MARKET RULES AND ROLE OF THE IESO

Board of Directors Orientation

April 2017

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IESO Engagement Framework

Process Continuum

1. **Pre-Consult** Discussions with SAC and stakeholders via working groups and committees, one-on-one interviews, information sessions
2. **Launch Engagement**
3. **SAC - Follow up** Present how the IESO considered and responded to feedback during SE initiative
4. **Technical Panel** - if market rule amendments are required
5. **IESO Board - if review or approval is required**
6. **SAC Final Report** Present how stakeholder feedback throughout the engagement shaped the outcome - close SE if applicable

IESO Engagement Principles - http://www.ieso.ca/sector-participants/engagement-initiatives/overview/engagement-principles

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Technical Panel Review to Align with IESO Engagement Framework

- In 2014, IESO Board requested a review of the Technical Panel (TP) and the Market Rule Amendment (MRA) process in response to stakeholder feedback

- Purpose of the review was to assess:
  1. The TP's role within the IESO's Engagement Framework and how the TP should interact within that Process
  2. The TP's role, in relation to the MRA Process, and how it can be better aligned with the SE Process

Technical Panel Review

- The Review determined that the TP process was still needed in order to have a stakeholder body tasked with the technical review of market rules
- At a high level, the recommendations touched on the following areas:
  - TP members should be more actively involved within the stakeholder engagement initiatives that will help inform members of those discussions – particularly those that may lead to rule amendments affecting constituencies they represent;
  - More emphasis on the rationale behind the member's vote on market rule amendments;
  - Proposed changes to composition of the Technical Panel
- Feedback on a proposed terms of reference was received from members of the Stakeholder Advisory Committee, TP and through broader engagement
- IESO Board proposed changes to the Governance & Structure By-Law to the Minister of Energy to effect the implementation of a new terms of reference
- The Terms of Reference came into effect in November 2016 - http://www.ieso.ca/-/media/files/ieso/document-library/tp/technical-panel-terms-of-reference.pdf?la=en

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New Terms of Reference - Clarify Duties of the Panel

- Review and provide advice on proposed amendments to the market rules and ad hoc technical advice, as requested

"…advice helps the Board ensure that the technical writing of the proposed rule amendment reflects a design that has been established through other engagement discussions and provides a proper fit within the context of other market rules" – TP Terms of Reference

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Updated Membership

Core Market Participant Members (7)	
Generators (2)	Bill Wilbur, Brian Kelly
Transmitters (1)	Luis Marti
Distributor (1)	Joe Saunders
Retailer/Wholesaler (1)	Julien Wu
Consumer (1)	Martin Longlade
Other Market Participant (1)	Sarah Griffiths
Non-Market Participant Members (3 to 5)	
Generators	N/A
Consumers	Robert Lake, Bob Bieler
Energy Related Businesses/Services	Dave Dent, Ron Collins
IESO Member (1)	Barbara Ellard
Chair	Chuck Farmer

*All members appointed by the IESO Board

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Roles and Authorities

- Technical Panel
  - Reviews all proposed market rule amendments
  - Provide advice to IESO Board to ensure technical writing of proposed amendments reflect final design intent of the proposed change
  - Provides a recommendation with rationale on amendments to the IESO Board
- IESO Board of Directors
  - Considers all market rule amendments
- IESO Staff
  - Chair of Technical
  - Secretariat roles to support Technical Panel
- Ontario Energy Board
  - Revoke and refer approved amendments back to the IESO
  - Review upon request or on own initiative; hold hearing; revoke amendment and refer back to the IESO
- Ontario Energy Board – existing market rules
  - Review upon request; hold hearing; direct the IESO to make a change

Market Rules vs Market Manuals

- IESO Market Rules specify market participant and IESO obligations
  - Higher level obligations
  - Specifies "what" market participants/the IESO are obligated to do
- IESO Market Manuals outline the specifics of how to meet those obligations
  - Specifies the "how" or the details of how MPs/the IESO must meet their obligations
  - If there is a discrepancy or inconsistency between market manuals and market rules, the market rules prevail
  - Market manuals are the responsibility of the relevant business unit/department within the IESO

Types of Amendments

- General
  - Most amendments fall into this category with 2-3 amendments typically under consideration at any given time
  - Follow the Technical Panel consultation process which takes 4-6 months from first meeting to implementation
- Urgent
  - Amendment must satisfy at least one of five criteria specified in the Electricity Act (Section 34.1) (see Appendix for criteria)
  - 11 urgent rule amendments since inception (2002)
- Minor
  - Correct typographical or grammatical errors, or to effect a change of a non-material procedural nature

