

Metering and Settlements

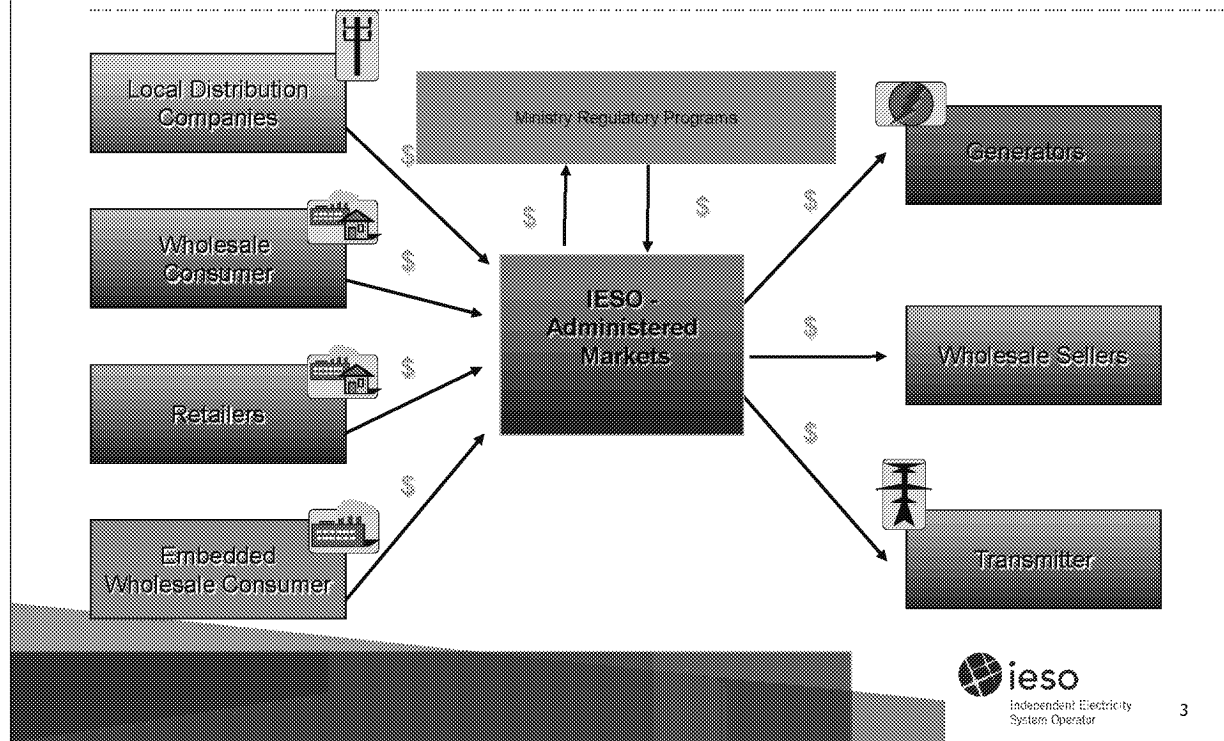
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Agenda

- Settlement overview
- Metering
- Settlement Timelines
- Settlement Statements
- Notice of Disagreement
- Transmission Rights Market
- Other settlement activities

Overview - Who the IESO Settles



Metering – Start With Measuring Injection/Consumption

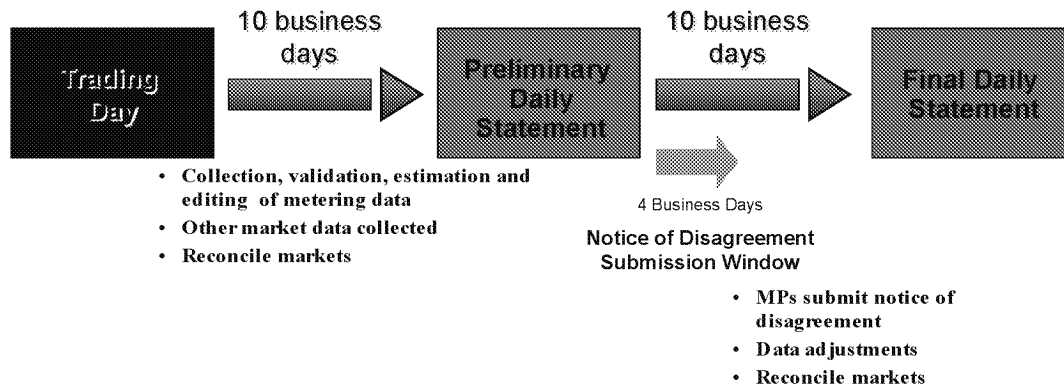
- IESO collects meter data nightly via modem and internet
- Approximately 4,140 meters are polled for meter readings
- Meter readings are on a 5 minute basis
- Each meter reading provides multiple pieces of information
- In excess of 8 million separate pieces of information is collected each night
- IESO issues meter trouble reports for any metering problems encountered (on average 22 reports are issued each business day) and resolves the issues quickly when possible

- Responsible for establishing metering standards – MOU with Measurement Canada
- Registered meters through online IESO, reviewing all supporting info and documentation
- Registering Meter Service Providers (MSP), including performance measurement and compliance (working closely with MACD)
- IESO audits approximately 5% of the meter installations every year (External auditors review the meters where the IESO is the Metered Market Participant for RES I/ RES II)
- IESO complete DR audits

