To: Imbrogno, Serge (ENERGY)[Serge.Imbrogno@ontario.ca]
From: Katona, Keley (ENERGY)
Sent: Fri 12/2/2016 1:56:38 AM
Subject: Energy Meeting with Premier & Minister

Rec 2

Deputy.
Attached is a deck from the IESO for tomorrow's meeting. Ok to share with MO?
Keley

[DRAFT] Rate Mitigation Measures

Presentation for Ministry of Energy

December 2, 2016

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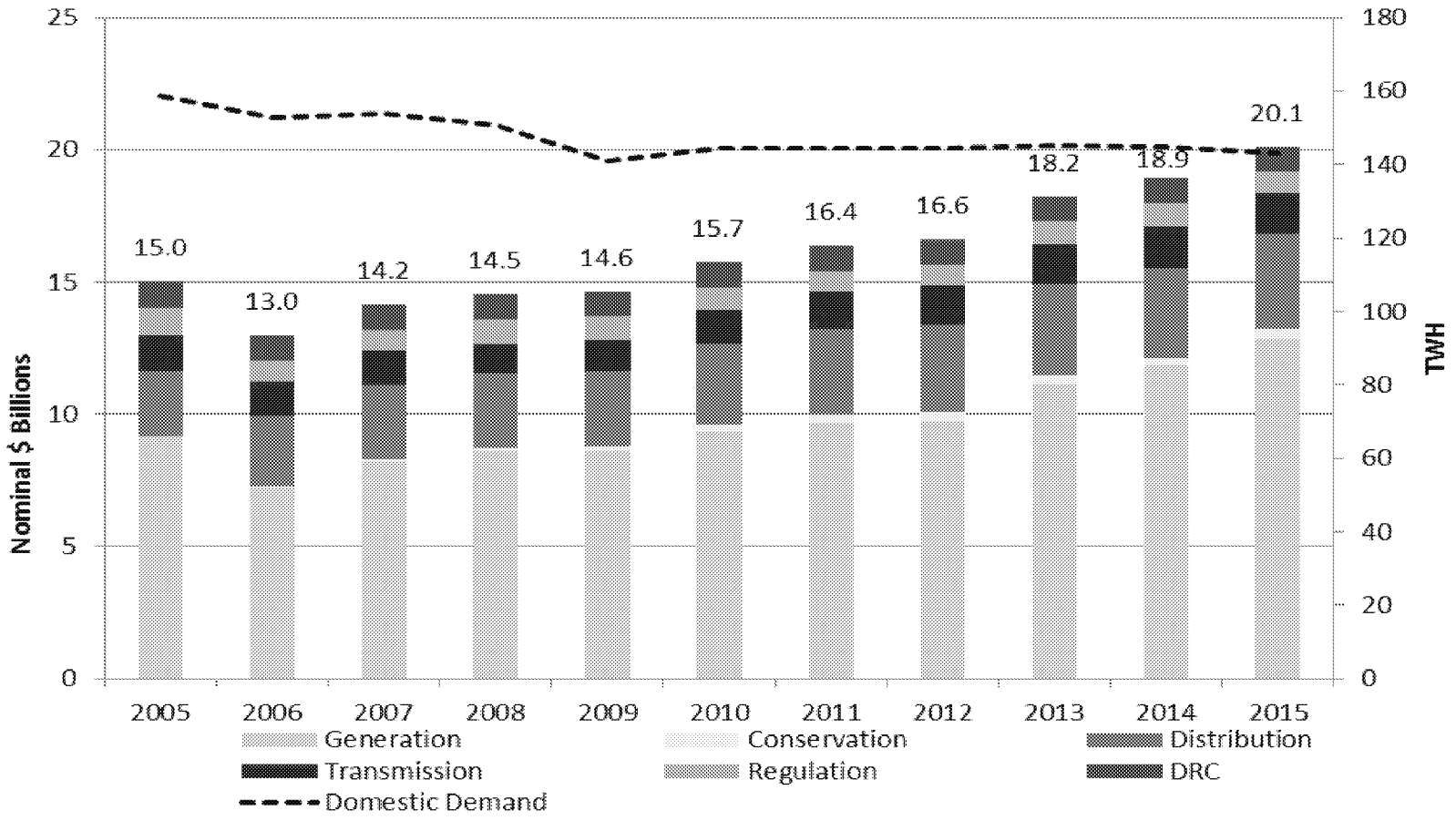
Overview

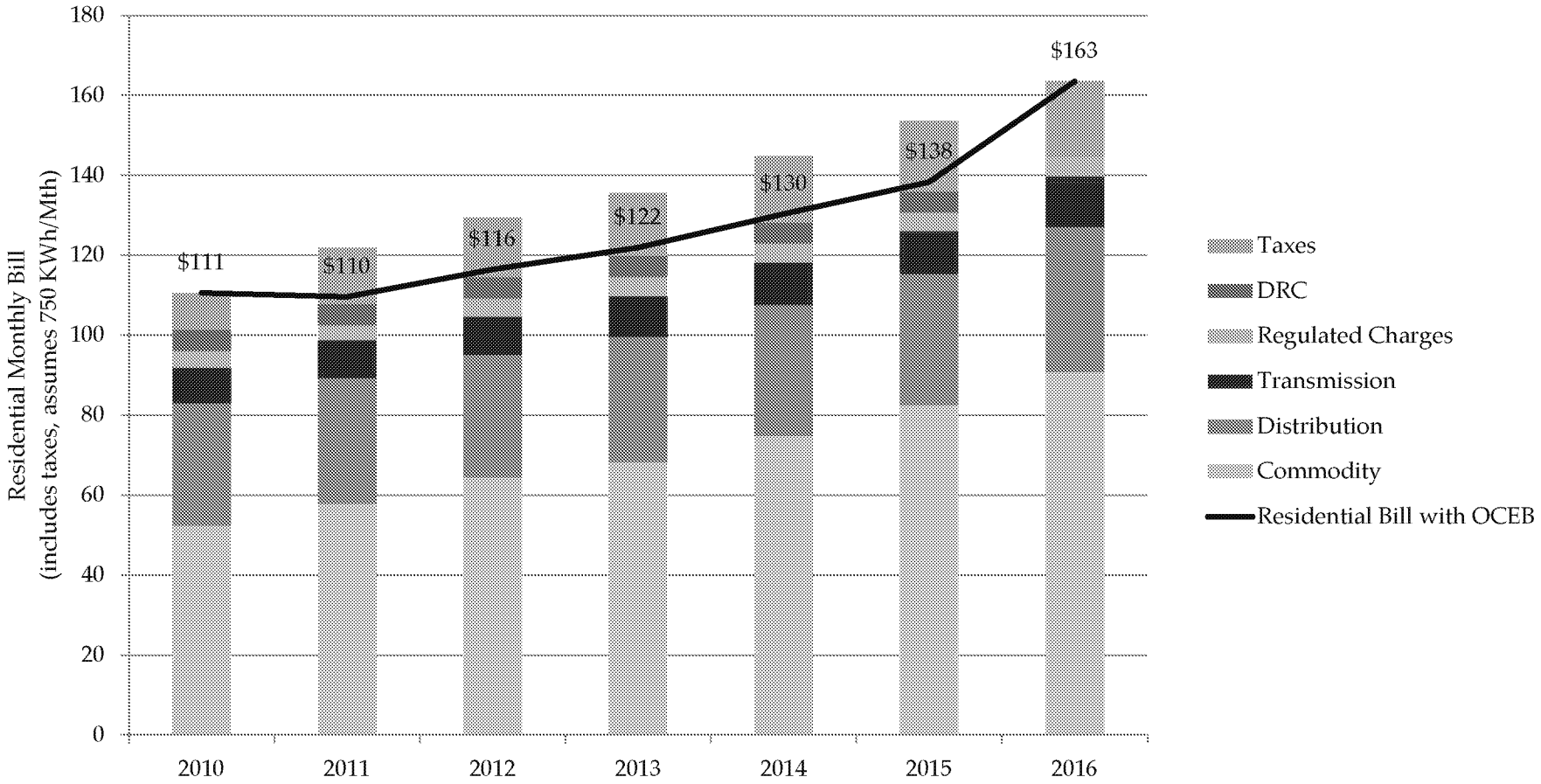
- Over the past decade Ontario has experienced yearly electricity rate increases averaging 5.1 percent, peaking at 18 percent in 2016.
- However, rates are expected to stabilize and remain flat in real dollars and increase by 2.1% annually in nominal dollars from 2016 to 2020.
- The IESO has ongoing initiatives, like Market Renewal and Non Utility Generator (NUG) renegotiations, that will help minimize rate increases.
- There are additional options that could be considered by the government to reduce rate increases further, but these rate mitigating measures predominantly occur beyond a 5-year timeframe.
- The IESO has assessed the impact of a number of potential rate mitigation measures. The analysis provided in the following slides is preliminary but provides a directional indication of savings.

Historical Total Cost of Electricity Service



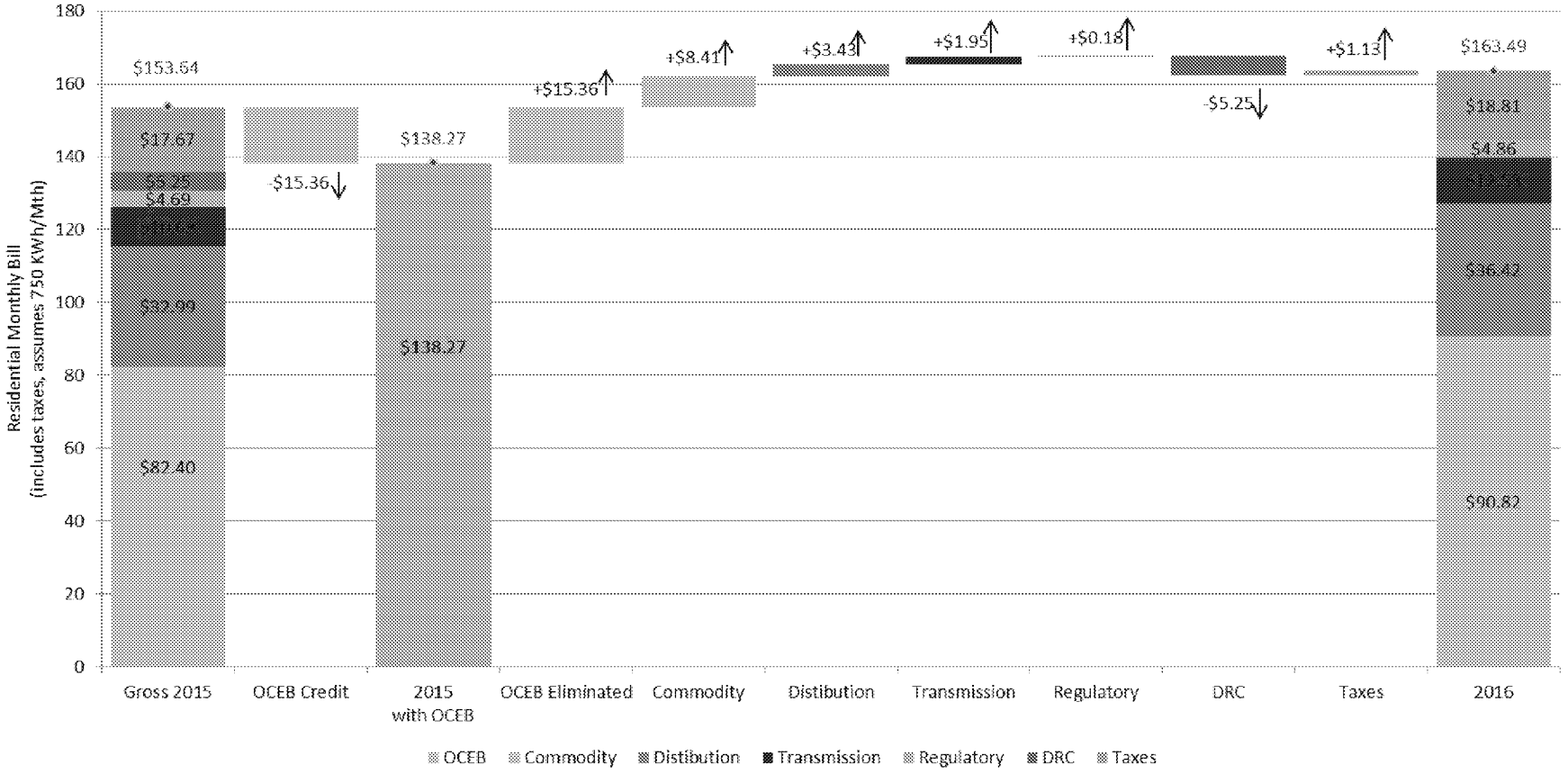
- From 2006 to 2015 the total cost of electricity has increased about 54%
- Average annual increases of about 5%/Yr (Inflation has been about 1.8% per year during this period)
- Domestic electricity demand dropped about 11% from 2005 to 2009 or 1% per year when averaged over the period. About 6.3% of this decrease occurred between 2008/09
- From 2010 to 20015, the domestic demand has remained relatively flat

Historical Toronto Hydro Residential Monthly Bill



- The residential monthly bill included the Ontario Clean Energy Benefit (OCEB) during 2011 to 2015, in 2016 the OCEB was removed
- The annual increase from 2015 to 2016 was 18% which is a period the OCEB was eliminated
- The annual average increase from 2010 to 2015 was 4.6% per year

Drivers for the 2016 Rate Increase



- Monthly bill increase is 18% for 2016 compared to 2015; of which the elimination of the OCEB is responsible for 60% of is 18% increase (10.8% of the 18%), with the remaining 40% (or 7.2%) of the increase due other factors.
- The commodity and regulatory costs increased by 10% and 4%, respectively from the prior year. This amounts to a $8.60 increase that would have been a 6.2% increase experienced by all residential customers.

Residential Monthly Bill is based on the monthly average bill for a Toronto Hydro customer using 750 kWh/Mth during the 2015 and 2016 calendar year

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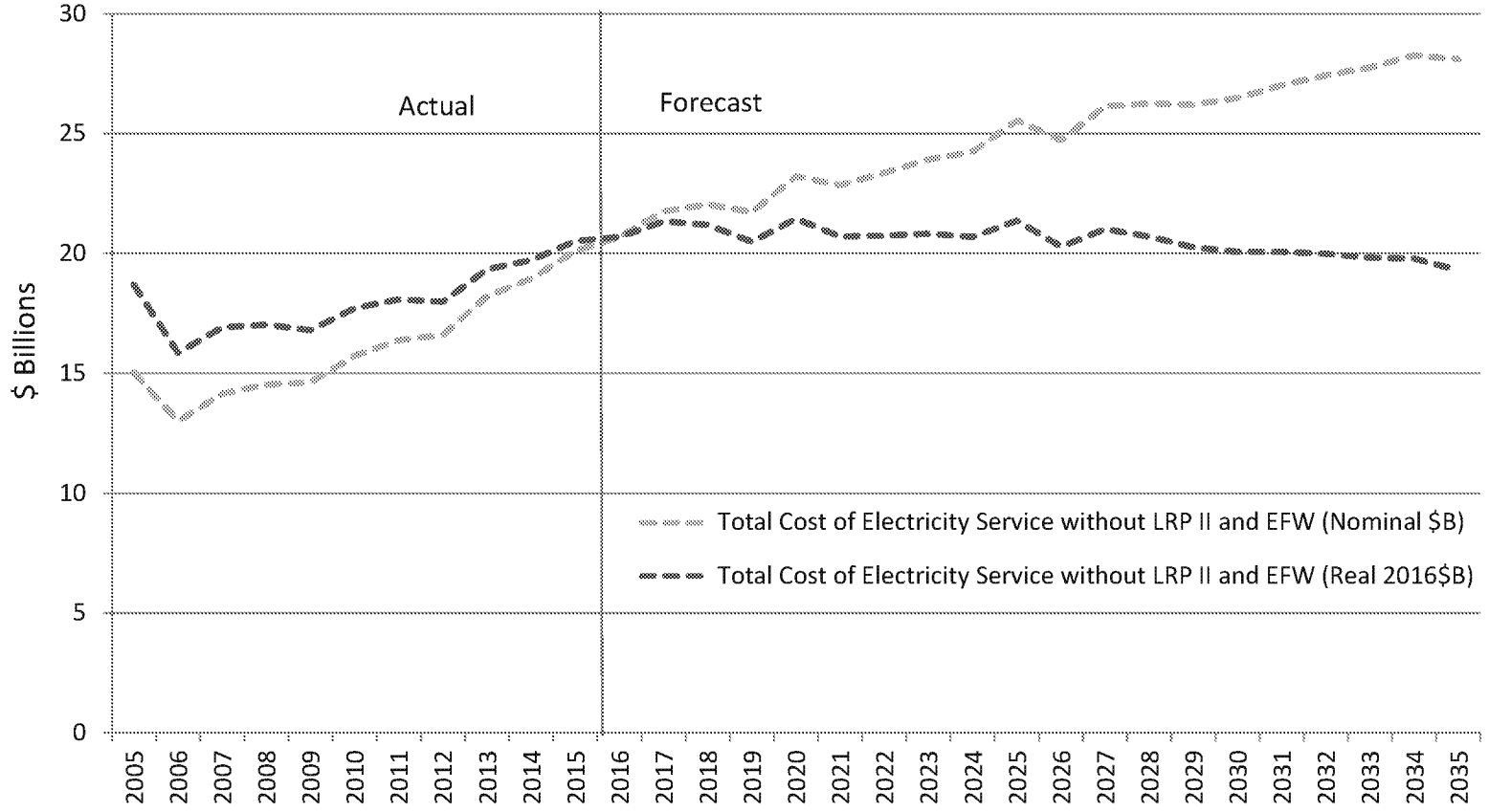
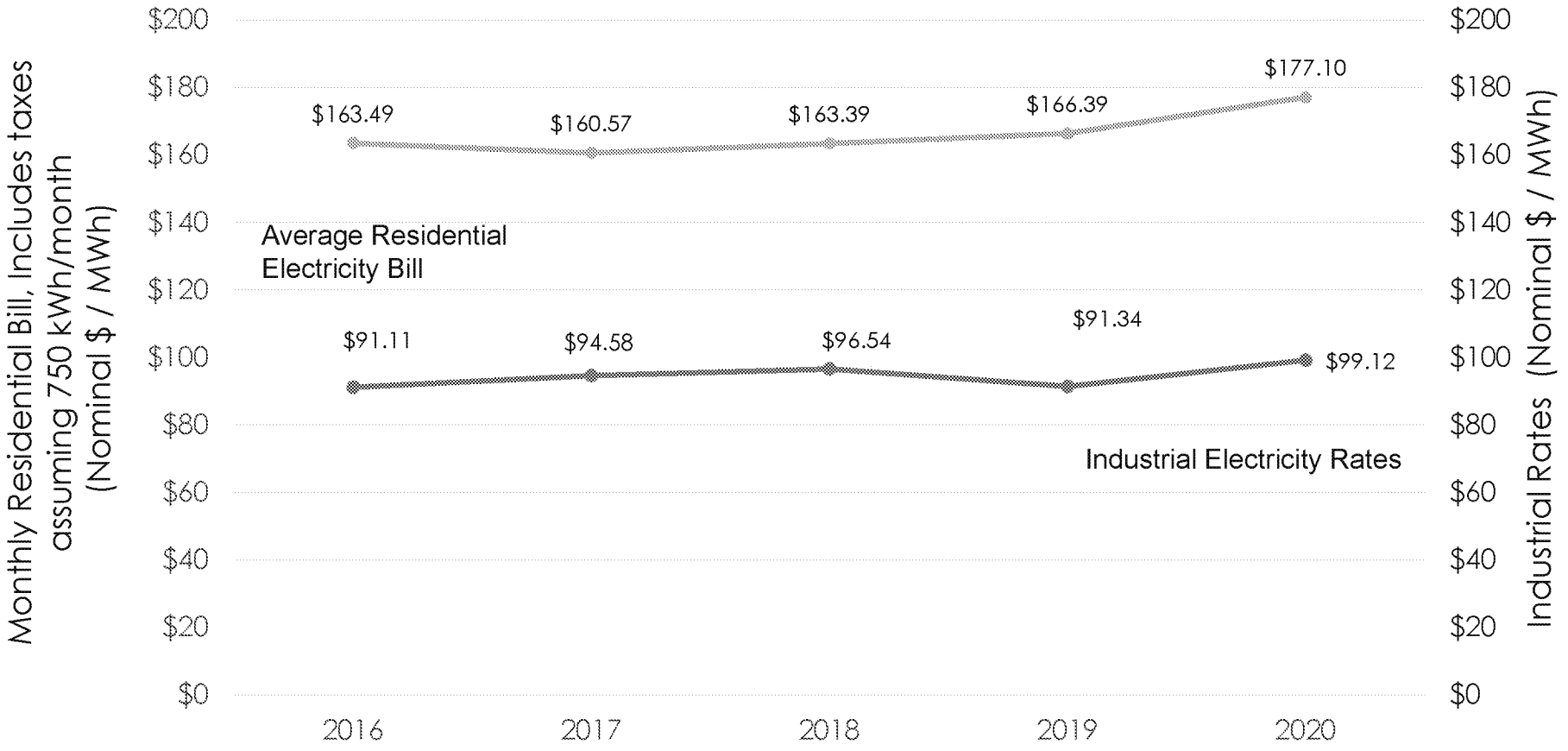
Evolution of Historical Total Cost of Electricity Service into the Future



