Energy offers* submitted in Pre-dispatch, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h' arranged in ascending order by the offered price in each *price quantity pair* where offered prices 'P' are in column 1 and offered quantities 'Q' are in column 2.	9.3.1.2D	Same as *IESO market rules.*
$PD\_BL_{k,h}^{i,t}$	*Energy* Bid submitted into the Pre-dispatch	Energy bids submitted in *pre-dispatch*, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h' arranged in ascending order by the offered price in each *price quantity pair* where offered prices 'P'	9.3.1.2D	Same as *IESO market rules.*

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		are in column 1 and offered quantities 'Q' are in column 2.		
$PD\_DQSI_{k,h}^{i,t}$	*Pre-dispatch* quantity scheduled for injection at an *intertie metering point*	*Pre- dispatch* constrained quantity scheduled for injection by *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2C	Same as *IESO market rules*
$PD\_DQSW_{k,h}^{i,t}$	*Pre-dispatch* quantity scheduled for withdrawal at an *intertie metering point*	*Pre- dispatch* constrained quantity scheduled for withdrawal by *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2C	Same as *IESO market rules*
$PD\_ELMP_{h}^{m,t}$	*Pre-dispatch* constrained schedule price for an *intertie metering point* in the export zone	*Pre-dispatch* constrained schedule intertie price at the *delivery point* 'm ' of the sink for the export transaction during *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2C	Same as *IESO market rules.*
$PD\_EMP_{h}^{m,t}$	Pre-dispatch energy market price for Ontario	*Pre-dispatch* projected *energy market price* applicable to all *delivery points* 'm' in the Ontario zone in *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2C	Same as *IESO market rules*
$PD\_ILMP_{h}^{m,t}$	*Pre-dispatch* constrained schedule price for an *intertie metering point* in the import zone	*Pre-dispatch* constrained schedule intertie price at the *delivery point* 'm' of the source for the import transaction during *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2C	Same as *IESO market rules.*
$PDF_{k,m,d}$	Peak Demand Factor	The Peak Demand Factor for Class A Market Participant or Distributor 'k' for month 'm' with effectiveness ratio 'd'.	N/A – subject to regulation by the *Ontario Energy Board*	N/A – See regulations.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
$PDR\_BE_{k,h}^{i,t}$	*Energy Offer* submitted into the *pre-dispatch of record*	EFFECTIVE OCTOBER 13, 2011, THIS VARIABLE IS NO LONGER USED IN THE CALCULATION OF ANY SETTLEMENT. *Energy offers* submitted into the *pre-dispatch of record,* represented as an n by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h' arranged in ascending order by the offered price in each *price-quantity pair*, where *offered prices* are in column 1 and *offered quantities* are in column 2.	9.3.1.2B	Same as *IESO market rules*
$PDR\_DQSI_{k,h}^{i,t}$	*Pre-dispatch of record* dispatch quantity scheduled for injection at an *intertie metering point*	EFFECTIVE OCTOBER 13, 2011, THIS VARIABLE IS NO LONGER USED IN THE CALCULATION OF ANY SETTLEMENT. *Pre-dispatch of record* constrained quantity scheduled for injection by *market participant* 'k' for an import transaction at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h'.	9.3.1.2A	Same as *IESO market rules*
$PDR\_DQSI_{k,h}^{m,t}$	*Pre-dispatch of record* dispatch quantity scheduled for injection at a *delivery point*	EFFECTIVE OCTOBER 13, 2011, THIS VARIABLE IS NO LONGER USED IN THE CALCULATION OF ANY SETTLEMENT.	9.3.1.2A	Same as *IESO market rules*

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		Pre-dispatch of record constrained quantity scheduled for injection by *market participant* 'k' at *delivery point* 'm' during *metering interval* 't' of *settlement hour* 'h'.		
$PGS_{h,M}$	Allocated Quantity of Energy Withdrawn by OPG at Beck Pump Generating Station	Allocated quantity in MWh of *energy* withdrawn by OPG at Beck Pump Generating Station in *metering interval* 't' of *settlement hour* 'h' for month 'M'.		
$PROR_{r,h}^{m,t}$	5-minute Operating Reserve Price	*Market price* in $/MW of *class r reserve* in *metering interval* 't' of *settlement hour* 'h' at *RWM* 'm' or *intertie metering point* 'm'.	9.3.1.4	Same as *IESO market rules*.
$PST_{k,h}^{p,t}$	Steam turbine portion from Daily Generator Data	The percentage of the *pseudo-unit*'s schedule that relates to the steam turbine in association with *offer k* for *market participant* 'k' at *pseudo unit* 'p' during *metering interval* 't' of *settlement hour* 'h'.	7.2.2.2	Same as *IESO market rules*.
PTS-L	Provincial Transmission Service Line Connection Service Rate ($/KW)	Line Connection Transmission Tariff Service Rate in units of dollars per kilowatt.	N/A	Subject to the OEB "Ontario Transmission Rate Order".
PTS-N	Provincial Transmission Service Network Service Rate ($/KW)	Network Transmission Tariff Service Rate in units of dollars per kilowatt.	N/A	Subject to the OEB "Ontario Transmission Rate Order".
PTS-T	Provincial Transmission Service Transformation Connection Service Rate ($/KW)	Transformation Connection Service Transmission Tariff Rate in units of dollars per kilowatt.	N/A	Subject to the OEB "Ontario Transmission Rate Order".

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
$QTR_{k,h}^{i,j}$	Quantity of Transmission Rights Owned	Quantity of TRs in MW assigned to *market participant* 'k' for transmission from injection *TR zone* 'i' to withdrawal *TR zone* 'j'.	9.3.1.8 and 8.4.2	Same as *IESO market rules*.
RAC^{m}_{k}	Resource Available Capacity (MW)	The available capacity (in MW) of *capacity auction resource* at *delivery point* 'm' for *capacity market participant* 'k' in the applicable *obligation period*, and is determined in accordance with the following: For *capacity dispatchable load resources* and *hourly demand response resources*: $RAC^{m}_{k} = MIN(DREBQ^{m}_{k,h}, (1.15* CCO^{m}_{k,h}), CICAP^{m}_{k}, CARC_{k}^{m})$ Where: $CARC_{k}^{m}$ is only applicable to virtual *hourly demand response resources* For *capacity generation resources*, *system-backed capacity import resources, generator-backed capacity import resources and capacity storage resources*: $RAC^{m}_{k} = MIN(CAEO^{m}_{h,k}, (1.15* CCO^{m}_{k,h}), CICAP^{m}_{k})$	9.3.1.10	Refer to Market Manual 5.5

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
RPP_l	Regulated Price Plan	A fixed *energy* rate for all *metering intervals* based on consumption level l.	N/A – subject to regulation by the *Ontario Energy Board*	N/A – See regulations.
$RPPVA_k$	Total volume of electricity distributed to prescribed Class B consumers	The total volume of electricity distributed to Class B consumers whose rates are determined under subsection 79.16 (1) of the *Ontario Energy Board Act, 1998* during the month by licensed distributor 'k'.	N/A	N/A – See regulations.
RQ	Reallocate Quantity	A quantity derived from a *physical bilateral contract quantity* ($BCQ_{k,b,h}^{m,t}$ or $BCQ_{s,k,h}^{m,t}$) in order to reallocate a component of *hourly uplift* from the *buying market participant* to the *selling market participant* in direct proportion to the size of the *physical bilateral contract.*	N/A	See hourly uplift charge types in Section 2.2
$SQEI_{k,h}^{i,t}$	Scheduled Quantity of Energy Injected at an *intertie metering point*	Scheduled quantity in MWh of *energy* injected by *market participant* 'k' at *intertie metering point* 'i' for each *metering interval* 't' in *settlement hour* 'h'.	9.3.1.9	This variable is a sub-set of variable AQEI described in Section 3.1.9 of Chapter 9 of the *market rules*, specifically referring to those quantities derived from *interchange schedule data*.

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
$SQEW_{k,h}^{i,t}$	Scheduled Quantity of Energy Withdrawn at an *intertie metering point*	Scheduled quantity in MWh of *energy* withdrawn by *market participant* 'k' at *intertie metering point* 'i' for each *metering interval* 't' in *settlement hour* 'h'.	9.3.1.9	This variable is a subset of variable AQEW described in Section 3.1.9 of Chapter 9 of the *market rules*, specifically referring to those quantities derived from *interchange schedule data*.
$SQROR_{r,k,h}^{m,t}$	Scheduled Quantity of class r Operating Reserve	Market Schedule quantity in MW of *class r reserve* for *market participant* 'k' in *metering interval* 't' of *settlement hour* 'h' at *RWM* 'm'.	9.3.1.4	Same as *IESO market rules*.
$TCD_{k,h}^{m}$	Transformation Connection Demand (KW)	Billing Demand for Transformation Connection Transmission Service (KW) for *transmission customer* 'k' at transmission delivery point m during *settlement hour* 'h' in which $TCD_{k,h}^{m}$ denotes the non-coincident peak demand for the month.	N/A	Subject to the OEB "Ontario Transmission Rate Order".
$TD_{k,h,c}$	Total Market Settlement Amount	Total *settlement amount* (dollars) for the market used in *hourly uplift* and calculations for various other non-hourly *settlement amounts* for *market participant* 'k' or *transmission customer* 'k' during *settlement hour* 'h' with respect to *charge type* 'c'.	N/A	This is purely a notational term is used within the documentation to describe the aggregation of various *settlement amounts.* A summation across *charge type* 'c' denotes an aggregation of all *settlement amounts* for that *charge type* for the time period concerned. e.g.: $\sum_{c}^{T}$ indicates a summation of all *settlement amounts* for *charge*

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
				type 'c' during all *metering intervals* 'T'.
TLQ	Threshold Load Quantity	A threshold (kWh) with respect to monthly consumption of regulated customers, set by the *OEB.*	N/A – subject to regulation by the *Ontario Energy Board.*	N/A – See regulations.
TP_c	Tariff price	A stipulated rate ($/MWh, $/KW) used in the calculation of a specific *charge type* 'c'.	N/A	This is purely a notational term is used within the documentation to describe the unique per MW or per MWh rate applied to specific quantities in order to calculate various *settlement amounts*.
TRMP	TR Market Clearing Price	The price of each *transmission right* in a single round of a *TR auction*.	8.4.15	Same as *IESO market rules*.
TRCAD	TR Clearing Account Disbursements	The total dollar value of all disbursements from the *TR clearing account* authorized by the *IESO Board* in the current *energy market billing period*.	9.4.7.2	Same as *IESO market rules.*
$TRCAD_E$	TR Clearing Account Disbursements for Exporters	The proportion of the total dollar value of all disbursements from the *TR clearing account* authorized by the *IESO Board* in the current *energy market billing period* allocated to exporters.	9.4.7.2	Same as *IESO market rules.*
$TRCAD_L$	TR Clearing Account Disbursements for Loads	The proportion of the total dollar value of all disbursements from the *TR clearing account* authorized by the *IESO Board* in the current	9.4.7.2	Same as *IESO market rules.*

Key to the Table Below				
Variable used within Section 2	**Data Description**	**Description**	**Market Rules Reference**	**Relation to the corresponding variable description within the IESO Market Rules**
		energy market billing period allocated to loads.		
TRCAR	TR Shortfall Recovery Amount	The total dollar value of TR shortfall recovery from the *TR clearing account* authorized by the *IESO Board* in the current *energy market billing period*.	9.4.7.2	Same as *IESO market rules.*
U_k	Energy Storage Facility Injection	The total volume of *energy* (MWh) conveyed back into the *IESO-controlled grid* during the month by energy storage facilities associated with Class B *market participant* 'k' and the total volume of *energy* (MWh) conveyed back into the *distribution system* during the month by energy storage facilities that are Class B consumers of *distributor* 'k'.	N/A	N/A – See regulations.
$X_h^{m,t}$	Settlement Floor Price for exports	A *settlement* floor price for *energy* applicable to *intertie metering point* 'm' *metering interval* 't' in *settlement hour* 'h' as set in the applicable *market manual*. The need for a *settlement* floor price other than *MMCP* shall remain in effect only until floor prices for *energy offers* from *registered market participants* that are *variable generators* or nuclear *generators* go into effect.	9.3.1.3	Same as *IESO market rules*

2.2 Charge Types and Equations

The following table contains the *IESO charge types* and equations that are part of an active *IESO-administered market*.

Notice to Electricity Storage Participants – As of January 2021, substantial amendments to the *market rules* came into effect allowing for increased participation of *electricity storage participants* and *electricity storage facilities* in the *IESO-administered markets* and on the *IESO-controlled grid.* However, the *IESO* does not anticipate updating the *charge types* and equations set out in this Section 2.2, the variable descriptions set out in Section 2.1 above, or any other potentially affected parts of this document to reflect those *market rule* amendments until the *IESO*'s commercial reconciliation tools shall have been updated. Therefore, until such time, settlement programs, variable descriptions, *charge types* and equations will be applied to *electricity storage participants* and their *electricity storage facilities* as follows:

(i) the relevant provisions of Market Manual 5: Settlements, Part 5.5: Physical Markets Settlement Statements and all other relevant *market manuals* have been updated to reflect the aforementioned *market rule* amendments with respect to settlements of transactions and other circumstances relating to *electricity storage participants* and *electricity storage facilities*, and;

(ii) based on these updated provisions, the variable descriptions, *charge types* and equations set out in this document will, as appropriate, be applied to the settlement of all relevant transactions and other circumstances, subject to the making of any alterations to such variable descriptions, *charge types* and equations as may be necessary to properly apply them in respect of each such transaction or other circumstance.

Key to the Table Below	
Charge Type Number	The designation number for each *charge type* enumerated below – which correspond to the *charge type* numbers used on *settlement statements* and *invoices.*
Charge Type Name	The name of the *charge type.*
Settlement Amount Acronym	The abbreviated name of the variable used to describe the *settlement amount* within the *IESO market rules*.

Key to the Table Below	
Market Rules Reference	The relevant reference to the variable in question within the *IESO market rules*. The format for each reference is: [Chapter] [Section number] For example: "Chapter 9 Section 3.1.6" would appear as: 9.3.1.6
Equation	The equation used by the *IESO settlements process* to calculate the *settlement amount* related to each *charge type*.
Settlement Resolution	The level of granularity by which the *IESO settlements process* calculates the *settlement amount* (for which the *charge type* is related), and provides the supporting data in the settlement data file. Where: • "Interval" means that the calculations are performed on the basis of each relevant, 5-minute *metering interval*; • "Hourly" means that the calculations are performed on the basis of each *settlement hour*; • "Daily" means that the calculations are performed on the basis of each calendar day; • "Monthly" means that the calculations are performed on the basis of a calendar month (equivalent to a real-time market *billing period*); • "Quarterly" means that the calculations are performed on the basis of 3 month intervals; • "Yearly" means that the calculations are performed on the basis of a calendar year.

Key to the Table Below	
Cashflow	This column indicates whether or not the *settlement amount* (for which the *charge type* is related) is: • "Due *IESO*" – which means, owed to the *IESO* by the *market participant*; *** or • "Due MP" – which means, owed to the *market participant* by the *IESO*; *** or • "Either Way" – which indicates that the *settlement amount* in question could be either owed to the *IESO* by the *market participant* or owed to the *market participant* by the *IESO* in any given time period (according to the applicable "settlements resolution"). *****NOTE in cases where a Cashflow is designated as "Due *IESO*" or "Due MP" this should be read in the context of its intended use in the normal course of *settlements*. However, such cashflows can always be REVERSED in situations where an adjustment is applied to a *market participant*, or the application of a per-unit charge in order to offset an adjustment to another *market participant*.**
HST Tax Treatment within Ontario	• This column indicates the percentage levy as per the Harmonized Sales Tax (HST). • Zone used for Tax Basis is (ONZN) for Ontario. • The applicable Zone ID may be found in column 7 of the applicable settlement statement detail record (see also, the Technical Interface Document entitled, "Detail Field Description"). • A complete list of Zones may be found in the Technical Interface Document entitled, "Standing Data".
HST Tax Treatment for U.S., Manitoba and Quebec Generation	• This column indicates the percentage levy as per the Harmonized Sales Tax (HST). • Zones used for Tax Basis are (NYSI) for US Generation, (MBSI) for Manitoba Generation and (PQSI) for Quebec Generation. • The applicable Zone ID may be found in column 7 of the applicable settlement statement detail record (see also, the Technical Interface Document entitled, "Detail Field Description"). • A complete list of Zones may be found in the Technical Interface Document entitled, "Standing Data".
HST Tax Treatment for US Load	• This column indicates the percentage levy as per the Harmonized Sales Tax (HST). • Zone used for Tax Basis is (NYSI) for US Load. • The applicable Zone ID may be found in column 7 of the applicable settlement statement detail record (see also, the Technical Interface Document entitled, "Detail Field Description"). • A complete list of Zones may be found in the Technical Interface Document entitled, "Standing Data".

Key to the Table Below	
HST Tax Treatment for Manitoba and Quebec Load	• This column indicates the percentage levy as per the Harmonized Sales Tax (HST). • Zones used for Tax Basis are (MBSI) for Manitoba Load and (PQSI) for Quebec Load. • The applicable Zone ID may be found in column 7 of the applicable settlement statement detail record (see also, the Technical Interface Document entitled, "Detail Field Description"). • A complete list of Zones may be found in the Technical Interface Document entitled, "Standing Data".
Effective Start Trading Day	• This column indicates the effective start *trading day* of the *charge type*.
Effective End Trading Day	• This column indicates the effective end *trading day* of the *charge type*.
Comments	This column notes any *charge types* that are governed by various documentation other than the *IESO market rules* and additional details for "Effective Start Trading Day" and "Effective End Trading Day" columns, where applicable.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Financial Market Charge Types									
52	Transmission Rights Auction Settlement Debit	N/A	8.4.17	$QTR_{k,h}^{i,j} \times TRMP$	Daily	Due *IESO*	Exempt	Exempt	Exempt	Exempt			
				Physical Market Charge Types									
100	Net Energy Market Settlement for Generators and Dispatchable Load	$NEMSC_{k,h}$	9.3.3.2	For *dispatchable facilities* or an *intertie metering point* associated with: i) An injecting *boundary entity*; ii) A withdrawing *boundary entity* where the associated *intertie congestion price* is less than zero; iii) A withdrawing *boundary entity* conducting a wheeling through transaction that is linked as per Chapter 7, section 3.5.82 of the *market rules*	Interval	Either Way	13	13	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$\sum_{t,m}$ ($EMP_h^{m,t}$ x (($AQEI_{k,h}^{m,t}$ + $SQEI_h^i$ – $AQEW_{k,h}^{m,t}$ – $SQEW_h^i$) + $\sum_{s,b}$ ($BCQ_{s,k,h}^{m,t}$ – $BCQ_{k,b,h}^{m,t}$))) For an *intertie metering point* associated with a withdrawing *boundary entity* where that *intertie congestion price* is not less than zero: $\sum_{t,m}$ (($MAX(X_h^{m,t}, EMP_h^{m,t})$ x $AQEI_{k,h}^{m,t}$)									
101	Net Energy Market Settlement for Non-dispatchable Load	$NEMSC_{k,h}$	9.3	$HOEP_h$ x $\sum_{t,m}$ ($AQEI_{k,h}^{m,t}$ - $AQEW_{k,h}^{m,t}$ + $\sum_s BCQ_{s,k,h}^{m,t}$) - $\sum_{n,b,t}$ ($EMP_h^{m,t}$ x $BCQ_{k,b,h}^{n,t}$)	Hourly	Either Way	13	N/A	N/A	N/A			
102	TR Clearing Account Credit	$TRCAC_k$	9.4.7.2	**For loads:** $TRCAC_k = TRCAD_L$ x $\sum_H^{M,T}$ [($AQEW_{k,h}^{m,t}$) / $\sum_{K,H}^{M,T}$ ($AQEW_{k,h}^{m,t}$)] **For exporters:** $TRCAC_k = TRCAD_E$ x $\sum_H^{I,T}$ [($SQEW_{k,h}^{i,t}$) / $\sum_{K,H}^{I,T}$ ($SQEW_{k,h}^{i,t}$)] **Where** $TRCAD_L = (\sum_K TD_C / \sum_K TD_{C,C1})$ x TRCAD $TRCAD_E = (\sum_K TD_{C1} / \sum_K TD_{C,C1})$ x TRCAD	Monthly (when applicable)	Due MP	13	N/A	0	13			The *billing period* is defined in Market Manual 5.5: Settlements Part 5.5: Physical Markets Settlement Statements, section 1.6.27

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'C' is the set of all *monthly service charge types c as follows: 650,651,652.* Where 'C1' is the set of all *monthly export transmission charge types c as follows:653.* Where 'H' is the set of all s*ettlement hours* 'h' in the *billing periods* immediately preceding the current *billing period*, as determined by *IESO Board.* Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'. Where 'M' is the set of all *delivery points* 'm', excluding any *intertie metering points*. Where 'I' is the set of all *intertie metering points* 'i'. Where 'K' is the set of all *market participants* 'k'.									
103	Transmission Charge Reduction Fund	$TCRF_h$	9.3.6.2 and 8.4.18	$\sum_{t,m} (EMP_h^{m,t} - EMP_h^{REF,t}) \times \sum_k (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} - AQEI_{k,h}^{m,t} - SQEI_{k,h}^{i,t}) - \sum_k TRSC_{k,h}$	Hourly	Accumulates in the *TR Clearing Account*	N/A	N/A	N/A	N/A			See *IESO market rules*, Chapter 8 Section 4.18 for further details.
104	Transmission Rights Settlement Credit	$TRSC_{k,h}$	9.3.6.1	$MAX((0), (\sum_{j,i} 1/12 \times QTR_{k,h}^{i,j} \times \sum_t (EMP_h^{j,t} - EMP_h^{i,t}))$	Hourly	Due MP	0	0	0	0			
105	Congestion Management Settlement Credit for Energy	$CMSC_{k,h}$	9.3.5.2 to 9.3.5.7	$OP(EMP_h^{m,t}, MQSI_{k,h}^{m,t}, BE) - MAX(OP(EMP_h^{m,t}, DQSI_{k,h}^{m,t}, BE), OP(EMP_h^{m,t}, AQEI_{k,h}^{m,t}, BE))$ Subject to the mathematical sign of (DQSI-MQSI) being equal to the mathematical sign of (AQEI-MQSI). $AQEI_{k,h}^{m,t}$ and $EMP_h^{m,t}$ may be substituted with $SQEI_{k,h}^{i,t}$ and $EMP_h^{i,t}$	Interval	Either Way	13	13	13	13			This *charge type* holds the *market participant* to the expected profits implied by the *market schedule* derived on *dispatch data*

				respectively, where the application of this equation pertains to *intertie metering point* 'i'. or $-1OP(EMP_h^{m,t}, MQSW_{k,h}^{m,t}, BL) - MAX(-1OP(EMP_h^{m,t}, DQSW_{k,h}^{m,t}, BL), -1OP(EMP_h^{m,t}, AQEW_{k,h}^{m,t}, BL))$ Subject to the mathematical sign of (DQSW-MQSW) being equal to the mathematical sign of (AQEW-MQSW). $AQEW_{k,h}^{m,t}$ and $EMP_h^{m,t}$ may be substituted with $SQEW_{k,h}^{i,t}$ and $EMP_h^{i,t}$ respectively, where the application of this equation pertains to *intertie metering point* 'i'. or For *variable generators* that are registered *market participants* whose *registered facility* is operating under a release notification for any given *dispatch interval*, and the *facility*'s market schedule quantity is less than the corresponding quantity in the constrained schedule for the same dispatch interval as a result of the *market participant*'s offers being partially or fully uneconomic: $OPE(EMP_h^{m,t}, MQSI_{k,h}^{m,t}, BE) - OP(EMP_h^{m,t}, AQEI_{k,h}^{m,t}, BE)$ See 9.3.5.2 for the definition of the Operating Profit (OP) function referenced above.									provided by that *market participant*. Offer prices in matrix 'BE' may be revised down to a lower limit as described in 9.3.5.6. See also: description of variable 'BE' in Section 2.2. The bid prices in the matrix BL may be revised as described in Market Manual 5: Settlements Part 5.5: Physical Markets Settlement Statements, section 1.6.8.
106	Congestion Management Settlement Credit for 10 Minute Spinning Reserve	$CMSC_{r,k,h}$	9.3.5.2	$OP(PROR_{r,h}^{m,t}, SQROR_{r,k,h}^{m,t}, BR_r) - MAX(OP(PROR_{r,h}^{m,t}, DQSR_{r,k,h}^{m,t}, BR_r), OP(PROR_{r,h}^{m,t}, AQOR_{r,k,h}^{m,t}, BR_r))$	Interval	Either Way	13	N/A	N/A	N/A			This *charge type* holds the *market participant* to the expected profits implied by the *market schedule*

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				See 9.3.5.2 for the definition of the Operating Profit (OP) function referenced above.									derived on *dispatch data* provided by that *market participant*.
107	Congestion Management Settlement Credit for 10 Minute Non-spinning Reserve	$CMSC_{r,k,h}$	9.3.5.2	$OP(PROR_{r,h}^{m,t},SQROR_{r,k,h}^{m,t}, BR_r) - MAX(OP(PROR_{r,h}^{m,t}, DQSR_{r,k,h}^{m,t}, BR_r),OP(PROR_{r,h}^{m,t}, AQOR_{r,k,h}^{m,t}, BR_r))$ See 9.3.5.2 for the definition of the Operating Profit (OP) function referenced above.	Interval	Either Way	13	N/A	N/A	N/A			This *charge type* holds the *market participant* to the expected profits implied by the *market schedule* derived on *dispatch data* provided by that *market participant.*
108	Congestion Management Settlement Credit for 30 Minute Operating Reserve	$CMSC_{r,k,h}$	9.3.5.2	$OP(PROR_{r,h}^{m,t},SQROR_{r,k,h}^{m,t}, BR_r) - MAX(OP(PROR_{r,h}^{m,t}, DQSR_{r,k,h}^{m,t}, BR_r),OP(PROR_{r,h}^{m,t}, AQOR_{r,k,h}^{m,t}, BR_r))$ See 9.3.5.2 for the definition of the Operating Profit (OP) function referenced above.	Interval	Either way	13	N/A	N/A	N/A			This *charge type* holds *the market participant* to the expected profits implied by the *market schedule* derived on *dispatch data* provided by that *market participant*.
111	Northern Pulp and	N/A	N/A	$= \sum_{M H}^{T} (AQEW_{mh}^{t}) \times (Tprate)$	Quarterly	Due MP	13	N/A	N/A	N/A			Eligibility, rates, and other

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Paper Mill Electricity Transition Program Settlement Amount			Where: Tprate is the transition program rate 'M' is the set of all *delivery points* 'm' for all *market participant*-eligible *facilities*. 'H' is the set of all *settlement hours* 'h' in the settlement period. 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 5 H'. 'AQEW' is limited to a maximum of 1,000,000 MWh annually per eligible *market participant*.									implementation details subject to Ministry of Natural Resources specifications. This program ends on September 30, 2010.
112	Ontario Power Generation Rebate	N/A	N/A	**<u>** CALCULATIONS FOR *CHARGE TYPE* 112 END April 30, 2009 **</u>** $= TD_{162} \times [(AQEW_{k,h}^{t}) / \sum_{K,H}^{T} (AQEW_{k,h}^{t})]$ Where: 'K' is the set of all Ontario *market participants* 'k' 'H' is the set of all *settlement hours* 'h' in the applicable quarter. 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	May 1, 2006 to April 30, 2009	Due MP	13	N/A	N/A	N/A			The Ontario Power Generation Rebate payments will be based on the allocated quantity of *energy* withdrawn for the applicable quarter.
113	Additional Compensation for Administrativ	N/A	7.8.4A.16 or 7.8.4A.10	Manual Entry as per 7.8.4A.16, or 7.8.4A.10, or 7.13.6.2.	Monthly	Due MP	13	13	0	13			This charge will still be used for market

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	e Pricing Credit		or 7.13.6.2										suspension events
114	Outage Cancellation/ Deferral Settlement Credit.	N/A	5.6.7.4	Manual Entry as per 5.6.7.4.	Monthly	Due MP	13	N/A	N/A	N/A			
115	Unrecoverable Testing Costs Credit	N/A	9.4.8.1.1 and4.5.3.4	Manual Entry as per 4.5.3.4.	Monthly	Due MP	13	13	13	13			
116	Tieline Maintenance Reliability Credit	N/A	9.4.8.1.2 and 5.5.3.4	Manual Entry as per 5.5.3.4.	Monthly	Due MP	13	13	13	13			
118	Emergency Energy Rebate	N/A	9.4.8.2 and 5.4.4A.1	$= \sum_{H,c}^{M,T} TD_c \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of *all metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due MP	13	N/A	0	13			
119	Station Service Reimbursement Credit	N/A	9.4.8.1.6 and 9.2.1A.9 - 2.1A14	$= \{TD_{C,k,h}^{m,T} \times [\sum^{T2} (AQEW_{k,h}^{M,t}) / \sum_{K,h}^{T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]\} + \{TD_{C2,k,H}^{m,T} \times [\sum_{H2}^{T2} (AQEW_{k,h}^{M,t}) / \sum_{K,H}^{T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]\} + \{TD_{C3,k,H}^{m,T} \times [\sum_{H4}^{T2} (AQEW_{k,h}^{M,t}) / \sum_{K,H3}^{T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]\}$ Where:	Monthly	Due MP	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'T' is the set of all *metering intervals* in *settlement hour* 'h'. 'M' is the eligible generation station service delivery point 'm' of market participant 'k' 'C' is the set of the following hourly uplift *charge type* c as follows: 150, 155, 250, 252, 254, 451 'T2' is the set of all *metering intervals* in *settlement hour* 'h' where the eligible *generation facility* was a net injector of *energy* into the *IESO-controlled grid*. 'K' is the set of all *market participants* 'C2' is the set of the following non-hourly monthly *charge type* 'c' as follows: 163,164,165,166,167,168,169,183, 184,450,452,454,460,550,1188, 1650 'C3' is the set of the following daily *charge type* 'c' as follows: 1550, 1560 'H' is the set of all *settlement hours* 'h' in the *billing period* 'H2' is the set of all *settlement hours* 'h' in the *billing period* where the eligible *generation*									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				facility was a net injector of *energy* into the *IESO-controlled grid*. 'H3' is the set of all *settlement hours* 'h' in the day 'H4' is the set of all *settlement hours* 'h' in the day where the eligible *generation facility* was a net injector of *energy* into the *IESO-controlled grid*.									
120	Local Market Power Debit	N/A	9.4.8.2.2 and Ch. 7, Appendix 7.6		Monthly	Due *IESO*	13	13	0	13			
121	Northern Industrial Electricity Rate Program Settlement Amount	N/A	N/A	$= \sum_{M\,H^T} (AQEW_{mh^t})$ x (Rate) Where: Rate is the program rate 'M' is the set of all *delivery points* 'm' for all *market participant*-eligible *facilities*. 'H' is the set of all *settlement hours* 'h' in the settlement period. 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 5 H'.	Quarterly	Due MP	0	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to Ministry of Northern Development, Mines and Forestry specifications.
122	Ramp Down Settlement Amount	$RDSA_{k,h}$	9.3.5A.1	Let 'BE' be a matrix of n *price-quantity pairs* offered by *market participant* 'k' to supply *energy* during the *settlement hour*	Interval	Either Way	13	N/A	N/A	N/A			The RDF is defined in

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				immediately before the hour in which ramp-down begins, adjusted by a ramp-down factor (RDF) as specified in the applicable *market manual*. Let OP(P,Q,B) be a 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 BE such that $Q_{s*} \leq Q \leq Q_n$ and where, $Q_0=0$ Using the terms below, let $RDC_{k,h}^{m,t}$ be expressed as follows: $RDC_{k,h}^{m,t} = MAX[0, [OP(EMP_h^{m,t}, MQSI_{k,h}^{m,t}, BE) – MAX(OP(EMP_h^{m,t}, DQSI_{k,h}^{m,t}, BE), OP(EMP_h^{m,t},AQEI_{k,h}^{m,t}, BE))]]$ $RDSA_{k,h}^{m,t} = MIN(-1 \times RDCB_{k,h}^{m,t}, RDC_{k,h}^{m,t})$									Market Manual 5: Settlements Part 5.5: Physical Markets Settlement Statements, section 1.6.31.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
123	MACD Enforcement Activity Amount	N/A	N/A	Manual entry based on the values submitted by MACD	Monthly	Due MP	13	N/A	N/A	N/A			
124	SEAL Congestion Management Settlement Credit Amount	N/A	N/A	Manual entry based on the values submitted by MACD	Monthly	Due MP	13	13	13	13			
130	Intertie Offer Guarantee Settlement Credit – Energy	$IOG_{k,h}$ and $IOG_{k,h}$OFFSET	9.3.8A.1 9.3.8A.3 and 7.3.5.8.1	**<u>**CALCULATIONS FOR *CHARGE TYPE* 130 END OCTOBER 12, 2011. *CHARGE TYPE* 130 REPLACED BY *CHARGE TYPE* 1131 EFFECTIVE OCTOBER 13, 2011.**</u> The Intertie Offer Guarantee *settlement amount* is derived from an hourly *Energy* Import sub component ($EIM_{k,h}$) as follows: $\sum_I$ (-1)MIN[0, $\sum^T$OP($EMP_h^{i,t}$, $MQSI_{k,h}^{i,t}$, BE)] See 9.3.8A.2 for the definition of the Operating Profit (OP) function referenced above. Where 'I' is the set of relevant *intertie metering points* 'i'. Where 'T' is the set of all *metering intervals* 't' during *settlement hour* 'h'. The IOG_OFFSET component of this *charge type* applied on a monthly basis and is calculated as follows:	Hourly (the IOG Offset is debited)	Either Way	N/A	13	13	13			Compensation for cumulative, hourly financial losses as implied by the *market schedule* for Imports of *energy* at an *intertie metering point.* This amount is reduced by the IOG Offset when the import is part of an implied "wheeling through" transaction as described in Section 3.5.8.1 of Chapter 7.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				= $DA\_IOG_{k,h} + EIM_{k,h} - \sum^{T}(-1) * MIN[0, \sum^{T} OP(EMP_{h}^{i,t}, QSI\{adj\}_{k,h}^{i,t}, BE_{k,h}^{i,t}$ or $PDR\_BE_{k,h}^{i,t}) + \sum^{T} QSI\{adj\}_{k,h}^{i,t} / \sum^{T} MI_{k,h}^{t}[n,1] * OPE'_{k,h}^{i}]$ (See 9.3.8A.4 for the derivation of the variable $QSI\{adj\}_{k,h}^{i,t}$, $OPE'_{k,h}^{i}$ and the proper context of the matrix notation $MI_{k,h}^{t}[n,1]$ used above).								
133	Generation Cost Guarantee Payment	N/A	9.4.7B	<u>Dispatchable *delivery points:*</u> $MAX[0, (CGC + RT\_COST - \sum^{T} EMP_{h}^{m,t} \times AQEI\{limited\}_{k,h}^{m,t} - \sum^{T} CMSC\_REV_{k,h}^{m,t}]$ **Subject to:** $AQEI\{limited\}_{k,h}^{m,t} = MIN[AQEI_{k,h}^{m,t}$, *minimum loading point*] Where 'CGC' is a *Submitted* C*ombined Guaranteed Costs* variable, assessed in accordance with the applicable *market manual* (see also Section 2.1 "Variable Description"). Where 'm' is *delivery point* 'm' at which the *generation unit* incurring the relevant costs is located. Where 'T' is a set of *metering intervals* 't' from a valid start time until the earlier of: - the end of *minimum generation block run-time;* or	Hourly	MP	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				- the end of the unit's *minimum run-time.* Where $AQEI\{limited\}_{k,h}^{m,t}$ shall denote all allocated quantities in MWh of *energy* injected at *delivery point* 'm' irrespective of any submission of *physical allocation data* by *market participant* 'k' in metering interval 't' of *settlement* hour 'h', up to the *generation unit's minimum loading point.* Where RT_COST is fuel and O&M cost component related to operation of the *generation unit* at its *minimum loading point* during its *minimum generation block run-time* (these costs are calculated based on the *offer* price associated with real-time dispatch). $RT\_COST_k = \Sigma^{T^*}_{HI} COST(AQEI\{limited\}_{k,h}^{m,t}, BE)$ A. Where the COST function is defined as follows: $$COST(Q, B) = \sum_{i=1}^{s^*} P_i \cdot (Q_i - Q_{i-1})$$ *where:*									

