Ontario
MINISTRY OF ENERGY

Auditor General and Environmental Commissioner Reports

Foundation Briefing

September 2016

Context

- There are several officers who report to the legislature on the activities of the government, its ministries and agencies.
- This deck discusses two key officers that impact how the ministry and its agencies conduct their activities:
  - The Auditor General of Ontario; and
  - The Environmental Commission of Ontario
- Details on recent reports from the Office of the Auditor General of Ontario and the Office of the Environmental Commission of Ontario, about the energy sector, are also included.
- These reports are publicly accessible and can attract significant media attention – particularly on the date they are released, as both the Auditor General and the Environmental Commissioner typically issue media releases when a new report is released.

Auditor General of Ontario

Auditor General of Ontario

- The Auditor General (AG) is an independent officer of the Legislative Assembly.
- The AG conducts value-for-money and financial audits of the government and agencies.
    - The AG reports annually to the Speaker of the Assembly no later than December 31st.
    - In addition to the annual report, the AG may make "special" reports to the Speaker at any time on any matter that, in their opinion, should not be deferred until the annual report.
- The Public Accounts Committee (PAC) reviews the AG reports, and Public Accounts and ministries are answerable when called upon to discuss related matters

ENERGY and The Auditor General

- The energy sector is routinely featured in AG reports.
    - Over the past 5 years, the Ministry of Energy and/or one of its agencies have been audited 9 times, including two stand-alone reports on the Mississauga and Oakville gas plants.
- The Auditor General's annual report also includes a chapter on the public accounts of the Province.
    - That chapter often touches on electricity related topics such as stranded debt, Hydro One and OPG.
- As a result, the Ministry has spent a great deal of time with the Office of the Auditor General of Ontario (OAGO) over the past few years, as the process of an audit is time and labour intensive.

Audit Process

- The general audit process is outlined below and a summary of recent Ministry's audits are on the next slide:

Audit Conducted

- AG identifies an area for audit, including scope and notifies Ministry/Agency
- OAGO requests information from the affected Ministries and/or Agencies – AG has wide latitude for information requests.
- Ministry/Agency provides responses .
- AG drafts report and shares draft with Ministry for comments (not required to accept Ministry comments)
- Process could take up to a year.

Audit Report Released

- Annual Reports of the Auditor General are released annually in December.
- Auditor General also releases special stand-alone reports. These reports are not issued on a particular timeline.
- AG typically hosts a press conference when releasing a report.

Committee on Public Accounts

- The Standing Committee on Public accounts reviews and holds public hearings on selected sections of the AG's Annual Report.
- Representatives from the ministry (but not the Minister) or agencies attend these hearings.
- The Committee issues Reports and recommendations based on its examinations of the Auditor General's Reports.

Follow-up

- The Annual Reports include a follow-up section on the value for money audits conducted 2 years previously.

Recent AG Audits

Ontario

Snapshot of Recent Auditor General Audits

- The following slides provide a summary of four recent AG Audits - including the AG's observations and recommendations as well as the Ministry's responses to the recommendations. Here is a snapshot of those four audits:

	1. Electricity Power System Planning (2003 – 2015)	**2. Hydro One Transmission and Distribution (2012-2014)**	**3. Smart Meters (2004 – 2014)**	**4. OPG Human Resources (Pre-2013)**
Date Audit Released	December 2, 2015	December 2, 2015	December 9, 2014	December 2013 December 2015 (follow-up)
Committees and Defenses	Not Called	Public Accounts Committee March 23, 2016	Public Accounts Committee May 22, 2015	Public Accounts Committee November 26, 2014
Follow-up	2017 Annual Report (follow-up on 2015 Value-for-money Audits)	2017 Annual Report (follow-up on 2015 Value -for-money Audits)	2016 Annual Report (follow-up on 2014 Value-for-money Audits)	Internal Audit

1. Electricity Power System Planning

- The AG Audit of Electricity Power System Planning was tabled as a chapter of the AG's 2015 annual report on December 2, 2015.
  - The finding included that the planning process had broken down; that there was an extensive use of ministerial directives and direction; that there were problems with generation procurement and decisions; conservation programs were not cost-effective and that there were problems with transmission system planning.
  - The Ministry accepted the Auditor General's recommendations, though did provide responses where it was believed the benefits of certain investments were not fully considered (see next slide).
- In response to the AG's findings, the Minister of Energy introduced the Energy Statute Law Amendment Act, 2015 (Bill 135) that was recently passed and was proclaimed into force on July 1, 2016.
- This legislation replaces the current Integrated Power System Plan (IPSP) process with an enhanced Long Term Energy Plan (LTEP) process that clarifies the roles of the Ministry of Energy and the IESO. The enhanced LTEP process includes the development of a technical plan by the IESO and legislates an extensive consultation process.
- The audit of the Electricity Power System Planning was not included as one of the topics for the Standing Committee for Public Accounts; however, ENERGY has been providing written progress updates as requested by the Chair of the Committee.

