

Market Settlements Overview

October 2017



Agenda

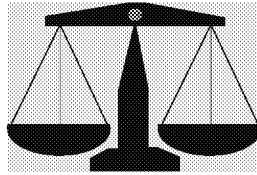
- Settlement Overview
- Settlement/Invoicing Timelines
- Settlement Statements
- Notice of Disagreements (NOD)
- Notice of Disputes
- Other Settlement Activities
- Implementing New Programs and Policies
 - Industrial Conservation Initiative (ICI) Expansion
 - Conservation First Framework (CFF) Payments
 - Hydro Quebec (HQ) Contract Implementation
 - Ontario Fair Hydro Act (OFHA) Implementation

Settlement Overview

Revenue Neutrality Principle

IESO must remain revenue neutral

$$\text{Sum Received from MP Debtors} = \text{Sum Due to MP Creditors}$$



Settlements must balance debit and credit charges

In settling transactions within the IESO-administered market, under government regulation, or on behalf of MNDM, the IESO receives money from some participants (e.g. local distribution companies, directly connected wholesale consumers, embedded wholesale consumers, and retailers), and pays that money out to other participants (e.g. generators and wholesale sellers).

Settlement Overview

Revenue Neutrality Principle (Exceptions)

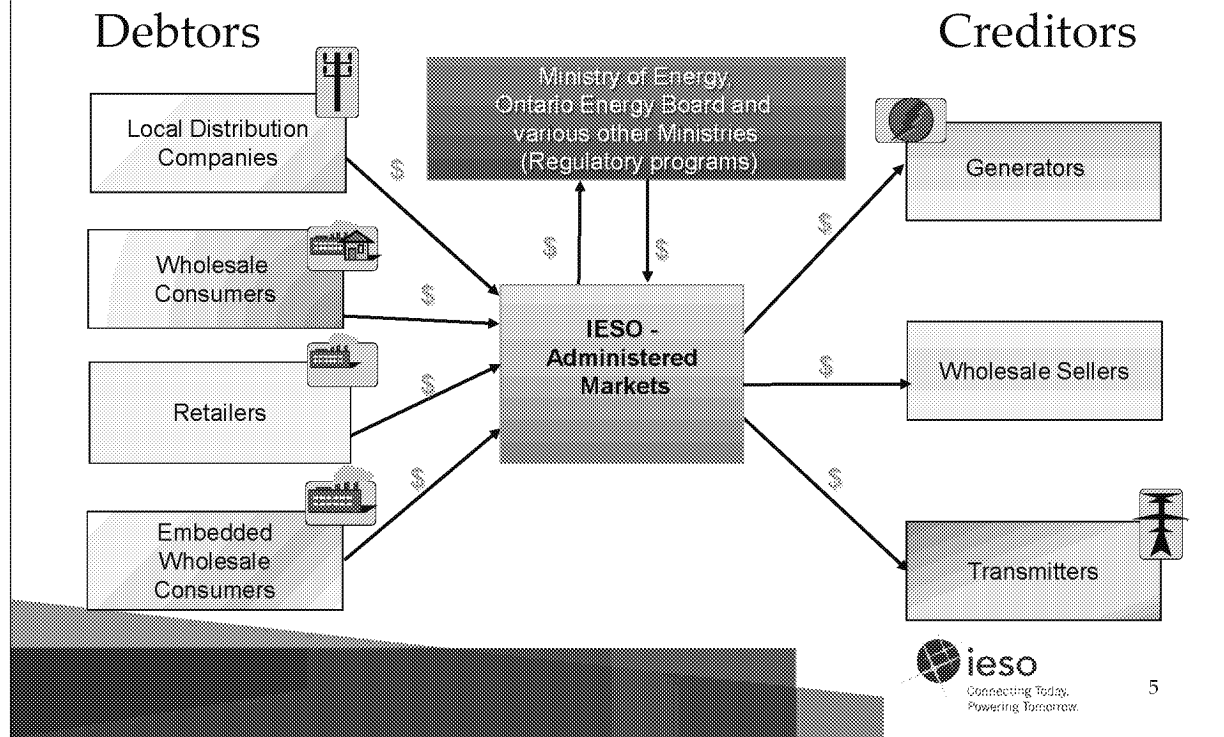
IESO also manages variances through Finance/Treasury for the following programs:

- Ontario Fair Hydro Plan (OFHP)
 - Regulated Price Plan (RPP)
 - GA Modifier
- Ontario Electricity Support Program (OESP)
- Rural or Remote Rate Protection (RRRP)
- Transmission Rights (TR)

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Settlement Overview

Who the IESO Settles



In settling transactions within the IESO-administered market, under government regulation, or on behalf of MNDM, the IESO receives money from some participants (e.g. local distribution companies, directly connected wholesale consumers, embedded wholesale consumers, and retailers), and pays that money out to other participants (e.g. generators and wholesale sellers).

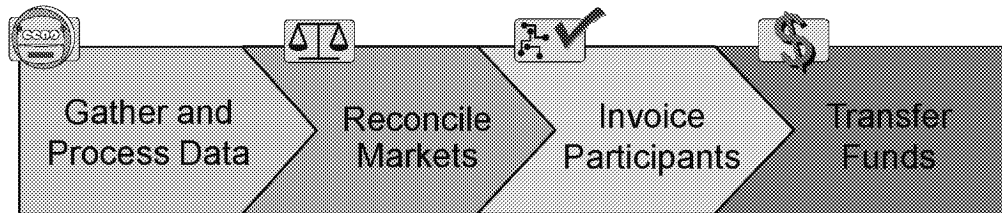
LDCs settle downstream

OEB role

Settlement Overview

Flow of Data

Flow of data and information



Enabled by the:

- IT supported systems; and
- End User Computing tools (Supported by the business)

IESO collects meter data nightly via modem and internet

Approximately 4,100 meters are polled for meter readings

Meter readings are on a 5 minute basis

Each meter reading provides multiple pieces of information

In excess of 8 million separate pieces of information is collected each night

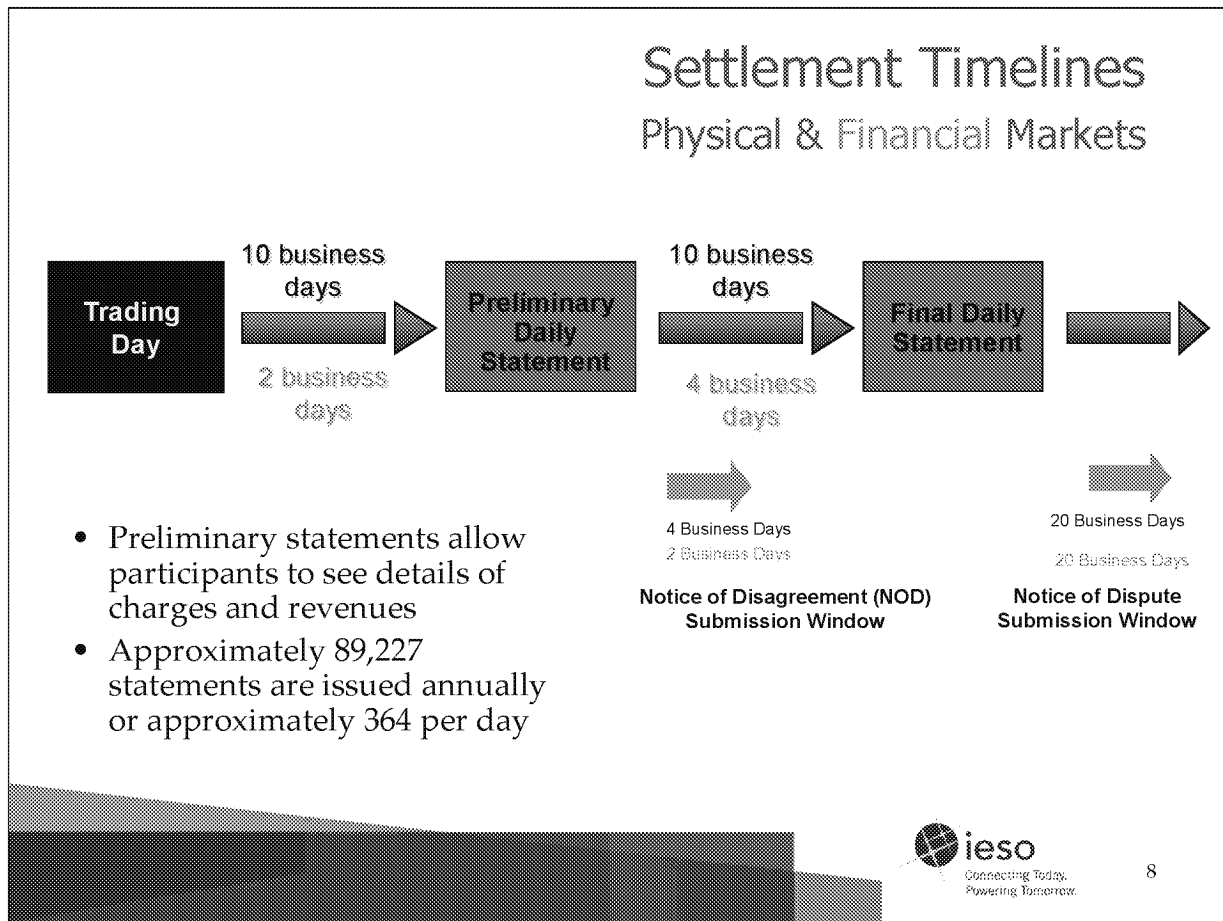
IESO issues meter trouble reports for any metering problems encountered (on average 17 reports are issued each business day)