				• B is the n x 2 matrix (B) of offered *price-quantity pairs* (P_i , Q_i) • s* is the highest indexed row of B such that $Q_{s*-1} \leq Q \leq Q_{s*}$ and where $Q_0=0$ B. Where 'H1' is the set of all settlement hours 'h' during the period from beginning of the *minimum generation block run-time* until the end of the calculated *minimum run time.* We consider that the *minimum generation block run-time* starts with the first hour after we add the submitted number of ramp intervals to the valid start-up hour. C. Where 'T*' is the set of *metering intervals* 't' in the set of all *settlement hours* 'H1' Where $CMSC\_REV_{k,h}^{m,t}$ is any real-time $CMSC(TD_{k,h,105}^{m,t})$ payment associated with allocated quantities in MWh of *energy* injected at *delivery point* 'm' irrespective of any submission of *physical allocation data* by *market participant* 'k' in metering interval 't' of *settlement* hour 'h' up to the *generation unit's minimum loading point.* CMSC_REV is calculated using the following rules: 1) Real-time CMSC ($TD_{k,h,105}^{m,t}$) for the same interval is greater than zero. 2) If $MQSI_{k,h}^{m,t}$ and $\max(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t})$ >= MLP, then $CMSC\_REV_{k,h}^{m,t} = 0$. 3) In the case of a *constrained-off event*:									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				a. If $MQSI_{k,h}^{m,t} < MLP$, then $CMSC\_REV_{k,h}^{m,t} = TD_{k,h,105}^{m,t}$ b. If $MQSI_{k,h}^{m,t} >= MLP$ and $max(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t}) <= MLP$, then $CMSC\_REV_{k,h}^{m,t} = OP(EMP_{h}^{m,t}, MLP, BE) - OP(EMP, max(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t}), BE)$. 4) In the case of a *constrained-on event*: a. If $MQSI_{k,h}^{m,t} < MLP$ and $min(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t}) < MLP$, then $CMSC\_REV_{k,h}^{m,t} = TD_{k,h,105}^{m,t}$ b. If $MQSI_{k,h}^{m,t} <= MLP$ and $min(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t}) >= MLP$, then $CMSC\_REV_{k,h}^{m,t} = OP(EMP_{h}^{m,t}, MQSI_{k,h}^{m,t}, BE) - OP(EMP_{h}^{m,t}, MLP, BE)$ (See applicable *market manual*)									
134	Demand Response Credit	N/A	9.4.7C 9.4.7F	Manual Entry for TDRP (Refer to "Market Manual 5: Settlements, Part 5.10: Transitional Demand Response Program". Manual Entry for ELRP (Refer to "Market Manual 10: Emergency Load Reduction Program (ELRP)".	Monthly	Either way	13	N/A	NA	N/A			TDRP and ELRP suspended by the *IESO*.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
135	Real-time Import Failure Charge	$RT\_IFC_{k,h}$	9.3.8C.3	$\sum^{I,T}$ (-1) * MIN[MAX[0, ($EMP_h^{m,t}$ + $PB\_IM_h^t$ – $PD\_EMP_h^{m,t}$) * $RT\_ISD_{k,h}^{i,t}$], (MAX(0, $EMP_h^{m,t}$)* $RT\_ISD_{k,h}^{i,t}$)] Where: 'I' is the set of all *intertie metering points* 'i'. 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. $RT\_ISD_{k,h}^{i,t}$ = MAX ($PD\_DQSI_{k,h}^{i,t}$ – $DQSI_{k,h}^{i,t}$, 0)	Hourly	Due *IESO*	N/A	13	N/A	N/A			Subject to exemptions under the provisions of 9.3.8C.2.2.
136	Real-time Export Failure Charge	$RT\_EFC_{k,h}$	9.3.8C.5	$\sum^{I,T}$ (-1) * MIN⎡MAX[0, ($PD\_EMP_h^{m,t}$ – $EMP_h^{m,t}$ – $PB\_EX_h^t$) * $RT\_ESD_{k,h}^{i,t}$], (MAX(0, $PD\_EMP_h^{m,t}$)* $RT\_ESD_{k,h}^{i,t}$)⎤ Where: 'I' is the set of all *intertie metering points* 'i' 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h' $RT\_ESD_{k,h}^{i,t}$ = MAX ($PD\_DQSW_{k,h}^{i,t}$ – $DQSW_{k,h}^{i,t}$, 0)	Hourly	Due *IESO*	N/A	N/A	0	13			Subject to exemptions under the provisions of 9.3.8C.4.2.
137	Generation Cost Guarantee - Output Based Pricing System Reimbursement Settlement Amount	N/A	9.4.7B.1.2 7.2.2B	Manual entry based on the calculations outlined in Market Manual 4: Market Operations Part 4.6: Real-Time Generation Cost Guarantee Program, section 5.4 Fuel Cost Recovery Methodology.	Monthly	Due MP	13	N/A	N/A	N/A	March 3, 2021		

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
140	Fixed Energy Rate Settlement Amount	N/A	N/A	**** *CHARGE TYPE* 140 REPLACED BY *CHARGE TYPE* 142 EFFECTIVE JANUARY 1, 2005 **** **NOTE:** The equations identified below apply to low volume and designated consumers (as defined in *Ontario Energy Board Act, 1998* and associated regulations) in the *IESO-administered market*. For *distributors, charge type* 140 is applied once a month based on the values submitted by the *distributor* on IMO_FORM_1562 (monthly adjustment) and IMO_FORM_1505 (May-Nov 2002 refund). For *IESO's* low volume and designated customers a fixed rate adjustment with a rate of 5.5 cents per kWh is applied on an interval basis using the equation below. A manual adjustment is applied at the end of the month to apply a rate of 4.7 cents per kWh for *energy* withdrawn up to 750 kWhs. **Fixed Energy Rate Settlement Amount (dispatchable locations):** **Where net uncovered consumption > 0:** $\Sigma_{T,m} (EMP_h^{m,t} – FP_h^{m}) \times (AQEW_{k,h}^{m,t} – AQEI_{k,h}^{m,t} - \Sigma_s BCQ_{s,k,h}^{m,t})$ **Where net uncovered consumption = 0:** $\Sigma_{T,m} (EMP_h^{m,t} – FP_h^{m}) \times (-AQEI_{k,h}^{m,t})$ **SUBJECT TO:**Net uncovered consumption = MAX $[\Sigma_{T,m} (AQEW_{k,h}^{m,t} - \Sigma_s BCQ_{s,k,h}^{m,t}),0]$ **Fixed Energy Rate Settlement Amount (non-dispatchable locations):** **Where net uncovered consumption > 0:** $(HOEP_h – FP_h^{m}) \times \Sigma_{m,T} (AQEW_{k,h}^{m,t} – AQEI_{k,h}^{m,t} - \Sigma_s BCQ_{s,k,h}^{m,t})$ **Where net uncovered consumption = 0:** $(HOEP_h – FP_h^{m}) \times \Sigma_{m,T} (- AQEI_{k,h}^{m,t})$ **SUBJECT TO:** Net uncovered consumption = MAX $[\Sigma_{T,m} (AQEW_{k,h}^{m,t} - \Sigma_s BCQ_{s,k,h}^{m,t}),0]$	Hourly (type 'DP' records only. See: "Format Spec. for Settlement Statement Files and Data Files" for further details)	Either Way	N/A	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				SUBJECT TO: Net uncovered consumption = MAX [$\Sigma_{T,m}$ ($AQEW_{k,h}^{m,t}$ - Σ_s $BCQ_{s,k,h}^{m,t}$),0]									
141	Fixed Wholesale Charge Rate Settlement Amount	N/A	N/A	**<u>** CALCULATIONS FOR *CHARGE TYPE* 141 END MARCH 31, 2005 **</u>** <u>**NOTE:**</u> The equations identified below apply to *distributors*, low volume and designated consumers (as defined in Bill 4 and associated regulations) in *the IESO-administered market.* For *distributors* an additional *charge type* 141 record is provided to reflect any monthly submission of IMO_FORM_1562. See IMO_FORM_1562 for further details. $TD_{k,C} - \sum_{M,H} AQEW_{k,h}^{m,t} * (FPC)$ Where: 'H' is all *settlement hours* 'h' during the *billing period;* and, 'C' is a designated group of *charge types* 'c' prescribed by government regulation (and associated rulings by the *Ontario Energy Board*) and consisting of the cumulative sum of the following *charge types*: **150, 155, 168, 170, 182, 183, 184, 250, 252, 254, 450, 452, 454, 550, 753, 9990**	Monthly	Either Way	N/A	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.
142	Regulated Price Plan Settlement Amount	N/A	N/A	<u>**NOTE:**</u> The equation identified below applies to low volume and designated consumers (as defined in *Ontario Energy Board Act, 1998* and associated regulations) in the *IESO-administered market*. For *distributors, charge type* 142 is applied once a month based on the values submitted by the	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government and OEB regulations.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				distributor via On-line settlement forms: "Regulated Price Plan vs. Market Price – Variance for Conventional Meters", "Regulated Price Plan vs. Market Price – Variance for Smart Meters" and "Regulated Price Plan – Final Variance Settlement Amount". **Regulated Price Plan Settlement Amount:** $NEMSC_{k,H} - \{ MIN [TLQ , \sum_H^{M,T} (AQEW_{k,h}^{m,t} - AQEI_{k,h}^{m,t} - \Sigma_s BCQ_{s,k,h}^{m,t})] \times RPP_{l=1} + MAX [0, \sum_H^{M,T} (AQEW_{k,h}^{m,t} - AQEI_{k,h}^{m,t} - \Sigma_s BCQ_{s,k,h}^{m,t}) - TLQ] \times RPP_{l=2} \}$									
143	NUG Contract Adjustment Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *OEFC* via On-line settlement form "NUG Adjustment Amount Information", subject to Regulation.	Monthly	Due *OEFC*	13	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.
144	Regulated Nuclear Generation Adjustment Amount	N/A	N/A	**For dispatchable *delivery points*:** $(GRP - EMP_h^{m,t}) \times AQEI_{k,h}^{m,t}$ **For non-dispatchable *delivery points*:** $(GRP - HOEP_h) \times \Sigma^T AQEI_{k,h}^{m,t}$ Where 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'.	Interval or Hourly	Due OPG	13	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.
145	Regulated Hydroelectric Generation	N/A	N/A	$NEMSC_{k,H} - \{ \sum_H^{M,T} [(MWAvg_T \times GRP) + ((AQEI_{k,h}^{m,t} - AQEW_{k,h}^{m,t}) - MWAvg_T) \times EMP_h^{m,t}] \}$	Monthly	Due OPG	13	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Adjustment Amount			Where 'M' is the set of all *delivery points* 'm' of OPG's regulated hydroelectric generating stations. 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. 'H' is the set of all *settlement hours* 'h' in the month. MWAvg is the average hourly net energy production within a given month.									to *OEB* regulation.
146	Global Adjustment Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 146 END DECEMBER 31, 2010. *CHARGE TYPE* 146 REPLACED BY *CHARGE TYPES* 147 AND 148 EFFECTIVE JANUARY 1, 2011.**</u> For Fort Frances Power Corporation Distribution Inc.: $\Sigma_{H,M,C}TD$ x $(\Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - EEQ) / (\Sigma_{K,H}^{M,T} AQEW_{k,h}^{m,t} + \Sigma_K EGEI_k - EEQ)$ For other *market participant*s: $\Sigma_{H,M,C}TD$ x $(\Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k) / (\Sigma_{K,H}^{M,T} AQEW_{k,h}^{m,t} + \Sigma_K EGEI_k - EEQ)$	Monthly	Due MPs	13	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'K' is the set of all *market participants* 'k'. Where 'M' is the set of all *delivery points* 'm' of *market participant* 'k'. Where 'C' is the set of the following *charge types* 'c': **193, 194, 195, 197, 198, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1450, 1460, 1461, 1462 and 1464.**									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
147	Class A – Global Adjustment Settlement Amount	N/A	N/A	$\Sigma_{H,M,C}TD * PDF_{k,m,d}$ Where 'd' is the ratio of the number of days in the month the Peak Demand Factor was effective compared to the total number of days in the month and 'C' is the set of the following *charge types* 'c': **193, 194, 195, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1466, 1450, 1460, 1461, 1462, 1464, 1468, 1469, 1471, 1472, 1473, 1474, 1475.**	Monthly	Either Way	13	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.
148	Class B – Global Adjustment Settlement Amount	N/A	N/A	For Fort Frances Power Corporation Distribution Inc.: $(\Sigma_{H,M,C}TD - TD_{147})x$ $MAX((\Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - EEQ),0)$ / Class B Load For other Class B *Market Participant*s and Distributors: $(\Sigma_{H,M,C}TD - TD_{147}) x$ $MAX((\Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - GA\_AQEW_{g,k,h,M}^{m,t} - PGS_{h,M}),0)$ / Class B Load Class B Load =	Monthly	Either Way	13	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$(\Sigma_K (MAX(\Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - EEQ - \Sigma_H^{M,T} GA\_AQEW_{g,k,h,M}^{m,t} - \Sigma_H PGS_{h,M} ,0))) - \Sigma_K U_k$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'K' is the set of all *market participants* 'k'. Where 'M' is the set of all *delivery points* 'm' of *market participant* 'k'. Where 'C' is the set of the following *charge types* 'c': **193, 194, 195, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1466, 1450, 1460, 1461, 1462, 1464, 1468, 1469, 1471, 1472, 1473, 1474, 1475.**									
149	Regulated Price Plan Retailer Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *market participants* via On-line settlement form "Retailer Payments for Contract Price vs. HOEP for Regulated Consumers with a Retail Contract".	Monthly	Due LDCs	13	N/A	N/A	N/A			Implementation details subject to government regulation.
150	Net Energy Market Settlement Uplift	N/A	9.3.9.1	$\sum_C {}^{M,T} TD_{k,h,c} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_k {}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where: 'C' is the set of the following *charge types* 'c' as follows: **100, 101, 103, 104, 1131**	Hourly	Either Way	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement hour* 'h' in which the NEMSC component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which: $RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$									
155	Congestion Management Settlement Uplift	N/A	9.3.5.2 and 9.3.5.7	$\sum_c^{M,T} TD_{k,h,(105, 106, 107, 108,122, 124, 1050, 1051)}$ x $[(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_k^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'T' is the set of 12 *metering intervals*'t' during *settlement hour* 'h'. Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement hour* 'h' in which the CMSC component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which: $RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$	Hourly or Monthly (see 9.3.5.7)	Either Way	13	N/A	0	13			Pursuant to market rules, Section 9.3.5.7, during an interim period, the disbursements of charge type 105 amounts adjusted as per Section 9.3.5.6 may be made on a monthly basis.
161	Northern Pulp and Paper Mill	N/A	N/A	$\Sigma_K TD_{k,111}$	Quarterly	Due *IESO*	0	N/A	N/A	N/A			This program ends on

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Electricity Transition Program Balancing Amount			Where 'k' is part of a subset of eligible *market participants* 'k'.									September 30, 2010.
162	Ontario Power Generation Rebate Debit	N/A	N/A	**<u>** CALCULATIONS FOR *CHARGE TYPE* 162 END April 30, 2009 **</u>** Payment (n) = $\sum_H$ [(HOEP$_h$ – ORL) x (ONPAO$_h$ x 0.85 – PAA) + (PAP – PAORL) x PAA)] OPG rebate (n) = Max [0, Payment (n) – Payment (n-1) + NCF (n-1)] Where: 'H' is the set of all *settlement hours* 'h' from May 1, 2006 to the end of the applicable quarter. 'n' is the current quarter. 'n-1' is the previous quarter. NCF is the negative amount carried forward and calculated as NCF (n) = Min [0, Payment (n) – Payment (n-1) + NCF (n-1)]	May 1, 2006 to April 30, 2009	Due *IESO*	N/A	N/A	N/A	N/A			The OPG rebate quarterly payment will be based on a cumulative calculation commencing May 1, 2006 to the end of each quarter less the same cumulative calculation to the end of the previous quarter. Where the payment formula results in an amount owing to OPG for any quarter, no such payment will be made to OPG and any such amount will be carried forward into

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
													subsequent quarters.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
163	Additional Compensation for Administrative Pricing Debit.	N/A	7.8.4A.16 or 7.8.4A.10 or 7.13.6.2, and 9.4.8	$\sum_{c,H}^{M,T} TD_{k,H,(113)}$ x [$(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})$] Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			This charge will still be used for market suspension events.
164	Outage Cancellation/ Deferral Debit.	N/A	5.6.7.4 and 9.4.8.1.3	$\sum_{c,H}^{M,T} TD_{k,H,(114)}$ x [$(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})$] Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* H.	Monthly	Due *IESO*	13	N/A	0	13			
165	Unrecoverable Testing Costs Debit	N/A	9.4.8.1.1 and 4.5.3.4	= $\sum_{H,c}^{M,T} TD_c$ x [$(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})$] Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
166	Tieline Reliability Maintenance Debit	N/A	9.4.8.1.2 and 5.5.3.4	$= \sum_{H,c}^{M,T} TD_c \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			
167	Emergency Energy Debit	N/A	9.4.8.1.5 9.4.2.3A and 5.2.3.3A	$= \sum_{H,c}^{M,T} TD_c \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'c' is any payments made for *emergency energy* during the applicable period. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			
168	TR Market Shortfall Debit	N/A	9.4.8.1.7 and 9.6.14.5.2	**For loads:** $TRCAC_k = TRCAD_L \times \sum_H^{M,T} [(AQEW_{k,h}^{m,t}) / \sum_{K,H}^{M,T} (AQEW_{k,h}^{m,t})]$ **For exporters:** $TRCAC_k = TRCAD_E \times \sum_H^{I,T} [(SQEW_{k,h}^{i,t}) / \sum_{K,H}^{I,T} (SQEW_{k,h}^{i,t})]$ **Where** $TRCAD_L = (\sum_K TD_C / \sum_K TD_{C,C1}) \times TRCAR$ $TRCAD_E = (\sum_K TD_{C1} / \sum_K TD_{C,C1}) \times TRCAR$ Where 'C' is the set of all *monthly service charge types c as follows: 650,651,652.*	Monthly	Due *IESO*	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'CT' is the set of all *monthly export transmission charge types c as follows:653.* Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'. Where 'M' is the set of all *delivery points* 'm', excluding any *intertie metering points*. Where 'I' is the set of all *intertie metering points* 'i'. Where 'K' is the set of all *market participants* 'k'.									
169	Station Service Reimbursement Debit	N/A	9.4.8.1.6 and 9.2.1A.12.2(a)	$= \sum_{H,c}^{M,T} TD_c \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			
170	Local Market Power Rebate	N/A	9.4.8.2.2 9.4.8.2.3 9.3.8A.5 9.3.8A.6 and Ch. 7, Appendix 7.6	$= \sum_{H,C}^{M,T} TD_c \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'c' denotes *charge type* 120 and that portion of *charge type* 130 related to the IOG OFFSET *settlement amount.* Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due MP	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
171	Northern Industrial Electricity Rate Program Balancing Amount	N/A	N/A	Σ_K $TD_{k,121}$ Where 'k' is part of a subset of eligible *market participants* 'k'.	Quarterly	Due *IESO*	0	N/A	N/A	N/A			
173	MACD Enforcement Activity Balancing Amount	N/A	N/A	$\Sigma_K TD_{k123}$ Where 'K' is the set of all *market participants* 'k'. Where TD_{k123} is the *settlement amount* of *charge type* 123 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			
183	Generation Cost Guarantee Recovery Debit	N/A	9.4.8.1.9	$= \sum_{H,C}^{M,T} TD_{h,c} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where: 'C' is the set of the following *charge types* 'c' as follows: **133, 137** 'H' is the set of all *settlement hours* 'h' in the month. 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	*IESO*	13	N/A	0	13			
184	Demand Response Debit	N/A	9.4.7C 9.4.7F	$\sum_{k,H,} (TD_{134}) \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$	Monthly	Either way	13	N/A	0	5			TDRP and ELRP suspended by the *IESO*.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where: 'H' is all *settlement hours* 'h' during the *billing period*.									
186	Intertie Failure Charge Rebate	$HUSA_{k,h}$	9.3.9.1	$\sum_C^{M,T} TD_c$ x $[(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_k^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where: 'C' is the set of the following *charge types* 'c' as follows: **135, 136, 1134, 1135, 1136** 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement hour* 'h' in which the IFCR component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which: $RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$	Hourly	Due MP	13	N/A	0	13			
190	Fixed Energy Rate Balancing Amount	N/A	N/A	**** *CHARGE TYPE* 190 REPLACED BY *CHARGE TYPE* 192 EFFECTIVE JANUARY 1, 2005 **** $\sum_{k,H,c} (TD_{140})$ Where: 'H' is all *settlement hours* 'h' during the *trading day* for all *trading days* during the interim period beginning December 1, 2002.	Hourly (type 'DP' records only. See: "Format Spec. for Settlement Statement Files and Data Files"	Either Way	N/A	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
					for further details)								
191	Fixed Wholesale Charge Rate Balancing Amount	N/A	N/A	**<u>** CALCULATIONS FOR *CHARGE TYPE* 191 END MARCH 31, 2005 **</u>** $\Sigma_{k,H,c}$ (TD_{141}) Where: 'H' is all *settlement hours* 'h' during the *billing period*.	Monthly	Either Way	N/A	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.
192	Regulated Price Plan Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,142}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,142}$ is the total *settlement amount* of *charge type* 142 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			Implementation details subject to government regulation.
193	NUG Contract Adjustment Balancing Amount	N/A	N/A	TD_{143}	Monthly	Due *IESO*	0	N/A	N/A	N/A			Implementation details subject to government regulation.
194	Regulated Nuclear Generation Balancing Amount	N/A	N/A	TD_{144}	Interval or Hourly	Due *IESO*	0	N/A	N/A	N/A			Implementation details subject to government regulation.
195	Regulated Hydroelectric Generation Balancing Amount	N/A	N/A	TD_{145}	Monthly	Due *IESO*	0	N/A	N/A	N/A			Implementation details subject to *OEB* regulation.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
196	Global Adjustment Balancing Amount	N/A	N/A	$\Sigma_{K,}TD_{k,147,\ 148}$ -$\sum$197 Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,147,\ 148}$is the *settlement amount* of *charge type* 147 and 148 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.
197	Global Adjustment - Special Programs Balancing Amount	N/A	N/A	Σ_K $TD_{k,1466}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1466}$ is the *settlement amount* of *charge type* 1466 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			Implementation details subject to government regulation.
198	Renewable Generation Balancing Amount	N/A	N/A	**<u>** CALCULATIONS FOR *CHARGE TYPE* 198 END DECEMBER 31, 2010 **.</u>** Σ_K $TD_{k,148}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,148}$ is the *settlement amount* of *charge type* 148 for the month for *market participant* 'k'.	Pending	Due *IESO*	0	N/A	N/A	N/A			Implementation details subject to government regulation.
199	Regulated Price Plan Retailer Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,149}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,149}$ is the *settlement amount* of *charge type* 149 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			Implementation details subject to government regulation.
200	10 Minute Spinning Reserve	ORSCk,h	9.3.4.1	$\sum$m,t,r AQORr,k,hm,t x PRORr,hm,t	Interval	Due MP	13	13	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Market Settlement Credit												
201	10 Minute Spinning Reserve Market Shortfall Rebate	$HUSA_h$	9.3.9.1	$\sum_c^{M,T} TD_{k,h,(251)}$ x $[(AQEW_{k,h}^{m,t} + SQEW_h^{i,t} + RQ_{k,h}^{m,t}) / \sum_k^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement hour* 'h' in which the *operating reserve* component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which: $RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$	Hourly	Due MP	13	N/A	0	13			
202	10 Minute Non-spinning Reserve Market Settlement Credit	$ORSC_{k,h}$	9.3.4.1	$\sum_{m,t,r} AQOR_{r,k,h}^{m,t}$ x $PROR_{r,h}^{m,t}$	Interval	Due MP	13	13	N/A	N/A			
203	10 Minute Non-spinning Reserve Market Shortfall Rebate	$HUSA_h$	9.3.9.1	$\sum_c^{M,T} TD_{k,h,(253)}$ x $[(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_k^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'.	Hourly	Due MP	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement hour* 'h' in which the *operating reserve* component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which: $RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$									
204	30 Minute Operating Reserve Market Settlement Credit	$ORSC_{k,h}$	9.3.4.1	$\sum_{m,t,r} AQOR_{r,k,h}^{m,t} \times PROR_{r,h}^{m,t}$	Interval	Due MP	13	13	N/A	N/A			
205	30 Minute Operating Reserve Market Shortfall Rebate	$HUSA_{h}$	9.3.9.1	$\sum_{c}^{M,T} TD_{k,h,(255)} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_{k}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement hour* 'h' in which the *operating reserve* component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which:	Hourly	Due MP	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$									
250	10 Minute Spinning Market Reserve Hourly Uplift	$HUSA_h$	9.3.9.1	$\sum_c^{M,T} TD_{k,h,(200)}$ x $[(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_k^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement hour* 'h' in which the *operating reserve* component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which: $RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$	Hourly	Due *IESO*	13	N/A	0	13			
251	10 Minute Spinning Market Reserve Shortfall Debit	$ORSSD_{k,r,h}$	9.3.8.2	Manual Entry as per 9.3.8.2 where the value below which ORESFk,r,hm,t shall be set at zero equals ∞.	Interval	Due *IESO*	13	13	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
252	10 Minute Non-spinning Market Reserve Hourly Uplift	$HUSA_h$	9.3.9.1	$\sum_c^{M,T} TD_{k,h,(202)}$ x [$(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_k^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})$] Where 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement hour* 'h' in which the *operating reserve* component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which: $RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$	Hourly	Due *IESO*	13	N/A	0	13			
253	10 Minute Non-spinning Market Reserve Shortfall Debit	$ORSSD_{k,r,h}$	9.3.8.2	Manual Entry as per 9.3.8.2 where the value below which ORESFk,r,hm,t shall be set at zero equals ∞	Interval	Due *IESO*	13	13	N/A	N/A			
254	30 Minute Operating Reserve Market Hourly Uplift	$HUSA_h$	9.3.9.1	$\sum_c^{M,T} TD_{k,h,(204)}$ x [$(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_k^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})$] Where 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. Where $RQ_{k,h}^{m,t}$ is a reallocated quantity whereby *market participant* 'k' is a party to one or more *physical bilateral contracts* for *settlement*	Hourly	Due *IESO*	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				hour 'h' in which the *operating reserve* component of *hourly uplift* is to be reallocated between *market participant* 'k' and the other *market participant* that is a party to the contract in which: $RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$								
255	30 Minute Operating Reserve Market Shortfall Debit	$ORSSD_{k,r,h}$	9.3.8.2	Manual Entry as per 9.3.8.2 where the value below which ORESFk,r,hm,t shall be set at zero equals ∞	Interval	Due *IESO*	13	13	N/A	N/A			
400	Black Start Capability Settlement Credit	N/A	9.4.2.2	Manual Entry as per 9.4.2.2	Monthly	Due MP	13	N/A	N/A	N/A			
404	Regulation Service Settlement Credit	N/A	9.4.2.3	Manual Entry as per 9.4.2.3	Monthly	Due MP	13	N/A	N/A	N/A			
406	Emergency Demand Response Program Credit	N/A	9.4.2.3A	Manual Entry as per 9.4.2.3A	Monthly	Due MP	N/A	N/A	N/A	N/A			EDRP no longer contracted by the *IESO*.
410	*IESO-Controlled Grid* Special	N/A	5.8.2.6	Manual Entry as per 5.8.2.6	Monthly	Either way	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Operations Credit												
450	Black Start Capability Settlement Debit	N/A	9.4.2.2	$= \sum_{H,c}^{M,T} TD_{h,(400)} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			
451	Hourly Reactive Support and Voltage Control Settlement Debit	N/A	9.4.2.4	$= \sum_{C}^{M,T} TD_{h,c} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'C' is the set of the following charge types 'c' as follows: **1401, 1402, 1404, 1405, 1451** Where 'T' is the set of all *metering intervals* 't' during *settlement hour* 'h'.	Hourly	Due *IESO*	13	N/A	0	13			
452	Monthly Reactive Support and Voltage Control Settlement Debit	N/A	9.4.2.4	$= \sum_{H,C}^{M,T} TD_{h,c} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'C' is the set of the following charge types 'c' as follows: **1403, 1406, 1407, 1408, 1409, 1417** Where 'H' is the set of all *settlement hours* 'h' in the month.	Monthly	Due *IESO*	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.									
454	Regulation Service Settlement Debit	N/A	9.4.2.3	$= \sum_{H,c}^{M,T} TD_{h,(404)} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			
460	*IESO*-Controlled Grid Special Operations Debit	N/A	5.8.2.6	$= \sum_{H,c}^{M,T} TD_{h,(410)} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Either way	13	N/A	0	13			
500	Must Run Contract Settlement Credit	N/A	9.4.2.1	Manual Entry as per 9.4.2.1	Monthly	Due MP	13	N/A	N/A	N/A			
550	Must Run Contract Settlement Debit	N/A	9.4.2.1	$= \sum_{H,c}^{M,T} TD_{h,(500)} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
600	Network Service Credit	N/A	9.4.1 / 9.4.3	$\sum_{k,H,c}$ (TD_{650}) Where 'H' is the set of the *settlement hours* 'h' in the month during which the Network Service Demand occurs at every *delivery point* defined for Transmission Network Service charges.	Monthly	Due applicable *transmitters*	13	N/A	N/A	N/A			Subject to the OEB "Ontario Transmission Rate Order".
601	Line Connection Service Credit	N/A	9.4.1 / 9.4.3	$\sum_{k,H,c}$ (TD_{651}) Where 'H' is the set of all *settlement hours* 'h' in the month during which the Line Connection Service Demand occurs at every *delivery point* defined for Transmission Line Connection Service charges.	Monthly	Due applicable *transmitters*	13	N/A	N/A	N/A			Subject to the OEB "Ontario Transmission Rate Order".
602	Transformation Connection Service Credit	N/A	9.4.1 / 9.4.3	$\sum_{k,H,c}$ (TD_{652}) Where 'H' is the set of all *settlement hours* 'h' in the month during which the Transformation Connection Demand occurs at every *delivery point* defined for Transmission Transformation Connection Service charges.	Monthly	Due applicable *transmitters*	13	N/A	N/A	N/A			Subject to the OEB "Ontario Transmission Rate Order".
603	Export Transmission Service Credit	N/A	9.4.1 / 9.4.3	$\sum_{k,H,c}$ (TD_{653}^{i}) Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'i' is an *intertie metering point* 'i' where an export transaction occurred during the month	Monthly	Due applicable *transmitter*	13	N/A	N/A	N/A			Subject to the OEB "Ontario Transmission Rate Order".

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Each *charge type* 603 line detail record line item is therefore totaled on the basis of TD_{653} per *intertie metering point* 'i' per month.									
650	Network Service Charge	N/A	9.4.1 / 9.4.3	$NSD_{k,h}^{m}$ x PTS-N The Billing Demand for Network Transmission Service (kW) is defined as the higher of: Transmission customer coincident peak demand (kW) in the hour of the month when the total hourly demand of all PTS customers is highest for the month; and 85% of the customer peak demand in any hour during the peak period.	Monthly	Due *IESO*	13	N/A	N/A	N/A			Subject to the OEB "Ontario Transmission Rate Order".
651	Line Connection Service Charge	N/A	9.4.1 / 9.4.3	$LCD_{k,h}^{m}$ x PTS-L Where 'h' is the *settlement hour* of the current *billing period* in which $LCD_{k,h}^{m}$ denotes the non-coincident peak demand for the month.	Monthly	Due *IESO*	13	N/A	N/A	N/A			Subject to the OEB "Ontario Transmission Rate Order".
652	Transformation Connection Service Charge	N/A	9.4.1 / 9.4.3	$TCD_{k,h}^{m}$ x PTS-T Where 'h' is the *settlement hour* of the current *billing period* in which $TCD_{k,h}^{m}$ denotes the non-coincident peak demand for the month.	Monthly	Due *IESO*	13	N/A	N/A	N/A			Subject to the OEB "Ontario Transmission Rate Order".
653	Export Transmission Service Charge	N/A	9.4.1 / 9.4.3	$\sum_{H}^{T} SQEW_{k,h}^{i,t}$ x ETS Where 'H' is the set of all *settlement hours* 'h' in the month.	Monthly	Due *IESO*	13	N/A	0	13			Subject to the OEB "Ontario Transmission Rate Order".

