TORYS LLP

79 Wellington St. W., 30th Floor
Box 270, TD South Tower
Toronto, Ontario M5K 1N2 Canada
P. 416.865.0040 | F. 416.865.7380
www.torys.com

Charles Keizer
ckeizer@torys.com
P. 416.865.7512

November 22, 2019

RESS, EMAIL & COURIER

Ontario Energy Board
PO Box 2319
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Attention: Ms. Christine E. Long

Dear Ms. Long:

Re: Hydro One Networks Inc. ("Hydro One")
Custom Incentive Rate-setting ("Custom IR") Application for 2020-2022
Transmission Rates (OEB File No. EB-2019-0082)
Applicant Argument-in-Chief

We are legal counsel to Hydro One in the above-referenced proceeding. Pursuant to Procedural Order No. 3, please find enclosed Hydro One's Argument-in-Chief. Copies have been filed on RESS and served on each party in the proceeding.

Yours truly,

Charles Keizer

Enclosure

cc: Hydro One
All Parties

ONTARIO ENERGY BOARD

OEB PROCEEDING EB-2019-0082

APPLICATION FOR ELECTRICITY TRANSMISSION REVENUE REQUIREMENT BEGINNING JANUARY 1, 2020 UNTIL DECEMBER 31, 2022

ARGUMENT IN CHIEF OF

HYDRO ONE NETWORKS INC.

November 22, 2019

Table of Contents

INTRODUCTION

In March 2019, Hydro One Networks Inc. ("Hydro One" or the "company") filed with the Ontario Energy Board ("OEB") a three-year Transmission Custom Incentive Rate-Setting ("CIR" or "Custom IR") application for the period commencing January 1, 2020 and ending December 31, 2022 (the "Application"). For the reasons highlighted here and addressed further in the issues below, Hydro One submits that the OEB should grant the approvals sought in the Application, including the total revenue requirement for the 2020 test year and the proposed Custom IR framework for determining Hydro One's transmission revenue requirement for 2021 and 2022.

Hydro One is currently facing a period of significant changes with many challenges, including:

1. increasing customer expectations relating to reliability and power quality;

2. aging infrastructure and deteriorating asset conditions (portions of the transmission system date back more than 50 to 100 years) that require increased maintenance and renewal to mitigate risks to public or employee safety and system and customer reliability;

3. regional infrastructure needs to address system constraints to enable new load growth and to facilitate system access;

4. increased focus on critical infrastructure protection and associated regulatory compliance, requiring greater system resiliency against climate change impacts, cyber-attacks and threats to physical security; and

5. mitigating the rate impacts of Hydro One's plan on both its transmission customers and distribution-connected customers through productivity improvements to reduce costs for the benefit of customers and shareholders.

With respect to asset aging and deterioration, Hydro One forecasts that 43% of its transformers, 23% of breakers, 42% of protection systems and 13% of conductors will,

through natural aging, reach the end of their expected service life ("ESL") over the 5-year period covered by the 2020-2024 Transmission System Plan ("TSP"), which forms an integral part of the Application. Nevertheless, the primary driver of replacement decisions is asset condition. In this regard, Hydro One continuously assesses and tests asset condition, and assigns a risk rating to indicate asset condition (from very low to very high risk). A significant population of Hydro One's major assets is currently in the high and very high risk categories, and this population has increased in size since Hydro One's last transmission revenue requirement application (EB-2016-0160). Metrics associated with asset aging and deterioration are leading indicators of asset and system performance, signaling the investments required to reliably and safely operate the transmission system that powers the lives of over 14 million Ontarians.

In addition to asset condition, Hydro One's investment plan has been informed by its customer engagement activities, including survey results, which reflect input from customers on priorities, pacing and the level and mix of investments. As a result, Hydro One's transmission investment plan addresses and is responsive to customers' priorities of safety, reliability and outage restoration – in particular, the reduction of the frequency of power interruptions.

In response to the OEB's direction to Hydro One to continue improving its investment planning process and conduct timely customer engagement,[1] Hydro One employed its new eight-step risk-based investment planning process to prioritize investments and ensure a consistent and common understanding of risk by its planners. Key improvements to the planning process include:

1. a revised risk assessment framework that embeds safety, reliability and environmental risks, in alignment with the priorities identified by customers;

[1] OEB Decision and Order EB-2016-0160, p. 117, ("EB-2016-0160 Decision").

2. clearly defining risk impacts to enable the consistent assessment of all investment candidates; and

3. challenge sessions to engage stakeholders across the company to review potential investments and discuss trade-offs.

Hydro One engaged an independent expert to review its planning process, which concluded that the improved process met or exceeded expectations relative to "best in class" practice.

The result of Hydro One's rigorous and enhanced planning process is a TSP that is customer-focused and that reflects investment levels that are in line with what the majority of customers support. The projects and programs in the System Renewal category will address the risks associated with Hydro One's aging and deteriorating infrastructure by renewing deteriorated transformers, obsolete circuit breakers, unsafe porcelain insulators, and overhead conductors that are in poor condition and installed in public spaces across the province. Underpinned by asset condition assessments, these System Renewal investments account for about 83% of the capital plan and are essential to supporting strong and successful communities and business growth in Ontario.

System Service and System Access are non-discretionary investments made pursuant to the requests of the government and customers, respectively. System Service projects include the East-West Tie Expansion and Leamington Area Transmission Reinforcement and capacity work which will help the growing agricultural industry. System Access work is largely driven by customer needs, including for example, Metrolinx's request to connect a power station for the purpose of rail electrification.

General Plant investments sustain Hydro One's real estate facilities, transportation and work equipment, as well as information technology ("IT") systems, which directly and indirectly support the utility's field work and customer service. Major investments

include IT hardware and software, the Network Management System and a new Integrated System Operating Centre ("ISOC").

To successfully deliver and report on capital plan execution, Hydro One has improved its processes for project definition and execution as well as performance reporting. Specific aspects of Hydro One's improved capital delivery framework include a structured project stage gate process as well as new project management and control practices. For instance, the company completes a quality review of the inputs into project execution plans to ensure that consistent and detailed "go-no-go" criteria are used to assess project deliverable quality and project readiness to proceed to the next phase. This additional rigor in the early project phases is contributing to improved cost and schedule performance at the individual project and total portfolio levels.

As a result of the improvements that Hydro One has implemented, and despite the practical reality of managing a large capital program (with some projects spanning multiple years), Hydro One was able to deliver its 2017 and 2018 investment plan on an envelope basis in-line with the OEB's direction in the last transmission application. Throughout 2017 and 2018, Hydro One achieved $1.9 billion in capital spend and $2.0 billion in in-service additions with only modest variances (at 1.5% and 0.7%, respectively) from the OEB-approved amounts. These small variances represent a significant improvement relative to the 2014-2016 period, where the aggregate capital variance was 4% and the aggregate in-service additions variance was -9%. In this regard, Hydro One's track record demonstrates that it is able to accomplish sizeable investments very close to target at a portfolio level and that it is in a strong position to effectively deliver the proposed plan.

With respect to OM&A, Hydro One's proposed envelope for 2020 is $374.1 million. The largest component is Sustainment OM&A, which funds maintenance to existing transmission lines and stations facilities to maintain their functionality. The 2020 OM&A program reflects Hydro One's efforts to minimize rate increases while ensuring sufficient funding to meet system needs, consistent with customer-focused outcomes. Hydro One's 2020 OM&A is significantly less than historical years (2015-2018):

1. 2020 OM&A has been reduced by almost 11% relative to 2018 actuals; and

2. relative to the 2015-2018 average, 2020 OM&A is lower by almost $40 million despite upward cost pressures from new facilities through system expansion, aging infrastructure, additional regulatory compliance obligations, and natural inflationary pressures.

Reductions to Hydro One's OM&A budget are the result of a company-wide effort, and which was achieved in three key ways:

1. sustained savings related to the extension of maintenance cycles;

2. sustained productivity gains across the company; and

3. a company-wide initiative to reduce common corporate costs by reducing vacancies and limiting consulting and contract engagements to critical functions.

Hydro One's total revenue requirement for 2020 is $1,602.3 million, which is $42.1 million lower than 2019 OEB-approved levels, not including External & Other Revenue and Regulatory Accounts. This is offset by External & Other Revenue and the Disposition of Regulatory Accounts, which together account for a $4.3 million increase in the Total Rates Revenue Requirement over 2019 OEB-approved levels, resulting in a 2020 Total Rates Revenue Requirement of $1,556.6 million.[2]

Furthermore, and significantly, the total revenue requirement and resulting rate impacts have been mitigated by $370 million in productivity savings over the 3-year Application period through defined capital and OM&A initiatives and additional undefined progressive productivity initiatives for capital. Progressive productivity is a new and material feature of this Application, representing a commitment by Hydro One to find further efficiencies over the planning period when executing the necessary planned investments, without reducing work volumes. Hydro One has included the

[2] Undertaking J-8.5, Table 2.

benefit of these various productivity savings to ratepayers up front and has taken on the execution risk of delivering its planned work program within a reduced funding envelope.

The change in the Total Rates Revenue Requirement, combined with the impact of resetting the load forecast in 2020, results in the following rate impacts:

1. An average transmission rate increase in 2020 of 4.1%, the majority (3.8%) of which is attributable to declining load (see Issue 20).

2. A 3-year average annual transmission rate increase of 5.5% (or 3.8% when the impact of declining load is excluded).

3. A 2020 bill impact of 0.3% for both a typical transmission-connected customer and a typical distribution-connected customer.

4. A 3-year average bill impact of 0.4% for both a typical transmission-connected customer and a typical distribution-connected customer.

In summary, and as addressed further in the sections below, Hydro One has proposed a balanced and appropriate rate request that is based on a customer-oriented investment plan and comprehensive risk-based planning process and that is needed to continue to tackle Hydro One's deteriorating asset conditions. At the same time, Hydro One has focused on implementing material productivity measures and commitments as well as pursuing cost containment to reduce OM&A expenditures relative to historical averages for the benefit of customers. As such, Hydro One's revenue requirement should be approved as requested.

Each of the specific issues in this proceeding is addressed in the sections below.

A. GENERAL:

Issue 1: Has Hydro One responded appropriately to all relevant OEB directions from previous proceedings?

In Hydro One's 2017-2018 transmission revenue requirement proceeding (EB-2016-0160), the OEB directed Hydro One to make improvements to certain of its processes and practices, or to prepare and provide certain information in the current Application. Hydro One has taken appropriate steps to address all relevant OEB directions. Those steps are reflected throughout the Application and are highlighted below. Exhibit A-2-4 provides a full list of the OEB's directions from the EB-2016-0160 proceeding along with descriptions of the steps Hydro One has taken to address them.

To address the OEB's previous concerns regarding Hydro One's capital planning process, and its direction to undertake a third-party review of the asset condition assessment and capital planning processes,[3] Hydro One has:

1. implemented an enhanced eight-step investment planning process, through which Hydro One planners score, prioritize, and develop investment candidates into a capital plan, accounting for asset and system risks, customer needs and preferences, rate impacts, and corporate objectives;[4]

2. enhanced its evidence to better explain the asset condition assessment process and the manner in which Hydro One identifies the need and scope of investments underpinning its capital investment plan;[5]

3. enhanced the pacing of its planned investments through improved planning, prioritization and optimization;[6] and

[3] EB-2016-0160 Decision, p. 18.
[4] Further details are provided in Exhibit B-1-1, TSP Section 2.0.
[5] Exhibit B-1-1, Sections 2.0 and 2.1.
[6] Exhibit B-1-1, TSP Sections 1.6.2, 2.1.4, 2.1.5, 3.2 and 3.3.1.2.

4. improved its ability to execute capital programs, which reduces the variability of capital in-service additions.[7]

Hydro One engaged an independent expert consultant, the Boston Consulting Group ("BCG"), to review the enhanced investment planning process. BCG found the enhanced process to be consistent and thorough, and that it meets or exceeds expectations for an above average utility planning process.[8] Hydro One also retained Metsco Energy Solutions Inc. ("Metsco") to review its asset condition assessment process. Metsco found that Hydro One's asset condition assessment process is aligned with other asset management frameworks in the industry that are sufficiently rigorous and robust to accomplish their intended functions from the analytical perspective.[9]

In response to the OEB's previous concerns in respect of Hydro One's customer engagement process and timing,[10] Hydro One has improved its customer engagement process by:

1. carrying out formal customer engagement early in its planning process to ensure that customer feedback could be considered and integrated into transmission investment planning;[11]

2. working directly with Local Distribution Company ("LDC") customers to solicit feedback from their end users including, where applicable, Indigenous communities;[12]

[7] Exhibit B-1-1, TSP Section 2.1.9; Exhibit B-2-1.
[8] Exhibit B-1-1, TSP Section 1.4, Attachment 14.
[9] Exhibit B-1-1, TSP Section 3.2, Attachment 13.
[10] EB-2016-0160 Decision, pp. 22-24.
[11] Exhibit B-1-1, TSP Section 1.3.
[12] *Ibid*.

3. leveraging its ongoing engagement activities to identify and consider in the planning process the needs and preferences of customers and Indigenous communities;[13] and

4. engaging a third-party expert, Innovative Research Group ("IRG"), to design and carry out a customer engagement survey using information that is unambiguous and easy for customers to understand.[14]

Hydro One was also directed by the OEB, in EB-2016-0160, to establish firm short-term and long-term targets for productivity improvements and associated reductions in revenue requirement as a means to drive continuous improvement. It was directed to evolve its scorecard in order to further develop its performance management system. In response to these directions, Hydro One has identified savings opportunities and established savings targets, with respect to capital and OM&A, of approximately $704 million from 2020 to 2024 ($370 million over the Application period). These savings have been directly embedded into the business plan and the TSP. Hydro One also enhanced its scorecard by making improvements based on the company's past performance management measures, benchmarking studies, scorecards and measures of other utilities, as well as based on the EB-2016-0160 Decision and guidance in the *Handbook for Utility Rate Applications* (the "Handbook").

In the EB-2016-0160 Decision, the OEB directed Hydro One to file various reports, including benchmarking studies comparing outcomes that are consistent with the Renewed Regulatory Framework for Electricity ("RRF") and that demonstrate continuous improvement.[15] Hydro One has responded to these directions by filing numerous internally and externally prepared reports as part of the Application.

Hydro One's internally prepared reports cover a broad range of topics, including for instance a capital program performance report that describes Hydro One's ability to

[13] Exhibit A-7.1.

[14] Exhibit B-1-1, TSP Section 1.3, Attachment 1.

[15] EB-2016-0160 Decision, pp. 30, 35, and 69; Draft Rate Order Decision, p. 8.

execute capital programs relative to plan and the impact of capital reductions on in-service additions.[16]

Hydro One engaged a number of third-party experts to perform various benchmarking studies. These included a series of studies on the treatment of major assets, so as to assess whether Hydro One is following industry best practices with respect to condition assessments, asset management and capital expenditure pacing.[17] These studies confirm that Hydro One appropriately optimizes the life cycles of its assets and selects the appropriate assets for replacement, and that its practices and processes for managing key transmission assets align with industry best practices.[18]

Hydro One also commissioned expert econometric studies of its costs relative to a peer group of U.S. utilities, as well as an assessment of the total factor productivity ("TFP") trend for the transmission sector.[19] These cost-based studies showed that Hydro One has consistently exhibited strong cost performance relative to its peer utilities. Moreover, with respect to the OEB's concern in EB-2016-0160 that Hydro One's total compensation amounts may have been understated,[20] Hydro One notes that the updated 2017 study by Mercer Canada ("Mercer") accounted for a larger scope of compensation elements and nevertheless showed that the company's total compensation is still trending lower than in the previous study – improvements have been made by Hydro One in recent years in respect of its compensation costs relative to market median.[21]

Based on the foregoing, Hydro One has responded appropriately to all relevant OEB directions from previous proceedings.