Electricity Power System Planning – Ministry Issues

Issue	AG Report Observation	Ministry Position
Global Adjustment	Suggested Ontario had paid $37B "extra" in GA as a result of investments that were not cost-effective, and will pay $133B more between 2015 and 2032.	• Investing in facilities to build up system capacity and assure reliability seen as critical in wake of 2003 blackout. • *Green Energy Act* spurred economic development in wake of global financial crisis. • FIT prices attracted investment and continues to compensate at fair rate to projects 500 kW and under.
Korean Consortium Agreement	Suggested additional incentives beyond FIT prices do not deliver value for consumers.	• Samsung is investing $5B and could create as many as 9,000 direct and indirect jobs. • Per the agreement, Samsung must maintain minimum staffing levels. • Samsung's partnership with Six Nations of the Grand River is expected to generate no less than $65M for the community.
Value of Renewables	Suggested renewables are too expensive and that there are other more cost effective ways to reduce greenhouse gas emissions.	• Coal phase-out is single largest climate change initiative in North America. • Ontario's Cap and Trade program will lead to reductions from other GHG-emitting sectors. • RE programs have transitioned to competitive procurement for large projects (500 kW+).
Value of Conservation	Suggested conservation is not cost-effective, particularly in times of surplus.	• Cost-effective evaluations increased in rigor from 2006 onwards as delivery capacity was increased. • Ontario is transparent with evaluation, measurement, and verification – IESO-led and reported in variety of government and independent reports.
Electricity Exports	Suggested there are significant losses on electricity exports, and that exports are only used to manage wasted surplus.	• Through increased flexibility and cost-effective resource scheduling, IESO estimates Ontario's benefit from 2014 exports was ~$320M. • Surplus facilities will be required during nuclear refurbishment period.

Electricity System Power Planning – Stakeholder Response

- Following the report, a number of concerns were expressed by third parties on some of the AG's observations:
  - **Ontario Energy Association:** Published an op-ed in The Globe and Mail arguing the AG did not properly characterize the global adjustment and noting that system investments "transformed (the electricity system) from one in severe decline to one we can rely on."
  - **Dr. Jatin Nathwani, University of Waterloo:** Published an op-ed in The Globe and Mail, arguing that the AG did not properly characterize global adjustment. He also explained the operations of Ontario's hybrid market and came out in support of investments that provide Ontario with sufficient energy capacity.
  - **Toronto Star:** Martin Regg Cohn wrote column arguing the AG did not properly characterize the global adjustment and was having "fun with numbers".

2. Hydro One
Transmission and Distribution Management

- Tabled as a chapter of the AG's 2015 annual report on December 2, 2015
- Findings included 17 recommendations, focused primarily on opportunities to improve operational matters (e.g. reliability, maintenance and asset management, use of smart meters, performance benchmarking, and vegetation management)
  - Ministry response acknowledged operational recommendations are best addressed by Hydro One
- Hydro One accepted most of AG's recommendations, noting ongoing projects in some areas
  - Highlighted that compliance with international standards guides asset management
  - Cautioned that full adoption of some recommendations, notably vegetation management, could have adverse impact on rates
- 2015 Annual report was the last AG review of Hydro One
  - As part of shift to partial government ownership AG oversight no longer applies to Hydro One
  - Hydro One now has a dedicated Ombudsman office similar to those in other public companies