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'T' is the set of all *metering intervals* 't' during the set of *settlement hours* 'H'.									
700	Dispute Resolution Settlement Amount	N/A	3.2.7	Manual Entry as per 3.2.7	Monthly	Due MP	13	13	0	13			Note: tax would follow original disputed transaction
702	Debt Retirement Credit	N/A	9.4.6	$\sum_{k,H,c} TD_{752}$	Monthly	Due Ministry of Finance	0	N/A	N/A	N/A			Ontario Regulations 493/01 and 494/01 See Ministry of Energy website for details.
703	Rural and Remote Settlement Credit	N/A	9.4.4	Manual Entry as per Reg	Monthly	Due MP as per Reg	13	N/A	N/A	N/A			Ontario Regulation 442/01 See Ministry of Energy website for details.
704	OPA Administration Credit	N/A	N/A	$\Sigma_K TD_{k,754}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,754}$ is the *settlement amount* of *charge type* 754 for the month for *market participant* 'k'.	Monthly	Due *IESO*	13	N/A	N/A	N/A			Implementation details subject to government regulation.
705	Ontario Fair Hydro Plan First Nations On-reserve Delivery Amount	**N/A**	**N/A**	Manual entry based on: (1) the values submitted via on-line settlement form "First Nations On-Reserve Delivery Credit (FNDC)";	Monthly	Due LDCs either way	**13**	**N/A**	**N/A**	**N/A**			Eligibility, rates, and other implementation details subject to government and OEB regulations.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
706	Ontario Fair Hydro Plan Distribution Rate Protection Amount	**N/A**	**N/A**	Manual entry based on: (1) the values submitted via on-line settlement form "Distribution Rate Protection (DRP)";	Monthly	Due LDCs either way	**13**	**N/A**	**N/A**	**N/A**			Eligibility, rates, and other implementation details subject to government and OEB regulations.
750	Dispute Resolution Balancing Amount (IESO)	N/A	3.2.7	$\sum_K TD_{k,700}$, where applicable	Monthly	Due *IESO*	N/A	N/A	N/A	N/A			
751	Dispute Resolution Board Service Debit	N/A					13	13	13	13			
752	Debt Retirement Charge	N/A	9.4.6	$AQEW_{k,h}^{m,t}$ x TP Where 'k' is part of a subset of *market participants* meeting the criteria of any government regulation defining the ultimate *consumers* of *energy*.	Monthly	Due *IESO*	13	N/A	N/A	N/A			Ontario Regulations 493/01 and 494/01 See Ministry of Energy website for details.
753	Rural and Remote Settlement Debit	N/A	9.4.4	$AQEW_{k,h}^{m,t}$ x TP	Monthly	Due *IESO*	13	N/A	N/A	N/A			Ontario Regulation 442/01 See Ministry of Energy website for details.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
754	OPA Administration Charge	N/A	N/A	$\Sigma_H{}^T$ $AQEW_{k,h}{}^{m,t}$ x TP Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in *settlement hour* 'h'. Where TP is the rate ($/MWh) for the *OPA* Administration Charge set by *OEB.*	Monthly	Due *IESO*	13	N/A	N/A	N/A			Eligibility, rates, and other implementation details subject to government regulation.
755	MOE - Ontario Fair Hydro Plan First Nations On-reserve Delivery Balancing Amount	**N/A**	**N/A**	$\Sigma_K TD_{k,705}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,705}$ is the total *settlement amount* of *charge type* 705 for the month for *market participant* 'k'.	Monthly	Due Ministry of Energy	**N/A**	**N/A**	**N/A**	**N/A**			Eligibility, rates, and other implementation details subject to government and OEB regulations.
756	MOE - Ontario Fair Hydro Plan Distribution Rate Protection Balancing Amount	**N/A**	**N/A**	$\Sigma_K TD_{k,706}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,706}$ is the total *settlement amount* of *charge type* 706 for the month for *market participant* 'k'.	Monthly	Due Ministry of Energy	**N/A**	**N/A**	**N/A**	**N/A**			Eligibility, rates, and other implementation details subject to government and OEB regulations.
850	Market Participant Default Settlement	N/A	2.8.6	Manual Entry as per 2.8.6	Monthly	Due *IESO*	13	13	13	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Debit (recovery)												
851	Market Participant Default Interest Debit	N/A	2.8.3, 2.8.5	Manual Entry as per 2.8.3 and 2.8.5	Monthly	Due *IESO*	N/A	N/A	N/A	N/A			
900	GST/HST Credit	N/A	N/A	$\sum_C TD_{k,c}$ A summation of all Goods and Services Tax Credits or Harmonized Sales Tax Credits payable to *market participant* 'k' across all *charge types* 'c'. Where 'C' is the set of all *charge types* 'c'.		Due MP	N/A	N/A	N/A	N/A			Only appear as "SC" record types.
950	GST/HST Debit	N/A	N/A	$\sum_C TD_{k,c}$ A summation of all Goods and Services Tax Debits or Harmonized Sales Tax Debits payable *by market participant* 'k' across all *charge types* 'c'. Where 'C' is the set of all *charge types* 'c'.		Due *IESO*	N/A	N/A	N/A	N/A			Only appear as "SC" record types.
1050	Self-Induced Dispatchable Load CMSC Clawback	N/A	9.3.5.1A	**BUSINESS RULES** are used in conjunction with the definitions below to specify the criteria by which the *IESO* will recover *constrained off* CMSC paid to *dispatchable load* facilities. **Business Rule 1 – Materiality:** *Constrained off* CMSC is allowed for an interval during a *constrained*	Interval	Due *IESO*	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				off event if the total amount of CMSC paid for the trade day to that *dispatchable load* is less than $4000. The daily total includes negative CMSC. ****BUSINESS RULE 1 –** **MATERIALITY THRESHOLD END JUNE 1, 2019** **Business Rule 2 – Non-Dispatchable Portion of Load:** *Constrained off* CMSC is not allowed for an interval during a *constrained off* event if the CMSC is paid for portions of the dispatch where the load has bid greater than or equal to MMCP, indicating that it is a non-dispatchable in that range. $[-1OP(EMP_h^{m,t}, MQSW_{k,h}^{m,t}, BL) – MAX (-1OP(EMP_h^{m,t}, DQSW_{k,h}^{m,t}, BL), -1 OP(EMP_h^{m,t},AQEW_{k,h}^{m,t}, BL)] –$ $[-1OP(EMP_h^{m,t}, MQSW_{k,h}^{m,t}, BL) – MAX (-1OP(EMP_h^{m,t}, DQSW_{k,h}^{m,t}, BL),-1OP (EMP_h^{m,t},AQEW_{k,h}^{m,t}, BL), -1OP(EMP_h^{m,t},MC_h^{m}, BL)]$ Where ‘MC’ is minimum consumption level and is equal to the quantity in the price quantity pair where the bidding price is MMCP (i.e., $2000). This business rule applies unless CMSC is allowed because of materiality (defined by Business Rule 1).									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Business Rule 3 – Dispatch Deviation: *Constrained off* CMSC is not allowed for an interval during a *constrained off* event if the current 5-minute constrained schedule exceeds the revenue meter value in the previous interval plus 2.5 minutes of ramping. This business rule applies unless CMSC is allowed because of: • Materiality (defined by Business Rule 1); or • The load has been *constrained off* economically (defined below – 'Economically *constrained off* interval'); or • Operating reserve has been activated (defined below – 'Operating Reserve Activation interval'); or • The load is ramping (defined below – 'Ramping interval'); or • The load has been manually dispatched down for reliability (defined below – 'Manual Dispatch for Reliability'). **Business Rule 4 – Facility off-line or unable to follow dispatch instructions:** *Constrained off* CMSC is not allowed for an interval during a *constrained off* event if the constrained schedule is 0 MW and the consumption is less than 1 MW, or if the consumption is 0 MW.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				This business rule applies unless CMSC is allowed because of: • Materiality (defined by Business Rule 1); or • The load has been *constrained off* economically (defined below – 'Economically *constrained off* interval'); or • Operating reserve has been activated (defined below – 'Operating Reserve Activation interval'); or • The load has been manually dispatched down for reliability (defined below – 'Manual Dispatch for Reliability'). In addition to the Business Rules 1 to 4 described above, *constrained off* CMSC is not allowed for hour 'h' if a *dispatchable load* changes its *energy bid* that results in a change in the *facility's market schedule* and the ramping up or down of the *dispatchable load*. **DEFINITIONS** – There are a number of definitions that are used in the specification of criteria for recovery of *constrained off* CMSC paid to dispatchable load facilities. These are: **Constrained-off event**: A *constrained off* event comprises one or more consecutive intervals where the *market schedule* is greater than the constrained schedule and the *market schedule* is greater than the actual quantity of energy withdrawn. Both conditions must exist to be considered a *constrained off* event.									The decision rule for ramping up or down is

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Economic Constrained–off interval: A *dispatchable load* is considered to be 'economically *constrained off*' in an interval if the relevant nodal price is greater than or equal to the *bid* price for either the current interval, the next interval or the previous interval. The inequality should be applied to the last MW *constrained off*. **Operating Reserve Activation Interval (ORA)**: A *dispatchable load* is considered to be dispatched in an interval as part of an activation of *operating reserve* if one or more of the following conditions exist: a. The constrained schedule is labeled with the reason code 'ORA'. b. The interval is 1-3 intervals before an interval with the 'ORA' code. c. The interval is 1-3 intervals after an interval with the 'ORA' code. **Ramping Interval**: A *generation unit* is considered to be ramping up or ramping down when the unconstrained schedule differs between consecutive hours. A *dispatchable load* is considered to be 'ramping' in an interval if one of the following exist: a. It is one of the first 3 intervals of the second hour when ramping up. b. It is one of the last 3 intervals of the first hour when ramping down.									described in Market Manual 5.5: Settlements Part 5.5: Physical Markets Settlement Statements, section 1.6.9.3.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Manual Dispatch for Reliability: A *dispatchable load* is considered to be a 'manually *constrained off* for reliability' if the *IESO* Control Room logs indicate that the *IESO* needed to constrain off the load for system or for local requirements.									
1051	Ramp-Down CMSC Claw Back	$RDCB_{k,h}$	9.3.5.1G	$RDCB_{k,h}^{m,t} = -1 \times TD_{k,h,105}^{m,t}$ (See applicable *market manual*)	Interval	Either Way	13	N/A	N/A	N/A			Conditions for the Ramp-Down CMSC Claw Back are described in Market Manual 5: Settlements Part 5.5: Physical Markets Settlement Statements, section 1.6.31.
1130	Day-Ahead Intertie Offer Guarantee Settlement Credit	$DA\_IOG_{k,h}$	9.3.8A.2A	****CALCULATIONS FOR *CHARGE TYPE* 1130 END OCTOBER 12, 2011. *CHARGE TYPE* 1130 REPLACED BY *CHARGE TYPE* 1131 EFFECTIVE OCTOBER 13, 2011.** The Day-Ahead Intertie Offer Guarantee *settlement amount* is derived as follows: For all day-ahead import transactions other than those that are subject to a *constrained on event* in the *real-time market:* $\sum^{I} (-1) * MIN[0, \sum^{T} OP(EMP_h^{i,t}, MIN(PDR\_DQSI_{k,h}^{i,t}, DQSI_{k,h}^{i,t}), PDR\_BE_{k,h}^{i,t}) + TD_{k,h,105}^{i}]$	Hourly	Due MP	N/A	13	13	13			Subject to IOG OFFSET process under the provisions of 9.3.8A.3 (see also, entry for *charge type* 130 for further details)

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Or, in the case of an import transaction subject to a *constrained on event* in the *real-time market:* $\sum^{I}$ (-1) * MIN[0, $\sum^{T}$OP($EMP_h^{i,t}$, MIN($PDR\_DQSI_{k,h}^{i,t}$, $DQSI_{k,h}^{i,t}$), $PDR\_BE_{k,h}^{i,t}$) + $OPE\{adj\}_{k,h}^{i,t}$] See 9.3.8A.2A for the definition of the Operating Profit (OP) function referenced above. Where: 'I' is the set of relevant *intertie metering points* 'i'. 'T' is the set of all *metering intervals* 't' during *settlement hour* 'h'. $TD_{k,h,105}^{i}$ is that component of *charge type* 105 ("Congestion Management Settlement Credit for Energy") applicable to *market participant* 'k' at *intertie metering point* 'i' during *settlement hour* 'h'.									
1131	Intertie Offer Guarantee Settlement Credit	$IOG_{k,h}$	9.3.8A	The Day-Ahead Intertie Offer Guarantee *settlement amount* is derived as follows: $\sum_{I}$ MAX[0, $\sum^{T}$ (DA_IOG_COMP1 + DA_IOG_COMP2 – DA_IOG_COMP3)] Where **DA_IOG_COMP1:** -1 x OP($EMP_h^{i,t}$, MIN($DA\_DQSI_{k,h}^{i,t}$, $DQSI_{k,h}^{i,t}$), $DA\_BE_{k,h}^{i,t}$) **DA_IOG_COMP2:** $XDA\_BE_{k,h}^{i,t}$ – MAX(0, $XBE_{k,h}^{i,t}$)	Hourly	Due MP	N/A	13	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				DA_IOG_COMP3: Component 3 is calculated when: the CMSC for energy ($TD_{k,h,105}^{m,t}$) for the same metering interval is a value other than zero. For Component 3 (DA_IOG_COMP3), the six scenarios of the possible orderings of the generator's DA_DQSI, DQSI and MQSI are as follows: 1. DQSI >= MQSI >= DA_DQSI 2. MQSI >= DQSI >= DA_DQSI 3. DQSI > DA_DQSI > MQSI 4. MQSI > DA_DQSI > DQSI 5. DA_DQSI >= DQSI > MQSI 6. DA_DQSI >= MQSI > DQSI Scenario 1 and 2: 0 Scenario 3: $OP(EMP_h^{i,t}, MQSI_{k,h}^{i,t}, BE) - OP(EMP_h^{i,t}, DA\_DQSI_{k,h}^{i,t}, BE)$ Scenario 4: $OP(EMP_h^{i,t}, DA\_DQSI_{k,h}^{i,t}, BE) - OP(EMP_h^{i,t}, DQSI_{k,h}^{i,t}, BE)$ Scenario 5 and 6: $TD_{k,h,105}^{m,t}$									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'I' is the set of relevant *intertie metering points* 'i'. 'T' is the set of all *metering intervals* 't' during *settlement hour* 'h'. 'OP' is the operating profit function defined in *IESO market rules* Section 9.3.8A.2. $XDA\_BE_{k,h}^{i,t} = (-1) * [OP(EMP_h^{i,t}, DA\_DQSI_{k,h}^{m,t}, DA\_BE) - OP(EMP_h^{i,t}, \min(DA\_DQSI_{k,h}^{m,t}, DQSI_{k,h}^{m,t}, DA\_BE)]$ $XBE_{k,h}^{i,t} = (-1) * [OP(EMP_h^{i,t}, DA\_DQSI_{k,h}^{i,t}, BE) - OP(EMP_h^{i,t}, \min(DA\_DQSI_{k,h}^{i,t}, DQSI_{k,h}^{i,t}, BE)]$ Where $EMP_h^{i,t} = 0$ The Intertie Offer Guarantee *settlement amount* is derived from an hourly *Energy* Import sub component ($EIM_{k,h}$) as follows: $RT\text{-}IOG_{k,h} = EIM_{k,h}$ The Real-Time Intertie Offer Guarantee ($RT\text{-}IOG_{k,h}$) *settlement amount* is derived as follows: $\sum_I (-1)*MIN[0, \sum^T OP(EMP_h^{i,t}, MQSI_{k,h}^{i,t}, BE)]$ Where 'I' is the set of relevant *intertie metering points* 'i'.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'I' is the set of all *metering intervals* 't' during *settlement hour* 'h'. 'OP' is the operating profit function defined in *IESO market rules* Section 9.3.8A.2. The IOG_OFFSET component of this *charge type* is calculated as follows: **The Day-Ahead IOG rate:** DA_IOG_RATE = IF [DA_IOG is not NULL, DA_IOG / min(DA_DQSI, DQSI), 0] **The Real-Time IOG rate:** RT_IOG_RATE = IF[RT_IOG is NULL, 0, RT_IOG/DQSI] **The matrix is arranged in ascending order on DA_IOG_RATE and the day-ahead import quantities are offset against the day-ahead export schedule quantities:** DA_DQSW_REM = [MAX[0, DA_OFFSET_DQSW)]] DA_OFFSET_DQSW = MIN[DA_DQSI, DQSI, DA_DQSW_REM] **The day-ahead IOG offset flag:** DA_OFFSET_FLAG = IF(DA_OFFSET_DQSW > [50% X MIN(DA_DQSI,DQIS)],Y,N) **The IOG offset rate:** IOG_SETTLEMENT_RATE = IF[DA_OFFSET_FLAG = 'Y', RT_IOG_RATE, MAX(RT_IOG_RATE, DA_IOG_RATE)]								

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Subject to: MI[n,9] >= MIN[n-1,9] MI[1,9] = MIN[MI[1 to N,9]] MI[1 to N,9] <> 0 **The Gross IOG amount:** IOG = IOG dollar amount associated with the used to calculate IOG_SETTLEMENT_RATE **The matrix is arranged in ascending order on IOG_SETTLEMENT_RATE and the real-time import quantities are offset against the real-time export schedule quantities:** RT_DQSW_REM = [MAX[0, DQSW – RT_OFFSET_DQSW)]] RT_OFFSET_DQSW = MIN[DQSI, RT_DQSW_REM] **The IOG offset settlement amount:** IOG_OFFSET = (IOG_SETTLEMENT_RATE * RT_OFFSET_DQSW) **The IOG settlement amount:** NET_IOG = (IOG – IOG_OFFSET)								
1133	Day-Ahead Generation Cost Guarantee Payment	$DA\_GCG_{k,h}$	9.4.7D	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1133 END OCTOBER 12, 2011.**</u> <u>Dispatchable *delivery points:*</u>	Hourly	Due MP	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$MAX[0, (DA\_CGC + DA\_COST - \sum^{T} EMP_{h}^{m,t} \times AQEI\{limited\}_{k,h}^{m,t} - \sum^{T} CMSC\ REV_{k,h,}^{m,t}]$ **Subject to:** $AQEI\{limited\}_{k,h}^{m,t} = MIN[AQEI_{k,h}^{m,t}$, *minimum loading point*] Where 'DA_CGC' is a Day-Ahead *Combined Guaranteed Costs* variable, assessed in accordance with the applicable *market manual* (see also Section 2.1 "Variable Description"). Where 'm' is *delivery point* 'm' at which the *generation unit* incurring the relevant costs is located. Where 'T' is a set of *metering intervals* 't' from a valid start time to the end of *minimum generation block run-time.* Where $AQEI\{limited\}_{k,h}^{m,t}$ shall denote all allocated quantities in MWh of *energy* injected at *delivery point* 'm' irrespective of any submission of *physical allocation data* by *market participant* 'k' in metering interval 't' of *settlement* hour 'h' up to the *generation unit's minimum loading point.*									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where DA_COST is fuel and O&M cost component related to operation of the *generation unit* at its *minimum loading point* during its *minimum generation block run-time* (these costs are calculated based on the *offer* price associated with Pre-dispatch of record). $DA\_COST_k = \Sigma^{T*}_{H2} COST(AQEI\{limited\}_{k,h}^{m,t}, PDR\_BE_{k,h}^{m,t})$ A. Where the COST function is defined as follows: $COST(Q, B) = \sum_{i=1}^{s^*} P_i \cdot (Q_i - Q_{i-1})$ *where:* • B is the n x 2 matrix (B) of offered *price-quantity pairs* (P_i , Q_i) • s* is the highest indexed row of B such that $Q_{s^*-1} \leq Q \leq Q_{s^*}$ and where $Q_0=0$ *B.* Where H2 is the set of all *settlement hours* 'h' during the period from the *Pre-dispatch of*										

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Record 'start hour' until the end of *minimum generation block run* C. Where 'T*' is the set of metering intervals 't' in the set of all settlement hours 'H2' Where $CMSC\_REV_{k,h}^{m,t}$ is any real-time $CMSC(TD_{k,h,105}^{m,t})$ payment associated with allocated quantities in MWh of *energy* injected at *delivery point* 'm' irrespective of any submission of *physical allocation data* by *market participant* 'k' in metering interval 't' of *settlement* hour 'h' up to the *generation unit's minimum loading point.* CMSC_REV is calculated using the following rules: 1) Real-time CMSC ($TD_{k,h,105}^{m,t}$) for the same interval is greater than zero. 2) If $MQSI_{k,h}^{m,t}$ and $\max(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t}) >= MLP$, then $CMSC\_REV_{k,h}^{m,t} = 0$. 3) In the case of a *constrained-off event*: a. If $MQSI_{k,h}^{m,t} < MLP$, then $CMSC\_REV_{k,h}^{m,t} = TD_{k,h,105}^{m,t}$ b. If $MQSI_{k,h}^{m,t} >= MLP$ and $\max(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t}) <= MLP$, then									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$CMSC\_REV_{k,h}^{m,t} = OP(EMP_{h}^{m,t},MLP,BE) – OP(EMP,max(DQSI_{k,h}^{m,t},AQEI_{k,h}^{m,t}),BE)$. 4) In the case of a *constrained-on event*: a. If $MQSI_{k,h}^{m,t} < MLP$ and $min(DQSI_{k,h}^{m,t},AQEI_{k,h}^{m,t}) < MLP$, then $CMSC\_REV_{k,h}^{m,t} = TD_{k,h,105}^{m,t}$ b. If $MQSI_{k,h}^{m,t} <= MLP$ and $min(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t}) >= MLP$, then $CMSC\_REV_{k,h}^{m,t} = OP(EMP_{h}^{m,t},MQSI_{k,h}^{m,t},BE) – OP(EMP_{h}^{m,t},MLP,BE)$ (See applicable *market manual*)									
1134	Day-Ahead Linked Wheel Failure Charge	$DA\_LWF\bar{C}_{k,h}$	9.3.8E	$MAX\left[(-1) * \left[(DA\_LWSD_{k,h}^{i}) * MAX[0,(DA\_PS_{k,h}^{i} – PD\_PS_{k,h}^{i})]\right], (RT\_IFC\_DALW_{k,h}^{i} + RT\_EFC\_DALW_{k,h}^{i})\right]$ Where: $DA\_LWSD_{k,h}^{i,t} = MAX[MAX(DA\_DQSI_{k,h}^{i,t} – PD\_DQSI_{k,h}^{i,t}, DA\_DQSW_{k,h}^{i,t} – PD\_DQSW_{k,h}^{i,t}),0]$ $RT\_IFC\_DALW_{k,h}^{i} = \sum^{I,T} (-1) * MIN\left[MAX[0, (EMP_{h}^{m,t} + PB\_IM_{h}^{t} – PD\_EMP_{h}^{m,t}) * MAX\right.$	Hourly	Due *IESO*	N/A	13	13	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$(DA\_DQSI_{k,h}^{i,t} - PD\_DQSI_{k,h}^{i,t}, 0)]$, $(MAX(0, EMP_h^{m,t}) * MAX(DA\_DQSI_{k,h}^{i,t} - PD\_DQSI_{k,h}^{i,t}, 0))]$ $RT\_EFC\_DALW_{k,h}^{i} = \sum^{I,T} (-1) * MIN[MAX[0, (PD\_EMP_h^{m,t} - EMP_h^{m,t} - PB\_EX_h^{t}) * MAX(DA\_DQSW_{k,h}^{i,t} - PD\_DQSW_{k,h}^{i,t}, 0)], (MAX(0, PD\_EMP_h^{m,t}) * MAX(DA\_DQSW_{k,h}^{i,t} - PD\_DQSW_{k,h}^{i,t}, 0))]$ Where: 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'. 'I' is the set of all *intertie metering points* 'i'.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1135	Day-Ahead Import Failure Charge	$DA\_IFC_{k,h}$	9.3.8B	$\Sigma^{I,T}$ (-1) * MIN[MAX[0, $OP(PD\_EMP_h^{m,t}, DA\_DQSI_{k,h}^{i,t}, DA\_BE_{k,k}^{i,t}) - OP(PD\_EMP_h^{m,t}, PD\_DQSI_{k,h}^{i,t}, DA\_BE_{k,k}^{i,t})$] , (MAX(0, $XPD\_BE_{k,h}^{i,t} - XDA\_BE_{k,h}^{i,t}$)], (MAX(0, $PD\_EMP_h^{m,t}$)* $DA\_ISD_{k,h}^{i,t}$)] Where: 'OP' is the operating profit function defined in *IESO market rules* Section 9.3.8B.2. 'T' is the set of all *metering intervals* 't' in *settlement hour* 'h'. 'I' is the set of all *intertie metering points* 'i'. $DA\_ISD_{k,h}^{i,t} = MAX (DA\_DQSI_{k,h}^{i,t} - PD\_DQSI_{k,h}^{i,t}, 0)$ $XDA\_BE_{k,h}^{i,t} = (-1) * [OP(0,DA\_DQSI,DA\_BE) - OP(0,PD\_DQSI,DA\_BE)]$ $XPD\_BE_{k,h}^{i,t} = (-1) * [OP(0,DA\_DQSI,PD\_BE) - OP(0,PD\_DQSI,PD\_BE)]$	Hourly	Due *IESO*	N/A	13	N/A	N/A			Subject to exemptions under the provisions of 9.3.8B.1.2

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1136	Day-Ahead Export Failure Charge	$DA\_EFC_{k,h}$	9.3.8D	$\sum^{I,T}$ (-1) * MIN⎡MAX[0,(–1)* $OP(PD\_EMP_h^{m,t}, DA\_DQSW_{k,h}^{i,t}, DA\_BL_{k,k}^{i,t}) – (–1)* OP(PD\_EMP_h^{m,t}, PD\_DQSW_{k,h}^{i,t}, DA\_BL_{k,k}^{i,t})]$, $(MAX(0, XDA\_BL_{k,h}^{i,t} – XPD\_BL_{k,h}^{i,t}), (MAX(0, XDA\_BL_{k,h}^{i,t})$⎤ Where: 'OP' is the operating profit function defined in *IESO market rules* Section 9.3.8B.2. 'T' is the set of all *metering intervals* 't' in *settlement hour* 'h'. 'I' is the set of all *intertie metering points* 'i'. $XDA\_BL_{k,h}^{i,t} = [OP(0,DA\_DQSW,DA\_BL) - OP(0,PD\_DQSW,DA\_BL)]$ $XPD\_BL_{k,h}^{i,t} = [OP(0,DA\_DQSW,PD\_BL) - OP(0,PD\_DQSW,PD\_BL)]$	Hourly	Due *IESO*	N/A	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1137	Intertie Offer Guarantee Reversal	**Context 1:** IOG_REV$_{k,h}$ **Context 2:** DA_IOG{adj}$_{k,h}^{i}$	9.3.8A.1.2 and 9.3.8A.7 to 9.3.8A.9	****CALCULATIONS FOR *CHARGE TYPE* 1137 END OCTOBER 12, 2011.** **NOTE**: This *charge type* is used in two separate contexts as follows: **Context 1:** When a day-ahead Intertie Offer Guarantee and a real-time Intertie Offer Guarantee apply to the same import transaction, the lower of the two is reversed by this *charge type*. -1 x $TD_{k,h,c}^{i}$ Where: 'c' is *charge type* 130 or 1130 as the case may be such that: $TD_{k,h,c}^{i} = MIN (TD_{k,h,130}^{i}, TD_{k,h,1130}^{i})$ **Context 2:** In cases where this *charge type* is used for the purposes of applying the intertie offer guarantee adjustment (DA_IOG{adj}$_{k,h}^{i}$), the *settlement amount* applied is DA_IOG{adj}$_{k,h}^{i}$ and is calculated as follows: DA_IOG{adj}$_{k,h}^{i} = MAX [0 , IOG\_FV_{k,h}^{i} - TD_{k,h,100}^{i} - MAX(TD_{k,h,1130}^{i}, TD_{k,h,130}^{i}) - TD_{k,h,105}^{i}]$ Where: $TD_{k,h,100}^{i}$, $TD_{k,h,1130}^{i}$, $TD_{k,h,130}^{i}$ and $TD_{k,h,105}^{i}$ are the *settlement amounts* for *charge types* 100, 1130, 130 and 105 respectively, that are applicable to *market participant* 'k' during *settlement hour* 'h' at *intertie metering point* 'i'.	**Context 1:** Hourly **Context 2:** Hourly, but reported on the last *trading day* of the *billing period*	**Context 1:** Due *IESO* **Context 2:** Due MP	N/A	13	13	13			**Note:** Context 1 and Context 2 can both be applied to the same import.
1138	Day-Ahead Fuel Cost Compensation Credit	DA_FCC$_{k,h}$	9.4.7E	Manual entry as per 9.4.7E.2	Hourly	Due MP	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1139	Intertie Failure Charge Reversal	$IFC\_REV_{k,h}$	9.3.8C.6	**<u>CALCULATIONS FOR *CHARGE TYPE* 1139 END OCTOBER 12, 2011.</u> When a Day-Ahead Import Failure Charge and a Real-time Import Failure Charge apply to the same import transaction, the lower of the two is reversed by this *charge type*. $-1 \times TD_{k,h,c}^{i}$ Where: 'c' is *charge type* 135 or 1135 as the case may be such that: $TD_{k,h,c}^{i} = MIN(-1 \times TD_{k,h,135}^{i}, -1 * TD_{k,h,1135}^{i})$	Hourly	Due *IESO*	N/A	13	N/A	N/A			
1142	Ontario Fair Hydro Plan Eligible RPP Consumer Discount Settlement Amount	**N/A**	**N/A**	**<u>** *CHARGE TYPE* 1142 REPLACED BY *CHARGE TYPE* 142 EFFECTIVE NOVEMBER 1, 2019 **</u>** Manual entry based on: (1) the values submitted via on-line settlement forms "Regulated Price Plan vs. Market Price – Variance for Conventional Meters", "Regulated Price Plan vs. Market Price – Variance for Smart Meters" and "Regulated Price Plan – Final Variance Settlement Amount"; or (2) For eligible	Monthly	Due LDCs, Unit Sub-Meter Providers and eligible MPs either way	**13**	**N/A**	**N/A**	**N/A**			Eligibility, rates, and other implementation details subject to government and OEB regulations.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				IESO market participant consumers: $NEMSC_{k,H} - \{ MIN [TLQ , \Sigma_{H M,T} (AQEW_{k,hm,t} - AQEI_{k,hm,t} - \Sigma_s BCQ_{s,k,hm,t})] \times RPP_{l=1} + MAX [0, \Sigma_{H M,T} (AQEW_{k,hm,t} - AQEI_{k,hm,t} - \Sigma_s BCQ_{s,k,hm,t}) - TLQ] \times RPP_{l=2} \}$									
1143	Ontario Fair Hydro Plan Eligible Non-RPP Consumer Discount Settlement Amount	**N/A**	**N/A**	Manual entry based on: (1) the values submitted via on-line settlement form "Ontario Fair Hydro Plan (OFHP) for Eligible Non-RPP Customers";	Monthly	Due LDCs, Unit Sub-Meter Providers and eligible MPs either way	**13**	**N/A**	**N/A**	**N/A**			Eligibility, rates, and other implementation details subject to government and OEB regulations.
1144	Ontario Fair Hydro Plan Financing Entity Amount	**N/A**	**N/A**	Manual entry based on: (1) the values submitted via on-line settlement form "Ontario Fair Hydro Plan – Financing Entity Funding Expenses";	Monthly	Due Financing Entity	**N/A**	**N/A**	**N/A**	**N/A**			Implementation details subject to government regulations
1145	Ontario Fair Hydro Plan Financing Entity Interest	**N/A**	**N/A**	Manual entry based on: (1) the values submitted via on-line settlement form "Ontario Fair Hydro Plan – Financing Entity Funding Expenses";	Monthly	Due Financing Entity	**N/A**	**N/A**	**N/A**	**N/A**			Implementation details subject to government regulations
1148	GA Energy Storage Injection	N/A	N/A	$U_k \times GAR_B$	Monthly	Due MP	13	N/A	N/A	N/A			Eligibility and other implementation

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Reimbursement												details subject to government regulation.
1188	Day-Ahead Fuel Cost Compensation Debit	DA_FCC_$U_{k,h}$	9.4.8.1.12	$= \sum_{K,H,c}{}^{M,T} TD_c$ x $[(AQEW_{k,h}{}^{m,t} + SQEW_{k,h}{}^{i,t}) / \sum_{K,H}{}^{M,T} (AQEW_{k,h}{}^{m,t} + SQEW_{k,h}{}^{i,t})]$ Where: 'c' is *charge type* 1138. 'K' is the set of all *market participants* 'k'. 'M' is the set of all *delivery points* 'm' and *intertie metering points* 'i'. 'H' is the set of all *settlement hours* 'h' in the month. 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			
1192	Ontario Fair Hydro Plan Eligible RPP Consumer Discount Balancing Amount	**N/A**	**N/A**	**** *CHARGE TYPE* 1192 REPLACED BY *CHARGE TYPE* 192 EFFECTIVE NOVEMBER 1, 2019 **** $\Sigma_K TD_{k,1142}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1142}$ is the total *settlement amount* of *charge type* 1142 for the month for *market participant* 'k'.	Monthly	Due *IESO*	**N/A**	**N/A**	**N/A**	**N/A**			Eligibility, rates, and other implementation details subject to government and OEB regulations.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1193	Ontario Fair Hydro Plan Eligible Non-RPP Consumer Discount Balancing Amount	**N/A**	**N/A**	$\Sigma_K TD_{k,1143}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1143}$ is the total *settlement amount* of *charge type* 1143 for the month for *market participant* 'k'.	Monthly	Due *IESO*	**N/A**	**N/A**	**N/A**	**N/A**			Eligibility, rates, and other implementation details subject to government and OEB regulations.
1194	Ontario Fair Hydro Plan Financing Entity Balancing Amount	**N/A**	**N/A**	$\Sigma_K TD_{k,1144}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1144}$ is the total *settlement amount* of *charge type* 1144 for the month for *market participant* 'k'.	Monthly	Due IESO	**N/A**	**N/A**	**N/A**	**N/A**			Implementation details subject to government regulations
1195	Ontario Fair Hydro Plan Financing Entity Balancing Interest	**N/A**	**N/A**	$\Sigma_K TD_{k,1145}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1145}$ is the total *settlement amount* of *charge type* 1145 for the month for *market participant* 'k'.	Monthly	Due IESO	**N/A**	**N/A**	**N/A**	**N/A**			Implementation details subject to government regulations