Physical Market Settlement Statements – Moving Measurement to Settlement

- A settlement statement may contain up to four generic types of transactions:
 - Costs or revenues related to the operation of the IESO-administered market (e.g. energy and energy related charges);
 - Costs or revenues that the IESO collects and disburses under an Ontario Energy Board order (e.g. transmission charges);
 - Costs or revenues that the IESO collects and disburses under government legislation or regulation (e.g. global adjustment); and
 - Costs or revenues related to programs that the IESO settles on behalf of the Ministry funded programs e.g. 8% rebate, Ontario Electricity Support Program, Northern Development and Mines rebate etc.
- Volume of information contained within a settlement statement varies greatly depending upon the nature and size of the market participant
- Approximately 690 statements are issued per business day
- Approximately \$17.5 billion was settled in the wholesale electricity market in 2016

Physical Market Settlement Timelines



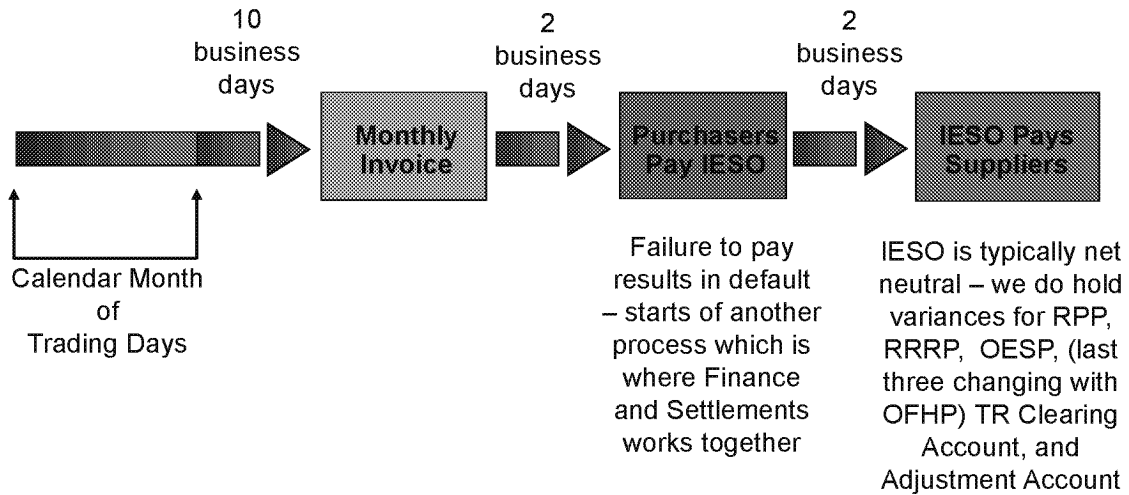
Notice of Disagreement (NoD)

- A NoD allows an MP or the IESO to identify issues they have with a preliminary settlement statement – in 2016, 982 NODs received, 56% resulted in subsequent adjustment
- A market participant may disagree with among other things:
 - Meter readings
 - Application of price
 - Schedules
- A market participant **may not** disagree with the calculation of prices or the equations used in calculating charges – however can initiate a market rule amendment
- A NoD must be filed no later than 4 business days after the issuance of the preliminary statement – very quick turnaround so must be reviewing daily

NoD

- IESO may agree with the adjustments proposed by the market participant, agree with the basic principle but implement a different solution, or determine that no correction is necessary
- If the issue is resolved before the final statement
 - the adjustment if required will appear on the final statement
- If the issue is resolved after the final statement
 - the adjustment if required will appear on a subsequent preliminary statement and related final statement
- IESO must close a NoD within 15 business days after final statement issue
- The Dispute Resolution Process exists for the market participant who does not agree with IESO's resolution to the NoD – we have six or seven open disputes working with Legal for resolution

Physical Market Settlement Moves to Invoices



Financial Market – Financial Transmission Rights

- Buy rights to hedge against congestion at the interties
- Preliminary statements issued on 2nd business day after the trading day of auction
- NoD must be filed within 2 days after preliminary statement issued
- Notice of dispute must be filed within 20 business days of final statement being issued
- Congestion payments flows through Physical Market
- Auction revenues along with undisbursed congestion rents go to the Transmission Rights Clear Account and disbursed every six months by Settlements – in 2016 we disbursed \$113M back to Ontario loads and exporters.

Other Settlement Activities

- Processing MACD adjustments
- Disbursing adjustment account and over-collection of IESO fees
- Conservation/Contract (Ancillary Services and GA) settlement including most recently Hydro Quebec contract
- Ontario Rebate for Electricity Consumers Act (ORECA)
 - A program to rebate 8% off eligible consumer bills
- NEIRP for Ministry of Northern Development and Mines
 - A program designed to reduce electricity costs for certain businesses in northern Ontario that commit to increased energy efficiency.

Other Settlement Activities

- **Supporting Ontario's Fair Hydro Plan Act**
- Refinancing the Global Adjustment (GA) over a longer time period for Regulated Price Plan (RPP) and specified consumers, including families, farms and small businesses – similar to Ontario Rebate for Electricity Consumers (8% rebate)
- Enhancing competitiveness for NAICS small manufacturers and industrials by lowering the eligibility threshold to 500 KWs for Industrial Conservation Initiative (ICI). We calculate all the Peak Demand Factors for Class A customers
- Helping vulnerable electricity consumers by enhancing electricity support and conservation programs, and funding these programs from provincial revenues (RRRP, OESP and First Nations On-Reserve Delivery Credit). We developed forms to permit participants to submit amounts to be recovered and will be reporting to both OEB and Ministry

Day to Day Interactions Inside IESO

- Pretty much each part of the organization:
 - Corporate Relations (Stakeholder and Public Affairs), Finance, MACD, Legal, Contracts, Conservation (Performance and Program & Partner Services), Regulatory Affairs, Market & System Operations, Markets (including part in MRP), Planning (Resource and Transmission Integration), IT (a lot of IT interaction! – we are replacing the Commercial Reconciliation System in advance of MRP implementation), IA (many audits internal and external, including CSAE 3416 and SOC II),