IESO audits approximately 5% of the meter installations every year

Settlement Overview

Market Types

- IESO settles two distinct markets:
 - Physical
 - Settlement of the real time market (energy, operating reserve, procurement contract, reliability services, global adjustment, etc.)
 - Financial
 - Settlement of Transmission Rights (TR)
 - The IESO has a monthly auction to sell TRs, which entitle the owner to a payment if the price of energy in Ontario is different from the price in an intertie zone.

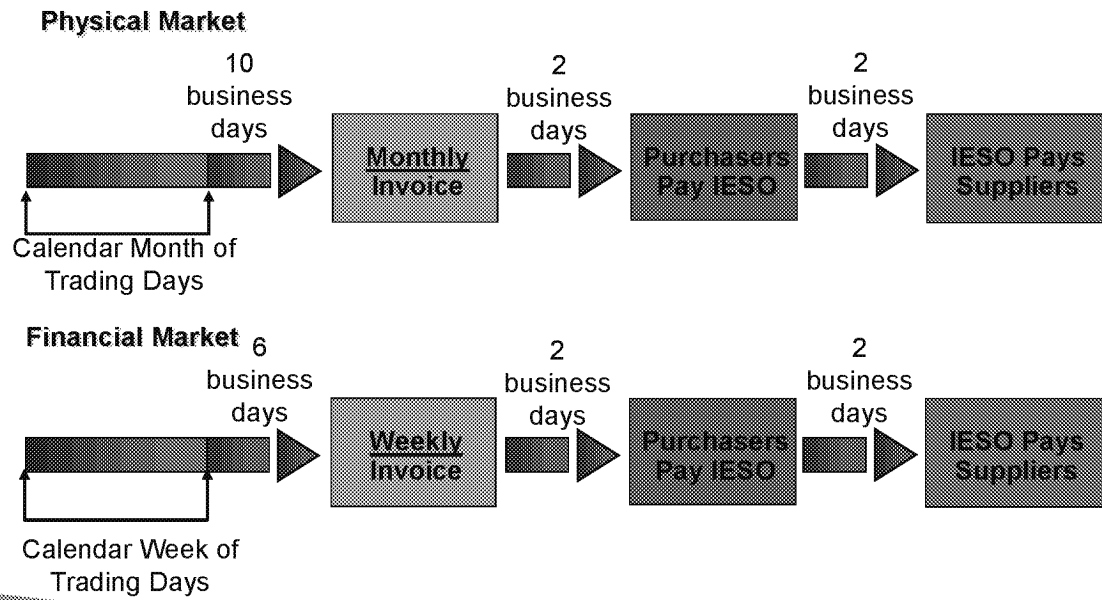


The IESO issues two settlement statements to every market participant for activities in the physical market for each trading day.