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1300	Capacity Based Demand Response Program Availability Payment Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1300 ENDED ON OCTOBER, 2018.</u> $= HA_H \times MCMW_h \times AAR$ Where: 'AAR' means 'Adjusted Availability Rate'. 'H' is the total hours a DRMP is available in a program month. 'HA' means 'Hours of Availability'. 'MCMW' means 'Monthly Contracted MW'.	Monthly	Due MP	13	N/A	N/A	N/A			
1301	Capacity Based Demand Response Program Availability Over-Delivery Settlement Amt	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1301 ENDED ON OCTOBER, 2018.</u> $= \sum_H (CMW_h - MCMW_h) \times AODR_h$ Applicable only in response to an 'Open Standby Notification'. Where: 'AODR' means 'Availability Over-Delivery Rate'. 'CMW' means 'Confirmed MW'. 'H' is the set of all hours 'h' in the month where the 'CMW' exceeded the 'MCMW'. 'MCMW' means 'Monthly Contracted MW'.	Monthly	Due MP	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1302	Capacity Based Demand Response Program Availability Set-Off Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1302 ENDED ON OCTOBER, 2018.</u> The charge to a DRMP is highest of **A**, **B** or **C:** **A: Availability Set-Off (Reliability)** $= \sum_H PSO_h \times AAR \times MCMW_h$ This formula applies when the Reliability Rate for a given Demand Response Account is less than 85%	Monthly	Due IESO	13	N/A	N/A	N/A			

				during any interval of an Activation Hour, or where the Participant is not Fully Available for Curtailment. Where: 'AAR' and 'MCMW' have the same meaning as in CT1300. 'H' is the set of all activation hours 'h' for the activation period. 'PSO' means 'Performance Set-Off Factor' as described in the market manual. **B: Availability Set-Off (Timely Confirmation)** = PSO x AAR x $MCMW_h$ x CDP This formula applies when the Participant, regardless of Activation, has failed to deliver, or delivers late, a Confirmation that is required by the *IESO*. Where: 'AAR' and 'MCMW' have the same meaning as in CT1300. 'CDP' (Contracted Dispatch Period) means four consecutive hours. Each Contracted Dispatch Period shall occur within the hours of Availability, and shall occur within and no more than once in accordance with the Daily Schedule. 'PSO' has the same meaning as defined above. **C: Availability Set-Off (Low Confirmation)** = $\sum_H$ (PSO x AAR x ($MCMW_h$ – CMW) This formula applies when the Confirmed MW's are less than 95% of the Monthly Contracted MW for a Confirmed Hour of the Contracted Dispatch Period. Where:									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'AAR' and 'MCMW' have the same meaning as in CT1300. 'CMW' has the same meaning as in CT1301. 'H' is the set of all confirmed hours 'h' when the Confirmed MW's are less than 95% of the Monthly Contracted MW for the Contracted Dispatch Period. 'PSO' has the same meaning as defined above.									
1303	Capacity Based Demand Response Program Utilization Payment Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1303 ENDED ON OCTOBER, 2018.</u> $= [\sum_H (AAM_h \times UR_h)] - [\sum_H (NG_h \times MIN(HOEP, UR_h))]$ Where: 'AAM' (Actual Activated MWh), means the number of MWh Curtailed by a Participant when requested by the *IESO*, as measured through the use of electricity meter(s). Curtailment shall not exceed the product of the Activation MW and the activation period requested by the *IESO*, plus the lesser of an additional 15% of the Activation MW per hour of the activation period, OR 15 MWh per hour of the activation period. 'H' is the total hours 'h' a DRMP is activated in a program month. 'HOEP' means Hourly Ontario Energy Price.	Monthly	Due MP	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'NG' (Net Generation), means the MWh of net electricity generated by any contributor that is a behind the meter generator. 'UR' (Utilization Rate), means the rates, expressed in $/MWh, as specified in the Demand Response Schedule.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1304	Capacity Based Demand Response Program Utilization Set-Off Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1304 ENDED ON OCTOBER, 2018.</u>** The charge to a DRMP is highest of **A**, **B** or **C:** **A: Utilization Set-Off (Reliability)** $= \sum_H PSO_h \times UR \times MCMW_h$ This formula applies when the Reliability Rate for a given Demand Response Account is less than 85% during any interval of an Activation Hour. Where: 'H' is the set of all activation hours 'h' for the activation period. 'PSO' has the same meaning as in CT 1301. 'UR' has the same meaning as in CT1303. 'MCMW' has the same meaning as in CT1300. **B: Utilization Set-Off (Timely Confirmation)** $= PSO \times UR \times MCMW_h \times CDP$ This formula applies when the DRMP, regardless of Activation, has failed to deliver, or delivers late, a Confirmation that is required by the *IESO*. Where: 'CDP' (Contracted Dispatch Period) means four consecutive hours. Each Contracted Dispatch Period	Monthly	Due IESO	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				shall occur within the hours of Availability, and shall occur within and no more than once in accordance with the Daily Schedule. 'MCMW' has the same meaning as defined above. 'PSO' has the same meaning as defined above. 'UR' has the same meaning as defined above. **C: Utilization Set-Off (Low Confirmation)** $= \sum_H (PSO \times UR \times (MCMW_h - CMW)$ This formula applies when the Confirmed MW's are less than 95% of the Monthly Contracted MW for a Confirmed Hour of the Contracted Dispatch Period. Where: 'CMW' has the same meaning as in CT1301. 'H' is the set of all confirmed hours 'h' when the Confirmed MW's are less than 95% of the Monthly Contracted MW for the Contracted Dispatch Period. 'MCMW' has the same meaning as defined above. 'PSO' has the same meaning as defined above. 'UR' has the same meaning as defined above.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1305	Capacity Based Demand Response Program Planned Non-Performance Event Set-Off Amt	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1305 ENDED ON OCTOBER, 2018.</u> The Planned Non-Performance Availability Set-Off applies for any day for which a participant has requested a Non-Performance Event as part of either a Single Day Non-Performance Event or a part of an Extended Period Planned Non-Performance Event. The monthly set-off calculation is the sum of all: 1. Non-Activation Day Non-Performance Availability Set-Off s and 2. Activation Day Non-Performance Availability Set-Offs. For 1.) The Non-Activation Day Non-Performance Availability Set-Off amount is: = (AAR x $MCMW_h$ x $HANE_H$) Where: 'AAR' has the same meaning as in CT1300. 'HANE' (Hours of Availability for a Non-Performance Event), represents the Hours of Availability for all days in the contract month for which a planned Non-	Monthly	Due IESO	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Performance Event is requested and for which an Activation Notice is not received by the participant. 'MCMW' has the same meaning as in CT1300. For 2.) The Activation Day Non-Performance Availability Set-Off amount is: = (OH x AAR x $MCMW_h$ x $NEWF_H$) Where: 'AAR' and 'MCMW' have the same meaning as in CT1300. 'OH' (Opportunity Hours), means 64 if Option A is applicable to the Demand Response Account; or 32 if Option B is applicable to the Demand Response Account. 'NEWF' (Non-Performance Event Weighting Factor), means 10%, unless the Actual Activated MWh per interval, as averaged over all of the Intervals in the Contracted Dispatch Period for the Activation, is greater than or equal to the product of the Monthly Contracted MW and 1/12 of an hour in which case 'NEWF' means 50%.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1306	Capacity Based Demand Response Program Measurement Data Set-Off Settlement Amt	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1306 ENDED ON OCTOBER, 2018.</u>** = MDSF x (HA_H x $MCMW_h$ x AAR) This formula applies when the complete set of weekly measurement data for a Demand Response Account are not received as per the CBDR Processing Timelines. The formula recovers a percentage of the availability payment for the applicable week. Where: 'MDSF' (Measurement Data Set-Off Factor), is an increasing factor for every week that the full data remains undelivered. The factor is equal to: • 20% for the first week that the full data remains undelivered; • 33% for the second week that the full data remains undelivered; • 50% for the third week that the full data remains undelivered; and • 100% for the fourth week that the full data remains undelivered. 'AAR', 'HA' and 'MCMW' have the same meaning as in CT1300. 'H' is the total hours a DRMP is available for the applicable week.	Monthly	Due IESO	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1307	Capacity Based Demand Response Program Buy-Down Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1307 ENDED ON OCTOBER, 2018.</u> Buy-Down means the act by the DRMP chooses to reduce its Monthly Contracted MW and/or remove up to three Daily Schedules from participation in CBDR. For the Buy-Down of Monthly Contracted MW the payment is: = (MCMWR x BDR x HAE) Where: 'MCMWR' (Monthly Contracted MW Reduction), means the MW of demand reduction in the Monthly Contracted MWs. 'BDR' (Buy-Down Rate), means the Buy-Down Rate, expressed in $/MW. 'HAE' (Hours of Availability Elapsed), means the number of Hours of Availability that have elapsed in the Schedule Term up to the date that the reduction takes effect. For the Buy-Down of the Daily Schedules the payment is: = (MCMW x RD x BDR x HAE) Where:	Monthly	Due IESO	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'BDR' has the same meaning as defined above. 'HAE' has the same meaning as defined above. 'MCMW' has the same meaning as in CT1300. 'RD' (Requested Days), means the number of Business Days per week from which the Hours of Availability are to be removed.									
1308	Capacity Based Demand Response Program Performance Breach Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1308 ENDED ON OCTOBER, 2018.</u> Performance breach amounts are calculated as defined in the market manual.	Monthly	Either way	13	N/A	N/A	N/A			
1309	Demand Response Pilot – Availability Payment	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1309 ENDED ON APRIL, 2018.</u> Calculated as per demand response pilot contracts.	Monthly	Due MP	13	N/A	N/A	N/A			Demand Response Pilot
1310	Demand Response Pilot – Availability Clawback	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1310 ENDED ON APRIL, 2018.</u> Calculated as per demand response pilot contracts.	Hourly	Due IESO	13	N/A	N/A	N/A			Demand Response Pilot

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1311	Demand Response Pilot – Availability Charge	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1311 ENDED ON APRIL, 2018.</u> Calculated as per demand response pilot contracts.	Monthly	Due IESO	13	N/A	N/A	N/A			Demand Response Pilot
1312	Demand Response Pilot – Availability Adjustment	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1312 ENDED ON APRIL, 2018.</u> Calculated as per demand response pilot contracts.	Monthly	Due IESO	13	N/A	N/A	N/A			Demand Response Pilot
1313	Demand Response Pilot – Demand Response Bid Guarantee	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1313 ENDED ON APRIL, 2018.</u> Calculated as per demand response pilot contracts. **Notes:** - Bid guarantee as a payment is Due MP; bid guarantee as a clawback is Due IESO. Bid guarantee is calculated per unit commitment period/event.	Monthly	Either Way	13	N/A	N/A	N/A			Demand Response Pilot

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1314	Capacity Obligation – Availability Payment	N/A	N/A	$\sum_{d}^{n} \sum_{h}^{d} CCO_k \times CACP_h$ Where 'h' is an hour within the hours of availability for the ~~month~~day. Where 'n' is the number of hours of availability during a business day 'd' multiplied by the number of business days in the month which the *settlement* is for.	Monthly	Due MP	13	13	N/A	N/A			
1315	Capacity Obligation – Availability Charge	N/A	N/A	**For *capacity dispatchable load resources* and *hourly demand response resources*:** $\sum_{h}^{n} (-1) \times Max(0, (CCO_k - DREBQ_h)) \times CACP_h \times CNPF_m$ **For *capacity generation resources*, *system-backed capacity import resources, generator-***	Daily	Due IESO	13	13	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				backed capacity import resources **and** ***capacity storage resources*****:** $\sum_h^n$ (-1) x Max(0, (CCO_k - $CAEO_h$)) x $CACP_h$ x $CNPF_m$ Where 'h' is an hour within the hours of availability for the day. Where 'n' is the number of hours of availability for the day and 'm' is the month being settled									
1316	Capacity Obligation – Administration Charge	N/A	N/A	(-1) x Availability $Payment_m$ Where 'm' is the month that is being settled. Where 'Availability Payment' is the *settlement amount* calculated for CT1314.	Monthly	Due IESO	13	13	N/A	N/A			
1317	Capacity Obligation – Dispatch Charge	N/A	N/A	(-1) x $DRSQty_h$ x $CACP_h$ x $CNPF_m$ Where 'h' is an hour in which the *hourly demand response* resource failed to follow its *dispatch* instruction and 'm' is the month being settled.	Hourly	Due IESO	13	13	N/A	N/A			
1318	Capacity Obligation – Capacity Charge	N/A	N/A	(-1) x Availability $Payment_m$ Where 'm' is the month that is being settled. Where 'Availability Payment' is the *settlement amount* as calculated for CT1314.	Monthly	Due IESO	13	13	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1319	Capacity Obligation – Buy-Out Charge	N/A	N/A	=50% x$\sum_d^n$ $CBOC_k$ x CACP x (1 - $CNPF_m$) Where 'd' is a *business day* as defined in the Market Rules Chapter 11. Where 'n' is the range of *business days* from the buy-out effective date to the end of the *commitment period*. Where 'm' is the month that corresponds to the *business day*.	Monthly	Due IESO	13	13	N/A	N/A			
1320	Capacity Obligation – Out of Market Activation Payment	N/A	Chapter 9, Section 4.7J.5	**For test activations:** HDRTAPR X $HDRDC_h$ **For *emergency operating state* activations:** Max(0, $HDRBP_h$ – Max(0,$HOEP_h$)) X $HDRDC_h$ Where *h* is an hour within the activation window	Hourly	Due MP	13	13	N/A	N/A			
1321	Capacity Obligation – Capacity Import Call Failure Charge		Ch.9. section 4.7~~j~~J.2.7	(-1) x Availability $Payment_m$ Where 'm' is the month that is being settled. Where 'Availability Payment' is the *settlement amount* as calculated for CT1314.	Monthly	Due IESO	TBD	TBD	TBD	TBD			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1322	Capacity Obligation – Capacity Deficiency Charge		Ch.9. section 4.7~~j~~J.2.8	$\sum_h^n$ (-1.5) x $OCMW_k$ x $CACP_h$ Where 'h' is an hour within the hours of availability for the month in the applicable *obligation period*. Where 'n' is the number of hours of availability during a business day multiplied by the number of business days in the month multiplied by the number of months in the applicable *obligation period*.	Monthly	Due IESO	TBD	TBD	TBD	TBD			
1323	Capacity Obligation – In-Period UCAP Adjustment Charge		Ch. 9, section 4.7J.2.9	$\sum_d$ (-1 x Max (0, ($CAAP^m_k$ x (UCAP Adjustment) + $CAAC^m_k$)) Where: a. $CAAP^m_k$ is the *capacity obligation* availability payment *settlement amount* for *capacity market participant* 'k' at *delivery point* 'm' for the relevant *trading day*, as calculated pursuant to section 4.7J.1. b. $CAAC^m_k$ is the *capacity obligation* availability charge *settlement amount* for	Monthly	Due IESO							

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				capacity market participant 'k' at *delivery point* 'm' for the relevant *trading day*, as calculated pursuant to section 4.7J.2.1 c. 'd' is determined in accordance with the following: i. for the *energy market billing period* in which the *IESO* provided notice to the *capacity market participant* that the *hourly demand response resource's* average hourly capacity delivered over the four hour testing period was less than 90% of its *cleared UCAP*, the set of *business days* within the relevant *obligation period*, commencing with the first *business day* of the relevant *obligation period* and ending one business day following the time period referred to in section 6.3.14 of chapter 9 of the *market rules*; and ii. if the capacity market participant has filed a notice of disagreement in regards to the outcomes of the									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				capacity auction capacity test in accordance with section 6.8 of chapter 9 of the *market rules*, the set of all *business days* within the relevant subsequent *energy market billing period*. 'UCAP Adjustment' is a de-rate (in %) based on the *hourly demand response* resource's delivered performance during a *capacity auction capacity test*, as determined in accordance with the applicable *market manual*. If the *capacity market participant* has filed a *notice of disagreement* in regards to the outcomes of the *capacity auction capacity test* in accordance with section 6.8, and but for filing such *notice of disagreement* the *capacity market participant* would have forfeited any of its *capacity obligation* pursuant to section 19.4.18 of chapter 7, then the UCAP Adjustment shall equal 100%. d.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1324	Capacity Obligation – Availability Charge True-up Payment	N/A	Ch. 9, sections 4.7J.6	(Min ((-1) x $\sum_m t_m$ ($\sum_d CAAC^m_k$ + UCAP Adjustment x $CAAP^m_k$ + $CAIPA^m_k$), $\sum_h$ Max (0,(RAC_k – CCO_k) x $CACP_h$ x $CNPF_m$)) Where: a. $CAAC^m_k$ is the *capacity obligation* availability charge *settlement amount* for *capacity market participant* 'k' at *delivery point* 'm' for the relevant *trading day*, as calculated pursuant to section 4.7J.2.1 of Chapter 9 of the *market rules*; b. 'UCAP Adjustment' is a de-rate (in %) based on the *hourly demand response* resource's delivered performance during a *capacity auction capacity test* performed during the relevant *obligation period*, as determined in accordance with the applicable *market manual*; c. $CAAP^m_k$ is the *capacity obligation* availability payment *settlement amount* for *capacity market participant* 'k' at *delivery point* 'm' for the relevant *energy market billing period*, as calculated pursuant to section 4.7J.1 of Chapter 9 of the *market rules*; d. $CAIPA^m_k$ is the *capacity obligation* in-period *cleared UCAP* adjustment charge	Bi-annually (at the end of each obligation period)	Due MP	TBD	TBD	TBD	TBD	-	-	-

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				settlement amount for *capacity market participant* 'k' at *delivery point* 'm' for the relevant *energy market billing period;* e. 'd' is the set of all *trading days* within the relevant *energy market billing period*; f. 'tm' is the set of all *energy market billing periods* within the relevant *obligation period;* and g. 'H' is the set of all *settlement hours* 'h' within the *availability window* of the relevant *obligation period.*									
1325	Capacity Obligation – Capacity Auction Charges True-up Payment		Ch. 9, section 4.7J.7	$-1 \times \text{Min}(0, (\sum_H TD_{C,k,h}^m + \sum_H TD_{P,k,h}^m))$ a. $TD_{C,k,h}^m$ is the total dollar value of all *settlement amounts* 'C' for *capacity market participant* 'k' at *delivery point* 'm' in *settlement hour* 'h' in the relevant *obligation period*, where: a. 'C' is the set of the *settlement amounts* applied in accordance with MR Ch. 9 ss. 4.7J.2.1, 4.7J.2.1A, 4.7J.2.3, 4.7J.2.4, 4.7J.2.5, 4.7J.2.6, 4.7J.2.7, 4.7J.2.8, and 4.7J.2.9.	Bi-annually (at the end of each obligation period)	Due MP	TBD	TBD	TBD	TBD	-	-	

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				b. $TD_{P\,k,h}^{m}$ is the total dollar value of all *settlement amounts* 'P' for *capacity market participant* 'k' at *delivery point* 'm' in *settlement hour* 'h' in the relevant *obligation period*, where: a. 'P' is the set of the *settlement amounts* applied in accordance with MR Ch. 9 ss. 4.7J.1 and 4.7J.6 c. 'H' is the set of all *settlement hours* 'h' within the *availability window* of the relevant *obligation period*.									
1330	On behalf of the former OPA for the DR2 Program - Availability Payment Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1330 ENDED ON FEBRUARY 28, 2015.**</u> $= \sum_{H} CoMW_{h} \times AR \times ILSR$ Where: 'CoMW' (Contracted MW), means the MW specified in the DR2 Schedule(s) for a given Settlement Account which the Participant agrees to Load Shift in each On-Peak Contract hour. 'AR' (Availability Rate), means the availability rate, expressed in $/MW, in the amount as specified by the OPA from time to time on the	Monthly	Due DR2-participants Either way	13	N/A	N/A	N/A			*Former OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				OPA Website pursuant to the DR2 Program Rules. 'H' is the total On-Peak contract hours in a Contract Month. 'ILSR' (Implied Load Shift Ratio), has the meaning as defined in OPA's DR2 Program Rules and is calculated as follows: ILSR = (-1) x [Implied Load Shift - ((3/4)(Load Shift Credit))] / Implied Load Shift Requirement									
1331	On behalf of the former OPA for the DR2 Program - Availability Set-Off Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1331 ENDED ON FEBRUARY 28, 2015.**</u> The charge to a DR participant is the highest of amounts A, B or C plus amount D; where A, B and C cannot occur within an on-peak period that was subject to D. **A: Availability Set-Off (Reliability)** $= \sum_H PSO_h \times AR \times CoMW_h \times ILSR$ This formula applies when the Actual MW Reliability Ratio for a given Settlement Account is less than 95% during the Summer and Winter	Monthly	Due DR2-participants Either way	13	N/A	N/A	N/A			*Former OPA* Program Rules. The DR2 program was last settled on the February 2015 settlement statements and invoice.

				seasons and less than 90% during the shoulder seasons. The Actual MW Reliability Ratio, which shall not be greater than 100%, shall be calculated as follows: - For each On-Peak Contract Hour, the Actual MW Reliability Ratio is defined as the result of the baseline MW minus the actual MW divided by the confirmed MW. 'PSO' (Performance Set-Off Factor) refers to a set of factors defined in the OPA DR2 Program Rules. 'AR' has the same meaning as in CT1330. 'CoMW' has the same meaning as in CT1330. 'H' is the set of all hours 'h' in the On-Peak Contract period where the required reliability is not met. 'ILSR' has the same meaning as in CT1330. **B: Availability Set-Off (Timely Confirmation)** = PSO x AR x $CoMW_h$ x H x ILSR This formula applies when the Participant has failed to deliver, or delivers late, a Confirmation that is required by the IESO pursuant to the DR2 Program Rules. Where: 'PSO' has the same meaning as defined above. 'AR' has the same meaning as in CT1330. 'CoMW' has the same meaning as in CT1330.									

				'H' is the set of all hours in the On-Peak Contract period. 'ILSR' has the same meaning as in CT1330. **C: Availability Set-Off (Low Confirmation)** $= \sum_H PSO \times AR \times (CoMW_h - CMW) \times ILSR$ This formula applies when the Confirmed MW is less than the product of the Required Reliability Ratio and the Contracted MW for one or more On-Peak Contract hours. Where: 'PSO' has the same meaning as defined above. 'AR' has the same meaning as in CT1330. 'CoMW' has the same meaning as in CT1330. 'CMW' (Confirmed MW) means the number of MW available to shift by the Participant. 'H' is the set of all confirmed hours 'h' when the Confirmed MW's are: - Less than 95% during the Summer and Winter seasons or - Less than 90% during the shoulder seasons of the Contracted MW. 'ILSR' has the same meaning as in CT1330. **D: Availability Set-Off (Non-Performance)** $= PSO \times AR \times CoMW_h \times H \times ILSR$ This formula applies when the Participant has taken an Extended Planned Non-Performance									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Event or Single Day Planned Non-Performance Event. Where: 'PSO' has the same meaning as defined above. 'AR' has the same meaning as in CT1330. 'CoMW' has the same meaning as in CT1330. 'H' is the set of all hours in the On-Peak Contract period. 'ILSR' has the same meaning as in CT1330.									
1332	On behalf of the former OPA for the DR2 Program - Utilization Payment Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1332 ENDED ON FEBRUARY 28, 2015.**</u> The monthly Utilization Payment to a DR2 participant is the sum of the weekly utilization payments for the contract month and calculated as follows: Weekly Utilization payment $= \sum_P \text{Max}[(\text{GHDiff} - \text{AHDiff}),0] \times \text{Min}[(\text{CoMWh} \times 1.15),(\text{Curt}_p)] \times \text{ILSR}$ Where:	Monthly	Due DR2-participants Either way	13	N/A	N/A	N/A			*Former OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'GHDiff' (Guaranteed weekly HOEP Differential), means the weekly differential rate, expressed in $/MWh, as specified by the *OPA* 'AHDiff' (Actual weekly HOEP Differential), is equal to the average actual HOEP for all hours of the useable On-Peak Contract Periods in the Week less the average actual HOEP for all hours in the Off-Peak Period for the same Week. 'CoMWh' (Contracted MWh), means the MWh specified in the DR2 Schedule(s) for a given Settlement Account which the Participant agrees to Load Shift in each On-Peak Contract Period. 'Curt' (Curtailment), means the number of MWh Curtailed by a Participant for each useable on-peak contract period, and shifted to the off-peak period as measured through the use of electricity meter(s). 'P' is the total number of On-Peak Contract Periods 'p' for a Participant in a Contract Week 'ILSR' has the same meaning as in CT1330.									
1333	On behalf of the former OPA for the DR2 Program - Utilization Set-Off Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1333 ENDED ON FEBRUARY 28, 2015.**</u> The charge to a DR participant is highest of **A**, **B** or **C** where A, B and C cannot occur within an on-	Monthly	Due DR2-participants Either way	13	N/A	N/A	N/A			*Former OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement

				peak period that was subject to an Availability Set-Off (Non-Performance) event: **A: Utilization Set-Off (Reliability)** $= \sum_P PSO \times Max[(GHDiff - AHDiff),0] \times CoMWh_p \times ILSR$ This formula applies when the Actual MWh Reliability Ratio for a given Settlement Account is less than 95% during the Summer and Winter seasons and less than 90% during the shoulder seasons. The Actual MWh Reliability Ratio, which shall not be greater than 100%, shall be calculated as follows: - For each On-Peak Contract Period, the Actual MWh Reliability Ratio is defined as the result of the baseline MWh minus the actual MWh divided by the product of the confirmed MW and the On-Peak Contract Hours. Where: 'PSO' (Performance Set-Off Factor) refers to a set of factors defined in the *OPA's* Program Rules. 'GHDiff' has the same meaning as in CT1332. 'AHDiff' has the same meaning as in CT1332. 'CoMWh' has the same meaning as in CT1332. 'P' is the total number of On-Peak Contract Periods 'p' for a Participant in a Contract Month. 'ILSR' has the same meaning as in CT1330.									statements and invoice.

				B: Utilization Set-Off (Timely Confirmation) $= \sum_P PSO \times Max[(GHDiff - AHDiff),0] \times CoMWh_p \times ILSR$ This formula applies when the Participant has failed to deliver, or delivers late, a Confirmation that is required by the IESO pursuant to the DR2 Program Rules. Where: 'PSO' has the same meaning as defined above. 'GHDiff' has the same meaning as in CT1332. 'AHDiff' has the same meaning as in CT1332. 'CoMWh' has the same meaning as in CT1332. 'P' is the total such On-Peak Contract Periods 'p' for a Participant in a Contract Month when the Participant has failed to deliver, or delivers late, a Confirmation. 'ILSR' has the same meaning as in CT1330. **C: Utilization Set-Off (Low Confirmation)** $= \sum_P PSO \times Max[(GHDiff - AHDiff),0] \times (CoMWh - CMWh_p) \times ILSR$ This formula applies when the Confirmed MWh are less than the product of the Required Reliability Ratio and the Contracted MWh for an On-Peak Contract Period. Where: 'PSO' has the same meaning as defined above.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'GHDiff' has the same meaning as in CT1332. 'AHDiff' has the same meaning as in CT1332. 'CoMWh' has the same meaning as in CT1332. 'CMWh' (Confirmed MWh) means the MWh available confirmed for shifting by the Participant. 'P' is the total such On-Peak Contract Periods 'p' for a Participant in a Contract Month. 'ILSR' has the same meaning as in CT1330.									
1334	On behalf of the former OPA for the DR2 Program – Meter Data Set-Off Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1334 ENDED ON FEBRUARY 28, 2015.**</u> = MDSF x ($TD_{k,1330}$ / NoW_k) This formula applies when the complete set of weekly meter data for a Settlement Account is not received by 15:00 EST on the first Business Day of the following week. The formula recovers a	Monthly	Due DR2-participants Either way	13	N/A	N/A	N/A			*Former OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				percentage of the Availability Payment, as pro-rated for that week in question. Where: 'MDSF' (Meter Data Set-Off Factor), is an increasing factor for every week that the full data remains undelivered. The factor is equal to: - 20% for the first week that the full data remains undelivered; - 33% for the second week that the full data remains undelivered; - 50% for the third week that the full data remains undelivered; and - 100% for the fourth week that the full data remains undelivered. $TD_{k,1330}$ is the *settlement amount* of *charge type* 1330 for month 'k' for the DR2 participant. 'NoW' (Number of Weeks) means the number of Weeks contained in the Contract month. 'k' is the Contract month.									
1335	On behalf of the former OPA for the DR2 Program - Buy-Down Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1335 ENDED ON FEBRUARY 28, 2015.**</u> Buy-Down means the act by the Participant of reducing its Contracted MW and/or the number of	Monthly	Due DR2-participants Either way	13	N/A	N/A	N/A			*Former OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement

				On-Peak Contract hours from participation in DR2. For the Buy-Down of Seasonal Contracted MW the payment is: = (SCMWR x BDR x CHE) Where: 'SCMWR' (Seasonal Contracted MW Reduction), means the MW of demand reduction in the Seasonal Contracted MWs. 'BDR' (Buy-Down Rate), means the Buy-Down Rate, expressed in $/MW. 'CHE' (on-peak Contract Hours Elapsed), means the number of On-Peak Contract Hours that have elapsed in the Schedule Term up to the date that the reduction takes effect. For the Buy-Down of the number of On-Peak Contract hours, the payment is: = (CoMW x PRCH x BDR x CHE) Where: 'CoMW' has the same meaning as in CT1330. 'PRCH' (Percent Reduction in Contract Hours), means the percent reduction in On-Peak Contract Hours requested. 'BDR' has the same meaning as defined above. 'CHE' has the same meaning as defined above.								statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1336	On behalf of the former OPA for the DR2 Program - Miscellaneous Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1336 ENDED ON FEBRUARY 28, 2015.</u> Reserved for DR2 payments or charges of a miscellaneous nature not specifically covered under Charge Types 1330 through 1335.	Monthly	Due DR2-participants Either way	13	N/A	N/A	N/A			*Former OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.
1340	On behalf of the former OPA for the DR3 Program – Availability Payment Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1340 ENDED ON APRIL 30, 2015.</u> = HA_H x $MCMW_h$ x AAR Where: 'HA' (Hours of Availability), means those hours within which a Participant shall maintain a Contracted Dispatch Period to be available for potential Curtailment of that Participant's Monthly Contracted MW. 'MCMW' (Monthly Contracted MW), means the MW of demand reduction capacity for a specific Contract Month as identified in one or more DR3 Contact Schedule(s). 'AAR' (Adjusted Availability Rate), means an amount equal to the Availability Rate, expressed in $/MWh, as increased by the Availability	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			*Former OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Premium or as decreased by the Availability Discount, as the case may be. 'H' is the total hours a Participant is available in a Contract Month.									
1341	On behalf of the former OPA for the DR3 Program – Availability Over-Delivery Settlement Amt	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1341 ENDED ON APRIL 30, 2015.**</u> $= \sum_H (CMW_h - MCMW_h) \times AODR_h$ Applicable only in response to an open standby notification. Where: 'CMW' (Confirmed MW), means the number of MW available for Curtailment by the Participant. 'CMW' is limited to the lesser of the Monthly Contracted MW plus 15 MW and 130% of the Monthly Contracted MW. 'MCMW' has the same meaning as in CT1340. 'AODR' (Availability Over-Delivery Rate), means the over-delivery rate as specified by the *OPA*. 'H' is the set of all hours 'h' in the Contract month where the 'CMW' exceeded the 'MCMW'.	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1342	On behalf of the former OPA for the DR3 Program – Availability Set-Off Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1342 ENDED ON APRIL 30, 2015.**</u> The charge to a DR participant is highest of **A**, **B** or **C:** **A: Availability Set-Off (Reliability)** $= \sum_H PSO_h \times AAR \times MCMW_h$ This formula applies when the Reliability Rate for a given Settlement Point is less than 85% during any meter interval of an Activation Hour, or where the Participant is not Fully Available for Curtailment as defined in the *OPA* DR3 Program Rules. Where: For each metered interval, the Reliability Rate at a settlement point is defined as the actual reduction	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

				divided by the requested reduction; however, the Reliability Rate cannot exceed 100%. 'PSO' (Performance Set-Off Factor) refers to a set of factors defined in the *OPA* DR3 Program Rules. 'AAR' has the same meaning as in CT1340. 'MCMW' has the same meaning as in CT1340. 'H' is the set of all activation hours 'h' for the activation period. **B: Availability Set-Off (Timely Confirmation)** = PSO x AAR x $MCMW_h$ x CDP This formula applies when the Participant, regardless of Activation, has failed to deliver, or delivers late, a Confirmation that is required by the *IESO* pursuant to the DR3 Program Rules. Where: 'CDP' (Contracted Dispatch Period) means four consecutive hours. Each Contracted Dispatch Period shall occur within the hours of Availability, and shall occur within and no more than once in accordance with the Daily Schedule. 'PSO' has the same meaning as defined above. 'AAR' has the same meaning as in CT1340. 'MCMW' has the same meaning as in CT1340. **C: Availability Set-Off (Low Confirmation)** = $\sum_H$ (PSO x AAR x ($MCMW_h$ – CMW)									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				This formula applies when the Confirmed MW's are less than 95% of the Monthly Contracted MW for a Confirmed Hour of the Contracted Dispatch Period. Where: 'PSO' has the same meaning as defined above. 'AAR' has the same meaning as in CT1340. 'MCMW' has the same meaning as in CT1340. 'CMW' has the same meaning as in CT1341. 'H' is the set of all confirmed hours 'h' when the Confirmed MW's are less than 95% of the Monthly Contracted MW for the Contracted Dispatch Period.									
1343	On behalf of the former OPA for the DR3 Program – Utilization Payment Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1343 ENDED ON APRIL 30, 2015.**</u> $= [\sum_H (Curt_h \times UR_h)] - [\sum_H (NG_h \times MIN(HOEP, UR_h))]$ Where: 'Curt' (Curtailment), means the number of MWh Curtailed by a Participant when requested by the *IESO*, as measured through the use of electricity meter(s). Curtailment shall not exceed the	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				product of the Activation MW and the activation period requested by the *IESO*, plus the lesser of an additional 15% of the Activation MW per hour of the activation period, OR 15 MWh per hour of the activation period. 'UR' (Utilization Rate), means the rates, expressed in $/MWh, as specified by the *OPA*. 'NG' (Net Generation), means the MWh of net electricity generated by any contributor that is a behind the meter generator. 'H' is the total hours 'h' a Participant is activated in a Contract Month.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1344	On behalf of the former OPA for the DR3 Program – Utilization Set-Off Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1344 ENDED ON APRIL 30, 2015.</u> The charge to a DR participant is highest of **A**, **B** or **C:** **A: Utilization Set-Off (Reliability)** $= \sum_H PSO_h \times UR \times MCMW_h$ This formula applies when the Reliability Rate for a given Settlement Point is less than 85% during any meter interval of an Activation Hour. Where: For each metered interval, the Reliability Rate at a settlement point is defined as the actual reduction	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

				divided by the requested reduction; however, the Reliability Rate cannot exceed 100%. 'PSO' (Performance Set-Off Factor) refers to a set of factors defined in the *OPA's* Program Rules. 'UR' has the same meaning as in CT1343. 'MCMW' has the same meaning as in CT1340. 'H' is the set of all activation hours 'h' for the activation period. **B: Utilization Set-Off (Timely Confirmation)** = PSO x UR x $MCMW_h$ x CDP This formula applies when the Participant, regardless of Activation, has failed to deliver, or delivers late, a Confirmation that is required by the *IESO* pursuant to the DR3 Program Rules. Where: 'CDP' (Contracted Dispatch Period) means four consecutive hours. Each Contracted Dispatch Period shall occur within the hours of Availability, and shall occur within and no more than once in accordance with the Daily Schedule. 'PSO' has the same meaning as defined above. 'UR' has the same meaning as in CT1343. 'MCMW' has the same meaning as in CT1340 **C: Utilization Set-Off (Low Confirmation)** = $\sum_H$ (PSO x UR x ($MCMW_h$ – CMW)									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				This formula applies when the Confirmed MW's are less than 95% of the Monthly Contracted MW for a Confirmed Hour of the Contracted Dispatch Period. Where: 'PSO' has the same meaning as defined above. 'UR' has the same meaning as in CT1343. 'MCMW' has the same meaning as in CT1340. 'CMW' has the same meaning as in CT1341. 'H' is the set of all confirmed hours 'h' when the Confirmed MW's are less than 95% of the Monthly Contracted MW for the Contracted Dispatch Period.									
1345	On behalf of the former OPA for the DR3 Program – Planned Non-Performance Event Set-Off Amt	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1345 ENDED ON APRIL 30, 2015.**</u> The Planned Non-Performance Availability Set-Off applies for any day for which a participant has requested a Non-Performance Event as part of either a Single Day Non-Performance Event or a part of an Extended Period Planned Non-Performance Event. The monthly set-off calculation is the sum of all:	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