Amendment Submission & Proposal through Technical Panel

Technical Panel Reviews Amendment Submission, where applicable

Panel provided information/background then determines if the amendment submission "warrants consideration" and priority; waived if discussions held in formal engagement(new)

Technical Panel Reviews Amendment Proposal

Amendment Proposal includes detailed change with rationale and draft rules

Panel determines if the amendment proposal will be posted for stakeholder comment

Technical Panel Reviews Amendment Proposal & Stakeholder Comments

Panel votes to recommend final amendment proposal to the IESO Board **with commentary**

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IESO Board Decision & Approved Amendments

Board Reviews Recommended Amendment & Consumer Impact Assessment (impacts on price, reliability and power quality)

Approve or Amend & Approve

Reject or refer back to the Technical Panel or engagement for further consultation

Approved Amendment Published & Sent to the OEB

OEB can revoke approved amendment (within 15 days of publication)

Any person can request the OEB to review (within 21 days of publication)

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IESO Reporting to Board

- President's Report
  - Update on Technical Panel business
  - Non-decisive items

- Board memoranda
  - Items for consideration/decision
  - Supporting information and material

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Appendix: A Roadmap to the Market Rules

- Chapter 1: Introduction and Interpretation of the Market Rules
- Chapter 2: Participation
  - Classes of Market Participants, Authorization
  - Prudential Requirements
  - Default Levy
- Chapter 3: Administration, Supervision, Enforcement
  - Market Rule Amendment Process
  - Enforcement – Breaches of market rules, events of default, financial penalties
- Chapter 4: Grid Connection Requirements
  - Equipment, performance standards, obligations of market participants
- Chapter 5: Power System Reliability
  - Operating states, IESO/Market participant obligations
  - System reliability (ancillary services standards)
  - Outage Coordination, forecasts and assessments

Appendix: A Roadmap to the Market Rules Cont'd.

- Chapter 6: Wholesale Metering
  - Requirements for Metering Installations
- Chapter 7: System Operations and Physical Markets
  - Registration of Facilities
  - Data Submissions for the RT markets (offers, bids)
  - Pre-dispatch/RT Scheduling
- Chapter 8: Physical Bilateral Contracts and Financial Markets
  - Transmission Rights Market auction process, settlements
- Chapter 9: Settlements and Billing
  - Hourly/Non-Hourly Charges, settlement statements, billing
- Chapter 10: Transmission Service and Planning
- Chapter 11: Definitions
- Appendices

Appendix: Urgent Amendments - Criteria

- The urgent amendment process can be used for one or more of the following reasons:
  - To avoid, reduce the risk of, or mitigate the effects of
    - conditions that affect the ability of the integrated power system to function normally;
    - the abuse of market power;
    - an unintended adverse effect of a market rule;
  - To implement standards or criteria of a standards authority; or
  - A reason prescribed by the regulations

Memorandum

April, 2017

MEMORANDUM TO:	The Board of Directors of the Independent Electricity System Operator
FROM:	Jeannette Briggs Director, Settlements
RE:	Briefing Note – Metering and Settlements

The purpose of this memo is to provide an overview of the metering and settlements activities that the IESO undertakes within the IESO-administered market, under government regulation, or on behalf of the Ministry of Northern Development and Mines (MNDM).

In settling transactions within the IESO-administered market, under government regulation, the IESO receives money from participants (e.g. local distribution companies, directly connected wholesale consumers, embedded wholesale consumers, retailers) or provincial revenues, and pays that money out to other participants (e.g. generators, importers, program participants).

Metering and Meter Data Management

There are 4,140 revenue meters within the IESO-administered market, each of which collects multiple pieces of information on a five minute basis. This information is collected on a nightly basis by the IESO either via telephone lines, or increasingly, over the internet. The IESO collects in excess of 8 million separate pieces of information every night.

If the IESO is unable to obtain information from a meter, or has reason to believe that the meter information that is obtained is inaccurate, the IESO works with the metering service provider to resolve the issue via a meter trouble report. In 2016 the IESO issued 5,821 meter trouble reports down from approximately 10,000 in 2013 which is testament to IESO process improvements and communication protocols.

