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Mercredi 23 mars 2016

Standing Committee on Public Accounts

2015 Annual Report,
Auditor General:

Ministry of Energy

Hydro One

Ontario Energy Board

Chair: Ernie Hardeman
Clerk: Valerie Quioc Lim

Comité permanent des comptes publics

Rapport annuel 2015,
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Ministère de l'Énergie

Hydro One

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de l'Ontario

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LEGISLATIVE ASSEMBLY OF ONTARIO

ASSEMBLÉE LÉGISLATIVE DE L'ONTARIO

STANDING COMMITTEE ON
PUBLIC ACCOUNTSCOMITÉ PERMANENT DES
COMPTES PUBLICS

Wednesday 23 March 2016

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The committee met at 1230 in room 151, following a closed session.

The Vice-Chair (Ms. Lisa MacLeod): Welcome, everyone. It's great to start the committee this afternoon.

Before we get started with our deputants, I have been told that Mr. Yakabuski has a motion he would like to file with the committee. Would you like to read it?

Mr. John Yakabuski: Do I read it or just present it to the Clerk?

The Clerk of the Committee (Ms. Valerie Quioc Lim): I can handle that, Mr. Yakabuski.

Mr. John Yakabuski: I only have the one copy at this point.

The Clerk of the Committee (Ms. Valerie Quioc Lim): I'll make copies.

The Vice-Chair (Ms. Lisa MacLeod): Okay, so we will make copies. It is now filed, so we'll move on.

2015 ANNUAL REPORT,
AUDITOR GENERAL
MINISTRY OF ENERGY
HYDRO ONE
ONTARIO ENERGY BOARD

Consideration of section 3.06, Hydro One—management of electricity transmission and distribution assets.

The Vice-Chair (Ms. Lisa MacLeod): The Standing Committee on Public Accounts will now come to order. We are here to consider Hydro One—management of electricity transmission and distribution assets, section 3.06 of the 2015 annual report of the Office of the Auditor General of Ontario.

Our deputants have 20 minutes collectively to make a presentation to the committee. After that, each party, beginning with the New Democrats, has two rounds for questions of about 20 minutes each. As I said, the rotation will start with the third party.

I would now ask our deputants to introduce themselves and give them up to 20 minutes in order for them to provide their information. Thank you.

Mr. Serge Imbrogno: Good afternoon. My name is Serge Imbrogno, deputy minister, Ministry of Energy.

Ms. Rosemarie Leclair: Rosemarie Leclair, chair of the Ontario Energy Board.

Mr. Mayo Schmidt: Mayo Schmidt, chief executive officer and president, Hydro One.

Mr. Mike Penstone: Mike Penstone, vice-president of planning, Hydro One.

Mr. Serge Imbrogno: I want to thank all the standing committee members who are here today. It's my pleasure to be here and to discuss Hydro One's management of electricity, transmission and distribution assets, specifically section 3.06 from the Auditor General's 2015 annual report. I look forward to our discussion over the next few hours.

As the minister said on the day of its release, the government welcomes and accepts the Auditor General's report, including its chapter dedicated to Hydro One. As you have likely noticed, many of the recommendations to Hydro One were of an operational nature, such as the auditor's look at the company's preventative maintenance policies, vegetation management program, asset analytics, maintenance expenditures, management of equipment inventory levels, and management of capital projects.

Any questions you have about these recommendations are best addressed by the representatives from Hydro One who have joined us today. We're confident that the entire Hydro One leadership team—not just those in the room today—has the skills and motivation to address your questions, concerns and recommendations to improve operations and customer service.

Last year, the government acted on the advice of the Premier's Advisory Council on Government Assets and completed an initial public offering of approximately 15% of the province's shares of Hydro One. The government plans to continue the subsequent share sales in the future, ultimately selling down to approximately 40% ownership.

The government has put in place protections that have enabled the Ontario government to remain the largest shareholder after the IPO and, by law, require that no other shareholder be allowed to hold more than 10% of the voting shares. The province is also prohibited by law from taking action to reduce its ownership below 40% of the voting securities of the company.

Hydro One now operates as a publicly held company, which means that the government's relationship to Hydro has changed to that of an investor. Of course, Hydro One falls under the same Ontario Energy Board oversight as all other transmitters and distributors across the province.

In addition, the province has required by law that Hydro One create 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. She reports directly to the board of directors and has the independence and resources necessary to fulfill her mandate.

Just as with Toronto Hydro or Enbridge, we'll continue to encourage Hydro One to achieve continuous improvements that benefit customers. In the broader scope, the ministry expects that all local distribution companies will continuously work to improve their efficiency and service standards. We'll continue to rely on the Ontario Energy Board as the best body for overseeing all of the province's energy utilities, whether they are municipally owned or shareholder-owned companies.

To give you some background on the OEB's roles and responsibilities, the Ontario Energy Board Act provides the board with a robust set of powers to oversee and regulate the electricity sector, including setting just and reasonable rates; enforcing its oversight powers through an ability to impose penalties for non-compliance; licensing market participants and imposing licence conditions; and making rules through codes and guidelines that govern the conduct of market participants. These rules are considered conditions of licence that must be followed.

On December 3, 2015, the Strengthening Consumer Protection and Electricity Oversight Act, 2015, received royal assent. This legislation amends the Ontario Energy Board Act, 1998, and the Energy Consumer Protection Act, 2010. Amendments to the OEBA came into force on March 4, 2016. This legislation will enhance the role of the OEB to ensure that it continues to have a robust set of tools to protect consumers and regulate the energy sector. Changes include providing the OEB with stronger compliance and enforcement authority; creating further opportunities to enhance consumer representation at OEB hearings; enhancing the OEB's ability to ensure continuity of service; enhancing the OEB's oversight of utility transactions; and increasing the OEB's flexibility to determine the types of business activities that an LDC can engage in. These recent legislative amendments have further enhanced the OEB's regulatory oversight over the transmission and distribution sectors in Ontario.

With that, I'd like to turn it over to Rosemarie Leclair to talk a bit about the OEB and its role.

Ms. Rosemarie Leclair: Thank you, Deputy. I want to thank the committee, as well, for inviting us to attend today.

As the deputy has said, the audit that we're here to talk about today is largely an operational audit. While the OEB is not directly the subject of the report being discussed, the Auditor General has recognized in her report the important oversight role that the OEB plays with respect to regulated utilities like Hydro One.

As an independent public agency—independent, much like the Auditor General—the OEB's primary objective is to protect the interests of Ontario energy consumers with respect to price, quality and reliability of service. We have a long history of doing just that.

The OEB, as the deputy has mentioned, has broad oversight responsibilities that are set out in our legislation. We license all market participants, we establish standards and codes of service, we approve major infrastructure investments, and we approve the revenue requirements for 73 distribution and five transmission companies, among others, to help them serve 4.8 million energy customers in Ontario.

We fulfill our mandate in a way that, as best we can, aligns consumer and utility interests and considers the broader public interest, while attempting to maintain a financially viable, sustainable and efficient sector. As part of our regime, the OEB uses open, transparent and thorough processes to hold all utilities, including Hydro One, accountable for prudently managing their resources and improving services to their customers. We apply the same standards, regardless of the size of the utility and the ownership structure, to all of the entities we regulate.

Like the Auditor General, we also place a high priority on delivering value to electricity customers. In 2012, the OEB developed what we call our renewed regulatory framework for electricity. Under that framework, we require much more rigorous asset management and effective capital planning, in support of more cost-efficient operations. We use industry benchmarking to ensure that utilities improve their performance, and we encourage continuous improvement to increase the productivity of utility operations. The framework also requires utilities to engage with their customers to better understand—and, more importantly, better respond to—their needs and their preferences.

The goal of our renewed framework is quite simple: It's to focus utilities on delivering outcomes that are valued by their customers. By requiring ongoing reporting against performance metrics such as cost and reliability, and making that information publicly available, customers can assess for themselves whether they are receiving value from their utility.

Electricity distributors like Hydro One were the first to follow this framework. Earlier this year, we extended the framework's application to transmitters as well. The OEB's expectations, as outlined in our renewed regulatory framework, are very much aligned with many of the observations in the Auditor General's report.

Hydro One distribution filed its first application under the renewed framework in 2013. During the OEB's review, we identified many of the same concerns that the Auditor General noted. In our decision, we took steps to ensure that Hydro One addresses these shortcomings, many of which intersect very directly with the recommendations found in the Auditor General's report.

We're requiring Hydro One to conduct external benchmarking on pole replacement and refurbishment plans, to consider external reviews on distribution system planning, to undertake a total factor productivity study, and to explore best practices in vegetation management. The OEB will be considering all of this information when Hydro One next files its distribution application in 2017.

1240

A similar focus is being placed on Hydro One's transmission business. As part of its 2014 rate application, Hydro One is required to benchmark its cost performance against similar North American companies. This study will be considered during the next rate application, expected this spring.

This application will be Hydro One's first under the RRFE for transmitters. The OEB is expecting to see strong, evidence-based planning, including robust asset management and appropriate pacing and prioritization of system investments. Hydro One will also be required to consult with its customers and to propose metrics, such as cost and reliability, among others, to be used to measure its ongoing performance.

As demonstrated in these recent Hydro One decisions, the OEB is committed to ensuring that owners and operators of electricity networks in Ontario provide reliable, cost-effective services that represent good value to their customers. The recommendations made by the Auditor General in this report are useful in further supporting our efforts to hold utilities, including Hydro One, to a high standard of efficiency and effectiveness. The OEB will consider the Auditor General's findings as well as our own in future Hydro One proceedings.

I want to thank you again for the opportunity and I look forward to answering any questions you might have. I'll turn it over to Mr. Schmidt.

Mr. Mayo Schmidt: Thank you. Good afternoon to the Chair, committee members, Auditor General Bonnie Lysyk and guests. On behalf of Hydro One, I'd like to thank you for the opportunity to comment on the Auditor General's report on Hydro One's management of electricity transmission and distribution assets. Sitting next to me is Mike Penstone, Hydro One's vice-president of planning.

Our transmission operations represent 96% of the province's transmission networks, comprise approximately 29,000 circuit kilometres of high-voltage lines, towers, transformers and are the backbone of Ontario's electricity system. Hydro One's electricity distribution system covers approximately 75% of the province, with approximately 123,000 circuit kilometres of low-voltage power lines and transformers, serving more than 1.3 million customers across Ontario in rural and urban centres. Looking at it another way, we have more poles than we have customers.

Our transmission system is linked to five jurisdictions adjacent to Ontario—Manitoba, Minnesota, Michigan, New York and Quebec—through high-voltage interconnections. It's part of North America's eastern interconnection.

Hydro One is one of the largest transmission utilities in North America, with a service territory that covers more than 640,000 kilometres—a geography twice the size of France, with a fair bit more of unforgiving terrain and weather. It's our job to plan, operate, build and maintain affordable, robust and flexible distribution and transmission systems that serve Ontario's needs and meet our obligations as part of the North American grid.

We manage \$12 billion in assets and operate a mammoth and complex system made up of millions of parts, be they towers, wires, breakers and transformers or protection, control and telecommunications equipment. We're not just operators; we're asset managers charged with the planning, refurbishment and replacement of these assets so that reliability is maintained and costs are managed.

Most people in this province recognize our highly visible field staff, the men and women in orange who must brave brutal weather and challenging operating conditions to build, maintain and repair the system. Today, I'd also like to illustrate the work of the people you don't see: our engineers.