The first settlement statement, called the preliminary settlement statement is provided in order to allow market participants to review the data which the IESO will use to determine all of the participant's charges associated with their transactions for that day. The preliminary settlement statement is issued ten business days after the trading day to which it relates.

Invoice Timelines

Physical & Financial Markets



Settlement Statement

Types of Transactions

- A settlement statement may contain up to five generic types of transactions:

Costs (debit charges) or revenues (credit charges) associated with

1. The operation of the **IESO-administered market**. Examples:
 - Energy and energy-related charges,
 - Operating reserve,
 - Market procurement contracts (e.g. ancillary service contracts),
 - Transmission Rights (TR) payments
2. Settlement of **Global Adjustment**
 - Class A and Class B

Settlement Statement

Types of Transactions (Cont'd)

3. An Ontario Energy Board (**OEB**) **order**, where the IESO collects and disburses funds as per OEB order. Examples:
 - Transmission delivery charges,
 - Rural or Remote Electricity Rate Protection (RRRP).
4. Government **legislation or regulations** for rate mitigation or consumer support, where the IESO collects and disburses funds accordingly. Examples:
 - Regulated Price Plan (RPP),
 - Ontario Electricity Support Program (OESP),
 - Ontario Rebate for Electricity Consumers (OREC).

Settlement Statement

Types of Transactions (Cont'd)

5. Settlement on behalf of various Ministries as per Service Level Agreements (SLA). Examples:
 - Northern Industrial Electricity Rate Program (NIERP) on behalf Ministry of Northern Development and Mines (MNDM)

Settlement Statement

Sample

A	B	C	D	E	F	G	H	I
1	H	191324	13-Sep-13	197403 ST	P	P	-20345.52	-601445.35
2	SC	101 NET ENERGY MARKET SETTLEMENT FOR NON-DISPATCHABLE LOAD	13-Sep-13	-16481.7 N				
3	SC	150 NET ENERGY MARKET SETTLEMENT UPLIFT	13-Sep-13	-360.94 N				
4	SC	155 CONGESTION MANAGEMENT SETTLEMENT UPLIFT	13-Sep-13	-709.45 N				
5	SC	186 INTERTIE FAILURE CHARGE REBATE	13-Sep-13	17.03 N				
6	SC	250 10-MINUTE SPINNING MARKET RESERVE HOURLY UPLIFT	13-Sep-13	-112.93 N				
7	SC	252 10-MINUTE NON-SPINNING MARKET RESERVE HOURLY UPLIFT	13-Sep-13	-114.57 N				
8	SC	254 30-MINUTE OPERATING RESERVE MARKET HOURLY UPLIFT	13-Sep-13	-11.57 N				
9	SC	451 HOURLY REACTIVE SUPPORT AND VOLTAGE CONTROL SETTLEMENT DEBIT	13-Sep-13	-230.74 N				
10	SC	900 GST/HST CREDIT	13-Sep-13	13.72 N				
11	SC	950 GST/HST DEBIT	13-Sep-13	-2354.37 N				
12	DP	101	13-Sep-13	1	0	63.25 ONZN	761902	P
13	DP	150	13-Sep-13	1	0	-1.41 ONZN		P
14	DP	155	13-Sep-13	1	0	-44.06 ONZN		P
15	DP	250	13-Sep-13	1	0	-3.44 ONZN		P
16	DP	252	13-Sep-13	1	0	-0.3 ONZN		P
17	DP	254	13-Sep-13	1	0	-0.2 ONZN		P
18	DP	451	13-Sep-13	1	0	-15.62 ONZN		P
19	DP	101	13-Sep-13	2	0	-177.32 ONZN	761902	P
20	DP	150	13-Sep-13	2	0	-2.27 ONZN		P
21	DP	155	13-Sep-13	2	0	-201.5 ONZN		P
22	DP	250	13-Sep-13	2	0	-2.95 ONZN		P
23	DP	252	13-Sep-13	2	0	-0.22 ONZN		P
24	DP	254	13-Sep-13	2	0	-0.18 ONZN		P
25	DP	451	13-Sep-13	2	0	-19.5 ONZN		P

Notice of Disagreement (NOD)