The 4,140 meters are contained within approximately 2,000 metering installations comprised of both main and alternate meters. A metered market participant is responsible for the overall metering installation, the individual meters contained within the installation, and the provision of accurate metering data (local distribution companies are examples of a metered market participant). The metered market participant must either be registered as a metering service provider, or must contract with a metering service provider, to undertake certain activities, including maintaining the metering installation, registering the meter with the IESO, and responding to meter trouble reports. The IESO is responsible to establish metering standards, registering meters including reviewing all supporting information and documentation, auditing metering installations, and registering metering service providers.

Market Settlements

Statements

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.

If the market participant disagrees with the IESO, the market participant must file a notice of disagreement within four business days of the issuance of the preliminary statement. The notice of disagreement will be investigated by the IESO.

The second settlement statement for a trading day, called the final settlement statement, is issued twenty business days after the trading day and may include changes due to the resolution of a notice of disagreement or any revised data.

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 ("OEB") order (e.g. transmission charges, Rural & Remote electricity Rebate Program);

- 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 Ministries for regulatory programs (e.g. Ontario Electricity Support Program, Ontario Rebate for Electricity Consumers).

Settlement statements reflect energy consumption or energy generation based on either metering data, or inter-tie schedules for participants that transact on the inter-ties. The price is either the hourly Ontario energy price or the five-minute price for real-time energy. Uplift charges associated with the operation of the IESO-controlled grid, such as congestion management settlement credits are calculated on an hourly or monthly basis, depending upon the type of uplift, and appear on the appropriate preliminary settlement statement. Transactions settled as a result of an OEB order, government legislation or regulation, or on behalf of Ministry regulatory programs are calculated and appear on a preliminary statement consistent with the specific requirement. The settlement statement and associated data files provide transparency to IESO's settlement processes, in that all the input details used in calculating the charges are provided to market participants.

The IESO issues approximately 179,500 settlement statements annually. The volume of information contained within a daily settlement statement issued to a market participant varies greatly depending upon the nature and size of the market participant.

Invoices

Invoices are issued monthly to market participants for the approximately $17.5 billion/year wholesale electricity market. Invoices are issued ten business days after the end of the calendar month. Each invoice reflects a combination of "final settlement statements" for the first half of the month and "preliminary settlement statements" for the second half of the month plus any adjustments and monthly charges. Participants who owe money to the IESO must make payment within two business days of the invoice being issued, while the IESO must make payment to participants' owed money within four business days of the invoice being issued.

Notice of Disagreement

As mentioned previously, a market participant may submit a notice of disagreement if they disagree with information contained on a preliminary settlement statement, which the IESO will then investigate. A market participant may not disagree with the calculation of prices or the equations used in calculating charges but may disagree with meter readings, the application of the price, schedules, quantities utilized for physical bilateral contracts, and meter data allocation among other items.

There are three possible options with respect to the resolution by the IESO of a notice of disagreement:

- Agree with the participant and accept the proposed solution by adjusting the final settlement statement for the trading day in question;
- Agree with the basic issue but propose and implement a different solution from the one proposed by the participant and adjust the final settlement statement for the trading day in question; or
- Disagree with the participant and take no action to revise the preliminary settlement statement in which case there would be no adjustment to the final settlement statement for the trading day in question.

The IESO attempts to resolve as many notices of disagreement as possible prior to the issuance of the final settlement statement. For notices of disagreement that do not get resolved prior to the issuance of the final settlement statement, the IESO must complete its investigation within fifteen business days of the issuance of the final settlement statement for the trading day in question. At that time the IESO will follow one of the three courses previously described. In 2016 the IESO received 982 notices of disagreement of which approximately 56% resulted in a subsequent adjustment.

If a market participant disagrees with the IESO's resolution of the notice of disagreement the market participant may submit a notice of dispute, and take the issue to the dispute resolution process. Disputes related to settlement statements must be submitted within twenty business days from when the final settlement statement was issued for the trading day in question. There were six settlement disputes filed for 2016 trade dates, one was withdrawn, and the remaining continues to be under legal review.

<u>Transmission Rights</u>

Settlement statements and invoice processes for the auctions within transmission rights market are essentially the same as for the physical market, with the exception of the timing. Settlement statements and invoices are issued more quickly for the transmission rights auctions than for the physical market as no meter data is required. Preliminary statements are issued on the second business day after the trading day and final statements are issued on the sixth business day after the trading day. Similar to the physical market, market participants may also utilize the notice of disagreement and dispute resolution process to seek changes to issued settlement statements. For the transmission rights auction, a market participant must file a notice of disagreement within two business days of when the preliminary statement is issued, while a notice of dispute must be filed within twenty business days of the final settlement statement being issued.

