Education and Awareness

Energy Workstream High-Level Designs

Consumers

November 20, 2018

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Purpose

- This exercise will provide education and practical understanding of the key aspects of the Energy High-Level Designs (HLDs)
- Focus of today will be on design decisions that are most impactful to this group
- The presentation will consider the design changes from the perspective of three consumer (load) groups:
  1. Dispatchable Load (DL)
  2. Non-Dispatchable Load (NDL)
  3. Price Responsive Load (PRL)*

**PRLs will be introduced as part of the new market design, further details to be provided in this presentation*

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Approach

- The presentation is split into three sections:
  A. Summary of the core design concepts relevant to consumers
  B. High-level walk through of operational activities to compare new design features to the current design
  C. Settlement scenarios relevant to consumers
- Attendees who desire more detailed information after today are invited to read the HLDs or can explore further online:
  – Timelines for HLD publication and links are provided at the end of this presentation

SECTION A: DESIGN CONCEPTS

Introduction

- This section will begin with a recap of the rationale for Market Renewal, and summarize the key initiatives in the energy workstream
- The presentation will then outline the key design concepts most relevant for consumers including:
  1. Locational Pricing
  2. Residuals
  3. Price Responsive Load

Market Renewal Overview

- Ambitious set of initiatives that amounts to a fundamental redesign of Ontario's electricity markets and **prepares us for future change**
- Current design has served Ontario well but demands of a modern **grid evolving rapidly**
- **Reforms are required** to allow the IESO to continue to manage the grid reliably & cost effectively

Market Renewal Activities

ENERGY work stream

- Single Schedule Market (SSM)
- Day-Ahead Market (DAM)
- Real-Time Unit Commitment (ERUC)

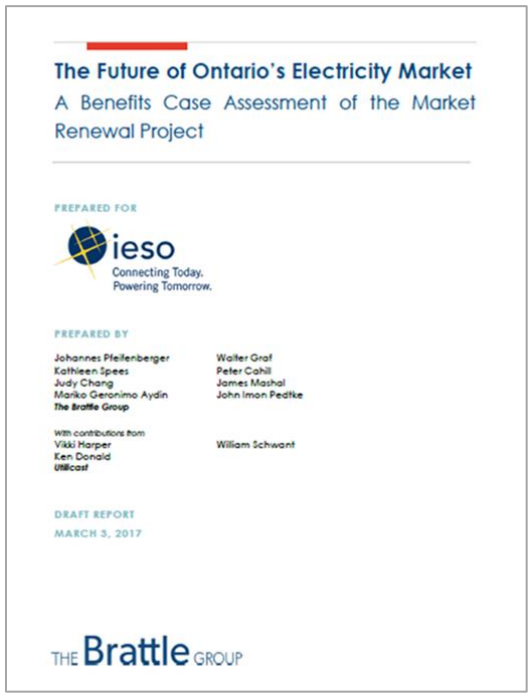
CAPACITY work stream

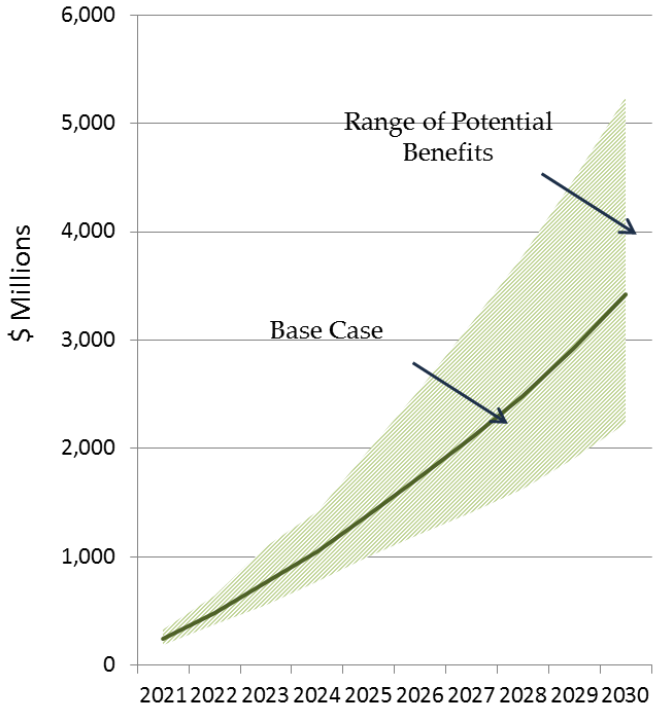
- Incremental Capacity Auction (ICA)

Near-term Projects → **Market Renewal** → Future Projects

Developing a Benefits Case

The IESO spent eight months analyzing the potential benefits of market renewal together with stakeholders under a range of future scenarios.





Market Renewal is expected to deliver an average of **$3.4 billion in efficiency savings** (most of which will flow to Ontario's consumers) over a 10-year period with a potential to reach as high as $5.2 billion.

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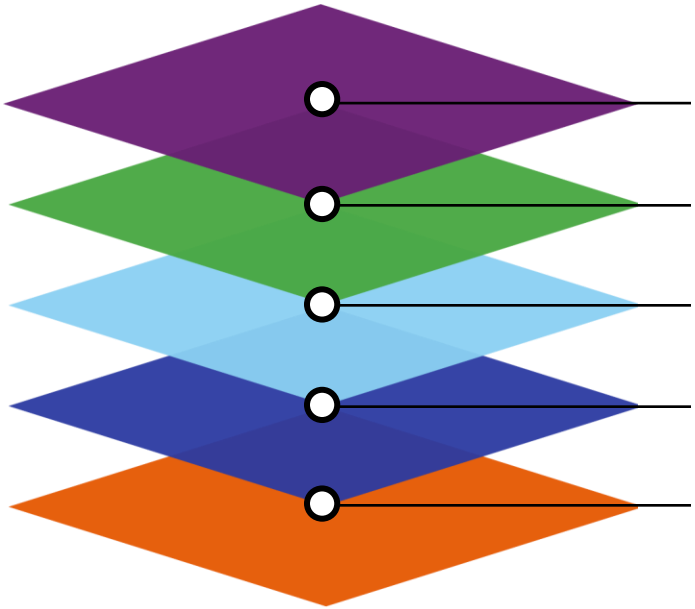
Market Renewal Principles

A more efficient, stable marketplace with competitive and transparent mechanisms that meet system and participant needs at lowest cost.