Hydro One is very fortunate to have a team of highly skilled and dedicated engineers, educated in the finest schools here in Canada and around the world. Our teams are admired throughout the industry. The iron ring that they wear is a symbol of professional duty, ethics and obligation by our Canadian engineers. They wear it with pride and a sense of commitment to creating a better, safer and more reliable electricity system.

In essence, the work they do every day is about creating value by ensuring the investment plan considers and reflects the needs and preference of our customers; making prudent, cost-effective short- and long-term investments in the system; addressing emerging risk in our system and always looking for ways to extend the life of existing assets; and adapting new and proven technologies to contribute to our efficiency and improving service.

When the Auditor General's staff came to see us last year, they did so with a very clear objective: to assess whether Hydro One had adequate systems and procedures in place to manage and maintain its transmission and distribution assets effectively. Although this audit was conducted prior to my arrival at Hydro One, I know that the Auditor General's staff had our full co-operation and unfettered access to our people, systems and operations. We made sure that they got out to our field operations and facilities, developing a true appreciation—which can't be developed from a desk, of course, in Toronto.

The culmination of their efforts resulted in recommendations concerning system reliability, investment priorities, strategies and practices, the need for better data, and benchmarking.

I would like now to provide Hydro One's perspective on some of these recommendations and, more importantly, talk about the actions that have been completed or are under way since the report was issued.

I must start with reliability. As stewards of this massive and complex electricity system, we know that the homes, schools and businesses of Ontario rely on us to provide safe and reliable power. It must be there all day and all night, every day, at the flick of a switch, to power an assembly line at the local manufacturing plant, to light up a hockey rink on a cold winter morning or illuminate an operating table at a local hospital.

The level of reliability experienced by Ontario customers and consumers doesn't just happen. It requires us

to make the right investment at the right place at the right time. We do believe our investment strategy has been working. In fact, over the last several years, I note that Hydro One's transmission reliability was relatively consistent, even though we are managing assets that continued to age.

On our distribution network, we have maintained historical reliability levels, but recognize there's an opportunity to do better, particularly for those large distribution customers that are vital to the economic health of many communities across the province.

When considering history, the electricity system was built over successive generations, powering needs that arose from various economic conditions and different stages of rural and urban growth resulting from booms in our population. However, the system is aging, and with aging comes reliability risk.

Our engineers are constantly monitoring the entire system so that we can replace system components before they fail. Like the parts of your car, they don't all fail at the same time and in the same way, and like your car, we want to replace them when we know we've maximized the component's useful life. We also strive to replace assets in a managed fashion, to avoid a bow wave, all at once, of replacements that cannot be accomplished in a timely manner.

So what are we going to do to manage risk and reliability? These things:

- managing asset performance by replacing equipment not just because it's old but considering its specific condition;

- using data-driven risk analysis to determine why and when we should replace and maintain an asset;

- continually assessing maintenance programs and capital expenditures, to make sure we are making the right investments at the right place at the right time;

- executing our programs efficiently; and

- prioritizing our work keeping our lines, poles and towers clear of brush and trees, to maximize reliability.

As I noted earlier in my remarks, the Auditor General's report provided commentary and recommendations concerning our approach to asset management. I'd like now to talk about improvements that we've made since the report was issued and consistent with the report communications and recommendations.

We have taken actions on a number of fronts. On how we've made those decisions, the company has taken steps to improve the quality and quantity of data combined in our asset analytics system. Hydro One has recently established a new asset risk model to enhance decision-making with respect to planning, prioritizing and pacing asset maintenance and replacements.

On distribution, the organization has commenced, and will complete this year, three benchmarking studies and an independent review of our distribution system plan. We're in the process of identifying and prioritizing the most cost-effective opportunities to drive reliability improvements across our distribution system. We will also conduct an assessment of our past maintenance expenditures and activities.

Furthermore, we're actively evaluating opportunities to be more efficient in the field, initiatives that would improve response times for trouble calls, adopt best-in-practice operations and maintenance practices, and improve the overall experience for our customers.

The company is implementing initiatives to address our large customers' power quality issues more proactively, in co-operation and collaboration with our customers.

In the last transmission rate application, Hydro One committed to the OEB to benchmarking its transmission total cost performance, including capital construction projects, relative to like companies. This benchmarking study is being finalized as we speak.

These are just a few initiatives under way.

I'd like now to speak to an issue that, while not overtly covered in the AG report, is front and centre in many people's minds.

As you know, the province of Ontario took steps last year to broaden Hydro One's ownership. Some might suggest that a privatized Hydro One puts the interests of investors ahead of the interests of our customers.

Our core belief is that when our customers are happy, so are our investors. We further believe that customers' and investors' interests are aligned and mutually beneficial. Therefore, we have improved the quality of our call centres, through improved training, staffing and performance management. We're now experiencing 90% satisfaction at the call centre, which is a 13% improvement—

The Vice-Chair (Ms. Lisa MacLeod): You have about a minute and a half.

1250

Mr. Mayo Schmidt: Sorry?

The Vice-Chair (Ms. Lisa MacLeod): You have a minute and a half.

Mr. Mayo Schmidt: All right. Thank you. Our billing system has never been better, and we've launched new service-level guarantees for appointments.

As a debt issuer, Hydro One is held to the highest standard conducted by securities regulators north and south of the border. We have a new, independent board of directors, and a new ombudsman, Fiona Crean, has come to ensure unsolved customer issues are appropriately addressed.

We're regulated by the OEB, the IESO and also the securities commission. In fact, many activities and initiatives for improvement are under way as a direct result of the OEB and the regulatory process.

We're engaged today in a province-wide consultation with our customers. Personally, I've been attending the conferences and find them to be dynamic and constructive.

As I spoke earlier, managing Hydro One's massive and complex transmission and distribution system takes a lot of expertise as well with our engineering system. We're transforming from a government crown agency to a public company known for its outstanding customer service and system reliability.

We appreciate this opportunity and confirm the steps we've taken since the audit was conducted. Thank you very much.

The Vice-Chair (Ms. Lisa MacLeod): Thank you very much. I appreciate that. We will now go to the NDP to start their line of questioning. I will, however, remind any deputants who aren't at the table and haven't introduced themselves to, if you are to come to the table, just introduce yourself on the microphone.

Mr. Tabuns.

Mr. Peter Tabuns: Thank you, Chair. My first question is for Mr. Imbrogno. Mr. Imbrogno, the Auditor General in her report noted that Hydro One's customers "have a power system for which reliability is worsening while costs are increasing." And on the prospectus that was signed by your minister in October, it was stated that "Hydro One's current leadership has demonstrated the capability to execute Hydro One's strategic plan and drive performance improvements and shareholder returns."

So what you are telling the investors through the prospectus was that we have a strategic plan that's improving things; the Auditor General finds that in fact they're deteriorating. Why is the prospectus not reflective of reality?

Mr. Serge Imbrogno: In the prospectus, Hydro One acknowledged the auditor's report and said that they would be acting on the report. I think Hydro One, as the OEB has said, was already aware of a number of the issues that the auditor raised in her report, and the OEB was taking steps to ensure that Hydro One would move forward on those actions. I think Mayo Schmidt just talked about benchmarking and so on. So I think the changes were already in place through the prospectus and the company was moving forward with making the changes, both to address the auditor and also to address the OEB.

Mr. Peter Tabuns: But the leadership had demonstrated they didn't have the capability to actually deliver system improvements. The system deteriorated from 2010 to 2014, yet you were telling investors that frankly they could execute a "strategic plan and drive performance improvements." That wasn't happening. We were getting performance deterioration. Why were you stating that this group had the ability to drive improvements when in fact things were coming apart?

Mr. Serge Imbrogno: Well, part of the broadening of the ownership of Hydro One was changing senior management at Hydro One. It was also introducing a new board. Those were changes that were being made as part of the broadening of ownership, so those changes were in place as part of the prospectus.

Mr. Peter Tabuns: And they've been in place for a few months, so they didn't have a long track record of delivering the goods, did they?

Mr. Serge Imbrogno: Well, I think the company itself had a track record of delivering. I think there are always improvements that could be made—

Mr. Peter Tabuns: No, just a second. We look at the Auditor General's report. From 2010 to 2014, costs

increased and reliability deteriorated. I take that as an indicator that things weren't getting better.

Mr. Serge Imbrogno: If you look at the auditor's report—and the auditor is here—I think there were different benchmarks used. I think Hydro One compared well to other Canadian utilities and when you compared Hydro One to some US utilities. I think, depending on your comparison—

Mr. Peter Tabuns: I'm comparing Hydro One to itself, and the fact that its performance deteriorated. Was there a strategic plan to drive up costs and have deteriorating performance?

Mr. Serge Imbrogno: I think Hydro One always had the desire to do the best that it could. I think it always tried to respond to directions from the OEB as well. Those things sometimes take time. I think those changes were in place and with the broadening of ownership and the change in management and the new board, there was a renewed focus on customer service. Mayo can talk about what they are doing to change the culture of the company.

Mr. Peter Tabuns: I'll go on to another question, but I will note that in the prospectus, you were telling investors that there was a team that was driving a strategic plan where things were getting better, and for the past four years, they've been deteriorating. I think there's a substantial gap between what you were claiming in the prospectus and what the Auditor General found when she actually went to look at the corporation.

I'm going to go to another point. On page 43 of your prospectus, you talk about the assets analytics tool. The Auditor General notes, in fact, that there were substantial problems with that assets analytics tool: that it wasn't accurately considering all factors related to asset replacement decisions. Why were you lauding a system that, in fact, was substantially flawed?

Mr. Serge Imbrogno: Do you want me to answer that or—

Mr. Peter Tabuns: Yes, I do, because—

Mr. Serge Imbrogno: I'm not an expert in the assets analytics tool. I would suggest maybe picking up the phone book—

Mr. Peter Tabuns: No, just a second: It was your team that put together the prospectus. It was Mr. Chiarelli who signed that document that went out and said, "Things are great here, and we have this assets analytics system that is really good, really accurate." The Auditor General takes a look and finds that in fact, it isn't taking into account what's going on in the field.

Mr. Serge Imbrogno: The prospectus was signed by the province and Hydro One. I think a lot of the details on the technical part of it would have been Hydro One expertise, so I would suggest maybe Mike Penstone could address that specific question.

Mr. Peter Tabuns: Didn't the minister actually probe at the time that he signed this document, signed October 29, 2015, signed Bob Chiarelli, page C-3 of the prospectus?

Mr. Serge Imbrogno: There would have been full disclosure by Hydro One in that prospectus.

Mr. Peter Tabuns: And did they fully disclose their problems with their assets analytics system?

Mr. Serge Imbrogno: I suggest that we let Hydro One answer that question.

Mr. Peter Tabuns: But in the end, and with no disrespect to Hydro One, we can't issue directives to you guys anymore. You're spun off. You have an independent board of directors. The Ministry of Energy historically signed off on a document saying, "Things are improving and we have an analytics system that will give us the straight goods on what's going on inside." You didn't know what you were signing off on at the time? Your minister didn't know?

Mr. Serge Imbrogno: There was full disclosure in the prospectus. Hydro One also signed off on the prospectus. I don't think there is anything in that prospectus that is inconsistent, and if we can let Hydro One answer the detailed question—

Mr. Peter Tabuns: I think there's a pretty sharp difference between what the Auditor General found and what you've put in that prospectus, frankly.