				1. Non-Activation Day Non-Performance Availability Set-Off s and 2. Activation Day Non-Performance Availability Set-Offs. For 1.) The Non-Activation Day Non-Performance Availability Set-Off amount is: $= (AAR \times MCMW_h \times HANE_H)$ Where: 'AAR' has the same meaning as in CT1340. 'MCMW' has the same meaning as in CT1340. 'HANE' (Hours of Availability for a Non-Performance Event), represents the Hours of Availability for all days in the contract month for which a planned Non-Performance Event is requested and for which an Activation Notice is not received by the participant. For 2.) The Activation Day Non-Performance Availability Set-Off amount is: $= (OH \times AAR \times MCMW_h \times NEWF_H)$ Where: 'OH' (Opportunity Hours), means 64 if Option A is applicable to the Settlement Account; or 32 if Option B is applicable to the Settlement Account. 'AAR' has the same meaning as in CT1340. 'MCMW' has the same meaning as in CT1340. 'NEWF' (Non-Performance Event Weighting Factor), means 50%, if the Actual Activated MWh per interval, as averaged over all of the Intervals in the Contracted Dispatch Period for the									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Activation, is greater than or equal to the product of the Monthly Contracted MW and 1/12 of an hour; or 100% otherwise.									
1346	On behalf of the former OPA for the DR3 Program – Meter Data Set-Off Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1346 ENDED ON APRIL 30, 2015.**</u> = MDSF x (HA_H x $MCMW_h$ x AAR) This formula applies when the complete set of weekly meter data and proof of any Forced Outage(s) for a Settlement Account is not received by 15:00 EST on the first Business Day of the following week. The formula recovers a	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				percentage of the availability payment for the applicable week. Where: 'MDSF' (Meter Data Set-Off Factor), is an increasing factor for every week that the full data remains undelivered. The factor is equal to: - 20% for the first week that the full data remains undelivered; - 33% for the second week that the full data remains undelivered; - 50% for the third week that the full data remains undelivered; and - 100% for the fourth week that the full data remains undelivered. 'HA' has the same meaning as in CT1340. 'MCMW' has the same meaning as in CT1340. 'AAR' has the same meaning as in CT1340. 'H' is the total hours a Participant is available for the applicable week.									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1347	On behalf of the former OPA for the DR3 Program – Buy-Down Settlement Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1347 ENDED ON APRIL 30, 2015.</u> Buy-Down means the act by the Participant of reducing its Monthly Contracted MW and/or removing Daily Schedules from participation in DR3. For the Buy-Down of Monthly Contracted MW the payment is: = (MCMWR x BDR x HAE) Where: 'MCMWR' (Monthly Contracted MW Reduction), means the MW of demand reduction in the Monthly Contracted MWs. 'BDR' (Buy-Down Rate), means the Buy-Down Rate, expressed in $/MW. 'HAE' (Hours of Availability Elapsed), means the number of Hours of Availability that have elapsed	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				in the Schedule Term up to the date that the reduction takes effect. For the Buy-Down of the Daily Schedules the payment is: = (MCMW x RD x BDR x HAE) Where: 'MCMW' has the same meaning as in CT1340. 'RD' (Requested Days), means the number of Business Days per week from which the Hours of Availability are to be removed. 'BDR' has the same meaning as defined above. 'HAE' has the same meaning as defined above.									
1348	On behalf of the former OPA for the DR3 Program – Miscellaneous Settlement Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1348 ENDED ON APRIL 30, 2015.**</u> Reserved for DR3 payments or charges of a miscellaneous nature not specifically covered under Charge Types 1340 through 1347.	Monthly	Due DR3-participants Either way	13	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1350	Capacity Based Recovery Amount for Class A Loads	N/A	N/A	$\Sigma_{H,M,C}TD * PDF_{k,m,d}$ Where: 'd' is the ratio of the number of days in the month the Peak Demand Factor was effective compared to the total number of days in the month. 'C' is the set of the following *charge types* 'c': 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307,1308, 1309, 1310, 1311, 1312, 1313 and 1314 to 1320, 1321, 1322.	Monthly	Due IESO	13	N/A	N/A	N/A			See comments under charge type 147
1351	Capacity Based Recovery Amount for Class B Loads	N/A	N/A	For Fort Frances Power Corporation Distribution Inc.: $(\Sigma_{H,M,C}TD - TD_{1350}) \times$ $MAX((\Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - EEQ),0)$ / Class B Load For other Class B *Market Participant*s and Distributors: $(\Sigma_{H,M,C}TD - TD_{1350}) \times$ $MAX((\Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - GA\_AQEW_{g,k,h,M}^{m,t} - PGS_{h,M}),0)$ / Class B Load Where: Class B Load = $(\Sigma_K (MAX(\Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - EEQ - \Sigma_H^{M,T} GA\_AQEW_{g,k,h,M}^{m,t} - \Sigma_H PGS_{h,M},0))) - \Sigma_K U_k$ 'H' is the set of all *settlement hours* 'h' in the month.	Monthly	Due IESO	13	N/A	N/A	N/A			See comments under charge type 148

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'K' is the set of all *market participants* 'k'. 'M' is the set of all *delivery points* 'm' of *market participant* 'k'. 'C' is the set of the following *charge types* 'c': 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307 and 1308, 1309, 1310, 1311, 1312 and 1313 and 1314 to 1320, 1321, 1322.								
1380	Demand Response 2 Availability Payment Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1380 ENDED ON FEBRUARY 28, 2015.</u> $\Sigma_K TD_{k,1330}$ Where 'K' is the set of all DR2 participants 'k'. Where $TD_{k,1330}$ is the *settlement amount* of *charge type* 1330 for the month for DR2 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.
1381	Demand Response 2 Availability Set-Off Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1381 ENDED ON FEBRUARY 28, 2015.</u> $\Sigma_K TD_{k,1331}$ Where 'K' is the set of all DR2 participants 'k'. Where $TD_{k,1331}$ is the *settlement amount* of *charge type* 1331 for the month for DR2 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.
1382	Demand Response 2 Utilization	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1382 ENDED ON FEBRUARY 28, 2015.</u>	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR2 Contract. The DR2

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Payment Balancing Amount			$\Sigma_K TD_{k,1332}$ Where 'K' is the set of all DR2 participants 'k'. Where $TD_{k,1332}$ is the *settlement amount* of *charge type* 1332 for the month for DR2 participant 'k'.									program was last settled on the February 2015 settlement statements and invoice.
1383	Demand Response 2 Utilization Set-Off Balancing Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1383 ENDED ON FEBRUARY 28, 2015.**</u> $\Sigma_K TD_{k,1333}$ Where 'K' is the set of all DR2 participants 'k'. Where $TD_{k,1333}$ is the *settlement amount* of *charge type* 1333 for the month for DR2 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.
1384	Demand Response 2 Meter Data Set-Off Balancing Amount	N/A	N/A	**<u>**CALCULATIONS FOR *CHARGE TYPE* 1384 ENDED ON FEBRUARY 28, 2015.**</u> $\Sigma_K TD_{k,1334}$ Where 'K' is the set of all DR2 participants 'k'. Where $TD_{k,1334}$ is the *settlement amount* of *charge type* 1334 for the month for DR2 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1385	Demand Response 2 Buy-Down Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1385 ENDED ON FEBRUARY 28, 2015.</u> $\Sigma_K TD_{k,1335}$ Where 'K' is the set of all DR2 participants 'k'. Where $TD_{k,1335}$ is the *settlement amount* of *charge type* 1335 for the month for DR2 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			*Former OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.
1386	Demand Response 2 Miscellaneous Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1386 ENDED ON FEBRUARY 28, 2015.</u> $\Sigma_K TD_{k,1336}$ Where 'K' is the set of all DR2 participants 'k'. Where $TD_{k,1336}$ is the *settlement amount* of *charge type* 1336 for the month for DR2 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			*Former OPA* DR2 Contract. The DR2 program was last settled on the February 2015 settlement statements and invoice.
1390	Demand Response 3 Availability Payment Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1390 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1340}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1340}$ is the *settlement amount* of *charge type* 1340 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			*Former OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1391	Demand Response 3 Availability Over-Delivery Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1391 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1341}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1341}$ is the *settlement amount* of *charge type* 1341 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			*Former OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.
1392	Demand Response 3 Availability Set-Off Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1392 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1342}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1342}$ is the *settlement amount* of *charge type* 1342 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			*Former OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.
1393	Demand Response 3 Utilization Payment Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1393 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1343}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1343}$ is the *settlement amount* of *charge type* 1343 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1394	Demand Response 3 Utilization Set-Off Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1394 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1344}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1344}$ is the *settlement amount* of *charge type* 1344 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.
1395	Demand Response 3 Planned Non-Event Set-Off Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1395 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1345}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1345}$ is the *settlement amount* of *charge type* 1345 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.
1396	Demand Response 3 Meter Data Set-Off Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1396 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1346}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1346}$ is the *settlement amount* of *charge type* 1346 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			Former *OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1397	Demand Response 3 Buy-Down Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1397 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1347}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1347}$ is the *settlement amount* of *charge type* 1347 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			*Former OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.
1398	Demand Response 3 Miscellaneous Balancing Amount	N/A	N/A	**<u>CALCULATIONS FOR *CHARGE TYPE* 1398 ENDED ON APRIL 30, 2015.</u> $\Sigma_K TD_{k,1348}$ Where 'K' is the set of all DR3 participants 'k'. Where $TD_{k,1348}$ is the *settlement amount* of *charge type* 1348 for the month for DR3 participant 'k'.	Monthly	Due *OPA*	0	N/A	N/A	N/A			*Former OPA* DR3 Contract. The DR3 program was last settled on the April 2015 settlement statements and invoice.
1400	OPA Contract Adjustment Settlement Amount	N/A	N/A	Manual entry based on the values submitted by the former *OPA* via On-line settlement form "Global Adjustment Amount Information", subject to Regulation.	Monthly	Due *IESO*	13	N/A	N/A	N/A			Implementation details subject to government regulation
1401	Incremental Loss Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Hourly	Due *MP*	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service
1402	Hourly Condense System	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Hourly	Due MP	13	N/A	N/A	N/A			Reactive Support and

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Constraints Settlement Credit												Voltage Control Service
1403	Speed-no-load Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Monthly	Due MP	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service
1404	Condense Unit Start-up and OM&A Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Hourly	Due MP	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service
1405	Hourly Condense Energy Costs Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Hourly	Due MP	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service
1406	Monthly Condense Energy Costs Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Monthly	Due MP	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service
1407	Condense Transmission Tariff Reimbursement Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Monthly	Due MP	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service
1408	Condense Availability Cost Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Monthly	Due MP	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1409	Monthly Condense System Constraints Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Monthly	Due MP	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service
1410	Renewable Energy Standard Offer Program Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *market participants* via On-line settlement forms: "Licenced Distributor Claims for the Renewable Energy Standard Offer Program" and "Embedded Distributor Claims for the Renewable Energy Standard Offer Program".	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			
1411	Clean Energy Standard Offer Program Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *market participants* via future On-line settlement form "Clean Energy Standard Offer Program".	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			
1412	Feed-In Tariff Program Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *market participants* via On-line settlement form "Feed-In Tariff Program".	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			
1413	Renewable Generation Connection – Monthly Compensation Settlement Credit	N/A	N/A	Manual entry based on the values submitted by the OEB.	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			Recipients, compensation amounts and other implementation details subject to OEB regulation.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1414	Hydroelectric Contract Initiative Settlement Amount	N/A	N/A	Manual entry based on the values submitted by the *market participant*.	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			
1415	Conservation Assessment Recovery	N/A	N/A	$\Sigma_{H,M,}$ TD x ($\Sigma_{H}^{M,T}$ $AQEW_{k,h}^{m,t}$ / ($\Sigma_{K,H}^{M,T}$ $AQEW_{k,h}^{m,t}$) Where 'H' is the set of all *settlement hours* 'h' in the year 2009. Where 'K' is the set of all non-LDC load *market participants* 'k'. Where 'M' is the set of all *delivery points* 'm' of *market participant* 'k'. Where 'TD' equals the value assessed by the *OEB*.	Monthly	Due Non-LDC Load	13	N/A	N/A	N/A			Implementation details subject to government regulation.
1416	Conservation and Demand Management – Compensation Settlement Credit	N/A	N/A	Manual entry based on the values submitted by the OEB and/or as stipulated by contracts held with the IESO.	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			
1417	Daily Condense Energy Costs Settlement Credit	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Monthly	Due MP	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1418	Biomass Non-Utility Generation Contracts Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *market participants* via Online *IESO*.	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			
1419	Energy from Waste (EFW) Contracts Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *market participants* via Online *IESO*.	Monthly	Due LDCs Either way	13	N/A	N/A	N/A			
1420	Ontario Electricity Support Program Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *market participants* via Online *IESO*	Monthly	Due LDCs, USMPs and service providers	0	N/A	N/A	N/A			Implementation details subject to Ontario Regulation 314/15
1421	Capacity Agreement Settlement Credit	N/A	N/A	Calculated as per capacity contracts.	Monthly	Either way	13	13	N/A	13			
1422	Capacity Agreement Penalty Settlement Amount	N/A	N/A	Calculated as per capacity contracts.	Monthly	Either way	13	13	N/A	13			
1423	Energy Sales Agreement Settlement Credit	N/A	N/A	Calculated as per energy sales contracts.	Monthly	Either way	13	13	N/A	13			
1424	Energy Sales Agreement Penalty	N/A	N/A	Calculated as per energy sales contracts.	Monthly	Either way	13	13	N/A	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Settlement Amount												
1425	Hydroelectric Standard Offer Program Settlement Amount	**N/A**	**N/A**	Manual Entry.	Monthly	Due LDCs either way	13	N/A	N/A	N/A			
1427	Non-Hydro Renewables Funding Amount	N/A	N/A	Manual entry as per Ontario Transfer Payment Agreement.	Monthly	Due IESO	13	N/A	N/A	N/A	January 1, 2021	March 31, 2022	Ontario Regulation 735/20
1450	OPA Contract Adjustment Balancing Amount	N/A	N/A	TD_{1400}	Monthly	Due *IESO*	0	N/A	N/A	N/A			Implementation details subject to government regulation
1451	Incremental Loss Offset Settlement Amount	N/A	9.4.2.4	Calculated as per ancillary service contracts.	Hourly	Due *IESO*	13	N/A	N/A	N/A			Reactive Support and Voltage Control Service
1457	Ontario Electricity Rebate Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,9983}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,9983}$ is the *settlement amount* of *charge type* 9983 for the month for *market participant* 'k'.	Monthly	Due Ministry of Energy	0	N/A	N/A	N/A			Implementation details subject to Ontario Regulation 363/16 and 364/16

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1460	Renewable Energy Standard Offer Program Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1410}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1410}$ is the total *settlement amount* of *charge type* 1410 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			
1461	Clean Energy Standard Offer Program Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1411}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1411}$ is the total *settlement amount* of *charge type* 1411 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			
1462	Feed-In Tariff Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1412}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1412}$ is the total *settlement amount* of *charge type* 1412 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			
1463	Renewable Generation Connection – Monthly Compensation Settlement Debit	N/A	N/A	$\Sigma_K TD_{k,1413}$ x $(\Sigma_H{}^{M,T} AQEW_{k,h}{}^{m,t} + EGEI_k) / (\Sigma_{K,H}{}^{M,T} AQEW_{k,h}{}^{m,t} + \Sigma_K EGEI_k)$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'K' is the set of all *market participants* 'k'.	Monthly	Due MPs	13	N/A	N/A	N/A			Cost recovery implementation details set out in Ontario Regulation 330/09

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'M' is the set of all *delivery points* 'm' of *market participant* 'k'. Where $TD_{k,1413}$ is the total *settlement amount* of *charge type* 1413 for the month for *market participant* 'k'.									
1464	Hydroelectric Contract Initiative Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1414}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1414}$ is the total *settlement amount* of *charge type* 1414 for the month for *market participant* 'k'.	Monthly	Due IESO	0	N/A	N/A	N/A			
1465	Ontario Clean Energy Benefit (-10%) Program Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,9992}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,9992}$ is the *settlement amount* of *charge type* 9992 for the month for *market participant* 'k'.	Monthly	Due Ministry of Energy	0	N/A	N/A	N/A			Implementation details subject to Ontario Regulation 495/10.
1466	Conservation and Demand Management – Compensation Balancing Amount	N/A		$\Sigma_K TD_{k,1416}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1416}$ is the *settlement amount* of *charge type* 1416 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1467	Ontario Rebate for Electricity Consumers (8% Provincial Rebate) Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,9982}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,9982}$ is the *settlement amount* of *charge type* 9982 for the month for *market participant* 'k'.	Monthly	Due Ministry of Energy	0	N/A	N/A	N/A			Implementation details subject to Ontario Regulation 363/16
1468	Biomass Non-Utility Generation Contracts Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1418}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1418}$ is the total *settlement amount* of *charge type* 1418 for the month for *market participant* 'k'.	Monthly	Due *IESO*	0	N/A	N/A	N/A			
1469	Energy from Waste (EFW) Contracts Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1419}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1419}$ is the total *settlement amount* of *charge type* 1419 for the month for *market participant* 'k'	Monthly	Due *IESO*	0	N/A	N/A	N/A			
1470	Ontario Electricity Support Program Balancing Amount	N/A	N/A	**** *CHARGE TYPE* 1470 REPLACED BY *CHARGE TYPE* 2470 EFFECTIVE FEBRUARY 1, 2018 **** $\sum_H {}^{M,T}(AQEW_{k,h}{}^{m,t} + EGEI_k) \times TP$ Where 'H' is the set of all *settlement hours* 'h' in the month.	Monthly	Due IESO	13	N/A	N/A	N/A			Implementation details subject to Ontario Regulation 314/15. TP rate subject to OEB regulation.

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.									
1471	Capacity Agreement Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1421}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1421}$ is the total *settlement amount* of *charge type* 1421 for the month for *market participant* 'k'	Monthly	Either way	0	N/A	N/A	N/A			
1472	Capacity Agreement Penalty Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1422}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1422}$ is the total *settlement amount* of *charge type* 1422 for the month for *market participant* 'k'	Monthly	Either way	0	N/A	N/A	N/A			
1473	Energy Sales Agreement Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1423}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1423}$ is the total *settlement amount* of *charge type* 1423 for the month for *market participant* 'k'	Monthly	Either way	0	N/A	N/A	N/A			
1474	Energy Sales Agreement Penalty Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1424}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1424}$ is the total *settlement amount* of *charge type* 1424 for the month for *market participant* 'k'	Monthly	Either way	0	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
1475	Hydroelectric Standard Offer Program Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1425}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1425}$ is the total *settlement amount* of *charge type* 1425 for the month for *market participant* 'k'.	Monthly	Due IESO	0	N/A	N/A	N/A			
1477	COVID-19 Energy Assistance Program (CEAP) Settlement Amount	N/A	N/A	Manual entry based on the values submitted via the relevant on-line settlement form "COVID-19 Energy Assistance Program" for residential consumers.	Monthly	Due LDCs and USMPs	0	N/A	N/A	N/A			Implementation details subject to OEB order EB-2020-0186 and EB-2020-0163
1487	Non-Hydro Renewables Funding Balancing Amount	N/A	N/A	TD_{1427}	Monthly	Due IESO	13	N/A	N/A	N/A	January 1, 2021	March 31, 2022	Ontario Regulation 735/20
1500	Day-Ahead Production Cost Guarantee Payment – Component 1 and Component 1 Clawback	DA_PCG_COMP1	9.4.7D.4	Σ^T (Component 1 – Component1 Clawback) **Component 1:** -1 x OP($EMP_h^{m,t}$, MIN($DA\_DQSI_{k,h}^{m,t}$, $DQSI_{k,h}^{m,t}$, $AQEI_{k,h}^{m,t}$), DA_BE) + $DA\_SNLC_{k,h}^{m}/12$ **Component 1 Clawback:**	Hourly	Either Way	13	N/A	N/A	N/A			**Component 1** applies to Variants 1, 2 and 3. **Component 1 Clawback** applies to Variant 2 only. For a description of Production Cost Guarantee Variants, see

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				-1 x OP($EMP_h^{m,t}$, MIN($MLP_{k,h}^{m,t}$, $AQEI_{k,h}^{m,t}$), DA_BE) + $DA\_SNLC_{k,h}^{m}/12$ Where: T is the set of metering intervals in the settlement hour h. 'OP' is the operating profit function defined in *IESO market rules* Section 9.3.8B.2. For a combustion turbine resource associated to a pseudo unit: **Component 1:** -1 x OP($EMP_h^{m,t}$, MIN($DA\_DQSI_{k,h}^{m,t}$, $DQSI_{k,h}^{m,t}$, $AQEI_{k,h}^{m,t}$), $DIPC_{k,h}^{m,t}$) + ($DA\_SNLC_{k,h}^{m}/12$) * (1 – $PST_{k,h}^{p,t}$) **Component 1 Clawback:** -1 x OP($EMP_h^{m,t}$, MIN($MLP\_CONS_{k,h}^{m,t}$, $AQEI_{k,h}^{m,t}$), $DIPC_{k,h}^{m,t}$) + ($DA\_SNLC_{k,h}^{m}/12$) * (1 – $PST_{k,h}^{p,t}$) For a steam turbine resource associated to a pseudo unit:									Market Rules 9.4.7D.2.1

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Component 1: $-1 \times OP(EMP_h^{m,t}, MIN(DIGQ_{k,h}^{m,t}, DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t}), DIPC_{k,h}^{m,t}) + (DA\_SNLC_{k,h}^{m}/12) * PST_{k,h}^{p,t}$ **Component 1 Clawback:** $-1 \times OP(EMP_h^{m,t}, MIN(MLP\_CONS_{k,h}^{m,t}, AQEI_{k,h}^{m,t}), DIPC_{k,h}^{m,t}) + (DA\_SNLC_{k,h}^{m}/12) * PST_{k,h}^{p,t}$									
1501	Day-Ahead Production Cost Guarantee Payment – Component 2	DA_PCG_COMP2	9.4.7D.4	$\sum^{T} (XDA\_BE_{k,h}^{m,t} - MAX(0, XBE_{k,h}^{m,t}))$ Where: T is the set of metering intervals in the settlement hour h. $XDA\_BE_{k,h}^{m,t} = (-1) * [OP(EMP_h^{m,t}, min(DA\_DQSI_{k,h}^{m,t}, OPCAP_{k,h}^{m,t}), DA\_BE) - OP(EMP_h^{m,t}, min(DA\_DQSI_{k,h}^{m,t}, OPCAP_{k,h}^{m,t}, max(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t})), DA\_BE)]$ $XBE_{k,h}^{m,t} = (-1) * [OP(EMP_h^{m,t}, min(DA\_DQSI_{k,h}^{m,t}, OPCAP_{k,h}^{m,t}), BE) -$	Hourly	Either Way	13	N/A	N/A	N/A			**Component 2** applies to Variants 1, 2 and 3. For a description of Production Cost Guarantee Variants, see Market Rules 9.4.7D.2.1

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$OP(EMP_h^{m,t}, \min(DA\_DQSI_{k,h}^{m,t}, OPCAP_{k,h}^{m,t}, \max(DQSI_{k,h}^{m,t}, AQEI_{k,h}^{m,t})), BE)]$ Where: 'OP' is the operating profit function defined in *IESO market rules* Section 9.3.8B.2. $EMP_h^{m,t} = 0$. For a combustion turbine and a steam turbine resources associated to a pseudo unit: DA_BE is replaced with $DIPC_{k,h}^{m,t}$. For a steam turbine resource associated to a pseudo unit: $DA\_DQSI_{k,h}^{m,t}$ is replaced with the $DIGQ_{k,h}^{m,t}$									
1502	Day-Ahead Production Cost Guarantee Payment – Component 3 and	DA_PCG_COMP3	9.4.7D.4	$\sum^{T}$ (-1)*(Component 3 + Component 3 Clawback) Where: T is the set of metering intervals in the settlement hour h.	Hourly	Either Way	13	N/A	N/A	N/A			**Component 3** applies to Variants 1, 2 and 3. **Component 3 Clawback**

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Component 3 Clawback			For Component 3, the six scenarios of the possible orderings of the generator's DA_DQSI, DQSI and MQSI are as follows: 1. DQSI >= MQSI >= DA_DQSI 2. MQSI >= DQSI >= DA_DQSI 3. DQSI > DA_DQSI > MQSI 4. MQSI > DA_DQSI > DQSI 5. DA_DQSI >= DQSI > MQSI 6. DA_DQSI >= MQSI > DQSI **Component 3:** Component 3 is calculated when: the CMSC for energy ($TD_{k,h,105}^{m,t}$) for the same metering interval is a value other than zero; and the mathematical sign of (DQSI-MQSI) is equal to the mathematical sign of (AQEI-MQSI). Scenario 1 and 2:									applies to Variant 2 only. For a description of Production Cost Guarantee Variants, see Market Rules 9.4.7D.2.1

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				0 Scenario 3: $OP(EMP_h^{m,t}, MQSI_{k,h}^{m,t}, BE) - MAX(OP(EMP_h^{m,t}, DA\_DQSI_{k,h}^{m,t}, BE), OP(EMP_h^{m,t}, AQEI_{k,h}^{m,t}, BE))$ Scenario 4: $OP(EMP_h^{m,t}, DA\_DQSI_{k,h}^{m,t}, BE) - MAX(OP(EMP_h^{m,t}, DQSI_{k,h}^{m,t}, BE), OP(EMP_h^{m,t}, AQEI_{k,h}^{m,t}, BE))$ Scenario 5 and 6: $TD_{k,h,105}^{m,t}$ Refer to Market Rules for a description of Scenarios 1 through 6. **Component 3 Clawback:**									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Component 3 Clawback is calculated when: the event is a constrained-on event (i.e. Scenarios 3 and 5); the *minimum loading point* is greater than the real-time unconstrained schedule; and Component 3 ($PCG\_COMP3_{k,h}^{m,t}$) for the same interval is a value other than zero. $MAX(OP(EMP_h^{m,t}, MLP_{k,h}^{m,t}, BE), OP(EMP_h^{m,t}, AQEI_{k,h}^{m,t}, BE)) – OP(EMP_h^{m,t}, MQSI_{k,h}^{m,t}, BE)$ For combustion turbine resources associated to a pseudo unit: DA_BE is replaced with $DIPC_{k,h}^{m,t}$; and MLP is replaced with MLP_CONS. For steam turbine resources associated to a pseudo unit: DA_BE is replaced with $DIPC_{k,h}^{m,t}$, MLP is replaced with MLP_CONS, and									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$DA\_DQSI_{k,h}^{m,t}$ is replaced with the $DIGQ_{k,h}^{m,t}$. Where 'OP' is the operating profit function defined in *IESO market rules* Section 9.3.8B.2.									
1503	Day-Ahead Production Cost Guarantee Payment – Component 4	DA_PCG_COMP4	9.4.7D.4	$\sum^{T}$ ((-1) x [$OP(PROR_{r1,h}^{m,t}, 30R\_SQROR_{r1,k,h}^{m,t}, BR_{r1,k,h}^{m,t})$ + $OP(PROR_{r2,h}^{m,t}, 10NS\_SQROR_{r2,k,h}^{m,t}, BR_{r2,k,h}^{m,t})$ + $OP(PROR_{r3,h}^{m,t}, 10S\_SQROR_{r3,K,h}^{m,t}, BR_{r3,k,h}^{m,t})$]) Where T is the set of metering intervals in the settlement hour h. 'OP' is the operating profit function defined in *IESO market rules* Section 9.3.8B.2. r1 = 30-minute operating reserve r2 = 10-minute non-spinning operating reserve r3 = 10-minute spinning operating reserve $30R\_SQROR_{r1,k,h}^{m,t} = MAX[0,MIN(DA\_DQSI_{k,h}^{m,t} - MQSI_{k,h}^{m,t}, SQROR_{r1,k,h}^{m,t})]$	Hourly	Either Way	13	N/A	N/A	N/A			**Component 4** applies to Variants 1, 2 and 3. For a description of Production Cost Guarantee Variants, see Market Rules 9.4.7D.2.1

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$10NS\_SQROR_{r2,k,h}^{m,t} = MAX[0,MIN(DA\_DQSI_{k,h}^{m,t} - MQSI_{k,h}^{m,t} - 30R\_SQROR_{r1,k,h}^{m,t}, SQROR_{r2,k,h}^{m,t})]$ $10S\_SQROR_{r3,k,h}^{m,t} = MAX[0,MIN(DA\_DQSI_{k,h}^{m,t} - MQSI_{k,h}^{m,t} - 30R\_SQROR_{r1,k,h}^{m,t} - 10NS\_SQROR_{r2,k,h}^{m,t}, SQROR_{r3,k,h}^{m,t})]$ For combustion turbine resources and steam turbine resources associated to a pseudo unit: $DA\_DQSI_{k,h}^{m,t}$ is replaced with the $DIGQ_{k,h}^{m,t}$									
1504	Day-Ahead Production Cost Guarantee Payment – Component 5	DA_PCG_COMP5	9.4.7D.4	If first hour of the DACP start event is not HE24, then the start-up cost is calculated as follows: Scenario 1 (achieves MLP before the 7th interval): $DA\_SUC_{k,h}^{m}$ Scenario 2 (achieves MLP between the 7th and 18th interval): $DA\_SUC_{k,h}^{m} - (DA\_SUC_{k,h}^{m} \times 1/12 \times SUC\_INT)$	Hourly	Due *IESO*	13	N/A	N/A	N/A			**Component 5** applies to Variant 1 only. For a description of Production Cost Guarantee Variants, see Market Rules 9.4.7D.2.1

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where SUC_INT is the number of 5-minute intervals between and including Interval 7 and 18 the *market participant* takes to achieve MLP Scenario 3 (achieves MLP after the start of the 18th interval): 0 For a combustion turbine resource associated to a pseudo unit: Scenario 1 (achieves MLP before the 7th interval): $DA\_SUC_{k,h}^{p} * (1 - PST_{k,h}^{p,t})$ Scenario 2 (achieves MLP between the 7th and 18th interval): $DA\_SUC_{k,h}^{p} * MLP\_MF * (1 - PST_{k,h}^{p,t})$ Scenario 3 (achieves MLP after the start of the 18th interval): 0									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where MLP_MF = 1/12 * (12 - SUC_INT) For a steam turbine resource associated to a pseudo unit: Scenario 1 (achieves MLP before the 7th interval): $DA\_SUC_{k,h}^{p} * (PST_{k,h}^{p,t})$ Scenario 2 (achieves MLP between the 7th and 18th interval): $DA\_SUC_{k,h}^{p} * MLP\_MF * (PST_{k,h}^{p,t})$ Scenario 3 (achieves MLP after the start of the 18th interval): 0. If first hour of the DACP start event is HE24 and the resource has not achieved MLP before Interval 12, then the start-up cost is calculated as follows:									