Efficiency

Competition

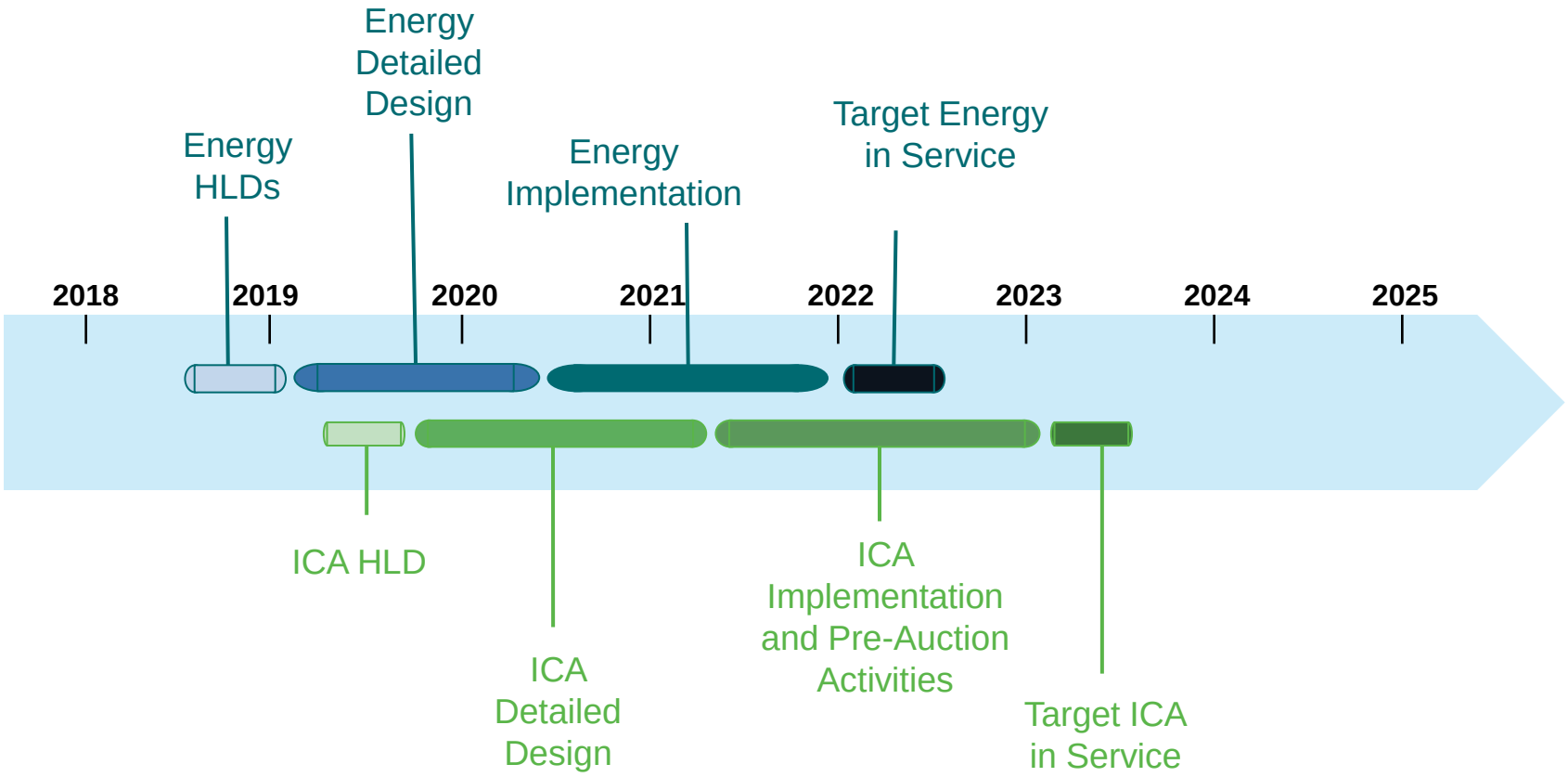
Implementability

Certainty

Transparency

Market renewal must meet Ontario's reliability needs and work within public policy parameters

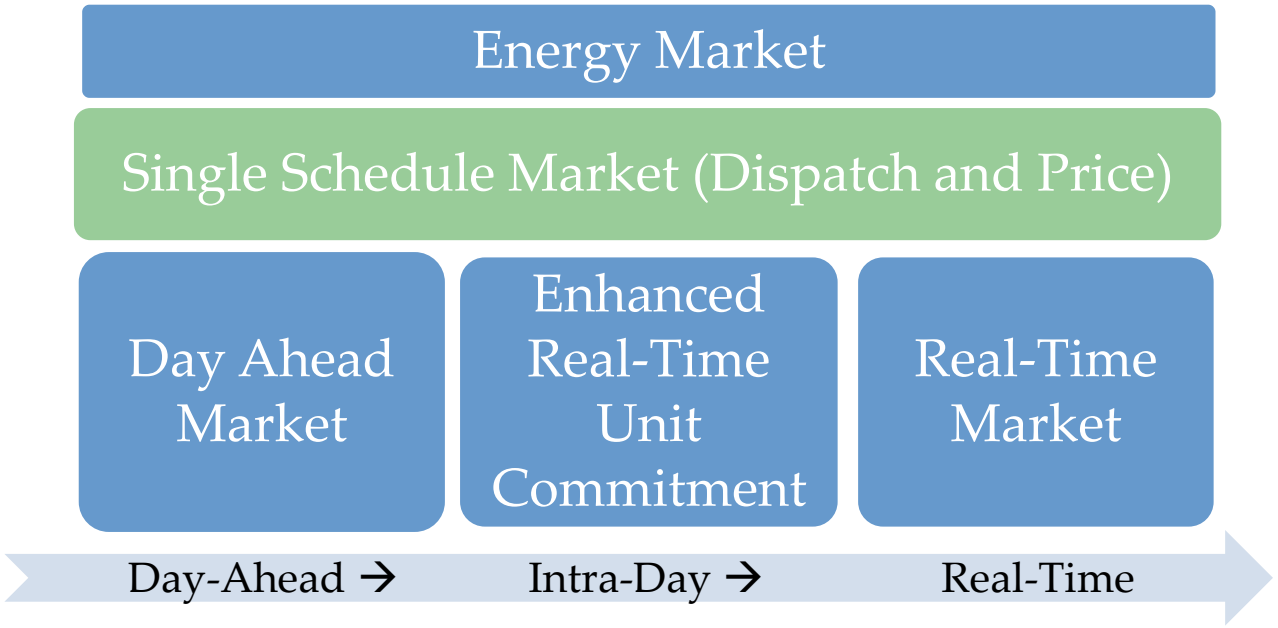
Market Renewal Timeline



**This graphic is for illustrative purposes only and dates are subject to change*

Single Schedule Market - The Big Picture

- This initiative will replace Ontario's two schedule market with a single schedule market (SSM) that better aligns price with dispatch
- Improving the energy price signal in Ontario is a foundational change that is required to address existing challenges and prepare for the market of the future



Ontario's Current Market Design

Ontario's current market uses two different schedules (sets of calculations) to determine price and dispatch in Ontario

Schedule 1

- Determines a province-wide uniform price for energy (MCP)
- Ignores certain physical limitations of the system
- Used to settle the market financially

When there are differences between the two schedules, out-of-market CMSC* payments must be made to maintain reliability

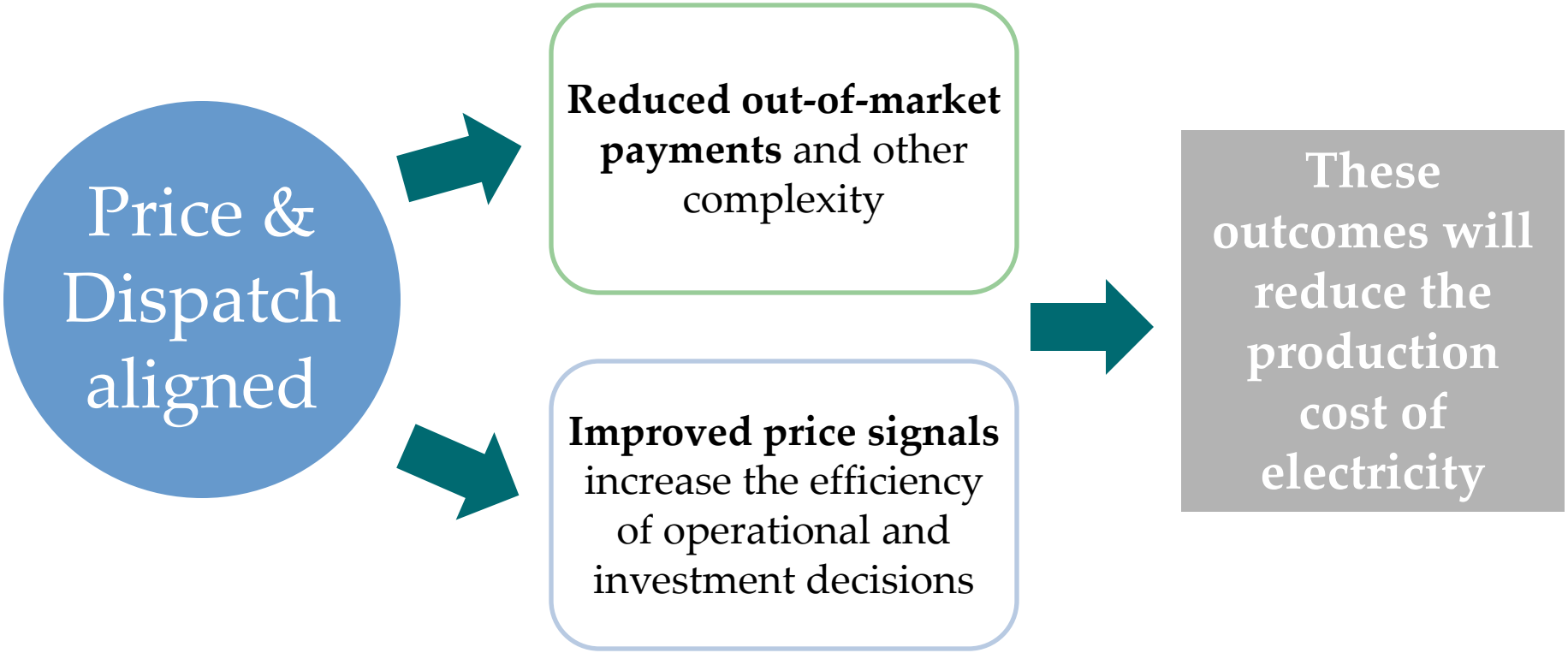
These payments have led to inefficient behaviour and costly outcomes for consumers