- Projected total cost for electricity service is expected to increase at a slower rate than experienced historically
- Cost of Electricity Service as per OPO projection Outlook B and Estimated Cost without LRP II and EFW

Average Residential Electricity Bill and Industrial Electricity Rate



- The average residential electricity bill includes 8% Rebate, MOE's estimated ICI Expansion, and RRRP costs increase
- The industrial electricity rate includes MOE's estimated cost for Proceed Recycling and RRRP rate increase
- MOE assumes no impact on this "implied" Class A rate for expansion of the Class A customers (from >3MW to 1MW)

Ongoing IESO initiatives that will help further reduce future rate increases

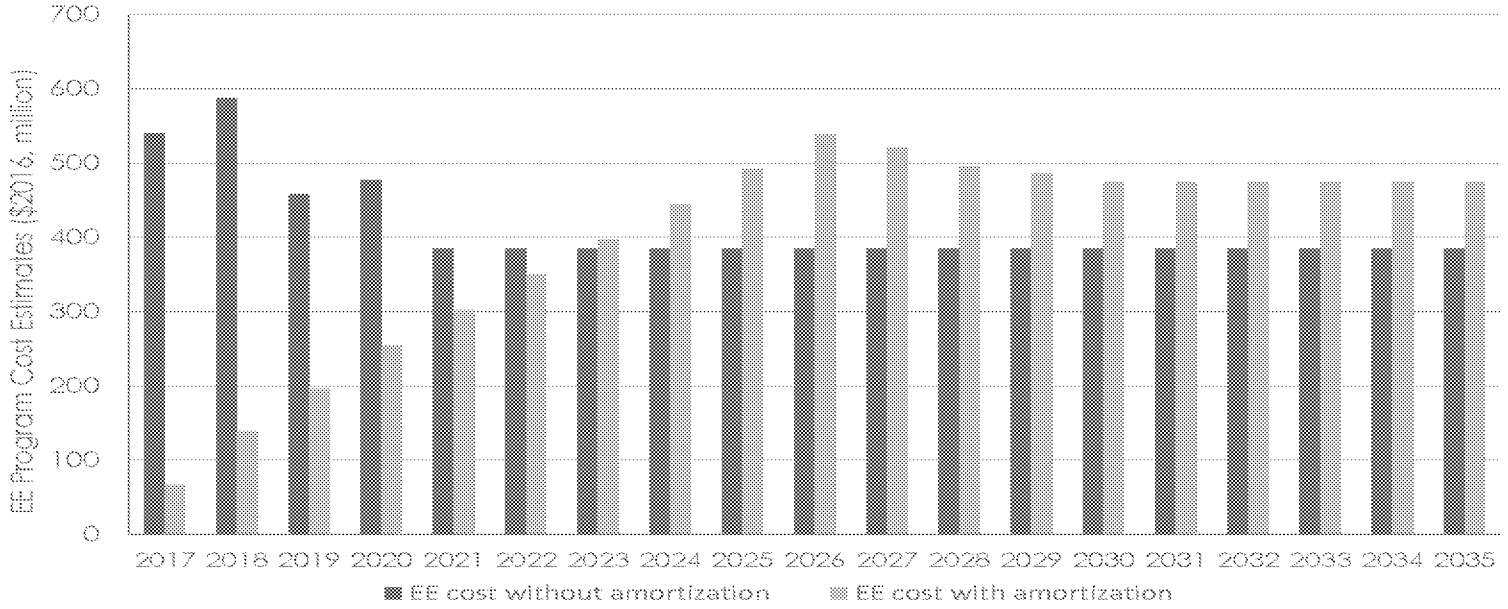
- **The Market Renewal Project**
  - The IESO is working with its stakeholders to consider important enhancements to Ontario's wholesale electricity market, and introducing a technology agnostic and competitive procurement of resources
  - Market Renewal will draw on lessons learned and best practices in Ontario and elsewhere to achieve material efficiencies in the near and longer term
  - The IESO is in the process of quantifying the expected benefits before committing to developing and implementing the various projects. The Benefits Case is expected to be completed in Q1 2017
- **NUG Re-negotiations**
  - The IESO has been pursuing more flexible operation from the natural gas NUGs still under contract with the OEFC
  - Potential for ratepayer savings of up to $135 million over four years based on avoided gas and variable O&M costs
  - This will also have the effect of reducing electricity sector GHG emissions

Additional rate mitigation options

- The IESO has included a number of additional measures that could be taken to help reduce or defer future rate increases, including:
  1. Amortization of conservation costs
  2. Eliminate planned and directed renewables procurements
  3. Halt the procurement of further gas Combined Heat and Power (CHP) projects allowed through the Conservation First Framework
  4. Continue to re-negotiate NUG Contracts
  5. Transfer certain electricity costs from the rate base to the tax base

1. Amortization of conservation costs

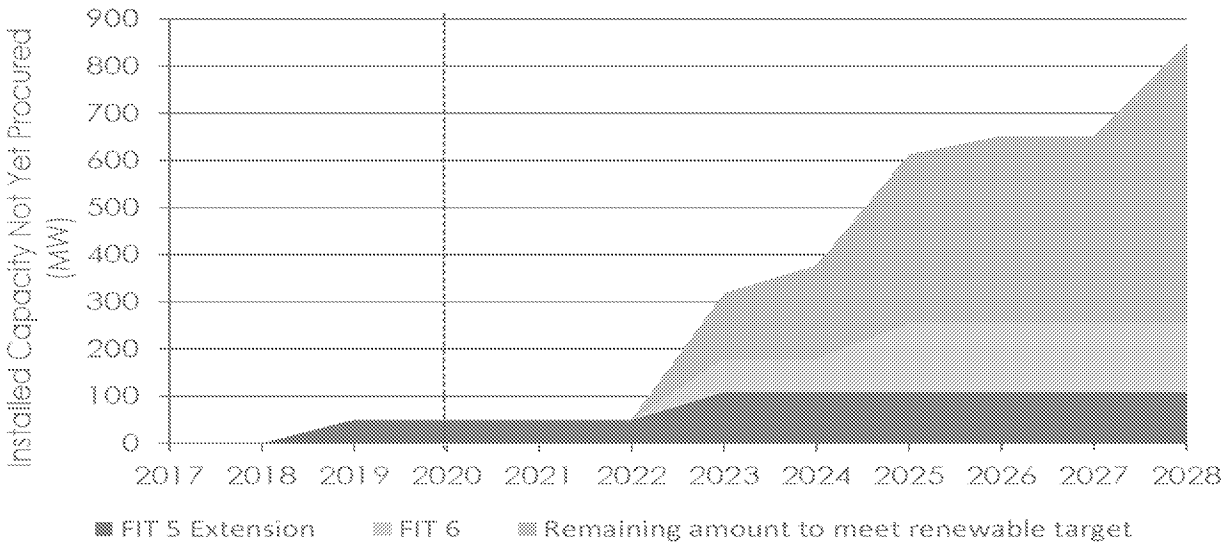
- Conservation program expenditures are approximately $500 M/year
- Treat conservation cost recovery consistent with generation and transmission
- A 10 year amortization period would decrease near-term ratepayer impacts , while increasing longer term rate impacts. The overall cost to ratepayers will be higher due to borrowing costs.



Option	2016 $ Million			
	2017	2018	2019	2020
Savings Through Conservation Amortization	**$473**	**$448**	**$263**	**$223**
% of Total Cost of Electricity Service	2.26%	2.15%	1.30%	1.05%
Monthly Residential Bill Savings, assuming 750 kWh/month ($ Nominal/mth)	**-$3.45**	**-$3.35**	**-$2.04**	**-$1.77**

2. Eliminate planned and directed renewables procurements

- The elimination of remaining renewable target would help reduce rate increases with minimal impact on future capacity and reliability forecasts
- The majority of this capacity reduction will be achieved in the later part of the forecast, beyond 2020



Option	2016 $ Million											
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Savings Through Elimination of Remaining Renewables			**$18**	**$18**	**$18**	**$18**	**$48**	**$57**	**$92**	**$98**	**$98**	**$127**
% of Total Cost of Electricity Service	0.00%	0.00%	0.09%	0.08%	0.08%	0.08%	0.23%	0.27%	0.43%	0.48%	0.46%	0.61%
Monthly Residential Bill Savings, assuming 750 kWh/month ($ Nominal/Mth)	**$0.00**	**$0.00**	-$0.13	-$0.13	-$0.14	-$0.14	-$0.39	-$0.47	-$0.77	-$0.84	-$0.85	-$1.12

3. Halt procurement of further gas CHP projects

- The Conservation First Framework currently allows for the procurement of gas CHP facilities, which could also increase GHG emissions.
- The government could remove these types of facilities from the CFF and reduce costs and emissions from the electricity sector.
- Halting the procurement of these facilities would impact the overall CFF target, and those of specific LDCs

Option	2016 $ Million			
	2017	2018	2019	2020
Future CHP Gas Energy Saved (700 GWh) No phasing in period	**$0**	**$60**	**$60**	**$0**
% of Total Cost of Electricity Service	0.00%	0.29%	0.30%	0.00%
Monthly Residential Bill Savings, assuming 750 kWh/month ($ Nominal/mth)	**$0.00**	**-$0.44**	**-$0.45**	**$0.00**
Future CHP Gas Energy Saved (550 GWh) With phasing in period	**$0**	**$45**	**$45**	**$0**
% of Total Cost of Electricity Service	0.00%	0.22%	0.22%	0.00%
Monthly Residential Bill Savings, assuming 750 kWh/month ($ Nominal/mth)	**$0.00**	**-$0.33**	**-$0.34**	**$0.00**

Note: With phasing in period recognizes retaining applications that are in progress via customer discussion and are identified projects that are part of LDC plans

4. Re-negotiate NUG contracts

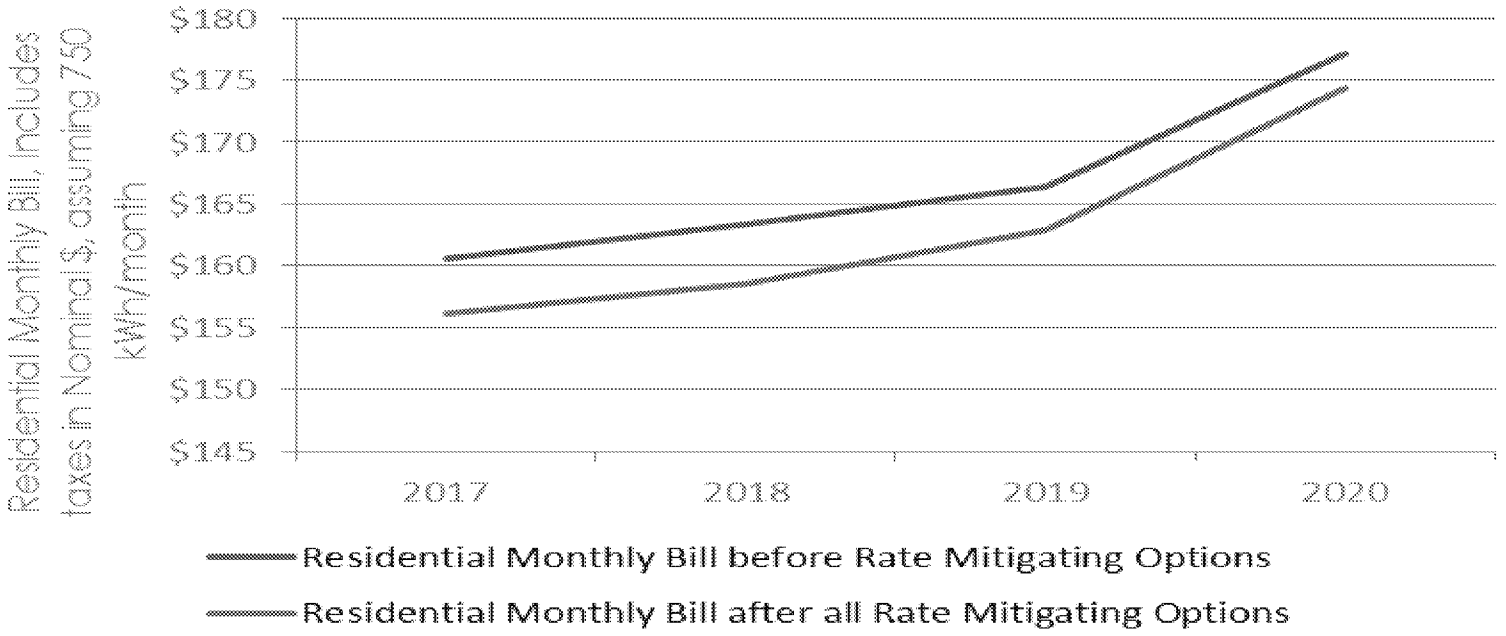
- Re-negotiating NUG contracts to seek greater flexibility from the resources and no longer operate as base load generators
- This will also have the effect of reducing surplus base load generation
- As the facilities will no longer operate 24/7 there will be an expected reduction in GHG emissions

Option	2016 $ Million			
	2017	2018	2019	2020
Savings Through Re-negotiating NUG contracts	**$60**	**$45**	**$15**	**$15**
% of Total Cost of Electricity Service	0.29%	0.22%	0.07%	0.07%
Monthly Residential Bill Savings, assuming 750 kWh/month ($ Nominal/mth)	**-$0.43**	**-$0.33**	**-$0.11**	**-$0.11**

5. Transferring costs to taxpayers

- Over the past decade investments made in the electricity sector achieved policy objectives beyond meeting electricity system reliability needs
- The costs of some of these policy-based initiatives could be transferred to the tax base, like the Industrial Electricity Incentive program that represents about $400 million over the next four years
- There are approximately $20 billion in yearly electricity system costs, so every $200 million transferred from the rate base to the tax base would reduce electricity system costs by approximately 1 percent annually
- There is also an opportunity for better coordination between the Conservation First Framework and Climate Change Action Plan between tax payer and rate payer programs