The timeline for invoices for the transmission rights market is different than for the real-time energy market as it uses a one-week billing period and invoices are issued six business days after the end of the billing period.

<u>Other Settlement Activities</u>

The IESO also performs settlement activities on behalf of Ministries:

- Northern Industrial Electricity Rate (NEIR) program under a service level agreement with Ministry of Northern Development Mines. The NEIR program provides a rebate of up to $20 per MWh of energy consumption to qualifying businesses in northern Ontario that commit to increasing energy efficiency.
- Ontario Electricity Support Program (OESP) as of January 1, 2016, monthly electricity bills for eligible low-income families were reduced by $20 to $50 per month based on a 'sliding scale' which links household income, family size and, for some, energy use. As part of the Ontario Fair Hydro Plan, this program eligibility will be expanded to increase credits to cover more low income Ontarians. OESP is funded by provincial revenues.
- Ontario Rebate for Electricity Consumers (OREC) is an 8% reduction of the bills of Regulated Price Plan (RPP) eligible consumers plus a small additional group of consumers defined under regulation. OREC is funded by provincial revenues
- Rural or Remote electricity Rate Protection (RRRP) for Hydro One R2 residential customer receive a rate subsidy starting July 1, 2017 funded by provincial revenues.
- First Nations On-Reserve Delivery Credit eliminates the delivery charge for all on-reserve First Nations households and removing the monthly service charge for customers of licensed distributors which charge a bundled rate. This credit begins July 1, 2017 funded by provincial revenues

The IESO undergoes a comprehensive external audit on the controls for its settlement processes and procedures (Canadian Standard for Assurance Engagements 3416) every two years. We have recently completed an unqualified audit for period January 1, 2017 to June 30, 2017. A final report was made available for Board review in August 2017.

I would be happy to answer any questions that you may have regarding Settlements.

Yours truly,

J. Briggs

Jeannette Briggs
Director, Settlements

Metering and Settlements

Jeannette Briggs- Director, Settlements

April 2017

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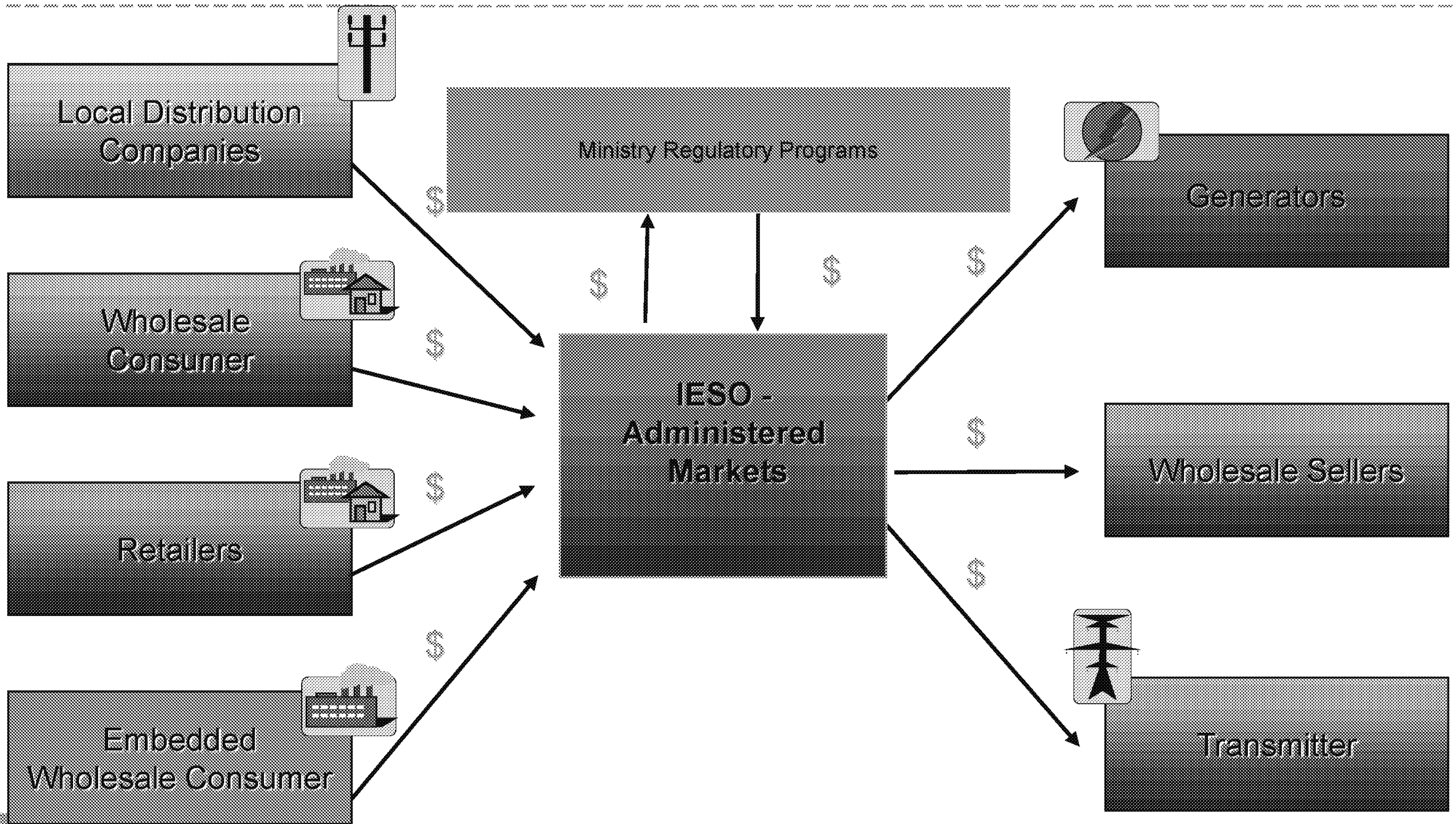
Agenda