[16] Exhibit C-2-1, Attachment 1.
[17] For a full list of benchmarking studies, refer to Exhibit B-1-1, TSP Section 1.4 and attachments.
[18] Exhibit B-1-1, TSP Section 1.4.2.
[19] Exhibit A-4-1, Attachment 1.
[20] EB-2016-0160 Decision, p. 58.
[21] Exhibit F-4-1, p. 37.

Issue 2: Are the bill impacts resulting from Hydro One's proposed revenue requirement reasonable?

The bill impacts resulting from Hydro One's proposed revenue requirement are reasonable. To determine the impact of proposed changes to the 2020-2022 transmission rates on an average transmission-connected and distribution-connected customer's bill, Hydro One adopted the same approach used in the EB-2016-0160 proceeding, which was approved by the OEB.

Hydro One's Application proposes a 0.3% increase to its Rates Revenue Requirement for 2020 (relative to 2019), which, combined with the 3.8% rate increase attributable to the resetting of the load forecast in 2020, results in an average transmission rate increase of 4.1% in 2020. Over the 3-year period from 2020 to 2022, the Application will result in an average annual transmission rate increase of 5.5%, or 3.8% when excluding the impact of changes in the load forecast.[22]

The resulting total bill impacts in 2020 are 0.3% for both an average transmission-connected customer and an average distribution-connected customer. On this basis, the total bill increase is expected to be about 37 cents per month for a typical Hydro One Medium Density (R1) Residential Customer (750 kWh/month),[23] and 88 cents per month for a typical Hydro One General Service (GSe) Customer (2,000 kWh/month).[24]

While certain bill impact drivers (e.g., declining load) are out of Hydro One's control, the relatively small bill impacts resulting from the proposed Rates Revenue Requirement reflect Hydro One's objective of and efforts in appropriately balancing system and asset needs and identified customer preferences regarding outcomes and rates. Based on the foregoing, the bill impacts resulting from this Application are reasonable.

[22] Undertaking J8.5, Table 6.
[23] Undertaking J8.5, Table 7.
[24] Undertaking J8.5, Table 8.

Issue 3: Were Hydro One's customer engagement activities sufficient to enable customer needs and preferences to be considered in the formulation of its proposed spending?

Hydro One engaged in a broad range of customer engagement activities that sufficiently and appropriately enabled customer needs to be identified for the formulation of its investment plan. Hydro One gained a clear understanding of the outcomes that customers care about as well as the level and mix of investments that customers wanted to see included in the investment plan. The investment planning process accounted for customer feedback throughout, ensuring that the ultimate plan is responsive to customer needs and preferences and drives value for customers, as discussed further under Issue 8 below.

Hydro One Transmission serves a diverse customer base organized in three segments, including distributors, transmission-connected generators and end-users across the province. The three customer segments have unique needs and preferences. Serving customers in northern and rural areas presents different challenges due to sparse populations, remote location of assets and the prevalence of single-phase circuits. Customers in non-rural, more populated areas, on the other hand, often share multi-circuit lines with other transmission customers. As such, Hydro One uses various channels to engage effectively with its customer segments. These customer engagement activities (both specific and non-specific to the TSP) are integrated as part of Hydro One's business practices and are fundamental to how Hydro One interacts with and serves its customers. As further described below, these activities consist primarily of:

1. the transmission customer engagement survey;
2. customer satisfaction research and surveys;
3. large customer account management;
4. the Ontario Grid Control Centre ("OGCC") customer operating support group;

5. large customer conferences;

6. oversight committees and working groups; and

7. engagement with Indigenous communities.[25]

Transmission Customer Engagement Survey

Conducted by IRG in 2017, the customer engagement survey enabled Hydro One to obtain important feedback regarding customer needs and preferences that directly informed its investment planning. The survey incorporated lessons learned from Hydro One's 2016 customer engagement exercise, including feedback from the OEB and intervenors in the EB-2016-0160 proceeding. Key improvements to Hydro One's engagement approach included the following:[26]

1. *OEB Direction 1: Timing of Survey* – The 2017 survey was completed sufficiently in advance of plan development (prior to the start of the Investment Planning Context phase, which is discussed under Issue 8 below), enabling Hydro One planners to meaningfully incorporate customer feedback when developing the TSP, and management to hold a series of cross functional sessions to review relevant findings, trends and specific customer feedback.[27]

2. *OEB Direction 2: Include Feedback from LDC End-Users* – Hydro One has taken steps to include feedback from LDC end-users. The 2017 survey specifically asked LDCs to respond "with your customers in mind" and "with consideration to your customers' needs", and to identify whether their responses were informed by their own customer engagement or other customer research (many of the respondents answered "yes").[28] In addition, consistent with LDCs' suggested way to obtain feedback, Hydro One Account

[25] Exhibit B-1-1, TSP Section 1.3, pp. 1-3; Exhibit A-7-2.

[26] Exhibit A-2-4, pp. 5-6.

[27] Exhibit B-1-1, TSP Section 1.3.

[28] Exhibit B-1-1, TSP Section 1.3, Attachment 1, pp. 54, 56, 96 and 118.

Executives engaged LDCs in discussions regarding the needs of end-users. The results of LDC customer surveys were also considered during Hydro One's planning process.[29]

3. *OEB Direction 3: Incorporate Input from Indigenous Groups* – Hydro One's survey asked relevant LDC customers whether there was anything they felt Hydro One could do so better serve the specific needs of First Nations and Métis communities. Hydro One also used its ongoing engagement with these communities to identify their needs and preferences.[30]

4. *OEB Direction 4: Ensure Information Presented to Customers is Easy to Understand* – The 2017 survey was designed to ensure that its content was clear, sufficiently informative for customers to respond to, and easy for customers to comprehend. In response to a post-survey question, 76% of respondents indicated that the survey contained the right amount of information. [31]

Hydro One and IRG also took steps to increase the participation rate of customers in the survey. The resulting participation rate of 66% (103 out of 156 transmission-connected customers) was a 51% increase from the 2016 customer engagement.[32]

The customer engagement survey yielded valuable feedback concerning the specific needs and preferences of Hydro One's transmission-connected customers for investment planning purposes. As highlighted at the outset of the survey, three key questions about Hydro One's potential capital investments were at the core of this customer engagement exercise: (1) what outcomes should Hydro One focus on as it decides which investments come first?; (2) how should Hydro One pace its investments in the transmission system over the long run?; and (3) what is the preferred balance between reliability and the amount customers are willing to pay?

[29] Exhibit B-1-1, TSP Section 1.3, Appendix 2, and Section 1.5.2.
[30] Exhibit B-1-1, TSP 1.3, Appendix 2; Exhibit A-7-2.
[31] Exhibit B-1-1, TSP Section 1.3, pp. 31-32, and Attachment 1.
[32] Exhibit B-1-1, TSP Section 1.3, p. 6.

The survey obtained customer feedback on the outcomes they prioritize (when considering the stack of potential investments) and on investment pacing (taking into account costs), including based on illustrative investment scenarios and associated costs outcomes. The survey methodology and results are detailed in IRG's Customer Engagement Report.[33]

Key feedback from customers included the following.

1. Safety, reliability and outage restoration are top priority outcomes.

2. All customer segments prefer pacing that spreads investments over time, instead of investing now with higher short term rates and lower future increase or delaying investments with lower short term rates and higher future rates.

3. Outage frequency reduction is more important than duration reduction, but the most important issue is to reduce the number of day-to-day interruptions.

4. When presented with several investment scenarios, most customers (by at least a three to one margin) preferred investment levels in line with what was before the OEB in EB-2016-0160.

5. Half of end-user participants rate power quality as being "extremely important".[34]

Customer feedback from the survey was an important and direct input for investment planning purposes (as further discussed under Issue 8). Hydro One's other channels of ongoing customer engagement, highlighted below, were also important ways of obtaining customer feedback on needs and priorities, which were taken into account in the investment planning process and the resulting plan.

Customer Satisfaction Research and Surveys

[33] Exhibit B-1-1, TSP Section 1.3, pp. 6-8, and Attachment 1, including pp. 32-52 and 97; Oral Hearing Transcript Volume 6, p. 142, ln. 6-13, and p. 144, ln. 25 to p. 145, ln. 23.

[34] Exhibit B-1-1, TSP Section 1.3, pp. 7-8, and Attachment 1.

Hydro One collects feedback from transmission customers through annual customer satisfaction research. Hydro One uses this data to stay informed of trends that matter most to customers and to guide and improve business practices (and customer satisfaction scores are also included in Hydro One's scorecards, as discussed under Issue 7 below). In 2018, Hydro One's overall transmission customer satisfaction of 90% was the highest in 7 years and a 12% improvement over 2016.[35]

Hydro One's Ontario Grid Control Centre (OGCC) surveys satisfaction among its medium and large business customers so as to improve customer service policies, service delivery processes and communications within the OGCC's areas of accountability, such as outage planning and interruption restoration information.[36]

Large Customer Account Management

An important channel of ongoing customer engagement is Hydro One's Large Customer Account Management Group. This group communicates with customers on matters that include connection requests, sustainment and system development plans and projects, and concerns regarding service levels or power quality. Account Executives from the group regularly meet with transmission customers to discuss their needs and ensure action plans are developed as required. This open dialogue during the planning of candidate investments ensures customer needs and preferences are accounted for and addressed in a collaborative manner.[37]

As an example, TSP investments that have resulted from this type of customer engagement include: (1) Strachan Transmission Station (SR-05), which addresses Toronto Hydro's request for capacity increase, and (2) Frontenac Transmission Station (SR-07), which addresses area asset needs and feeder protections based on direct input from Utilities Kingston. Once the relevant investment needs were identified based on customer feedback, the risks associated with each candidate project were

[35] Exhibit B-1-1, TSP Section 1.3, pp. 9-10, and TSP Section 1.5.
[36] Exhibit B-1-1, TSP Section 1.3, pp. 11-12.
[37] Exhibit B-1-1, TSP Section 1.3, pp. 14-16.

further considered during investment planning, resulting in the eventual inclusion of the projects in Hydro One's capital expenditure plan.[38]

OGCC Customer Operating Support

The OGCC's Customer Operating Support Group works directly with transmission customers to efficiently plan real-time outage operations, coordinate planned outages so Hydro One or the customer can complete required work, respond quickly to unexpected outages, and coordinate switching activities.[39] The OGCC's Outage Planning Group organizes bi-annual customer meetings throughout the province to coordinate outage planning activities. The OGCC sends reports (customized for individual customers) regarding planned outages that will affect the customer's delivery point. The reports provide an opportunity for customers to give feedback. During the customer meetings, customers can (and do) bring forward their maintenance plans for their own facilities, with a view to scheduling or bundling outages in a manner that minimizes the frequency and duration of outages.[40]

Large Customer Conference

Each year, Hydro One organizes and hosts a Large Customer Conference for all large Transmission and Distribution (2 MW and up) customers. This is an opportunity for large customers to hear about Hydro One's plans and initiatives, ask questions, discuss their interests, and raise any concerns they may have. To ensure the conference addresses areas of interest and issues that are top of mind for these customers, Hydro One solicits customer input to inform the conference agenda. Through discussions with customers during these conferences, Hydro One's planning staff learn about customer needs and preferences. Feedback received during these

[38] Exhibit B-1-1, TSP Section 1.3, p.15.
[39] Exhibit B-1-1, TSP Section 1.3, p.16.
[40] Exhibit B-1-1, TSP Section 1.3, pp. 16-17.

conferences, and through post-conference customer surveys, is provided to planners for consideration.[41]

Oversight Committees and Working Groups

To engage with and obtain feedback from customers on issues with a high level of customer interest, Hydro One has also established various oversight committees and working groups, including the Sarnia Area Reliability Oversight Committee, LDC Working Group, Toronto Hydro Oversight Committee, Nuclear Switchyard Oversight Committees with OPG and Bruce Power, Metrolinx Working Group, and Hydro Ottawa Oversight Committee. This helps Hydro One ensure that it obtains feedback as to the ongoing operational needs and preferences of these customer groups, and that they are accounted for in a timely and appropriate fashion. These committees and working groups provide Hydro One with valuable early insight regarding future investment needs.[42]

Engagement with Indigenous Communities

Hydro One has carried out an extensive process of engagement with Indigenous customers and rights holders, which has further informed the formulation of the TSP. This is discussed in more detail under Issue 10 below.

In summary Hydro One's numerous channels of customer engagement activities outlined above have yielded robust and meaningful feedback, in a variety of forms, from its diverse groups of customers. Hydro One considers and addresses the identified customer needs in its investment planning process and the formulation of proposed spending in this Application, such that the resulting plans are responsive to those needs and preferences.

[41] Exhibit B-1-1, TSP Section 1.3, pp. 17-18.
[42] Exhibit B-1-1, TSP Section 1.3, pp. 19-21.

Issue 4: Is the proposed effective date of January 1, 2020 appropriate?

In its Application, Hydro One requests that the OEB's rate orders be made effective from January 1, 2020.[43] The Application was filed on March 21, 2019, over 9 months prior to the requested effective date. This has provided a sufficient period to allow for the requested effective date, particularly given that the Application is for a rate period of only three years.

The Application was deemed complete by the OEB as originally filed. Moreover, Hydro One has conducted itself appropriately and met all filing deadlines that the OEB has established throughout the proceeding. As such, the proposed effective date of January 1, 2020 is appropriate.

Notwithstanding the proposed effective date, to address the possibility that the requested rate orders cannot be issued prior to January 1, 2020, Hydro One has requested an interim order to (1) make its current transmission revenue requirement and charges effective on an interim basis as of January 1, 2020 and (2) establish a Foregone Transmission Revenue Deferral Account (see Issue 22, below) to recover the differences between the revenues earned under interim rates and the revenues that would have been earned based on final rates from the January 1, 2020 effective date until the implementation date of the final rates. Given that the schedule for the proceeding extends into the early part of 2020, Hydro One requests that the OEB proceed to issue the requested interim order prior to the end of 2019.

B. CUSTOM APPLICATION:

Issue 5: Are all elements of Hydro One's proposed CIR framework for the determination of revenue requirement appropriate?

The elements of Hydro One's proposed CIR framework for the determination of revenue requirement are appropriate. The CIR option was selected as it is the only one that is appropriate for, and can properly address, Hydro One's large, recurring

[43] Exhibit A-2-1, p. 4.

and variable capital investment requirements during the plan term. The proposed CIR framework includes features which contribute to the achievement of the goals set out in the OEB's RRF (see Issues 6 and 7, below), and meets the requirements in the OEB's Handbook, including in respect of the index for the annual rate adjustment, benchmarking, performance metrics, minimal updates, and consumer protection.[44] The proposed framework aligns with frameworks approved by the OEB in prior decisions.[45]

The proposed custom revenue cap framework calculates the revenue requirement for 2021 and 2022 by escalating the 2020 revenue requirement by an index for annual rate adjustment, which includes an industry-specific inflation factor, two custom productivity factors, as well as a capital factor. The proposed index is essentially an extension of what was approved by the OEB in Hydro One's most recent distribution proceeding (EB-2017-0049), though tailored to the transmission industry and supported by the applicable benchmarking results. The framework is also similar to the one the OEB approved for Toronto Hydro in EB-2014-0116.[46]

The industry-specific inflation factor is based on a custom weighted two-factor input price index as recommended by Hydro One's independent expert consultant, Power System Engineering, Inc. ("PSE").[47] The OEB approved the use of this inflation factor for transmitters in Hydro One Sault St. Marie's 2019 transmission revenue requirement

[44] A minimum five-year term is also normally required, but Hydro One is applying for three years in light of the following special circumstances:

(1) to align with the filing of a combined Transmission and Distribution rate application with a test period commencing in 2023, as directed by the OEB in its March 16, 2018 letter (see Exhibit A-2-3, p. 2); and

(2) as a result of the filing of a one-year mechanistic adjustment application for 2019 (see Exhibit A-3-1, p. 4).