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				$DA\_SUC_{k,h}^{m}$ * 50% For a combustion turbine resource associated to a pseudo unit: $DA\_SUC_{k,h}^{m}$ * (1 – $PST_{k,h}^{p,t}$) * 50% For a steam turbine resource associated to a pseudo unit: $DA\_SUC_{k,h}^{m}$ * ($PST_{k,h}^{p,t}$) * 50%									
1505	Day-Ahead Production Cost Guarantee Reversal		9.4.7D.6	For each DACP start event If $\sum_{H,C} TD_{k,h,c} < 0$ Then $\sum_{H,C} TD_{k,h,c}$ Else 0 Where:	Hourly	Due MP	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				'C' is the set of the following charge types 'c' as follows: **1500, 1501, 1502, 1503, 1504** 'H' is the set of all *settlement hours* 'h' in the DACP start event.									
1510	Day-Ahead Generator Withdrawal Charge	DA_GWC	9.3.8F.2	The Day-Ahead Generator Withdrawal Charge is calculated as follows: If notification of the withdrawal is received 4 or more hours prior to first withdrawal hour: $MIN(0,\sum_{i=1}^{n}(-1) * OP([MIN(PD\_EMP_h^{m,t}, EMP_h^{m,t}), MLP_{k,h}^{m,t}, DA\_BE_{k,h}^{m,t}))$ Where: n is the set of all *metering intervals* 't' in *settlement hour* 'h' for the total number of hours with a committed day-ahead schedule for the DACP start event that are withdrawn If notification of the withdrawal is received less than 4 hours prior to first withdrawal hour: $MIN(0,\sum_{i=1}^{n}(-1) * OP(EMP_h^{m,t}, MLP_{k,h}^{m,t}, DA\_BE_{k,h}^{m,t})$	Daily	Due *IESO*	13	N/A	N/A	N/A			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where: n is the set of all *metering intervals* 't' in *settlement hour* 'h' for the total number of hours with a committed day-ahead schedule for the DACP start event that are withdrawn For resources associated to a pseudo unit, the DA_BE is replaced with $DIPC_{k,h}^{m,t}$; and the MLP is replaced with MLP_CONS.									
1550	Day-Ahead Production Cost Guarantee Recovery Debit		9.4.8.1.12	$\sum_{H,c}{}^{M,T} TD_{k,h,c} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{K}{}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where: 'C' is the set of the following charge types 'c' as follows: **1500, 1501, 1502, 1503, 1504, 1505** 'K' is the set of all market participants 'k'. 'M' is the set of all delivery points 'm' and intertie metering points 'i'. 'H' is the set of all *settlement hours* 'h' in the day. 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'.	Daily	Due *IESO*	13	N/A	0	13			
1560	Day-Ahead Generator Withdrawal Rebate		9.4.8.2.14	$\sum_{H,c}{}^{M,T} TD_{k,h,c} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{K}{}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$	Daily	Due MP	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where: 'c' is *charge type* 1510. 'K' is the set of all market participants 'k'. 'M' is the set of all delivery points 'm' and intertie metering points 'i'. 'H' is the set of all *settlement hours* 'h' in the day. 'T' is the set of 12 *metering intervals* 't' during *settlement hour* 'h'.									
1600	Forecasting Service Settlement Amount	N/A	9.1.1.2.16, 9.4.7G , 9.4.7G.1, 9.4.8.1.16, 9.6.3.17, 9.6.11.5	Manual entry based on the values submitted by the forecasting entity.	Monthly	Due MP	13	N/A	N/A	N/A			
1650	Forecasting Service Balancing Amount	N/A	9.1.1.2.16, 9.4.7G , 9.4.7G.1, 9.4.8.1.16, 9.6.3.17, 9.6.11.5	$= \sum_{H,C}^{M,T} TD_{h,c} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{k,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'C' is charge type 'c' **1600.** Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			
1750	Dispute Resolution Balancing Amount (Market)	N/A	3.2.7 and 9.6.8.5 (if applicable)	∑H,cM,T TDh,(700) x [(AQEWk,hm,t + SQEWk,hi,t) / ∑k,HM,T (AQEWk,hm,t + SQEWk,hi,t)], where applicable	Monthly	Due MP	13	N/A	0	13			

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'H' is the set of all settlement hours 'h' in the month. Where 'T' is the set of all metering intervals 't' in the set of all settlement hours 'H'.									
1753	MOE - Rural and Remote Settlement Debit	N/A	N/A	Manual entry based on: (1) the values submitted via on-line settlement form "Rural or Remote Rate Protection (RRRP) – Fixed Rate Credit";	Monthly	Due Ministry of Energy	N/A	N/A	N/A	N/A			Implementation details subject to government and OEB regulations.
2148	Class B Global Adjustment Prior Period Correction Settlement Amount	N/A	N/A	Manual entry based on post-final changes to input data for charge type 148	Monthly	Due MP	13	N/A	N/A	N/A			
2470	MOE - Ontario Electricity Support Program Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1420}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,1420}$ is the *settlement amount* of *charge type* 1420 for the month for *market participant* 'k'.	Monthly	Due Ministry of Energy	0	N/A	N/A	N/A			Implementation details subject to government and OEB regulations.
6000	Ontario Fair Hydro Plan - Regulatory Asset	N/A	N/A	Manual Entry	Monthly	Due Financing Entity	N/A	N/A	N/A	N/A			Implementation details subject to

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
	Transfer Amount												government regulations
6050	Ontario Fair Hydro Plan - Regulatory Asset Transfer Balancing Amount	N/A	N/A	Manual Entry	Monthly	Due IESO	N/A	N/A	N/A	N/A			Implementation details subject to government regulations
6147	Class A Global Adjustment Deferral Recovery Amount	N/A	N/A	MDCAA × ($PDF_{k,m,d}$ / $\sum_K PDF_{k,m,d}$) Where 'K' is the set of all *market participants* 'k'.	Monthly	Due IESO	13	N/A	N/A	N/A	January 1. 2021	December 31, 2021	Ontario Regulation 429/04
6148	Class B Global Adjustment Deferral Recovery Amount	N/A	N/A	$CBRR \times CBMP_k$ Where: $CBRR = MDCBA / (Class\ B\ Load - \sum_K RPPVA_k)$ Class B Load = $(\Sigma_{K,H}^{M,T} AQEW_{k,h}^{m,t} + \Sigma_K EGEI_k - \Sigma_K EEQ - \Sigma_K GA\_AQEW_{g,k,h,M}^{m,t} - \Sigma_K PGS_{h,M} - \Sigma_K U_k)$ For Fort Frances Power Corporation Distribution Inc.: $CBMP_k = \Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - EEQ - RPPVA_k$	Monthly	Due IESO	13	N/A	N/A	N/A	January 1. 2021	December 31, 2021	Ontario Regulation 429/04

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				For other applicable Class B market participants or licensed distributors that are also market participants : $CBMP_k = \Sigma_H^{M,T} AQEW_{k,h}^{m,t} + EGEI_k - GA\_AQEW_{g,k,h,M}^{m,t} - PGS_{h,M} - RPPVA_k$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'K' is the set of all *market participants* 'k'. Where 'M' is the set of all *delivery points* 'm' of *market participant* 'k'.									
9147	Class A Global Adjustment Smoothing Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,6147}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,6147}$ is the *settlement amount* of *charge type* 6147 for the month for *market participant* 'k'.	Monthly	Due IESO	0	N/A	N/A	N/A	April 1, 2020	December 31, 2021	Ontario Regulation 429/04
9148	Class B Global Adjustment Smoothing Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,6148}$ Where 'K' is the set of all *market participants* 'k'. Where $TD_{k,6148}$ is the *settlement amount* of *charge type* 6148 for the current month for *market participant* 'k'.	Monthly	Due IESO	0	N/A	N/A	N/A	April 1, 2020	December 31, 2021	Ontario Regulation 429/04
9920	Adjustment Account Credit	AAC	9.6.18.6	$AAD \times \sum_H^{M,T} [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{K,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$ Where 'H' is the set of all s*ettlement hours* 'h' in the *billing periods* immediately preceding the current *billing period*, as determined by *IESO Board.*	Monthly (when applicable)	Due MP	13	N/A	0	13			The *billing period* is defined in Market Manual 5: Settlements Part 5.5: Physical

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'. Where 'M' is the set of all *delivery points* 'm' and *intertie metering points* 'i' Where 'K' is the set of all *market participants* 'k'.									Markets Settlement Statements, section 1.6.30
9980	Smart Metering Charge	N/A	N/A	Manual entry based on the values submitted by the *Smart Metering Entity*.	Monthly	Due *IESO*	13	N/A	N/A	N/A			Subject to Ontario Regulation 453/06 and the applicable OEB rate order.
9982	Ontario Rebate for Electricity Consumers (8% Provincial Rebate) Settlement Amount	N/A	N/A	Manual entry based on: (1) the values submitted via on-line settlement form "Ontario Rebate for Electricity Consumers (OREC) – LDC and USMP"; and (2) 8 per cent of the base invoice amount for *market participant consumers* who have an eligible account with the *IESO*	Monthly	Due LDCs, Unit Sub-Meter Providers and eligible MPs	0	N/A	N/A	N/A			Implementation details subject to Ontario Regulation 363/16
9983	Ontario Electricity Rebate Settlement Amount	N/A	N/A	Manual entry based on: (1) the values submitted via on-line settlement forms "Ontario Electricity Rebate (OER) – LDC & USMP"; and	Monthly	Due LDCs, Unit Sub-Meter Providers and eligible MPs	0	N/A	N/A	N/A			Implementation details subject to Ontario Regulation 363/16 and 364/16

Charge Type Number	Charge Type Name	Settlement Amount Acronym	Market Rules Reference	Equation	Settlement Resolution	Cashflow (See Note at Beginning of this Section)	HST Tax Treatment within Ontario (%)	HST Tax Treatment for U.S., Manitoba, and Quebec Generation (%)	HST Tax Treatment for U.S. Load (%)	HST Tax Treatment for Manitoba and Quebec Load (%)	Effective Start Trading Day	Effective End Trading Day	Comments
				(2) 33.2 per cent of the base invoice amount for *market participant consumers* who have an eligible account with the *IESO*									
9984	COVID-19 Energy Assistance Program (CEAP) Balancing Amount	N/A	N/A	$\Sigma_K TD_{k,1477}$ Where 'K' is the set of all market participants 'k' Where TDk,1477 is the settlement amount of charge type 1477 for the month for market participant 'k'.	Monthly	Due Ministry of Energy	0	N/A	N/A	N/A			Implementation details subject to OEB order EB-2020-0186 and EB-2020-0163
9990	IESO Administration Charge	N/A	9.4.5.1	$\sum_H {}^{M,T}(AQEW_{k,h}{}^{m,t} + SQEW_{k,h}{}^{i,t} + EGEI_k) \times TP$ Where 'H' is the set of all *settlement hours* 'h' in the month. Where 'T' is the set of all *metering intervals* 't' in the set of all *settlement hours* 'H'.	Monthly	Due *IESO*	13	N/A	0	13			TP rate subject to OEB regulation.
9992	Ontario Clean Energy Benefit (-10%) Program Settlement Amount	N/A	N/A	Manual entry based on the values submitted by *market participants* via on-line settlement forms "Ontario Clean Energy Benefit (-10%) – LDC" and "Ontario Clean Energy Benefit (-10%) – Unit Sub-Meter Provider".	Monthly	Due LDCs and Unit Sub-Meter Providers Either way	0	N/A	N/A	N/A			Implementation details subject to Ontario Regulation 495/10.
9996	Recovery of Costs	N/A	Ch. 2, Appendix 3.4	Manual entry as per Chapter 2, Appendix 3.4	Monthly	Due *IESO*	13	N/A	N/A	N/A			

2.3 Rounding Conventions – by Settlement Variable

2.3.1 Key to the Table of Rounding Conventions for Individual Settlement Variables

Column Name	Description
Variable referenced in Section 2.1	This column provides the name of the variable listed in Section 2.1.
Data Description	The short name of the variable in question.
Number of decimal places (values published by upstream systems)	If this variable is available to *market participants* via another system besides *settlements*, this number of significant digits to the right of the decimal place in the published value. **NOTE:** "published" does not necessarily mean a public report or a report available to all *market participants*. E.g. *metering data* from the *metering database*.
Number of significant digits to the right of the decimal (values received by CRS)	This column discloses the accuracy of a settlement variable received by the *IESO* settlements system via an upstream system OR manually entered as the case may be.
Number of significant digits to the right of the decimal (externally passed from CRS in settlement statements or data files)	This column discloses the accuracy of a settlement variable appearing on a *settlement statement*. **NOTE: This should NOT be confused with the number of decimal places allowable in some columns on the *settlement statements* and data files as set out in, "Format Specification for Settlement Statements and Data Files."**
Comments	Any comments as to the availability of such variables. In some cases, variables are not made available to *market participants* via upstream systems and are noted as such. In other instances variables are not published in a report but are communicated in participant-specific messages (e.g. *bid*/*offer* confirmation).

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
AAD	Adjustment Account Disbursement	N/A	2	3	• Not published in upstream IESO systems
$AQEI_{k,h}^{m,t}$	Allocated Quantity of Energy Injected	2	3	3	• RMS presentation is in units of KW to TWO decimal places. • Unit change to MW to 3 decimal places occurs prior to transfer to CRS.
$AQEW_{k,h}^{m,t}$	Allocated Quantity of Energy Withdrawn	2	3	3	• RMS presentation is in units of KW to TWO decimal places. • Unit change to MW to 3 decimal places occurs prior to transfer to CRS.
$AQOR_{r,k,h}^{m,t}$	Allocated Quantity of Operating Reserve	1	1	1	• See SQROR.
BE	Energy Offers	N/A	1	1	• Not published via upstream *IESO* systems. • Confirmations passed to *market participants* as *bids*/*offers* (“*dispatch data*”) are received.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
BL	Energy Bids	N/A	1	1	• Not published via upstream *IESO* systems. • Confirmations passed to *market participants* as *bids*/*offers* ("*dispatch data*") are received.
BR_r	Operating Reserve Offers	N/A	1	1	• Not published via upstream *IESO* systems. • Confirmations passed to *market participants* as *bids*/*offers* ("*dispatch data*") are received.
$BCQ_{s,k,h}^{m,t}$	Physical Bilateral Contract Quantity of Energy bought	N/A	1 or 3	1 or 3	• Not published via upstream *IESO* systems. • *Physical Bilateral Contract Data* is provided to the *IESO* by the *selling market participant.* • Accuracy driven by the submission at the MIM interface and the method used (i.e. absolute quantities vs. 100% of *PBC).*

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$BCQ_{k,b,h}^{m,t}$	Physical Bilateral Contract Quantity of Energy sold	N/A	1 or 3	1 or 3	• Not published via upstream *IESO* systems. • *Physical Bilateral Contract Data* is provided to the *IESO* by the *selling market participant.* • Accuracy driven by the submission at the MIM interface and the method used (i.e. absolute quantities vs. 100% of *PBC*).
CACP	Capacity Auction Clearing Price	2	2	2	• Published in post-auction report.
$CACP_h$	Hourly Capacity Auction Clearing Price	N/A	2	2	• Not published via upstream *IESO* systems.
$CAEO_k$	Capacity Auction Energy Offer	N/A	1	1	• Not published via upstream IESO system
$CBOC_k$	Buy-Out Capacity	N/A	3	3	• Not published via upstream *IESO* systems.
CCO_k	Capacity Obligation (MW)	1	3	3	• Published in private post-auction report.
CGC	Combined Guaranteed Costs	N/A	2	2	• Not published via upstream *IESO* systems.
$CNPF_m$	Capacity Auction Non-Performance Factor	N/A	1	1	• Not published via upstream *IESO* systems.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$DA\_BE_{k,h}^{i,t}$	*Energy Offer* submitted into the *schedule of record*	N/A	N/A	N/A	• Not published via upstream *IESO* systems. • Confirmations passed to *market participants* as *bids*/*offers* ("*dispatch data*") are received.
$DA\_BE_{k,h}^{m,t}$	*Energy Offer* submitted into the *schedule of record at a delivery point*	N/A	N/A	N/A	• Not published via upstream *IESO* systems. • Confirmations passed to *market participants* as *bids*/*offers* ("*dispatch data*") are received.
$DA\_BL_{k,h}^{i,t}$	*Energy* Bids submitted into the *schedule of record*	N/A	N/A	N/A	• Not published via upstream *IESO* systems. • Confirmations passed to *market participants* as *bids*/*offers* ("*dispatch data*") are received.
$DA\_DQSI_{k,h}^{i,t}$	*Schedule of record* dispatch quantity scheduled for injection at an *intertie metering point*	1	1	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.
$DA\_DQSI_{k,h}^{m,t}$	*Schedule of record* dispatch quantity scheduled for injection at a *delivery point*	1	1	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$DA\_DQSW_{k,h}^{i,t}$	*Schedule of record* dispatch quantity scheduled for withdrawal at an *intertie metering point*	1	1	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.
$DA\_ELMP_{h}^{m,t}$	*Pre-dispatch* constrained schedule price for an *intertie metering point* in the export zone	2	2	2	• MIM Publication.
$DA\_ILMP_{h}^{m,t}$	*Pre-dispatch* constrained schedule price for an *intertie metering point* in the import zone	2	2	2	• MIM Publication.
$DA\_SNLC_{k,h}^{m}$	Speed-no-load costs submitted into the *schedule of record*	1	2	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.
$DA\_SNLC_{k,h}^{p}$	Speed-no-load costs for pseudo units submitted into the *schedule of record*	1	2	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$DA\_SUC_{k,h}^{m}$	Start-up costs submitted into the *schedule of record*	1	2	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.
$DA\_SUC_{k,h}^{p}$	Start-up costs for pseudo units submitted into the *schedule of record*	1	2	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.
$DIPC_{k,h}^{m,t}$	Derived Interval Price Curve	1	2	1	• Derived price curve and therefore not published on *settlement statements.*
$DIGQ_{k,h}^{m,t}$	Derived Interval Guaranteed Quantity	1	1	1	• Derived schedule quantity and therefore not published on *settlement statements.*
$DQSI_{k,h}^{m,t}$	Dispatch Quantity of Energy Scheduled for Injection	1	1	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.
$DQSR_{r,k,h}^{m,t}$	Dispatch Quantity Schedule of Operating Reserve	1	1	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$DQSW_{k,h}^{m,t}$	Dispatch Quantity of Energy Scheduled for Withdrawal	1	1	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.
DRACP	Demand Response Auction Clearing Price	2	2	2	• Published in post-auction report.
$DRACP_h$	Hourly Demand Response Auction Clearing Price	N/A	2	2	• Not published via upstream *IESO* systems.
$DRBOC_k$	Demand Response Buy-Out Capacity	N/A	3	3	• Not published via upstream *IESO* systems.
$DRCO_k$	Demand Response Capacity Obligation (MW)	1	3	3	• Published in private post-auction report.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$DREBQ_k$	Demand Response Energy Bid Quantity	N/A	1	1	• Not published via upstream *IESO* systems.
DRNPF	Demand Response Non-Performance Factor	N/A	1	1	• Not published via upstream *IESO* systems.
DRSQty	Demand Response Scheduled Quantity	N/A	1	1	• Not published via upstream *IESO* systems.
EEQ	Excluded Energy Quantity	N/A	3	3	• Not published via upstream *IESO* systems.
$EGEI_k$	Embedded Generator Energy Injection	N/A	3	3	• Not published via upstream *IESO* systems.
$EIM_{k,h}$	Operating Profit Function for the IMPORT of Energy under the Intertie Offer/Bid Guarantee Settlement Credit	N/A See Section 2.4	N/A See Section 2.4	N/A See Section 2.4	• This acronym is associated with the energy import component of the Intertie Offer/Bid Guarantee Settlement Credit.
$EMP_h^{i,t}$	5-minute Energy Market Price at the Interties	2	2	2	• MIM Publication.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$EMP_h^{m,t}$	5-minute Energy Market Price within Ontario	2	2	2	• MIM Publication.
$EMP_h^{REF,t}$	5-minute Energy Market Reference Price	2	2	2	• MIM Publication.
ETS	Export Transmission Service Tariff Rate	N/A	2	2	• Not published via upstream *IESO* systems. • Subject to the OEB "Ontario Transmission Rate Order".
FP_h^m	Fixed Energy Rate	N/A	2	2	• Not published via upstream *IESO* systems.
FPC_h^m	Rate for a designated group of *charge types* (see description of *charge type* 141))	N/A	2	2	• Not published via upstream *IESO* systems.
GRP	Generator Regulated Price	N/A	2	2	• Not published via upstream *IESO* systems.
$HDRBP_h$	HDR bid price	N/A	1	1	• Not published via upstream *IESO* systems.
HDRDC	Measured hourly demand response capacity	N/A	3	3	• Not published via upstream *IESO* systems.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
HDRTAPR	Out of market test activation payment rate	N/A	N/A	N/A	• Not published via upstream IESO systems • Fixed rate as defined in this document
$HOEP_h$	Hourly Ontario Energy Price	2	2	2	• MIM Publication.
$LCD_{k,h}^{m}$	Line Connection Demand (KW)	2 and 3	3	3	• RMS presentation is in units of KW to 2 decimal places. • Unit changes to MW to 3 decimal places prior to transfer to the Transmission Tariff Demand Calculator (TTDC). • Unit changes to KW to 3 decimal places prior to transfer to CRS.
MC_h^m	Minimum Consumption	1	1	1	
MI	Ordered matrix of and corresponding IOG *settlement amounts*	1 and 2	2	2	• Derived set of variables and therefore not published on *settlement statements.*
$MLP_{k,h}^{m,t}$	Minimum Loading Point	1	1	1	• Not published via upstream *IESO* systems.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$MLP\_CONS_{k,h}^{m,t}$	Minimum Loading Point for a steam turbine resource or a combustion turbine resource associated to a pseudo unit	1	1	1	• Not published via upstream *IESO* systems.
$MQSI_{k,h}^{m,t}$	Market Quantity Scheduled for Injection	1	1	1	
$MQSI\{adj\}_{k,h}^{m,t}$	Adjusted Market Quantity Scheduled for Injection	1	1	1	• Derived variable and therefore not published on *settlement statements.*
$MQSW_{k,h}^{m,t}$	Market Quantity Scheduled for Withdrawal	1	1	1	
$NSD_{k,h}^{m}$	Network Service Demand (KW)	2 and 3	3	3	• RMS presentation is in units of KW to 2 decimal places. • Unit changes to MW to 3 decimal places prior to transfer to the Transmission Tariff Demand Calculator (TTDC). • Unit changes to KW to 3 decimal places prior to transfer to CRS.
OP	Operating Profit Function	N/A See Section 2.4	N/A See Section 2.4	N/A See Section 2.4	• This acronym is associated with the operating profit equation used within the CMSC equation.
$OPCAP_{k,h}^{m,t}$	Operating Capacity	1	1	1	• Not published via upstream *IESO* systems.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$PB\_IM_h^t$	Price bias adjustment factor for import transactions	2	2	2	• Published on by the *IESO* on a periodic basis.
$PB\_EX_h^t$	Price bias adjustment factor for export transactions	2	2	2	• Published on by the *IESO* on a periodic basis.
$PD\_BE_{k,h}^{i,t}$	*Energy Offer* submitted into the *Pre-dispatch*	N/A	1	1	• Not published via upstream *IESO* systems. • Confirmations passed to *market participants* as *bids*/*offers* ("*dispatch data*") are received.
$PD\_BL_{k,h}^{i,t}$	*Energy bids* submitted into the *Pre-dispatch*	N/A	1	1	• Not published via upstream *IESO* systems. • Confirmations passed to *market participants* as *bids*/*offers* ("*dispatch data*") are received.
$PD\_DQSI_{k,h}^{i,t}$	*Pre-dispatch* quantity scheduled for injection at an *intertie metering point*	1	1	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.
$PD\_DQSW_{k,h}^{i,t}$	*Pre-dispatch* quantity scheduled for withdrawal at an *intertie metering point*	1	1	1	• Not published via upstream *IESO* systems. • Passed to *market participants* via dispatch messaging.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$PD\_ELMP_h^{m,t}$	*Pre-dispatch* constrained schedule price for an *intertie metering point* in the export zone	2	2	2	• MIM Publication.
$PD\_EMP_h^{m,t}$	Pre-dispatch energy market price for Ontario	2	2	2	• MIM Publication.
$PD\_ILMP_h^{m,t}$	*Pre-dispatch* constrained schedule price for an *intertie metering point* in the import zone	2	2	2	• MIM Publication.
$PROR_{r,h}^{m,t}$	5-minute Operating Reserve Price	2	2	5	• MIM Publication.
$PST_{k,h}^{p,t}$	Steam Turbine Portion from Daily Generator Data	1	1	1	• Not published via upstream *IESO* systems.
PTS-L	Provincial Transmission Service Line Connection Service Rate ($/KW)	N/A	2	2	• Not published via upstream *IESO* systems. • Subject to the OEB "Ontario Transmission Rate Order".
PTS-N	Provincial Transmission Service Network Service Rate ($/KW)	N/A	2	2	• Not published via upstream *IESO* systems. • Subject to the OEB "Ontario Transmission Rate Order".

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
PTS-T	Provincial Transmission Service Transformation Connection Service Rate ($/KW)	N/A	2	2	• Not published via upstream *IESO* systems. • Subject to the OEB "Ontario Transmission Rate Order".
$QTR_{k,h}^{i,j}$	Quantity of Transmission Rights Owned	PENDING	0	0	• TR's are in denominations to the nearest MW. • Upstream publication accuracy currently being resolved.
$SQEI_{k,h}^{i,t}$	Scheduled Quantity of Energy Injected at an *intertie metering point*	1	1	1	
$SQEW_{k,h}^{i,t}$	Scheduled Quantity of Energy Withdrawn at an *intertie metering point*	1	1	1	
$SQROR_{r,k,h}^{m,t}$	Scheduled Quantity of class r *Operating Reserve*	1	1	1	

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
$TCD_{k,h}^{m}$	Transformation Connection Demand (KW)	2 and 3	3	3	• RMS presentation is in units of KW to 2 decimal places. • Unit changes to MW to 3 decimal places prior to transfer to the Transmission Tariff Demand Calculator (TTDC). • Unit changes to KW to 3 decimal places prior to transfer to CRS.
$TD_{k,h,c}$	Total Market Settlement Amount	N/A	N/A	N/A	• N/A- notational description of an aggregated financial amount (reported to the nearest cent when applicable).
TP_c	Tariff price	N/A	N/A	N/A	• N/A – notational description of tariff rate (reported to the nearest cent when applicable).
TRMP	TR Market Clearing Price	2	2	2	
TRCAD	TR Clearing Account Disbursements	N/A	2	2	• Not published via upstream *IESO* systems.
$TRCAD_E$	TR Clearing Account Disbursements for Exporters	N/A	2	2	• Not published via upstream *IESO* systems.
$TRCAD_L$	TR Clearing Account Disbursements for Loads	N/A	2	2	• Not published via upstream *IESO* systems.

Variable referenced in Section 2.1	Data Description	Number of DECIMAL PLACES (values published by upstream systems)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (values received by CRS)	MAXIMUM Number of SIGNIFICANT DIGITS to the right of the decimal (externally passed from CRS in settlement statements or data files)	Comments
TRCAR	TR Shortfall Recovery Amount	N/A	2	2	• Not published via upstream *IESO* systems.

2.4 Rounding Conventions – by Charge Type

2.4.1 General Notes

- **The table below references significant digits to the right of the decimal place. This should NOT be confused with the number of decimal places allowable in some columns on the *settlement statements* and data files as set out in, "Format Specification for Settlement Statements and Data Files."**

- All **settlement amounts** reported by the *IESO* settlements system are rounded to the nearest cent (i.e. to two decimal places) on *settlement statements,* although some settlement calculations may only yield 1 significant digit to the right of the decimal place. In these instances, the financial amount is NOT further rounded to the nearest ten cents. **The table below does not include the final rounding step to the nearest cent, as this is done for ALL *settlement amounts*. Rather, it describes any intermediate calculations (particularly, those involving division) that involve rounding prior to the final calculation of the *settlement amount*.**

2.4.2 Key to the Table of Rounding Conventions

Column Name	Description
Charge Type Number	This table contains an entry for each *charge type* listed in Section 2.2 of this document ("IESO Charge Types and Equations").
Charge Type Name	The name of each of the *charge types*.
INPUT VARIABLES **Least number of significant digits to the right of the decimal**	In terms of assessing the accuracy of the final *settlement amount*, this column is derived from the settlement variable received by the *settlement* system with the LEAST number of significant digits to the right of the decimal place.
INPUT VARIABLES **Maximum number of significant digits to the right of the decimal**	In terms of assessing the accuracy of the final *settlement amount*, this column is derived from the settlement variable received by the *settlement* system with the MAXIMUM number of significant digits to the right of the decimal place.

Column Name	Description
INTERMEDIATE Rounding done by Settlements	This column indicates whether or not any **INTERMEDIATE** rounding is done by the *IESO settlement process*. **This does NOT include the final rounding of *settlement amounts* to 2 decimal places as the last step in the calculation of ALL *charge types*.**
INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	This column ONLY describes an intermediate calculation of the *settlement amount* in which rounding occurs PRIOR to the final rounding of the *settlement amount* to the nearest cent.
Disposition of INTERMEDIATE CALCULATION 1	This column describes the disposition of the rounded value resulting from Intermediate Calculation 1.
INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	This column ONLY describes an intermediate calculation of the *settlement amount* in which rounding occurs PRIOR to the final rounding of the *settlement amount* to the nearest cent.
Disposition of INTERMEDIATE CALCULATION 2	This column describes the disposition of the rounded value resulting from Intermediate Calculation 2.

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
52	Transmission Rights Auction Settlement Debit	0	2	No				
100	Net Energy Market Settlement for Generators and Dispatchable Load	1	3	Yes	Numerator: BCQ Denominator: 12 Resulting Decimals: 3	BCQ quantities Multiplied by EMP when applicable.		

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
101	Net Energy Market Settlement for Non-dispatchable Load	1	3	Yes	Numerator: BCQ Denominator: 12 Resulting Decimals: 3	BCQ quantities Multiplied by EMP when applicable.		
102	TR Clearing Account Credit	1	3	No				
103	Transmission Charge Reduction Fund	2	3	Yes	Numerator: Difference between SQEW – SQEI by *intertie zone* Denominator: 12 Resulting Decimals: 3	Resulting value included with the TCRF calculation at that particular zone for the *metering interval* in question.		
104	Transmission Rights Settlement Credit	0	2	Yes	Numerator: Summation of the zonal price difference $(EMP_h^{j,t} – EMP_h^{i,t})$ Denominator: 12 Resulting Decimals: 5	Multiplied by QTR for the *settlement hour.*		
105	Congestion Management Settlement Credit for Energy	1	3	Yes	AQEI multiplied by 12 or AQEW multiplied by 12 Resulting Decimals: 3	Used in the calculation of OP(EMP, AQEI, BE) or OP(EMP, AQEW, BL) as the case may be.	Numerators OP(EMP, MQSI, BE) OP(EMP, DQSI, BE) OP(EMP, AQEI, BE) OP(EMP, MQSW, BL) OP(EMP, DQSW, BL) OP(EMP, AQEW, BL) Denominator: 12 Resulting Decimals: 2	Profits compared as applicable.