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

Overview - Who the IESO Settles



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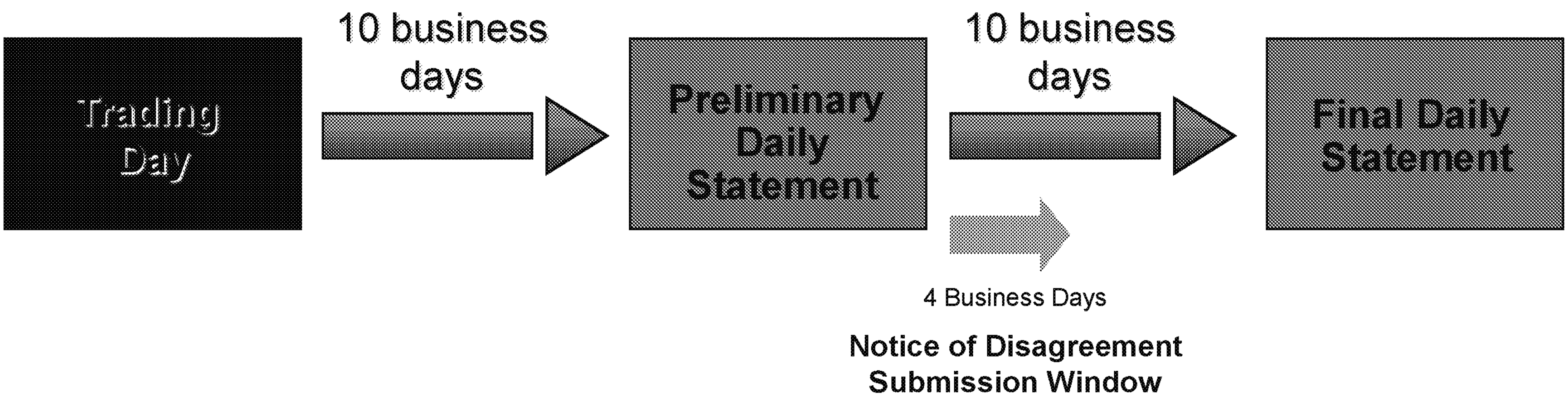
Metering

- 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 23 reports are issued each business day)
- IESO audits approximately 5% of the meter installations every year

Physical Settlement Timelines



- Collection, validation, estimation and editing of metering data
- Other market data collected
- Reconcile markets