[45] EB-2017-0049 Decision and Order (March 7, 2019) ("EB-2017-0049 Decision"), pp. 20-25; and EB-2014-0116 Decision and Order (December 29, 2015), pp. 14-19.

[46] EB-2017-0049, Pacific Economic Group report: "IRM Design for Hydro One Networks, Inc." (April 13, 2018), p. 3.

[47] Exhibit A-4-1, Section 1.1; and Exhibit A-4-1, Attachment 1, p. 12.

application [48] and in Hydro One's 2019 transmission revenue requirement application.[49]

The values proposed for Hydro One's two custom productivity factors (which together comprise the proposed X factor of 0%) are derived from the econometric total cost benchmarking ("TCB") work and the TFP trend research conducted by PSE:

1. Hydro One's stretch factor is based on PSE's total cost benchmarking study,[50] which shows that Hydro One is a very strong cost performer – its total costs have been well below the benchmark value since 2004 and will continue to be well below benchmark during 2020-2022. On average, Hydro One is projected to be 32.9% below the benchmark during the 2020-2022 period.[51] In the OEB's 4th Generation IR framework, a benchmark finding of -25% or less implies a 0% stretch factor. PSE recommends a 0% stretch factor here given Hydro One's strong benchmarking results and because there is already a significant stretch factor implicit in PSE's recommended industry productivity factor**.**

2. Hydro One's custom industry TFP measure is based on PSE's industry productivity factor recommendation derived from its TFP study. The TFP trend of the industry from 2004 to 2018 shows an average annual decline in industry-wide TFP (at a -1.61% growth rate). [52] Notwithstanding this significant productivity decline in the industry during the 2004-2018 period, PSE recommends an industry productivity factor of 0%, consistent with previous OEB direction that it did not wish to have a negative industry productivity factor in an escalation formula.[53] The reality, however, is that using a 0% industry

[48] EB-2018-0218.

[49] EB-2018-0130.

[50] The use of econometric total cost benchmarking research to set stretch factors for electric distributors was established by the OEB in EB-2010-0379. As indicated at p.7 of its report (Exhibit A-4-1, Attachment 1), PSE modified the variables and sample to accommodate a transmission total cost econometric study but has retained the basic benchmarking methodology of the 4GIR proceeding.

[51] PSE Reply Report (October 15, 2019), p.3.

[52] Exhibit A-4-1, Attachment 1, p.10; PSE Reply Report (October 15, 2019), p.6.

[53] Exhibit A-4-1, Attachment 1, p.13.

productivity factor amounts to a significant implicit stretch factor for Hydro One because it is stretched to outpace the industry by 1.61%.[54]

The custom capital factor provides the incremental revenue requirement associated with new capital investment that is not recovered pursuant to the I minus X escalation, including depreciation, return on equity, interest and taxes attributable to new capital investment placed in-service each year of the CIR term.[55] The calculation of the capital factor is shown in Exhibit A-4-1, page 7, Table 2. As addressed under Issue 8 below, the capital investments proposed in this Application result from a rigorous process in which significant productivity has been built into the proposed amounts. It is noteworthy that PSE's studies confirm that Hydro One's proposed capital spending compares favourably to the industry.[56] Further, Hydro One's TSP is supported by a number of benchmarking reports which confirm that Hydro One's proposed investments are grounded in asset management and planning practices that align with industry best practices.[57]

In addition, Hydro One has built into the revenue requirement progressive productivity savings which impose a further stretch on Hydro One and provide an explicit financial incentive for continuous improvement.[58] The built-in progressive productivity results in lower capital factors than would otherwise be the case and amounts to an additional stretch from a revenue requirement perspective of about 0.15% in 2021 and 0.3% in 2022.[59] Hydro One is entirely bearing the risk of achieving these savings. These measures are addressed under Issue 6 below.

Hydro One has also proposed a number of customer protection mechanisms, including an earnings-sharing mechanism ("ESM") that will share with customers 50%

[54] Exhibit A-4-1, Attachment 1, p.13.

[55] Exhibit A-4-1, p. 6.

[56] Exhibit A-4-1, Attachment 1, p.14.

[57] Exhibit B-1-1, TSP Section 1.4.2.

[58] Consistent with the expectation outlined on p.25 of the OEB's *Handbook for Utility Rate Applications*.

[59] Exhibit A-4-1, Attachment 1, pp. 5-6; Oral Hearing Transcript, Volume 8, p. 19 ln. 8 to p. 20 ln 8; Undertaking JT2.42.

of any earnings that exceed the OEB-allowed regulatory return on equity ("ROE") by more than 100 basis points in any year of the CIR term[60] and a Capital In-Service Variance Account ("CISVA") which will protect customers by tracking the difference between the revenue requirement associated with actual and OEB-approved in-service capital additions. The proposed CISVA is identical to the CISVA approved by the OEB in Hydro One's recent distribution proceeding[61] and is designed to incent appropriate behaviours throughout the CIR term.[62]

C. PRODUCTIVITY IMPROVEMENT AND PERFORMANCE MEASURES:

Issue 6: Has Hydro One taken appropriate steps to identify and quantify productivity improvements in all areas of its transmission operations?

Hydro One has taken appropriate steps to identify and quantify productivity improvements in all areas of its transmission operations. The total revenue requirement and resulting rate impacts from this Application have been mitigated by $370 million in productivity savings over the 3-year Application period through defined capital and OM&A initiatives, as well as undefined progressive productivity initiatives for capital. Hydro One has included the benefit of these savings to ratepayers up front and has taken on the execution risk to deliver its planned work program within a reduced funding envelope.[63]

Reflecting a strong commitment to achieving its forecast productivity savings, Hydro One has: (1) enhanced governance and visibility in its productivity reporting process with an emphasis on identifying and implementing initiatives across all lines of business while driving accountability across the organization; (2) embedded the forecast savings in its business plan, placing the achievement risk on Hydro One (not

[60] Exhibit A-4-1, p.9.
[61] EB-2017-0049 Decision, p.173.
[62] Exhibit A-4-1, Section 2.3.
[63] Exhibit B-1-1, TSP Section 1.6.

on ratepayers); and (3) included the savings and associated net income targets on the Team scorecard for management staff, putting compensation at risk and incenting desired behavior.[64]

Hydro One's commitment to achieving incremental and continuous productivity improvements is also central to the planning and execution of work programs across the company.[65]

As noted in Table 6-1 below, Hydro One has identified approximately $704 million in savings opportunities over the 2020-2024 TSP period. These are savings that have a direct correlation to a budget and/or spending forecast reduction. This is consistent with the OEBs direction in EB-2016-0160 to "establish firm short-term and long-term targets for productivity improvements and associated reductions in revenue requirement". Over the TSP Period, there are $353 million in fully defined capital productivity savings, $114 million in OM&A productivity savings and an additional $237 million in undefined capital savings that fall into the category of "Progressive Productivity".[66]

Progressive Productivity is a new and important feature of this Application, and represents an upfront commitment by Hydro One to find further efficiencies over the planning period when executing the necessary planned investments in its transmission system without reducing work volumes. These Progressive Productivity savings are material - they total $286 million over the TSP planning period, and include $237 million in Progressive Operations (Capital) savings yet to be defined and $49 million in Progressive Operations (Defined Capital) savings from identified initiatives that are subject to verification through Hydro One's productivity governance framework.[67]

[64] *Ibid*.
[65] Exhibit B-1-1, TSP Section 1.6, p. 1
[66] Exhibit B-1-1, TSP Section 1.6, p.7.
[67] Exhibit B-1-1, TSP Section 1.6, pp. 7-8; Oral Hearing Transcript, Vol. 5, p. 61, ln. 8-28.

Hydro One has shown progress towards the goal of achieving Progressive Productivity savings, including by defining further initiatives since the time of filing this Application.[68] In any event, regardless of whether initiatives are fully defined or undefined, the revenue requirement has been reduced in this Application by the full amount of these productivity commitments. The reductions are the equivalent of $0.6 million in 2020, $2.4 million in 2021 and $5.8 million in 2022.[69] These Progressive Productivity Savings amount to (or are equivalent to) a further stretch factor on capital (i.e., they have the same impact on revenue requirement as a stretch factor), as referred to under Issue 5 above.[70]

Table 6-1: 2020-2024 Productivity Savings

$ millions	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Operations	47	52	53	53	54	**259**
Progressive Operations (Defined Capital)	6	12	12	10	10	**49**
Corporate	12	11	9	7	6	**45**
Capital Total	**$65**	**$74**	**$73**	**$70**	**$70**	**$353**
Operations	9	10	9	9	9	**45**
Information Technology	6	9	10	10	10	**44**
Corporate	7	6	5	4	3	**25**
OM&A Total	**$22**	**$25**	**$23**	**$23**	**$22**	**$114**
Total Defined	**$87**	**$99**	**$97**	**$93**	**$92**	**$468**
Progressive Operations (Undefined Capital)	11	27	49	68	81	**237**
Grand Total	**$98**	**$126**	**$146**	**$161**	**$173**	**$704**
Progressive Productivity						
Progressive Operations (Defined Capital)	6	12	12	10	10	**49**
Progressive Operations (Undefined Capital)	11	27	49	68	81	**237**
Progressive Productivity Placeholder	**17**	**39**	**61**	**78**	**91**	**286**

[68] JT 1.09 and Oral Hearing Transcript, Vol. 6, p. 12, ln. 21 to p. 13, ln. 19.

[69] Undertaking JT 2.42.

[70] Oral Hearing Transcript, Vol 8, p. 19, ln. 17-19.

Hydro One will continue to define, implement and validate initiatives until all of the undefined progressive savings ($237 million) are allocated to specific work programs and projects as discrete initiatives.[71] As noted in an undertaking response,[72] Hydro One has identified $11.5 million of defined progressive initiatives compared to the previously defined $6 million at the time of filing the Application, and, as confirmed in oral testimony,[73] it has been able to define additional initiatives since filing the undertaking response.

These productivity savings are the result of a rigorous process for identifying, developing, implementing, monitoring and measuring initiatives that will reduce costs while maintaining or improving service quality and work outputs.[74] Hydro One's Finance group manages and maintains the process to ensure consistent and disciplined implementation so that productivity changes are accurately measured and reported on Hydro One's scorecards and consistently identified in the company's Business Plan. Staff from each of the lines of business also play an integral role in Hydro One's productivity process and framework. Reports of productivity results are provided monthly to senior executives within each line of business, as well as to the CEO.[75] Hydro One has provided a sample productivity report, reflecting rigor of the productivity framework.[76]

This productivity process was executed in parallel with, and as an input to, Hydro One's business planning process.[77] Each of the lines of business[78] was asked to identify productivity initiatives that would have the potential to result in savings and was required to demonstrate that each proposed productivity initiative: (1) is capable

[71] Exhibit B-1-1, TSP Section 1.6, p. 9.

[72] Undertaking JT1.09.

[73] Oral Hearing Transcript Vol 6, p.12, ln. 21 to p.13, ln. 19

[74] Ibid., p. 8, Oral Hearing, Vol. 5, p.162, ln. 11-16.

[75] Exhibit B-1-1, TSP Section 1.6, p. 2.

[76] Sample monthly productivity report produced in response to undertaking J6.3.

[77] Oral Hearing, Vol. 6, p. 11, ln. 2-7, Oral Hearing, Vol. 5, p.162, ln. 17-28.

[78] Hydro One's lines of business with productivity commitments are Fleet Services, Supply Chain, Station Services, Network Operating, Distribution Lines, Forestry Services, Information Technology, Corporate Groups, Planning, Customer Service, and Engineering.

of achieving demonstrable unit based savings; (2) has a corresponding auditable measurement methodology; and (3) is considered in the development of the business plan and associated investments.[79] As a result, quantifiable productivity improvements were identified and included in corporate scorecards with clear accountabilities for delivering the anticipated savings. The embedded savings resulted in actual plan reductions which would otherwise not have been identified, and this process has resulted in productivity initiatives across Hydro One's transmission business to reduce costs while maintaining or improving service quality and work outputs.[80] The table that was provided in response to interrogatory I-07-SEC-026 details productivity initiatives for historical years, as well as forecast years of this Application, reflecting increasing levels of savings.

Issue 7: Are the metrics in the proposed scorecard appropriate and do they adequately reflect appropriate outcomes? Do the outcomes adequately reflect customer expectations?

Hydro One's evolved scorecard metrics (and associated Performance Reporting Governance Framework) demonstrate a proven and continuous commitment to enhancing performance management, reflect the OEB's directions, and will enable the utility to drive and achieve relevant outcomes. As highlighted below, given the robust link between customer engagement, corporate strategic objectives, RRF outcomes, and scorecard development, Hydro One believes its proposed metrics directly measure and incent performance based on outcomes relevant to utility service and customer expectations. Notably, these outcomes and customer priorities permeate the enhanced, eight-step investment planning process that underpins the establishment of the TSP.

[79] *Ibid*., p. 4
[80] *Ibid*., p. 6.

Hydro One's scorecards consist of performance measures that enable the utility to monitor, demonstrate and drive performance relative to meaningful outcomes. The three relevant scorecards are:[81]

1. The evolved Transmission Scorecard, which is Hydro One's proposed scorecard that aligns the company's strategy and results with the RRF;

2. The Team Scorecard, which is Hydro One's internal corporate scorecard that links the company's objectives with performance-based compensation; and

3. The Operational Scorecard, which is the company's internal operational reporting scorecard with more granular measures and targets.

In formulating and refining its scorecards, Hydro One focused on the delivery and sustainment of long-term value to align with the identified customer priorities and preferences, transmission system needs, and public policy objectives. The resulting performance management framework and metrics are consistent with the OEB's RRF principles as well as key considerations from the Handbook, the *Filing Requirements for Electricity Transmission Applications* ("Filing Requirements"), and the EB-2016-0160 Decision. Specifically, the RRF outcomes of customer focus, operational effectiveness, public policy responsiveness and financial performance were directly integrated into and linked with Hydro One's corporate values and strategic objectives.[82] The interactions between the RRF and the company's scorecards are illustrated in Figure 7-1 below (as excerpted from the Performance Reporting Governance Framework, which applies to both the Transmission and Distribution business).[83]

[81] Oral Hearing Transcript Vol. 1, p. 17.

[82] Exhibit A-3-1, Attachment 1 (2019-2024 Transmission Business Plan), p. 5.

[83] Exhibit B-1-1, TSP Section 1.5, Attachment 1, p. 4, Figure 1.