Mr. Serge Imbrogno: No, I think the OEB had already raised a number of the issues that the auditor raised, so I think there was full disclosure. All the OEB hearings are public. All the OEB findings are public. I don't think there was anything that wasn't in the public domain that either wasn't revealed in the prospectus or wasn't revealed in the OEB deliberations.

Mr. Peter Tabuns: Well, I think I'll go to the Ontario Energy Board, then. Ms. Leclair, thank you for being here today.

I noticed that the applications for rate increases were tied to assets that were in bad shape but weren't replaced after rate increases were given; that in fact, your board allowed a rate increase to go forward. Transformers that were in bad shape weren't repaired and they were brought back again for a rate increase in the following period.

Does the OEB actually check to see if the documentation that's filed is factually accurate? Do you audit? Are you stringent?

Ms. Rosemarie Leclair: The OEB is not an auditor. Having said that, we do adjudicate the applications. There is a thorough process for doing that. The OEB has filing guidelines. The company is required to meet those filing guidelines and file its information. That information is tested through, again, an adjudicative process, meaning that OEB staff, our parties to the process, question the documentation, question the performance and all sorts of issues through an interrogatory process. We have consumer groups, interveners and others who test that information.

That's our process for reviewing it. As I say, we believe it's a thorough process.

Perhaps on the issue of approving the funds and then replacement, the OEB doesn't approve specific projects. What the OEB does is approve a certain revenue requirement that allows the company to undertake the work that it needs to undertake and sets the rates that allow it to do

that. So the information that we get in terms of the capital programs that they have is reviewed based on historical context as well on a go-forward context for reasonableness, so that we can ensure that the amount of dollars that are provided to the company to do the work are appropriate.

1300

The OEB recognizes that, when you're operating a company, things change, and so that's one of the reasons why, particularly on the operational programs, the information is indicative of the nature of the programs and the scope of the work that's going to be undertaken rather than the specific elements.

Mr. Peter Tabuns: The Auditor General wrote, "We found Hydro One was not replacing assets it determined were in very poor condition and at very high risk of failing, and it used these assets in successive rate applications to the Ontario Energy Board to justify and receive rate increases." That's page 248.

If, in fact, Hydro One was coming forward to you, telling you that they had transformers that were failing, that had to be replaced, and didn't replace them, and then came back again and said, "We have these transformers that are failing," why is it that you're not picking up that there is a game going on here?

Ms. Rosemarie Leclair: As I said, the process for the OEB is an adjudicative one. The applicant files its information. It has a pole replacement program. It has a transformer replacement program. It will indicate that it has X number of assets and a percentage of those have to be replaced on an ongoing basis in order to meet the life-cycle standards. We look at that. We look at whether there is a reasonableness of that, whether the costs are reasonable, and we approve funding to allow them to deliver that program. We are not looking at a specific asset.

Again, I think Mr. Schmidt would be more appropriately versed in terms of the operational realities, but for the operational realities that are recognized, sometimes, for greater efficiency, it makes more sense to do a particular asset replacement in advance of another because other work is being done. Sometimes you're on an emergency issue, and it makes sense. So there are operational considerations that go into that. The application that we get is a point in time based on a forward-looking about what's anticipated, based on the information that the company has and that's filed with the board.

Mr. Peter Tabuns: Do other regulators check more thoroughly than you as to the veracity of the information that's provided to those regulators?

Ms. Rosemarie Leclair: I can't speak to other regulators' practices. The practices of the OEB are outlined in our legislative framework. We have an adjudicative process. Other regulators have a different process that may allow them to do a different type of review. What I can say is that our processes are efficient, they're transparent, they're thorough, but they are very much dependent on the adjudicative process, which relies on the application that's filed before us.

Recognizing that it is in operation, what we are trying to do is set just and reasonable rates and allow the management of the company to be undertaken by the management of the company. We are not going to replace our judgment for theirs. What we're looking at is the pool of dollars required to do the work that the company says is required to do. That is tested by OEB staff and it's tested by an extensive intervenor community. I can say that in all of the most recent Hydro One applications, there has been significant participation by consumer representations, as well as other delegations—in the neighbourhood of eight to 10. So it's been thoroughly tested through the process that we have.

Mr. Peter Tabuns: Another question: The Hydro One sale came after your last rate-setting decision. If you'll remember—and Mr. Imbrogno can speak to this because I had a chance to question him in estimates—this government gave a very substantial chunk of money to Hydro One to pay off tax debts. You issued rate increases of 19% over three years, a little over 6% a year.

I know that when we were discussing this in estimates, there were real questions about whether or not the OEB would allow the investors to keep that windfall. Will the OEB be questioning that tax gift windfall in future rate hearings? Will the customers be protected or will the investors be protected when it comes to that money?

The Vice-Chair (Ms. Lisa MacLeod): Just before you answer, I want to remind all members that we have a very precise report in front of us and that we want to stick to the contents in that.

Mr. Peter Tabuns: Thank you, Chair.

The Vice-Chair (Ms. Lisa MacLeod): You're welcome.

Interjection.

Mr. Peter Tabuns: That isn't the ruling that I heard.

The Vice-Chair (Ms. Lisa MacLeod): No, it wasn't a ruling; it was just a reminder.

Mr. Peter Tabuns: No, I could range much further. I'm just going to Hydro One, its prices and what's allowed and what's not allowed.

Ms. Rosemarie Leclair: Since I actually don't do the individual review—I could give you an answer, but I want to make sure it's the right answer—I'm going to call on our VP of applications, Lynne Anderson, to join us and talk about the detailed process.

Mr. Peter Tabuns: That would be fine.

Ms. Lynne Anderson: Thanks.

When we look at a rate application, we look at all the costs that go into the revenues that are required.

The Vice-Chair (Ms. Lisa MacLeod): Excuse me. Could you—

Ms. Lynne Anderson: Oh, I'm sorry. Lynne Anderson with the Ontario Energy Board.

We do look at all aspects of costs. One of those aspects is the taxes that are paid, so when we're setting rates, we will definitely be looking at what the appropriate tax allowance will be going forward. This would be a factor that would be in that assessment.

Mr. Peter Tabuns: Okay. The fact that this rate was given after you set the last round of rates: Would that mean that it would be possible, when the next rate-setting period comes forward, that consideration can be given to that gift that was given to the corporation?

Ms. Lynne Anderson: When we look at an application, we're looking at it going forward, so we will be looking at what the appropriate tax allowance would be going forward from the time that they file the application.

Mr. Peter Tabuns: So if they've essentially consumed all the asset, the gift that was given by the province of Ontario, by the next time they apply, then you wouldn't be looking back at that. Is that correct?

Ms. Lynne Anderson: Well, obviously, taxes are quite a complicated matter. What we do look at in setting the rates is, again, the appropriate tax allowance that should be going into the rates going forward. We don't look back at rates from the past. The only thing that we do track is if there is a material change in a tax rate during that period. Then we would look at truing up for that.

The Vice-Chair (Ms. Lisa MacLeod): Just to remind members, this isn't about the Hydro One sale; this is a very focused chapter. Just as a reminder.

Mr. Peter Tabuns: Thank you.

Mrs. Laura Albanese: There is a detailed review of taxes, certainly, in each rate application.

Mr. Peter Tabuns: So, in fact, if the tax benefit applied to these past three years, the three years that the rates have already been set for isn't something you'll be considering in the next round.

Ms. Lynne Anderson: I guess it's very difficult to say because we haven't seen any of this information come before us. Once the information comes before us on the setting of rates in the future period, we'll look at all those details and determine the just and reasonable rates to set for taxes in rates going forward.

Mr. Peter Tabuns: Okay. While you're here, and this is relating back to the audit, there has been a significant cost identified arising from excessive inventory storage of transformers, somewhere in the range of \$50 million to \$70 million arising from poor inventory management. Will the OEB be disallowing that expense? Frankly, why should customers be paying for this? Why shouldn't the investors be taking a hit on it?

Ms. Rosemarie Leclair: Ms. Anderson can respond.

Ms. Lynne Anderson: Inventory, unless it's considered particularly a spare part—there are meters and transformers that can go into the rate base on which rates are set, but most inventory actually does not go into the rates. It's not a cost that is factored into the rates that we set unless it is considered a spare meter or a spare transformer. Then it would go into the rate base on which we set rates. So certainly inventory is looked at from the perspective of what goes into setting rates, yes.

Mr. Peter Tabuns: The Auditor General has found that we have excessive inventory here and so people are paying more than they would otherwise pay because there is too much inventory. Will that be taken into

account and will customers be protected, as opposed to investors?

Ms. Lynne Anderson: Again, we certainly look at the amount that would be going into the setting of rates. If there are other such portions of inventory that are not factored into setting rates, then it would not be in our consideration. It's really setting just and reasonable rates, what's going into the calculation of those rates. So, yes, that would definitely be scrutinized.

Mr. Peter Tabuns: One of the concerns raised by the Auditor General, on page 251, was weak management oversight on capital project costs, the fact that it was, I think, up to 28% that was allowed in terms of a margin for overruns. That seems an awfully big chunk of overrun. Is this something that the Ontario Energy Board will be looking at to protect the interests of customers on a go-forward basis?

1310

Ms. Lynne Anderson: Certainly, because it would be part of the cost of the various projects that are put before us, and contingencies would be part of those costs. We do a comprehensive, robust analysis of costs that go into what we call the rate base on which they earn their return.

Mr. Peter Tabuns: Okay. Thank you.

The Vice-Chair (Ms. Lisa MacLeod): Thank you very much. We'll now move to the Liberals and to Mr. Delaney.

Mr. Bob Delaney: Good afternoon, everyone. While I'm familiar from reading the background of Mr. Schmidt, I'd just like to say as an intro to this that I used to get back and forth to Saskatchewan fairly often earlier in my career, and I always enjoyed the business climate that I dealt with out in Saskatchewan. While I've read some of the work that you've done with Viterra, which I believe succeeded the Saskatchewan Wheat Pool, would you begin by talking about how some of the challenges that you faced with the Saskatchewan Wheat Pool—which struck me as ones that were not merely germane, but very parallel to the ones that Hydro One faces—have prepared you for the challenge that you face here at Hydro One, and what type of thinking that's led to in the type of management team that you've surrounded yourself with?

The Vice-Chair (Ms. Lisa MacLeod): Just a reminder, Mr. Delaney, that we do have a very precise document in front of us which pertains to the audit of Hydro One, so I'd like you to stick to the topic.

Mr. Bob Delaney: I understand. This is a part of leading into that. I think some—

The Vice-Chair (Ms. Lisa MacLeod): If we could stick to the audit. Thank you.

Mr. Bob Delaney: Thank you, but I think my question does relate to that, and I think it indicates where I'm going with some of the questions to Hydro One.

The Vice-Chair (Ms. Lisa MacLeod): Please stick to the audit.

Mr. Bob Delaney: Okay. Again, to Mr. Schmidt, in some of your opening remarks, you talked about the

strengthened governance through the board of directors, through some of the pressures that the market faces, and you mentioned the new Hydro One ombudsman. Would you perhaps elaborate on that?

Mr. Mayo Schmidt: Sure, I'd be happy to. Following the IPO process of the organization, the independent board of directors undertook to identify ombudsmen to come to the organization and provide, in the spirit of customer service, the same delivery of services that had been aspired to by the organization. So Fiona Crean has joined the organization. She reports directly to the board of directors; she does not report to myself or to the management team.

