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STANDING COMMITTEE ON PUBLIC ACCOUNTS

HYDRO ONE—MANAGEMENT OF ELECTRICITY TRANSMISSION AND DISTRIBUTION ASSETS

(Section 3.06, 2015 Annual Report of the
Office of the Auditor General of Ontario)

2nd Session, 41st Parliament
65 Elizabeth II

ISBN 978-1-4606-8889-2 (Print)
ISBN 978-1-4606-8891-5 [English] (PDF)
ISBN 978-1-4606-8893-9 [French] (PDF)
ISBN 978-1-4606-8890-8 [English] (HTML)
ISBN 978-1-4606-8892-2 [French] (HTML)

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The Honourable Dave Levac, MPP
Speaker of the Legislative Assembly

Sir,

Your Standing Committee on Public Accounts has the honour to present its Report and commends it to the House.

Ernie Hardeman, MPP
Chair of the Committee

Queen's Park
December 2016

STANDING COMMITTEE ON PUBLIC ACCOUNTS

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2nd Session, 41st Parliament

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PETER TABUNS regularly served as a substitute member of the Committee.

VALERIE QUIOC LIM
Clerk of the Committee

IAN MORRIS
Research Officer

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PREAMBLE

On March 23, 2016 the Standing Committee on Public Accounts (the Committee) held public hearings on the Auditor General's 2015 audit of Hydro One—Management of Electricity Transmission and Distribution Assets, Section 3.06 of the Auditor's *2015 Annual Report*. Senior officials from the Ministry of Energy (the Ministry), Hydro One, and the Ontario Energy Board (OEB) participated in the hearings. (For a transcript of the Committee proceedings, please see Committee *Hansard*, March 23, 2016.)

The Committee endorses the Auditor's findings and recommendations and presents its own findings, views, and recommendations in this report. The Committee requests that Hydro One provide the Committee Clerk with written responses to the recommendations within 120 calendar days of the tabling of this report with the Speaker of the Legislative Assembly, unless otherwise specified.

Acknowledgments

The Standing Committee on Public Accounts extends its appreciation to officials from the Ministry, Hydro One, and the OEB for their attendance at the hearings. The Committee also acknowledges the assistance provided during the hearings and report writing deliberations by the Office of the Auditor General of Ontario (the Auditor), the Clerk of the Committee, and staff in the Legislative Research Service.

OVERVIEW

Audit's Objective and Scope

The objective of the audit was to assess whether Hydro One had adequate systems and procedures in place to manage and maintain its transmission and distribution assets efficiently and cost-effectively in accordance with relevant Hydro One policies and regulatory requirements, and to ensure the system was reliable for its customers.

The scope of the audit work did not include Hydro One Brampton Networks, or the government's recent decisions to privatize Hydro One Inc. and sell Hydro One Brampton Networks. Also, the audit did not cover Hydro One Remote Communities because these communities are not connected to Ontario's electricity grid. Audit fieldwork was conducted from January to July 2015, and the audit primarily focused on Hydro One's activities over the three calendar years from 2012 to 2014.

Background

Hydro One Inc. (Hydro One or the Company), one of North America's largest electrical utilities, supplies power to local distribution companies (LDCs or utilities), large industrial customers, and about 1.4 million residential and business customers directly throughout Ontario. Hydro One has three reportable business segments:

- **Transmission Business:** Hydro One's electrical transmission system totals approximately 29,000 circuit kilometres of high-voltage lines, towers, and transformers. Hydro One's grid transmits electricity from power generators to 47 of the 71 LDCs and 90 large industrial customers directly connected to the transmission system, and to Hydro One's own local distribution system.
- **Distribution Business:** Hydro One's electrical distribution system totals approximately 123,000 circuit kilometres of lower-voltage power lines, poles, and transformers. Hydro One's lower-voltage distribution system serves about 1.4 million customers, mostly in smaller municipalities and rural areas throughout the province. Hydro One has an average of 11 customers for each kilometre of distribution line, whereas the average for the four largest LDCs in Ontario is 51. It also sends electricity to the remaining 24 smaller LDCs not directly serviced by the transmission network.
- **Other Business (Telecommunications):** Hydro One's telecommunications business provides telecommunications support for Hydro One's transmission and distribution businesses, and sells broadband network services to organizations using its fibre optic network.