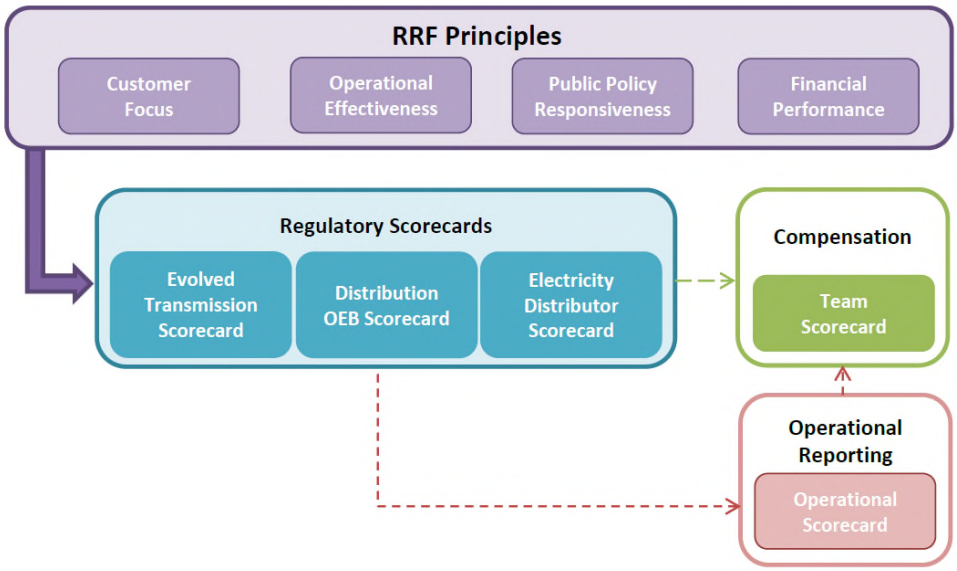

Figure 7-1: Performance Reporting Scorecards & Interactions

To be responsive to the OEB's direction in EB-2016-0160[84] and to maintain continuity relative to what was filed in that proceeding, Hydro One has proposed its evolved Transmission Scorecard and associated targets, as set out below[85]:

[84] Exhibit B-1-1, TSP Section 1.5, pp. 3, 10-19.

[85] Exhibit B-1-1, TSP Section 1.5, p. 5

Table 7-1: Transmission Scorecard & Targets

Performance Categories	Measures		2014	2015	2016	2017	2018	Trend	2018	2019	2020	2021	2022	2023	2024
Customer Satisfaction	Satisfaction with Outage Planning Procedures (% Satisfied)		86	92	89	94	85		85	86	86	87	87	88	88
	Overall Customer Satisfaction (% Satisfied)		77	85	78	88	90		86	88	88	88	88	88	88
Service Quality	Customer Delivery Point (DP) Performance Standard Outliers as % of Total DPs		11.8	14.3	9.7	9.5	10.1		13.0	12.0	11.7	11.5	11.3	11.0	10.8
Safety	Recordable Incidents (# of recordable injuries/illnesses per 200,000 hours work		1.8	1.7	1.1	1.2	1.1		1.1	1.1	1.1	1.0	0.9	0.9	0.9
System Reliability	T-SAIFI-S (Ave. # Sustained interruptions per Delivery Point)		0.60	0.59	0.46	0.65	0.83		0.58	0.55	0.54	0.53	0.52	0.51	0.50
	T-SAIFI-M (Ave. # of Momentary interruptions per Delivery Point)		0.48	0.50	0.33	0.47	0.50		0.53	0.49	0.48	0.48	0.47	0.46	0.45
	T-SAIDI (Ave minutes of interruptions per Deliver Point)		36.7	43.9	80.8	42.8	70.0		46.5	35.36	34.66	33.96	33.28	32.62	31.97
	System Unavailability (%)		0.48	0.63	0.70	0.69	0.71		0.42	0.48	0.47	0.47	0.46	0.45	0.44
	Unsupplied energy (minutes)		12.2	11.8	11.4	13.2	19.5		12.6	9.78	9.59	9.40	9.21	9.02	8.84
Asset & Project Management	Transmission System Plan Implementation Progress (%)		99	105	100	94	99		100	100	100	100	100	100	100
	CapEx as % of Budget		90	106	105	100	97		100	100	100	100	100	100	100
	OM&A Program Accomplishment (composite index)			97	99	108	107		100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Capital Program Accomplishment (composite index)			122	59	88	120		100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cost Control	Total OM&A and Capital per Gross Fixed Asset Value (%)		8.4	9.0	8.6	7.9	7.7		7.7	7.3	7.8	7.9	7.7	7.3	7.0
	OM&A per Gross Fixed Asset Value (%)		2.7	2.9	2.5	2.3	2.3		2.2	1.8	1.8	1.7	1.6	1.5	1.5
	Line Clearing Cost per kilometer ($/km)		2,495	2,234	1,966	2,100	2,797		2,295	2,295	2,264	2,200	2,175	2,100	2,100
	Brush Control Cost per Hectare ($/Ha)		1,624	1,566	1,542	1,356	1,539		1,625	1,625	1,620	1,630	1,608	1,608	1,608
Connection of Renewable Generation	% on-time completion of renewables customer impact assessments		100	100	100	100	100		100	100	100	100	100	100	100
Regional Infrastructure Planning (RIP) &	Regional Infrastructure Planning progress - Deliverables met, %		100	100	100	100	100		100	100	100	100	100	100	100
Long-Term Energy Plan (L-TEP) Right-Sizing	End-of-Life Right-Sizing Assessment Expectation					Met	Met		Met	Met	Met	Met	Met	Met	Met
Financial Ratios	Liquidity: Current Ratio (Current Assets/Current Liabilities)		0.69	0.13	0.20	0.13	0.12								
	Leverage: Total Debt (includes short-term and long-term debt) to Equity Ratio		1.16	1.39	1.43	1.47	1.53								
	Profitability: Regulatory Return on Equity	Deemed (included in rates)	9.36	9.30	9.19	8.78	9.00								
		Achieved	13.12	10.93	10.02	9.03	11.08								

The evolved Transmission Scorecard includes new and refined performance measures and corporate performance targets. The selection of these measures was influenced by internal and external sources, including past performance management measures, benchmarking studies, and scorecards of other utilities in the public domain.[86] The measures were also informed by the OEB's guidance in the Handbook by reflecting the following key considerations and filing requirements:

1. A focus on strategy and results, not activities;
2. The need to demonstrate continuous improvement;
3. Outcomes that are demonstrated to be of value to customers; and
4. Performance metrics that accurately measure the achievement of outcome and include stretch goals to demonstrate enhanced effectiveness and continuous improvement.[87]

In addition, Hydro One developed and implemented a Performance Reporting Governance Framework that focuses on two primary activities: (1) performance reporting and (2) measure and target development. The framework was designed to support the key principles from the RRF of continuous improvement, robust integrated planning and asset management, strong incentive to enhance performance, ongoing monitoring of performance against targets, and customer engagement to inform rate applications. This framework provides a practical mechanism by which Hydro One aligns the company's goals and objectives to the expected outcomes and requirements of the RRF across its regulatory and internal scorecards.[88] The performance categories and measures comprising the Transmission Scorecard are discussed in detail in Section 1.5 of the TSP and highlighted below:

[86] Exhibit B-1-1, TSP Section 1.5, p. 3.
[87] Exhibit B-1-1, TSP Section 1.5, p. 3; Exhibit A-3-1, Attachment 1, p. 19.
[88] Exhibit B-1-1, TSP Section 1.5, Attachment 1, p. 5.

1. The Customer Focus measures within the Transmission Scorecard fall into two performance categories (Service Quality and Customer Satisfaction) and were selected to demonstrate that customers' expected level of service is met.[89] Outcomes tracked by these measures directly correlate with the utility's customer service delivery and performance, including customer satisfaction with OGCC's outage planning procedures, delivery point standard outliers, and overall customer satisfaction.

2. The Operational Effectiveness measures encompass four categories: Safety, System Reliability, Asset & Project Management, and Cost Control. They were selected to demonstrate Hydro One's commitment to continuous improvement in performance and execution as well as delivery of system reliability and service quality objectives.[90]

    a. For instance, specific measures regarding recordable safety incidents, sustained/monetary interruption frequency, average interruption duration, system unavailability, and unsupplied energy directly relate to the service quality and outcomes valued by customers (i.e., safety and reliability were identified as priorities via customer engagement).

    b. Further, in alignment with the OEB's feedback, Asset & Project Management measures (including new measures for TSP implementation progress and capital program accomplishment[91]) enable Hydro One to effectively track and report on plan execution; while Cost Control measures (e.g., ratio of total capital and OM&A spend to fixed asset book value) help demonstrate the cost effectiveness of work execution.[92]

[89] Exhibit B-1-1, TSP Section 1.5, p. 6.
[90] Exhibit B-1-1, TSP Section 1.5, p. 6.
[91] Undertaking J1.2.
[92] Exhibit B-1-1, TSP Section 1.5, pp. 7-9; Oral Hearing Transcript Vol. 1, p. 27.

c. Additionally, the Cost Control category includes unitized metrics (i.e., line clearing and brush control costs) that are responsive to the OEB's direction with respect to unit cost measurement.[93] Notably, while not embedded within the Transmission Scorecard, Hydro One employs a range of refined cost and schedule metrics[94] to ensure the effective ongoing management of detailed work cost, schedule and scope.[95]

3. The Public Policy Responsiveness measures pertain to two performance categories (Renewable Energy and Regional Infrastructure Plan ("RIP")/Long Term Enegy Plan ("LTEP") Right Sizing) and were selected to demonstrate Hydro One's commitment to meet governmental policies and requirements. For instance, measures regarding the completion of renewable customer impact assessments and the progress of RIP deliverables directly stem from regulatory obligations.[96]

4. Lastly, the Financial Performance measures were selected to provide financial visibility and demonstrate that the continuous improvements in execution and cost performance (as highlighted by Operational Effectiveness measures) are sustainable. They align with the Financial Ratio measures used in the Electricity Distributor Scorecard.[97]

Hydro One's targeted performance outcomes will assist the utility in transparently monitoring and measuring its performance relative to these outcomes. The company's overall performance against these targets is reported to stakeholders by means of regulatory scorecards (i.e., the Transmission Scorecard for the transmission business) as well as internal scorecards (i.e., Team Scorecard and Operational Scorecard). In particular, key transmission targets were incorporated into the Team Scorecard to link corporate goals and objectives with performance-based compensation and incent continuous improvement.[98]

[93] Exhibit B-1-1, TSP Section 1.5, p. 16.
[94] Undertaking J3.7
[95] Undertakings JT1.16 and J1.3.
[96] Exhibit B-1-1, TSP Section 1.5, p. 9.
[97] Exhibit B-1-1, TSP Section 1.5, p. 10.
[98] Exhibit A-2-4, Attachment 1, p. 2.

Practically speaking, the incentives that are embedded in Hydro One's compensation plans support continuous improvement in performance management and are designed to both increase efficiency and deliver outcomes that customers value.

In light of the evolved scorecard and robust Performance Reporting Governance Framework, as well as its successful record of plan execution in recent years, Hydro One is confident in its ability to effectively track and report on the successful delivery of its proposed plan and believes that no additional performance reporting (beyond what is already proposed) is needed for the test period.

Issue 8: What is the status of Hydro One's joint work with the IESO to explore cost effective transmission line loss reduction opportunities and to report on those initiatives?

In the proceeding for Hydro One's 2017-2018 transmission revenue requirement (EB-2016-0160), the OEB directed Hydro One to work jointly with the IESO to explore cost effective opportunities for line loss reduction and to explore, as part of its investment decision process, opportunities for economically reducing line losses.[99]

In response to the OEB's direction, Hydro One, with the support of the IESO, retained a third-party expert, EPRI, to review transmission line loss mitigation practices by other utilities and compare them to Hydro One's practices. The resulting EPRI report concluded that Hydro One's design practices are materially consistent with industry best practices for loss mitigation.[100] Furthermore, while the EPRI report demonstrated that line loss mitigation is not the primary driver for transmission investments, secondary or implicit savings may be achieved through system planning and equipment selection. On this basis, Hydro One incorporates line loss mitigation into its investment plan by identifying transmission line loss reduction for projects undertaken to provide supply adequacy or reliability.[101]

[99] EB-2016-0160 Decision, p. 33.
[100] Exhibit B-1-1, TSP Section 1.8, Attachment 1.
[101] Exhibit B-1-1, TSP Section 1.8.5, Table 2.

Hydro One and Environmental Defence, an intervenor in this proceeding, agreed to terms of settlement in respect of this Issue 8, as filed with the OEB on October 17, 2019.[102] As part of that filing, Hydro One included an updated exhibit responding to Issue 8 in greater detail.[103] Under the terms of settlement, Hydro One will take the following steps:

1. Hydro One will participate in and contribute to the ongoing IESO stakeholder engagement on transmission line losses, including offering to be a contributor to the final report which will document the IESO and Hydro One's respective practices with regard to mitigating transmission line losses as well as identifying potential areas for overall net benefit reductions in transmission line losses.

2. As part of the IESO stakeholder engagement process, Hydro One will endeavour to identify any additional opportunities to cost-effectively reduce transmission losses, including through improved processes, option analysis methodologies, documentation, and reporting. This includes the opportunities for improvement identified in points 3 and 4 below.

3. Hydro One will prepare an internal Hydro One guideline delineating the transmission line loss process that Hydro One will follow and is accountable for. This will be developed in Q1 2020 and refined throughout the IESO stakeholder consultation as necessary.

4. In business cases for projects where transmission line losses are material, Hydro One will include an option analysis and report on transmission line losses. This will be implemented over the course of 2020 for any projects meeting a documented materiality threshold.

5. At the end of the IESO stakeholder consultation and upon issuance of the IESO report, if the IESO determines that it will not proceed to engage an independent third party to review the IESO's and Hydro One's processes, Hydro One will initiate an independent third-party review of its own processes for cost-effectively reducing

[102] EB-2019-0082 Hydro One Settlement of Issue 8 Letter (October 17, 2019).

[103] Exhibit B-1-1, TSP Section 1.8, Attachment 2.

transmission line losses, to be filed in connection with its next rate application. This review would aim to identify any additional opportunities to cost-effectively reduce transmission line losses, including through improved processes, option analysis methodologies, documentation, and reporting, and would invite input from stakeholders.

These terms of settlement are consistent with and support the relevant OEB objective outlined in the Issues List Decision[104] to address Hydro One's "plans going forward to achieve concrete results." Hydro One therefore submits that the OEB should adopt the settlement between Hydro One and Environmental Defence as a complete resolution of this issue.

D. TRANSMISSION SYSTEM PLAN:

Issue 9: Are the proposed forecast capital expenditures and in-service additions arising from the transmission system plan appropriate, and is the rationale for planning and pacing choices (including consideration of customer preferences, planning criteria, system reliability, asset condition and benchmarking) appropriate and adequately explained?

The proposed capital expenditures and in-service additions arising from Hydro One's TSP are appropriate and supported by thorough planning practices. The TSP establishes the Hydro One's investment needs and proposals on the basis of a rigorous and customer-focused planning framework.

As demonstrated through comprehensive evidence and further articulated in this proceeding, Hydro One's plan achieves and balances the imperatives of maintaining prudent stewardship over transmission system assets, responding to customer needs and preferences, satisfying compliance and service obligations, and ensuring efficient execution

[104] EB-2019-0082 OEB Issues List Decision (September 23, 2019).

of work and sustainable financial performance.[105] In alignment with the OEB's RRF, Hydro One is targeting the four outcomes through its TSP:[106]

1. **Customer Focus**: improving power quality and customer reliability;
2. **Operational Effectiveness**: striving for an injury-free workplace, minimizing long-term costs to maintain the transmission system and improve reliability, and restoring top quartile reliability performance by mitigating risk arising from asset deterioration;
3. **Public Policy Responsiveness**: ensuring compliance with regulatory requirements (including environmental and safety requirements) and reliability standards; and
4. **Financial Performance**: achieving manageable and stable rate impacts over the course of the planning period.