After a customer has an experience where they feel that they need to get more time with the organization, Laura Cooke and her group in customer solutions would undertake to solve any outstanding issues for the organization. If it did come to a point where the customer felt that they weren't fairly treated or we weren't able to resolve their issue—and, in some degree, whether it was fair or unfair to the customer—Fiona would get involved and reconcile that as an independent third party. She will report back to the board of directors of Hydro One, the governance committee, on the final solution with those customers. So that shop is up and running.

On day one, they did get a bit of pent-up demand, I think, in terms of applications to have some reviews of certain customer outcomes that needed to be solved. She's well under way running her office. Her staff were approved by the board of directors. I do know, in terms of my observation, that all the staff that were requested were approved; the entire budget that was requested was approved. She will report quarterly to the board of directors on customer engagement.

Mr. Bob Delaney: What type of transformation has occurred at Hydro One during the years 2015 and 2016?

Mr. Mayo Schmidt: There has actually been, from my observation, a considerable amount of work that had begun with the benefit of the Auditor General's report. People had taken it very seriously and had undertaken to do the work necessary to overcome some of the historic challenges. We've seen a 13% improvement in terms of some of the customer service modules, as well as now a high percentage—over 80% of calls to the customer centre are answered within 20 seconds, which I think is remarkable when you consider that most organizations simply have a recording where you then have to subsequently go through button after button, whereas we answer the phones directly. There's a really key focus on certainly the customer, our cost—the things that were talked about earlier in terms of inventories are being re-reviewed.

All of the aspects of that report are being taken seriously. Our internal audit group has taken the report and is applying their skill set. We've got more than a dozen people who are involved as an internal audit group that report directly to the board of directors as well that are reviewing and will be reporting to the board on the report to make sure that every angle and every aspect of

the report will be reviewed and reported on internally as well. So there has been a lot of work undertaken there.

The systems analytics, which I think Mike certainly could speak to, are seeing significant improvements. There were a number of things in the analytics that I think detracted from our ability to be more precise. Some of those analytics were adjusted for things that simply weren't relevant to the outcomes, so we get a more precise nature. It is difficult, whether it's the age of the equipment, the manufacturer's use-by date or a failure of that equipment—there's a lot of analysis that goes into: When will a transformer fail? Mike and his team have been undertaking that.

We're looking at the cost in the organization being more precise, the reporting, and we're doing these things and undertaking a comprehensive reorganization of the entire business from the ground up to see that we're lean and the company is agile to be able to respond. We have a very, very strong focus on safety and a centric-customer organization.

Mr. Bob Delaney: I'm very interested in that. Could you perhaps give us an overview of the analytics and what conclusions you were able to draw from some of the data that you measured and how you organized it?

Mr. Mayo Schmidt: Sure—be happy to. I'll ask Mike Penstone, who heads up that project for us, please.

Mr. Mike Penstone: Thank you for the question, and thank you to the auditor and the committee for their interest about Hydro One's planning and asset management. Normally these are topics that are limited to engineers and utility professionals, so I'm happy to be here to answer your questions.

A little bit of context about asset analytics: Hydro One has been making decisions about when, where and how to replace assets since it was first formed as an offspring of the old Ontario Hydro. Asset analytics was an example of a tool which we developed to try to improve our ability to determine when assets need to be replaced. Engineers were making those decisions long before this tool happened to be instituted. The tool itself was basically finalized towards the end of 2013-14. It was designed to take large volumes of information, use that information through an algorithm, and produce a result for an engineer to subsequently assess.

I want to make it clear to the committee that the tool did not just spit out an answer that we automatically used and determined that investments had to be made. Engineering judgment and engineering confirmation had to be applied before we made any decisions, and this is what we did.

The purpose of developing the tool in the first place was recognizing, as the auditor recognized in her report, that our assets are aging and that we needed to do a better job of identifying the timing and scope of the replacements of those assets. We wanted to do it in such a fashion that, frankly, we got the maximum lifespan out of our assets before we replaced them. We needed to find an optimal point for this replacement. By doing that, it actually enables us to contain our costs and plan our

work in a more effective manner. I think that there was a lot of interest in asset analytics.

1320

The other point I want to make is that the data that this tool was to use was extensive—millions of pieces of information. I will agree that we started to use the tool before all the data was populated. The reason for doing that was that the information that was contained in the tool was still useful, and the algorithms that the tool was using were also useful. So we had something that may not have been perfected, but it was still better than the processes and methods that we were using in the past.

We recognized and agree with the auditor that there were gaps in the information systems or in the data. We've undertaken an enormous effort to fill those gaps since the report was issued. We've gone from 37% of all of the data fields being populated to over 80%. But I want to underscore that the actual, specific decisions to spend millions of dollars had to be validated and that the output of this tool had to be confirmed.

Mr. Bob Delaney: Okay. Actually, that's very interesting. Could you describe, perhaps, some of the parameters, the scope and the breadth of the data underlying the tool, and what you think are the current strengths and limitations in what it measures and the validity of the conclusions you can draw from it?

Mr. Mike Penstone: That's a long question.

Again, in the auditor's report, it talks about the myriad of equipment that comprises our transmission and distribution systems. It's everything from the poles to the transformers at the top of those poles to the wires to the insulators, production and control—the list goes on and on and on.

What this program does is basically identify all of these various asset groups and then, for each of the asset groups it provides information about the condition of the asset, the age of the asset, how the asset has been used and the cost of maintaining the asset. All of those factors are then considered to determine if it is now time to replace it.

I want to underscore that when we talk about transformers, the transformer at the top of a pole is worth about \$5,000. We have transformers in our networks that are about the size of this room literally, and they're worth \$12 million. The amount of attention and the process that we use to determine when something needs to be replaced—we take a more refined view for, frankly, very expensive equipment that will have a profound impact on reliability.

The purpose of this tool is to collect all of this information, consider all those factors that I just described and then, based on those factors, provide a recommendation—and I want to underscore that it's only a recommendation—to a planner. The planner then looks at this and applies a sanity check: "Does this make sense?"

The other point I want to make is that one of the considerations in this tool is, frankly, the age of an asset. Just because something is old doesn't mean that it has to be replaced.

Laughter.

Mr. Bob Delaney: That actually makes us all feel a great deal more secure.

Mr. Mike Penstone: I'm pleased to hear that. In fact, I take some comfort in that myself occasionally.

The auditor's report talks a lot about the expected service life of assets. The expected service life of an asset is simply the average time that we believe an asset can operate under normal conditions. I wanted to emphasize the terms "average" and "normal" because I can tell you that the circumstances are that there are very few times when you have an average actually reflecting reality when we replace something, and there are very few occasions when all of our assets are operated under normal conditions. I will admit that we do have assets that are "beyond their expected service life." But I can tell you that in the human population there are a lot of people—men and women—who are still living beyond what actuaries would believe to be their normal expected lifespan.

The same is true with assets. Although age is a factor, we normally use that when we consider the fleet of our assets. When you take a look at an entire fleet, that is indicative of the extent to which you should be replacing it. But the actual decisions about individual replacements are based on many other considerations. Again, those considerations—this tool helps the planner collect this information and make an informed decision about whether it's time to replace a piece of equipment.

I also want to make the point that earlier there may have been discrepancies between Hydro One identifying something that was in poor condition and we actually didn't replace it. We are prepared and fully expect to be asked about this particular practice at our upcoming transmission rate application. The fact is—and I think Ms. Leclair referred to it—we initially come up with a plan. The plan that we will be submitting to the OEB: By the time we actually start implementing it, over a year will have elapsed. Within that year, circumstances and new information can materialize, and we act on that new information.

So, for example, why did we not replace a transformer? Well, we had a customer come that we didn't anticipate and ask to be connected, and we had to replace a transformer that was in good condition because that existing good transformer couldn't accommodate the demands of the new customer. So there's an example where circumstances changed. I had a fully loaded, very good transformer; a customer comes and wants to be connected; the transformer has inadequate capacity and I replace it. This is an example where, rightfully, the auditor's report pointed out that we replaced assets that were in good condition; but there were good reasons for doing that.

The point is, we make a plan, and the actual decisions change as circumstances change.

Mr. Bob Delaney: So in other words, you're describing an issue that isn't one of repairing a faulty or about-to-fail piece of equipment, as much as it is upgrading to add additional capacity.

Mr. Mike Penstone: There was a point that was made that we replaced a transformer that was in good condition. We did that. The reason that we did that was because we actually had to replace it with an upsized—or upgraded—transformer. So there are reasons behind those decisions, and we fully expect to, and will, explain those decisions either to the OEB or to interveners in our upcoming rate application.

Mr. Bob Delaney: In describing your asset analytics tool, is it fair to say that it tells you what 5% or 10% or 15% of your assets need to be managed very carefully?

Mr. Mike Penstone: There is an element in that tool that's referred to as criticality. Criticality refers to what the impacts would be if this particular piece of equipment failed. I may have two identical pieces of equipment in two different parts of the network. If one of them fails, it only affects a handful of customers. If the other identical piece of equipment fails, it blacks out downtown Toronto. In that particular case, the criticality of the piece of equipment that serves downtown Toronto is higher than the piece of equipment that serves Upper Rubber Boot. So that is a consideration in our investment decisions as well.

Mr. Bob Delaney: What other types of information have you been able to draw from the body of data that you've accumulated that would tell you a similar type of story?

Mr. Mike Penstone: We use this particular tool to also help us identify trends.

The Vice-Chair (Ms. Lisa MacLeod): You have one minute.

Mr. Bob Delaney: Summarize the trend in a minute.

Mr. Mike Penstone: Summarize the trend in a minute. Again, asset managers—and this applies across all utility sectors—are trying to identify early when something is going to fail.

1330

This is an emerging science, I'm going to call it. It's an area that all utilities are trying to master. Part of this tool is to identify trends where equipment is failing sooner than its expected service life or, frankly, can be extended beyond its expected service life.

Mr. Bob Delaney: Thank you very much, Chair.

The Vice-Chair (Ms. Lisa MacLeod): Mr. Yakabuski.

Mr. John Yakabuski: Thank you very much for joining us today, all of you. I realize you have busy schedules, and we appreciate you coming.

I want to start out by saying that I'm more than amenable to giving a five-minute stress relief period, because I know those questions from Mr. Delaney were very, very difficult and had to be extremely stressful. If you want five minutes to recover from that, I'm okay. You're going to be all right? Okay, that's great too. I'm thankful, because I know they were really, really difficult and tough.

Anyway, the auditor's report really was, quite frankly, as a legislator, one that was shocking and very, very disappointing, that this utility, which is our utility, according

to that report—and as Mr. Imbrogno said, it was fully accepted by the minister. He accepted all of the issues and recommendations in the auditor's report.

Some of this may repeat some of the things that Mr. Tabuns asked, but we need to ask some of them ourselves as well.

I must say, Mr. Schmidt, that your address was wonderful, but based on that address, I say to Mr. Imbrogno—not that we are in favour of you selling the utility, because we're not—but my God, you're not asking for enough. I saw a story of a utility that is being run perfectly and was even going to be better than perfect in the future, yet it's the subject of a report that paints a very, very different picture.

The auditor says in her report, on page 250: “Hydro One's distribution system has consistently been one of the least reliable among large Canadian electricity distributors between 2010 and 2014. The average number of outages” was much higher, and the length of them was longer. It “was ranked worst and second worst of all distributors in Ontario for duration and frequency of outages in 2013. Over the same period, spending increased by 18% to operate and maintain the distribution system or replace assets that were old or in poor condition.”