A new governance agreement between Hydro One and the Province of Ontario was announced in April 2015. In July 2015 a new independent board of directors was appointed to govern Hydro One through its transition into a publicly traded company. In November 2015 Hydro One completed the initial public offering (IPO) of 15% of its common shares in the first phase of its sale of the majority of the company to the public. In April 2016 the Province announced a secondary offering of Hydro One common shares, increasing the publicly held portion to approximately 30%.

Hydro One's transmission and distribution businesses are licensed and regulated by the Ontario Energy Board (OEB) under the authority of the *Ontario Energy Board Act, 1998*. The OEB sets transmission and distribution rates and issues licences to Hydro One for both systems. Hydro One is bound by the terms of its transmission and distribution licences, as well as the requirements of the Transmission System Code and Distribution System Code, both issued by the OEB. The Codes provide the minimum conditions a transmitter or distributor must meet in carrying out its obligation to operate and maintain each system.

Hydro One's earnings are principally generated from its regulated transmission and distribution businesses. For the year ending December 31, 2015, Hydro One's revenues were \$6.54 billion and its costs were \$5.34 billion, resulting in net income of \$713 million. According to the Auditor, Hydro One's transmission, distribution, and telecommunication net fixed assets were valued at about \$16.2 billion at December 31, 2014.

ISSUES RAISED IN THE AUDIT AND BEFORE THE COMMITTEE

Transmission System

Transmission System Reliability

The Auditor recommended that Hydro One

- set multi-year targets and timetables for reducing the frequency and duration of power outages (creating system reliability and availability that compares favourably to other utilities in North America), establish an action plan and strategy for achieving these targets, and regularly report publicly on its efforts to achieve these targets;
- set targets and timetables, and cost-effective action plans, to improve the poor performance of its single-circuit transmission system; and
- analyze more thoroughly outage data on both its single- and multi-circuit systems to correct the main issues that are contributing to the system's declining reliability.

In its response, Hydro One stated that it is in the process of developing its Transmission Investment Plan for 2017 and beyond. In addition, Hydro One highlighted a number of actions it is undertaking aimed at mitigating reliability risk on its transmission system. Specifically, Hydro One is undertaking

- a continued focus on asset condition assessments and data-driven risk analysis;
- an assessment of maintenance programs and capital expenditures versus transmission reliability contributions from specific types of transmission assets; and
- an increase in investments on transmission lines.

Hydro One added that it will continue to analyze outage data to identify issues relating to reliability. The Company plans to submit to the OEB a transmitter scorecard containing measures and targets as part of its transmission rate application for 2017 and 2018.

Hydro One noted that its single circuit delivery points, by design, are not as reliable as delivery points served by multiple circuits, which provide redundancy. Also, the Company is undertaking customer consultations in order to determine its customers' risk tolerances, needs, and preferences—including the performance of single circuit delivery points. The aim will be to ensure that Hydro One's transmission rate application to the OEB includes the need to manage asset risk against service and cost.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

1. Hydro One

- **provide the Committee with annual reliability targets over the next five years, starting with 2017, for its transmission system, both for its multi- and single-circuit systems;**
- **provide a comparison of its five-year reliability targets with those established by comparable peer utilities in North America (and provide an explanation where its targets are weaker);**
- **report back annually for the next five years, starting with the 2017 year, to the Committee on its achievement of these targets, including an assessment of the factors that contributed to meeting or not meeting the targets; and**
- **provide the Committee with its risk management plan, including estimated costs, on climate change and detail how climate change is expected to impact the reliability targets of its transmission system.**

Equipment Outages, Preventive Maintenance Backlog

The Auditor recommended that Hydro One

- establish a timetable that eliminates its growing preventive maintenance backlog as soon as possible; and
- improve its oversight of preventive maintenance programs to ensure maintenance is completed as required and on time.