Residential Monthly Bill Impact with Rate Mitigating Options

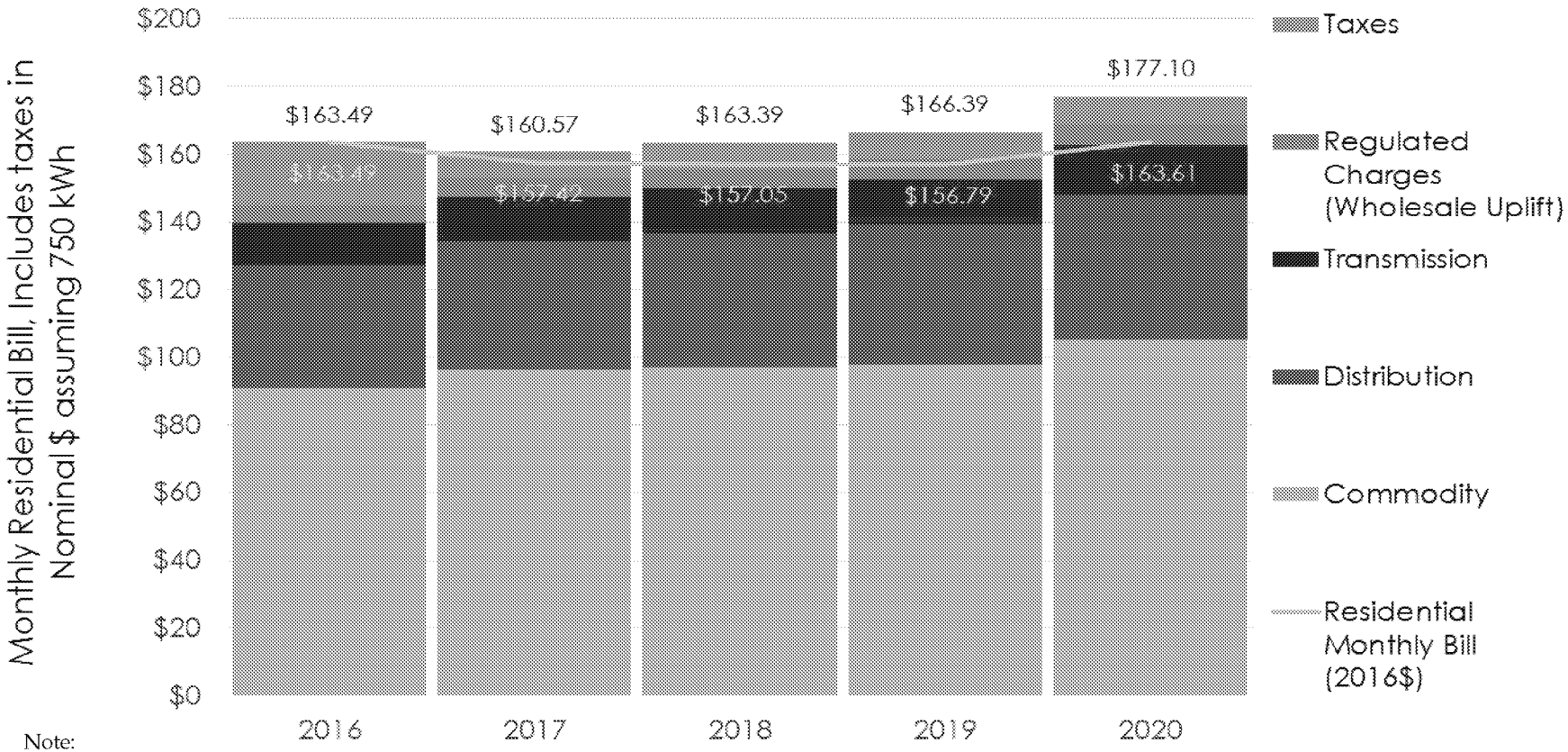


Residential Monthly Bill, Includes taxes in Nominal $, assuming 750 kWh/month				
$ Nominal / Month	**2017**	**2018**	**2019**	**2020**
Residential Monthly Bill before Rate Mitigating Options	**$ 160.57**	**$ 163.39**	**$ 166.39**	**$ 177.10**
Renewables	$0.00	$0.00	-$0.13	-$0.13
IEI Transfer to Tax Base	-$0.63	-$0.86	-$0.87	-$0.80
CHP Conservation	$0.00	-$0.33	-$0.34	$0.00
Renegotiating NUGs	-$0.43	-$0.33	-$0.11	-$0.11
Conservation amortization	-$3.45	-$3.35	-$2.04	-$1.77
Total Cost Savings for all Rate Mitigating Options	-$4.51	-$4.87	-$3.49	-$2.82
Residential Monthly Bill after all Rate Mitigating Options	**$ 156.07**	**$ 158.52**	**$ 162.90**	**$ 174.28**

Appendix

Average Residential Electricity Bill

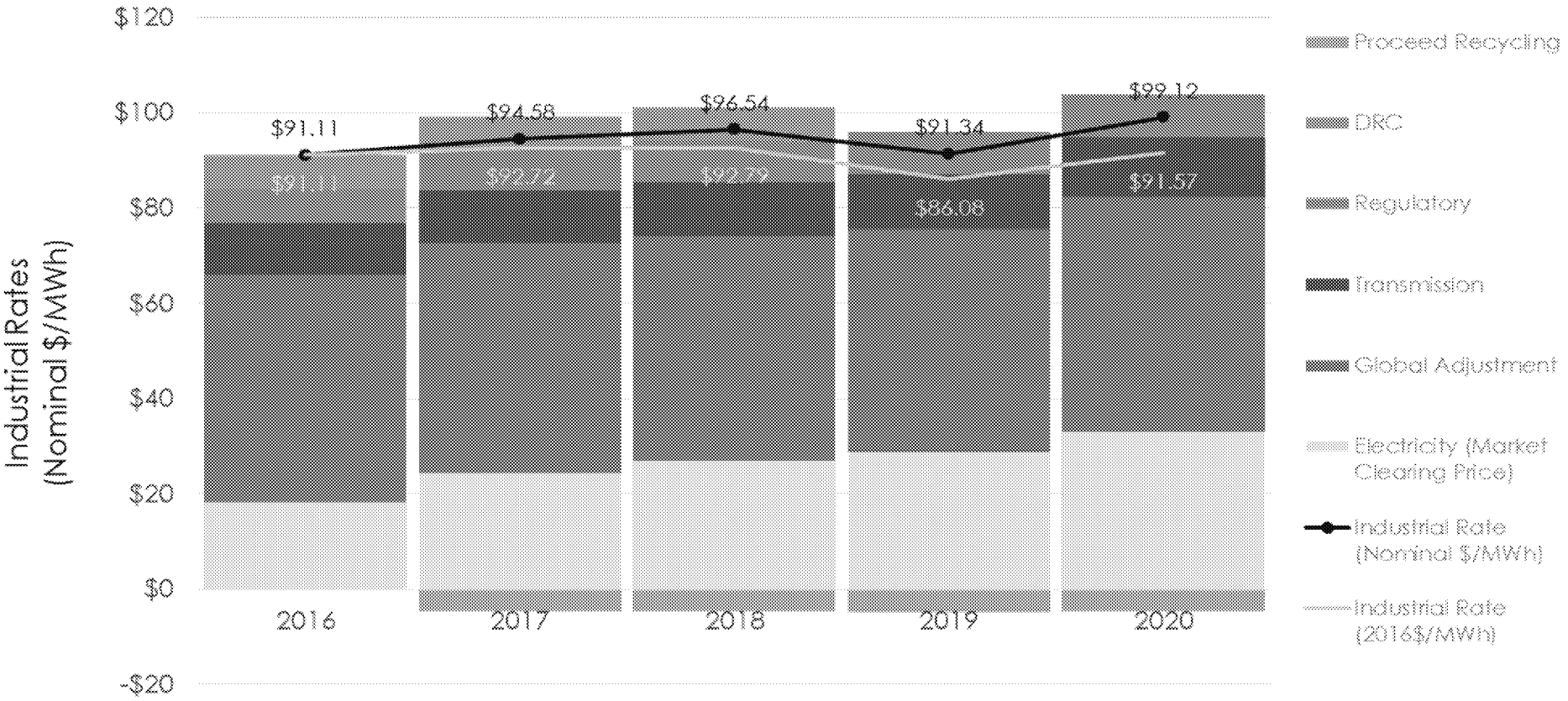
- Minor impact on upcoming residential bills
- The monthly residential bill assuming consumption of 750kWh/month will increase in nominal terms from $163.49/month in 2016 to $177.10/month by 2020, an annual average increase of 2.02% per year (0.02% per year in real).
- Includes 8% Rebate, MOE's estimated ICI Expansion, and RRRP costs increase



Note:
EB-2012-0410 proposing changes to residential distribution rates, transitioning from a mixed fixed/volumetric charge to a pure fixed charge. This change is not assumed in the above analysis

Industrial Electricity Rate

- Proceed Recycling estimate from MOE provides a benefit for industrial rates
- Increases by 2.1% annually in nominal dollars from 2016 to 2020 in nominal dollars (0.1% per year in 2016$ Real).
- In 2019, the upward trend is interrupted when the debt retirement charge is assumed to be eliminated for all remaining consumers.
- Includes MOE's estimated cost for Proceed Recycling and RRRP rate increase
- MOE assumes no impact on this "implied" Class A rate for expansion of the Class A customers (from >3MW to 1MW)



Note:
Industrial Customer assumes a direct connect customer, so no distribution costs are included

Ontario's Electricity Market:
Context for Market Renewal

Presentation for the Ministry of Energy

December 5, 2016

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Purpose

- Provide an overview of the role of electricity markets
- Discussion on three core components of energy markets and the inefficiencies associated with them
  - Two schedule market
  - Day ahead scheduling
  - Real-time unit commitment
- Provide an overview of "capacity"
- Update on the Market Renewal project

Role of Markets in the Electricity Sector

Long Term Decisions

Short Term Decisions (Day to Day)

1. ***Policy Decisions*** Government has responsibility for supply mix decisions

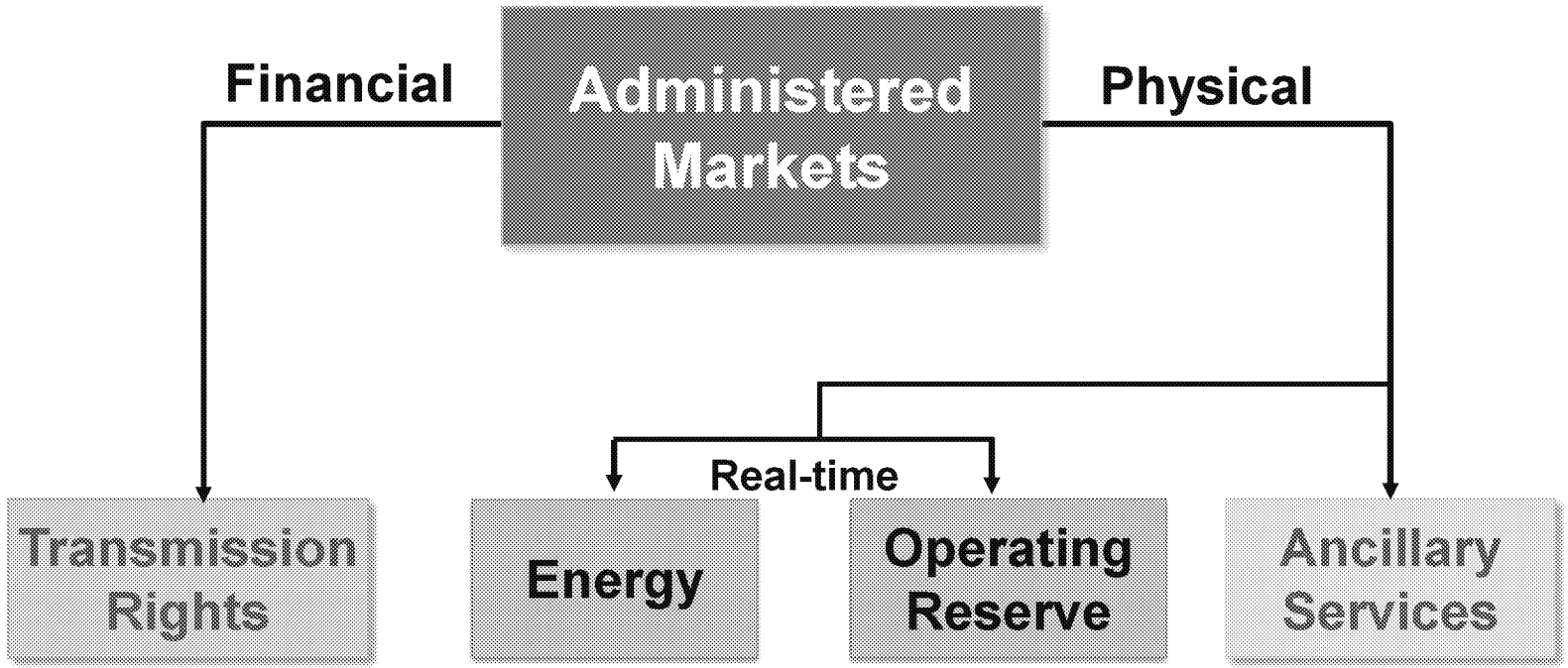
2. ***Procurement*** Resource acquisition to maintain reliability and meet policy goals

3. ***Operational*** Resources are dispatched based upon competitive mechanisms to ensure efficient and cost-effective outcomes

4. ***Financial*** Suppliers are paid for the services their provide to the market (e.g., for producing energy or providing capacity)

Markets play a key role in achieving low cost and efficient outcomes because suppliers have to compete to supply the market

IESO Markets



How Does a Market Deliver Lowest Cost?

Generators will put in an offer of how much energy they can produce at what price (e.g., 20MW @ $50/MWh)

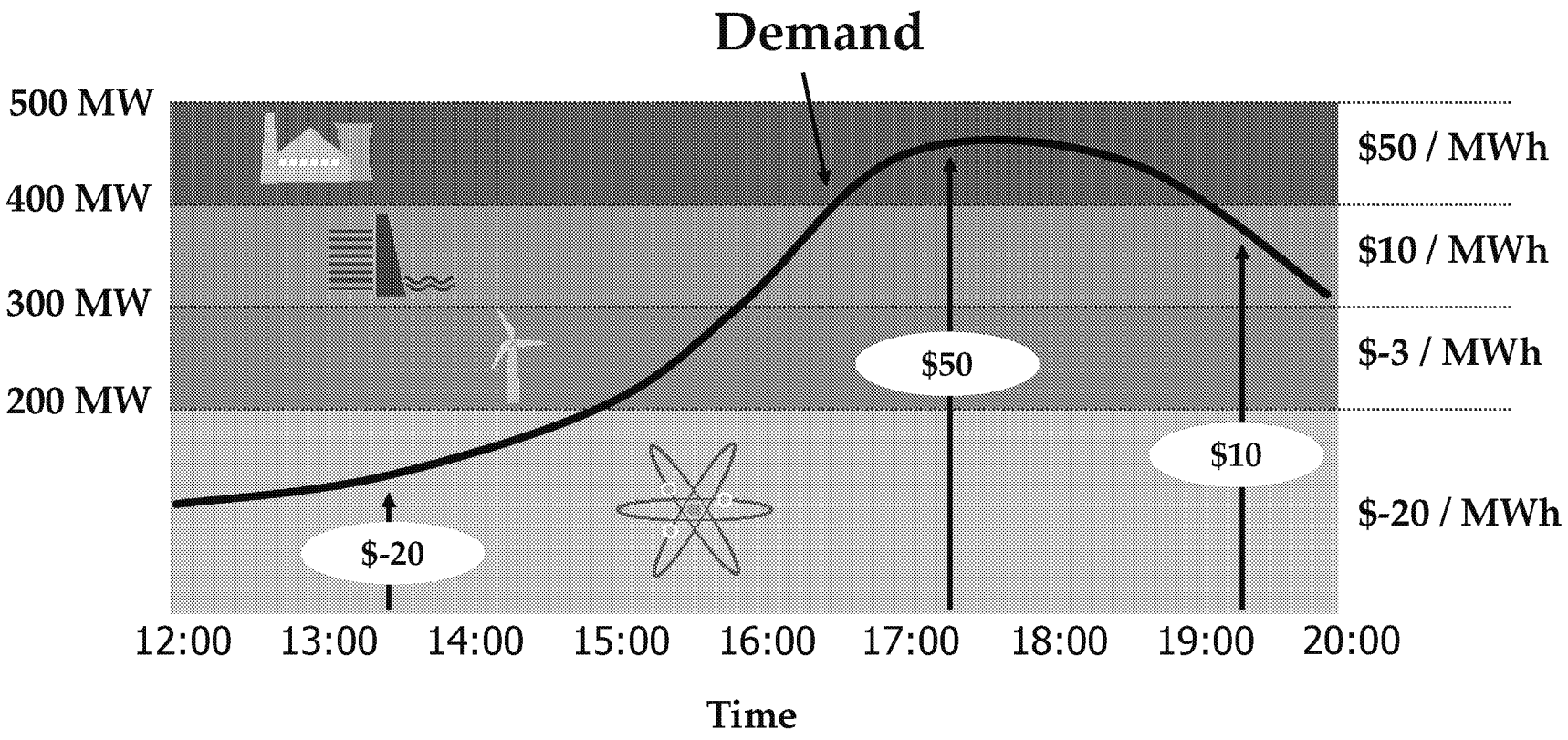
The system operator collects all the offers and "stacks" them up against consumer demand

A complex optimization engine (the so-called DSO) calculates which resources are required to meet demand at lowest cost

Resources are dispatched according to the results of the DSO

The highest cost resource to meet demand sets the market price, which is then paid to all suppliers

The Market Manages Changing Conditions



Price is set by stacking offers from lowest to highest cost. The lowest cost resources are chosen first until the demand for electricity is satisfied.