In developing the TSP, Hydro One utilized a set of robust asset management and investment planning processes. The mix and level of capital expenditures within the plan are necessary for achieving outcomes that are valued by customers and required to sustain safe and reliable transmission system operations, including to respond to deteriorating system and asset condition, fund non-discretionary investments to address system needs and mandatory service obligations, and invest in infrastructure that is essential to core business functions and operations. In response to the OEB's previous direction, Hydro One has made significant improvements to several aspects of its planning framework, including:

1. Timely and comprehensive customer engagement to inform plan development;
2. Robust risk scoring and prioritization of investment candidates;
3. Embedding progressive productivity into the plan; and
4. Improving the management and reporting of capital program delivery to ensure execution feasibility and efficiency.

[105] Exhibit B-1-1, TSP Section 1.1.5.2, p. 27.
[106] Exhibit B-1-1, TSP Section 1.1.5.3, p. 28.

These improvements directly support the rigor and effectiveness of the planning process that underpins Hydro One's TSP. The discussion below highlights Hydro One's investment needs and proposed capital expenditure plans, followed by further descriptions of each of the above-noted aspect of process improvements.

Transmission System and Asset Needs

Hydro One must address significant transmission system and asset needs as well as customer service and mandatory compliance obligations

Hydro One has proposed a proactive and strategically paced investment plan to mitigate escalating pressures on OM&A and capital costs and maintain customers' expected level of service.[107] Aging infrastructure and deteriorating asset condition will require increased maintenance and renewal in the coming years to ensure levels of performance and reliability that the system is designed and expected to deliver[108] and to mitigate the risks to public and employee safety.[109]

Most of Hydro One's major transmission asset categories have experienced growing numbers of high and very high risk assets (i.e., in poor condition[110]) relative to the levels shown in the prior transmission rate application (EB-2016-0160).[111] This increase in asset deterioration corresponds with Hydro One's aging asset populations. Over the next 10 years, in the absence of replacements, the number of major assets (i.e., transformers, protection systems/equipment, breakers and conductors) beyond ESL[112] will increase by

[107] Exhibit B-1-1, TSP Section 2.2, p. 1.

[108] Oral Hearing Transcript Vol. 1, p. 147, ln. 6-14.

[109] Exhibit A-3-1, Attachment 1, p. 2.

[110] Based on various qualitative and quantitative analyses, Hydro One assigns risk ratings to indicate asset condition (i.e., very low risk, low risk, fair risk, high risk, very high risk).

[111] Undertaking JT1.21.

[112] Hydro One uses the ESL of assets as a general guideline to inform investment decisions. The ESL is defined as the average time duration in years that an asset can be expected to operate under normal system conditions and is determined by considering manufacturer guidelines and Hydro One's historical asset retirement data (Exhibit B-1-1, TSP Section 2.2, p. 1).

1.7 to 2.9 times.[113] Hydro One's business objectives and system performance will be materially impacted if replacements do not occur in a planned and paced manner.

Asset condition correlates with the probability of asset failure and equipment outages, and as such, is one of the major factors considered by Hydro One planners when selecting investment candidates. For instance, the 1,903 circuit-km of verified high risk condition aluminum core steel-reinforced ("ACSR") conductor (out of the total 2,127 circuit-km planned for refurbishment) has been experiencing five times more delivery point interruptions compared to the overall fleet.[114] Notably, since 2008, lines, protection and control equipment, transformers and breakers have been the predominant sources of equipment-related delivery point interruptions, accounting for 88% of all such interruptions. This highlights the significant impact key transmission assets have on system and customer reliability. A run-to-fail approach would not be prudent given the magnitude of these interruptions, and Hydro One must proactively manage the associated failure risks.[115] As the primary driver of replacement decisions, asset condition is assessed by Hydro One planners to verify the end of life of relevant assets before work is undertaken.[116]

In addition to risks stemming from aging and deteriorating assets, Hydro One's transmission business is facing a host of other challenges, including:

1. Customer service: customer expectations relating to reliability and power quality continue to increase.[117]

2. System service and access: Hydro One must proactively respond to government policy and regional infrastructure needs to address system constraints, enable new load growth, and facilitate access and new connections to the transmission system.[118]

[113] Exhibit B-1-1, TSP Section 2.2, p. 1.
[114] Interrogatory I-01-OEB-23(e).
[115] Exhibit B-1-1, TSP Section 2.2, p. 4.
[116] Exhibit B-1-1, TSP Section 2.2, p. 1.
[117] Exhibit A-3-1, Attachment 1, p. 2.
[118] Exhibit A-3-1, Attachment 1, p. 2.

3. Environmental compliance: notably, federal polychlorinated biphenyl ("PCB") regulations require all PCB contaminated equipment that exceed applicable thresholds to be removed from service by 2025.

4. Critical infrastructure protection: Increased focus on critical infrastructure protection and regulatory compliance requirements.[119]

To effectively address these challenges in a balanced manner, Hydro One has developed a restrained and appropriately paced investment plan, which incorporates the investments with the highest risk mitigation benefits for resolving system, customer and compliance challenges (as prioritized based on thorough quantitative and qualitative assessments). If not addressed in a planned and timely manner, system and asset risks are expected to materialize and exert upward pressure on reactive repairs and replacements. This would result in higher costs and adverse impacts on customers during and/or beyond the test period, which are risks that Hydro One seeks to avoid through the proposed plan.

Capital Investment Plan and In-Service Additions

Hydro One has developed a comprehensive 5-year investment plan to address significant investment needs.

Hydro One's TSP includes a comprehensive five-year capital expenditure plan organized into four investment categories: System Renewal, System Service, System Access, and General Plant. The TSP also includes Investment Summary Documents ("ISD")[120] that detail the specific need, drivers and expenditures for each material investment with spending greater than $3 million in any given year.

Hydro One's capital investments are carried out as either a project or program. Programs are high-volume, recurring investments that tend to be less complex and experience less variability in units of work and costs from year to year, such as the Wood Pole Structure Replacements program (SR-21) and the Steel Structure Coating Program (SR-22). Projects

[119] Exhibit A-3-1, Attachment 1, p. 2.
[120] Exhibit B-1-1, TSP Section 3.3.

are unique and complex one-time investments that occur within a specific period with the schedule and budget varying from one project to the next, such as the Air Blast Circuit Breaker ("ABCB") Replacement Projects (SR-01), Transmission Line Refurbishment Projects (SR-19), or the Barrie Area Transmission Upgrade (SS-09).

Approximately 83%[121] of Hydro One's 2020-2024 transmission capital plan falls under System Renewal, which is required to proactively manage and mitigate condition-driven risks. The proposed System Service and System Access investments (about 14% of the total plan) are largely non-discretionary. These investments must be completed to address system needs (identified through collaborative efforts with the IESO, distributors, and customers through bulk transmission planning and Regional Planning) and mandatory service obligations (i.e., pursuant to the Transmission System Code ("TSC") and Hydro One's transmission licence). General Plant accounts for about 7% of the total plan and includes investments that are required to sustain Hydro One's core business functions and operations in a safe and efficient manner. The 2020-2024 transmission capital plan, including recent updates[122], is summarized in Table 9-1, below.

Table 9-1: 2020 – 2024 Capital Expenditures

	Forecast ($M)				
	2020	**2021**	**2022**	**2023**	**2024**
Capital Expenditure	1,188.0	1,312.5	1,364.2	1,364.2	1,364.2

In-service additions represent increases to rate base as a result of capital work being declared in-service and ready for use. The relationship between in-service additions and capital expenditures in a given year is not one to one as multi-year projects incur capital expenditures over many years prior to the project being completed and placed in-service. The test period (2020-2022) transmission in-service capital additions, including recent updates[123] is summarized in Table 9-2 below.

[121] Note that the 2020-2024 capital plan categories shown in percentages in this paragraph exclude progressive productivity of -4%.

[122] Undertaking J1.01, Table 6.

[123] Undertaking J1.01 Table 7.

Table 9-2: 2020 – 2022 In-Service Capital Additions

	Test		
	2020	**2021**	**2022**
In-Service Capital Additions	**1,032.9**	**1,292.5**	**1,287.6**

The specific drivers and needs pertaining to each capital investment category are further discussed below.

System Renewal

Hydro One's System Renewal investments are necessary to address condition driven asset needs.

System Renewal investments replace or refurbish transmission system assets to sustain performance and reliability as the system is designed and expected to deliver.[124] These investments address assets that have failed, have a high risk of failure (as indicated by condition assessments), have substandard performance, or are functionally obsolete.[125]

As shown in Table 9-3 below, most of Hydro One's major transmission asset categories have experienced growing numbers of high and very high risk assets (i.e. in poor condition) relative to the levels shown in the EB-2016-0160 application, including: a 39% increase for conductors 17% increase for wood poles, 13% increase for transformers, 3% increase for protection systems, and 8% decrease in circuit breakers.

[124] Oral Hearing Transcript Vol. 1, p. 147, ln, 6-14.
[125] Exhibit B-1-1, TSP Section 3.1.1, p. 5.

Table 9-3: Transmission Assets in High or Very High Risk Condition

Asset Type	Assets at High or Very High Risk[126]		
	Prior Application	Current Application	Change
Transformers	108	122	+13%
Circuit Breakers	499	460	-8%
Protection Systems	3,267	3,363	+3%
Conductors (km)	2,643	3,680	+39%
Wood Poles	4,832	5,630	+17%

The increasing number of deteriorating assets corresponds with Hydro One's aging asset populations. As outlined in the various benchmarking studies regarding specific major assets[127], the relationship between ESL population and aggregate fleet condition is reasonably understood; as the population of any group ages, aggregate fleet condition will deteriorate, and performance and reliability will be negatively impacted. On this basis, deteriorating asset condition poses a material risk of adverse impact to Hydro One's system performance and business objectives, particularly as the populations of major transmission assets exceeding their ESL will drastically increase by 2024. Notably, without replacement by 2024, transformers exceeding ESL will increase from 25% to 39%, breakers will increase from 12% to 23%, protection systems will increase from 27% to 41%, and conductors will increase from 5% to 13%.[128]

System Renewal investments have been selected based on condition, performance and obsolescence criteria, considering customer needs and preferences and end-of-life equipment right-sizing, and have been prioritized through Hydro One's rigorous investment planning process. System Renewal investments account for the vast majority of the net capital expenditures over the five-year TSP period (83%).[129]

[126] Undertaking JT1.21.

[127] Exhibit B-1-1, TSP Section 1.4, Attachments 1-16.

[128] Exhibit B-1-1, TSP Section 3.1, p. 6.

[129] Exhibit B-1-1, TSP Section 3.1, p. 5.

Table 9-4 Historical System Renewal Net Capital Investments ($ millions)

OEB Category	2015		2016		2017		2018		2019
	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Bridge
System Renewal	688.9	573.6	733.9	539.9	740.7	733.7	776.2	780.4	773.3

Historical System Renewal spending is shown in Table 9-4. Variances in 2015 to 2017 resulted from higher than planned investments in transmission stations and line refurbishments, timing of projects, and higher spending on emergency replacements.[130] Notably, in 2017 and 2018, System Renewal projects were generally in line with plan on an envelope basis and forecast expenditures for 2019 are in line with 2018 levels.

Hydro One's forecast System Renewal investments for 2020-2024 are shown in Table 9-5 below and reflect $3.5 billion for stations investments and $2.0 billion for lines investments. Over the 2020-2022 test period, System Renewal investments total $3.1 billion.

Table 9-5 Forecast System Renewal Net Capital Investments ($ millions)

OEB Category	2020	2021	2022	2023	2024
	Forecast				
System Renewal	865.2	1,103.1	1,172.8	1,177.4	1,193.8

Significant investment is required to address aging and deteriorating transmission infrastructure, characterized by a large number of assets in poor condition. The key components and drivers for stations and lines renewal investments are discussed below.

Stations Renewal Investments

The TSP includes stations renewal investments of $3.5 billion (53% of the total planning period forecast) to address transformers, circuit breakers, and protection, control and telecom equipment that are deteriorated as determined by condition assessments.[131] These

[130] Exhibit B-1-1, TSP Section 3.3, p. 7.

[131] Exhibit B-1-1, TSP Section 3.1.1.1.

investments are planned based on an integrated planning and execution approach to leverage efficiencies through design, construction and commissioning. The renewal plan for each station asset type is further described below:

1. A significant proportion of Hydro One's transformer fleet is beyond ESL and 17% of the fleet is in high or very high risk condition. Since 2008, transformers have caused 13% of equipment-caused outages.[132] Hydro One plans to manage the risks associated with its transformer fleet by replacing an average of 22 units annually from 2020 to 2024 based on condition assessments.**[133]**

2. Over the past 10 years, circuit breakers have been the cause of 13% of equipment-related delivery point outages, and 9% of the breaker fleet is in high or very high risk condition. Notably, the entire population of ABCBs (133 in total) is rated at a high or very high risk condition.[134] Hydro One's ABCBs (and their auxiliary systems[135]) have been the primary cause of increasing breaker-related forced outages.[136] ABCBs are located in critical stations where the impact of failure on system and customer reliability can be enormous.[137] In response to these risks, Hydro One will replace 95 ABCBs (72% of the ABCB fleet) at eight bulk transmission stations over the 2020-2024 TSP period.[138]

3. Over the past 10 years, protection systems have accounted for 17% of equipment-related delivery point outages,[139] and 27% of the protection system fleet is in high or very high risk condition. Hydro One will replace an average of 480 protection systems

[132] Exhibit B-1-1 TSP Section 2.2 Figure 2 p 4,

[133] Exhibit B-1-1, TSP Section 3.1, p. 11.

[134] Exhibit B-1-1, TSP Section 3.1, pp. 11-12.

[135] Oral Hearing Transcript Vol. 2, p. 22, ln. 7-20.

[136] Exhibit B-1-1 TSP Section 2.2, Figure 9 - 11 p 20,

[137] For example, in 2016, Sir Adam Beck II had a loss of 6 ABCBs which resulted in 100 MW of reduced generation, impacting the imports and exports of power to the New York Power Authority (NYPA) and the customer, Ontario Power Generation (OPG) had to redirect the river water flow to avoid flooding parts of downtown Niagara Falls (ISD-SR-01, p. 5).

[138] Exhibit B-1-1, TSP Section 3.1, p. 12; ISD-SR-01.

[139] Exhibit B-1-1, TSP Section 3.1, p. 12.

per year over 2020-2024,[140] including solid-state Power Line Carrier ("PLC") relays that are considered high risk and have a history of mis-operation.[141] Overall, this will result in the replacement of obsolete, non-standard and poor performing protection systems at 72 transmission stations.**[142]**

Lines Renewal Investments

The TSP includes an increased emphasis on lines renewal investments at a cost of $2.0 billion (30% of the total planning period forecast) to refurbish and replace end-of-life transmission lines, insulators, and wood poles and to continue the steel tower coating program (albeit at a slower pace consistent with the OEB's direction in EB-2016-0160).[143] Planned line refurbishment investments have been prioritized based on detailed asset condition assessments confirming replacement candidates to be at end of life.

Hydro One's planned line renewal investments include: (1) replacement of 2,127 circuit-km (7%) of end-of-life conductors; (2) replacement of defective insulators on 10,850 (8.5%) primarily critical circuit structures; and (3) replacement of 4,000 (9.5%) end-of-life wood poles.[144] The renewal plan for each line asset type is further described below:

1. Overhead conductors are the single largest and most vulnerable component of the transmission line system, and failures can cause severe reliability and safety consequences impacting Hydro One's customers and the general public. Given that 13% of the conductor fleet is in high and very high risk condition, planned replacements are necessary to maintain acceptable fleet condition and performance, and to avoid a sudden rise in future replacements as a result of unplanned failures.