Schedule 2

- Calculates "shadow" prices at each node
- Considers all relevant physical limitations of the system
- Prices used to dispatch resources

CMSC = Congestion Management Settlement Credit

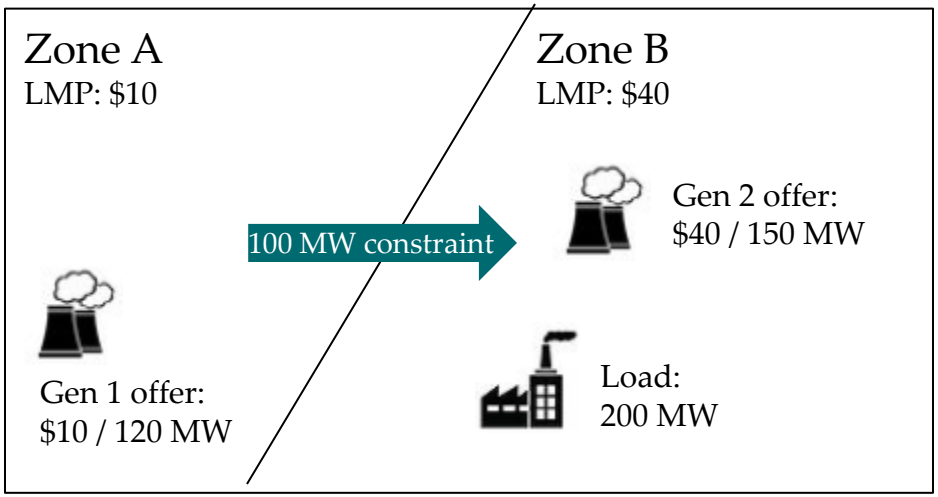
Single Schedule Market



Enabled by Single Schedule Market

Supply Paid Locational Price

- In today's market, all suppliers receive a uniform price for their supply
- In SSM, prices will differ by location due to generator costs, congestion, and losses – some resources will be paid a lower price relative to uniform HOEP



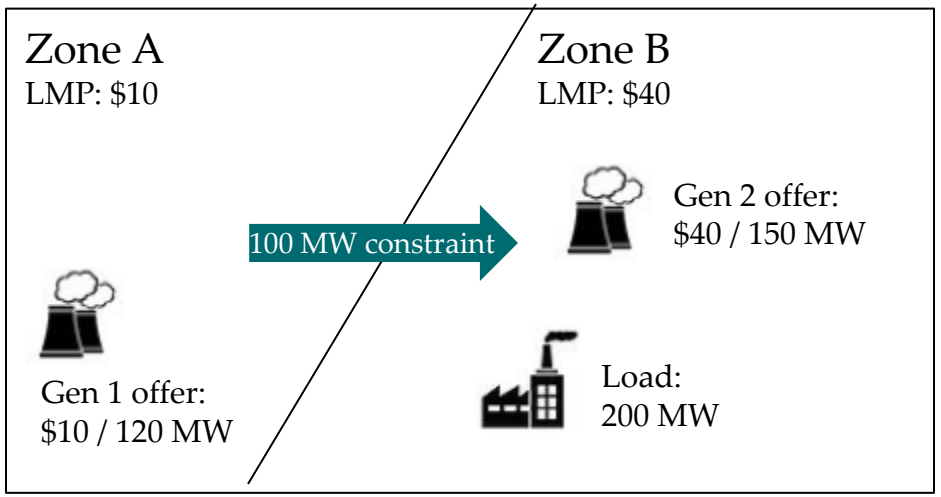
Status Quo MCP: $40 set by Gen 2

	Status quo MCP	SSM LMP
Gen 1	$40	$10
Gen 2		$40

Under SSM Gen 1 is paid $10

CMSC Eliminated

- In today's market, bottled supply is paid constrained-off CMSC
- In SSM, there is no payment for generation limited by transmission constraints (constrained-off payments are eliminated)



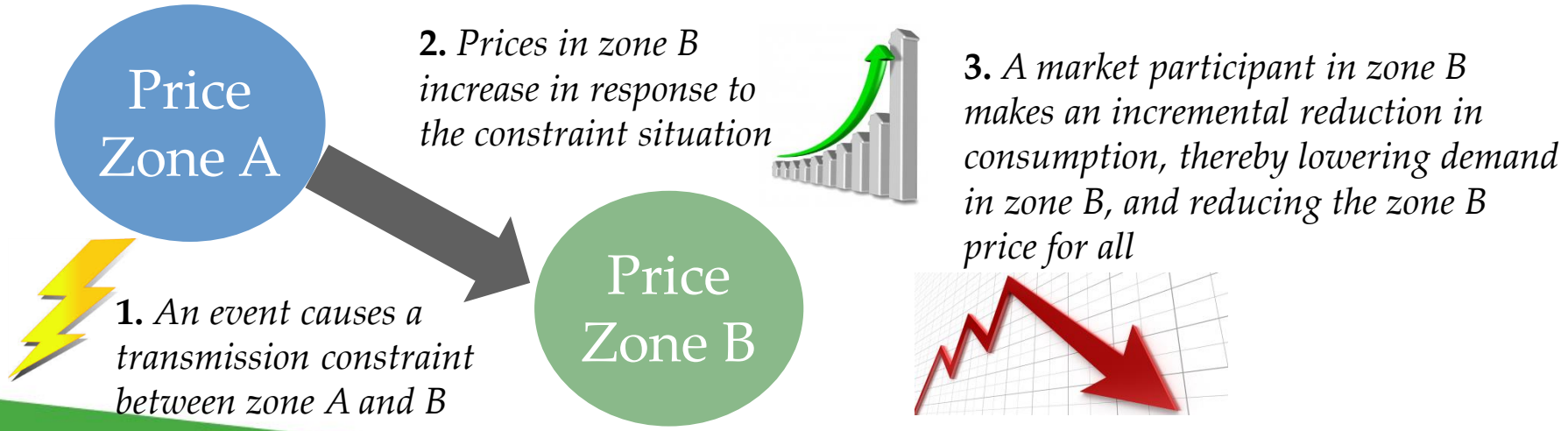
Status Quo MCP: $40 set by Gen 2

	Status quo CMSC	SSM
Gen 1	20× ($40-$10)	$0
Gen 2	$0	$0

Under SSM CMSC payment to Gen 1 is eliminated

Improved Price Signals

- In the current system, the price impact of local system constraints is muted as it is shared amongst all load in the province
- In a zonal design, prices will more accurately reflect locational constraints:
  - Through more accurate, locational prices, the zonal design will increase the incentives for load to be more price responsive to lowering system costs for all
  - Residual disbursements will compensate load that is negatively impacted by higher locational prices