3. Smart Metering Initiative

- Tabled as a chapter of the AG's 2014 annual report on December 9, 2014, the findings of the report included that the cost to implement was nearly double the initial $1B projection and suggested that the goal of reducing peak power use through time-of-use (TOU) billing has not materialized.
- The Ministry and agencies have largely completed the implementation of the AG's recommendations. However there was some disagreement with the OAGO findings (e.g. total cost, effectiveness of TOU, no accounting of other system benefits). Ministry staff note that:
  - The OAGO believes there is still duplication for TOU bill processing. The Ministry's position is that the Smart Metering Entity (SME) has exclusive responsibility for this activity, and through its regulatory responsibilities, the OEB prevents duplication by utilities. Toronto Hydro is currently exempted and has its own TOU system, but it will integrate with the SME in 2017.
  - The Ministry did not accept the recommendation to undertake a cost / benefit of utility consolidation, noting that the government will encourage but not require utilities to consolidate. The OAGO may question this decision due to criticisms that policies are not instructed by cost / benefit analyses.
- Post-Release Events included:
  - May 22, 2015: Standing Committee on Public Accounts (PAC).
  - November 24, 2015: PAC Report. Responses submitted in March 2016.
  - February 1, 2016: OAGO Status Update. Responses submitted in April 2016.
  - June 6, 2016: Follow-up questions from the OAGO. Responses submitted in July 2016.
  - August 24, 2016: OAGO and PAC draft reports shared. Responses to be submitted in September 2016.

4. OPG Human Resources

- Following the December 2013 report by the Office of the Auditor General of Ontario (OAGO) on Value-For -Money audit of Ontario Power Generation's (OPG) Human Resources, OPG terminated 3 senior staff members in response to the findings.
- Additionally, the Ontario Internal Audit Division (OIAD) was engaged by the Ministry to monitor OPG's progress. The OIAD released three reports based on the assessment of AG's report: initial in June 2014, July 2015, and will release its final report in 2016.
- On December 2015, the OAGO released its 2015 Annual Report which contained a follow up to the 2013 Value-For-Money audits.
  - The report found that OPG had fully implemented 57% (8 out of 14) items in OPG's action plan to respond to the OAGO recommendations.
  - The majority of recommendations will have been completed by the end of 2015.
- On June 7, 2016, OPG informed MOE that the remaining 6 action items are now complete.
- On June 30, 2016, OIAD sent a draft report to Ministry of Energy highlighting that 2 out of 16 recommendations still require more progress by OPG:
  - OAID disagrees with PwC's assessment that OPG has satisfactorily demonstrated incorporation of SMART criteria into its annual incentive plan (AIP).
  - As of June 30, 2016 OPG still hadn't conducted an audit of their enhanced internal controls over payments to contractors.
- The report is to be shared with OPG in mid-September.

Value for Money of Ontario's Climate Change Initiatives (MOECC)

- The Auditor General (AG) is currently conducting a value-for-money (VFM) audit on the government's climate change initiatives undertaken since 2007. This audit response is led by MOECC, with ENERGY input.
- The Ministry of Environment and Climate Change (MOECC) is the lead ministry for this audit; however, as climate change actions span the entire government MOECC has reached out to all other Ministries on behalf of the Auditor General's Office.
- The AG's office is interested in assessing how climate change factors into the government's decision making and planning processes.
- Ministries were asked to collect supporting documents related to *"climate change programs or initiatives (planned, underway or completed) led by your ministry since January 2007"*. See next slide for list of ENERGY's initiatives.
- ENERGY was not informed of the AG's requests until approximately six weeks after other ministries were notified. As a result, ENERGY was late in initiating its search for documents and is the last ministry to complete the original document collection as requested by the AG.
- ENERGY has provided all responsive records to the AG's Office. There may be further follow-up questions from the AG's office.

ENERGY's Climate Change Initiatives

1. Aboriginal Community Energy Plan	16. Long Term Energy Plan
2. Broader Public Sector (BPS) Reporting	17. microFIT
3. Community Conservation Initiative	18. Municipal EcoChallenge
4. Conservation and Demand Management (CDM) Programs	19. Municipal Energy Plan (MEP)
5. Continued Operation of Pickering Nuclear Generating Station	20. Natural Gas Demand Side Management (DSM) Programs
6. Darlington and Bruce Nuclear Refurbishments	21. Net Metering Regulation
7. Eliminating coal from Ontario's electricity supply mix	22. Ontario Solar Thermal Heating Incentive (OSTHI)
8. Feed-in-Tariff	23. Ontario's energy efficiency regulation
9. Green Button	24. PowerHOUSE (Pilot)
10. Green Energy Investment Agreement	25. Reducing Diesel Use for Electricity Generation in Remote Northwest Ontario First Nation Communities
11. Home Energy Savings Program (HESP)	26. Renewable Energy Standard Offer Program (RESOP)
12. Hydroelectric Contract Initiative (HCI)	27. Renewable Energy Supply III (RES III)
13. Hydroelectric Standard Offer Program (HESOP)	28. Smart Grid Fund
14. Large Building Energy and Water Reporting and Benchmarking	29. Under the Energy Consumer Protection Act, new multi-unit residential buildings must include smart meters on each unit so residents are billed for their usage
15. Large Renewable Procurement (LRP)	30. Cap and Trade Impacts on Electricity Prices

* Yellow initiatives have been identified by AG's Office as priority.