Hydro One stated that, consistent with industry practice, it maintains a catalogue of planned maintenance work that may have completion dates that extend well into the future. These maintenance orders are released well in advance of required completion dates to allow Hydro One to schedule work efficiently and to avoid the need for multiple planned outages. This reduces the number and duration of planned outages and reduces the risk of customer interruptions. Hydro One added that all critical preventive maintenance is completed when required. Mandatory maintenance activities that need to comply with industry standards are confirmed through Hydro One's internal compliance program. Hydro One expressed that it will continue to prioritize work to enhance reliability and efficiency while balancing service and cost.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

- 2. Hydro One provide the Committee within six months with an assessment on the requirements of its preventive maintenance work orders, including how critical maintenance**

is defined, whether all critical maintenance work is completed on time, the extent and types of preventive maintenance that are required, and whether effective preventive maintenance programs are in place and followed for each key type of transmission asset.

Replacement of High-risk Assets

The Auditor recommended that Hydro One

- ensure that its asset replacement program targets assets that have the highest risk of failure, especially those rated as being in very poor condition;
- reassess its practice of replacing assets that are rated as being in good condition before replacing assets in very poor condition; and
- replace assets that have exceeded their planned useful service life.

Hydro One plans to increase its focus on existing and emerging system risks, including risks related to the aging of electricity assets. Accordingly, the Company has been reviewing its asset management strategies and approaches.

Hydro One noted that it has taken steps to improve the quality and quantity of data contained in its Asset Analytics system and has recently established a new asset risk model. This risk model is being used in addition to its improved Asset Analytics data and will support enhanced decision-making with respect to the planning, prioritizing, and pacing of asset maintenance and replacement.

Service Life of Transmission Assets

The Auditor noted that the number of key transmission assets, such as transformers, circuit breakers, and wood poles, in service beyond their normal replacement date ranged from 8% to 26% for all types of assets in service. Replacing these assets will eventually cost Hydro One an estimated \$4.47 billion, or over 600% more than its \$621 million capital sustainment expenditure for 2014.

A senior official from Hydro One responded to this assessment of Hydro One's capital deficit as follows:

I believe that assessment was based on the concept of our assets that existed beyond their expected service life. . . . We don't just use age or the expected service life to determine when something needs to be replaced. Generally, we replace it based on other considerations, but the primary one is actually the condition of the asset.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

3. Hydro One provide the Committee with

- **its criteria for determining the appropriate timing for replacing key transmission assets, such as transformers, circuit breakers, towers, and wood poles;**
- **a comparison of its criteria for determining the appropriate timing for replacing key transmission assets with those used by other peer utilities in North America; and**
- **its own assessment of its capital deficit for each type of key transmission asset and the expected cost of asset replacement.**

Funding Requests to the Ontario Energy Board

The Auditor recommended that Hydro One ensure that its applications for rate increases to the OEB provide accurate information on its asset replacement activities, including whether it actually replaced assets in poor condition that were cited in previous applications or if it is resubmitting the same assets in poor condition to obtain further or duplicate rate increases.

In its response, Hydro One noted that information concerning asset age and condition that it files with the OEB in consideration of rate applications is intended to establish overall fleet condition and not the condition of individual components. Additionally, Hydro One has committed to provide complete supporting evidence in future rate submissions, which will outline what the Company has accomplished compared to previous applications.