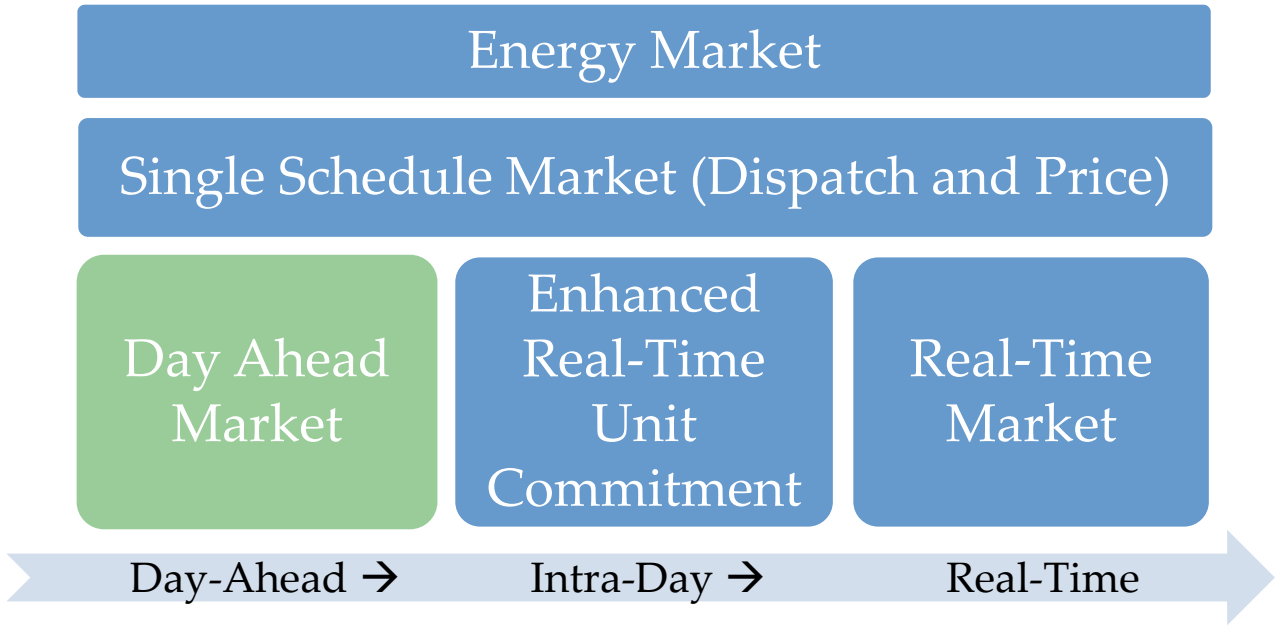


Single Schedule Market – Key Takeaways

- **Reduced costs**
  - Ontario has averaged over $100 million a year in CMSC payments; many of these costs will be avoided as a result of the SSM
  - Today, suppliers are at times paid the uniform price when their locational price may be lower; SSM will eliminate these overpayments
- **Improved price signals**
  - Locational prices will provide improved incentives for consumers to respond to price signals in high priced periods
  - When some loads reduce consumption to avoid high costs, reduced demand can lower prices for all

Day-Ahead Market: The Big Picture

- A day-ahead market will provide financially binding day-ahead schedules
- It is enabled by the single schedule market design and will operate prior to pre-dispatch and real-time



Why a Day Ahead Market?

Current Day-Ahead Commitment Process (DACP)	Day-Ahead Market (DAM)
• Participants submit day-ahead bids and offers primarily to declare availability in real-time.	• Participants submit day-ahead bids and offers to compete with other for a day-ahead price.
• Day-ahead bids and offers may be less efficient because they are not competing for a price	• Day-ahead bids and offers are more efficient because they are competitive
• Exports can participate but are not incentivized to do so	• Exports have incentive to participate in the DAM
• Resources are scheduled to meet Ontario demand, providing a rough approximation of tomorrow's operation	• Resources are scheduled to meet total Market demand, providing a better view of tomorrow's operation

A day-ahead price signal incentivizes more efficient participation from all resources

How it Works

- DAM produces hourly schedules and prices that are financially binding, introducing a 'two-settlement' system

Day Ahead Settlement		Real-Time Settlement
Scheduled Day-Ahead Quantity *multiplied by* Locational Day-Ahead Price	+	(Actual Real-Time Quantity* *minus* Scheduled Day-Ahead Quantity) *multiplied by* Locational Real-Time Price

- Real-time settlement only used for balancing deviations from day-ahead schedules

NDLs, including LDCs, will be settled on a modified approach which will be discussed later in this presentation

Day-Ahead Market – Key Takeaways

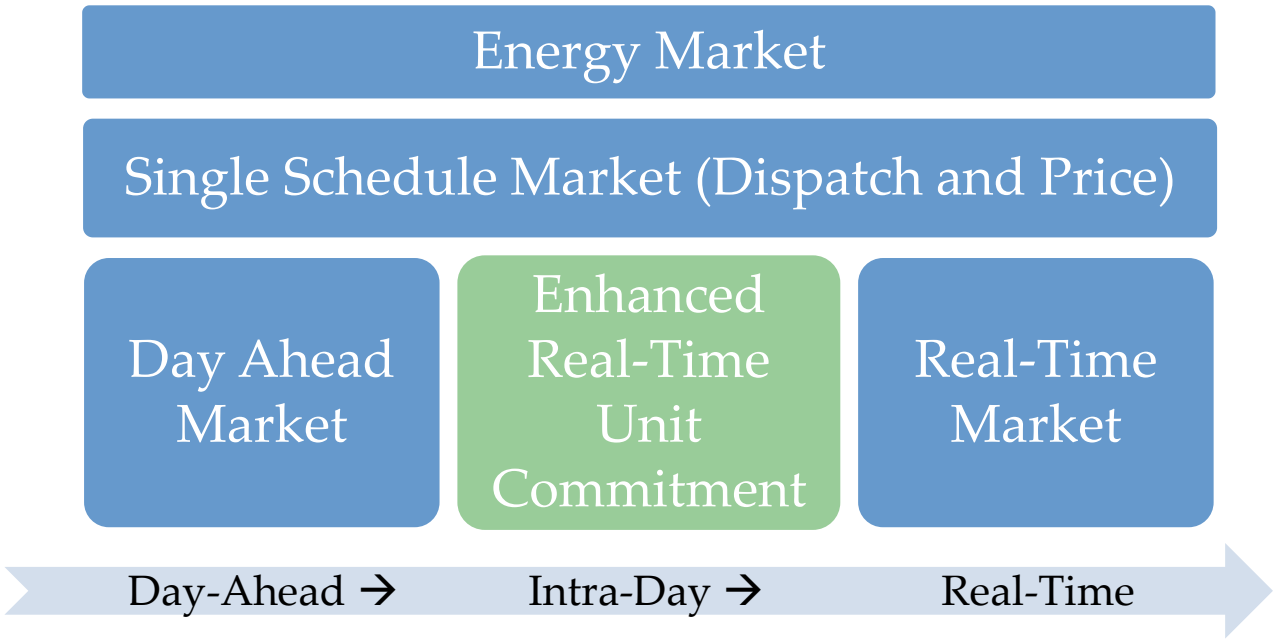
- **Increased financial certainty**
  - The DAM will introduce meaningful day-ahead prices, providing certainty for market participant consumers on the cost of consuming energy the following day
- **Hedge against volatility**
  - Transmission or generation outages can, at times, result in unexpectedly high prices during real-time
  - By locking in prices day-ahead, DAM provides insurance for consumers against unanticipated price spikes

Day-Ahead Market – Key Takeaways (cont.)