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
106	Congestion Management Settlement Credit for 10 Minute Spinning Reserve	1	2	Yes	Numerators OP(PROR, MQSR, BR) OP(PROR, DQSR, BR) OP(PROR, AQOR, BR) Denominator: 12 Resulting Decimals: 2	Profits compared as applicable.		
107	Congestion Management Settlement Credit for 10 Minute Non-spinning Reserve	1	2	Yes	Numerators OP(PROR, MQSR, BR) OP(PROR, DQSR, BR) OP(PROR, AQOR, BR) Denominator: 12 Resulting Decimals: 2	Profits compared as applicable.		
108	Congestion Management Settlement Credit for 30 Minute Operating Reserve	1	2	Yes	Numerators OP(PROR, MQSR, BR) OP(PROR, DQSR, BR) OP(PROR, AQOR, BR) Denominator: 12 Resulting Decimals: 2	Profits compared as applicable.		
111	Northern Pulp and Paper Mill Electricity Transition Program Settlement Amount	1	3	No				
112	Ontario Power Generation Rebate	2	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
113	Additional Compensation for Administrative Pricing Credit	1	3	Yes	For the calculation outlined in 7.8.4A.16 only: for dispatchable *facilities* located within Ontario only AQEI multiplied by 12 or AQEW multiplied by 12 Resulting Decimals: 3	(For the calculation outlined in 7.8.4A.16 only) For dispatchable *facilities* located within Ontario only: Used in the calculation of OP(EMP, AQEI, BE) or OP(EMP, AQEW, BL) as the case may be.	For the calculation outlined in 7.8.4A.16 only: Numerators: for dispatchable *facilities* located within Ontario: OP(EMP, AQEI, BE) OP(EMP, AQEW, BL) for Imports or Exports: OP(EMP, DQSI, BE) OP(EMP, DQSW, BL) Denominator: 12 Resulting Decimals: 2	(For the calculation outlined in 7.8.4A.16 only) The results are used in the final calculation
114	Outage Cancellation/ Deferral Settlement Credit	2	2	No				
115	Unrecoverable Testing Costs Credit	2	2	No				
116	Tieline Maintenance Reliability Credit	2	2	No				
118	Emergency Energy Rebate	1	3	No				
119	Station Service Reimbursement Credit	2	2	No				
120	Local Market Power Debit	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
121	Northern Industrial Electricity Rate Program Settlement Amount	1	3	No				
122	Ramp Down Settlement Amount	1	3	Yes	AQEI multiplied by 12 or AQEW multiplied by 12 Resulting Decimals: 3	Used in the calculation of OP(EMP, AQEI, BE) or OP(EMP, AQEW, BL) as the case may be.	Numerators OP(EMP, MQSI, BE) OP(EMP, DQSI, BE) OP(EMP, AQEI, BE) OP(EMP, MQSW, BL) OP(EMP, DQSW, BL) OP(EMP, AQEW, BL) Denominator: 12 Resulting Decimals: 2	Profits compared as applicable.
123	MACD Enforcement Activity Amount	2	2	No				
124	SEAL Congestion Management Settlement Credit Amount	2	2	No				
130	Intertie Offer Settlement Credit – Energy	1	3	Yes	Numerators OP(EMP, MQSI, BE) Denominator: 12 Resulting Decimals: 2	Profits compared as applicable.		
133	Generator Cost Guarantee Payment	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
134	Demand Response Credit	2	2	No				
135	Real-time Import Failure Charge	1	3	Yes	**TERM 1 – Failure Charge** Numerator: EMP + PB_IM – PD_EMP Denominator: 12 Resulting Decimals: 2 **TERM 2 – Price Cap** Numerator: MAX(0,EMP) * RT_ISD Denominator: 12 Resulting Decimals: 2	TERM 1 and TERM 2 compared as applicable.		
136	Real-time Export Failure Charge	1	3	Yes	**TERM 1 – Failure Charge** Numerator: PD_EMP – EMP – PB_EX Denominator: 12 Resulting Decimals: 2 **TERM 2 – Price Cap** Numerator: MAX(0,PD_EMP) * RT_ESD Denominator: 12 Resulting Decimals: 2	TERM 1 and TERM 2 compared as applicable.		
137	Generation Cost Guarantee - Output Based Pricing System Reimbursement Settlement Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
140	Fixed Energy Rate Settlement Amount	1	3	No				
141	Fixed Wholesale Charge Rate Settlement Amount	1	3	No				
142	Regulated Price Plan Settlement Amount	1	3	No				
143	NUG Contract Adjustment Settlement Amount	1	3	No				
144	Regulated Nuclear Generation Adjustment Amount	1	3	No				
145	Regulated Hydroelectric Generation Adjustment Amount	1	3	No				
146	Global Adjustment Settlement Amount	1	3	No				
147	Class A – Global Adjustment Settlement Amount	1	3	No				
148	Class B – Global Adjustment Settlement Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
149	Regulated Price Plan Retailer Settlement Amount	1	3	No				
150	Net Energy Market Settlement Uplift	1	3	No				
155	Congestion Management Settlement Uplift	1	3	No				
161`	Northern Pulp and Paper Mill Electricity Transition Program Balancing Amount	1	3	No				
162	Ontario Power Generation Rebate Debit	1	3	No				
163	Additional Compensation for Administrative Pricing Debit	1	3	No				
164	Outage Cancellation/ Deferral Debit	1	3	No				
165	Unrecoverable Testing Costs Debit	1	3	No				
166	Tieline Reliability Maintenance Debit	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
167	Emergency Energy and EDRP Debit	1	3	No				
168	TR Market Shortfall Debit	1	3	No				
169	Station Service Reimbursement Debit	1	3	No				
170	Local Market Power Rebate	1	3	No				
171	Northern Industrial Electricity Rate Program Balancing Amount	1	3	No				
173	MACD Enforcement Activity Balancing Amount	2	2	No				
183	Generator Cost Guarantee Recovery Debit	1	3	No				
184	Demand Response Debit	2	2	No				
186	Intertie Failure Charge Rebate	1	3	No				
190	Fixed Energy Rate Balancing Amount	2	2	No				
191	Fixed Wholesale Charge Rate Balancing Amount	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
192	Regulated Price Plan Balancing Amount	2	2	No				
193	NUG Contract Adjustment Balancing Amount	2	2	No				
194	Regulated Nuclear Generation Balancing Amount	2	2	No				
195	Regulated Hydroelectric Generation Balancing Amount	2	2	No				
196	Global Adjustment Balancing Amount	2	2	No				
197	Global Adjustment-Special Programs Balancing Amount	2	2	No				
198	Renewable Generation Balancing Amount	2	2	No				
199	Regulated Price Plan Retailer Balancing Amount	2	2	No				
200	10 Minute Spinning Reserve Market Settlement Credit.	1	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
201	10 Minute Spinning Reserve Market Shortfall Rebate	1	3	No				
202	10 Minute Non-spinning Reserve Market Settlement Credit	1	2	No				
203	10 Minute Non-spinning Reserve Market Shortfall Rebate	1	3	No				
204	30 Minute Operating Reserve Market Settlement Credit	1	2	No				
205	30 Minute Operating Reserve Market Shortfall Rebate	1	3	No				
250	10 Minute Spinning Market Reserve Hourly Uplift	1	3	No				
251	10 Minute Spinning Market Reserve Shortfall Debit	1	3	No				
252	10 Minute Non-spinning Market Reserve Hourly Uplift	1	3	No				
253	10 Minute Non-spinning Market Reserve Shortfall Debit	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
254	30 Minute Operating Reserve Market Hourly Uplift	1	3	No				
255	30 Minute Operating Reserve Market Shortfall Debit	1	3	No				
400	Black Start Capability Settlement Credit	2	2	No				
404	Regulation Service Settlement Credit	2	2	No				
406	Emergency Demand Response Credit	2	2	No				
410	IESO-Controlled Grid Special Operations Credit	2	2	No				
450	Black Start Capability Settlement Debit	1	3	No				
451	Hourly Reactive Support and Voltage Control Settlement Debit	1	3	No				
452	Monthly Reactive Support and Voltage Control Settlement Debit	1	3	No				
454	Regulation Service Settlement Debit	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
460	IESO-Controlled Grid Special Operations Debit	2	2	No				
500	Must Run Contract Settlement Credit	2	2	No				
550	Must Run Contract Settlement Debit	1	3	No				
600	Network Service Credit	2	3	No				
601	Line Connection Service Credit	2	3	No				
602	Transformation Connection Service Credit	2	3	No				
603	Export Transmission Service Credit	1	2	No				
650	Network Service Charge	2	3	No				
651	Line Connection Service Charge	2	3	No				
652	Transformation Connection Service Charge	2	3	No				
653	Export Transmission Service Charge	1	2	No				
700	Dispute Resolution Settlement Credit	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
702	Debt Retirement Credit	2	2	No				
703	Rural and Remote Settlement Credit	2	2	No				
704	OPA Administration Credit	2	2	No				
705	Ontario Fair Hydro Plan First Nations On-reserve Delivery Amount	**2**	**2**	**No**				
706	Ontario Fair Hydro Plan Distribution Rate Protection Amount	**2**	**2**	**No**				
750	Dispute Resolution Settlement Debit	2	2	No				
751	Dispute Resolution Board Service Debit	2	2	No				
752	Debt Retirement Charge	2	3	No				
753	Rural and Remote Settlement Debit	2	3	No				
754	OPA Administration Charge	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
755	MOE - Ontario Fair Hydro Plan First Nations On-reserve Delivery Balancing Amount	**2**	**2**	**No**				
756	MOE - Ontario Fair Hydro Plan Distribution Rate Protection Balancing Amount	**2**	**2**	**No**				
850	Market Participant Default Settlement Debit (recovery)	2	2	No				
851	Market Participant Default Interest Debit	2	2	No				
900	GST/HST Credit	2	2	No				
950	GST/HST Debit	2	2	No				
1050	Self-Induced Dispatchable Load CMSC Clawback	1	3	Yes	AQEW multiplied by 12 Resulting Decimals: 3	Used in the calculation of OP(EMP, AQEW, BL) as the case may be.	Numerators OP(EMP, MQSW, BL) OP(EMP, DQSW, BL) OP(EMP, AQEW, BL) OP(EMP, MC, BL) Denominator: 12 Resulting Decimals: 2	Profits compared as applicable.
1051	Ramp-Down CMSC Claw Back	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1130	Day-Ahead Intertie Offer Guarantee Settlement Credit	1	3	Yes	**FOR EACH 5-MINUTE *METERING INTERVAL:*** Numerators OP[EMP, MIN(DQSI, PDR_DQSI), PDR_BE] Denominator: 12 Resulting Decimals: 2	Results for each 5-minute *metering interval* are summed for the hour. Profits compared as applicable.		
1131	Intertie Offer Guarantee Settlement Credit	1	3	Yes	**For each 5 minute metering interval:** **RT-IOG – Real Time IOG** Numerator OP(EMP,MQSI,BE) Denominator: 12 Resulting Decimal: 2 **DA-IOG - Day-Ahead IOG** **Component 1** Numerator OP(EMP, Min(DA_DQSI,DQSI),DA_BE) Denominator: 12	**For DA-IOG,** Component 1, Component 2 and Component 3 are compared as applicable. Results of RT-IOG and DA-IOG are compared in IOG OFFSET component.		

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
					Resulting Decimal: 2 **Component 2** Numerator XDA_BE – MAX(0,XBE) Denominator: 12 Resulting Decimal: 2 **Component 3** Numerator OP(EMP,MQSI,BE), OP(EMP,DA_DQSI,BE) OP(EMP,DQSI,BE) Denominator: 12 Resulting Decimal: 2 **IOG Rate** Resulting Decimal: 5			
1133	Day-Ahead Generation Cost Guarantee Payment	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1134	Day-Ahead Linked Wheel Failure Charge	1	3	Yes	**RT_EFC_DALW and RT_IFC_DALW for each 5-minute metering interval are summed for the hour.** **Resulting Decimal: 2**	**Results are compared as applicable.**		
1135	Day-Ahead Import Failure Charge	1	3	Yes	**TERM 1 – Operating Profit („OP") Function used to calculate Failure Charge** OP(PD_EMP, DA_DQSI, DA_BE) OP(PD_EMP, PD_DQSI, DA_BE) Resulting Decimals: 2 **TERM 2 – Operating Profit („OP") Function used to calculate Failure Charge** OP(PD_EMP, DA_DQSI, PD_BE) OP(PD_EMP, PD_DQSI, PD_BE) Resulting Decimals: 2	TERM 1, TERM 2 and TERM 3 compared as applicable.		

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
					TERM 3 – Price cap Numerator Max(0,PD_EMP) x DA_ISD Denominator: 12 Resulting Decimals: 2			

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1136	Day-Ahead Export Failure Charge	1	3	Yes	**TERM 1 – Operating Profit („OP") Function used to calculate Failure Charge** OP(PD_EMP, DA_DQSW, DA_BL) OP(PD_EMP, PD_DQSW, DA_BL) Resulting Decimals: 2 **TERM 2 – Operating Profit („OP") Function used to calculate Failure Charge** OP(PD_EMP, DA_DQSW, PD_BL) OP(PD_EMP, PD_DQSW, PD_BL) Resulting Decimals: 2	TERM 1, TERM 2 and TERM 3 compared as applicable.		
1137	Intertie Offer Guarantee Reversal	2	2	No				
1138	Day-Ahead Fuel Cost Compensation Credit	2	2	No				
1139	Intertie Failure Charge Reversal	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1142	Ontario Fair Hydro Plan Eligible RPP Consumer Discount Settlement Amount	**2**	**2**	**No**				
1143	Ontario Fair Hydro Plan Eligible Non-RPP Consumer Discount Settlement Amount	**2**	**2**	**No**				
1144	Ontario Fair Hydro Plan Financing Entity Amount	**2**	**2**	**No**				
1145	Ontario Fair Hydro Plan Financing Entity Interest	**2**	**2**	**No**				
1148	GA Energy Storage Injection Reimbursement	2	2	No				
1188	Day-Ahead Fuel Cost Compensation Debit	1	3	No				
1192	Ontario Fair Hydro Plan Eligible RPP Consumer Discount Balancing Amount	**2**	**2**	**No**				
1193	Ontario Fair Hydro Plan Eligible Non-RPP Consumer Discount Balancing Amount	**2**	**2**	**No**				
1194	Ontario Fair Hydro Plan Financing Entity Balancing Amount	**2**	**2**	**No**				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1195	Ontario Fair Hydro Plan Financing Entity Balancing Interest	**2**	**2**	**No**				
1300	Capacity Based Demand Response Program Availability Payment Settlement Amount	1	3	No				
1301	Capacity Based Demand Response Program Availability Over-Delivery Settlement Amt	1	3	No				
1302	Capacity Based Demand Response Program Availability Set-Off Settlement Amount	1	3	No				
1303	Capacity Based Demand Response Program Utilization Payment Settlement Amount	1	3	No				
1304	Capacity Based Demand Response Program Utilization Set-Off Settlement Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1305	Capacity Based Demand Response Program Planned Non-Performance Event Set-Off Amt	1	3	No				
1306	Capacity Based Demand Response Program Measurement Data Set-Off Settlement Amt	1	3	No				
1307	Capacity Based Demand Response Program Buy-Down Settlement Amount	1	3	No				
1308	Capacity Based Demand Response Program Performance Breach Settlement Amount	1	3	No				
1309	Demand Response Pilot – Availability Payment	1	3	No				
1310	Demand Response Pilot – Availability Clawback	1	3	No				
1311	Demand Response Pilot – Availability Charge	1	3	No				
1312	Demand Response Pilot – Availability Adjustment	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1313	Demand Response Pilot – Demand Response Bid Guarantee	1	3	No				
1314	Capacity Obligation – Availability Payment	1	3	No				
1315	Capacity Obligation – Availability Charge	1	3	No				
1316	Capacity Obligation – Administration Charge	1	3	No				
1317	Capacity Obligation – Dispatch Charge	1	3	No				
1318	Capacity Obligation – Capacity Charge	1	3	No				
1319	Capacity Obligation – Buy-Out Charge	1	3	No				
1320	Capacity Obligation – Out of Market Activation Payment	1	3	No				
1330	On behalf of *Former* OPA for the DR2 Program – Availability Payment Settlement Amount	1	3	No				
1331	On behalf of *Former* OPA for the DR2 Program – Availability Set-Off Settlement Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1332	On behalf of *Former* OPA for the DR2 Program – Utilization Payment Settlement Amount	1	3	No				
1333	On behalf of *Former* OPA for the DR2 Program – Utilization Set-Off Settlement Amount	1	3	No				
1334	On behalf of *Former* OPA for the DR2 Program – Meter Data Set-Off Settlement Amount	1	3	No				
1335	On behalf of *Former* OPA for the DR2 Program – Buy-Down Settlement Amount	1	3	No				
1336	On behalf of *Former* OPA for the DR2 Program – Miscellaneous Settlement Amount	1	3	No				
1340	On behalf of *Former* OPA for the DR3 Program – Availability Payment Settlement Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1341	On behalf of *Former* OPA for the DR3 Program – Availability Over-Delivery Settlement Amt	1	3	No				
1342	On behalf of *Former* OPA for the DR3 Program – Availability Set-Off Settlement Amount	1	3	No				
1343	On behalf of *Former* OPA for the DR3 Program – Utilization Payment Settlement Amount	1	3	No				
1344	On behalf of *Former* OPA for the DR3 Program – Utilization Set-Off Settlement Amount	1	3	No				
1345	On behalf of *Former* OPA for the DR3 Program – Planned Non-Performance Event Set-Off Amt	1	3	No				
1346	On behalf of *Former* OPA for the DR3 Program – Meter Data Set-Off Settlement Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1347	On behalf of *Former* OPA for the DR3 Program – Buy-Down Settlement Amount	1	3	No				
1348	On behalf of *Former* OPA for the DR3 Program – Miscellaneous Settlement Amount	1	3	No				
1350	Capacity Based Recovery Amount for Class A Loads	1	3	No				
1351	Capacity Based Recovery Amount for Class B Loads	1	3	No				
1380	Demand Response 2 Availability Payment Balancing Amount	2	2	No				
1381	Demand Response 2 Availability Set-Off Balancing Amount	2	2	No				
1382	Demand Response 2 Utilization Payment Balancing Amount	2	2	No				
1383	Demand Response 2 Utilization Set-Off Balancing Amount	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1384	Demand Response 2 Meter Data Set-Off Balancing Amount	2	2	No				
1385	Demand Response 2 Buy-Down Balancing amount	2	2	No				
1386	Demand Response 2 Miscellaneous Balancing amount	2	2	No				
1390	Demand Response 3 Availability Payment Balancing Amount	2	2	No				
1391	Demand Response 3 Availability Over-Delivery Balancing Amount	2	2	No				
1392	Demand Response 3 Availability Set-Off Balancing Amount	2	2	No				
1393	Demand Response 3 Utilization Payment Balancing Amount	2	2	No				
1394	Demand Response 3 Utilization Set-Off Balancing Amount	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1395	Demand Response 3 Planned Non-Performance Event Set-Off Balancing Amount	2	2	No				
1396	Demand Response 3 Meter Data Set-Off Balancing Amount	2	2	No				
1397	Demand Response 3 Buy-Down Balancing Amount	2	2	No				
1398	Demand Response 3 Miscellaneous Balancing Amount	2	2	No				
1400	OPA Contract Adjustment Settlement Amount	1	2	No				
1401	Incremental Loss Settlement Credit	1	6	No				
1402	Hourly Condense System Constraints Settlement Credit	1	5	No				
1403	Speed-no-load Settlement Credit	1	2	No				
1404	Condense Unit Start-up and OM&A Settlement Credit	1	2	No				
1405	Hourly Condense Energy Costs Settlement Credit	1	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1406	Monthly Condense Energy Costs Settlement Credit	1	2	No				
1407	Condense Transmission Tariff Reimbursement Settlement Credit	2	3	No				
1408	Condense Availability Cost Settlement Credit	1	2	No				
1409	Monthly Condense System Constraints Settlement Credit	1	2	No				
1410	Renewable Energy Standard Offer Program Settlement Amount	1	3	No				
1411	Clean Energy Standard Offer Program Settlement Amount	1	3	No				
1412	Feed-In Tariff Program Settlement Amount	1	3	No				
1413	Renewable Generation Connection – Monthly Compensation Settlement Credit	1	3	No				
1414	Hydroelectric Contract Initiative Settlement Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1415	Conservation Assessment Recovery	1	3	No				
1416	Conservation and Demand Management - Compensation Settlement Credit	1	3	No				
1417	Daily Condense Energy Costs Settlement Credit	1	2	No				
1418	Biomass Non-Utility Generation Contracts Settlement Amount	1	3	No				
1419	Energy from Waste (EFW) Contracts Settlement Amount	1	3	No				
1420	Ontario Electricity Support Program Settlement Amount	2	2	No				
1421	Capacity Agreement Settlement Credit	0	2	No				
1422	Capacity Agreement Penalty Settlement Amount	0	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1423	Energy Sales Agreement Settlement Credit	0	3	No				
1424	Energy Sales Agreement Penalty Settlement Amount	0	2	No				
1425	Hydroelectric Standard Offer Program Settlement Amount	2	2	No				
1427	Non-Hydro Renewables Funding Amount	2	2	No				
1450	OPA Contract Adjustment Balancing Amount	2	2	No				
1451	Incremental Loss Offset Settlement Amount	2	2	No				
1457	Ontario Electricity Rebate Balancing Amount	2	2	No				
1460	Renewable Energy Standard Offer Program Balancing Amount	2	2	No				
1461	Clean Energy Standard Offer Program Balancing Amount	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1462	Feed-In Tariff Program Balancing Amount	2	2	No				
1463	Renewable Generation Connection – Monthly Compensation Settlement Debit	1	3	No				
1464	Hydroelectric Contract Initiative Balancing Amount	2	2	No				
1465	Ontario Clean Energy Benefit (-10%) Program Balancing Amount	2	2	No				
1466	Conservation and Demand Management - Compensation Balancing Amount	2	2	No				
1467	Ontario Rebate for Electricity Consumers (8% Provincial Rebate) Balancing Amount	2	2	No				
1468	Biomass Non-Utility Generation Contracts Balancing Amount	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1469	Energy from Waste (EFW) Contracts Balancing Amount	2	2	No				
1470	Ontario Electricity Support Program Balancing Amount	2	3	No				
1471	Capacity Agreement Balancing Amount	2	2	No				
1472	Capacity Agreement Penalty Balancing Amount	2	2	No				
1473	Energy Sales Agreement Balancing Amount	2	2	No				
1474	Energy Sales Agreement Penalty Balancing Amount	2	2	No				
1475	Hydroelectric Standard Offer Program Balancing Amount	2	2	No				
1477	COVID-19 Energy Assistance Program (CEAP) Settlement Amount	2	2	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1487	Non-Hydro Renewables Funding Balancing Amount	2	2	No				
1500	Day-Ahead Production Cost Guarantee Payment – Component 1 and Component 1 Clawback	1	3	Yes	AQEI is multiplied by 12 Resulting decimal: 3	Use in the calculation of OP(EMP,AQEI, DA_BE),	**For each 5 minute metering interval:** Numerator OP(EMP,AQEI, DA_BE), OP(EMP,DQSI, DA_BE), OP(EMP,DA_DQSI, DA_BE) Denominator: 12 Resulting Decimal: 2 Numerator DA_SNLC Denominator: 12 Resulting decimal: 2 Results for each 5-minute metering interval are summed for the hour.	Profits are compared as applicable.

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1501	Day-Ahead Production Cost Guarantee Payment – Component 2	1	3	Yes	AQEI is multiplied by 12 Resulting decimal: 3	Use in the calculation of OP(EMP,AQEI, DA_BE), OP(EMP,AQEI, BE)	**For each 5 minute metering interval:** Numerator OP(EMP,AQEI, DA_BE), OP(EMP,DQSI, DA_BE), OP(EMP,DA_DQSI, DA_BE) OP(EMP,OPCAP, DA_BE) OP(EMP,AQEI, BE), OP(EMP,DQSI, BE), OP(EMP,DA_DQSI, BE) OP(EMP,OPCAP, BE) Resulting Decimal: 2	Profits are compared as applicable.

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1502	Day-Ahead Production Cost Guarantee Payment – Component 3 and Component 3 Clawback	1	3	Yes	AQEI is multiplied by 12 Resulting decimal: 3	Use in the calculation of OP(EMP,AQEI, BE),	**For each 5 minute metering interval:** Numerator OP(EMP,AQEI, BE), OP(EMP,DQSI, BE), OP(EMP,DA_DQSI, BE) OP(EMP,MLP, BE) Results for each 5-minute metering interval are summed for the hour. Resulting Decimal: 2	Profits are compared as applicable.
1503	Day-Ahead Production Cost Guarantee Payment – Component 4	1	3	Yes	**For each 5 minute metering interval:** Numerators OP(PROR,30R_SQROR,BR), OP(PROR,10NS_SQROR,BR), OP(PROR,10S_SQROR,BR), Denominator: 12 Resulting Decimal: 2	Profits are compared as applicable.		

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1504	Day-Ahead Production Cost Guarantee Payment – Component 5	1	3	No				
1505	Day-Ahead Production Cost Guarantee Reversal	1	3	No				
1510	Day-Ahead Generator Withdrawal Charge	1	3	Yes	**For each 5 minute metering interval:** Numerators OP(EMP,MLP,DA_BE) or OP(PD_EMP,MLP,DA_BE) Denominator: 12 Resulting Decimal: 2	Results for each 5-minute metering interval are summed for the hour.		
1550	Day-Ahead Production Cost Guarantee Recovery Debit	1	3	No				
1560	Day-Ahead Generator Withdrawal Rebate	1	3	No				
1600	Forecasting Service Settlement Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
1650	Forecasting Service Balancing Amount	1	3	No				
1750	Dispute Resolution Balancing Amount (Market)	2	2	No				
1753	MOE - Rural and Remote Settlement Debit	2	2	No				
2148	Class B Global Adjustment Prior Period Correction Settlement Amount	2	2	No				
2470	MOE - Ontario Electricity Support Program Balancing Amount	2	2	No				
6000	Ontario Fair Hydro Plan - Regulatory Asset Transfer Amount	2	2	No				
6050	Ontario Fair Hydro Plan - Regulatory Asset Transfer Balancing Amount	2	2	No				
6147	Class A Global Adjustment Deferral Recovery Amount	1	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
6148	Class B Global Adjustment Deferral Recovery Amount	1	3	No				
9147	Class A Global Adjustment Smoothing Balancing Amount	1	3	No				
9148	Class B Global Adjustment Smoothing Balancing Amount	1	3	No				
9920	Adjustment Account Credit	1	1	No				
9980	Smart Metering Charge	2	2	No				
9982	Ontario Rebate for Electricity Consumers (8% Provincial Rebate) Settlement Amount	2	2	No				
9983	Ontario Electricity Rebate Settlement Amount	2	2	No				
9984	COVID-19 Energy Assistance Program (CEAP) Balancing Amount	2	2	No				
9990	IESO Administration Charge	2	3	No				

Charge Type Number	Charge Type Name	INPUT VARIABLES Least number of significant digits to the right of the decimal	INPUT VARIABLES Maximum number of significant digits to the right of the decimal	Intermediate Rounding done by Settlements?	INTERMEDIATE CALCULATION 1 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 1	INTERMEDIATE CALCULATION 2 (where intermediate rounding occurs)	DISPOSITION OF INTERMEDIATE CALCULATION 2
9992	Ontario Clean Energy Benefit (-10%) Program Settlement Amount	2	2	No				
9996	Recovery of Costs	2	2	No				

2.5 Settlement of Physical Bilateral Contracts

2.5.1 Governing Rules

Settlement of *physical bilateral contracts* is discussed in Section 2.1 of Chapter 8, of the *IESO market rules*. In summary this particular *market rules* Section prescribes the prices to be applied to a *Physical Bilateral Contract Quantity of Energy Sold* ($BCQ_{k,b,h}^{m,t}$) or a *Physical Bilateral Contract Quantity of Energy Bought* ($BCQ_{s,k,h}^{m,t}$) at a *delivery point* or an *intertie metering point.* This treatment is summarized in the table below with respect to each settlement variable defined in **Section 2.1** and *charge type* described in **Section 2.2** of this document.

Location of Bilateral Contract	Settlement of Selling Market Participant	Settlement of Buying Market Participant	Charge Type
Non-dispatchable *delivery point*	• Debit the Physical Bilateral Contract Quantity of Energy Sold ($BCQ_{k,b,h}^{m,t}$) at the 5-Minute Energy Market Price within Ontario ($EMP_h^{m,t}$).	• Credit the Physical Bilateral Contract Quantity of Energy Bought ($BCQ_{s,k,h}^{m,t}$) at the *Hourly Ontario Energy Price* (HOEP).	101
Dispatchable *delivery point*	• Debit the Physical Bilateral Contract Quantity of Energy Sold ($BCQ_{k,b,h}^{m,t}$) at the 5-Minute Energy Market Price within Ontario ($EMP_h^{m,t}$).	• Credit the Physical Bilateral Contract Quantity of Energy Bought ($BCQ_{s,k,h}^{m,t}$) at the 5-Minute Energy Market Price within Ontario ($EMP_h^{m,t}$).	100
Intertie Metering Point	• Debit the Physical Bilateral Contract Quantity of Energy Sold ($BCQ_{k,b,h}^{m,t}$) at the 5-minute Energy Market Price at the *Interties* ($EMP_h^{i,t}$).	• Credit the Physical Bilateral Contract Quantity of Energy Bought ($BCQ_{s,k,h}^{m,t}$) at the 5-minute Energy Market Price at the *Interties* ($EMP_h^{i,t}$).	100

These financial credits and debits are then included the overall *settlement amounts* calculated for *charge types* 100 and 101 as per the equations in **Section 2.2**.

2.5.2 The Nature of the Bilateral Contract Quantity

$\mathbf{BCQ_{s,k,h}^{m,t}}$	Physical Bilateral Contract Quantity of Energy bought.	Physical bilateral contract quantity of *energy* in MWh bought by *buying market participant* 'k' from *selling market participant* '*s'* at *RWM* or *intertie metering point* 'm' for each *metering interval* 't' in *settlement hour* 'h'.
$\mathbf{BCQ_{k,b,h}^{m,t}}$	Physical Bilateral Contract Quantity of Energy sold.	Physical bilateral contract quantity of *energy* in MWh sold by *selling market participant* 'k' to *buying market participant* 'b' at *RWM* or *intertie metering point* 'm' for each *metering interval* 't' in *settlement hour* 'h'.

The submission of *physical bilateral contract data* is governed by Section 2.4 of Chapter 8 of the *IESO market rules*. Furthermore, Section 2.3 of Chapter 8 describes 2 distinct "forms" of *physical bilateral contract data* that may be submitted by the *selling market participant*. Specifically, the two forms of such data are as follows:

1. **Absolute quantities:** specifying the absolute quantity of *energy* in MWh sold by the *selling market participant* to the *buying market participant* for each *settlement hour* at a particular *delivery point* or *intertie metering point*; and
2. **Derived quantities****:** specifying that the *physical bilateral contract quantity* shall be 100% of the *energy* sold by the *selling market participant* to the *buying market participant* for each *settlement hour* as derived from a particular *delivery point* value (i.e. NOT an *intertie metering point*).

Where:

- The *delivery point* chosen by the *selling market participant* must belong to either the *selling market participant* or the buying *market participant.*
- If the *delivery point* is designated as a sub-type 'I' (injection) *delivery point*, 100% of all injected *energy* for each *metering interval* in each applicable *settlement hour* shall be used regardless of any *physical allocation data*.
- If the *delivery point* is designated as a sub-type 'W' (withdrawal) *delivery point*, 100% of all withdrawn *energy* for each *metering interval* in each applicable *settlement hour* shall be used regardless of any *physical allocation data*.

***** See derived quantities examples that follow.**

Derived Quantities Example 1: *Delivery point* belongs to the *SELLING market participant* and is a sub-type 'I' (injection) *delivery point.* (note parity with EXAMPLE 3)												
metering interval	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
ENERGY QUANTITY	10	10	10	0	0	0	**10**	**10**	0	0	10	10
ENERGY FLOW Injection (I) Withdrawal (W)	I	I	I	I	I	I	**W**	**W**	I	I	I	I
BCQ value used for settlement purposes (for both the *buying* and *selling market participant*)	10	10	10	0	0	0	**0**	**0**	0	0	10	10
Total Quantity for the hour	50 (SEE SECTION 2.5.3 FOR THE DATA PRESENTATION OF THE BILATERAL CONTRACT QUANTITY)											

Derived Quantities Example 2: *Delivery point* belongs to the *SELLING market participant* and is a sub-type 'W' (Withdrawal) *delivery point.* (note parity with EXAMPLE 4)												
metering interval	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
ENERGY QUANTITY	**10**	**10**	**10**	0	0	0	10	10	0	0	10	10
ENERGY FLOW Injection (I) Withdrawal (W)	**I**	**I**	**I**	W	W	W	W	W	W	W	I	I
BCQ value used for settlement purposes (for both the *buying* and *selling market participant*)	**0**	**0**	**0**	0	0	0	10	10	0	0	0	0
Total Quantity for the hour	20 (SEE SECTION 2.5.3 FOR THE DATA PRESENTATION OF THE BILATERAL CONTRACT QUANTITY)											

Derived Quantities Example 3: *Delivery point* belongs to the *BUYING market participant* and is a sub-type 'I' (injection) *delivery point.* (note parity with EXAMPLE 1)												
metering interval	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
ENERGY QUANTITY	10	10	10	0	0	0	**10**	**10**	0	0	10	10
ENERGY FLOW Injection (I) Withdrawal (W)	I	I	I	I	I	I	**W**	**W**	I	I	I	I
BCQ value used for settlement purposes (for both the *buying* and *selling market participant*)	10	10	10	0	0	0	**0**	**0**	0	0	10	10
Total Quantity for the hour	50 (SEE SECTION 2.5.3 FOR THE DATA PRESENTATION OF THE BILATERAL CONTRACT QUANTITY)											

Derived Quantities Example 4: *Delivery point* belongs to the *BUYING market participant* and is a sub-type 'W' (Withdrawal) *delivery point.* (note parity with EXAMPLE 2)												
metering interval	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
ENERGY QUANTITY	**10**	**10**	**10**	0	0	0	10	10	0	0	10	10
ENERGY FLOW Injection (I) Withdrawal (W)	**I**	**I**	**I**	W	W	W	W	W	W	W	I	I
BCQ value used for settlement purposes (for both the *buying* and *selling market participant*)	**0**	**0**	**0**	0	0	0	10	10	0	0	0	0
Total Quantity for the hour	20 (SEE SECTION 2.5.3 FOR THE DATA PRESENTATION OF THE BILATERAL CONTRACT QUANTITY)											

2.5.3 Time Resolution of Bilateral Contract Quantities and Rounding

Where a *physical bilateral contract* takes place at a non-dispatchable *delivery point*, the *Physical Bilateral Contract Quantity* of Energy Bought is reported by *settlement hour* as per the *market rules* (because the *Hourly Ontario Energy Price* is applied to this quantity – see Chapter 9, Section 3.3). At the same location however, the 'Physical Bilateral Contract Quantity of Energy Sold' is debited at the 5-minute energy market price. This latter, sold quantity must therefore be divided into 12, equal *metering intervals* (see Chapter 9, Section 3.1.6 of the *market rules*) and rounded to the appropriate number of significant digits (see Section 2.4 of this document). As a result, the summation of these 12, equal quantities may not equal the original, hourly value submitted in some circumstances due to this intermediate rounding. The table below summarizes this phenomenon in terms of the location sub-type and the applicable *charge type* used. The reader is directed to Section 2.4 of this document for further details.