- Market participants file NODs if they disagree with any settlement amounts on their preliminary settlement statements.
- A market participant may disagree with things such as meter readings, application of price and/or schedules, etc.
- Adjustments resulting from a NOD may appear on the final settlement statement for the trading day or a subsequent preliminary settlement statement
- 1025 NODs were filed in 2016 and 315 resulted in re-settlement

Notice of Dispute

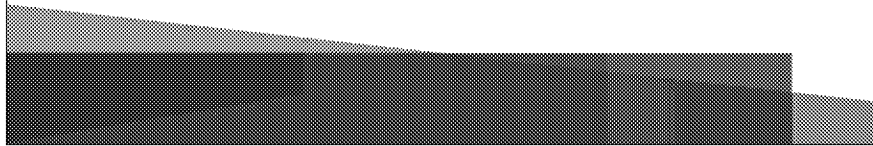
- Market Participants file a Notice of Dispute if they do not agree with IESO's resolution of a NOD.
- The market participant has 20 business days after the issuing of the Final Settlement Statements (FSS) to file a Dispute.
- 7 disputes were filed in 2016 and 3 resulted in a re-settlement

Other Settlement Activities

- Internal/External Reporting
 - RPP variance reporting (OEB, Finance)
 - Fair Hydro Act, 2017
 - OESP Settlement (OEB and Ministry of Energy)
 - First Nations On-Reserve Delivery Credit (FNDC) (Ministry of Energy)
 - Distribution Rate Protection (DRP) (Ministry of Energy)
 - Rural or Remote Electricity Rate Protection (RRRP) (Ministry of Energy)
 - Global Adjustment Reporting
 - 1st and 2nd Estimation Reports (Ministry of Energy)
 - Actual Rate report (OEB and Ministry of Energy)
 - Monthly Market Report
 - Statistics Canada Reporting
 - Inadvertent Energy Flow Tracking

Other Settlement Activities

- Estimate Global Adjustment (GA) Class B rate
 - Determine 1st estimate, 2nd estimate and Actual class B GA rates monthly to allow LDCs to bill their Class B customers
- Support the resolution of any notice of dispute
- Support any MACD investigations
- Implement new programs and policies



Implementing New Programs and Policies

- Industrial Conservation Initiative (ICI) Expansion
- Conservation First Framework (CFF) Payments
- Hydro Quebec (HQ) Contract Implementation
- Ontario Fair Hydro Act (OFHA) Implementation

ICI Expansion

Class A Determination

- To be eligible for the ICI program, consumers must meet certain criteria based on their activity during the year
- Eligible consumers are given a “peak demand factor” (PDF) which determines the portion of system-wide Global Adjustment costs they pay each month
 - PDF calculation is based on their activity during the top 5 peak hours of the year
- The election to be Class A lasts one full year
 - Cannot opt-out of ICI mid-way through the year

ICI Expansion

- As part of the Ontario Fair Hydro Plan, the Global Adjustment regulation O. Reg. 429/04 was amended in April 2017 to reflect changes to criteria for becoming a Class A market participant or consumer.
- The changes were made to generally allow more businesses to have the option of becoming Class A,
- Recent changes specifically target smaller manufacturing and industrial customers.

ICI Expansion (Cont'd)

Changes Over Time

- Changes to Class A peak demand criteria over time:
 - 2011: Must exceed 5MW to be eligible
 - 2015: Must exceed 5MW to be automatically eligible.
Participants and consumers in the 3-5 MW range are potentially eligible to opt-in to program, depending on industry classification (NAICS code)
 - 2017: Must exceed 5MW to be automatically eligible.
Participants and consumers in the 1-5 MW are eligible but must opt-in. Participants in the 0.5 – 1 MW range are potentially eligible depending on industry classification (NAICS code)

ICI Expansion (Cont'd)

Number of ICI Customers

- 2016:

	Average Monthly Peak Demand	
	Greater than 5MW	Between 3-5 MW
IESO	69	1
LDCs*	137	131
Total	206	132

- 2017:

	Average Monthly Peak Demand		
	Greater than 5MW	Between 1-5 MW	Between 0.5-1 MW
IESO	68	6	0
LDCs**	136	1025	373
Total	204	1031	373

*37 LDCs had Class A customers in 2016

**57 LDCs have Class A customers in 2017

ICI Expansion (Cont'd)

- The expansion of the ICI program has increased the amount of work for the IESO and the LDCs
 - Communicating changes effectively
 - Assisting smaller LDCs
 - Challenges meeting timelines in the regulation
- There has been an increase in requests for guidance around certain provisions in the regulation
 - Due to increased volume of customers, more acquisitions and changes in ownership of Class A consumers.
 - Increased number of Class A customers means LDCs are looking to the IESO for guidance w.r.t. provisions in the regulation.