That is not something that anybody would look at and say, “That was a good report card.” That one section alone is a bad report card.

You talked about—what did you call it?—asset analytics, about replacements, Mr. Penstone. You cited a situation where an asset got replaced because the need changed. Are you going to tell me that that is the only reason assets that were not in need of replacement got replaced, that that's the only reason that happened—because there was a need change or a capacity issue? Or did some actually get replaced that simply should not have been replaced at that point?

Mr. Mike Penstone: The other contributing factors towards the output of asset analytics being not entirely as reliable as we would have liked them to be—as it was early days—is the fact—and the auditor alluded to it—that some of the data was flawed. What we'd take a look at is a situation where the analytics may have indicated that the transformer was in good condition and in fact it was not, or it was in poor condition and in fact it was not—

Mr. John Yakabuski: I'm not necessarily looking at transformers. I'm looking at any piece of equipment. You've got a lot of assets besides transformers.

I'm going to give you an example. I drive up Highway 28 every week—back and forth, back and forth. Some of those poles—we got a slide from the Auditor General this morning that said that average life expectancy of those poles, for a wooden pole, is 62 years. That's a pretty good life. Some of those poles that were replaced since I've been elected—I have not been elected for 62 years; people aren't that crazy.

Mr. Lou Rinaldi: Thank God.

Mr. John Yakabuski: Yes, I agree with you there.

Some of those poles were replaced during my term with the green, pressure-treated poles. Some of those

same poles are currently being replaced with fibreglass poles. Those poles aren't beyond their use, so who makes that determination?

Mr. Mike Penstone: You've given me a very specific circumstance; I'm afraid I can't give you a specific answer to—

Mr. John Yakabuski: Well, you can tell me who makes the decision to replace those assets.

Mr. Mike Penstone: The question becomes—I believe that you're asking why the asset is being replaced. There can be other circumstances in terms of why we're replacing a good wood pole with a fibreglass pole. I'll give you one example, and I'm not suggesting that this may be the answer: We may be adding additional conductors to the pole and, in order to do that, in order to maintain clearances, you need a taller pole than the one that was already there.

Mr. John Yakabuski: I'll go measure them.

Mr. Mike Penstone: Okay. Just don't use a metal tape.

Interjection.

Mr. John Yakabuski: Or maybe use a metal tape. I'll get the advice from my friends on the other side.

Mr. Mike Penstone: The decision—back to your question—is a combination between information that engineers have at head office and information that is available to our crews in the local operating centres. If it involves a substantial number of replacements, that is supported by engineers at head office. There isn't an engineer here who is going to make a decision that one out of a million poles is going to get replaced—no. Some of that authority is delegated to the crews in the field, and we allow them to use their judgment and discretion.

Mr. John Yakabuski: Okay. Let's talk about capital deficits now. We're talking about a utility that we hear—I'm never political, but I'm going to be political for a moment.

Interjection.

Mr. John Yakabuski: Serge knows I'm never political.

We hear from the minister all the time about all the work that's been done to improve the transmission and the distribution system since, of course, those folks took office. Then we read in the auditor's report that we have an almost \$4.5-billion capital deficit when it comes to the work that you should have done and have yet to complete. There can be varying degrees, I understand, but maybe you can help me on why we've got a utility that we have on the block for sale that has a capital deficit of approximately \$4.5 billion of work that still needs to be done to bring that up to snuff.

Mr. Mike Penstone: I believe that assessment was based on the concept of our assets that existed beyond their expected service life. If you took a look at all of those assets—that we're now beyond 62 years of age for a wood pole—and you said, “Those should all be replaced,” that amounts to a lot of money.

As I mentioned earlier, 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.

Mr. John Yakabuski: There's an actual review of the asset—a physical, visual assessment of the asset by someone in the field who says, “You know what? We can get more out of that.” Is that a fair—

Mr. Mike Penstone: Just to that point, the OEB actually obligates Hydro One to inspect its wood poles on an ongoing basis to do exactly what you're suggesting.

Mr. John Yakabuski: My brother was a pole inspector for a summer, so I know all about that.

Mr. Mike Penstone: Okay.

Mr. John Yakabuski: Way back.

Mr. Mike Penstone: How many did he identify?

Mr. John Yakabuski: I don't know how many of those poles are still in the ground.

Mr. Mike Penstone: Okay, well, that's what I want to find out. How do you spell your last name? No.

1340

Mr. John Yakabuski: Delaney, D-E—

Mr. Mike Penstone: Okay. The point that I'm trying to make is we take a lot of information, including information that is received from field forces, about the state and condition of our assets. That information combined with the other factors I mentioned earlier—I may have a piece of equipment that is younger than its expected service life, but it's costing me a small fortune to maintain. I'm going to look at that and that will be a consideration, saying: “I'm going to replace this asset because with the new one, I'm going to save some money.” So there's an example where I'm replacing something before its expected service life.

Mr. John Yakabuski: I can tell you about an asset just like that. Daniel knows all about it. It could be replaced but the rules don't allow for it. We won't even get into it, but Daniel knows exactly what I'm talking about—and they're nodding their heads.

Let's talk about power quality issues now. This is something that I found where you've got the 138 power quality meters installed in your system, but you aren't—or at that time weren't—you weren't monitoring and analyzing the data from these meters to improve system reliability unless a customer calls first to complain.

We've got all this technology today—you install reliability meters that can tell you how well the systems work. Power quality is a big issue for somebody that runs the risk—I don't have to tell you; you know the system—how, if the power quality is bad, they can burn out motors and all of this kind of stuff. People lose their refrigerators; they lose their meat; they lose everything. So you've got these meters, but you basically put them in and forgot about them. It's my interpretation and I'm allowed to make my interpretation; you can correct me if you choose. We put in this equipment and then ignore it.

How does that make the system operate better? You can put out a press release or maybe the minister can say again about how, “We're making the system better. In fact, we put in 138 power quality meters.” But if you're

not using them, then you haven't done a thing. Can you tell me what has been done to actually proactively use that technology, or is it still sitting there, waiting for a customer to complain?

Mr. Mike Penstone: Both you and the auditor accurately have identified that power quality is a significant issue, particularly with large industrial customers. For the committee's information, power quality is a situation where your lights have not actually gone off; instead, they've dimmed a little bit, and the dimming is caused by the fact that the voltage has sagged, or has dropped.

The difficulty is that we see voltage sags, but we don't know whether it has actually impacted a customer or not. The best example that perhaps people in this room have experienced with power quality is if you'll suddenly see the lights dim and your clocks start blinking. Your lights actually haven't gone off, but there was a brief little spike or sag and it has caused your clock-radio to start blinking. In your particular case, it's just a matter of going back and resetting the clock-radio. There are large industrial customers in this province whose equipment cannot withstand that very, very small deviation.

Our challenge is that, as a transmitter and distributor, we are not aware when those deviations have had an adverse impact on a customer until the customer actually calls us. In some cases, you can have a situation and the customer's equipment rides through and there's no impact whatsoever. In other cases, it causes some significant damage or losses for the customer.

The purpose of the power quality meters is to collect information so that once a customer calls us and says, “I've had an issue,” we're then able to go and use that information to analyze what was the cause of the problem, and then work with the customer to sort out or identify solutions or actions that can be taken so that if a similar situation occurred again, it wouldn't have the same adverse effects.

Mr. John Yakabuski: Thank you very much. I'm going to pass it over to my colleague Mrs. Munro. She has a couple of questions as well.

Mrs. Julia Munro: Thank you for coming here today. In the time I have, I wanted to spend a moment or two on the issues that the auditor raised around page 278 of her report. On page 277, project costs that can be as much as 19% to 28% are referenced in the text. I looked at the capital-construction-projects-with-cost-overruns diagram on page 278. What struck me, beyond the initial fact that there was a built-in allowance of such a high percentage on a particular project—because, as suggested in the text of the material we have, that becomes the new normal; if you're going to allow that kind of percentage, then it's just going to be automatically attached to the cost of the project.

My question comes from having sat on this committee. Different ministries and government agencies have come over the years. One of the things that jumped out at me when I looked at this whole issue around construction projects with cost overruns is what happens with relations between Infrastructure Ontario and its partners

in the private sector, since Hydro One is now in the private sector. They come on time and on budget. Why can't we say the same thing for what's done here?

The Vice-Chair (Ms. Lisa MacLeod): Just to remind you: Introduce yourself for Hansard.

Mr. Brad Bowness: Good afternoon. My name is Brad Bowness. I'm the vice-president of our construction services group. I have overall accountability for delivery of our capital work program.

You asked a few questions. I'll speak to the first part about cost and cost estimating, and what past practices were and what current practices are.

Some of the projects that are outlined in the Auditor General's report—the three that were the examples in Figure 8—were projects that were approved back in 2010 and 2011. Those are projects that were estimated back in 2009 and 2010 to support those approvals. At the time, we had an estimating methodology and framework that had a certain percentage of engineering completed, which allowed for a certain quality of the estimate. A good example is: You've completed 10% to 15% of the engineering, so you're potentially going to have some broader swings in your implementation costs because you don't have certainty in the overall design. Since that time, we've changed our estimating practice and process where we've tightened up to get to the point where we've completed about 30% of the engineering during the up-front phase, and we've worked toward narrowing that contingency percentage down to the 10% mark on our major projects so that we don't have as much variability during the delivery phase.

Mrs. Julia Munro: Is it helpful to look at other jurisdictions? Do others do a better job of estimating on these projects?

Mr. Brad Bowness: We constantly interact with other utilities through CEA, our Canadian Electrical Association, and also through relationships with other parties, both from Mike Penstone's world and my world, to look at best practices around how to estimate. The Auditor General also highlighted, during the period they were in last year, that the best practice is to be between—I can't see it right here, but between 8% and 12%. So I think we're very much in line with an industry perspective of targeting to be at 10% contingency on our major capital projects. Also, since the Auditor General's report—

The Vice-Chair (Ms. Lisa MacLeod): You have one minute.

Mr. Brad Bowness: —we have engaged with an external third party, an industry-leading firm by the name of Burns and McDonnell. They're in working with us right now to help us improve our estimating practices and processes beyond where we are today, because the estimating phase of a capital project is critical for its success, both from a cost schedule and an estimate perspective.

1350

Mrs. Julia Munro: I'm pleased to know that you are looking at that, because when you look even at 8% to 10%, that's a lot of money.

Mr. Brad Bowness: Yes. The other thing I might highlight is that if you look at the overall aggregate portfolio of our projects, we do target to bring in the portfolio at or below budget. I'm pleased to report that on the major capital projects that we completed last year, we averaged, coming in, 4% under budget across the overall portfolio. There are some that are up; there are some that are down. But on average, we have made improvements in our delivery model, and we are looking to continue that trend of bringing in projects at or below the approved budget.

Mrs. Julia Munro: Thank you.

The Acting Chair (Ms. Lisa MacLeod): With that, I want to say thank you.

We're going now to the NDP. Our rounds will now be 18 minutes. We will go to you, Mr. Tabuns.

Mr. Peter Tabuns: Pleased to be generous, Chair. Eighteen minutes: What can I do with that?

Mr. Schmidt, thank you very much for being here today. I appreciate it. My understanding is that, in the end, we don't have, as a committee, any impact on you. You don't report to us; you don't report to the Minister of Energy. You have to comply with the OEB, the IESO and the securities commission. Is that correct?