- MPs submit notice of disagreement
- Data adjustments
- Reconcile markets

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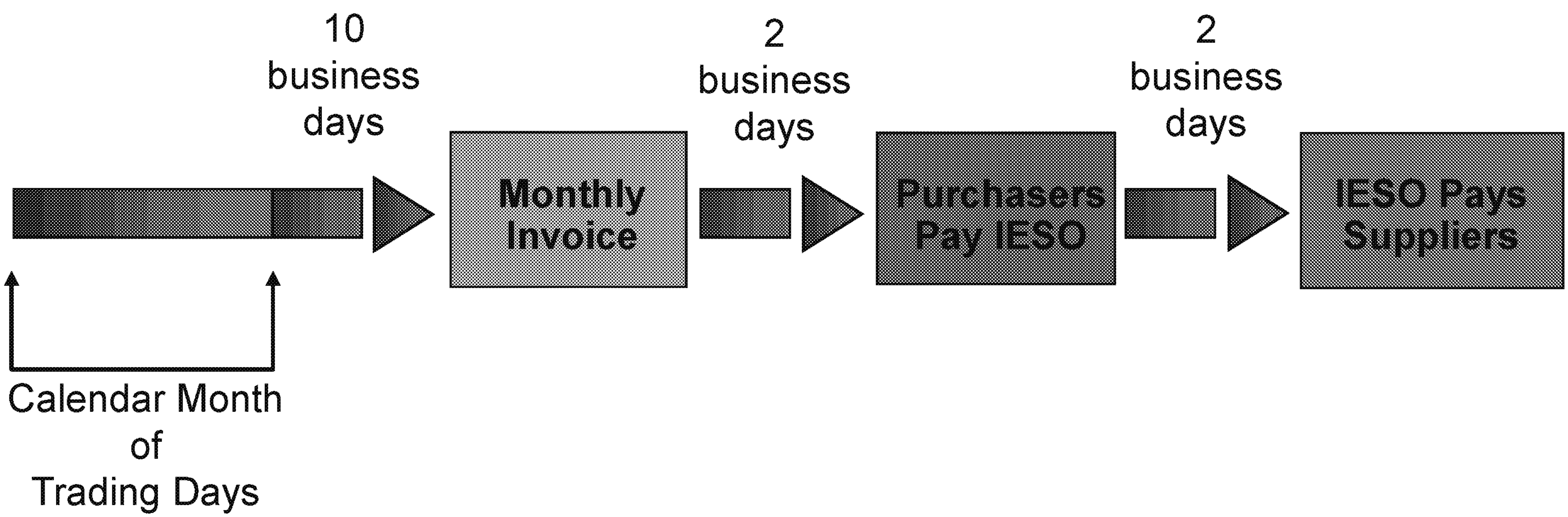
10
business
days
Monthly
Invoice
2
business
days
Purchasers
Pay IESO
2
business
days
IESO Pays
Suppliers
Calendar Month
of
Trading Days

Physical Settlement Statements

- 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.

Physical Preliminary and Final Statements

Trading Day → 10 business days → Preliminary Daily Statement → 10 business days → Final Daily Statement

- Preliminary statements are issued ten business days after the trade day
- Preliminary statements allow participants to see details of charges and revenues
- Participant can file a notice of disagreement (NoD) within 4 business days if there is a perceived problem
- Final statements are issued 20 business days after the trade day
- Approximately 145,000 statements are issued annually or approximately 400 per day
- Volume of information contained within a settlement statement varies greatly depending upon the nature and size of the market participant

Notice of Disagreement (NoD)

- A NoD allows an MP to identify issues they have with a preliminary settlement statement
- 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
- A NoD must be filed no later than 4 business days after the issuance of the preliminary statement

Notice of Disagreement

- 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
  - 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.
- A dispute process exists for the market participant who does not agree with IESO's resolution to the NoD

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Financial Transmission Rights Market

- Preliminary statements issued on 2nd business day after the trading day of auction
- NoD must be filed within 2 days after preliminary statement issued
- Final statements issued on 6th business day after the trading day of auction
- Notice of dispute must be filed within 20 business days of final statement being issued

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Other Settlement Activities

- Ontario Rebate for Electricity Consumers
  - A program to rebate 8% of eligible consumer bills
- 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
  - Refinancing the Global Adjustment (GA) over a longer time period for Regulated Price Plan (RPP) eligible consumers, including families, farms and small businesses – similar to Ontario Rebate for Electricity Consumers (8% rebate)
  - Enhancing competitiveness for small manufacturers and industrials by lowering the eligibility threshold for Industrial Conservation Initiative (ICI)
  - 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)