ICI Expansion (Cont'd)

- ICI-eligible market participants are typically large, well-established loads that are familiar with the eligibility requirements
- Many market participants hire external consultants to assist with predicting system peaks
 - Better Class A peak demand factor results in lower GA payments
- Peak tracking information is available to assist market participants in identifying potential peaks.

CFF Payments

Flow-Through to MS

- As part of the Conservation First Framework (CFF), LDCs are tasked with delivering conservation programs to residential and business customers across the province
- On a monthly basis, Conservation provides MS with amounts to be paid to specific LDCs
- Tool developed to process these payments through our settlements systems
 - Conservation doesn't have to process manual invoices anymore
- Conservation payments to LDCs are recovered through GA

HQ Contract Implementation

- Activities for the implementation of the contract settlement:
 - Settlements was consulted in the negotiation of HQ contract
 - Worked with Contracts and Support Services group and Hydro Quebec for the interpretation of contract terms
 - Came up with settlement requirements based on the contract and interpretations
 - Developed and tested the end user computing tool for the settlement of the contract
 - Worked with Finance group to implement new charge types
 - Updated market facing documents for the new charges types

HQ Contract Implementation (Cont'd)

- On going support of the contract settlement:
 - Coordinate with Contracts group for monthly settlement input
 - Resolve settlement disagreement for HQ related NODs



OFHA Implementation

Background

- The *Fair Hydro Act, 2017* came into effect on June 1, 2017. The Act puts in place the framework for giving effect to the Fair Hydro Plan initiatives that the government has stated will:
 - lower electricity bills by 25% on average for all residential customers and as many as half a million small businesses and farms;
 - hold increases to the rate of inflation for four years;
 - provide additional bill relief for residential customers in rural or remote areas of the province and for on-reserve First Nations residential customers; and
 - remove the cost of certain electricity-related relief programs from electricity bills, and instead fund those programs through taxes

OFHA Implementation (Cont'd)

- Activities for the implementation of the OFHA settlement:
 - Worked with the Ministry to come up with the design of the online settlement forms and report template
 - Worked with IT to come up with the business requirements for the development and update of online settlement forms
 - Implemented new online forms for the new regulatory programs:
 - First Nations on-Reserve Delivery Credit (FNDC)
 - Distribution Rate Protection (DRP)
 - Rural or Remote Electricity Rate Protection (RRRP)
 - Updated existing online forms as per the regulation changes
 - Ontario Electricity Support Program (OESP)
 - Regulated Rate Protection (RPP) forms

OFHA Implementation (Cont'd)

- Activities for the implementation of the contract settlement continued:
 - Worked with Finance to create new charge types for the new regulatory programs
 - Organized training webinars for market participants for the settlement claim submissions through the online form
 - Developed end user computing tools for the reporting of:
 - FNDC
 - DRP
 - RRRP
 - OESP
 - RPP Variance
 - Updated end user computing tool for the settlement of:
 - RPP

OFHA Implementation (Cont'd)

- On going activities for the administration and support of the programs:
 - Provide monthly settlement report of the programs to the Ministry and OEB
 - Assist OEB and the Ministry in their review and analysis of the settlement report
 - Assist with market participants in the interpretation of regulations
- Future activities for the programs as per Ministry's request:
 - Further changes to existing online settlement forms for more accurate reporting of the settlement data

OFHA Implementation (Cont'd)

Impact to Settlements' Functions

- Adjusted current tools and processes within the group to align with provision of the legislations and regulations
- Worked closely with both external and internal groups for the successful implementation of the programs
- Took on more responsibilities in the administration of the new programs.
 - Report on the monthly settlement of the programs
 - Assist in the analysis and review of the settlement data
 - Provide guidance in the interpretation of the regulations