Mr. Mayo Schmidt: That's my understanding. You're correct.

Mr. Peter Tabuns: So it's a courtesy that you're here. I appreciate the fact that you're willing to answer questions.

Mr. Mayo Schmidt: Thank you.

Mr. Peter Tabuns: In the end, we can't direct you. We can't direct you through the minister.

One question I wanted to raise: You already have a reliability problem at Hydro One. The Auditor General didn't touch on this in her report, so just a note to the Chair. I wanted to know if Hydro One has done an assessment of its vulnerability to climate change, and how that affects your planning for the system going forward.

Mr. Mayo Schmidt: Sure. I'll first address the reliability and then perhaps our planner might like to take some part of that. We're in the process right now of meeting with all of our, not only major customers, but customers all the way from local distribution all the way to the major plants in an effort to understand their needs on reliability.

Certainly, the changes that have occurred in the history, which, of course, has taken out all the coal operations and led to hydro, wind, solar, etc., are areas where we're working to support any new generators. There are 116 generators that we support today that are managed through the IESO as well.

In fact, only yesterday I met with several of the steel mills, who have talked about the reliability of power, which is what Mike had addressed, which was that the steel plant, even with Mike's comments about a fluctuation or a fluttering causing the entire plant to go down, we really have to be—which was addressed in the auditor's report—on top of that reliability because they

lose 24 hours to bring the plant back up because they have to reheat the system, etc.

With that, there are meetings that have taken place over the last two weeks, and will for the next two weeks, and that will help form our report to the OEB regarding our reliability and what we need within the system to avoid taking those major plants down.

Mike, I don't know if you'd like to comment any further.

Mr. Mike Penstone: Does that answer your question about reliability?

Mr. Peter Tabuns: Well, in terms of reliability—

Mr. Mike Penstone: Or the climate change—

Mr. Peter Tabuns: Yes, identification of vulnerability and plans to address that vulnerability so that you're adapted to the new realities.

Mr. Mike Penstone: Right. The impact of climate change is a subject or a topic that has been examined by all utilities. I'm certainly aware that it has been discussed within North America, and I expect it has been discussed elsewhere on the planet as well.

The Acting Chair (Mrs. Julia Munro): I'm sorry; I must remind you, Mr. Tabuns, that we are restricted by the confines of today's report.

Mr. Peter Tabuns: I understand that, but we're talking about reliability and I'm concerned to know if they have this as a factor in their—

The Acting Chair (Mrs. Julia Munro): I understand that. I ask you, though, to continue within the framework of today's report.

Go ahead.

Mr. Mike Penstone: One of the first things as an industry as a whole, where you'd expect the industry reacting to climate change in terms of its equipment standards. Our equipment has been constructed and designed in the past to withstand certain levels of wind and ice accretion, in particular on the transmission system.

As it becomes more apparent, you would expect that the standards that we have to build our facilities to will change and will require increased investments and more demanding requirements. That's the first step in terms of enabling the transmission system, or the distribution system, for that matter, to be able to withstand climate change.

I'll give you another example, and it's perhaps not as fancy. I think people may remember an incident that occurred I'm going to say two years ago, affecting Toronto following a substantial rainstorm, where there was a significant outage certainly in the western part of the GTA—

Mr. Peter Tabuns: You're talking about 2013, yes.

Mr. Mike Penstone: Thank you for correcting that. Exactly; in 2013. This was an unprecedented rainstorm. It set records for precipitation in Toronto. We'd never, ever, seen anything like it, and it caused substantial flooding in Hydro One's facilities and at our stations. That flooding contributed to damaged equipment that

was located in the basements. That damaged equipment led to the outage.

It's this simple: We're now taking steps to take equipment out of the basements of our stations. We took steps and identified how the water got into the basements of our stations and we've now sealed up those entrances. Again, it's not something that's very visible or, frankly, even costs a lot of money, but it's an example where we're now adjusting our practices and adjusting our designs and recognizing that we need to be prepared for, frankly, rainfall or precipitation that's much higher than what we've normally experienced.

There was an example where we have started to adapt. As I mentioned, it doesn't cost a lot of money, it's not particularly sexy, but there's a lot of small things like that that we're doing.

Mr. Peter Tabuns: Okay. Thank you. Going back to page 249 of the report—I like to see a happy Chair—on cyber security, I guess the first question is: Is the bulk electricity system physically isolated from all other cyber systems operated by Hydro One?

The Acting Chair (Mrs. Julia Munro): Please remember to identify yourself for Hansard. Thank you.

Mr. Colin Penny: Colin Penny. I'm the senior vice-president, technology, and chief information officer for Hydro One. My accountabilities also include our security.

Mr. Peter Tabuns: Okay.

Mr. Colin Penny: So the question was the physical separation of our—

Mr. Peter Tabuns: I think the term was “air gap”—

Mr. Colin Penny: Air gap, right. “Air gap” is a term that people use because they think that there's security in physical separation of networks. Certainly our security designs include having separate networks. People have heard about the incident in Ukraine; that was actually caused by the fact that their business networks, or the network that their email runs on, were actually connected to their power system network.

Mr. Peter Tabuns: Yes. Right.

Mr. Colin Penny: Our networks are not connected. There are transactions that need to occur between our operations systems and our business systems—asset analytics has come up a lot today. A lot of the information that asset analytics uses is operating information that comes from our power system network. But those aren't transacted through an automated mechanism; they're transacted by manual mechanisms that are very secure.

I don't like using the term “air gap” because people have a certain visual of it. But the networks are certainly separated and there are security perimeters around each of our network domains.

Mr. Peter Tabuns: Are you planning to bring your whole system up to NERC standards for cyber security outside the bulk electricity system?

Mr. Colin Penny: I'll answer that quickly and then I'll expand. We are compliant with NERC standards in terms of critical infrastructure protection. In the Auditor General report, it pointed out that for those that weren't

governed by the NERC standard, we have lesser security controls associated with those assets. That's actually by design. We use a risk-based methodology, as all utilities do, frankly, and all industries do around their cyber security approaches.

Those assets, which are the most critical in our system, are protected with the highest protections. Those that are lower risk or lower criticality are afforded less protection. A lot of that is the balance of cost, not just of implementing the protections themselves, or the controls themselves, but also the flexibility of our business and our operations to perform the work that we need to do on a day-to-day basis. If we put locks on every single door, it's a lot more difficult for Brad's folks to go to a station to work on a station. We have to take the cost and the balance of security into consideration, as well as our business operations.

1400

Mr. Peter Tabuns: The Auditor General notes that you don't "conduct regular security risk assessments, as required for NERC-covered devices, to determine how vulnerable its other transmission system devices are to security breaches" and that you don't know "how many devices have not had a security assessment." Is that still the case since that audit was completed?

Mr. Colin Penny: The finding, again, is consistent for those assets that are the most critical in our power system. They are assessed annually. That's actually a requirement of NERC that we have to prove to NERC and, frankly, the IESO. We have to declare to them that we're compliant with those standards. So we are compliant with that component of the standards.

A lot of the equipment at our stations, whether it's at a large critical station or a smaller station, is consistent. If I can test a device at a big station and determine its vulnerability profile, that actually does apply to all of those similar devices that are throughout our power system. We are quite consistent in a lot of those devices that we call IP-connected devices or computer devices that are on our power system. The proliferation of those is actually a very recent occurrence, so most of those things are new and are fairly consistent across our power system.

We have taken the approach that if we have assessed a device at a critical station, that assessment applies to those similar devices that have been installed in the same way by the same skill sets at those other station. We're comfortable that the risk is low that that device would have significantly different security profile than the similar device at a critical station.

Mr. Peter Tabuns: Hydro One's response to the Auditor General notes that you're developing and have already implemented certain aspects of a new comprehensive security program that will apply to all electronic devices. What are the timelines for that? What's the standard, if you can describe it briefly? Lastly, what kind of cost are we talking about?

Mr. Colin Penny: From a status standpoint, we've recently approved a new security policy and new security

standards that are aligned with a standard called the NIST standard—that's the National Institute of Standards and Technology standard. It's a North-American-developed standard. Their critical infrastructure cyber security framework is recognized across our industry and across many industries, including Public Safety Canada, as the foremost framework to use.

We have already signed those policies and approved those standards to apply that framework across our asset base—not just our power system assets, but our business IT assets, as well as people and our data. It is a comprehensive framework that is very consistent with the finding from the Auditor General's report. That is in place.

We have a current large project that we need to bring up to the new NERC cyber security standards by July of this year. That investment, those work practices and that implementation are also advised by the NIST standards. Those implementations for all of our new protections associated with the bulk electric system will be aligned with that new framework.

In the two years following that, there are just under 100 facilities on which there is going to be significant work. Mr. Penstone's folks are feverishly planning right now to get another 100 facilities up to that standard. I don't know if we have an estimate for it yet.

I would say that to bring all of our stations up to that standard, though, would be cost-prohibitive. Looking at, again, the risk profiles of each of our facilities and applying those standards to those facilities from a risk-based perspective is going to be consistent.

Mr. Peter Tabuns: So when you say "cost-prohibitive," have you done an analysis of what the cost would be?

Mr. Colin Penny: I'd be comfortable in saying that it would be in the hundreds of millions of dollars to bring all facilities up to the same critical infrastructure protection standard that we put the bulk electric system in.

Mr. Peter Tabuns: Your assessment right now is that you don't need that?

Mr. Colin Penny: That's correct.

Mr. Peter Tabuns: I guess we'll see.

Next question, on vegetation management—I'm not sure if you're the guy for trees and shrubs.

Mr. Colin Penny: No.

Mr. Mike Penstone: I'm the tree guy, the pole guy and the transformer guy.

Mr. Peter Tabuns: It's a hell of a thing to put on your resumé: "I'm the shrub guy."

The Auditor General noted that, according to your calculation, you're spending an awful lot of money on vegetation management because you have a 9.5-year rotation cycle. You're going to an eight-year rotation cycle. You've noted that you would save something in the range of \$84 million a year if you had a four-year cycle. I may not understand what the Auditor General has written—maybe you do better than me—but it looks to me like there's substantial cost savings there and a reli-

ability reinforcement opportunity that you aren't taking advantage of. Why is that?

Mr. Mike Penstone: A considerable amount of work is currently under way examining our vegetation management practices to confirm that the practices that we've got are actually giving us the outcomes that we expect in terms of the reliability outcomes for the dollars that we're spending. So this work is under way, and I will tell you that we are adjusting our vegetation management practices as a result of the assessments that have occurred.

The comment about vegetation management cycles—it's this simple, really, and I'll take an extreme example—is if you wait 20 years before you go and clear a right of way, then what you're clearing is 20 years old and it's going to take a lot of time and effort and chain-saws to clear it.

Mr. Peter Tabuns: Yes, that makes sense to me. Which is—

Mr. Mike Penstone: More money.

Mr. Peter Tabuns: Yes. So a shorter cycle would be less costly to clear.

Mr. Mike Penstone: Correct. But then the question becomes, what is the sweet spot? We have 123,000 circuit kilometres of lines and thousands and thousands of kilometres of rights of way that need to be cleared. At one extreme, you could argue, "Well, you should do it every year." But if you do it every year, it is going to cost you a lot of money. On the other extreme, if you wait 20 years, it's going to cost you a lot of money. So somewhere in between every year and 20 years, there's an optimal point.