Financial Settlement

- All suppliers are paid for the energy they produce (the so-called market revenue)
- In addition, they are also paid for any other services they provide (e.g., operating reserve)
  - Most resources are contracted or regulated, which means that they receive additional revenues to cover their fixed costs
  - It is possible that a generator may have to pay back market revenue if they earn more market revenues than is required to meet all of their costs
- Even in jurisdictions that have contracts and/or regulation, a competitive wholesale energy market has proven the best way to achieve efficient, low cost dispatch
  - Southwest Power Pool is a market that is based upon fully regulated assets

Current state of Ontario's Markets

- Ontario's current electricity market was designed in the 1990s primarily to dispatch coal, nuclear and hydroelectric
- It was based on a simple *real time energy market*
- As Ontario's supply mix radically changed the challenge of managing resources in real time has increased exponentially
- The current design has reached the limit of its capability
- Structural changes are required to ensure we continue to have an efficient market that reflects the changes we have gone through and that we will continue to experience

- Two Settlement System
- Day-Ahead Scheduling
- Real-Time Unit Commitment
- Capacity Procurement

Ontario's Unique Two Schedule System

- Ontario energy market is based on a complex two schedule system that is unique in North American energy markets

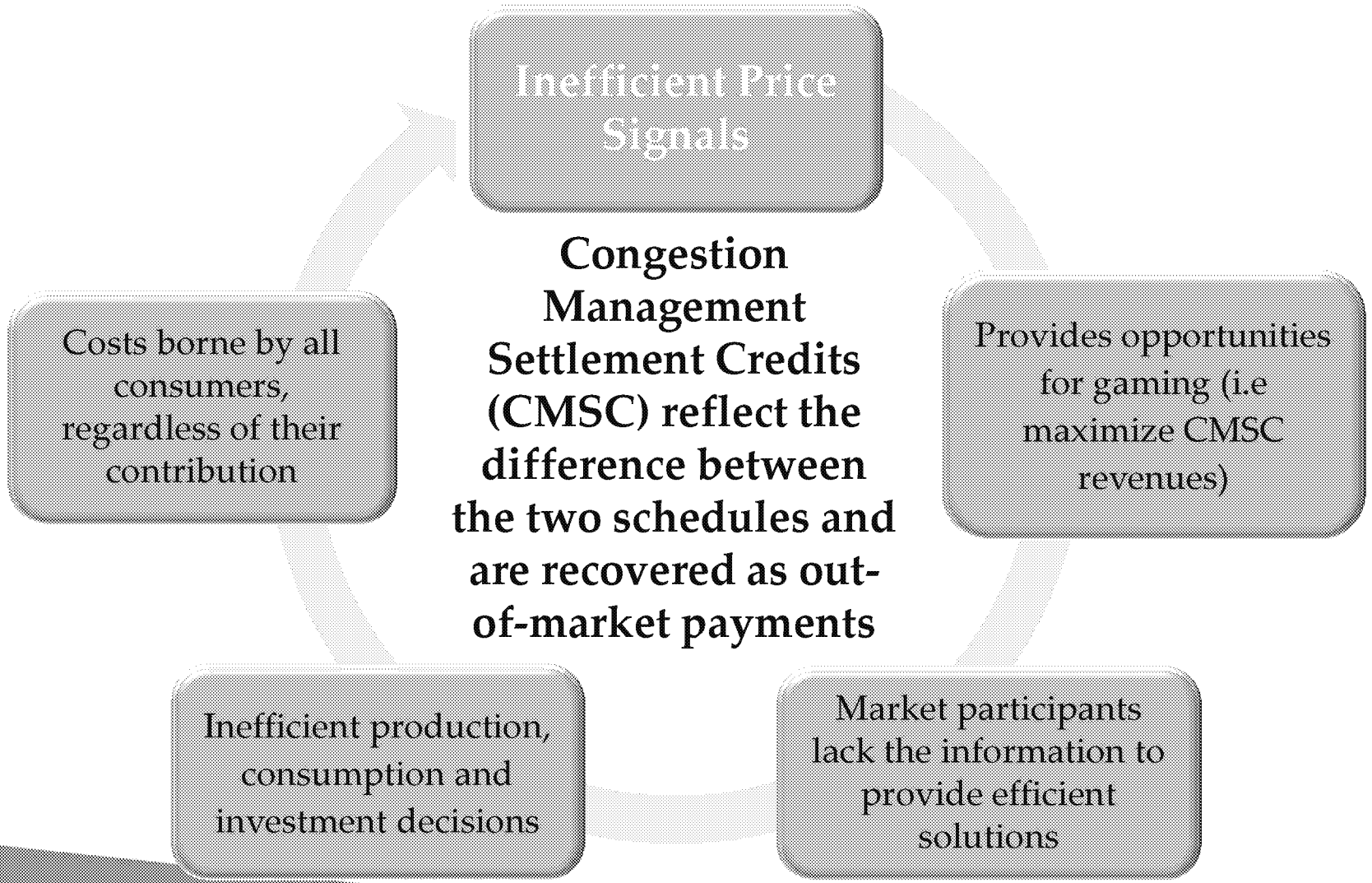
Unconstrained Schedule	Constrained Schedule
• Pay participants a market clearing price based **ignoring** real system constraints like transmission line losses and congestion which are out of a participant's control	• Determines dispatch based on a price that **includes** all system constraints like transmission line losses and congestion

- The difference between the two schedules is paid separately and not reflected transparently in prices
- These "out of market payments" have proven to be very costly and difficult to manage

History of the Two Schedule System

- Adopting the two schedule system at market opening was a deliberate decision to ease the transition from the pricing structure that was in place prior to market opening
- The Market Design Committee recognized the limitations of this approach and suggested it be phased out after 18 months and replaced with a locational pricing model
- The two schedule system mutes the price signals and results in non-optimal consumption and investment decisions
  - It has also been the source of 'gaming' by market participants
- Furthermore, the complexity of the two schedule system has also proven to be a major barrier to other market improvements

Out of Market Payments



- Two Schedule Energy Market
- **Day-Ahead Scheduling**
- Real-Time Unit Commitment
- Capacity Procurement

Day Ahead Markets

- All 7 system operators in the US now employ some form of look ahead or financially binding Day Ahead Market to reduce risk to suppliers and the operator
  - Generators can purchase fuel and make production decisions with greater certainty
  - Traders schedule imports and exports with greater clarity
  - The system operator can plan ahead and optimise resources over a much longer timeframe, better matching schedules with actual plant requirements (for example a gas plant might have a 8 hour run time)
  - Consumers who buy from directly from the market will be able to make better consumption decisions and plan their business accordingly (e.g. make shift decisions)

Day-Ahead Scheduling

- Unlike most markets Ontario does not have a financially binding Day Ahead Market (DAM)
  - Ontario considered a DAM in 2004 but it was not feasible to be implemented due to complexities that arose from the two schedule pricing system
- Ontario instead introduced a Day-Ahead Commitment Process to commit some resources day-ahead
  - These resources receive a financial guarantees for their commitments and are obliged to provide energy in real-time
  - However, not all resources participate (e.g. exports) , which results in incomplete information and hence imperfect decisions
- While the current process helps to meet Ontario's reliability needs, it does not provide the same efficiency benefits as a full DAM

- Two Schedule Energy Market
- Day-Ahead Scheduling
- **Real-Time Unit Commitment**
- Capacity Procurement

Real-Time Unit Commitment

- Shortly after the market opened in 2002 it became apparent that real time energy prices alone were not sufficient to attract certain generators at short notice due to operational characteristics
  - This was identified as a significant reliability concern
- A Real-Time Unit Commitment program was introduced to ensure resources had the incentives needed to make themselves available
  - Program incentivizes *non-quick start* generators to come to market
  - Eligible generators receive a guarantee to recover their start-up costs which are submitted after the fact and not in their offer price
- Program achieves its reliability goals but changes to the program would achieve efficiencies, especially when coupled with a day-ahead market

Real-Time Unit Commitment Inefficiencies

- The costs of the real-time unit commitment process are not transparently reflected in market prices
  - The actual costs of a unit start are not known until much later and are paid through inefficient out of market payments
  - The use of after-the-fact cost submissions has proven burdensome for both IESO and market participants and led to unnecessary costs
- This also means that the optimization of which units to start is imperfect as not all costs are known at the time of making these decisions
  - Efficient optimization takes into all costs in a transparent manner and looks out over several hours
  - Generators would also have to compete based upon all cost components, resulting in overall lower cost outcomes


Two Schedule Energy Market
Day-Ahead Scheduling
Real-Time Unit Commitment
Capacity Procurement

Capacity in the Market

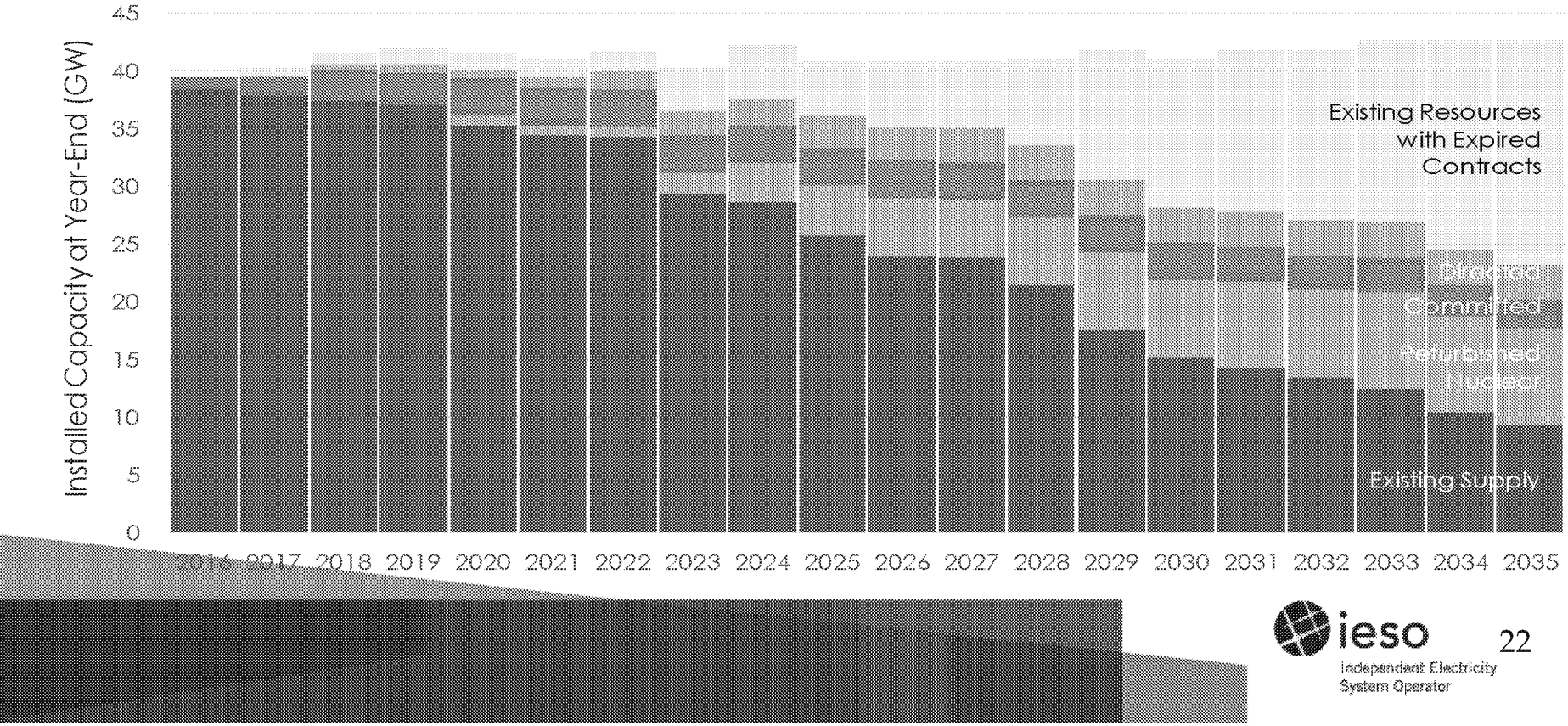
- To ensure reliability the IESO must ensure that there is enough capacity on the grid to meet demand at all times
- Some of the capacity will generate energy frequently and are therefore considered baseload
  - Nuclear and some hydro-electric units
- Other capacity will be rarely, if ever used, but should be available in case it is called upon
  - Peaking facilities such as Lennox or some demand response fall into this category
- However, regardless of how much energy is produced the capacity value is the same since they must all be available when needed

Capacity Procurements

- In recent years, Ontario has used procurements with long-term contracts to meet its energy and capacity needs
  - Procurements were the preferred approach since the need for new assets was urgent from a reliability perspective and also to meet specific policy goals (i.e. coal phase out)
- With Ontario having invested in new assets and fundamentally changing its supply mix, the procurement approach should evolve to reflect these changes and add greater flexibility
- While capacity markets can incentivize the development of new resources, they have proven very effective in maximizing capacity from existing assets at attractive prices
  - Ontario has a great asset-base of newer generators that will be able to compete to provide capacity in a more flexible and lower cost manner

Capacity Auctions

- Capacity needs emerge in the coming years as contracts expire
- Capacity auctions let all resources compete on a level playing field with the lowest cost resources selected until demand is met
- Shorter commitment periods than current 20-year contracting provides greater flexibility and better aligns supply with evolving system needs



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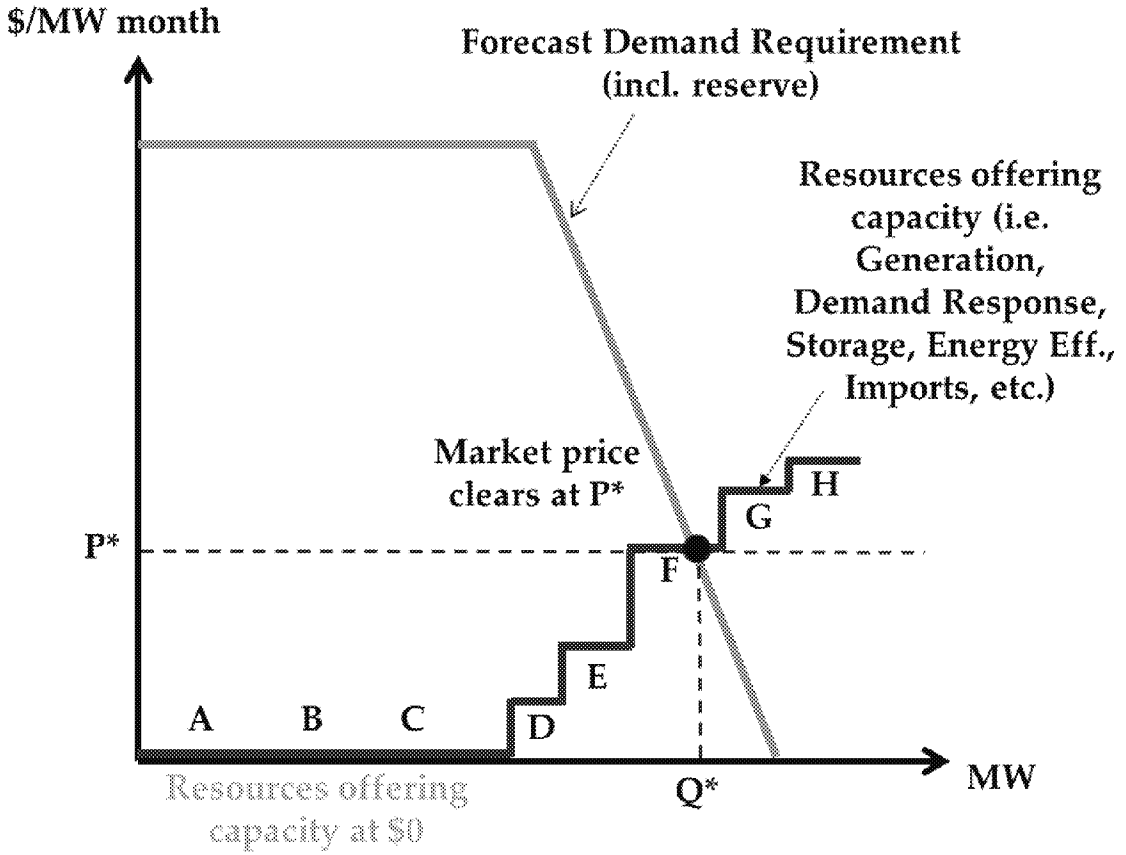
Capacity Auctions in Practice



- The annual Demand Response Auction was a success and has attracted innovative new entrants including residential participants
- Trading capacity with our neighbours is providing new opportunities for existing assets
  - The September 2016 NYISO auction cleared 88 MW of Ontario generation

Recap: How the Pieces Fit Together

The four types of market structures that are used to procure, commit, and dispatch needed resources.