		Location Type	Charge Type	Time Resolution used for Settlements Purposes	Intermediate Rounding Applied within Settlements System?
$BCQ_{s,k,h}^{m,t}$	Physical Bilateral Contract Quantity of Energy bought.	Dispatchable *Delivery Point* (injection or withdrawal sub-type)	100	by *metering interval*	Yes – See Section 2.4
		Non-Dispatchable *Delivery Point* (injection or withdrawal sub-type)	101	by *settlement hour*	No
		Intertie metering point	100	by *metering interval*	Yes – See Section 2.4
$BCQ_{k,b,h}^{m,t}$	Physical Bilateral Contract Quantity of Energy sold.	Dispatchable *Delivery Point* (injection or withdrawal sub-type)	100	by *metering interval*	Yes – See Section 2.4
		Non-Dispatchable *Delivery Point* (injection or withdrawal sub-type)	101	by *metering interval*	Yes – See Section 2.4
		Intertie metering point	100	by *metering interval*	Yes – See Section 2.4

2.5.4 Allocation of Hourly Uplift Components Between Buying and Selling Market Participants

Hourly uplift is defined in Section 3.9.1 of Chapter 9 of the *IESO market rules* and may be "disaggregated" (sic) on *settlement statements* into its component parts as per Section 3.9.2. The following components *hourly uplift* charges may be allocated from the *buying market participant* to the *selling market participant* as per the *physical bilateral contract data* submitted by the *selling market participant* (see also, *IESO market rules*, Chapter 8, Section 2.2.2).

Hourly Uplift Component Group	Associated Charge Types	Comments
Net Energy Market Settlement Credit (NEMSC) Hourly Uplift Component (also known as the "Losses" component)	150	• This hourly uplift component is an aggregation of *charge types* 100 (NEMSC), 101 (NEMSC), 104 (TRSC), and 103 (TCRF),. The aggregation of these *charge types* mathematically resolves down to the value of the difference between AQEI, AQEW, SQEW and SQEI quantities valued at the 5-minute Energy Market Reference Price ($EMP_h^{REF,t}$) for each *metering interval* in the *settlement hour* .
Operating Reserve Settlement Credit (ORSC) Hourly Uplift Component	250 252 254	• Separate *charge types* for recovery of ORSC *settlement amounts* paid to *market participants* for each class of *operating reserve.*
Intertie Failure Charge Rebate (IFCR) Hourly Uplift Component	186	Two components as follows: 1) *Charge type* 186: an aggregation of *charge types* 135 (Real-time Import Failure Charge), 136 (Real-time Export Failure Charge), 1134 (Day-Ahead Linked Wheel Failure Charge, 1135 (Day-Ahead Import Failure Charge) and 1136 (Day-Ahead Export Failure Charge). These *charge types* are primarily rebates back to *market participants* for amounts collected under these charges.
Congestion Management Settlement Credit (CMSC) Hourly Uplift Component	155	• Includes recovery of CMSC payments for *energy* and each class of *operating reserve.*

Hourly Uplift Component Group	Associated Charge Types	Comments
Transmission Rights Settlement Credit (TRSC) Hourly Uplift Component	NOT USED	• INCLUDED WITH THE "NET ENERGY MARKET SETTLEMENT CREDIT (NEMSC) Hourly Uplift COMPONENT". • SEE NOTE ABOVE.
Transmission Charge Reduction Fund (TCRF) Hourly Uplift Component	NOT USED	• INCLUDED WITH THE "NET ENERGY MARKET SETTLEMENT CREDIT (NEMSC) Hourly Uplift COMPONENT". • SEE NOTE ABOVE.
Operating Reserve Shortfall Settlement Debit (ORSSD) Hourly Uplift Component	201 203 205	• Separate *charge types* for distribution of ORSSD *settlement amounts* received from *market participants* for shortfalls in the provision of each class of *operating reserve.*

Each hourly uplift component group (i.e. not the individual *charge types* themselves) may be selected in any combination when the *physical bilateral contract data* is submitted by the *selling market participant*. Confirmation of this selection is included within the *settlement statement* supporting data files (type "B" records). A schematic overview of the format of type "B" records may be found within Table 3-2 of the *IESO's* Technical Interface Document entitled, "Format Specification for Settlement Statement Files and Data Files".

The effect of selecting an hourly uplift component group within *physical bilateral contract data,* is the creation of a "Reallocate Quantity (RQ)".

The RQ specific to a single *physical bilateral contract* is exactly equal to the quantity of *energy* involved in the contract itself.

The RQ specific to a single *market participant* is equal to the sum of all RQ quantities for which the *market participant* is the *selling market participant*, minus the sum of all RQ quantities for which the *market participant* is the *buying market participant*.

The RQ specific to a single *market participant* for a particular hourly uplift component group is equal to the sum of all RQ quantities designated to for that particular hourly uplift component group within *physical bilateral contract data* for which the *market participant* is the *selling market participant*, minus the sum of all RQ quantities for which the *market participant* is the *buying market participant*.

This RQ quantity is then applied to the calculation of the *settlement amounts* for each *charge type* associated with the hourly uplift component group as per the table above.

Therefore, when calculating the RQ quantity for a particular hourly uplift *charge type* for *market participant* 'k' at a particular location 'm' during a particular *metering interval* 't', the quantity may be expressed as follows:

$$RQ_{k,h}^{m,t} = \sum_{s,b} [BCQ_{k,b,h}^{m,t} - BCQ_{s,k,h}^{m,t}]$$

Where all variables are defined as per **Section 2.1**.

The RQ quantity is then used to either augment or decrease the *settlement amount* for the hourly uplift *charge type* "c" as follows:

$$\sum_c^{M,T} TD_{k,h,c} \times [(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) / \sum_k^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})]$$

Where all variables are defined as per **Section 2.1**.

In the event that the term,

$$(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,t}) < 0$$

Where:

$$RQ_{k,h}^{m,t} < 0 \text{ and } \left|RQ_{k,h}^{m,t}\right| > \left|(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})\right| \text{ and } TD_{k,h,c} > 0$$

The calculation of the applicable hourly uplift charge type "c" will yield a net credit to the *buying market participant* as a result of the reallocated quantity exceeding their actual/scheduled withdrawals of *energy* for the *metering interval* 't' in question.

The above mechanism applies to those "associated charge types" that are enumerated in the table at the beginning of this Section. See Section 2.2 for specific listings of *charge types* and their respective equations.

2.6 Exemptions from the Day-Ahead Import Failure Charge, Day-Ahead Export Failure Charge, and Day-Ahead Linked Wheel Failure Charge

2.6.1 Purpose of this Section

This section describes how Day-Ahead Import transactions are subject to an "*Offer* Price Test" in order to determine if they are exempt from the Day-Ahead Import Failure Charge (*charge type* 1135), Day-Ahead Export Failure Charge (*charge type* 1136) and Day-Ahead Linked Wheel Failure Charge (*charge type* 1134)[2].

Generally speaking the applicability of the five Intertie Failure charges[3] is affected by the "Reason Codes" attached to the applicable *interchange schedule* received by the *Settlement Process*. The impact of these Reason Codes is outlined in Table 3-5 of the *IESO* Technical Interface document entitled, "Format Specifications for Settlement Statement Files and Data Files" (IMP_SPEC_0005). As noted in that table however, day-ahead import transactions arranged in the *pre-dispatch-of-record* that include the 'AUTO''NY90' or 'ADQh', or 'ORA' Reason Codes in the resulting real-time dispatch will be further subject to an "Offer Price Test" which determines whether or not the transaction in question is in fact exempt from the Day-Ahead Failure Charges.

2.6.2 Objective of the "Offer Price Test"

The main objective of the Offer Price Test is to grant an exemption from the DA-IFC, DA-EFC and DA-LWFC for those import and export transactions that make a best effort to ensure that they are scheduled in the *real-time market*. The Offer Price Test assesses "best effort" on the basis of the offer price of the transaction itself.

2.6.3 How the Offer Price Test Works

The Offer Price Test is a simple test that is performed on the first lamination of the *real-time market* import *offer*/or export *bid*. The "first lamination" is defined by the first two *price-quantity* ("p-q") *pairs* in the *real-time market offer* curve, where:

- The first *price-quantity pair* contains an *offer* or *bid* price and a quantity of zero; and

[2] The price test for the Day-Ahead Linked Wheel Failure Charge (1134) is used to determine exemption from the RT-EFC-DALW and RT-IFC-DALW portions only.
[3] Specifically, the Real-time Import Failure Charge (*charge type* 135), the Real-time Export Failure Charge (*charge type* 136), the Day-Ahead Import Failure Charge (*charge type* 1135), the Day-Ahead Export Failure Charge (*charge type* 1136) and the Day-Ahead Linked Wheel Failure Charge (*charge type* 1134).

- The second *price-quantity pair* contains the same *offer* or *bid* price as the first *price-quantity pair* and a non-zero quantity.

The Offer Price Test applies to any situation in which a day-ahead import or export transaction has a Reason Code, 'AUTO', 'NY90' 'ADQh', or 'ORA' assigned to the corresponding real-time import or export transaction at the same location. It is applicable to *any intertie metering point* where the underlying constrained scheduling point (CSP) is a "source" (i.e. applicable to imports only) or a "sink" (i.e. applicable to exports only).

If the transaction fails this test; it will not receive exemption status from the DA-IFC or DA-EFC. If the transaction passes this test, then it will be exempted from the DA-IFC or DA-EFC – without actually changing the Reason Code itself.

2.6.4 Input Data:

$DA\_DQSI_{k,h}^{i,t}$	=	Day-ahead constrained quantity scheduled for injection by *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h'
$PD\_DQSI_{k,h}^{i,t}$	=	*Pre- dispatch* constrained quantity scheduled for injection by *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h'.
$PD\_BE_{k,h}^{i,t}$	=	*Energy offers* submitted in Pre-dispatch, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h' arranged in ascending order by the offered price in each *price quantity pair* where offered prices 'P' are in column 1 and offered quantities 'Q' are in column 2
- MMCP	=	The *Minimum Market Clearing Price*.
$DA\_DQSW_{k,h}^{i,t}$		Day-ahead constrained quantity scheduled for withdrawal by *market participant* 'k' at *intertie metering point* 'i' during metering interval 't' of settlement hour 'h'
$PD\_DQSW_{k,h}^{i,t}$		*Pre- dispatch* constrained quantity scheduled for withdrawal by *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement hour* 'h'.
$PD\_BL_{k,h}^{i,t}$		*Energy bids* submitted in *pre-dispatch*, represented as an N by 2 matrix of *price-quantity pairs* for each *market participant* 'k' at *intertie metering point* 'i' during *metering interval* 't' of *settlement*

hour 'h' arranged in ascending order by the offered price in each *price quantity pair* where offered prices 'P' are in column 1 and offered quantities 'Q' are in column 2

+MMCP = The *Maximum Market Clearing Price*.

2.6.5 Decision Logic Applied During the Offer Price Test for Import Transactions:

PART 1:

The first part of the test ensures that the original *schedule-of-record* schedule ($DA\_DQSI_{k,h}^{i,t}$) for the import transaction is indeed GREATER THAN the resulting *Pre-dispatch schedule* ($PD\_DQSI_{k,h}^{i,t}$) over the course of *settlement hour* 'h'.

IF $\sum^{T} DA\_DQSI_{k,h}^{i,t} > \sum^{T} PD\_DQSI_{k,h}^{i,t}$

THEN

Proceed to PART 2

ELSE

END of the test for this transaction.

PART 2:

The second part of the test ensures that the first lamination (i.e. as defined by the first 2 *price-quantity pairs*) of the offer curve submitted into the *pre-dispatch scheduling process*:

1) Was large enough to cover the entire quantity of the transaction originally scheduled by the *schedule-of-record* at the same *market participant/intertie metering point* combination (commonly referred to as a "MP/MSP/CSP triplet"); and,
2) Was offered at the *Minimum Market Clearing Price* (*-MMCP*).

The test is as follows:

For each *metering interval* 't' at *intertie metering point* 'i' where the transaction passed PART 1 for *settlement hour* 'h':

Let 'B' be matrix $PD\_BE_{k,h}^{i,t}$ (see above for definition).

IF B[2,2] ≥ $DA\_DQSI_{k,h}^{i,t}$ AND B[2,1] = -MMCP

THEN

Allow Reason Code to remain as-is, but exempt the transaction from the DA-IFC.

ELSE

Allow Reason Code to remain as-is, and do NOT exempt the transaction from the DA-IFC.

Implications:

- A day-ahead import transaction must be constrained down to a level lower than its original *schedule-of-record* schedule in order to receive exemption status;
- The entire amount of the constrained portion of the transaction must have been offered into the *Pre-dispatch* at *–MMCP* in order to receive exemption status (compare Figures 2-1 and 2-2 to see examples where this condition is met and not met respectively); and
- Only the first lamination (i.e. the first 2 p-q pairs) of the Pre-dispatch offer curve for each import transaction are relevant in performing this test (due to the existing market rule requirement that offer prices must be monotonically increasing).

2.6.6 Decision Logic Applied During the Offer Price Test for Export Transactions:

PART 1:

The first part of the test ensures that the original *schedule-of-record* ($DA\_DQSW_{k,h}^{i,t}$) for the export transaction is indeed GREATER THAN the resulting *Pre-dispatch schedule* ($PD\_DQSW_{k,h}^{i,t}$) over the course of *settlement hour* 'h'.

IF $\sum^{T} DA\_DQSW_{k,h}^{i,t} > \sum^{T} PD\_DQSW_{k,h}^{i,t}$

THEN

Proceed to PART 2

ELSE

END of the test for this transaction.

PART 2:

The second part of the test ensures that the first lamination (i.e. as defined by the first 2 *price-quantity pairs*) of the offer curve submitted into the *Pre-dispatch scheduling process*:

1) Was large enough to cover the entire quantity of the transaction originally scheduled by the *schedule-of-record* at the same *market participant/intertie metering point* combination (commonly referred to as a, "MP/MSP/CSP triplet"); and,
2) Was offered at the *Maximum Market Clearing Price* (+*MMCP*).

The test is as follows:

For each *metering interval* 't' at *intertie metering point* 'i' where the transaction passed PART 1 for *settlement hour* 'h':

Let 'B' be matrix $BL_{k,h}^{i,t}$ (see above for definition).

IF B[2,2] ≥ $DA\_DQSW_{k,h}^{i,t}$ AND B[2,1] = +MMCP

THEN

Allow Reason Code to remain as-is, but exempt the transaction from the DA-EFC.

ELSE

Allow Reason Code to remain as-is, and do NOT exempt the transaction from the DA-EFC.

Implications:

- A day-ahead export transaction must be constrained down to a level lower than its original *schedule-of-record* in order to receive exemption status;
- The entire amount of the constrained portion of the transaction must have been offered into the *Pre-dispatch* at +*MMCP* in order to receive exemption status (compare Figures 2-1 and 2-
- 2 to see examples where this condition is met and not met respectively); and
- Only the first lamination (i.e. the first 2 p-q pairs) of the Pre-dispatch offer curve for each export transaction are relevant in performing this test (due to the existing *market rule* requirement that *offer* prices must be monotonically decreasing).

2.6.7 Decision Logic Applied During the Offer Price Test for Linked Wheel Transactions:

The test seeks to demonstrate a best efforts attempt to schedule both the import and export legs of a day-ahead linked wheel (DALW) transaction through both:

- A Pre-dispatch bid at positive maximum market clearing price (+MMCP) for a quantity at least equal to the day-ahead export quantity, and
- A Pre-dispatch offer at negative maximum market clearing price (–MMCP) for a quantity at least equal to the day-ahead import quantity.

For import leg of the linked wheel, the decision logic for the price test is described in Section 2.6.5 with the following amendment:

For each *metering interval* 't' at *intertie metering point* 'i' where the transaction passed PART 1 for *settlement hour* 'h':

Let 'B' be matrix $PD\_BE_{k,h}^{i,t}$ (see above for definition).

IF $B[2,2] \geq DA\_DQSI_{k,h}^{i,t}$ AND B[2,1] = -MMCP

THEN

Allow Reason Code to remain as-is, but exempt the transaction from the **RT-IFC-DALW**.

ELSE

Allow Reason Code to remain as-is, and do NOT exempt the transaction from the **RT-IFC-DALW**.

For export leg of the linked wheel, the decision logic for the price test is described in Section 2.6.6 with the following amendment:

For each *metering interval* 't' at *intertie metering point* 'i' where the transaction passed PART 1 for *settlement hour* 'h':

Let 'B' be matrix $BL_{k,h}^{i,t}$ (see above for definition).

IF $B[2,2] \geq DA\_DQSW_{k,h}^{i,t}$ AND B[2,1] = +MMCP

THEN

Allow Reason Code to remain as-is, but exempt the transaction from the **RT-EFC-DALW**.

ELSE

Allow Reason Code to remain as-is, and do NOT exempt the transaction from the **RT-EFC-DALW**.

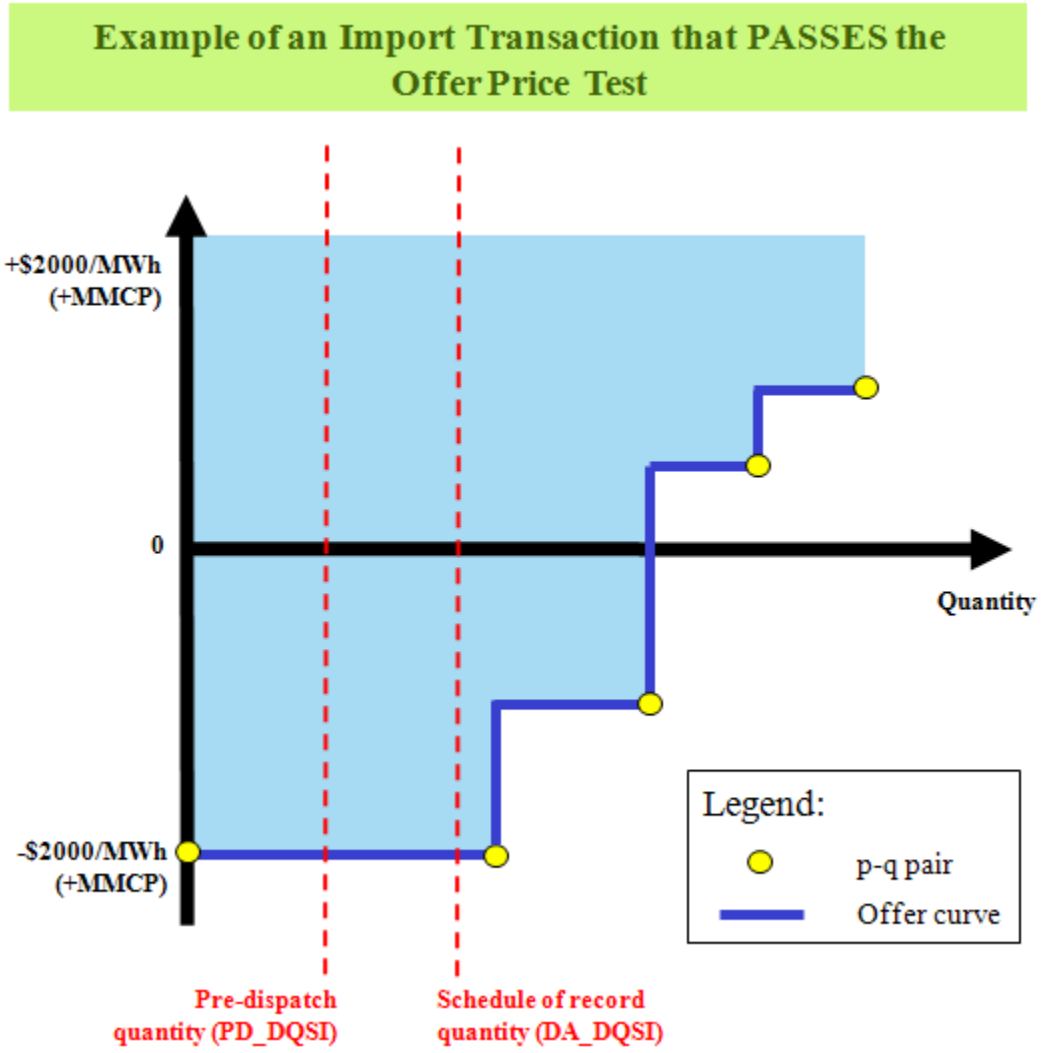

Figure 2-1 – Example of an Import Transaction that PASSES the "Offer Price Test"

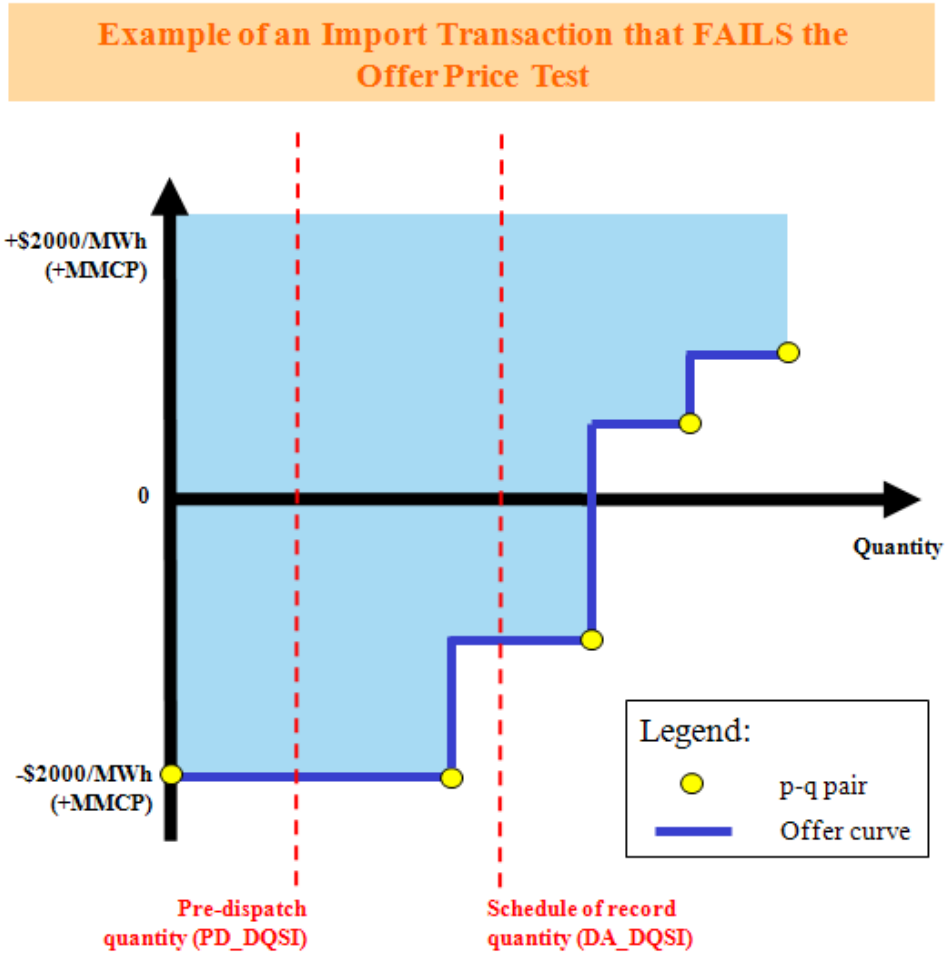

Figure 2-2 – Example of an Import Transaction that FAILS the "Offer Price Test"

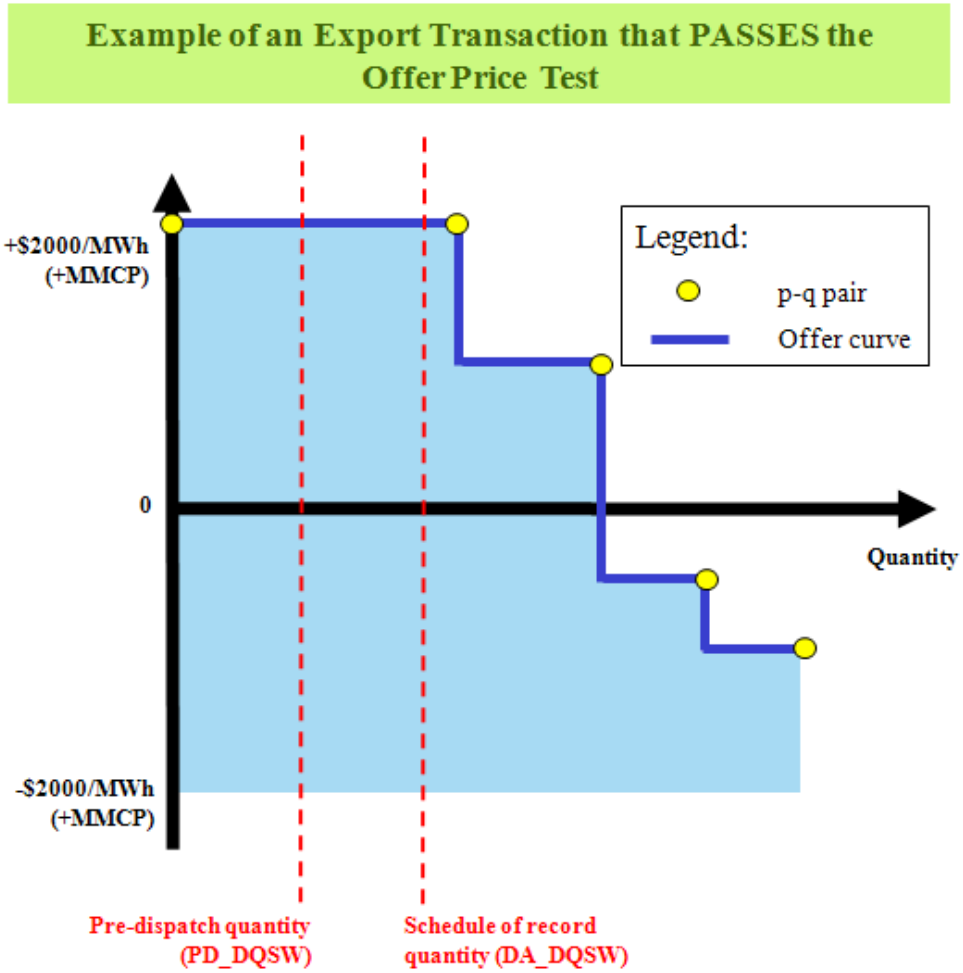

Figure 2-3 – Example of an Export Transaction that PASSES the "Offer Price Test"

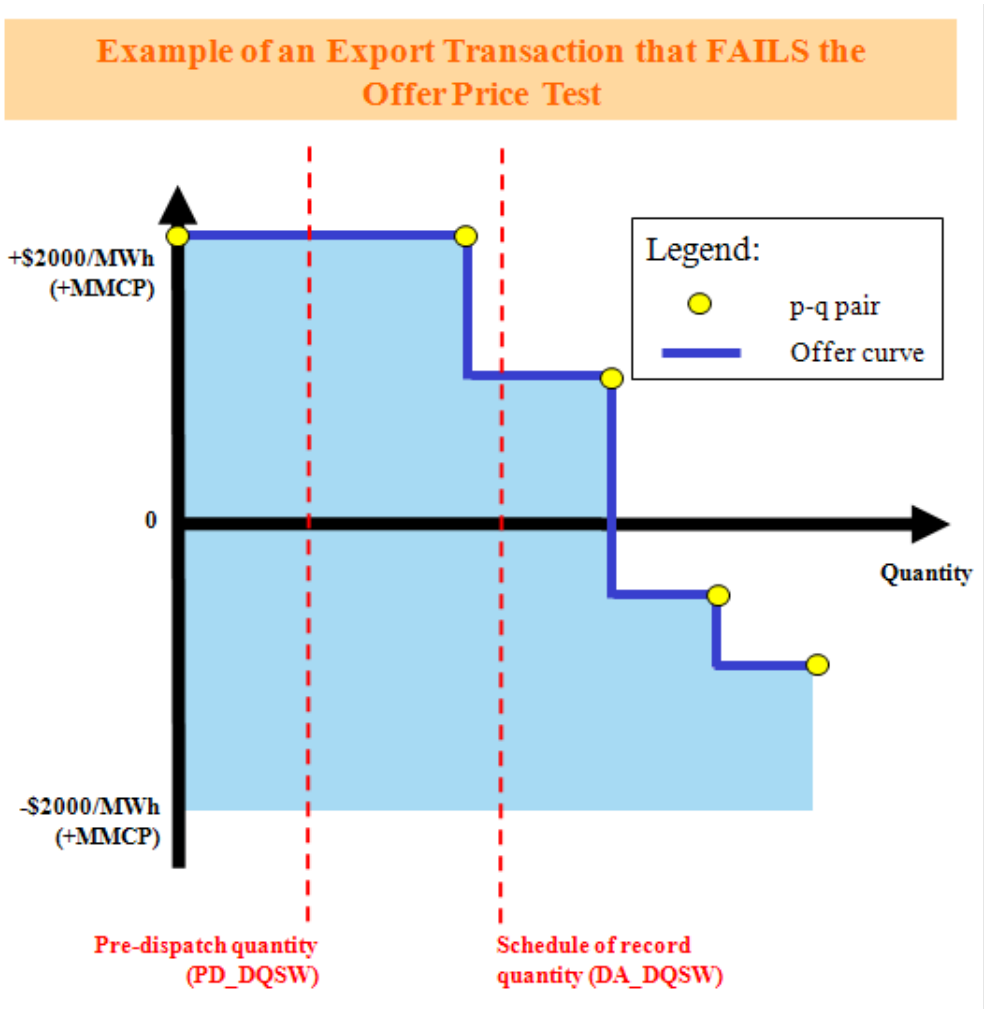

Figure 2-4 – Example of an Export Transaction that PASSES the "Offer Price Test"

- End of Section -

References

Document Name	Doc ID
Market Rules	MDP_RUL_0002
Format Specification for Settlement Statement Files and Data Files	IMP_SPEC_0005
Ontario Energy Board: Ontario Transmission Rate Schedules EB-2007-0759	EB-2007-0759
Order-in-Council 137/2008 Ontario Power Generation Rebate	OIC 137/2008
Ontario Regulation 442/01 "Rural or Remote Electricity Rate Protection	442/01
Ontario Regulation 493/01 "Debt Retirement Charge – Rates and Exemptions"	493/01
Ontario Regulation 494/01 "Debt Retirement Charge Administration"	494/01
Legislative Assembly of Ontario S.O. 2003, Chapter 8 "Bill 4, An Act to amend the *Ontario Energy Board Act, 1998* with respect to electricity pricing." **Royal Assent:** December 18, 2003	Bill 4
Regulations made pursuant to Bill 4 Ontario Regulation 42/04 made under the *Ontario Energy Board Act, 1998*. Ontario Regulation 43/04 made under the *Ontario Energy Board Act, 1998*.	 42/04 43/04
Legislative Assembly of Ontario, Bill 210 – "Electricity Pricing, Conservation and Supply Act, 2002." S.O. 2002, Chapter 23 **Formal Title:** "An Act to amend various Acts in respect of pricing, conservation and supply of electricity an in respect of other matters related to electricity." **Royal Assent:** December 9, 2002	Bill 210

Document Name	Doc ID
Regulations made pursuant to BILL 210 "Electricity Pricing, Conservation and Supply Act, 2002." **Regulation 339/02** (Under the *Ontario Energy Board Act, 1998*) "Electricity Pricing" – amended by regulation 433/02 **Regulation 341/02** (Under the *Ontario Energy Board Act, 1998*) "Compensation and Set-Offs Under Part V of the Act" – amended by regulation 434/02 **Regulation 342/02** (Under the *Ontario Energy Board Act, 1998*) "Payments to the IMO" – revoked by regulation 432/02 **Regulation 432/02** (Under the *Ontario Energy Board Act, 1998)* "Revoking Ontario Regulation 342/02 (Payments to the IMO)" **Regulation 433/02** (Under the *Ontario Energy Board Act, 1998*) "Amending Ontario Regulation 339/02 (Electricity Pricing)" **Regulation 434/02** (Under the *Ontario Energy Board Act, 1998)* "Amending Ontario Regulation 341/02 (Compensation and Set-Offs Under Part V of the Act)" **Regulation 435/02** (Under the *Ontario Energy Board Act, 1998*) "Payments re Section 79.4 of the Act" **Regulation 436/02** (Under the *Ontario Energy Board Act, 1998*) "Payments re Various Electricity-Related Charges" **Regulation 330/09** (Under the *Ontario Energy Board Act, 1998*) "Cost recovery re section 79.1 of the Act"	339/02 (amended by 433/02) 341/02 (amended by 434/02) 342/02 (revoked by 432/02) 433/02 434/02 435/02 436/02 330/09
***Ontario Energy Board*, *Independent Electricity Market Operator* Licence EI-2003-0088, issued on July 30, 2003**	**EI-2003-0088**
Legislative Assembly of Ontario, Bill 100 – "Electricity Restructuring Act, 2004" **Royal Assent:** December 9, 2004 Subject to regulations made pursuant to the "Electricity Restructuring Act, 2004" once proclaimed into force: Ontario regulation 427/04 "Payments to the Financial Corp. re Section 78.2 of the Act" Ontario regulation 428/04 "Payments re Section 79.4 of the Act" Ontario regulation 398/10 Amending Ontario regulation 429/04 "Adjustments Under Section 25.33 of the Act" Ontario regulation 430/04 "Payments re Section 25.33 of the Act"	BILL 100 See also, Ontario e-laws website for official Ontario Government Regulation ID numbers at: http://www.e-laws.gov.on.ca

Document Name	Doc ID
Ontario regulation 431/04 "Payments re Section 25.34 of the Act" Section 78.3 of the (Ontario Energy Board) Act Section 78.4 of the (Ontario Energy Board) Act Section 78.5 of the (Ontario Energy Board) Act	
Ontario regulation 53/05 made under *OEB Act, 1998* re "Payments under Section 78.1 of the Act" Ontario regulation 98/05 made under *OEB Act, 1998* re "Payments re Various Electricity-Related Charges" Ontario Regulation 66/10 made under *OEB Act, 1998* re "Assessments for Ministry of Energy and Infrastructure Conservation and Renewable Energy Program Costs"	BILL 100 See also, Ontario e-laws website for official Ontario Government Regulation ID numbers at: http://www.e-laws.gov.on.ca/
Ontario Clean Energy Benefit Act, 2010, Ontario Regulation 495/10.	
Ontario Regulation 314/15 "Ontario Electricity Support Program"	314/15
Ontario Regulation 363/16 made under "Ontario Rebate for Electricity Consumers Act, 2016".	363/16
Ontario Regulation 364/16 made under "Ontario Rebate for Electricity Consumers Act, 2016".	364/16

– End of Document –