Asset Analytics System Accuracy

The Auditor recommended that Hydro One

- enhance its Asset Analytics system to include information on all key factors that affect asset investment decisions, including those related to technological/manufacturer obsolescence, known defects, environmental impact, and health and safety;
- review and adjust current weighting assigned to risk factors in Asset Analytics to more accurately reflect their impact on asset condition and risk of failure;
- make changes to its Asset Analytics system and procedures so that updates to its data are complete, timely, and accurate;
- conduct a comprehensive review of the data quality in Asset Analytics to update any incomplete or erroneous information on its assets and to ensure the information can support its asset replacement decision-making process; and

- investigate why known deficiencies in the reliability of the Asset Analytics system, such as those found two years earlier by internal audits, have not been corrected by management in a timely manner.

The Auditor also recommended that Hydro One ensure that its applications to the OEB for rate increases include accurate assessments of the condition of its assets.

In its initial response, as published in the Auditor General's 2015 Annual Report, Hydro One acknowledged it had established a data remediation process to address gaps in its Asset Analytics system. This includes enhancing data input and change control processes, and establishing data quality metrics to ensure the system is populated in a timely, complete, and accurate manner. Hydro One stated that it will continue to enhance the capabilities of this tool and to support decision-making with respect to asset condition and associated replacement.

In addition, the Company has also recently implemented a new asset risk model that is being used in addition to the improved Asset Analytics tool and will support enhanced decision-making with respect to the planning, prioritizing, and pacing of asset maintenance and replacement.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

- 4. Hydro One provide the Committee within one year with an assessment of the Asset Analytics system (both for its transmission system and distribution system assets), including**
 - **whether the Auditor's concerns have been fully addressed; and**
 - **an analysis of how well the Asset Analytics system reflects the conditions of the assets in the field.**

Security for Electronic Devices

The Auditor recommended that Hydro One develop a comprehensive security framework to cover all of its electronic devices. The framework should include best practices for security, including establishing standards similar to those set by the North American Electricity Reliability Corporation (NERC), performing security vulnerability risk assessments on all electronic devices, establishing appropriate actions and controls to mitigate security risks to an acceptable level, and conducting regular audits to validate that the security framework has been adhered to.

In its response, Hydro One indicated that it is developing and has already implemented certain aspects of a new comprehensive security program that will apply to all electronic devices. Hydro One added that security hardening is part of its engineering standard for all deployed devices, which are currently being converted to the standard as dictated by their life cycle replacement.

Hydro One noted that NERC sets standards to protect the most critical grid components against likely threats including man-made or natural phenomena. The Company added that it is in compliance with current and applicable NERC standards and is in the process of completing investments designed to ensure compliance with new NERC critical infrastructure protection standards.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

- 5. Hydro One update the Committee on the status of its new comprehensive security program that will apply to all electronic devices, including a target as to when all transmission assets will be in compliance with the new NERC requirements.**

Distribution System

Distribution Reliability and Costs

The Auditor recommended that Hydro One

- establish more ambitious performance goals, targets, and benchmarks for system performance; and
- develop short- and long-term strategies for new and enhanced activities and cost-effective investments that will improve its overall reliability record.

In its response, Hydro One stated that its strategies to improve distribution reliability include

- relocating lines when they have reached their end of life from off-road to road allowances, thereby reducing the time required to identify and remediate equipment failures;
- providing visibility and controllability of electricity devices at Hydro One's operating centre in Barrie as the Company renews line switching devices and distribution stations; and
- prioritizing vegetation programs to maximize reliability benefits.

Hydro One stated that it will continue to report its scorecard performance results annually to the OEB for its distribution business, as required. In addition, prior to its next rate application for distribution rates, Hydro One has committed to consulting with its customers to better understand their service expectations, including reliability.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

6. Hydro One

- **provide the Committee with annual reliability targets over the next five years, starting with 2017, for its distribution system;**
- **provide a comparison of its five-year reliability targets with those established by comparable peer utilities in Canada (and provide an explanation where its targets are weaker);**
- **report back annually for the next five years, starting with the 2017 year, to the Committee on its achievement of these targets, including an assessment of the factors that contributed to meeting or not meeting the targets;**
- **provide the Committee with the result of its consultations with customers on service expectations, including reliability; and**
- **provide the Committee with a risk management plan on climate change and detail how climate change is expected to impact reliability targets of its distribution system.**

Vegetation Management Cycle

The Auditor recommended that Hydro One shorten its 9.5-year vegetation management cycle to a more cost-effective cycle of less than four years, in line with similar local distribution companies.