Capacity Markets

- Developed to maintain resource adequacy
- The procurement mix drives day-ahead and real-time energy markets
- Occurs 1-3 years before operation

Day-Ahead Energy Markets

- Market to procure energy resources the day before operation
- Stabilizes real-time markets
- Occurs 24 hours before operation

Real-Time Unit Commitment

- Re-optimize unit commitment for the real-time market over multiple hours to improve system efficiency
- Occurs 3-24 hours before operation

Single Schedule Markets

- Pricing reflects system constraints on a real-time basis and more transparently
- Occurs 5-15 minutes before operation

Market Renewal

Presentation to the Minister

December 5, 2016

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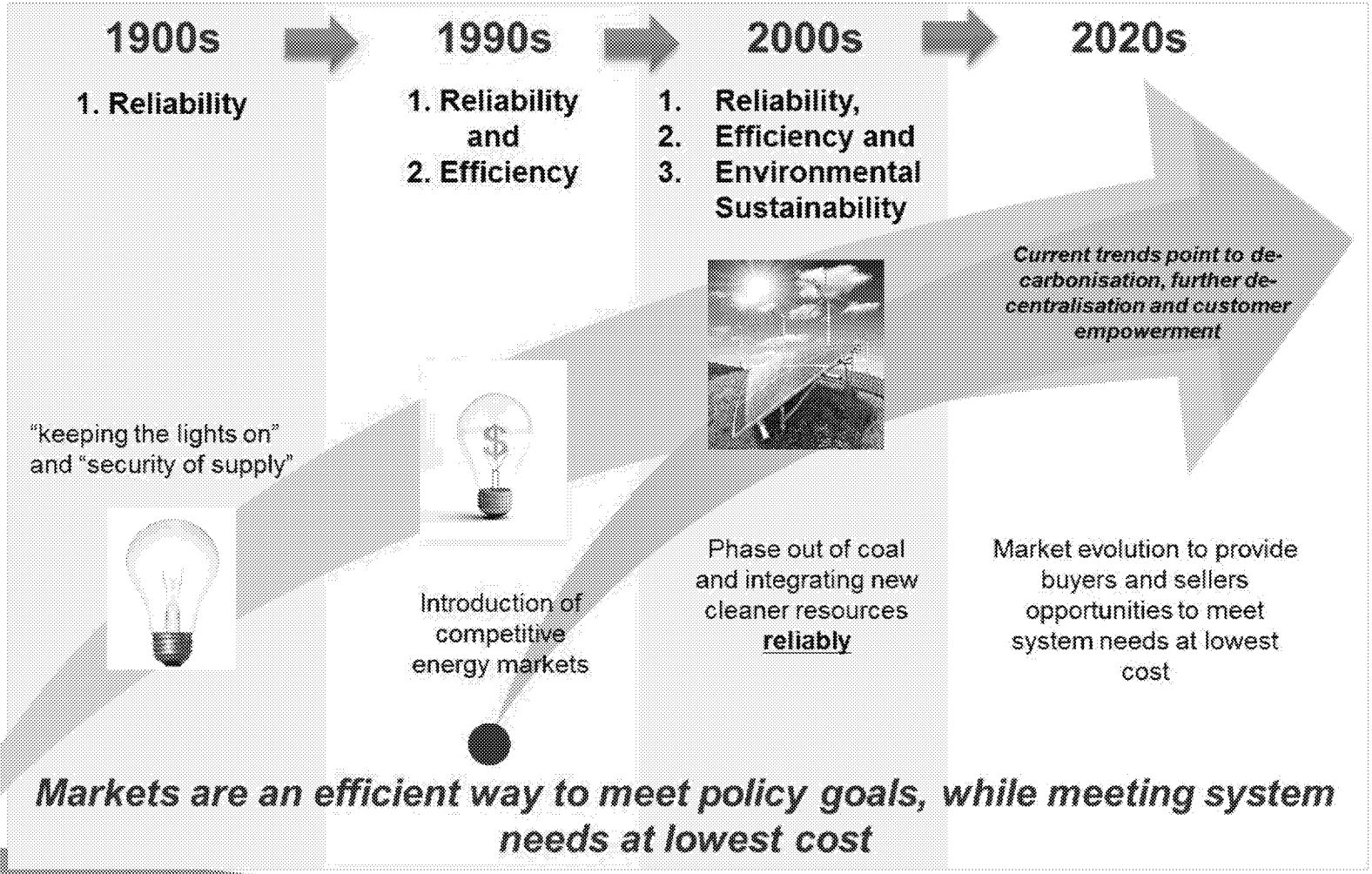
Introduction

- Ontario's electricity sector has gone, and continues to go through significant changes
- The IESO is working with its stakeholders to consider important enhancements to Ontario's wholesale electricity market
- The objective of the ***Market Renewal Project*** is to achieve material efficiencies in the near and longer term with minimal disruption to market participants
- The IESO is in the process of quantifying the expected benefits before committing to developing and implementing the various projects
- The ***Market Renewal Project*** aligns with many of the priorities outlined in the Minister's mandate letter, including mitigating the impact of electricity prices on consumers and businesses, driving efficiencies, and developing a level playing field to source affordable, clean, innovative, and reliable electricity in the future.

The Evolution of the Sector

The context for electricity sector policy goals has become increasingly complex



Goal of Market Renewal

Market Renewal would seek to create a more balanced and dynamic marketplace by establishing clear and transparent mechanisms for suppliers and consumers to supply what the system needs cost effectively

Expected Benefits

1. Reduce the commodity cost of electricity in the future
2. Prepare us to manage future change efficiently and more flexibly
3. Adopt best practices and incorporate lessons learned

What is Market Renewal?

Market Renewal will replace the key foundation of Ontario's market design and consists of three distinct work streams

Work Stream	Primary Objective	Initiatives
Energy	**Reduce cost and gain efficiency** scheduling energy to meet provincial demand	• Single Schedule System • Day-Ahead Market • Enhanced Real-Time Unit Commitment
Capacity	**Reduce cost** of procuring resources to meet long-term demand	• Capacity Trade • Incremental Capacity Auction
Operability	**Increase flexibility** to reliably and cost-effectively integrate renewable resources	• More Frequent Intertie Scheduling • Investigate other opportunities

Energy Work Stream

In Ontario, all energy is transacted in real-time making it difficult to plan ahead

- Transacting more energy day-ahead would allow the IESO to schedule more efficiently, reducing real-time operating costs
- A day-ahead market would allow resources to lock in their position, decreasing their production costs and risk (e.g., purchasing fuel)
- Proposed changes would eliminate the need for inefficient out-of-market payments
- In order to achieve these changes, the two schedule pricing schedule has to be replaced with a single schedule

Operability Work Stream

Ontario's changing supply mix has increased the need for system flexibility

- Ontario has the ability to dispatch down many of its intermittent resources
- Concerns have arisen during times when the production of intermittent resources is less than forecast
- IESO has identified a need for more flexible resources and improve the responsiveness of the current fleet
- Enhanced trading protocols (intertie scheduling every 15 minutes instead of every hour) can also help alleviate the issue in real-time

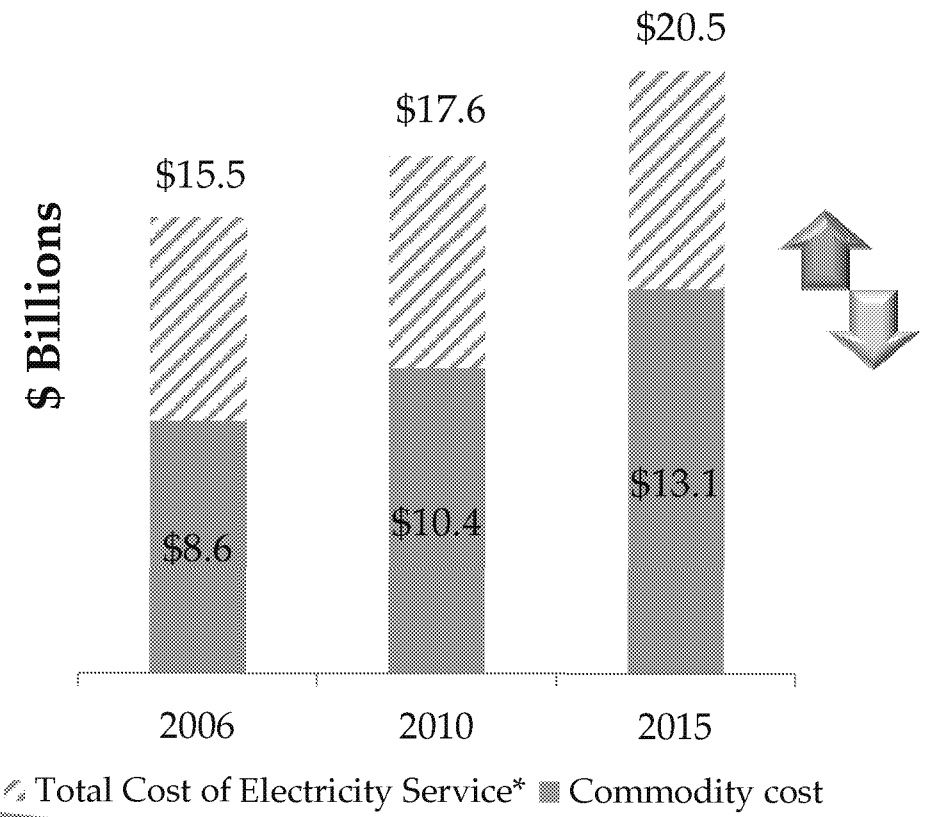
Capacity Work Stream

A competitive mechanism to meet Ontario's future incremental capacity needs

- Annual auctions avoid locking in resources any longer than needed
- Open to all resources, helping to drive innovation and unlock underutilized assets
- Enables capacity trade when efficient (lowering costs for consumers and generating revenues for suppliers)
- Well established in other jurisdictions
- DR auction demonstrated concept in Ontario

Market Renewal Key Driver 1 – Electricity Costs

Market design has a significant impact on investment and production costs which , when combined, are the largest portion of the total costs



Status Quo

- Can achieve reliability and sustainability, but current design is not as efficient as it could be
- Managing change under the status quo will put upward pressure on costs

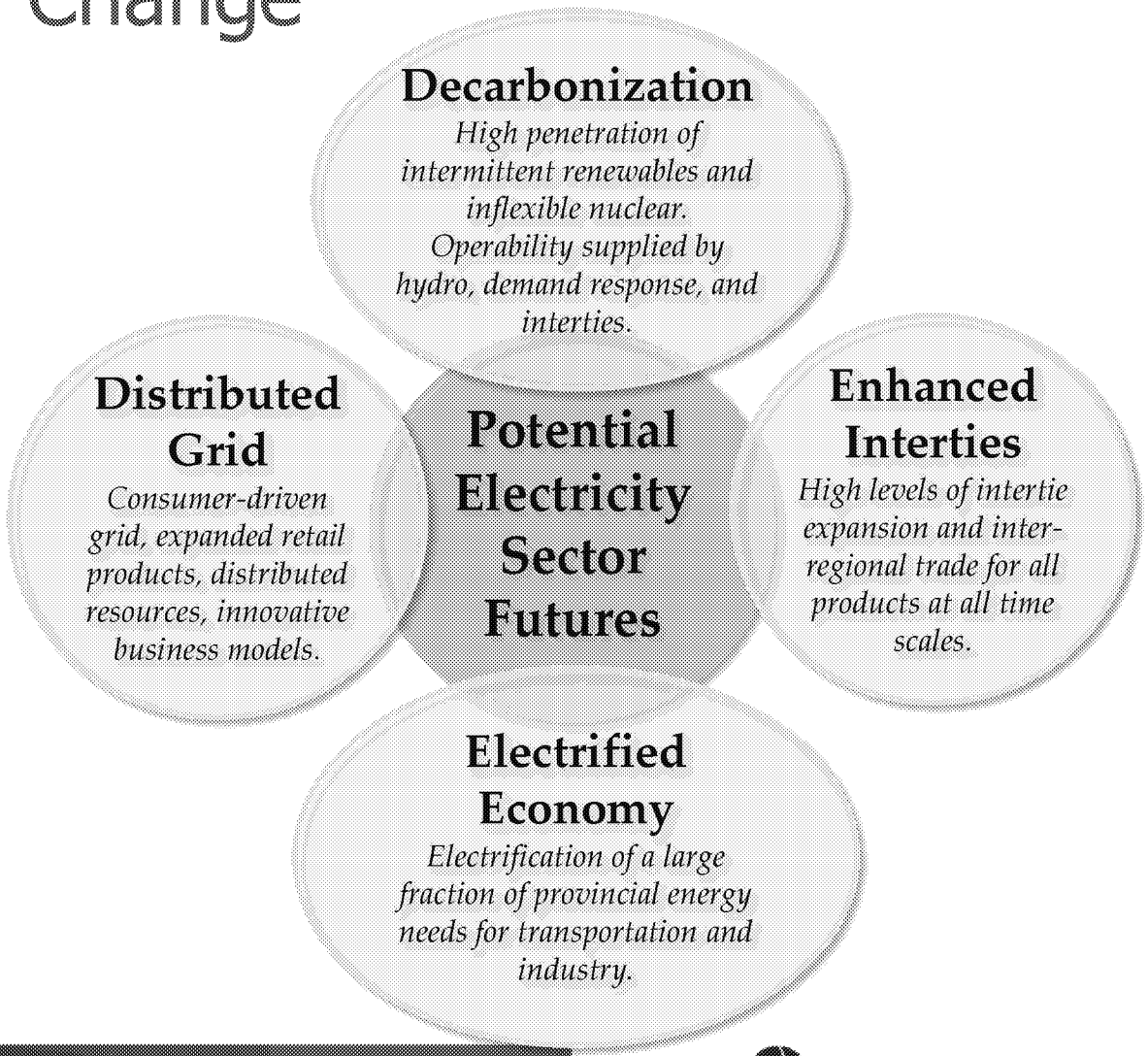
Market Renewal

- Opportunity to reduce costs while cost-effectively achieving reliability and sustainability
- Position Ontario's energy markets to efficiently manage future change

**Includes transmission, distribution, conservation, etc.*

Market Renewal Key Driver 2 – Managing Future Change

- The future of the sector is unclear, but change and increased complexity are certain
  - E.g., more players, greater consumer choice, new technologies, etc.
- Market Renewal project includes exploring what designs will best meet our future needs



Ontario's Opportunity to Incorporate Best Practices

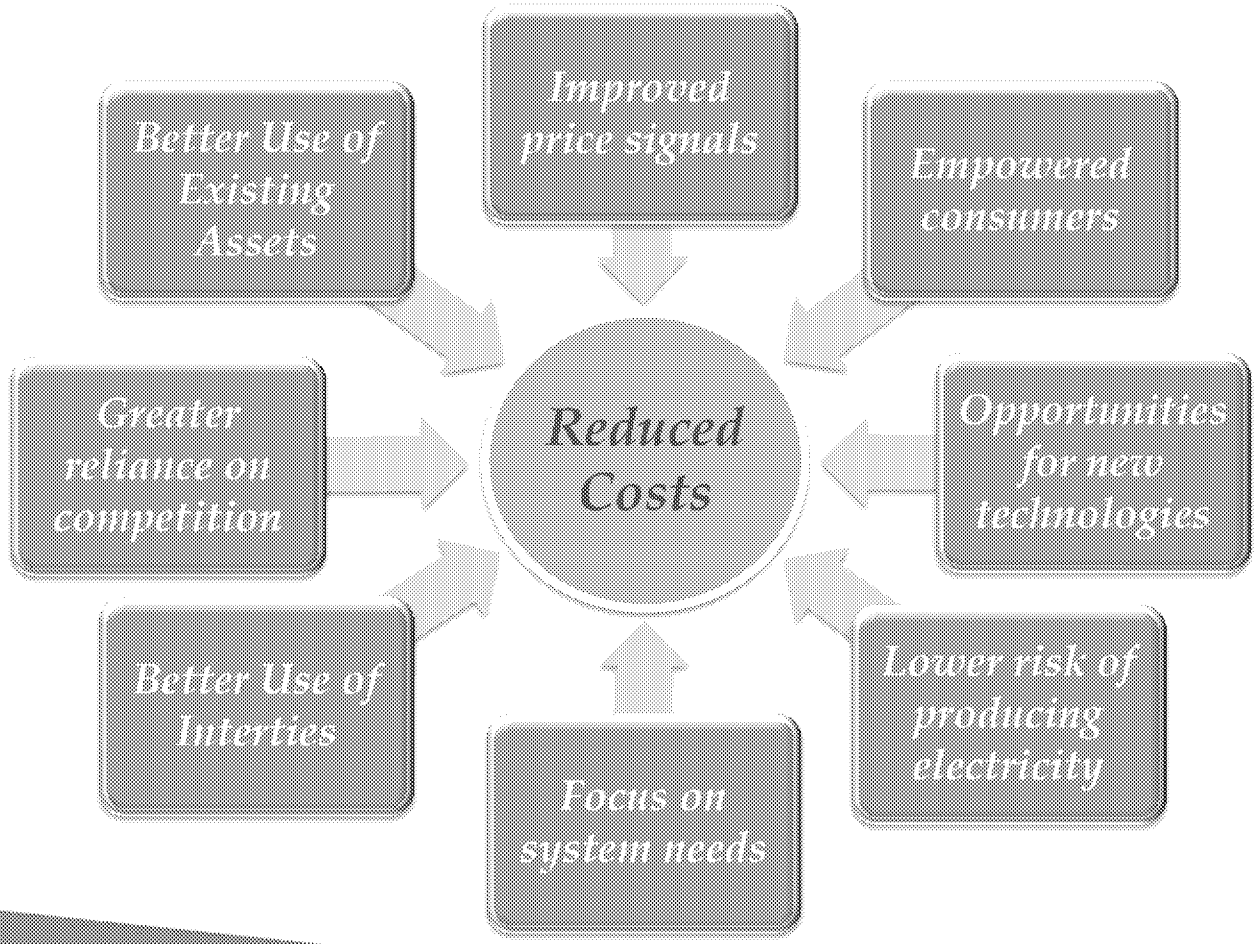
- Market Renewal will draw on lessons learned and best practices in Ontario and elsewhere
- In Ontario:
  - Stakeholders, the IESO, and the Market Surveillance Panel have identified important opportunities to enhance our current design that could be built in to any redesign
- Internationally:
  - Two decades of experience have established best practices and led to significant market redesign efforts in other jurisdictions (e.g., SPP, MISO, CAISO, ERCOT, etc.)
  - Ontario has a tremendous opportunity to learn from and build upon this experience

Benefits Case

- The IESO has retained an independent third party consultant – the Brattle Group - to assess the expected benefits of the Market Renewal Project
- The Benefits Case will explore both the quantitative costs and benefits as well as qualitative assessments of the more dynamic elements, particularly in relation to future evolution of the sector
- The consultants have worked throughout the fall with the IESO and the Market Renewal Working Group and are preparing to share initial findings with stakeholders in December
- We will continue to work with stakeholders to finalize the Benefits Case by the end of Q1, 2017
- The IESO will review the results thoroughly before making any decisions on the implementation of Market Renewal projects

Benefits Case – Current Status

Where are the Benefits Expected to Come From?



Case Study 1: DR Auction

The Auction sets a clear price on the cost of DR capacity which allows businesses to plan ahead and the IESO to secure resources at lowest cost.

The market has also attracted the attention of leading edge tech firms who can compete annually alongside existing firms helping to drive the next wave of competition and innovation.