[140] Exhibit B-1-1, TSP Section 3.1, p. 13.
[141] Exhibit B-1-1, TSP Section 2.2, p. 26.
[142] Exhibit B-1-1, TSP Section 3.1, p. 9.
[143] Exhibit B-1-1, TSP Section 3.1.1.2.
[144] Exhibit B-1-1, TSP Section 3.1, pp. 13-14.

Hydro One has included investments to address end of life ACSR and copper conductor,[145] and near end of life ACSR conductor[146].

2. Line insulators provide mechanical support for the conductor and electrical isolation between the live conductor and tower structure. Approximately 34,000 circuit structures with insulators manufactured by Canadian Ohio Brass and Canadian Porcelain between 1965 and 1982 are known to be defective and susceptible to mechanical and electrical failure. Similar to conductors, insulator failures can cause severe reliability and safety consequences impacting Hydro One's customers and the general public. Hydro One has prioritized its insulator replacements to target those posing a higher public safety risk (i.e., in critical locations) by 2022, and thereafter reduce the pace of replacement to target non-publicly accessible insulators.[147]

3. Hydro One has about 42,000 wood pole structures, with 13% of the fleet in high and very high risk condition. The majority of the wood pole fleet is located in Northern Ontario, including many that support radial circuits. This means that a wood pole or cross-arm failure can directly cause a customer outage, leading to costly and prolonged shut-downs of industrial customers.[148] In response, Hydro One plans to replace 4,000 verified end-of-life wood poles over 2020-2024.[149]

Hydro One's proposed system renewal investments represent the appropriate mix and level of investment that is required to effectively manage asset risk and system reliability while respecting customer preferences and minimizing rate increases.

[145] ISD SR-19.
[146] ISD SR-20.
[147] Exhibit B-1-1, TSP 3.1, p. 15.
[148] Exhibit B-1-1, TSP Section 2.2, p. 70.
[149] Exhibit B-1-1, TSP Section 3.1.1.2.

System Service

Hydro One's System Service investments are mostly non-discretionary and required to address system needs identified through regional planning, IESO bulk planning studies, or the 2017 LTEP.

System Service investments are non-discretionary investments identified through RIP, IESO Bulk Planning Studies, or the 2017 LTEP. These investments are necessary to maintain inter-area network transfer capability, ensure local area supply adequacy, and mitigate system risks related to safety, security and reliability. System Service investments also include those required due to government directives or customer power quality concerns.[150]

The pacing of Hydro One's System Service investments is dictated by identified system needs through the above-noted planning processes or government plans. Through these processes, need dates are established but are subject to change as a result of updated load forecasts or generation requirement changes.

Table 9-6 below shows the historical System Service capital investments. Spending in 2015 and 2016 was below planned levels due to certain project cancellations and deferrals.[151] Spending in 2017 and 2018 was in line with planned levels as major projects were completed and improved coordination with the IESO enabled better planning of investments.

Table 9-6: Historical System Service Capital Investments ($ millions)

OEB Category	2015		2016		2017		2018		2019
	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Bridge
System Service	157.9	189.9	140.9	180.0	93.5	97.0	73.9	75.6	103.8

Over the 2020-2024 period, Hydro One plans to build new (or upgrade existing) transmission assets to increase transfer capabilities between generation areas and load centers within

[150] Exhibit B-1-1 TSP Section 3.1, pp. 20-21.
[151] Exhibit B-1-1 TSP Section 3.3, p 7.

Ontario and with neighboring utilities, and provide bulk system reactive control.[152] Hydro One also plans to invest in local area supply by providing new or upgraded facilities to ensure area supply adequacy and meet load forecast requirements in areas where existing facility loading levels reach or exceed capacity.[153] Hydro One plans to invest in risk mitigation and reliability performance enhancements, as well as to address customer power quality issues. These investments will maintain Hydro One's compliance with mandatory requirements (such as the TSC[154], IESO Market Rules[155], Northeast Power Coordinating Council ("NPCC") standards) and ensure responsiveness to customer concerns.[156]

Table 9-7 below provides the forecast System Service net capital investments**.** The increase relative to historical levels is attributed to the timing of major transmission projects that will upgrade and expand system capacity, such as the East-West Tie connection, Leamington Area Transmission Reinforcement, and Barrie Area Bulk Transmission Line[157]

Table 9-7: Forecast System Service Capital Investments ($ millions)

OEB Category	2020	2021	2022	2023	2024
	Forecast				
System Service	204.1	148.2	151.8	174.3	204.2

System Access

Hydro One's System Access investments are non-discretionary investments driven by legally mandated service obligations.

System Access investments are non-discretionary based on Hydro One's obligations,[158] including requirements of the TSC and conditions of its Transmission Licence. Hydro One

[152] Exhibit B-1-1, TSP Section 3.3.8, ISDs SS-01, 02, 04-06, 08.
[153] Exhibit B-1-1, TSP Section 3.3.8, ISDs SA-09 to 15.
[154] OEB Transmission System Code, Appendix 2.
[155] IESO Market Rules, Appendix 4.1.
[156] Exhibit B-1-1, TSP Section 3.3.8, ISD SS-16.
[157] Exhibit B-1-1, TSP Section 3.3, p. 5.
[158] Exhibit B-1-1, TSP Section 2.1, p. 23-24.

must respond and connect new load and generation customers, and address transmission system modifications to accommodate third party requests.[159]

System Access investments vary significantly year over year and depend primarily on customer requirements, including the need for connection capacity, reliability needs relating to regional planning and IESO generation contracts, and system modifications driven by third party requests to facilitate or permit secondary land use.[160]

Table 9-8 below shows Hydro One's net System Access investments over the historical period (2015-2018) and 2019 bridge year. Despite Hydro One's best efforts to forecast funding levels, there are unavoidable fluctuations in System Access spending due to external factors such as customer and third-party project changes. Overall, System Access spending in the 2015 to 2018 period was below planned levels. Spending was below planned levels in 2015 and 2016 due to delayed projects that were subsequently completed in 2017 and 2018, which led to higher than planned spending in those years.[161]

Table 9-8: Historical System Access Net Capital Investments ($ millions)

OEB Category	2015		2016		2017		2018		2019
	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Bridge
System Access	7.6	19.7	17.0	31.9	42.7	33.3	33.7	24.3	45.1

Table 9-9 below provides the forecast System Access capital investments**.** System Access investments over the 2020-2024 period include new or expanded transmission assets to: (1) increase capacity and meet load growth;[162] (2) provide connections to customer owned stations,[163] including connections to power stations for the Metrolinx rail electrification project;[164] (3) connect generation customers and upgrade the system to enable such

[159] Exhibit B-1-1, TSP Section 3.1, p. 17.
[160] Exhibit B-1-1, TSP Section 1.2; Exhibit B-1-1, TSP Section 3.1, pp. 17-18.
[161] Exhibit B-1-1 TSP Section 3.3 Table 2 p 6.
[162] Exhibit B-1-1 TSP Section 3.3.8 ISD SA-02 and SA-03.
[163] Exhibit B-1-1 TSP Section 3.3.8 ISD SA-01.
[164] Exhibit B-1-1 TSP Section 3.3.8 ISD SA-04.

connections;[165] and (4) undertake modifications related to secondary land use to relocate, remove, or reinforce transmission assets and facilitate third-party projects (e.g., roadwork, transit systems).[166] These investments represent a small portion of the overall capital plan since a significant portion of System Access expenditures are recovered through customer capital contributions in accordance with the TSC.[167]

Table 9-9 Forecast System Access Net Capital Investments ($ millions)

	2020	2021	2022	2023	2024
OEB Category	**Forecast**				
System Access	24.8	11.3	11.7	12.7	4.1

General Plant

Hydro One's General Plant investments are required to keep Hydro One's core business functions and operations running safely, effectively, and efficiently.

The General Plant category includes investments in real estate facilities, transportation and work equipment, and IT systems. These investments are necessary to support the safe, efficient and effective performance of Hydro One's core business functions and operations. General Plant investments sustain the infrastructure and equipment that enable the day-to-day operations of fleet, facilities, and IT system, which in turn support the ongoing delivery of work execution and customer service, as well as the achievement of TSP outcomes.[168]

Hydro One's General Plant investment plan stems from a rigorous investment planning process and balances the need to minimize overall lifecycle costs, mitigate safety and security risks, improve efficiencies, and ensure business continuity. Investment pacing was

[165] Exhibit B-1-1 TSP Section 3.3.8 ISD SA-06.
[166] Exhibit B-1-1 TSP Section 3.3.8 ISD SA-07.
[167] Section 6.3 of the TSC.
[168] Exhibit B-1-1, TSP Section 1.1, p. 51; TSP Section 2.2.3.

driven by lifecycle cost management principles, business continuity needs, customer needs and preferences as well as IT system warranty and vendor support periods.

Table 9-10 below shows the historical General Plant capital expenditures. Spending below plan in the 2015-2018 period was due to delays related to new technology projects, facility upgrades, and the ISOC[169] which was approved by Hydro One's Board in July 2019.[170]

Table 9-10: Historical General Plant Capital Investments ($ millions)

OEB Category	2015		2016		2017		2018		2019
	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Bridge
General Plant	88.6	116.3	94.8	114.6	76.9	86.0	83.6	119.7	116.3

Forecasted General Plant investments over the test period are shown in Table 9-11 below.[171] Higher than historical spending in 2020 is attributed to the ISOC investment (GP-01) and additional operating infrastructure spending, as further described below. Funding is expected to significantly decrease in 2021 and 2022 as these two areas of investment are completed.

Table 9-11 Forecast General Plant Capital Investments ($ millions)

OEB Category	2020	2021	2022	2023	2024
	Forecast				
General Plant	115.4	94.4	94.7	83.6	58.9

Over the 2020-2024 period, Hydro One plans to make reliability and security enhancements to its operating infrastructure and control facilities in order to provide service continuity, maintain compliance with mandatory regulatory requirements, and allow Hydro One to continue to effectively monitor, operate, control the Ontario transmission system. These investments include: (1) building a new ISOC to ensure the continued safe and reliable

[169] Interrogatory I-07-SEC-38

[170] Undertaking J4.05, Attachment 1.

[171] Exhibit B-1-1, TSP Section 3.3, Table 2, p 3.

operations of the transmission system; [172] (2) developing a non-operational data management system to enable automation and modernization of the transmission system, in support of more effective decision-making and post-fault analysis;[173] (3) replacing end of service life elements of the grid control network to maintain system operability;[174] and (4) upgrading the Network Management System and the Integrated Voice Communications and Telephony System to ensure reliable system operation and ongoing communications among the OGCC, Backup Control Centre and the IESO.[175]

Transport, Work and Service Equipment ("TWE") investments will be made to replace end-of-life fleet vehicles, helicopters, and service equipment. These investments are expected to lower day-to-day operating costs, maximize line-of-business productivity, mitigate safety risks to the public and employees, and maintain compliance with laws and regulations. Hydro One's TWE investments are grounded in rigorous asset management analysis, which accounts for industry standards (i.e., life cycle expectancy), remaining net book value, operating cost drivers, and overall condition assessment of the relevant assets.

Investments in buildings and facilities are necessary to mitigate reliability, safety and environmental risks associated with deteriorating and failing physical infrastructure. These investments also ensure that essential improvements are made to meet operational requirements and promote efficiencies in facility maintenance and operations over the long-term.

Hydro One's IT investments are primarily focused on maintaining current business capabilities by replacing IT assets and upgrading high-priority systems that have reached end of life or become obsolete. To ensure IT systems are fully operational, over the 2020-2024 period Hydro One plans to invest in (1) hardware and software refresh and maintenance programs to ensure the continued operation of the IT application infrastructure and upgrade existing systems; (2) critical IT infrastructure to address equipment needs generated by the growth in demand for IT services, capacity limitations and the replacement

[172] Exhibit B-1-1, ISD GP-1.
[173] Exhibit B-1-1, ISD GP-5.
[174] Exhibit B-1-1, ISD GP-2.
[175] Exhibit B-1-1, ISDs GP-3 and 4.

of end-of-life equipment; and (3) planned financial and work management system transformation and planned human resources ("HR") and payroll transformation, aimed at optimizing talent management, time and payroll management and HR performance.

The following sections discuss Hydro One's rigorous and enhanced planning approach, which provided a sound basis for formulating the above-highlighted capital expenditure investments. The key aspects addressed below are customer engagement, investment scoring and prioritization, incorporation of progressive productivity into the plan, and improved capital program management and delivery.

Customer Engagement

Hydro One's improved investment planning process incorporated customer priorities: safety, reliability, and environment.

Hydro One's TSP is a customer-focused plan that reflects investment levels in line with what the majority of customers support.[176] As the product of a planning process that considered and integrated customer feedback throughout, the plan is focused on delivering results that matter to customers.

As discussed under Issue 3 above, Hydro One undertakes a broad range of customer engagement activities, including a transmission customer engagement survey that specifically informs the development of the Application and TSP. On this basis, Hydro One is able to understand the outcomes that its customers care about, as well as the level and mix of investments that they would like to see included in the investment plan. The feedback obtained through these engagement activities provides an important and direct input into Hydro One's investment planning process, resulting in an investment plan that is closely aligned with and highly responsive to customer needs and preferences.[177]

In 2017, prior to beginning the investment planning process for this TSP, Hydro One undertook the transmission customer engagement survey to identify the needs and

[176] Exhibit A-3-1, p. 18.

[177] Exhibit B-1-1, TSP Section 1.3.

preferences of transmission customers. The survey was completed sufficiently in advance of this Application, allowing Hydro One to hold a series of cross functional sessions to review relevant findings, trends and specific customer feedback[178] as well as to incorporate customer priorities into the TSP. In short, transmission customers identified the following priorities:[179]

1. Safety, reliability and outage restoration are priority outcomes.
2. All customer segments prefer to see investments paced and spread out over time.
3. Outage frequency reduction is more important than duration reduction, but the most important issue is to reduce the number of day-to-day interruptions.
4. The majority of customers (by at least a three to one margin) preferred investment levels in line with what was before the OEB in EB-2016-0160.[180]
5. Half of end-user participants rated power quality as being “extremely important”.

Hydro One incorporated these priorities directly into its planning framework, including by:

1. aligning its risk-based scoring criteria for investment candidates to closely reflect customer priorities (with safety, reliability and environmental risks being the most important),
2. implementing customer engagement flags to track and reflect needs and preferences that are more qualitative in nature (e.g., outage/asset renewal coordination, proactive communication, power quality, and performance improvements), and

[178] Exhibit B-1-1, TSP Section 1.1.5.4, p. 33.

[179] Exhibit B-1-1-, TSP Section 1.1.5.4, pp. 32-33.

[180] Through the customer engagement survey, respondents were provided with four illustrative investment scenarios (Scenarios A, B, C, D), with a line of data points that started at zero and extended beyond the four scenarios. Customers were asked to select any point along that continuum that reflected what they believed to be the appropriate balance between rate impacts and outcomes. The majority of customers selected Scenario C which included a rate increase of 5.1%/year (excluding load) to improve long term reliability. Hydro One will achieve these outcomes for a lower rate increase of 4.6% per year (excluding load) from 2019 to 2022 which includes the OEB approved 2019 inflationary rate filing (see interrogatory OEB-19(b)).