In its response, Hydro One determined that the increased initial short-term cost of moving to a four-year forestry cycle is not consistent with its goal of appropriately balancing service and cost. The Company added that this determination is being validated by a third party.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

7. **Hydro One provide the Committee with a summary of the results of the third-party assessment of the optimal length of its vegetation management cycle.**

Prioritization of Vegetation Management Work

The Auditor recommended that Hydro One change the way it prioritizes lines that need clearing so that lines with more frequent tree-related outages are given higher priority and work crews are dispatched sooner.

In its response, Hydro One stated that it continually reviews its vegetation management program and improves its prioritization model to support decision-making.

Asset Analytics Ratings Information

The Auditor recommended that Hydro One take the actions needed to ensure its Asset Analytics system provides timely, reliable, accurate, and complete information on the condition of assets.

As noted and described in greater detail above:

- Hydro One has established a data remediation process to address gaps in its Asset Analytics system.
- The Company has also recently implemented a new asset risk model that is being used in addition to the improved Asset Analytics tool.

Service Life of Significant Distribution Assets

The Auditor recommended that Hydro One

- replace assets that have exceeded their planned useful service life; and
- reassess its planned expected service life for assets and justify any variances in the years it uses compared to other similar local distribution companies.

Hydro One acknowledged that assets beyond their service life have a greater risk of failure, but it noted that asset age alone does not drive investment decisions. The Company noted that consideration must also be given to asset condition, criticality, performance, and utilization, among other considerations.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

8. Hydro One provide the Committee with

- **its criteria for determining the appropriate timing for replacing key distribution assets, such as transformers, circuit breakers, and wood poles;**
- **a comparison of its criteria for determining the appropriate timing for replacing key distribution assets with those used by other peer utilities in Canada; and**
- **its own assessment of its capital deficit for each type of key distribution asset and the expected cost of asset replacement.**

Use of Smart Meters to Identify Power Outages

The Auditor recommended that Hydro One develop a plan and timetable for using its existing smart meter capability to pinpoint the location of customers with power outages.

In its response, Hydro One noted that it had initiated a pilot project to test smart meter functionality to validate customer-reported outages. This functionality was used in 25,000 instances, allowing the Company to avoid more than 5,800 crew dispatches. Hydro One plans to implement a production version in 2017 that will consolidate multiple meters that are without power in order to identify the scope of a power outage.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

- 9. Hydro One provide the Committee with a timetable to fully implement the usage of smart meters, including**
 - **proactively identifying power outages;**
 - **using this information to dispatch work crews; and**
 - **the expected improvements to service and projected cost savings that are anticipated as a result.**

Number of Spare Transformers in Storage

The Auditor recommended that Hydro One

- improve the forecasting model it uses for predicting transformer failures, and maintain its inventory levels of spare transformers in accordance with the forecasts; and
- develop a plan to standardize in-service transformers as much as possible, and set targets and timelines for achieving savings from better managing both spare and in-service transformers.

Hydro One stated that it is reviewing its forecasting model for predicting transformer failures and this is expected to inform the number of transformers held in inventory. Since 2009 the Company has reduced the number of types of transformers it uses from 30 to 16. It expects that this will facilitate a reduction in its spare transformer fleet. Hydro One is also developing a plan to standardize distribution transformers and implement a comparable strategy to reduce associated inventories.