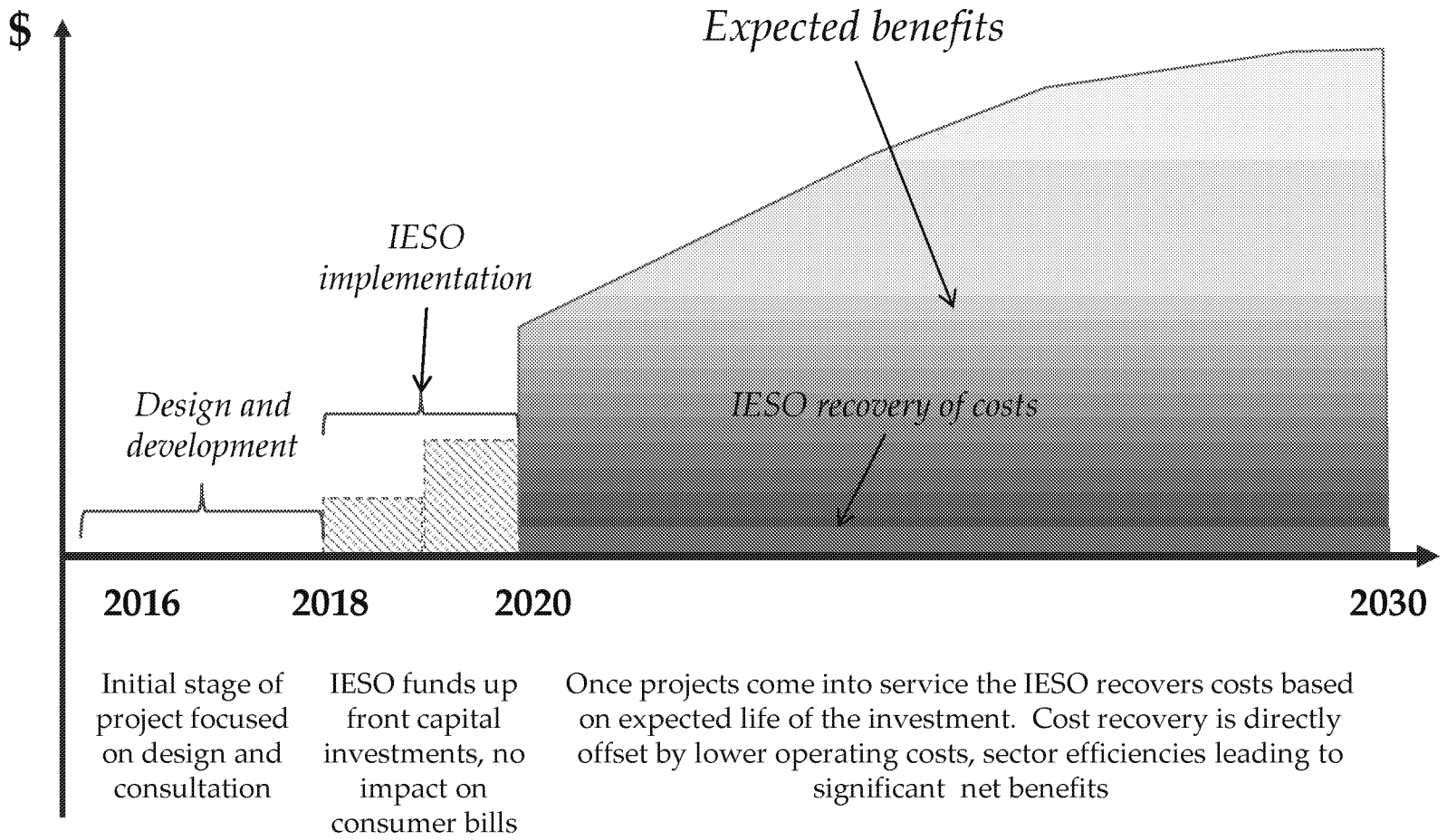
Case Study 2: Capacity Exports

In September the IESO facilitated the first ever sale of capacity to New York. An Ontario generator received incremental revenue and New York received capacity at a very attractive price ~$12,000/MW-year demonstrating the potential of enabling capacity trade through markets

Project Costs

- A bottom-up estimate of potential IESO implementation costs is in the process of being developed by IESO consultants
  - Accounts for costs avoided from investments that would need to be made regardless, and reduced staff requirements long term
- Typically, capital expenditures are recovered once the projects come into service (amortized over the life of the projects)
  - Based on current estimates cost recovery would be relatively modest and an order of magnitude lower than the expected benefits
- Project costs to date have been covered from existing budgets
- Given the scale of the project, it is anticipated there would be some incremental need for resources

Illustrative Potential Cost/Benefit



Note: Chart based on typical IESO process to fund a major market project with illustrative costs and benefits

Stakeholder Engagement

Stakeholders have been consulted extensively on the project and have provided valuable feedback and been actively engaged every step of the way

Q4 - 2015

The IESO held **one-on-one** consultations and worked closely with stakeholders to identify opportunities to improve the market

Q1 - 2016

The IESO launched a **Market Renewal stakeholder engagement** in March 2016 to begin work on the project

Q3 - 2016

A **Market Renewal Working Group was** established with 13 members representing the various types of market participants

Q4 - 2016

Both MRWG and broader stakeholder discussions to review approach and methodology for the Benefits Case

Q4 - 2016

Present initial findings mid-December and work together with stakeholders to finalize Benefits Case by end of Q1 2017

Summary

- The Market Renewal Project is expected to:
  1. Reduce the commodity cost of electricity in the future
  2. Prepare us to manage future change efficiently and more flexibly
  3. Adopt best practices and incorporate lessons learned
- The IESO is committed to working closely with its stakeholders to find and implement practical solutions
- The Benefits Case is targeted to be completed in Q1 2017 and is expected to summarize the range of potential benefits over time, document primary drivers of the benefits, and lay the foundation and support as the IESO proceeds with implementation

To: Imbrogno, Serge (ENERGY)[Serge.Imbrogno@ontario.ca]
Cc: Hume, Steen (ENERGY)[Steen.Hume@ontario.ca]
From: Bruce Campbell
Sent: Tue 2/28/2017 4:18:29 PM
Subject: IESO White Papers - Global Adjustment Smoothing Plan

Rec 127

Serge – please see attached.

Bruce

Bruce Campbell | President & CEO
Independent Electricity System Operator (IESO) | T: (416) 506-2829 | C: (416) 528-3685
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Powering Tomorrow.

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February 28, 2017

Deputy Minister Serge Imbrogno
Ontario Ministry of Energy
900 Bay Street
Hearst Block, 4th Floor
Toronto, ON M7A 2E1

Dear Deputy Imbrogno:

Attached are two documents prepared in conjunction with our KPMG advisors. The first outlines the proposed adoption by the IESO of the guidance in *ASC980 Regulated Operations* and the recognition of regulatory assets, as a more appropriate and transparent presentation in our financial statements.

The second is associated with the potential recognition and de-recognition of the regulatory assets associated with the IESO's role under the Global Adjustment Smoothing Account.

The conclusions of the second analysis are based on the structure of the account as the IESO currently understands it, and may vary depending on the final legislative materials.

We are available to address any questions you may have on these matters.

Sincerely,

Bruce B. Campbell

Attach.

Bruce B. Campbell
President and CEO
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White Paper - Adoption of the guidance in ASC 980 Regulated Operations

Independent Electricity System Operator ("IESO" or the "Company") is considering making changes in its accounting policies to reflect the balances of market participants within the IESO-administered markets (see separate technical analysis) and the economic impacts of rate regulation, as the changes would result in a more appropriate presentation of events or transactions in its financial statements.

Issue being considered in this document is: Can the IESO adopt the guidance in ASC 980 *Regulated Operations (US GAAP in FASB)*?

Background and Assumptions

The facts, circumstances, and assumptions relevant to the specific transactions are as follows:

1. The IESO's legal status is a not-for-profit, non-taxable, corporation established pursuant to Part II of the *Electricity Act, 1998*. IESO is classified as an Other Governmental Organization and prepares its financial statements in accordance with Canadian public sector accounting standards (PSAB).
2. IESO is rate regulated by the OEB in accordance with the Electricity Act, 1998 and the Ontario Energy Board ("OEB") Act, 1998 but currently does not recognize the economic impacts of rate regulation in its general purpose financial statements.
3. The IESO is required to obtain approval from the OEB under s. 25(1) of the Electricity Act, 1998 for the approval of its own expenditures, revenue requirement and fees. The last rate approval was obtained on December 29, 2016[1].
4. The OEB issued a Decision and Order on March 28, 2013 that permits IESO to recover the MDMR costs (the Smart Metering Charge) (see Appendix A). *(i.e. Costs incurred in the past will be fully recovered through future rates)*
5. Furthermore, in accordance with the *Electricity Act, 1998* and the *OEB Act, 1998*, the IESO has approved variance accounts to record all amounts payable or receivable by it in connection with the amounts paid to generators, the Financial Corporation, distributors and to entities with whom the IESO has a procurement contract. (i.e. costs incurred in the past will be fully recovered through future rates)
6. The IESO would change its accounting policies to permit the recognition of the economic impacts of rate regulation as from the 2016 financial year. IESO would adopt the guidance of ASC 980 *Regulated Operations* to better reflect the economic substance of its operations and enhance the transparency and accountability of its financial reporting.

Appropriate Accounting Principle

PS2120.02, "*a change in an accounting policy may be made... if it is considered that the change would result in a more appropriate presentation of events or transactions in the financial statements of the government.*"

PS1150.05 "*When the primary sources of GAAP do not deal with the accounting and reporting in financial statements of transactions or events encountered by the public sector reporting entity, or additional guidance is needed to apply a primary source to specific circumstances, the selection of an appropriate accounting policy requires the exercise of professional judgment. In these circumstances, a public sector reporting entity should adopt accounting policies and disclosures that are consistent with:*

[1] http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/rec/556699/view/Dec_Order_IESO_20161229.PDF

(a) the primary sources of GAAP; and

(b) the application of the concepts described in FINANCIAL STATEMENT CONCEPTS, Section PS 1000."

PS1150.19 "*Pronouncements issued by other bodies authorized to issue accounting standards may be useful sources to consult. For example, accounting pronouncements published with the authority of the Canadian Accounting Standards Board (AcSB), International Accounting Standards Board (IASB), US Federal Accounting Standards Advisory Board (FASB), US Governmental Accounting Standards Board (GASB), or International Public Sector Accounting Standards Board (IPSASB) are often important sources to consult on matters not covered by primary sources of GAAP or for assistance in applying a primary source of GAAP to specific circumstances.*"

PS1150.08 "A public sector reporting entity consults sources other than primary sources of GAAP to assist in selecting accounting policies and disclosures only when these sources comply with paragraph PS1150.05. The public sector reporting entity evaluates sources in selecting the appropriate accounting policies and disclosures based on all of the following criteria:

(a) The specificity of the source — A source that deals with the specific circumstances is likely to be more relevant than one from which the public sector reporting entity must analogize.

(b) The authority of the issuer or author — A source issued by an accounting standard setter in its own jurisdiction is likely to be more relevant than a source issued by others in the same jurisdiction.

(c) The continued relevance of the source — The passage of time may diminish the relevance of certain sources.

(d) The development process for the source — A source developed after extensive consultation and debate is likely to be more relevant than a source developed without such discipline."

PS1150.10 "PSAB considers a source to be consistent with the concepts in paragraph PS 1150.05(b) when the guidance in that source is compatible with the (i) qualitative characteristics of financial information, (ii) the elements of financial statements, and (iii) the recognition and measurement criteria in paragraph PS 1150.05(b)."

PS1000.58 "In the absence of appropriate public sector recognition and measurement criteria for intangibles, all intangibles, including those that have been purchased, developed, constructed or inherited in right of the Crown, are not recognized as assets in government financial statements. The intangible often called "human capital" that embodies the talent or intellectual capital of government employees is not recognized as an asset under existing accounting principles."

PS3210.03 "Assets are economic resources controlled by a public sector entity as a result of past transactions or events and from which future economic benefits are expected to be obtained."

PS3210.04 "Assets have three essential characteristics:

(a) They embody future economic benefits that involve a capacity, singly or in combination with other assets, to provide goods and services, to provide future cash inflows, or to reduce cash outflows.

(b) The public sector entity can control the economic resource and access to the future economic benefits.

(c) The transaction or event giving rise to the public sector entity's control has already occurred."

Issue: Can the IESO adopt the guidance in ASC 980 *Regulated Operations*?

In accordance with PS2120.02, the IESO can reflect the economic impacts of rate regulation only if it is considered that the change of accounting policy would result in a more appropriate presentation of events or transactions in the financial statements of the government. As mentioned in the Agenda ref. 9A of the IASB meeting of February 2017[2], rate regulated entities have long argued that, without recognizing regulatory assets and regulatory liabilities, the entity's performance is distorted by the rate regulator's intervention in the imposition of performance obligations on the entity and the timing of cash flows from the ratepayers.

[2] http://www.ifrs.org/Meetings/MeetingDocs/IASB/2017/February/AP09-Rate-regulated-Activities.pdf

The recognition of regulatory assets and liabilities would better reflect the economic substance of IESO's operations and enhance the transparency and accountability of its financial reporting. For example, during the period from 2007 to April 2013 the IESO incurred costs relating to the Smart Meter Program amounting to $90.9 million, and these costs were expensed and are included in the accumulated deficit. In the absence of applicable regulatory accounting under PSAS, the IESO was unable to recognize a regulatory asset for this charge, despite receiving a rate order to recover it over the period from May 1, 2013 to October 31, 2018. Should the IESO choose to adopt ASC 980, a regulatory asset for the Smart Metering Charge would be recognized at December 31, 2016 for an amount of approximately $21.6 million, which would represent the remaining unamortized amount that would have been reported if the asset was recognized originally in 2013.

PSAS does not address accounting concepts in a rate regulated environment. Since there is no guidance in PSAS regarding the recognition and measurement of regulatory assets and liabilities, IESO may consider other sources based upon PSAS 1150.05 in the GAAP hierarchy to determine appropriate accounting policies in a rate regulated environment.

Within AcSB, Accounting Standards for Private Enterprises (ASPE) defines a rate regulated entity but provides no guidance on regulatory assets and liabilities however requires disclosure of such balances if they are recognized. IASB has not completed their project on rate regulated activities and current standards only include a holding standard based upon what was done under previous GAAP. It will be important for the IESO to monitor the IASB's ongoing project on rate regulated activities as this may affect the recognition, measurement, presentation and disclosures of the regulatory assets and liabilities. Both FASB and GASB have guidance on accounting in a regulatory environment. IPSASB does not provide any guidance on accounting by rate regulated entities.

It is important to note that rate regulated entities in Canada that prepare their general purpose financial statements in accordance with US GAAP (e.g. Hydro One and Ontario Power Generation), ASPE (e.g. the three Fortis subsidiaries in Ontario), as well as those rate regulated entities that are eligible to elect to apply the requirements of IFRS 14 and elected to do so when they adopted IFRS (e.g. over 60 LDCs in Ontario), generally all recognize regulatory deferral and variance accounts in accordance with US GAAP accounting principles set out ASC 980 *Regulated Operations.*

Statement 62 issued by GASB in December 2010 is effective for financial statements for periods beginning after December 15, 2011. The objective of the Statement is to incorporate into the GASB's authoritative literature certain accounting and financial reporting guidance that is included in the Financial Accounting Standards Board (FASB) Statements and Interpretations issued on or before November 30, 1989, which does not conflict with or contradict GASB pronouncements. Paragraphs 476–500 may be applied to activities reported in business-type activities that have regulated operations that meet all of the three criteria in paragraph 476 as follows:

(a) The regulated business-type activity's rates for regulated services provided to its customers are established by or are subject to approval by an independent, third-party regulator or by its own governing board empowered by statute or contract to establish rates that bind customers.

(b) The regulated rates are designed to recover the specific regulated business-type activity's costs of providing the regulated services.

(c) In view of the demand for the regulated services or products and the level of competition, direct and indirect, it is reasonable to assume that rates set at levels that will recover the regulated business-type activity's costs can be charged to and collected from customers. This criterion requires consideration of anticipated changes in levels of demand or competition during the recovery period for any capitalized costs.

The criteria above and the guidance in paragraphs 476-500 are based on ASC 980 *Regulated Operations.*

It is also important to note that in its statement of financial position, the Ontario Electricity Financial Corporation ("OEFC"), which reports under Canadian public sector accounting standards, recognizes a net unamortized liability balance for power purchase contracts, as detailed in the summary of significant accounting policies:

"The liability for power purchase contracts was originally calculated by discounting estimated losses over the life of the contracts. Under the *Electricity Restructuring Act, 2004*, OEFC began receiving actual contract prices for power from electricity consumers, effective January 1, 2005, and no longer incurs losses on these power purchase contracts. At that time, the Ministry of Finance estimated that the bulk of the liability would be eliminated over 12 years as existing electricity contracts expire. As a result, the bulk of the liability is being amortized to revenue over that period."

Although this liability is not defined as a regulatory liability in the OEFC's financial statements, the argument can be made that it substantively meets the definition under ASC 980 of a regulatory liability, as the OEFC had no further obligation and should have reversed the liability into income. After consultation with the AG at that time, it was decided to amortize the gain over the remaining term of the contracts.

In summary

Rate regulated entities in North America reporting under US GAAP, ASPE, IFRS (entities which have elected to use IFRS 14) and GASB generally all recognize regulatory deferral and variance accounts in accordance with US GAAP accounting principles based on ASC 980 *Regulated Operations* (see Appendix B for the accounting framework used by the Canadian rate regulated entities).

Evaluation of Other Sources of GAAP

When looking to other sources of GAAP, PSAS requires the other sources of GAAP to be evaluated

1. *as to whether they are consistent with accounting policies and disclosure within PSAS,*
2. *as to whether they are consistent with the application of concepts in PS 1000 and*
3. *as to all of the following criteria:*
   - *(a) Source deals with the specific circumstance*
   - *(b) Source is issued by an accounting standard setter*
   - *(c) Source continues to be relevant*
   - *(d) Source uses a consultative process and deliberation when developing policies*

As required by PS 1150.05(b), we need to analyze whether the concepts in the other source (i.e. ASC 980) are compatible with the (i) qualitative characteristics of financial information, (ii) the elements of financial statements, and (iii) the recognition and measurement criteria in PS 1000.