- **Improved scheduling decisions and reduced costs**
  - Because day-ahead scheduling is not financially binding today, some resources (exports) don't participate and others have little incentive to participate accurately
  - A financially binding DAM will improve day-ahead participation
  - With improved inputs, the IESO will be in an improved position to schedule lowest cost supply to meet demand

ERUC: The Big Picture

- Enhanced real-time unit commitment will operate in the pre-dispatch timeframe, after day-ahead / before real-time



Summary of Issues with Current Real-time Unit Commitment Process

Incomplete Picture

Not all costs are considered in optimization process

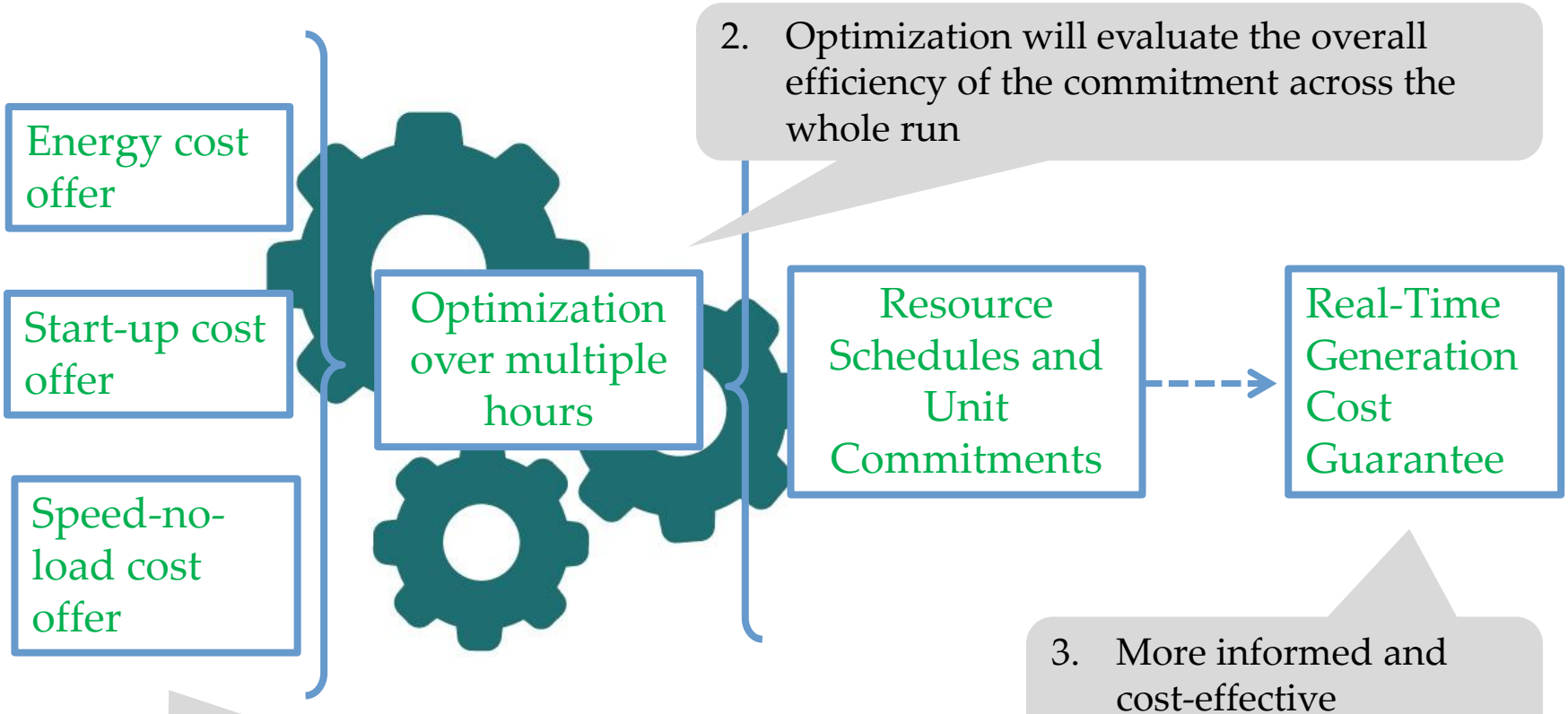
Lack of Competition

After-the-fact cost submission means no competition between generators on those costs

Limited look-ahead

Optimizes commitments based on a single hour

Enhanced Real-Time Unit Commitment Process



2. Optimization will evaluate the overall efficiency of the commitment across the whole run

3. More informed and cost-effective commitment decisions

1. Resources will be efficiently committed by considering all costs

Enhanced Real-Time Commitment – Key Takeaways

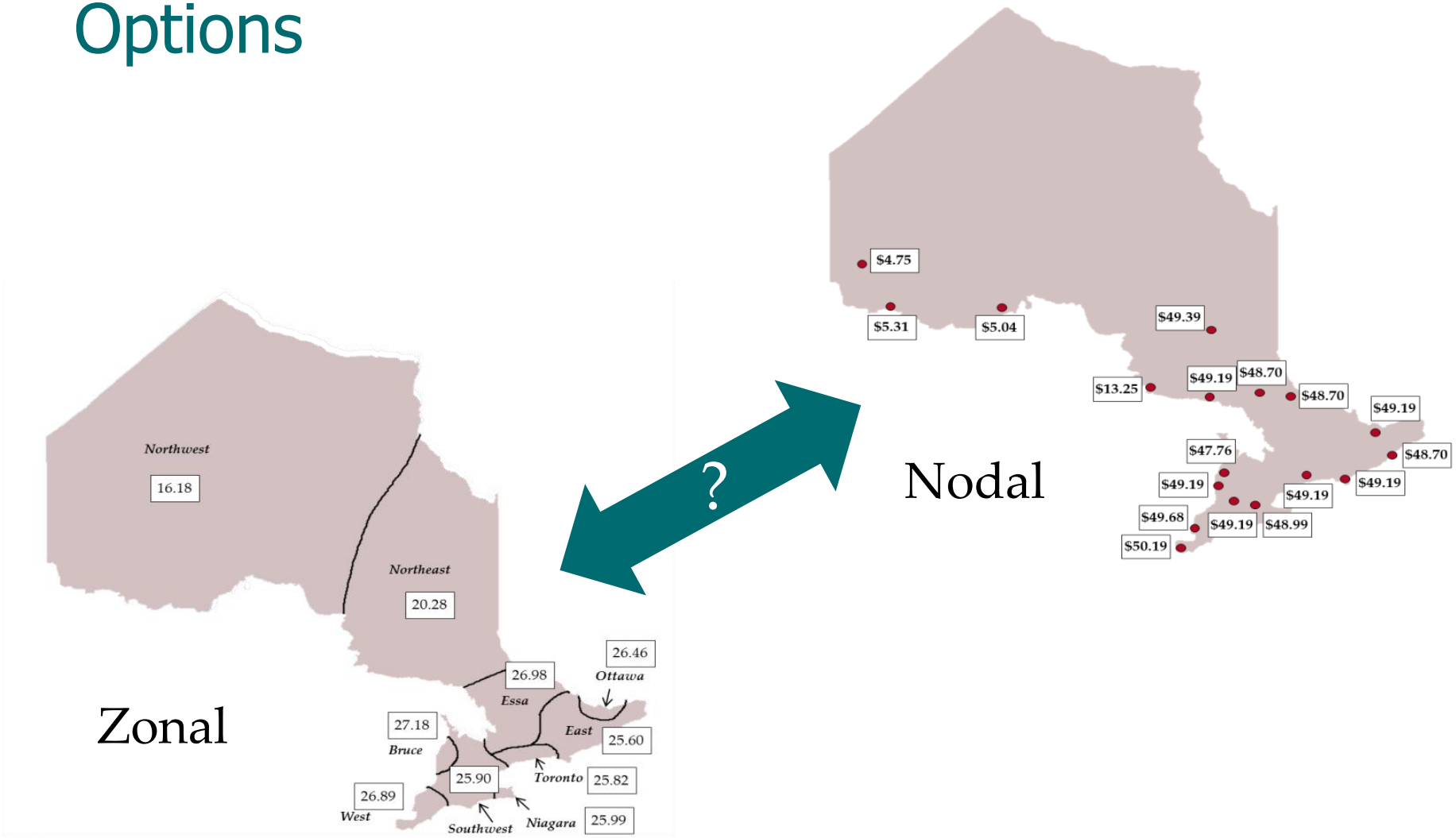
- **Improved scheduling decisions and reduced costs**
  - ERUC will improve the way suppliers are committed in Ontario
  - The IESO will be in a better position to consistently select the lowest cost set of resources to meet demand
  - Improved scheduling decisions will provide savings for Ontario consumers