Data from Power Quality Meters

The Auditor recommended that Hydro One proactively use the data collected by its power meters to help assess the frequency and location of power quality events on its transmission and distribution systems and thereby improve the reliability of the power supply.

In its response, Hydro One noted that it is implementing initiatives to address large customer power quality issues more proactively by providing power quality information to customers, and working with them to estimate the frequency, duration, and magnitude of potential events that could have an adverse effect on their equipment and processes.

Hydro One expressed that it is consulting with its large customers to understand their specific needs and preferences as it develops its investment plan, which is consistent with the OEB's Renewed Regulatory Framework. Hydro One is receiving customer feedback regarding concerns about power quality as part of this process and will consider this feedback in the context of its application to the OEB for transmission rates in 2016.

Management Oversight Processes over Capital Project Costs

The Auditor recommended that Hydro One

- use industry benchmarks to assess the reasonableness of capital construction project costs, and determine whether using internal services and work crews is more economical than contracting out;
- use and adhere to contingency and escalation allowances that are more in line with industry norms for capital construction projects;
- improve its management reporting and oversight of project costs by regularly producing reports that show actual project costs and actual completion dates compared to original project cost estimates, cost allowances used, original approved costs, subsequent approvals for cost increases, and planned completion dates; and
- regularly analyze its success in preparing project estimates by comparing them with final project costs.

In its latest transmission rate application to the OEB, Hydro One committed to benchmark its transmission total cost performance (including capital construction projects) relative to similar companies. Once completed, this benchmarking study will be submitted as evidence in Hydro One's transmission rate application for 2017 and 2018 rates.

The report will consider industry benchmarks, including the following:

- project manager assignments to capital additions and projects;
- the number of support staff per project manager;
- projects' actual spend as a percentage of estimate;
- percentage of projects completed on time; and
- percentage of capital budget spent.

An industry-leading project management partner has been engaged to assist Hydro One with developing an improved benchmarking framework to look at internal versus external-delivered capital projects and to demonstrate the cost effectiveness of Hydro One's capital project portfolio. Hydro One is working with Burns & McDonnell to review and make recommendations to improve its project estimating processes, methodologies, and tools. Adjustments will be made based on their findings and recommendations. A draft project management methodology report from Burns & McDonnell has been developed as of April 2016.

In May 2016 it was announced that Burns & McDonnell, a professional engineering, procurement, and construction management services firm, was awarded a contract by Hydro One to provide construction program management services during the next five to seven years. Burns & McDonnell will focus on enhancing Hydro One's construction management tools and processes required to effectively oversee investments to the transmission grid throughout the province. The program management will consist of a comprehensive suite of services, including project controls, scheduling, budgeting, estimating, and quality assurance.

Between June and November 2015, Hydro One transitioned to and fully adopted a practice of including an annual escalation rate of 2.5% and a maximum contingency of 10% within its estimates, which are in line with the industry norms. Of the 12 projects estimated since November 2015, all have met the defined criteria with a maximum 10% contingency and maximum 2.5% escalation rate.

Hydro One has improved internal oversight of projects by establishing a new monthly program reporting process. The associated report provides a line of sight to the original approved budget (estimate) and the scheduled in-service dates for the top 75 projects and programs.

Hydro One has implemented a new approach to focus on up-front project planning to minimize the implementation risks and improve project estimating accuracy. This approach shifts the detailed design process earlier in the investment lifecycle before the project estimate is produced to support a more defined project plan and better quality estimate. All new projects are adhering to this new estimating process.

A formalized project closure report process has been put in place to analyze the project plan and the effectiveness of its execution. Of the projects over \$5 million that went into service in 2015, 12 met the criteria to necessitate production of a project closure report. To date, eight project closure reports have been produced. The remaining four projects (which went into service in December 2015) are on track to have a project closure report produced within the 90-day window.

A lessons-learned process has also been established to support continuous improvement. This process consults key internal stakeholders to ensure all new projects consider the lessons learned from previous projects.