(i) Qualitative Characteristics of Financial Information

FASB	**PSAS 1000**	**Evaluation**
Concepts and objectives are for both business and non-business organizations as well as governmental units (Concept #4.3 to 4.5)	Public, legislators, councilors, investors, analysts, other governments (par. 14)	FASB considers governmental units
Financial reporting should: – Be useful in making resource allocation decisions – Be useful in assessing services and ability to provide services – Be useful in assessing management stewardship and performance – Provide information about economic resources, obligations, net resources and changes in them (Concept # 4.33-.54)	Financial statements should be relevant to the needs of the users and reliable. Relevance is achieved through timeliness, predictability and accountability value. Reliable information has the following characteristics: representational faithfulness, completeness, neutrality, conservatism and verifiability. (par. 28-29)	Similar

(ii) Elements of Financial Statements

FASB	PSAS	Evaluation
Assets		
Probable future economic benefits obtained or controlled by the entity as a result of past transactions or events. (Concept #6.25-.34)	Economic resources controlled by a government as a result of past transactions or event and from which future economic benefits are expected to be obtained. (par. 35)	Essential characteristics similar
Liabilities		
Probable future sacrifices of economic benefits arising from present obligations of the entity to transfer assets or provide services in the future as a result of past transactions or events. (Concept #6.35-.43)	Present obligations to others arising from past transactions or events, the settlement of which is expected to result in the future sacrifice of economic benefits with little or no discretion to avoid settlement. (par. 44)	Essential characteristics similar
Revenues		
Inflows from delivering or producing goods, rendering services or other activities that constitute the entity's central operations. (Concept #6.78-.79)	Increases in economic resources resulting from operations, transactions and events of the accounting period. (par. 46)	Similar
Expenses		
Outflows from delivering or producing goods, rendering services or carrying out other activities that constitute the entity's central operations. (Concept # 6.80-.81)	Decreases in economic resources resulting from operations, transactions and events of the accounting period. (par. 49)	Similar

(iii) Recognition Criteria

FASB	PSAS	Evaluation
To be recognized, an item must meet the definition of an element of the financial statements, must be measurable with sufficient reliability, be relevant and be reliable. (Concept # 5.64)	Item must have an appropriate basis of measurement, a reasonable estimate can be made of the amount and if the item involves obtaining or giving up future economic benefits, it is expected those benefits will be obtained or given up. (par. 55)	Similar

(iii) Measurement Criteria

FASB	PSAS	Evaluation
Measurement basis dependent upon nature of item. Historical cost basis, replacement cost, market value. (Concept # 5.65-.70)	Primarily using historical cost basis. Replacement cost and realizable value are also used, but in limited circumstances. (par. 60)	Similar

Criteria of PS 1150.08

Criteria	Evaluation
Source deals with the specific circumstance	Yes, ASC 980 Regulated Operations
Source is issued by an accounting standard setter	Yes, FASB
Source continues to be relevant	Yes, still used by rate regulated entities
Source uses a consultative process and deliberation when developing policies	Yes, comprehensive consultative process and deliberation

Evaluation whether regulatory assets meet the definition of Assets as per Section PS3210

PS3210 defines assets as *"economic resources controlled by a public sector entity as a result of past transactions or events and from which future economic benefits are expected to be obtained."* (par. 03)

The analysis of the three essential characteristics as defined by PS3210.4 are analyzed in the next table.

Characteristics	Additional guidance	Comments
They embody future economic benefits that involve a capacity, singly or in combination with other assets, to provide goods and services, to provide future cash inflows, or to reduce cash outflows. (par. 4(a))	The essence of assets are their future economic benefits. Assets embody future economic benefits that allow public sector entities to achieve their objectives. The future economic benefits embodied in assets involve a capacity, singly or in combination with other assets, to provide goods and services, to provide future cash inflows or to reduce cash outflows. (par. 11) The future economic benefits embodied in an asset may also be in the form of generating future cash inflows. Cash inflows benefit the public sector entity because cash can be used to purchase or to provide goods and services, redistribute wealth or settle liabilities. (par. 13)	The economic benefit embodied in the variance accounts (i.e regulatory asset) is the right to collect the incurred costs from ratepayers in order to settle the liability for the energy already consumed by the ratepayers. The electricity Act, 1998 ("EA") section 25.33(1) states: "*The IESO shall, through its billing and settlement systems, make adjustments in accordance with the regulations that ensure that, over time, payments by classes of market participants in Ontario that are prescribed by regulation reflect,* *a) amounts paid to generators, the Financial Corporation and distributors, whether the amounts are determined under the market rules or under section 78.1, 78.2 or 78.5 of the Ontario Energy Board Act, 1998; and* *b) amounts paid to entities with whom the IESO has a procurement contract, as determined under the procurement contract."*
The public sector entity can control the economic resource and access to the future economic benefits. (par. 4(b))	Economic resources can arise from, but are not limited to, the following: government's own legislation (for example, taxes, fines and penalties); (par. 08(c)) A public sector entity controls the economic resource and access to the	The economic resources is the right created by the legislation that the energy costs IESO incurs will result in future cash flows. In the regulatory environments, incurring costs creates an enforceable right to set rates at a level that permits

	future economic benefits when it: a. can benefit from the economic resource through its capacity to provide goods and services, to provide future cash inflows or to reduce cash outflows; b. can deny or regulate access to those benefits by others; and c. is exposed to the risks associated with the economic resource. (par.16)	IESO to recover those costs. The adjustment of future rates is the mechanism the OEB uses to implement the right. Currently, the EA section 25.33(5) states: *"The IESO shall establish and maintain such variance accounts as may be necessary to record all amounts payable or receivable by it under this section."* The legislation would be amended to permit IESO to collect specifically the deferral of the energy costs and the related interest and administrative costs.
The transaction or event giving rise to the public sector entity's control has already occurred. (par.4(c))	It is the occurrence of a past transaction or event on or before the financial statement date that distinguishes a present economic resource controlled by a public sector entity from an economic resource that may be controlled by a public sector entity in the future. (par. 25) The past transaction or event that gives rise to control of an economic resource resulting from exchange agreements or contracts usually occurs at the point of exchange. This arises when substantially all the benefits and risks of ownership have been transferred to the public sector entity and normally coincides with the disbursement of funds, exchange of other assets or assumption of liabilities. (par. 26)	The past event giving rise to IESO's control occurs as the energy cost is incurred, as IESO has a right to collect it from the ratepayers.
Conclusion: The right to collect the deferral of the energy costs and the related interest and administrative costs meets the definition of assets.		

When concepts are in conflict with PSAS then PSAS prevails (PS 1150.12). For example, PSAS does not recognize intangible assets (PS 3150.03, .14 and PS1000.58). So if regulatory assets are considered to be intangible assets, they would not be allowed to be recognized through another source of GAAP.

It is worth noting that the economic impacts of rate regulation are not recognized under US GAAP as intangible assets as the FASB has specific guidance to deal with this type of asset. It is also worth noting that the IASB has an ongoing project on rate regulated activities and are currently developing an accounting model based on the principles of IFRS 15 *Revenue from contracts with customers* to provide a principle-based framework for recognizing regulatory assets (see Agenda Ref. 9 for the IASB meeting on February 23, 2017). Furthermore, the Summary Comment Letter Analysis related to the ED/2009/8 on Rate Regulated Activities published by the IASB in July 2009 states on page 2 of 50:

"The International Financial Reporting Interpretations Committee ("IFRIC") observed that it had previously discussed whether a regulatory asset should be recognized in the context of service concession arrangements, either as deferred costs or as an intangible asset to reflect an expectation that the entity will

recover these costs as part of the price charged in future periods. It had concluded that entities applying IFRSs should recognize only assets that qualified for recognition in accordance with the IASB's *Framework for the Preparation and Presentation of Financial Statements* and relevant accounting standards, such as IAS 11 *Construction Contracts*, IAS 18 *Revenue*, IAS 16 *Property, Plant and Equipment* and IAS 38 *Intangible Assets*."

Entities that are not eligible to elect to apply the requirements of IFRS 14 do not recognize regulatory assets because in 2009 the IFRIC determined they did not meet the criteria for recognition of an intangible asset under IAS 38.

Therefore, we can conclude that ASC 980 is NOT in conflict with PS 3150.03, .14 and PS1000.58 with respect to intangible assets.

Conclusion:
FASB is appropriate to use as "*other source of GAAP*". FASB standard ASC 980 has extensive guidance for rate regulated entities including the recognition of regulatory assets and use of rate regulated accounting by IESO would be consistent with current reporting practices of H1, OPG and OEFC.

Appendix A:

Extract from the "DECISION and ORDER issued by the OEB on March 28, 2013" available on the IFRS website

Proceeding on the Ontario Energy Board's own motion to review the options for and ultimately determine the appropriate allocation and recovery of the Smart Metering Charge pursuant to section 19 of the Ontario Energy Board Act, 1998.

THE BOARD ORDERS THAT:

Effective May 1, 2013, the Smart Metering Entity charge to be levied and collected by the Smart Metering Entity from all Distributors identified in the Board's annual Yearbook of Electricity Distributors shall be $0.788 per month for each Residential and General Service <50kW customers for each distributor. The Smart Metering Entity charge shall be in effect from May 1, 2013 to October 31, 2018. The number of Residential and General Service <50kW customers to which the Smart Metering Entity charge will be applied to shall be in accordance with the methodology set forth in the Settlement Agreement attached as Appendix A.

http://www.ontarioenergyboard.ca/oeb/_Documents/EB-2012-0100/dec_order_IESO-SME_20130328.pdf

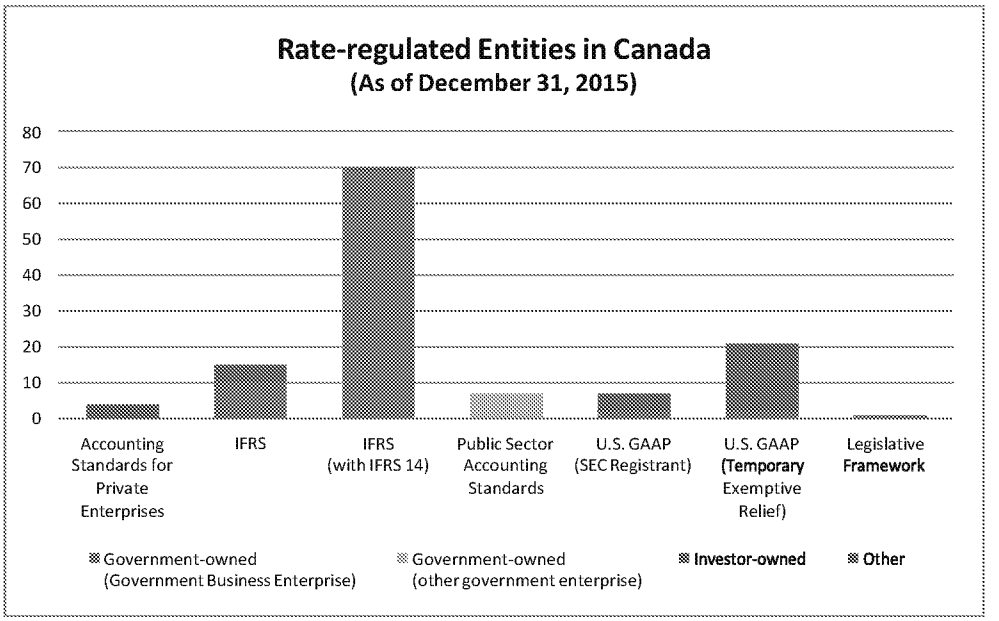
Appendix B:

Extract from the "Accounting Standards Advisory Forum Agenda Ref: 3A dated September 29, 2016" available on the IFRS website

Canadian Rate-regulated Entities

18. The accounting framework landscape for Canadian rate-regulated entities is currently diverse. For annual periods beginning on or after January 1, 2015, rate-regulated entities that are Canadian publicly accountable enterprises are required to apply IFRS. Rate-regulated entities that adopted IFRS for the first time after IFRS 14 *Regulatory Deferral Accounts* was issued continue to recognize these balances. Government Business Enterprises (which operate to generate a profit or on a break-even basis) that are also rate-regulated entities are also directed to apply standards applicable to for-profit entities, and thus apply IFRS. Canadian securities legislation permits dual-listed entities (i.e., Canadian entities also registered with the U.S. Securities and Exchange Commission) to apply U.S. GAAP in the normal course. Temporary exemptive relief is also available from the Canadian Securities Administrators that permits rate-regulated entities that are not dual-listed to apply U.S. GAAP in place of IFRS. If a rate-regulated entity is not a publicly accountable enterprise or a Government Business Enterprise, additional accounting framework options may also include Accounting Standards for Private Enterprises or Public Sector Accounting Standards. A non-GAAP reporting framework is used when legislated by the provincial owner of a government-owned rate-regulated entity.

19. As of December 31, 2015, there were approximately 125 rate-regulated entities in Canada. These entities mainly range in size from small entities owned by municipal governments to large investor-owned entities or entities owned by provincial governments.



Source: Information compiled based on audited financial statements for fiscal year 2015, or information from rate filings that confirmed the accounting framework used by these entities. Due to data collection constraints, the population could be slightly larger.

20. The chart above highlights two key points:

(a) The majority of investor-owned entities have chosen U.S. GAAP over IFRS. A few entities that are not reporting issuers apply Accounting Standards for Private Enterprises. Both U.S. GAAP and Accounting Standards for Private Enterprises permit the recognition of balances arising from rate regulation. Several entities that apply U.S. GAAP have told us this choice was influenced by the need to provide their users with financial statements that accurately reflect the economics of their business. Further, some entities presently using the temporary exemptive relief described in paragraph18 have said they are considering incurring the cost and effort necessary to become a registrant of the U.S. Securities and Exchange Commission in order to have the permanent ability to apply U.S. GAAP. While such a decision could be primarily for business reasons such as the entity expanding its operations into the U.S., it could also be attributed to the continuing uncertainty about the ultimate outcome of the IASB's Rate-regulated Activities project and the approaching expiry date of the securities regulators' exemptive relief.

(b) Public sector entities that are Government Business Enterprises tend to apply IFRS. The majority of these entities is made up of several large provincially-owned utilities, and many small municipally-owned local distribution utilities that do not issue debt or list in the U.S. stock market, and are not subject to Canadian securities legislation. As a result, they cannot apply U.S. GAAP. As shown in the chart, many of these entities adopted IFRS for the first time after the IASB issued IFRS 14, which allowed them to continue their previous accounting practices for rate-regulated activities.

21. Within the pool of government-owned rate-regulated entities, there are entities that do not meet the characteristics of Government Business Enterprises and are required to apply Public Sector Accounting Standards.

22. The data on the different accounting frameworks in Canada is unique. It demonstrates that when given a choice, rate-regulated entities select an accounting framework that captures the effects of rate regulation on their financial position and financial performance in order to communicate more decision-useful information to users.

http://www.ifrs.org/Meetings/MeetingDocs/ASAF/2016/September/1609-ASAF-03A-Rate-regulated-Activities-Canada.pdf

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White Paper on the Province's proposed Global Adjustment Smoothing Account

Below is a summary of IESO's preliminary views on the implementation of the Province's proposed Global Adjustment Smoothing Account.

Understanding that the finalization of the legal terms, the financing structure and other detailed terms will take several months and will involve collaboration between legal counsel, parties involved and other stakeholders, this letter is intended to provide the guideline and framework which could form the foundation of the plan.

Issues being considered in this document are:

Issue #1: Can the IESO recognize deferral or variance accounts related to the annual Global Adjustment Smoothing Account as a regulatory asset on its statement of financial position?

Issue #2: Can the IESO derecognize the deferral or variance accounts related to the Global Adjustment Smoothing Account upon sale to the OPG Trust**?**

1. Recognition of regulatory assets (deferral and variance accounts)

Background and Assumptions for issue #1

The facts, circumstances, and assumptions relevant to the specific transactions are as follows:

1. The IESO's legal status is a not-for-profit, non-taxable, corporation established pursuant to Part II of the *Electricity Act, 1998*. IESO is classified as an Other Governmental Organization and prepares its financial statements in accordance with Canadian public sector accounting standards (PSAB).
2. IESO is rate regulated by the OEB in accordance with the Electricity Act, 1998 and the Ontario Energy Board ("OEB") Act, 1998 but currently does not recognize the economic impacts of rate regulation in its general purpose financial statements.
3. The IESO is required to obtain approval from the OEB under s. 25(1) of the Electricity Act, 1998 for the approval of its own expenditures, revenue requirement and fees. The last rate approval was obtained on December 29, 2016[1].
4. The OEB issued a Decision and Order on March 28, 2013 that permits IESO to recover the MDMR costs (the Smart Metering Charge) (see Appendix A). *(i.e. Costs incurred in the past will be fully recovered through future rates)*
5. Furthermore, in accordance with the *Electricity Act, 1998* and the *OEB Act, 1998*, the IESO has approved variance accounts to record all amounts payable or receivable by it in connection with the amounts paid to generators, the Financial Corporation, distributors and to entities with whom the IESO has a procurement contract. (i.e. costs incurred in the past will be fully recovered through future rates)
6. The province is contemplating deferring the recovery of a portion of the annual Global Adjustment Smoothing Account (comprised primarily of the electricity costs paid to the generators) over a period of 25-30 years, so that costs incurred would be fully recovered through future rates.
7. The *Electricity Act, 1998* and the *OEB Act, 1998* would be amended through legislation to require the deferral of the recovery of the Global Adjustment Smoothing Account and the future recovery in rates charged to customers.