KEY DESIGN CONCEPTS

Context

- Locational Marginal Pricing (LMP) is a foundational feature of Market Renewal
- Locational prices will:
  - ✓ Align price with dispatch
  - ✓ Significantly reduce out-of-market payments
  - ✓ Unlock broader market renewal benefits
  - ✓ Reduce the cost of energy for Ontario consumers

Options

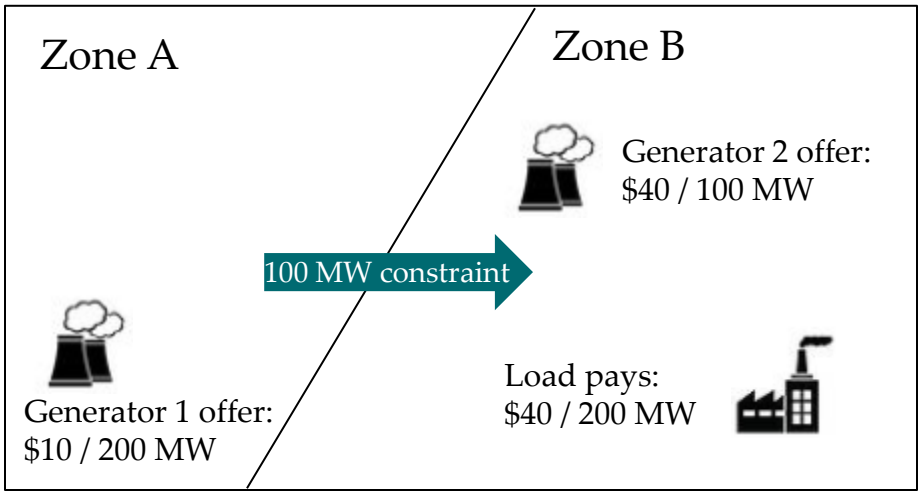

Zonal
Northwest
16.18
Northeast
20.28
26.98
Essa
26.46
Ottawa
27.18
Bruce
East
25.60
25.90
Toronto
25.82
26.89
West
Southwest
Niagara
25.99
?
Nodal
$4.75
$5.31
$5.04
$49.39
$13.25
$49.19
$48.70
$48.70
$49.19
$47.76
$48.70
$49.19
$49.19
$49.19
$49.68
$49.19
$48.99
$50.19

Pricing Summary

Participant	Customer Class	Current settlement price:	SSM settlement price:
IESO-Settled Loads	Dispatchable Loads	Uniform Market Clearing Price (MCP)	Nodal
	Non-dispatchable Loads (including LDCs)	HOEP	Zonal with Nodal option
LDC-Settled Loads	Large Customers (>250,000KWh)	HOEP	TBD by OEB
	Small Customers (<250,000 KWh)	RPP	
Suppliers	N/A	Uniform Market Clearing Price (MCP)	Nodal

Overview of Residuals

- Congestion and loss residuals ("Residuals") are created in all electricity markets that have locational pricing for loads
- Suppliers and loads are exposed to different prices which result in more money collected from loads than is paid to suppliers



Simplified residual settlement example	
Load pays	$40×200 = $8,000
Generator 1 receives	$10×100 = $1,000
Generator 2 receives	$40×100 = $4,000
Residual for load	$3,000
Load net payment with residual rebate	8,000 – 3,000 = $5,000

- Residuals will be returned to consumers on a quarterly basis

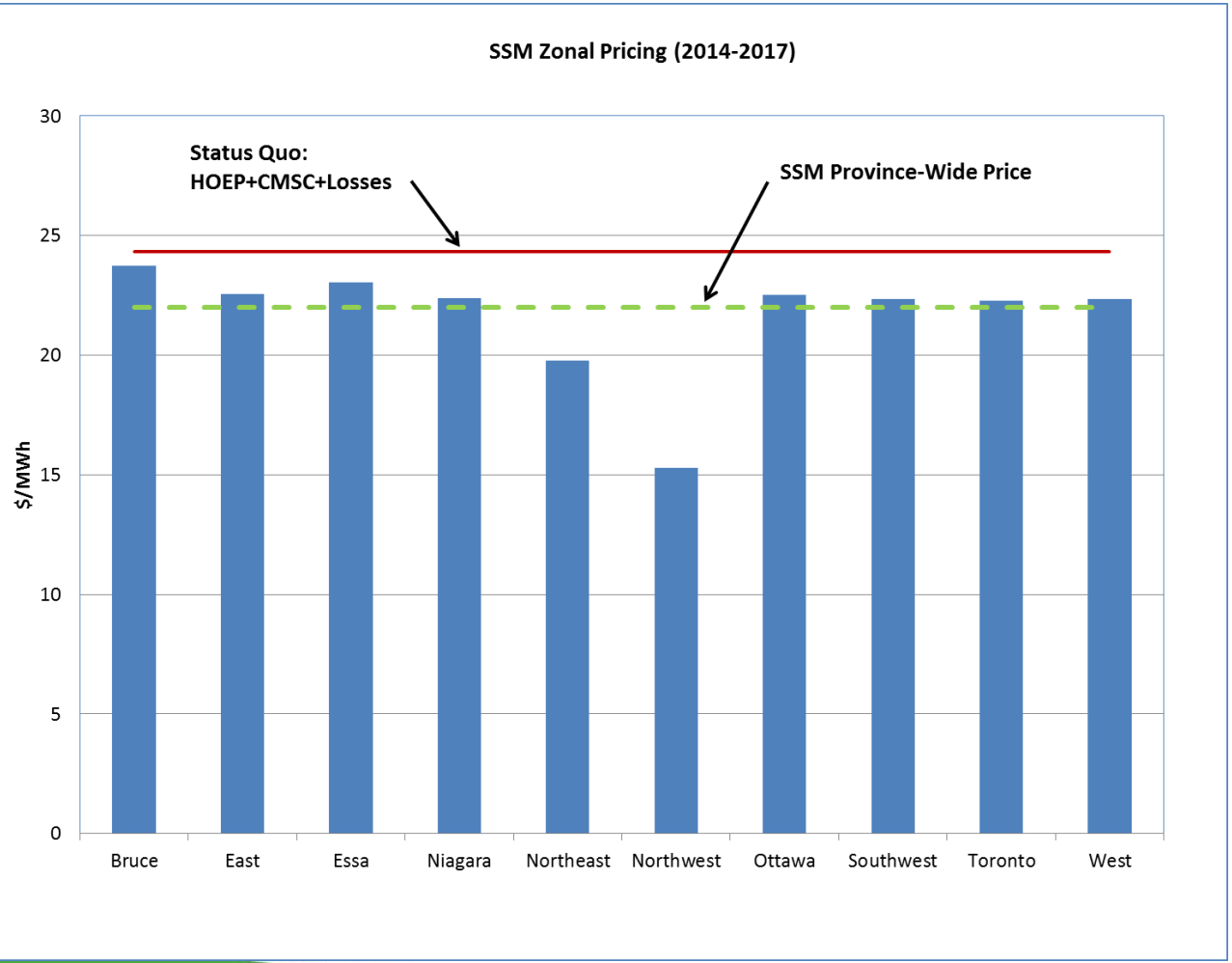
Impact of Residuals

Residual disbursement mechanism

- Residuals will be returned to consumers in zones with higher than average prices
- Helps to ensure all consumers share in the benefits of a single schedule market
- Different zones likely to receive residuals at different times
- Residual disbursement would be performed quarterly