** As part of a secondary request from the AG's Office to obtain the supporting documents/analysis for the projected impacts on electricity prices as a result of cap and trade as reported in the 2016 Budget and previous Cabinet and Treasury Board submissions..

Environmental Commissioner of Ontario

Environmental Commissioner of Ontario

- The role of the Environmental Commissioner's Office (ECO) is to monitor and report on compliance with the *Environmental Bill of Rights, 1993*, as well as the government's progress in reducing greenhouse gas (GHG) emissions and achieving greater energy conservation and efficiency in Ontario.
- The ECO does not have the authority to intervene directly in environmental issues – only the power to review and report.
- The ECO releases three annual reports: a climate change report; an energy conservation progress report; and an annual environmental protection report.
- These reports are presented annually to the Speaker of the Assembly. The ECO also has powers to periodically issue special reports which are not tabled in the legislature.
- There is an agreement in place where the Ministry is permitted to review and provide comments for ECO consideration on draft annual report material.
- The ECO must also respond to applications from the public to review government activities and will typically ask responsible ministries to assist in the response.
- The Ministry of Energy is prescribed under the *Environmental Bill of Rights, 1993* with the main obligation to post on the Environmental Registry proposal, information and decision notices that may significantly impact the environment.

Environmental Commissioner of Ontario - Reports

Climate Change Report

- The Environmental Commissioner of Ontario, Dianne Saxe, is required under the *Environmental Bill of Rights, 1993* to report annually to the Speaker of the Assembly on climate change and on the progress of activities in Ontario to reduce emissions of greenhouse gases.
- The Ministry of the Environment and Climate Change (MOECC) has the lead on the climate change and adaptation files for Ontario with support from a number of other ministries including the Ministry of Energy.
- In her most recent report, *Feeling the Heat: Greenhouse Gas Progress Report 2015*, the ECO commends the phasing out of coal, and conservation; and, provides comments on the energy supply mix as well as Non-Utility Generators (NUGs).
- Previously, the ECO has criticized the use of natural gas, biomass generation (e.g. Atikokan) and GHG emission tracking/forecasting. ECO has suggested the (former) OPA and OPG work together when developing emission forecasts.
- The previous ECO, Gord Miller, has indicated that he would like to see electricity generation data shared with Environment Canada.

Environmental Commissioner of Ontario - Reports

Environmental Protection Report

- Each year, the Environmental Commissioner of Ontario (ECO) reports on environmentally significant decisions made by ministries prescribed under the *Environmental Bill of Rights, 1993*. The Ministry of Energy is a prescribed ministry.
- The ECO's annual report also examines environmental issues that come to her attention through the course of her work such as the implementation of Ontario's biodiversity action plan.
- The ECO shares applicable sections of the report with the Ministry so that the Ministry can provide technical comments and corrections as well as substantive comments to be printed in the final version of the report. The Ministry will have a chance to review the final report in the Fall before it is tabled and released to the public.
- In the past, the ECO has urged ministries to post outstanding decision notices as soon as possible after a decision has been made on a proposal which was posted on the Environmental Registry.

Environmental Commissioner of Ontario - Reports

Energy Conservation Reports

- Each year, the ECO reports on Ontario's progress on energy conservation and efficiency and recommendations for improvement.
- In her most recent report (2015/16), the ECO commended the province's energy conservation programs delivered by electric and gas utilities as being *reasonable and cost-effective,* as well as the government's progress in bench-marking energy performance in public buildings (BPS Reporting).
  - In the same report, the ECO stressed the need for a comprehensive, multi-fuel energy conservation strategy (including the adoption of formal targets for reducing fossil fuel consumption); called for public bodies to be accountable for the energy they use; and was critical of the government's progress on transportation fuel conservation.
- In the past, the ECO has been supportive of energy conservation, advocating for more; the *Green Energy Act, 2009*; improvements in Ontario's electricity conservation programs; and innovative conservation projects in Ontario
- In the past, the ECO has recommended that the Ministry of Energy develop a comprehensive (multi-fuel) energy conservation strategy; provide stable predictable rules/policy for the energy sector; and increase the Time-of-Use pricing differential between on-peak and off-peak
- See Appendix for details on past ECO Conservation Reports (2009 to 2016).