3. holding calibration sessions to validate that the proposed investments are indeed responsive to customer feedback.[181]

Throughout the planning process, Hydro One ensured the alignment of investment drivers with identified customer needs and preferences. From the candidate investment development stage through to TSP finalization, the funding status of customer flagged investments was actively monitored, discussed and considered. These considerations were also integral to the review and approval of the business plan by Hydro One's Executive Leadership Team and its Board of Directors.[182] The final investment plan reflects the results of customer engagement while balancing system and asset needs, risk mitigation and cost impact.[183] It is noteworthy that following organizational changes in July and August 2018 (including the appointment of a new Board of Directors), Hydro One took the opportunity to brief the new Board of Directors and re-evaluate its transmission business plan to balance the needs of customers, system reliability and overall asset stewardship, with a particular focus on increasing productivity and minimizing rate increases.[184]

Lastly, Hydro One translated the results of its investment plan into expected customer outcomes with greater specificity than it had in previous years, leading to 5-year targets for key scorecard metrics.[185] While the "Customer Focus" category of metrics includes performance measures related to delivery point performance, customer satisfaction with outage planning, and overall customer satisfaction, performance measures under other categories (e.g., "Operational Effectiveness") also link or contribute to the utility's customer service objectives, including reliability. Overall, the evolved scorecard consists of performance measures that enable Hydro One to monitor, track and demonstrate performance relative to outcomes that are valued by its transmission customers. Hydro One's performance measurement framework is addressed under Issue 7 above.

[181] Exhibit B-1-1, TSP Section 1.3.6.

[182] Exhibit B-1-1, TSP Section 1.3, p. 25.

[183] Exhibit B-1-1, TSP Section 3.2.1. Investments that were identified and designed to respond to specific customer needs and preferences are highlighted in TSP Section 3.2, p. 7, Table 1.

[184] Exhibit A-3-1, p. 4; Oral Hearing Transcript Vol. 7, p. 86 ln. 14 to p. 87 ln. 10.

[185] Exhibit B-1-1- TSP Section 1.5, pp. 5-6.

Investment Planning Process

Hydro One improved its investment planning process to ensure effective prioritization and optimization of investments.

Underpinning Hydro One's TSP is a comprehensive and integrated asset management and planning framework, consisting of robust analytical tools and customer-focused processes. The overall framework includes two main components: asset needs assessment, and investment planning. Asset needs assessment entails the detailed technical review of assets to identify investment candidates and provides a major input to inform Hydro One's full strategic context for investment planning from the outset.[186] During the investment planning process, Hydro One planners score, prioritize, and develop investments, while accounting for asset and system risks, customer needs and preferences, rate impacts, and corporate objectives.[187]

Consisting of eight steps (as illustrated in Figure 8-1 below), Hydro One's planning process has been significantly improved to address the OEB's feedback from the EB-2016-0160 proceeding as well as to align with leading industry practices.[188]

Figure 8-1: Improved Eight-step Investment Planning Process

These improvements include:

1. An enhanced risk assessment framework to guide the consistent evaluation of safety, reliability and environmental risks (in alignment with customer priorities);

[186] Exhibit B-1-1, TSP Section 2.0.
[187] *Ibid*.
[188] Exhibit A-2-4, p. 2; Exhibit B-1-1, TSP 2.1, p.1.

2. Clear definitions of risk impacts to enable consistent assessments across investments, and calibration sessions to calibrate and align risk assessment practices throughout the planning process and Hydro One's organization; and

3. Challenge sessions to engage stakeholders across Hydro One to review investments and discuss trade-offs.[189]

The improved planning process supports a clear and objective understanding of risks, allowing Hydro One to effectively identify the highest value investments in the best interests of customers. It also ensures consistency in investment assessment and prioritization based on the level of risk mitigated and the cost and value delivered toward achieving business objectives. The rigor and maturity of Hydro One's planning process was found to meet or exceed expectations in all areas for an above average utility planning process, as discussed later in this section.

Section 2.1 of the TSP details each step of Hydro One's investment planning process. Highlighted below are several key aspects of that process to illustrate the comprehensive and robust nature of Hydro One's planning approach and rationale.

Investment Planning Context

Hydro One develops the investment plan by considering overall funding, customer feedback, strategic objectives and asset needs.

As part of the Investment Planning Context step, Hydro One ensures its asset management and business planning activities are guided by its strategic objectives, which are aligned with the OEB's RRF outcomes.[190] This step entails an upfront strategic allocation, i.e., dividing the initial funding envelope into discrete components for subsequent prioritization and optimization. The initial envelope and pacing of investments are informed by customer feedback with respect to preferred funding levels, and adjusted for efficiency gains and

[189] Exhibit B-1-1 TSP Section 2.1, p. 2. Hydro One has detailed in its Application the specific enhancements made based on both OEB findings and internal audit recommendations, at Exhibit B-1-1, TSP Section 2.1, Appendix 1.
[190] Exhibit B-1-1, TSP Section 2.1, pp. 4-7.

strategic considerations.[191] Occurring in parallel with the assessment of asset risks, this allocation exercise enabled Hydro One to: directly link investment planning with strategic objectives, incorporate executive-level input early on, and provide clarity and direction to stakeholders of the planning process with respect to investment allocations and targeted outcomes.[192]

Another key component of the Investment Planning Context is asset needs assessment, which involves a detailed and systematic assessment of asset-specific investment needs as a prerequisite and critical input for the determination of investment candidates. In this regard, Hydro One performs continuous asset risk assessment ("ARA"), relying on asset condition data, engineering analysis and other relevant information (e.g., the input of experienced planners). One of the inputs into the ARA is a quantitative asset analytics system, which combines information from various Hydro One databases to yield an initial common understanding of asset health. This analytics system accounts for a range of risk factors (based on asset condition, demographics, criticality, performance, utilization and economics), which enable planners to subsequently assess the probability and consequence of failure via investment scoring.

In their assessment of individual asset needs, Hydro One's planners bundle identified needs into logical, functional and geographic groups. For example, a customer's need for increased capacity and an asset-related need to replace transmission station equipment (e.g., transformer or switchgear) might be grouped together if both involve the same transmission station. Through this approach, diverse individual needs are brought together to form potential projects or programs that may be considered as candidate investments

Notably, Hydro One planners conduct on-site assessments with field personnel to validate and confirm asset condition and related information. For high-value assets (e.g., transformers), subject matter experts perform a thorough assessment of condition and consider issues such as equipment obsolescence, manufacturer support, and "repair vs. replace" evaluations. Based on these detailed assessments, field review, inspection and

[191] Exhibit B-1-1, TSP Section 2.1, pp. 7-8

[192] Exhibit B-1-1, TSP Section 2.1, p. 9.

validation, Hydro One ensures that the identified needs reflect the condition of assets in the field and relevant operating information (e.g., concerns raised by field personnel), which could not otherwise be verified through asset analytics alone.[193]

Candidate Investment Development

Hydro One develops candidate investments, including integrated stations or lines investments, to address asset needs and risks.

During the Candidate Investment Development step, Hydro One planners established a set of candidate investments to address the relevant asset needs and risks identified by the ARA. To be a candidate, an investment must reflect an appropriate need and planning assumption.[194] The candidates arising from ARA primarily pertain to System Renewal investments, which are developed based on the consolidated asset needs by major asset type and identified options to mitigate significant failure risks. Where practical, Hydro One also reviews opportunities for integrated stations or lines investments and examines alternative levels of investment[195]. The preferred option is subsequently selected via scoring and calibration.[196]

At the same time, Candidate Investment Development also yields investments in non-renewal categories that are not necessarily condition-triggered. System Access investments are non-discretionary and driven by mandated service obligations (i.e., load connection, generator connection, and third-party relocations). System Service investments are identified and developed as part of regional planning and/or IESO bulk planning, so as to address system modifications that are needed to meet operational objectives and customer requirements (e.g., increasing inter-area transfer capability, supplying load in transmission-constrained areas, satisfying system operational needs, and mitigating line losses). General Plant investments are comprised of modifications or replacements of assets that are not

[193] Exhibit B-1-1, TSP Section 2.1, p. 16.

[194] Exhibit B-1-1, TSP Section 2.1, p. 22.

[195] Alternative work volumes are typically included for line component programs, e.g., wood pole replacements, steel tower coating, foundation replacement, and shieldwire replacement (see SEC-37 and JT1.13).

[196] Exhibit B-1-1, TSP Section 2.1, p. 23.

directly or specifically part of the transmission system (i.e., vehicle and work equipment fleet, facilities, and information technology).[197] Each investment category is further discussed later in this section.

Investment Assessment and Calibration

Hydro One assesses and calibrates the risk mitigated impact of investment candidates through its improved risk assessment approach.

During the Investment Assessment and Calibration step, Hydro One planners assess the impact of investment candidates (in terms of risk mitigation and desired outcomes) and calibrate such assessments to ensure a consistent approach across the portfolio. As noted above, Hydro One has significantly improved its risk assessment approach, including the use of taxonomies to objectively evaluate the probability and consequence of risks including those identified by customers as high priority (i.e., safety, reliability and environmental), and the "flagging"[198] of investment benefits beyond quantitative risk mitigation.[199] Another key enhancement is the introduction of calibration sessions across the organization to ensure that scoring is comparable and consistent across various types of investments.[200] Risk assessment results are translated into risk scores for each investment candidate (both mandatory and discretionary) to ensure consistent ranking according to the expected level of risk mitigation per dollar.[201]

Prioritization and Optimization

Hydro One prioritizes and optimizes candidate investments using standardized risk scoring and challenge sessions.

[197] Exhibit B-1-1, TSP Section 2.1, pp. 23-28.

[198] Including: (1) mandatory flags relating to compliance, third party requests, contractual obligations, and in-flight projects; and (2) non-mandatory flags relating to customer needs/preferences, productivity, corrective or preventative maintenance/replacement, strategic considerations, and political commitments (Exhibit B-1-1, TSP Section 2.1, pp. 37-38).

[199] Exhibit B-1-1, TSP Section 2.1, pp. 30-38.

[200] Exhibit B-1-1, TSP Section 2.1, p. 38.

[201] Exhibit B-1-1, TSP Section 2.1, pp. 38-39; interrogatory SEC-32; and undertaking JT1.12.

Hydro One has enhanced its prioritization and optimization of investments through standardized risk scoring (as noted above) and the introduction of challenge sessions. A broad range of stakeholders across the organization participate in these challenge sessions to review the integrated portfolio, evaluate and confirm non-risk parameters, assess and debate investments on the margin, and make fact-based trade-off decisions.[202]

Trade-off decisions assess which investments should be promoted or demoted based on the following data-driven levers: (1) risk: is Hydro One comfortable with the remaining risk, and are there unfunded investments which mitigate large risks?; (2) flags (non-risk parameters): which investments need to be funded for non-risk merits?; and (3) consideration of risk efficiency and risk mitigated per dollar,[203] which supports prudent and data-driven trade-off decisions.[204]

Enterprise Engagement

Hydro One reviews the investment plan, incorporating operational and execution considerations, updated costs and new developments.

Hydro One has improved its enterprise engagement process to ensure that the investment plan is properly reviewed and updated by the relevant lines of business. The goal is to create a realistic and up-to-date investment plan for review at the final challenge session.

Enterprise engagement incorporates operational and execution considerations (e.g., resourcing, material availability, and outage feasibility), updates based on the latest cost estimates, schedule and investment scope, the identification of interim milestones for investment definition as well as other new developments (e.g., requests from external parties and demand failures) that must be reflected in the plan.[205] Any investments deemed

[202] Exhibit B-1-1, TSP Section 2.1, pp. 40-41.
[203] Undertaking JT1.12.
[204] Exhibit B-1-1, TSP Section 2.1, pp. 41.
[205] Oral Hearing Transcript Vol. 1, p. 55, ln. 12-17.

infeasible, and therefore incapable of delivering the expected risk mitigation or non-risk benefits, are replaced with the next best alternative.[206]

Benchmarking:

Hydro One's investment planning process and TSP reflects industry best practices as affirmed by benchmarking studies.

To ensure responsiveness to OEB directions and alignment with industry practices, Hydro One has proactively pursued third-party reviews and continuous enhancements of its investment planning and asset management framework. As confirmed by various independent reviews and benchmarking reports (which are highlighted below), Hydro One's approach for assessing asset condition, replacing major assets, and prioritizing and pacing capital investments is robust and consistent with best practices.

In EB-2016-0160, the OEB directed Hydro One to complete an independent third-party assessment of its TSP including the capital investment planning process.[207] In response, Hydro One engaged an independent expert consultant, BCG, to review the enhanced investment planning process. BCG found the updated process to be consistent and thorough, meeting or exceeding expectations for an above average utility planning process.[208] The assessment also identified certain enhancement opportunities which Hydro One continued to complete following the engagement.[209]

Additionally, in response to the OEB's findings in EB-2016-0160, Hydro One retained Metsco to conduct an Asset Condition Assessment Process Review. Specifically, Metsco reviewed Hydro One's ARA, Asset Analytics, and associated decision-making criteria, methodology, and data inputs for calculating asset scores. The review determined that both the ARA and Asset Analytics are aligned with other asset management frameworks in the

[206] Exhibit B-1-1, TSP Section 2.1, pp. 42.

[207] Exhibit A-2-4, p. 4.

[208] Exhibit B-1-1, TSP Section 1.4, Attachment 14, p. 1: reviewing capabilities sourced from ISO 55000 asset management standards and industry best practices.

[209] Exhibit B-1-1, TSP Section 1.4, Attachment 15, pp. 6-8.

industry and are sufficiently rigorous and robust to accomplish their intended functions from the analytical perspective. Hydro One continued to enhance its Asset Analytics system in 2018, updating the algorithms and weighting calculations to improve the quality of the asset risk model to better inform decision making.[210]

Hydro One also engaged the Electric Power Research Institute ("EPRI") and Kinectrics to assess whether its condition assessments, asset management and asset replacement practices align with industry best practices. The specific asset classes and practices covered by these studies included: spare transformers requirement; derivation of hazard functions (rate of removal) for transformers, breakers and overhead conductors; ESL assessment for conductor, relays and underground cables; management of ABCBs and oil circuit breakers; degradation rates of steel tower coating; and insulator population assessments.[211] The overall results of these studies demonstrate that Hydro One optimizes the life cycles of its assets and selects the appropriate assets for replacement in the business plan.[212]

Productivity

Hydro One is committed to finding efficiencies and delivering its capital plan for less.

Hydro One's TSP reflects its commitment to find efficiencies and deliver the same capital work program for less. Hydro One's productivity framework (discussed under Issue 6 above) includes quantifiable productivity improvements with clear accountabilities for delivering the anticipated savings and a robust governance framework to measure accomplishments. Savings have been identified in capital and OM&A expenditures totaling $704 million over the plan period (2020-2024) and approximately $370 million during the 2020-2022 test period.[213]

[210] Exhibit B-1-1, TSP Section 3.2, pp. 20-21.
[211] Exhibit B-1-1, TSP Section 3.2, pp. 12-20; TSP Section 1.4, Attachments 1-16.
[212] Exhibit B-1-1, TSP Section 1.4, p. 7, ln 17-18.
[213] Exhibit A-3-1, p. 21; Exhibit B-1-1, TSP Section 3.2, p. 26.

Over the 2020-2022 test period, $299 million in capital productivity savings have been directly embedded into forecast capital expenditures to reduce the requested capital funding.[214] Defined productivity savings were embedded into the capital plan from the bottom up,[215] with additional savings added as the investment plan matured.[216] Of these committed savings, $117 million relate to progressive commitments that place the financial and execution risk on Hydro One to find and deliver these commitments.[217] On this basis, Hydro One's investment plan will appropriately and effectively incentivize productivity and efficiency.

Demonstrated Ability to Execute

Hydro One improved its project execution processes and performance reporting framework to successfully deliver and report on the performance of its capital plan.