Design Concept 2 - Residuals

Zonal Energy Prices with SSM



- All zones pay less than status quo
- Energy costs reduced by $246M on average annually from 2014-2017
- Northern Ontario prices are less than those in Southern Ontario
- Southern Ontario prices are very close to the SSM average province-wide price
- Zonal pricing includes residuals returned to consumers

A New Type of Market Participant

Key features of Price Responsive Loads (PRLs) include:

- Provide own bids into the DAM
- Receive financially binding DAM schedules
- Continue to be non-dispatchable in real-time
- Nodal pricing with one year election period

PRL status will be contingent on meeting certain criteria such as being a market participant and complying with metering and prudential requirements

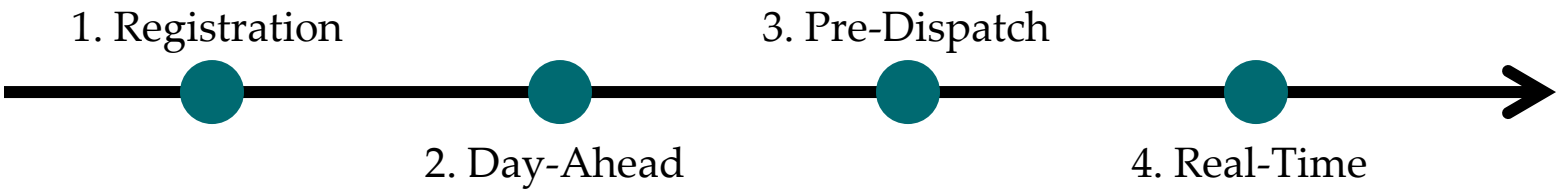
Why PRLs?

- Introduction of Price Responsive Loads:
  - ✓Increases consumer choice
  - ✓Improves efficiency of scheduling and unit commitments
  - ✓Open to expanded role for buy-side in the future

SECTION B: OPERATIONAL WALK THROUGH

Introduction

- The section will compare the most relevant new design features to the current design
- This will be illustrated chronologically through four stages:



- The section will start with a recap of the current design before then moving on to describe the new design

1. Registration – Current Design

Load type	Registration (settlement price/status)	Day-Ahead Commitment Process	Pre-Dispatch	Real-Time
Non-Dispatchable Load	HOEP only			
Dispatchable Load	Uniform MCP only			

2. Day-Ahead – Current Design

Load type	Registration (settlement price/status)	Day-Ahead Commitment Process	Pre-Dispatch	Real-Time
Non-Dispatchable Load	HOEP only	IESO submit forecast for NDL		
Dispatchable Load	Uniform MCP only	Submit energy bids and OR offers		

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3. Pre-Dispatch – Current Design

Load type	Registration (settlement price/status)	Day-Ahead Commitment Process	Pre-Dispatch	Real-Time
Non-Dispatchable Load	HOEP only	IESO submit forecast for NDL	IESO updates forecast for NDL	
Dispatchable Load	Uniform MCP only	Submit energy bids and OR offers	Opportunity to update energy bids and OR offers	

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4. Real-Time – Current Design

Load type	Registration (settlement price/status)	Day-Ahead Commitment Process	Pre-Dispatch	Real-Time
Non-Dispatchable Load	HOEP only	IESO submit forecast for NDL	IESO updates forecast for NDL	Consume as needed and settlement based on HOEP
Dispatchable Load	Uniform MCP only	Submit energy bids and OR offers	Opportunity to update energy bids and OR offers	Consume as per dispatch schedule and settlement based on uniform MCP

1. Registration – Market Renewal Design

Load type	Registration (settlement price/status)	Day-Ahead Market	Pre-Dispatch	Real-Time
Non-Dispatchable Load	Zonal pricing with option for nodal pricing			
Price-Responsive Load	Nodal pricing option only			
Dispatchable Load	Nodal pricing option only			

Option to select PRL status*

**PRL status will be contingent on meeting certain criteria such as being a market participant and complying with metering and prudential requirements*

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2. Day-Ahead – Market Renewal Design

Load type	Registration (settlement price/status)	Day-Ahead Market	Pre-Dispatch	Real-Time
Non-Dispatchable Load	Zonal pricing with option for nodal pricing	IESO submits forecast for NDL		
Price-Responsive Load	Nodal pricing option only	Submit energy bids for DAM participation and settlement		
Dispatchable Load	Nodal pricing option only	Submit energy bids & OR offers for DAM participation and settlement		

Financially binding schedule

3. Pre-Dispatch – Market Renewal Design

Load type	Registration (settlement price/status)	Day-Ahead Market	Pre-Dispatch	Real-Time
Non-Dispatchable Load	Zonal pricing with option for nodal pricing	IESO submits forecast for NDL	IESO forecasts for NDL and PRL	
Price-Responsive Load	Nodal pricing option only	Submit energy bids for DAM participation and settlement		
Dispatchable Load	Nodal pricing option only	Submit energy bids & OR offers for DAM participation and settlement	Opportunity to update energy bids and OR offers	

Financially binding schedule

4. Real-Time – Market Renewal Design

Load type	Registration (settlement price/status)	Day-Ahead Market	Pre-Dispatch	Real-Time
Non-Dispatchable Load	Zonal pricing with option for nodal pricing	IESO submits forecast for NDL	IESO forecasts for NDL and PRL	Consume as needed, settled on zonal/nodal price* via modified settlement
Price-Responsive Load	Nodal pricing option only	Submit energy bids for DAM participation and settlement		Consume as needed, settled on nodal price via two settlement
Dispatchable Load	Nodal pricing option only	Submit energy bids & OR offers for DAM participation and settlement	Opportunity to update energy bids and OR offers	Consume as per dispatch schedule, settled on nodal price via two settlement

Financially binding schedule

**Zonal or nodal as elected in registration*

SECTION C: SETTLEMENT SCENARIOS

Introduction

- This section will provide a series of simplified examples to illustrate the high-level settlement process for DLs and PRLs
  - NDL settlement calculation to be fully defined in detailed design so it is not be possible to share worked examples at this stage
- Three scenarios will be presented:
  1. Real-Time energy consumption equal to Day-Ahead consumption
  2. Real-Time energy consumption greater than Day-Ahead consumption
  3. Real-Time energy consumption less than Day-Ahead consumption

Settlement for DLs and PRLs

Day-Ahead	Real-Time (balancing)
Scheduled Day-Ahead Quantity *multiplied by* Locational Day-Ahead Price	(Actual Real-Time Quantity* *minus* Scheduled Day-Ahead Quantity) *multiplied by* Locational Real-Time Price
Loads **pay for DA scheduled withdrawals**	Loads **pay for incremental RT** withdrawals but are **paid for unconsumed DA** scheduled withdrawals

*Scheduled Real-Time Quantity for Operating Reserve

Settlement for NDLs

- The majority of NDL consumption will be settled based on DAM prices:
  - The IESO will forecast NDL demand and submit DAM bids on behalf of NDLs
  - Deviations between the IESO forecast and actual consumption will be settled at the real-time price (based on the equation below)