APPENDIX:

AUDIT DETAILS

Electricity Power System Planning

Electricity Power System Planning

- On December 2, 2015, the AG tabled her final report on electricity power system planning in the Legislative Assembly.
    - The Ministry worked with the AG's office from December, 2014 to October, 2015 to provide requested information and documents, clarify factual information and comment on draft reports.
- The AG's report outlined the following general observations regarding the Province's electricity system planning process:
    - The planning process has broken down without an Integrated Power System Plan in place and with limited oversight by the Ontario Energy Board.
    - The Minister of Energy has relied too heavily on the use of Ministerial Directives and Directions, resulting in a lack of transparency, a lack of oversight and in increased costs to consumers.
    - There are problems with generation procurement decisions whereby electricity surpluses have increased costs for consumers, excessive prices were paid for renewables and other generation projects have not been cost effective.
    - Conservation and demand management initiatives have been ineffective during times of electricity surplus and many CDM programs are not cost-effective and were not evaluated for cost-effectiveness.
    - There are problems with transmission system planning, including problems in regions that have been outstanding for years, not enough capacity to connect renewable generators and lack of analysis regarding increasing Ontario's transmission capacity to accommodate contracted imports.

Electricity Power System Planning – Recommendations

- In her report, the AG provided five detailed recommendations for the Ministry. At a high level, the recommendations were as follows:
  1) The Ministry should comply with legislation requiring the Independent Electricity System Operator (IESO) to prepare an Integrated Power System Plan (IPSP) and submit it to the Ontario Energy Board (OEB) for approval. Additionally, the Ministry should provide more information to the public about why electricity rates are increasing.
  2) To ensure that Ministerial directives consider both technical system impacts and economic impacts affecting consumers, the Ministry should engage with the IESO and other experts during the decision making process and provide the public with information and rationale for decisions made.
  3) The Ministry should work with the IESO, OPG, Hydro One and LDCs to determine the optimal supply mix for Ontario, consider different scenarios, evaluate cost-effectiveness when deciding on new projects, and conduct cost/benefit analyses to assess the impact of a decision on consumers.
  4) To ensure that conservation and demand management programs are implemented cost effectively, the Ministry should work with the IESO to assess the effects of conservation and its impacts on electricity costs during periods of surplus, evaluate programs for their support of Ministry objectives and set appropriate targets that can be monitored and reported on publicly.
  5) To ensure that Ontario's transmission system has sufficient capacity to transmit electricity throughout the province, the Ministry should work with the IESO, Hydro One and LDCs to address capacity and reliability issues, investigate causes of generator constraints and perform adequate system planning and analysis before undertaking major initiatives that affect transmission.

Electricity Power System Planning – Ministry Response

- The Ministry has publicly agreed with all of the AG's recommendations.
- The Ministry's response to the report has focused on the introduction of new legislation – the *Energy Statute Law Amendment Act, 2015* (Bill 135) – which formalizes an efficient and transparent approach to long-term energy planning by building on the processes undertaken for the 2010 and 2013 Long Term Energy Plans (LTEP).
- Bill 135 does the following:
    - Provides the Ministry with the role of developing future LTEPs after receiving independent technical information from the IESO and undertaking an extensive consultation process with the public, stakeholders and Indigenous communities;
    - Ensures that future LTEPs are developed by balancing the principles of cost-effectiveness, reliability, clean energy, community and Aboriginal engagement and an emphasis on conservation and demand management; and
    - Requires the publication of the LTEP and key information and data used in its development on a Government of Ontario website.
- Bill 135 was proclaimed into law on July 1, 2016.

Hydro One – Management of Electricity Transmission and Distribution Assets

Hydro One – Management of Electricity Transmission and Distribution Assets

- Hydro One – Management of Electricity and Distribution Assets was a chapter of the AG's 2015 annual report, tabled in the Legislative Assembly on December 2, 2015.
- This review focussed primarily on operational matters of Hydro One and much of the interaction with the AG was handled by Hydro One directly.
- In November 2015, the Initial Public Offering (IPO) of Hydro One was completed.
    - As part of the shift to partial government ownership of a publicly traded company, legislative changes were made to no longer apply Auditor General oversight of Hydro One.
    - The 2015 Annual report was the last AG review of Hydro One.