We are moving towards an eight-year cycle because our estimation is that this will cost us less money because of the growth that we would be clearing at that time as opposed to what it's now costing us in terms of the nine-year cycle or nine-and-a-half-year cycle, which is more expensive because—

The Vice-Chair (Ms. Lisa MacLeod): You have one minute.

Mr. Mike Penstone: —the vegetation is denser and more difficult to clear. I guess our view is that a four-year cycle is less optimum based on cost considerations. We're having that validated by a third party as we speak. What is the optimal cycle time?

The other element to this is, if you are going to clear a right of way, should certain lines get a priority based on their criticality? That is also getting examined, and that will inform our vegetation management practices moving forward.

Mr. Peter Tabuns: And when will that be available?

Mr. Mike Penstone: The results of those analyses will actually go into our investment plan, or the business plan that we will use as the basis for next rate application for the OEB.

The Vice-Chair (Ms. Lisa MacLeod): Thank you very much. We'll now go to the Mr. Delaney.

Mr. Bob Delaney: Thank you very much, Chair and Mr. Penstone. I was very interested in the line of dis-

cussion that you were having. Why don't you please continue?

Mr. Mike Penstone: About trees?

Mr. Bob Delaney: Yes.

Mr. Mike Penstone: Okay. I think, on the distribution system—I'll stand back. First of all, on the transmission network, there are industry standards that we have to comply with. Mr. Penny talked about some industry standards in terms of critical infrastructure protection. We have an obligation to follow those standards. Those standards are established by the North American Electric Reliability Corp. The standards are mandatory. The reason that they're now mandatory was one of the outcomes of the blackout that affected Ontario and parts of the US back in 2013.

Mr. Mayo Schmidt: Two thousand and three.

Mr. Mike Penstone: Oh, sorry; 2003. Thank you. Time flies.

1410

So, we have these mandatory standards. On the transmission system, there are mandatory requirements for us to keep our rights-of-way clear. On the distribution system, there are no equivalent standards, so we're allowed to apply our own discretion in terms of the timing—to the previous question—the frequency, and the priority of lines that we clear.

One of the things that is becoming evident is if you take a look at a distribution right-of-way, particularly distribution lines that are at a lower voltage, that right-of-way is very narrow. Hydro One can only go in and clear roughly 10 feet.

If any of you have cottages, you may see this. Hydro One has come in, we've cleared the distribution lines in and around your cottage, but it's a very narrow swath.

The benefit of doing that is that it manages health and safety risks, because we don't like trees growing up into lines, and if we have trees that are approaching lines, we don't like people climbing them. The difficulty is that on either side of that right-of-way that we've just cleared are some enormous trees, all the time. Lots of our lines are in rural Ontario; we've cleared our right-of-way within our legal ability, and on either side are monstrous trees.

Everybody loves trees, and I love trees. If we were to go and suggest to a property owner, "Your tree that is adjacent to our right-of-way will pose a risk if there is a wind storm or an ice storm, and we would like to trim your tree," we would not get a particularly positive response. The fact is that many of our outages that are caused by trees are actually from trees that are outside of our right-of-way. Limbs fall on our equipment or trees fall down: This is just a fact. If you look at our distribution system, the three largest causes of interruptions, in order, are tree contact, tree contact and tree contact. That's a fact.

What can we do about it? As we are looking at upgrading our networks on the distribution system, in many cases, what we try to do is relocate these lines so that they're on what we refer to as a road allowance. So we take it out from the middle of the bush and we put it

beside a road. Generally, at least on one side of the line, you have a road, and you're not going to have a tree that runs the risk of falling into it, so we start to mitigate the risk that way. The other benefit of a road allowance is, in many cases, on the other side of the line, there is a distance between the line and vegetation. These are some of the tactics that we're considering to mitigate the risk of tree contacts on our lines.

I'll give you another example of activities that we're now exploring, again, to get bang for the buck on vegetation management. There are products that we could install that are higher-cost than the current conductors. The conductors that are on top of a pole are not insulated, so if something contacts them, you automatically create a fault, and that line will be removed from service and people's lights will be out. There are products on the market, which we are now investigating, where there is insulation on those conductors. So if you had a branch contact it and the branch fell off, you would actually not have an outage.

We're examining these new products, and the difficulty is that the product is more expensive. I can tell you right now: We're not going to deploy it on 123,000 circuit kilometres of lines. We would look for areas in the province that are at the highest risk of vegetation contacts—and we know exactly where they are—and we would start to deploy a higher-cost solution in order to mitigate the risk of tree contacts.

You probably now know way more than you ever wanted to know about trees and the distribution system.

Mr. Bob Delaney: It brings to mind a conversation I had with one of our contacts at Enersource during some of the incidents that you mentioned. The lady at Enersource said to me that she had had these calls from a lady in Mississauga who complained about how energetically Enersource had been trimming trees and was concerned about the vigour with which the trees were being trimmed on her street. Following the ice storm of December 2013, to this woman at Enersource's surprise, it was the same lady who called back and said, "You know, I have to apologize to you. Your policy turned out to be completely correct. In all of the corridors in which you had trimmed the trees, the power stayed on, and on those where you had not trimmed the trees or they were on the homeowners' side, the power went off." So I was interested in your comments regarding the reaction of homeowners to trees in the general proximity of their homes.

At Hydro One, what are some of the interactions you've had and what have you learned from some of them?

Mr. Mike Penstone: In terms of the interactions with communities where we're intending to go and clear our rights of way?

Mr. Bob Delaney: Yes, as you've had your interactions with residents, business owners and whatnot concerning the tradeoff between esthetics and the safety and security of your system.

Interjection.

The Vice-Chair (Ms. Lisa MacLeod): I remind you to introduce yourself for Hansard. Thank you.

Ms. Laura Cooke: Good afternoon. My name is Laura Cooke. I'm the senior vice-president of customer corporate relations for Hydro One.

To your question about how we work with communities: To us, the key point on efforts to clear brush to help Mike's work along is all about communication. It's about working with local officials before we actually have to take that action—so education and communication.

We do find that communities, once they understand the reason to improve or maintain reliability, are on side. But as Mike says, they love their trees, so they look for ways for us to actually mitigate that activity.

Something else that we like to do is, we like to work with communities to beautify a section on a right of way after we've done the work. We understand that in some communities, the rights of way and the greenery along the rights of way are the only green space some communities have, so they really, really want to protect that space. What we try to do is manage our obligations to reliability and manage our obligations to the community by trying to do some beautification work following some aggressive tree trimming.

So it's communication, education, and try to leave the place looking better than you found it.

Mr. Bob Delaney: I believe Mr. Dong has a question.

Mr. Han Dong: I had sort of a supplementary question to the tree lecture there. I found it very fascinating, because they're often the details that we don't know about, now that this new technology is available.

Following the ice storm, some constituents in my riding in the older neighbourhoods came forward and said, "Why can't we just bury the lines to avoid this kind of stuff?" In Toronto and in my neighbourhood, there were a few areas—it seems to me that the city has a plan to replace water mains. They're opening up the ground, doing their work and all that stuff. I know it may cost a lot of money, so I want to find out how much it will cost. Is there any way that we can work with the city to minimize those costs?

Ms. Laura Cooke: I'm afraid I'm going to have to trade seats with my colleague Mike Penstone again. Apologies.

Interjection.

Mr. Mike Penstone: Right. Your colleague has hit the nail on the head.

Typically, underground service versus an overhead line is between seven to 10 times more expensive.

Mr. Han Dong: Wow.

1420

Mr. Mike Penstone: But having said that, to your point, if there is already work under way that is excavation or replacing existing infrastructure, if you're able to do the work simultaneously, that helps drive the cost down to some degree, but it will never be as cost-effective as overhead lines.

Mr. Han Dong: But wouldn't that save in the long run because you don't have to worry about trees, storms and all that stuff?

Mr. Mike Penstone: Right. A good point. If you bury them, if you actually run the numbers, it's still, in the long term over the entire life cycle, less expensive for overhead lines. The cables that you actually would install in the ground reach their end of life as well and need to be replaced. It's an issue that suburban utilities are now having to manage. Because their suburbs are now 30 or 40 years old and they had a lot of underground services, and they're faced with the challenge of replacing those cables. I can tell you that the cost of replacing underground cables versus overhead lines is also much more expensive.

Mr. Han Dong: Okay. Interesting.

Mr. Bob Delaney: What would be the expected lifetime of an overhead line as opposed to one that has been buried, which I imagine would depend upon the type of neighbourhood or the surrounding in which it's buried? Perhaps you could expand on that a bit?

Mr. Mike Penstone: An overhead line comprises a number of individual components. You have the pole, you have the insulators and you actually have the conductors—you know, the wires? Typically, the poles are good for 60 years. For the conductor, it all really depends on the environment in which it has been exposed to and the loading to which it has been exposed to.

On the distribution system, typically, we will take samples—and, for this matter, on the transmission system as well. We will take samples of the conductor and we're able to test it to determine if it's approaching its end of life or not. There are certain tests: tensile strength, ductility—you asked the question. I had to go there.

Mr. Bob Delaney: I know what "ductile" means.

Mr. Mike Penstone: Okay. We're actually able to test the conductors. Based on that determination we'll decide, if we're there to replace poles, do we just do the pole or do we actually replace the conductor as well?

In terms of our transmission system, the actual conductors are good for around 60 or 70 years, again depending on the environment in which they operate. We're now at the point where we've spent a lot of time and attention on replacing equipment within our transformer stations. It's now becoming evident to us that we need to spend increased attention and expenditures on replacing lines that have been in the air for a protracted period of time, and I'm talking decades.

This is a new area of emphasis for Hydro One, and this is an emerging asset management issue for us.

Mr. Bob Delaney: Going back to the last round, is the body of data that you're collecting in your asset analytics tool able to contribute to a greater degree of precision in making decisions around which assets to replace and where?

Mr. Mike Penstone: That's the intent of the tool. The intent of the tool is to help the planner in terms of giving him more information, then distilling that information and providing a recommendation. It enables the planning

to be more efficient in the sense that the data is all available in one source as opposed to having to go through multiple databases or files that people keep on their computers. We've done away with that. So the purpose of this is both in terms of planning efficiency and to get a better outcome and a better decision.

But again, as I mentioned earlier, everything that comes out of that tool has to be confirmed by the engineer or the planner.

Mr. Bob Delaney: Okay.

The Vice-Chair (Ms. Lisa MacLeod): You have two minutes.

Mr. Bob Delaney: Thanks, Chair. I think we'll wind it up here.

The Vice-Chair (Ms. Lisa MacLeod): Thank you very much for that fascinating round of questions.

We'll go the official opposition for their final 18 minutes, and we'll go to Mrs. Munro.

Mrs. Julia Munro: I want to move away from the trees for a moment and—

Mr. Mike Penstone: And look at the forest?

Mrs. Julia Munro: Not the forest yet, but the issue around the poles. My first question is, what's the lifespan of a transformer that's on a pole?

Mr. Mike Penstone: Would you accept, "It depends"?

Mrs. Julia Munro: Let's say it depends, to respond to that—that it's going to one house. So it's not a transformer that's a big thing in the neighbourhood.

Mr. Mike Penstone: Are you talking a pole-top transformer that would basically supply one, two or three homes?

Mrs. Julia Munro: That's right.

Mr. Mike Penstone: Again, we can come up with an expected service life for a transformer. For that type of transformer, 50 or 60 years is not unusual. Again, expected service life presumes normal conditions. It's an average.