[1] http://www.rds.ontarioenergyboard.ca/webdrawer/webdrawer.dll/webdrawer/rec/556699/view/Dec_Order_IESO_20161229.PDF

8. The OEB would grant generic deferral or variance accounts to capture the difference between the amounts paid to generators and others, and the amounts collected in rates. Furthermore, the interest and ancillary costs related to the contemplated transaction would also be included in future rates charged to customers. In summary, the legislation would create a right to collect the incurred cost.

9. The IESO would change its accounting policies to permit the recognition of the economic impacts of rate regulation as from the 2016 financial year. IESO would adopt the guidance of ASC 980 *Regulated Operations* to better reflect the economic substance of its operations and enhance the transparency and accountability of its financial reporting.

Appropriate Accounting Principle for issue #1

ASC 980 Regulated Operations

- 980-10-15-2 *"The guidance in the Regulated Operations Topic applies to general-purpose external financial statements of an entity that has regulated operations that meet all of the following criteria:*

  (a) The entity's rates for regulated services or products provided to its customers are established by or are subject to approval by an independent, third-party regulator or by its own governing board empowered by statute or contract to establish rates that bind customers.

  (b) The regulated rates are designed to recover the specific entity's costs of providing the regulated services or products. This criterion is intended to be applied to the substance of the regulation, rather than its form. If an entity's regulated rates are based on the costs of a group of entities and the entity is so large in relation to the group of entities that its costs are, in essence, the group's costs, the regulation would meet this criterion for that entity.

  (c) In view of the demand for the regulated services or products and the level of competition, direct and indirect, it is reasonable to assume that rates set at levels that will recover the entity's costs can be charged to and collected from customers. This criterion requires consideration of anticipated changes in levels of demand or competition during the recovery period for any capitalized costs."

- 980-10-20 Glossary, Definition of incurred costs *"A cost arising from cash paid out or obligation to pay for an acquired asset or service, a loss from any cause that has been sustained and has been or must be paid for."*

- 980-10-05-8 "*Unless an accounting order indicates the way a cost will be handled for rate-making purposes, it causes no economic effects that would justify deviation from the GAAP applicable to business entities in general. The mere issuance of an accounting order not tied to rate treatment does not change an entity's economic resources or obligations. In other words, the economic effect of regulatory decisions—not the mere existence of regulation—is the pervasive factor that determines the application of GAAP. 980-340 – Other Assets and Deferred Costs."*

- 980-340-25-1 "*Rate actions of a regulator can provide reasonable assurance of the existence of an asset. An entity shall capitalize all or part of an incurred cost that would otherwise be charged to expense if both of the following criteria are met:*

  (a) It is probable (as defined in Topic 450) that future revenue in an amount at least equal to the capitalized cost will result from inclusion of that cost in allowable costs for rate-making purposes.

  (b) Based on available evidence, the future revenue will be provided to permit recovery of the previously incurred cost rather than to provide for expected levels of similar future costs. If the revenue will be provided through an automatic rate-adjustment clause, this criterion requires that the regulator's intent clearly be to permit recovery of the previously incurred cost.

  A cost that does not meet these asset recognition criteria at the date the cost is incurred shall be recognized as a regulatory asset when it does meet those criteria at a later date."

- 980-340-40-1: "*If at any time an entity's incurred cost no longer meets the criteria for the capitalization of an incurred cost (see paragraph 980-340-25-1), that cost shall be charged to earnings."*

- 980-350-50-1: "*In some cases, a regulator may permit an entity to include a cost that would be charged to expense by an unregulated entity as an allowable cost over a period of time by amortizing that cost for rate-making purposes, but the regulator does not include the unrecovered amount in the rate base. That procedure does not provide a return on investment during the recovery period. If recovery of such major costs is provided without a return on investment during the recovery period, the entity shall disclose the remaining amounts of such assets and the remaining recovery period applicable to them.*"
- 980-340-55-2: "*In some cases, a regulator may approve rates that are intended to recover an incurred cost over an extended period without a return on the unrecovered cost during the recovery period.*"
- 980-340-55-3: "*The regulator's action provides reasonable assurance of the existence of an asset (see paragraph 980-340-25-1). Accordingly, the regulated entity would capitalize the cost and amortize it over the period during which it will be allowed for rate-making purposes. That cost would not be recorded at discounted present value. An exception to this general rule is provided for costs of abandoned plants.*"

Issue #1: Can the IESO recognize deferral or variance accounts related to the annual Global Adjustment Smoothing Account as a regulatory asset on its statement of financial position?

US GAAP includes special accounting provisions that are applicable to entities with activities that are subject to rate regulation (see White Paper - Adoption of the Guidance in ASC 980 Regulated Operations). The result is that rate regulated entities are required to recognize regulatory assets and liabilities provided the following three criteria are met:

Criteria	Comment	Evaluation
The entity's rates for regulated services or products provided to its customers are established by or are subject to approval by an independent, third-party regulator or by its own governing board empowered by statute or contract to establish rates that bind customers.	IESO has unrecognized variance accounts related to the MDMR (smart meters), that have been approved by the OEB in accordance with the Electricity Act and the OEB Act (see Appendix A). It is important to note that Hydro One and OPG are both consolidated into the province's books, are both regulated by the OEB and their respective regulatory assets and liabilities are reported in the province's books.	Met
The regulated rates are designed to recover the specific entity's costs of providing the regulated services or products.	Currently, the rates approved by the OEB are designed to recover the IESO's costs of providing the regulated services and the pass-through related to the energy purchased from the generators. The contemplated transaction is based on the fact that the OEB would grant generic deferral or variance accounts to capture the difference between the amounts paid to generators and others, and the amounts collected in rates. Furthermore, the interest and ancillary costs related to the contemplated transaction would also be included in future rates charged to customers. In summary, the legislation would create a right to collect the incurred costs.	Met

In view of the demand for the regulated services or products and the level of competition, direct and indirect, it is reasonable to assume that rates set at levels that will recover the entity's costs can be charged to and collected from customers. This criterion requires consideration of anticipated changes in levels of demand or competition during the recovery period for any capitalized costs."	Since the deferral or variance accounts would be sold to the OPG Trust at least on a monthly basis and cash would be received on the same day, this criteria would be met. This criteria would need to be monitored on a yearly basis to ensure that IESO and the OPG Trust would be able to recover the future deferred amount taking into account the levels of demand or competition during the recovery period.	Met
Conclusion: The three criteria would be met.		

Conclusion: Based on the assumptions mentioned above, IESO should be able to recognize a regulatory asset for the deferral of the annual Global Adjustment Smoothing Account. As mentioned in the ASC 980 guidance above, it is important that an accounting order be issued by the OEB which indicates the way the incurred costs would be handled for rate-making purposes as the OEB's action provides reasonable assurance of the existence of a regulatory asset.

2. Derecognition of regulatory assets (deferral and variance accounts)

Background and Assumptions for issue #2

The facts, circumstances, and assumptions relevant to the specific transactions are as follows:

1. The annual Global Adjustment Smoothing Account that would be deferred in the deferral or variance accounts (the "Asset") would be significant.
2. The IESO does not currently have the financial capability to finance the Asset and is contemplating selling the Asset to a Trust to be set-up by OPG (the "OPG Trust").
3. The OPG Trust would be consolidated by OPG.
4. Proposed terms of the sale agreement between the IESO and the OPG Trust:
   - The sale contract would be structured as an absolute sale, which would assign future economic benefits or cash flows related to the Asset exclusively to the OPG Trust.
   - The arrangement would be structured whereby there is no recourse or obligations remaining of IESO related to the Asset.
   - The arrangement is not considered to be a financing transaction as IESO would have no obligations to the OPG Trust after the Asset is sold to the OPG Trust.
   - IESO would not retain any rights or benefits from the Asset.
   - IESO would not have any rights to interest or penalties on the Asset once it has been transferred to the OPG Trust.
   - The contract would be clear that IESO cannot pledge the Asset as collateral to obtain future cash flows or financing.
   - IESO would continue to collect related cash flows on the OPG Trust's behalf and remit those cash flows to the OPG Trust without material delay. In addition, IESO would not be entitled to reinvest such cash flows, except for investments in cash or cash equivalents during the short settlement period from the collection date to the date of required remittance to the OPG Trust, and interest earned on such cash and cash equivalents is passed to the OPG Trust. The contract would define IESO's role strictly as that of agent, under a pass-through arrangement.
   - Servicing, origination, and arrangement fees, would be collected by IESO in rates charged to ratepayers as part of its market dealings.
   - The Asset would be sold to the OPG Trust at least, on a monthly basis and cash would be received on the same day.

Appropriate Accounting Principles for issue #2

Public Sector Accounting Standard ("PSAS") 3210, *Assets*, defines an asset as "*…economic resources controlled by a government as a result of past transactions or events and from which future economic benefits are expected to be obtained.*" [par. 3]

.04 *"Assets have three essential characteristics:*

(a) they embody future economic benefits that involve a capacity, singly or in combination with other assets, to provide goods and services, to provide future cash inflows, or to reduce cash outflows;

(b) the public sector entity can control the economic resource and access to the future economic benefits; and

(c) the transaction or event giving rise to the public sector entity's control has already occurred."

.22 *"Control of an economic resource and of access to the future economic benefits are essential characteristics of an asset, whereas possession or ownership is not."*

.24 *"A public sector entity may act as trustee when it administers trusts on behalf of the beneficiaries specified in the agreement or statute. As trustee, the public sector entity merely administers the assets, following the terms*

and conditions set out in the agreement. It does not control the asset because it does not have access to the future economic benefits. Those benefits flow to the beneficiaries."

As noted in PS1000 Financial statement concepts:

.37 *"An item is not an asset of a government if it lacks one or more of the essential characteristics listed in the preceding paragraph. Thus, for example, an item does not qualify as an asset of a government if the item involves:*

(a) no future economic benefit;

(b) future economic benefit, but the government cannot obtain it; or

(c) future economic benefit that the government may obtain, but the events or circumstances that give the government control of the benefit have not yet occurred."

As noted in PS3450, derecognition of a financial liability:

.042 *"A government should remove a financial liability (or part of a financial liability) from its statement of financial position when, and only when, it is extinguished (i.e., when the obligation specified in the contract is discharged or cancelled, or expires)."*

.043 *"A financial liability (or part of a financial liability) is extinguished when the debtor either:*

(a) discharges the liability (or part of it) by paying the creditor, normally with cash, other financial assets, goods or services; or

(b) is legally released from primary responsibility for the liability (or part of it) either by process of law or by the creditor. (When the debtor has given a guarantee, this condition may still be met.)"

.046 *"Payment to a third party, including a trust (sometimes called "in-substance defeasance"), does not, by itself, relieve the debtor of its primary obligation to the creditor in the absence of legal release."*

.047 *"If a debtor pays a third party to assume an obligation and notifies its creditor that the third party has assumed its debt obligation, the debtor does not derecognize the debt obligation, unless the condition in paragraph PS 3450.043(b) is met. If the debtor pays a third party to assume an obligation and obtains a legal release from its creditor, the debtor has extinguished the debt. However, if the debtor agrees to make payments on the debt to the third party or direct to the original creditor, the debtor recognizes a new debt obligation to the third party."*

Issue #2: Can the IESO derecognize the deferral or variance accounts related to the annual Global Adjustment Smoothing Account upon sale to the OPG Trust?

PS3210 does not specifically address the derecognition of a regulatory asset as the concept of a regulatory asset does not exist under PSAS.

As mentioned above, regulatory assets do not meet the definition of intangible asset or financial asset. Specifically, regulatory assets do not meet the definition of financial asset because they are imposed on customers through the tariff (i.e., imposed by the OEB) and do not represent a right to receive payments from another party as a result of a contract.

More generally, PSAS.3210.37 suggests that an asset would no longer be recognized when it fails to meet the definition of an asset.

Based on PS1000.37(b), an item does not qualify as an asset of a government if the item involves future economic benefit, but the government cannot obtain it.

Based on the assumptions mentioned above, the legal title of the Asset would be transferred to the OPG Trust, as well as, ALL risks and rewards, including the following:

- the contract would define IESO's role strictly as that of agent, under a pass-through arrangement;
- all cash flows related to the Asset would be transferred without material delay to the OPG Trust;
- rights to interest or penalties on the Asset would be for the benefits of the OPG Trust;
- IESO cannot pledge the Asset; and
- no recourse or obligations remaining of IESO related to the Asset.

IESO should also evaluate whether the sale of the Asset should in fact be considered as a borrowing arrangement. In the absence of detailed guidance on this subject, we can analogize to the guidance in PS3450 *Financial Instruments* for the derecognition of a financial liability. Par. 43 states that *"A financial liability (or part of a financial liability) is extinguished when the debtor is legally released from primary responsibility for the liability (or part of it) either by process of law or by the creditor. (When the debtor has given a guarantee, this condition may still be met.)"* Based on the assumptions mentioned above, since the legal title of the Asset would be transferred to the OPG Trust, as well as, ALL risks and rewards, it can be concluded that the sale of the Asset is not a borrowing arrangement.

Conclusion: Based on the proposed terms of the sale agreement between the IESO and OPG Trust mentioned above, the deferral or variance accounts would be derecognized at the point where the IESO would derive no future economic benefit from it. This would occur where the IESO ultimately transfers the rights, risk and rewards related to those deferral or variance accounts to the OPG Trust. This would occur on the receipt of cash from the OPG Trust.

Appendix A:

Extract from the "DECISION and ORDER issued by the OEB on March 28, 2013" available on the IFRS website

Proceeding on the Ontario Energy Board's own motion to review the options for and ultimately determine the appropriate allocation and recovery of the Smart Metering Charge pursuant to section 19 of the Ontario Energy Board Act, 1998.

THE BOARD ORDERS THAT:

Effective May 1, 2013, the Smart Metering Entity charge to be levied and collected by the Smart Metering Entity from all Distributors identified in the Board's annual Yearbook of Electricity Distributors shall be $0.788 per month for each Residential and General Service <50kW customers for each distributor. The Smart Metering Entity charge shall be in effect from May 1, 2013 to October 31, 2018. The number of Residential and General Service <50kW customers to which the Smart Metering Entity charge will be applied to shall be in accordance with the methodology set forth in the Settlement Agreement attached as Appendix A.

http://www.ontarioenergyboard.ca/oeb/_Documents/EB-2012-0100/dec_order_IESO-SME_20130328.pdf

To: Imbrogno, Serge (ENERGY)[Serge.Imbrogno@ontario.ca]
From: Bruce Campbell
Sent: Mon 5/1/2017 4:02:20 PM
Subject: Assurances for IESO

Rec 179

Serge - Following up from our conversation last week, the attached letter addresses the assurances to be provided for the IESO. Original to follow.

Bruce

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May 1, 2017

Deputy Minister Serge Imbrogno
Ontario Ministry of Energy
900 Bay Street
Hearst Block, 4th Floor
Toronto, ON M7A 2E1

Dear Deputy Imbrogno:

As the drafting of the proposed legislation to implement the Fair Hydro Plan (the "Plan") has proceeded, the IESO has gained a better understanding of the role it would play in implementing the Plan, and the associated risks posed for the company have become better defined. The IESO's Board of Directors appreciated ADM Steen Hume's recent presentation on the Plan, and in particular his assurances regarding the support and protections that the Province would provide given our expanded role. Accordingly I am writing to outline the key areas of risk we have identified for the IESO and the assurances we are seeking in that regard.

Addressing Increased Financial Exposure

The greatest corporate risk is in the years when rates for specified consumers are to be reduced resulting in a deferred amount, being the difference between the reduced amounts collected from ratepayers and the IESO's payment obligations. The draft legislation does not require OPG or its financing entity to fund the deferred amount, although we understand this is the intent.

Separately, we have begun discussions with the Ontario Financing Authority (OFA) to increase the IESO's line of credit to reflect the increased magnitude of variances that will be incurred by the IESO under the Plan and to provide a buffer to fund short periods where OPG does not fund a shortfall. In addition, we will be requesting enhancements to our OFA and OEFC lines of credit to provide assurance that in a situation where OPG does not fund the deferred amounts, the IESO will continue to be able to draw on these credit facilities. We would appreciate the Ministry of Energy's support in our discussions with OFA to increase our OFA line of credit to a sufficient amount to cover deferred amounts for a reasonable period of time and with both OFA and OEFC to enhance the credit facilities. This is important not only for IESO solvency but also to maintain the IESO's credit rating, as our contracted suppliers' credit arrangements are often based on the IESO maintaining a certain rating.

Bruce B. Campbell
President and CEO
bruce.campbell@ieso.ca
t 416 506 2829

Even with these changes to the credit facilities, a key issue of concern for the IESO remains the risk that the OPG financing entity does not continue to fund the deferred amounts and the OFA credit facility maximum is reached. The continued operation of the Plan rate reductions without access to funding to cover these amounts would quickly create a solvency situation for the IESO. Mr. Hume in his April presentation assured the IESO Board of Directors that the government recognized that the IESO would need some form of backstop to address this risk. Accordingly, the IESO requests a formal commitment from the Province that the Province will fund the deferred amounts if OPG (or its financing entity) does not.

Addressing Implementation and Administration Exposure

The IESO is playing a central role in the Plan including through the creation of a regulatory asset, the conveyance of that asset to OPG's financing entity and providing a servicing role in recovering OPG's funding costs from future ratepayers – all of which drive an increased risk of liability to the IESO, its Board of Directors, Officers and employees. This is over and above the usual IESO operations risk and arises solely due to the Plan. In addition, it remains uncertain what role if any the IESO will play in any securities offerings of OPG's financing entity, but if such a role for IESO is required, it will come with heightened exposure, especially if products are offered into the US market. To address these circumstances, we are requesting that a Provincial indemnity be provided for the IESO, its Board of Directors, Officers and employees to address the increased liability exposure relating to the IESO's role in implementing the Plan.

Finally, I wish to stress the importance that the IESO's Board of Directors places on obtaining appropriate and timely assurances from the Province. I look forward to working with you to put these in place.

Bruce B. Campbell