Hydro One – Transmission Recommendations

The following recommendations were made by the Auditor General on Hydro One's Transmission Assets:

- **Improve reliability ratings** by setting multi-year targets to reduce frequency and duration of outages and by reviewing outage data to correct issues that lead to reduced reliability.
- Reduce the **preventative maintenance backlog** by investing in identified maintenance work and improving oversight to avoid a maintenance backlog issues in the future.
- Prioritize **replacement of "Very Poor" assets** by replacing assets that have reached end of life or that have the highest risk of failure and ensure rate applications to the OEB include reporting on replacement work completed.
- **Enhance the Asset Analytics Program** used to monitor asset conditions by ensuring appropriate risk factors are used and ensure data is updated and free of issues. It was further recommended that Hydro One use this tool to improve accuracy when reporting to the OEB on the condition of assets.
- Improve **cost effectiveness of maintenance expenditures** by assessing past expenditures and benchmarking against other North American transmitters.
- Develop an **enhanced security framework** for assets.

Hydro One – Distribution Recommendations

The following recommendations were made by the Auditor General on Hydro One's Distribution Assets:

- **Improve reliability ratings** by setting more ambitious performance goals.
- Improve **vegetation management** by shortening the cycle of management activities from 9.5 years to four years, to align with cycles used by other distributors and to prioritize work on lines with significant vegetation related outages.
- Similar recommendations to transmission regarding **the Asset Analytics Program** and **cost effectiveness of maintenance expenditures** as they apply to distribution system assets.
- Use **smart meters to locate outages and improve power quality**
- **Reduce the inventory of spare transformers (Tx and Dx)** by enhancing the forecasting model and shifting towards greater standardization of transformers
- Improving the **Management and Monitoring of Capital Projects (Tx and Dx)** by benchmarking costs against other utilities, comparing final costs to cost estimates and improving management reporting on project costs and timing.

Hydro One – Response to Recommendations

Ministry Response:

- AG report is operational in nature and best addressed by Hydro One.
- With regard to AG oversight, the legislative changes created a new dedicated Ombudsman office, similar to those found at other public companies. Hydro One appointed Fiona Crean as its Ombudsman and the office launched on March 14, 2016

Hydro One Response:

- In general, Hydro One accepted the recommendations of the AG and noted a number of ongoing initiatives (e.g. pilot project on using smart meters for outage management) that address specific issues.
- In some cases, such as vegetation management, Hydro One responded that adopting the recommendation in full would compromise its ability to deliver electricity at affordable rates.
- In other cases, compliance with international standards (e.g. NERC) guide's Hydro One's actions with regard to managing its assets.

Smart Meters

Smart Metering Initiative – Overview

- The AG Annual Report covering the Smart Metering Initiative was released on December 9, 2014. This was a “value for money” audit to evaluate the cost / benefit of the Initiative.
- From January to May 2014, AG staff carried out its fieldwork, which included information requests and meetings with the Ministry, OEB, IESO and Hydro One. The AG also met 13 LDCs and surveyed the remainder. The Ministry provided final comments on draft findings in October 2014, identifying several concerns and potential errors.
- The Report identified the following top issues:
    - The total cost of the Initiative was about $1.96 billion, significantly higher than the original $1 billion estimate at the outset of the program.
    - The Initiative was announced in April 2004 prior to completion of a business case or cost / benefit analysis.
    - Most residential (65 percent) and small commercial (81 percent) have not reduced their on-peak usage (smart meters enabled Time-of-Use pricing, which is designed to incent off-peak usage).
    - Many LDCs operate their own usage data systems, duplicating the functionality of the provincial data centre (also known as the Meter Data Management and Repository, or MDM/R). Further, the LDC systems are cheaper.

Smart Metering Initiative – Recommendations

- The report included 11 main recommendations with several sub-recommendations. The main recommendations for the Ministry are summarized below:

1) The Ministry should ensure cost effective implementation of future initiatives.

2) The Ministry, OEB and IESO should evaluate Time-of-Use (TOU) design to make it more relevant, monitor trends in ratepayer consumption to evaluate effectiveness of TOU and disclose components of TOU rates.

3) The Ministry should work with Hydro One and LDCs, to address ratepayer concerns by improving tracking nature of complaints, better educate consumers about their bills and TOU, identify and fix billing problems.

5) The Ministry and OEB should formally conduct a cost / benefit analysis into consolidating LDCs as per the December 2012 Distribution Sector Review Panel Report.

7) The Ministry, IESO, OEB and LDCs should re-evaluate options for having the provincial MDM/R as well as LDCs' own systems to determine the cost effectiveness of different options & avoid continued duplication.