Typically, what we find is what actually causes those transformers to fail is also dependent on to what extent they have been loaded—in other words, what demands, how much power has flowed through that transformer over years and years and years. That influences when it's actually going to fail.

By the way, those transformers we replace when they fail; we don't proactively replace them. We have over half a million of them.

The other element that influences a transformer's lifespan is if it's been exposed to short circuits. For example—

Mrs. Julia Munro: A squirrel?

Mr. Mike Penstone: A squirrel or a tree: That causes a sudden in-rush of current or power that will flow through a transformer. If that happens frequently enough, that accelerates the aging of the transformer.

Another example that causes us transformer problems is you can have a situation where you have—on top of the transformers there's a little insulator, and then there's the actual wire. You can have situations where the

insulator gets contaminated. In other words, it's going to get covered with stuff. Typically, you'll see that when transformers are close to roads or major highways. What we experience is, over the course of a winter, there will be an accumulation of salt on the actual insulators. You combine that with some damp or foggy weather, and that salt will actually start to cause what we refer to as tracking. In other words, current will start to flow on the outside of the insulator.

The insulator is normally to separate the transformer and the wire that's carrying the power. You'll have a situation where it will start to track. Sorry, I step back: It's the pole and the insulator. It will track and it will start to flow through the pole. That will cause poles to catch fire. In some cases, if there's a transformer on that pole, it will also cause the transformer to fail as well.

The point I'm trying to make is: It all depends where the transformer is. How it's been exposed or how it's been treated through its lifetime and where it's physically located can all influence when a transformer fails.

Mrs. Julia Munro: Thank you. On another—I think I have a moment—

The Vice-Chair (Ms. Lisa MacLeod): You have 14.

Mrs. Julia Munro: In the auditor's report, there was the question about—and I think I'm quoting—you initiated a pilot project two years ago that has been testing smart meters. This was on page 274 of the auditor's report. On the question of “the information on outages is still limited to what the utility finds out from customer calls,” can you give us a sense of the effort that's being made to make that something that doesn't rest on the homeowner phoning? Have we seen any use of smart meters able to find the outages?

1430

Mr. Mike Penstone: What we're able to do with smart meters—and it was identified in the report. We undertook a pilot program to what we refer to as “ping the meter,” where we will interrogate the meter remotely. What it was designed to do is, in my cases, customers will call and they'll say, “My lights are out.” Normally we would dispatch a crew to investigate the problem.

What this pilot program did was, when we get that type of call, we'll actually interrogate the meter, ping it to see whether in fact there is service being supplied to the home. We'll be able to tell whether the wire right up to the home is actually energized. If it's energized, then we know there's no need to dispatch a crew and there's money to be saved. We'll also be able to advise the homeowner that, “If your lights are out, it's an issue within your premises.” Right? The benefit again is that it avoids an unnecessary crew dispatch and saves Hydro One money and, ultimately, saves ratepayers money.

The result of that pilot is that we've confirmed that there is real benefits to doing this, that the cost of now moving from a pilot to a full production system—there's a business case to do that and we're actually in the midst of undertaking that. We're now convinced that we're going to expand this to more meters and make this part of our conventional operating and control systems.

Mrs. Julia Munro: Okay. If I understand, this would happen automatically if there was an outage, or do you have to phone?

Mr. Mike Penstone: In this particular case it's a response to a homeowner calling saying, “My lights are out. Do something about it.”

Mrs. Julia Munro: Right.

Mr. Mike Penstone: I'll also say that in some cases in the past—not that anyone here would do this, but in many cases people who were going to their cottage, and they haven't been to their cottage for a number of weeks, they will call and they'll say, “My lights are out,” and they'll do that in advance to make sure that when they get there, the lights are on. That's a fact.

Mr. Peter Tabuns: I believe you.

Mr. Mike Penstone: Nobody likes to arrive at the cottage and have the lights out. So to make sure that that doesn't happen, you call in advance and say, “My lights are out.” The crew goes out there and they say, “No, it's not. Everything's good.” This is another exercise—a way of avoiding that.

To your point about, “Are we able to now start using smart meters to identify exactly the nature and scope of an outage?": not yet. That will be a next step, and don't ask me when that step is going to be taken. It's a possibility.

Mrs. Julia Munro: Okay.

Mr. John Yakabuski: To that point, that was something that was misinformation that was disseminated at the time that smart meters were being installed. It was precisely that point, that you could be proactive. Somebody was at the end of a line, which we get in rural Ontario when there's an outage that lasted for days and days. Somebody's always at the end of that line, that they could absolutely determine whether that person's power was on without having—the last person on the line, you might be a mile down from the next one and you don't know that the power has been restored to Joe. You're living down in your place, but then they said they would absolutely be able to determine that power has been restored to that place, and obviously by smart meters that's not the case yet.

Mr. Mike Penstone: Well, again, we're able to ping and interrogate those meters. Have we actually implemented that capability for the purpose that you just described—

Mr. John Yakabuski: Not yet—

Mr. Mike Penstone: Not yet.

Mr. John Yakabuski: Okay. Let's go back to vegetation, because, first of all, I want to point out that I owned property that had a right of way. Hydro One always had carte blanche to cut whatever they had to on my property.

Mr. Mike Penstone: Was that from you?

Mr. John Yakabuski: Yes, it was from me.

Mr. Mike Penstone: Okay.

Mr. John Yakabuski: They used to call me and I used to say, “Don't call me again. If you have issues with the power, deal with the trees.” And you know what?

They'd always call, because they said, "We have to." In fact, I guess when they had to do something, they still had to call.

I was not one of those people that said, "Don't touch my trees." I was more concerned about making sure I could watch the Toronto Maple Leafs or the Pittsburgh Steelers or something like that than whether or not they cut my trees.

Anyway, on that issue of vegetation in rural Ontario, that is by far the biggest issue we have with power outages: Trees fall across the lines. So you're actively rerouting things that have properties on either side or whatever to where there is a road allowance whenever there's a line rebuilt, or—when is that happening? And what is the expected cost of that project?

Mr. Mike Penstone: When you say "actively rerouting"—

Mr. John Yakabuski: That's what I heard. I got it from you, kind of.

Mr. Mike Penstone: There are occasions when there is no choice. If we're serving a customer in—and, by the way, our largest issues with tree contact are in cottage country and in northern Ontario. In many cases, there are no alternatives. These cottages are where they are, and you're going to go through—there isn't a road allowance available to us.

What I intended to say was that when there is an opportunity—that is, when the line has reached its end of life, and we know and are convinced it has reached its end of life and we know it needs to be replaced—we would then step back and investigate: Are there alternate routes that we could take to basically get the line away from the trees as much as we can? We'd look at routing the line along road allowances to the maximum practical extent and then start going back in towards the treed areas.

So do we have a formal program right now to basically move all of these lines onto road allowances? No. We do it when we know it has reached its end of life.

Mr. John Yakabuski: And when it's practical.

Okay. I asked you about this capital deficit, and I accept your explanation that there can be different interpretations about how we arrive at that number. Based on your—not the auditor's—assessment, what is the capital deficit facing Hydro One today? Because it's not zero. Don't tell me it's zero, that she picked out \$4.5 billion and you folks see none of that as being an issue. What is the number when it comes to the capital deficit that you folks are behind on in replacing equipment that is at risk of failure?

Mr. Mike Penstone: The answer to that question would be that we identify in our investment plans and in our rate applications, "Here's what we believe are capital expenditures that need to be undertaken, and here's why."

Mr. John Yakabuski: And that rate application covers what period?

Mr. Mike Penstone: Our next transmission rate application will cover 2017 and 2018.

Mr. John Yakabuski: So they're two years?

Mr. Mike Penstone: Our next transmission rate application will be two years. Our next distribution application will be five years.

Mr. John Yakabuski: Okay. You would do that assessment for both transmission and—because I believe it was distribution.

Interjection.

Mr. John Yakabuski: Oh, it's transmission and distribution, the capital—

Ms. Bonnie Lysyk: The \$4.472 billion is the number from Hydro One that relates to transmission.

Mr. John Yakabuski: Oh, transmission.

So you would then, in that rate application, assess what the capital needs are through that two-year period?

Mr. Mike Penstone: Correct, based on the state of our assets. The state of our assets considers all of these other factors. We would submit it to the OEB and advise them that, based on our analysis, we believe that these are the capital expenditures that are necessary to be made to maintain the liability and—I have to emphasize—meet our customers' expectations. As Mayo talked about earlier, we're going through that exercise.

Mr. John Yakabuski: Okay. I think this goes back to some of the points that Mr. Tabuns made: So when you make that application and you're approved, you're rolled back or whatever; you ask for this and get that or whatever. But if you're settled, the acceptance is that your numbers are right, just maybe your request is too high or whatever. I believe Ms. Leclair said that there's no audit, then, as to whether or not you actually completed that work. Correct? Maybe you could answer, Ms. Leclair. If they use that as a reason for requesting a rate increase, there's no audit or no follow-up as to whether or not, in that two-year period, they actually completed that capital work.

Ms. Rosemarie Leclair: When we're approving it, we're looking at the program on a forward-looking basis to determine the revenue requirement of just and reasonable rates. When they come back in—I believe we have said that they will be looking at what they completed against what they had anticipated doing.

Mr. John Yakabuski: When they make the next—

Ms. Rosemarie Leclair: When they made their next application.

Mr. John Yakabuski: The next application; okay. That's good. Thank you very much.

I wanted to ask one more question on the security side of it. I think you can probably answer this one. It seems that there's—no pun intended—a disconnect between how you view the risks in urban, populated areas versus rural, less populated areas, like where I live. It seems that there was very little attention paid to security in rural areas versus larger, urban ones. Is that correct?

The Vice-Chair (Ms. Lisa MacLeod): You have about a minute to respond.

Mr. Mike Penstone: Okay. Our business, as you point out, is all about risk. Without even talking about security, if you take a look at the networks that exist in

urban centres versus the networks that exist in remote centres—by the way, the auditor’s report points this out—the reliability is better in southern Ontario than it is in northern Ontario because of—

Mr. John Yakabuski: This splitting the province in two—I don’t live in northern Ontario but I do live in rural Ontario.

Mr. Mike Penstone: But it goes to the point of risk and what you are prepared to spend for the customers who are being served. This applies to more than just security. If there are large numbers of customers in urban centres, we’re able to provide additional designs and services to minimize—I shouldn’t say “minimize”—

manage the risk to them that we don’t do for rural customers simply because the densities aren’t there to be able to support the expenditures that we would have to make.

The Vice-Chair (Ms. Lisa MacLeod): Thank you very much, Mr. Penstone. I want to say thank you to all of the deputants today for joining us and taking time out of their busy schedules. Thank you to the auditor, her staff, to our committee Clerk and her staff, and our researchers.

We will have a few minutes’ recess in order to clear the room and then we will gather back as a committee.

The committee continued in closed session at 1443.

CONTENTS

Wednesday 23 March 2016

2015 Annual Report, Auditor General.....	P-287
Ministry of Energy; Hydro One; Ontario Energy Board.....	P-287
Mr. Serge Imbrogno	
Ms. Rosemarie Leclair	
Mr. Mayo Schmidt	
Mr. Mike Penstone	
Ms. Lynne Anderson	
Mr. Brad Bowness	
Mr. Colin Penny	
Ms. Laura Cooke	

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