Actual Real-Time Quantity

multiplied by

Locational Day-Ahead Price

+

Actual Real-Time Quantity

multiplied by

Value of forecast deviations

Scenario 1:

REAL-TIME AND DAY-AHEAD CONSUMPTION EQUAL

S1: RT and DAM consumption equal

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500		

The consumer places two bids: one bid to show that it is willing to consume 5 MW as long as the price is less than or equal to $1500 and another to indicate it will consume an additional 15 MW if the price is less than or equal to $300

S1: RT and DAM consumption equal

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $20 Load scheduled at 20 MW	
Energy settlement	-20 MW x $20 = -$400	

The locational day-ahead market clears at $20 and the consumer receives a financially binding schedule for 20 MW…

Locational day ahead settlement = (Day-Ahead Quantity x Day-Ahead Price)

S1: RT and DAM consumption equal

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $20 Load scheduled at 20 MW	Market clears at $250 Load consumes 20 MW
Energy settlement	-20 MW x $20 = -$400	(-20 MW – (-20 MW)) x $250 = $0

The consumer's real-time consumption is the same as its day-ahead schedule so no balancing settlement applies…

Locational Real-Time settlement = (Real-Time Quantity - Day-Ahead Quantity) x Real-Time Price

S1: RT and DAM consumption equal

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $20 Load scheduled at 20 MW	Market clears at $250 Load consumes 20 MW
Energy settlement	-20 MW x $20 = -$400	+ (-20 MW – (-20 MW)) x $250 = $0

The consumer pays $400 for consumption of 20 MW

Locational day ahead settlement = (Day-Ahead Quantity x Day-Ahead Price), Locational Real-Time settlement = (Real-Time Quantity - Day-Ahead Quantity) x Real-Time Price

S1: RT and DAM consumption equal – Summary

- In this scenario, the consumer placed two bids in the DAM which were both accepted at the locational market clearing price
- The participant's real-time consumption matched it's day-ahead schedule, and as a result, the consumer was not exposed to the price spike in the real-time
- Overall, this scenario demonstrates how participants can avoid exposure to real-time price volatility if their real-time consumption matches their day-ahead schedule

Scenario 2:

REAL-TIME CONSUMPTION GREATER THAN DAY-AHEAD

S2: RT consumption greater than DAM

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500		

The consumer places two bids: one bid to show that it is willing to consume 5 MW as long as the price is less than or equal to $1500 and another to indicate it will consume an additional 15 MW if the price is less than or equal to $300

S2: RT consumption greater than DAM

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $400 Load scheduled at 5 MW	
Energy settlement	-5 MW x $400 = -$2000	

The locational day-ahead market clears at $400 and the consumer receives a financially binding schedule for 5 MW…

Locational day ahead settlement = (Day-Ahead Quantity x Day-Ahead Price)

All prices and quantities are for illustration only

Price Responsive Load | Dispatchable Load

S2: RT consumption greater than DAM

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $400 Load scheduled at 5 MW	Market clears at $25 Load consumes 20 MW
Energy settlement	-5 MW x $400 = -$2000	(-20 MW – (-5 MW)) x $25 = -$375

The locational real-time market clears at a lower cost than the locational day-ahead market and the participant consumes an additional 15 MW…

Locational Real-Time settlement = (Real-Time Quantity - Day-Ahead Quantity) x Real-Time Price

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S2: RT consumption greater than DAM

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $400 Load scheduled at 5 MW	Market clears at $25 Load consumes 20 MW
Energy settlement	-5 MW x $400 = -$2000	+ (-20 MW – (-5 MW)) x $25 = -$375

The consumer pays $2375 for consumption of 20 MW

Locational day ahead settlement = (Day-Ahead Quantity x Day-Ahead Price), Locational Real-Time settlement = (Real-Time Quantity - Day-Ahead Quantity) x Real-Time Price

S2: RT consumption greater than DAM – Summary

- In this scenario, the consumer placed two bids in the DAM, of which only one was accepted given the locational day-ahead market clearing price
- In real-time, the participant increased consumption from the DAM schedule due to lower prices in real-time
- Overall, the scenario illustrates how the consumer had certainty day-ahead on the price of its first 5 MW of consumption and had the flexibility to capture lower real-time prices for the remaining 15 MW

Scenario 3:

REAL-TIME CONSUMPTION LESS THAN DAY-AHEAD

S3: RT consumption less than DAM

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500		

The consumer places two bids: one bid to show that it is willing to consume 5 MW as long as the price is less than or equal to $1500 and another to indicate it will consume an additional 15 MW if the price is less than or equal to $300

S3: RT consumption less than DAM

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $20 Load scheduled at 20 MW	
Energy settlement	-20 MW x $20 = -$400	

The locational day-ahead market clears at $20 and the consumer receives a financially binding schedule for 20 MW…

Locational day ahead settlement = (Day-Ahead Quantity x Day-Ahead Price)

S3: RT consumption less than DAM

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $20 Load scheduled at 20 MW	Market clears at $400 Load consumes 5 MW
Energy settlement	-20 MW x $20 = -$400	(-5 MW – (-20 MW)) x $400 = $6000

The locational real-time market price clears higher than the locational day-ahead price and the load consumes 15 MW less than its financially binding day-ahead schedule…

Locational Real-Time settlement = (Real-Time Quantity - Day-Ahead Quantity) x Real-Time Price

S3: RT consumption less than DAM

Bids	Locational Day-Ahead	Locational Real-Time
15 MW at $300 5 MW at $1500	Market clears at $20 Load scheduled at 20 MW	Market clears at $400 Load consumes 5 MW
Energy settlement	-20 MW x $20 = -$400	+ (-5 MW – (-20 MW)) x $400 = $6000

The consumer is paid $5600 for consumption of 5 MW

Locational day ahead settlement = (Day-Ahead Quantity x Day-Ahead Price), Locational Real-Time settlement = (Real-Time Quantity - Day-Ahead Quantity) x Real-Time Price

S3: RT consumption less than DAM – Summary

- In this scenario, the consumer placed two bids, which were both accepted given the locational day-ahead market clearing price
- The locational clearing price then increased in real-time and the market participant reduced their consumption
- This scenario demonstrates how a participant could reduce real-time consumption to sell out of its day-ahead position
- Overall, the scenario illustrates that if a price spike occurs in real-time and the participant reduces consumption they will be paid the reduction from the day-ahead schedule

WRAP-UP

Summary

- Consumers will be better off as a result of the initiatives in the energy work stream
  - The SSM will significantly reduce out-of-market payments and deliver cost savings for consumers
  - The SSM and improved scheduling decisions through DAM and ERUC will contribute to MRP benefits of up to $5.2 billion of net benefits over 10 years
  - The day-ahead market will provide consumers with protection against real-time price spikes

How To Get Involved

- Review and provide feedback on HLDs
  - SSM HLD is available at: http://www.ieso.ca/Sector-Participants/Market-Renewal/Single-Schedule-Market-High-Level-Design
  - ERUC and DAM HLDs will be published before year end
- Participate in detailed design engagement
  - Engagement plan to be published before year end at: http://www.ieso.ca/Sector-Participants/Market-Renewal/Overview-of-Market-Renewal
- Engage with appropriate industry associations (e.g. AMPCO, EDA and others) to follow MRP progress
- Subscribe to IESO Bulletin to receive periodic updates on MRP

Further Reading

- For further information on the design, stakeholders are invited to review materials online at:
  - Single Schedule Market: http://www.ieso.ca/Sector-Participants/Market-Renewal/Market-Renewal-Single-Schedule-Market
  - Day-Ahead Market: http://www.ieso.ca/Sector-Participants/Market-Renewal/Market-Renewal-Day-Ahead-Market
  - Enhanced Real-Time Commitment: http://www.ieso.ca/Sector-Participants/Market-Renewal/Market-Renewal-Enhanced-Real-Time-Unit-Commitment