8) The Ministry should set appropriate implementation targets/timelines to minimise the costs and risks.

11) The Ministry should work with Ontario Fire Marshall and ESA to track and monitor information on smart meter related fire incidents so as to identify and understand their causes in Ontario

Smart Metering Initiative – Ministry Response

- The Ministry agreed to incorporate the recommendations "when working in partnership with our agencies and the broader sector to deliver future smart meter initiatives and related investments". Some examples below:

Cost / Benefit Analysis

- Smart meters are considered the basic platform for a smart grid – they enable new ways to incent and influence customer behaviour and enhance the value of traditional and modern grid technologies.
  - In September 2014 (prior to the AG Report release), the Ministry hired Navigant Consulting to undertake a cost / benefit analysis of continued investment in the Smart Grid.
  - The report was completed on January 1, 2015 and found that, if Ontario continues to invest in smart grid through to 2035, there is a potential to deliver a net benefit of $6.3 billion.

TOU

- The OEB completed a review of the Regulated Price Plan (RPP) and TOU pricing and released its Roadmap on November 16, 2015, which highlights a five-point plan to redesign the RPP.

Smart Meter Fires

- Eight smart meter fires in Saskatchewan in summer 2015 prompted Ontario to examine its smart meter fleet. The Electrical Safety Authority conducted a detailed risk assessment, identified potentially faulty meters and removed them, and produced recommendations to ensure that public safety is protected.

Smart Metering Initiative – Follow Up

- As per normal practice, the Standing Committee on Public Accounts (PAC) asked the Ministry and agencies to attend Committee meetings and respond to questions. The Deputy Minister represented the Ministry at the May 22, 2015 meeting.
- The Committee tabled its Report on the Initiative on November 24, 2015. The Report included eight recommendations, many of which were virtually the same as recommendations made by the AG. The Ministry and agencies provided responses to the recommendations by March 23, 2015.
- The AG contacted the Ministry and agencies on February 1, 2016 to request a status update on the implementation of recommendations in the 2014 Annual Report. The Ministry and agencies provided updates by the deadline of April 24, 2016.
- The Ministry has received follow-up questions and requests for documentation on June 6, 2016. Responses were submitted on July 8, 2016.
- The AG provided the Ministry with a draft of both the AG's follow-up report and the PAC report on August 24, 2016. Ministry staff is currently preparing a response.

Ontario Power Generation
Human Resources

OPG Human Resources: 2013 Report

- On December 10, 2013 the Office of the Auditor General of Ontario (OAGO) released its Annual Report which contained a Value-For-Money audit of Ontario Power Generation's (OPG) Human Resources.
- The OAGO made 6 recommendations in the following areas (for details see Appendix):
  1. Staffing Levels and Recruitment
  2. Compensation
  3. Use of Non-Regular Staff and Contract Resources
  4. Overtime
  5. Absenteeism
  6. Staff Training
- The Ontario Internal Audit Division (OIAD) was engaged to monitor OPG's progress in implementing its action plan. The Minister of Energy informed the Chair of OPG, in a letter dated December 10, 2013, that he has asked the Ontario Internal Audit Division (OIAD) to:
  7. Track OPG's progress in implementing its action plan
  8. Provide regular and independent assessments of OPG's progress in resolving the issues identified by the OAGO
  9. Provide TB/MBC with regular updates and any recommendations with respect to additional measures that should be undertaken by OPG to ensure that it follows best HR practices.

OPG Human Resources: 2015 Reports

- The OIAD released a mid-year (6-Month) review June, 2014 and a final (12-Month) review July, 2015 (OPG progress as of Dec 2014). OIAD broke the OAGO recommendations down into 18 specific items.
- In its final 12-Month review (July 2015), out of 18 items that needed to be addressed to satisfy OAGO's six recommendations, OIAD assessed:
  - 10 as "Reasonable Progress"
  - 6 as "More Progress Beneficial"
  - 2 being out of scope
- On December 2, 2015, the OAGO released its 2015 Annual Report which contained a follow up to the 2013 Value-For-Money audits.
- The report found that OPG had fully implemented 57% (8 out of 14) items in OPG's action plan to respond to the OAGO recommendations. The follow up found that OPG had made reasonable progress on all recommendations made in the original report.
- The majority of outstanding recommendations were completed by the end of 2015 and OPG's CEO provided a status update informing ENERGY of the completion of their action plan on June 7, 2016. Some work is still needed to address recommendations in areas that affect unionized staff that are subject to collective bargaining.