Committee Recommendation

The Standing Committee on Public Accounts recommends that:

- 10. Hydro One provide the Committee with a report on its major projects (>\$1 million) completed in 2015. This report shall compare: the original project estimate without allowances; the approval amount, including allowances; and, the actual cost for each project. Hydro One will also report to the Committee again in one year and two years for the projects completed in 2016 and 2017, respectively.**

CONSOLIDATED LIST OF COMMITTEE RECOMMENDATIONS

The Standing Committee on Public Accounts recommends that:

1. **Hydro One**
 - provide the Committee with annual reliability targets over the next five years, starting with 2017, for its transmission system, both for its multi- and single-circuit systems;
 - provide a comparison of its five-year reliability targets with those established by comparable peer utilities in North America (and provide an explanation where its targets are weaker);
 - report back annually for the next five years, starting with the 2017 year, to the Committee on its achievement of these targets, including an assessment of the factors that contributed to meeting or not meeting the targets; and
 - provide the Committee with its risk management plan, including estimated costs, on climate change and detail how climate change is expected to impact the reliability targets of its transmission system.
2. **Hydro One provide the Committee within six months with an assessment on the requirements of its preventive maintenance work orders, including how critical maintenance is defined, whether all critical maintenance work is completed on time, the extent and types of preventive maintenance that are required, and whether effective preventive maintenance programs are in place and followed for each key type of transmission asset.**
3. **Hydro One provide the Committee with**
 - its criteria for determining the appropriate timing for replacing key transmission assets, such as transformers, circuit breakers, towers, and wood poles;
 - a comparison of its criteria for determining the appropriate timing for replacing key transmission assets with those used by other peer utilities in North America; and
 - its own assessment of its capital deficit for each type of key transmission asset and the expected cost of asset replacement.
4. **Hydro One provide the Committee within one year with an assessment of the Asset Analytics system (both for its transmission system and distribution system assets), including**

- whether the Auditor's concerns have been fully addressed; and
 - an analysis of how well the Asset Analytics system reflects the conditions of the assets in the field.
5. Hydro One update the Committee on the status of its new comprehensive security program that will apply to all electronic devices, including a target as to when all transmission assets will be in compliance with the new NERC requirements.
6. Hydro One
- provide the Committee with annual reliability targets over the next five years, starting with 2017, for its distribution system;
 - provide a comparison of its five-year reliability targets with those established by comparable peer utilities in Canada (and provide an explanation where its targets are weaker);
 - report back annually for the next five years, starting with the 2017 year, to the Committee on its achievement of these targets, including an assessment of the factors that contributed to meeting or not meeting the targets;
 - provide the Committee with the result of its consultations with customers on service expectations, including reliability; and
 - provide the Committee with a risk management plan on climate change and detail how climate change is expected to impact reliability targets of its distribution system.
7. Hydro One provide the Committee with a summary of the results of the third-party assessment of the optimal length of its vegetation management cycle.
8. Hydro One provide the Committee with
- its criteria for determining the appropriate timing for replacing key distribution assets, such as transformers, circuit breakers, and wood poles;
 - a comparison of its criteria for determining the appropriate timing for replacing key distribution assets with those used by other peer utilities in Canada; and
 - its own assessment of its capital deficit for each type of key distribution asset and the expected cost of asset replacement.

9. **Hydro One provide the Committee with a timetable to fully implement the usage of smart meters, including**
 - **proactively identifying power outages;**
 - **using this information to dispatch work crews; and**
 - **the expected improvements to service and projected cost savings that are anticipated as a result.**

10. **Hydro One provide the Committee with a report on its major projects (>\$1 million) completed in 2015. This report shall compare: the original project estimate without allowances; the approval amount, including allowances; and, the actual cost for each project. Hydro One will also report to the Committee again in one year and two years for the projects completed in 2016 and 2017, respectively.**