OPG Human Resources: 2016 Report

- OIAD submitted a draft of its Phase 3 report to the Ministry of Energy for review on July 29, 2016.
- Of the remaining 6 in-scope issues required to satisfy the OAGO recommendations, OAID evaluated them:
  - 4 as "Reasonable Progress"
  - 2 as "More Progress Required"; those two are outlined as below
    - OAID disagrees with PwC's assessment that OPG has satisfactorily demonstrated incorporation of SMART criteria into its annual incentive plan (AIP) (OAGO Recommendation 2)
    - As of June 30, 2016 OPG still hadn't conducted an audit of their enhanced internal controls over payments to contractors (OAGO Recommendation 3).
- OIAD recommended that the Ministry of Energy follow up with OPG regarding their quality assurance process for AIP near the end of the fiscal year.
- OIAD will submit the Phase 3 report to OPG in early to mid September 2016.

ECO Conservation Reports (2009 to 2016)

2015/2016 ECO Conservation Report

- On May 31, 2016, the ECO released *Conservation: Let's Get Serious*, which makes ten key recommendations related to ENERGY:

    1. All public bodies in Ontario should get serious about a "cleaner, leaner, greener" approach to energy, especially reducing the use of fossil fuels
    2. Ontario should adopt formal targets for reducing fossil fuel consumption
    3. Public bodies should be accountable to the public for the energy they use
    4. Public bodies should report the energy use of their fleets
    5. The Ontario Energy Board and utilities should encourage electric vehicle charging during off-peak hours, through enhanced time of use rates and load control technology
    6. The Minister of Energy should:
        a. Disclose the energy used in Ontario government buildings in a user-friendly format
        b. Set energy use intensity targets for all public buildings
        c. Implement *Green Energy Act, 2009* provisions that protect consumers by mandating home energy use disclosure prior to sale
        d. Require large private buildings to disclose their energy intensity
    7. MOECC and ENERGY should establish product standards for the efficient use of water in fixtures
    8. MOECC should obtain authority to inspect and enforce compliance with product efficiency standards
    9. Ontario should focus electricity conservation on times of higher demand when conservation displaces natural gas-fired generation
    10. The IESO should improve public participation in conservation planning by greater transparency about marginal hourly generation and how it is implementing recommendations for conservation program improvement

Past ECO Conservation Reports: 2009-2014

2014 - Smart from Sunrise to Sunset – A Primer on Ontario's Evolving Electricity Grid

- A non-technical primer on the Smart Grid to alert the public and decision makers to the ability of the Smart Grid to change how they think about electricity. The report describes how a 24-hour day will be different with the widespread adoption of the Smart Grid.
  - Summary: Ontario can build on its strong electricity infrastructure and transition to a Smart Grid - a good investment that will benefit electricity consumers and society as a whole.

2014 - Planning to Conserve Energy Report

- A review of the effectiveness of Ontario's energy conservation polices and programs (electricity, natural gas, propane, oil and transportation fuels) implemented by government ministries, agencies and boards with a specific focus on the integration of conservation in energy planning.
  - ECO Recommendations: LTEP updates need to explain the rational for all target changes; how Conservation First policy goals will be achieved lacks detail; need to widen the peak to off-peak price differential.

2009 – 2012

- From 2009 to 2012, the ECO's annual energy conservation progress reports were published as two separate volumes:
  - Volume one covers the broader policy framework and operation issues affecting energy conservation in Ontario.
  - Volume two analyzes provincial conservation programs and actions (electricity, natural gas, propane, oil and transportation fuels) and measures progress towards energy conservation targets.

2012 - Building Momentum (Volume 1 and 2)

ECO Recommendations: Ontario should Develop policy to help municipalities reduce energy use and greenhouse gas emissions in communities, including options for funding transit; develop a regular update cycle for product standards

2011 -Restoring Balance (Volume 1 and 2)

ECO Recommendations: Three years in, the ECO believes that the conservation promises of the GEA remain unfulfilled and possibly still years away from completion.

2010 Managing a Complex Energy System (Volume 1 and 2)

ECO Recommendations: Ontario should produce a comprehensive multi-fuel energy plan; increase natural gas conservation funding; encourage smart grid investments.

2009 Rethinking Energy Conservation in Ontario (Volume 1 and 2)

ECO Recommendations: Ontario should develop multi-fuel conservation strategy; commit to a period of policy stability to allow for implementation.