Hydro One has demonstrated its ability to successfully track and perform large capital work plans, where projects may span multiple years during which circumstances may change and plans must adapt accordingly. This success has been achieved while minimizing the variability of capital expenditures and in-service additions. Hydro One was able to deliver its 2017 and 2018 investment plan (EB-2016-0160) on an envelope basis within 1.5% of OEB-approved capital expenditures and 0.7% of OEB-approved in-service additions.[218] These low variances represent a major improvement relative to plan execution during the 2014-2016 period (which saw variances of 4% and -9% for capital spending and in-service additions, respectively).

Hydro One took the following steps to improve its ability to deliver its capital program:

1. reviewed and streamlined its capital delivery process;

[214] Exhibit B-1-1, TSP Section1.6, Table 1, p. 7.
[215] Interrogatory I-11-CCC-7, Attachment 1: 2019-2024 Investment Planning Kick-off Session, p. 20.
[216] Interrogatory I-7-SEC-28; Oral Hearing Transcript Vol. 2, p. 61, ln. 18.
[217] Exhibit B-1-1, TSP Section1.6, Table 1, p. 7.
[218] Exhibit B-2-1, p. 3.

2. established a Redirection Committee to appropriately redirect funds and resources and allow prudent and timely adjustments to the work program;

3. enhanced up-front engineering and planning deliverables;

4. increased governance that enables the timely redirection of funds and resources; and

5. improved estimating and scheduling tools and processes.

Historically, Hydro One's transmission capital work program has been executed 90% by internal resources and 10% by third-party contractors. To ensure the availability of resources for executing the proposed investment plan, Hydro One has developed the capacity with its external construction partners to scale up their project delivery contribution to approximately 30% over the planned period, while also building internal capacity (within Hydro One's project management and project controls processes) to manage this work program.

Hydro One's track record of successful plan performance, improved project execution processes, and capacity to scale up resources demonstrate its ability to accomplish sizeable investments meeting the expected schedule and cost outcomes.

Issue 9 Recap

The proposed capital expenditures and in-service additions arising from Hydro One's TSP are appropriate, supported by thorough planning practices and align with the OEB's RRF.

Hydro One improved its investment planning process to incorporate customer priorities and deliver results that are important to them, ensure consistent and robust risk scoring and prioritization of investment candidates, and reflect industry best practices as affirmed by benchmarking studies. Hydro One embedded productivity into the plan to deliver the capital plan for less and improve its capital delivery management and reporting to ensure feasible and efficient plan execution.

Hydro One submits that the proposed plan should be accepted, as it is necessary to respond to degrading system and asset condition, facilitate non-discretionary investments to address system needs and mandatory service obligation, and invest in infrastructure that supports core business functions and operations.

Issue 10: Are the methodologies used to allocate Common Corporate capital expenditures to the transmission business and to determine the transmission Overhead Capitalization Rate appropriate?

The methodologies that Hydro One has used to allocate its common corporate capital to the transmission business, to determine applicable costs for capitalization, and for determining the transmission Overhead Capitalization Rate, as set out in the Application, are appropriate. Hydro One's use of these methodologies is supported by studies that have been prepared by Black & Veatch, an independent third-party expert. These studies are consistent with studies that have been prepared by Black & Veatch and accepted by the OEB in prior applications by Hydro One. The studies included and relied upon in the current Application are as follows:

1. *Review of Allocation of Common Corporate Costs (Transmission) – 2019*. This study reviews the allocation of Common Corporate Costs between Transmission, Distribution and each of Hydro One's affiliates.[219] [220]

2. *Review of Overhead Capitalization Rates (Transmission) – 2019*. This study reviews the overhead capitalization rates, which are percentages that are applied to the costs of Transmission and Distribution capital expenditures and the amount of Common Corporate Costs that are capitalized to those capital expenditures.[221]

[219] Hydro One's affiliates as described under Exhibit E-2-2 are Hydro One Telecom, Hydro One Remote Communities Inc., B2M GP Inc. on behalf of B2M Limited Partnership, Hydro One Sault Ste. Marie, Hydro One Inc., and Hydro One Limited.

[220] Exhibit F-2-6, Attachment 1.

[221] Exhibit C-8-2, Attachment 1.

3. *Review of Shared Assets Allocation (Transmission) – 2019*. This study reviews the allocation of the costs of the Shared Assets between Hydro One's Distribution and Transmission businesses.[222]

Allocation of Common Corporate Capital

The common corporate cost allocation methodology, used to allocate common corporate costs to the Transmission business, follows the cost causative approach recommended by Black & Veatch, and is consistent with the approach used to allocate common corporate costs in prior Hydro One rate proceedings.

Additionally, the Black & Veatch *Review of Shared Assets Allocation (Transmission) - 2019* study, which is an input to the common corporate cost allocation methodology, is consistent with the methodologies included in prior Black & Veatch studies that have previously been approved by the OEB. These include Hydro One's 2017-2018 transmission revenue requirement application (EB-2016-0160)[223] and 2018-2022 distribution rate application (EB-2017-0049).[224]

The methodologies set out in both Black & Veatch review reports (for common corporate costs and for shared assets) remain appropriate. Notably, in its EB-2017-0049 Decision and Order, the OEB stated that the allocation methodology will be examined in detail when Hydro One files a single application for distribution rates and transmission revenue requirement for the 2023-2027 period.[225] On this basis, the proposed methodologies for corporate cost allocation and the allocation of shared assets should be accepted.

Overhead Capitalization

Hydro One's overhead capitalization policy is consistent with USGAAP and its overhead capitalization methodology is appropriate. Hydro One capitalizes costs that are directly attributable to capital projects and also capitalizes overhead costs supporting capital

[222] Exhibit C-3-1, Attachment 1.
[223] EB-2016-0160 Decision.
[224] EB-2017-0049 Decision, p.79.
[225] EB-2017-0049 Decision, p.79.

projects. The overhead capitalization rate is a calculated percentage representing the relative amount of overhead costs derived using the methodology reviewed by Black & Veatch that are required to support capital projects in a given year. The Black & Veatch *Review of Overhead Capitalization Rates (Transmission) – 2019*[226] includes a methodology that is consistent with the methodologies included in prior Black & Veatch studies, which have previously been approved by the OEB, including in Hydro One's 2017-2018 transmission revenue requirement application (EB-2016-0160) [227] and 2018-2022 distribution rate application (EB-2017-0049).[228]

In its EB-2016-0160 Decision, the OEB indicated that it will consider whether it should initiate a policy review regarding whether it is appropriate to allow for the continued use of USGAAP for the purpose of determining the capitalization of overhead amounts.[229] Subsequently, in its EB-2017-0049 Decision, the OEB stated that it expects to review Hydro One's approach to capitalization in its next rebasing application. To facilitate this review, the OEB indicated its expectation that Hydro One will provide a report comparing its capitalization of common corporate costs with those of other utilities.[230] Given the OEB's directions on this issue, the proposed methodology for determining the transmission overhead capitalized in the current Application is appropriate and should be approved.

Issue 11: Is the proposed capitalization of other post-employment benefits (OPEB) for both Hydro One Transmission and Hydro One Distribution appropriate, and if not, what is the appropriate approach for these costs?

There have been two prior OEB proceedings that have dealt with the treatment of Other Post-Employment Benefits ("OPEBs") and which have given rise to issues for determination in this proceeding. In particular, these issues relate to the appropriate treatment of: (1) amounts recorded in the OPEB Cost Deferral Account in relation to the non-current service

[226] Exhibit C-8-2, Attachment 1.
[227] EB-2016-0160 Decision, p.82.
[228] EB-2017-0049 Decision, p.81.
[229] EB-2016-0160 Decision, p. 82.
[230] EB-2017-0049 Decision, p.82.

component of OPEBs following a change to the applicable accounting standards, and (2) amounts recorded in the OPEB Asymmetrical Carrying Charge Account established by the OEB in a prior generic proceeding. These issues and the relevant prior OEB proceedings are discussed below.

Hydro One's Proposed Treatment of the Non-Current Service Component of OPEB Is Appropriate (EB-2017-0338)

In March 2017, the Financial Accounting Standard Board ("FASB") issued an Accounting Standards Update (ASU 2017-07) for the purpose of improving the presentation of pension costs and post-retirement benefits costs in the income statements of USGAAP-reporting companies. Effectively, ASU 2017-07 precludes capitalization of the non-current service component of pension and OPEB costs. Consequently, as of January 1, 2018, only the service cost component of the net periodic pension cost and net periodic OPEB cost is eligible for capitalization. As Hydro One accounts for pension costs on a cash basis, only Hydro One's OPEB costs are impacted.

The 2017-2018 transmission revenue requirement approved by the OEB in EB-2016-0160 did not account for the change in the accounting standards. As such, Hydro One applied for a deferral account, effective January 1, 2018, to capture the financial impacts resulting from the change.[231] The OEB approved the establishment of the OPEB Cost Deferral Account and found that the panel in Hydro One's next transmission rate application (i.e. the current proceeding) could "consider… whether Hydro One should continue to capitalize OPEBs". In the account, Hydro One records the OPEB costs previously capitalized but no longer allowed to be capitalized as per ASU 2017-07.[232] The OEB also directed Hydro One to propose an approach for the disposition of the OPEB Cost Deferral Account in the next proceeding and suggested that it may be appropriate to amend the calculation and treatment of interest based on the approach selected. The OEB noted that "options for disposition of the deferral account have not been considered in this proceeding but they could include an

[231] EB-2017-0338, Application for an Accounting Order Establishing a Deferral Account (November 2, 2017).
[232] EB-2017-0049 Decision.

adjustment to rate base, a rate rider, or other approaches."[233] In Hydro One's 2019 transmission revenue requirement application (EB-2018-0130), the OEB approved the continuance of the OPEB Cost Deferral Account until the current proceeding.[234]

Similarly, in Hydro One's application for 2018-2022 distribution rates, the OEB approved the establishment of an OPEB Cost Deferral Account for the distribution business, which is equivalent to the account established for the transmission business. The deferral account for the distribution business was also given an effective date of January 1, 2018 and the OEB instructed Hydro One to file the necessary evidence regarding the distribution OPEB Cost Deferral Account in its next transmission rebasing proceeding (being the current Application) so as to permit this matter to be determined for both Hydro One's Transmission and Distribution businesses. The decision also stated that the distribution deferral account would remain in effect until the OEB determines this matter.[235]

Hydro One is seeking OEB approval to continue capitalizing the non-service component of OPEBs for both its Transmission and Distribution businesses.[236] Continued capitalization of the non-service component of OPEBs enables Hydro One to accurately depict the true costs of its capital assets because, under this approach, all relevant labour costs incurred in developing and building capital assets would be allocated to the corresponding assets and be recovered over the useful lives of those assets. If Hydro One's request for continued capitalization is denied, and its alternative proposal of continuing the OPEB Cost Deferral Account and applying a 20-year rolling balance disposition method (as discussed below) is also denied, then the non-service component of OPEBs would instead need to be collected as part of OM&A, which would be inconsistent with the prior treatment of these costs and give rise to revenue requirement increases of $21 million for Transmission in 2020 and $15 million for Distribution in 2020.[237] Similar amounts would impact OM&A for both Transmission and Distribution in future years. In addition, accounting for these costs as

[233] EB-2017-0338 Decision and Accounting Order (June 7, 2018).
[234] EB-2018-0130 Decision and Order (April 25, 2019).
[235] EB-2017-0049 Decision, p. 170.
[236] Exhibit H-1-2, Sections 3.16 and 3.16.2; and undertaking J6.04.
[237] Undertaking J6.04.

OM&A would give rise to intergenerational inequities because current ratepayers would bear the full cost of assets that would benefit future generations.

It is important to note that continued capitalization of the non-service component of OPEB costs would be in line with guidance that the Federal Energy Regulatory Commission ("FERC") provided in its December 28, 2017 letter,[238] which allows FERC-regulated entities to continue to capitalize both the service and non-service cost components of pensions and OPEBs.

If the OEB is inclined to not approve Hydro One's request for continued capitalization of the non-service cost component of OPEBs for each of the Transmission and Distribution businesses, Hydro One requests as an alternative that it be permitted to continue using the OPEB Cost Deferral Account for each of the Transmission and Distribution businesses and that it be permitted to dispose of the balances of each such account on a 20 year rolling balance (as opposed to periodic clearance of the accounts in future rate applications). Twenty years is consistent with the USGAAP guidance that allows recovery of OPEB-related amounts over a period not exceeding 20 years. Moreover, the 20-year rolling balance disposition method would be beneficial to ratepayers as it would minimize the impact on rates.[239] As part of the alternative proposal, Hydro One proposes that interest improvement be recorded on the opening monthly balance of the principal amount. While continued capitalization would provide the most effective means of aligning costs with asset lives, and is Hydro One's preferred approach, the alternative proposal would at least provide better alignment with asset lives as compared to recovery of these costs through OM&A.

Hydro One's Alternative Methodology for the OPEB Asymmetrical Carrying Charge Account Is Appropriate (EB-2015-0040)

On September 14, 2017, the OEB issued a report entitled *Regulatory Treatment of Pension and Other Post-employment Benefits (OPEBs) Costs* ("OPEB Report").[240] In the OPEB

[238] Undertaking J6.04, Attachment 1.

[239] See Exhibit H-1-2, Attachment 10 for disposition example.

[240] EB-2015-0040, *Regulatory Treatment of Pension and Other Post-employment Benefit Costs*, Report of the Ontario Energy Board (September 14, 2017) ("OPEB Report"); Exhibit H-1-2, Section 3.16.1.

Report, the OEB determined that it would set rates for the recovery of pension and OPEB costs using the accrual method of accounting and directed utilities to establish a variance account to track the difference between the forecasted accrual amount in rates and actual cash payments made, with a carrying charge applied to the differential (the "reference amount").

As is evident from the OPEB Report, the intention of the OPEB Asymmetrical Carrying Charge Account is to provide ratepayers with a return on the money they have effectively "lent" to the utility insofar as the amount collected in rates exceeds the payments made by the utility.[241]

In Appendix C of the OPEB Report, the OEB indicates that its guidance is based on the assumption that total gross accrual costs are reflected in utilities' total OM&A expense. It also recognizes that where utilities capitalize a portion of their pension or OPEB amounts, this approach may not be appropriate, and utilities have the option to propose an alternative method of calculating the reference amount.[242] More specifically, the OPEB Report states:

> The forecast accrual reference amount that will be used to calculate the entries recorded in this new account assumes that the total gross accrual cost as determined by an actuarial valuation is what is recorded in a utility's total OM&A expense. If a utility capitalizes a material portion of its total pension and OPEB accrual costs, and there is sufficient incremental value to warrant the added complexity of tracking amounts that are capitalized separately from those that are expensed, any party may propose an enhanced methodology for determining the reference amount and the appropriate carrying charge to be applied, including journal entries consistent with the intent of the account as outlined in this report.[243]

While Hydro One recovers some of its OPEB costs through OM&A, it also capitalizes a material amount of the cost and recovers a portion through a regulatory account (this component is subject to OEB determination as discussed above), as follows:

[241] OPEB Report, pp.10-11.

[242] OPEB Report, p.14.

[243] OPEB Report, p.20

Table 11-1: Allocation of OPEB Cost Recovery

Allocation of OPEB Cost Recovery[244]	Tx (2018)	Dx (2018)	Tx (2020 - forecast)	Dx (2020 - forecast)
Recovered through OM&A	31%	51%	29%	48%
Capitalized to Property Plant and Equipment (PP&E)	29%	20%	33%	24%
Recorded in the OPEB Cost Deferral Account	40%	29%	38%	28%

Given that a material portion of Hydro One's OPEB costs for its distribution (49% in 2018 and 52% in 2020) and transmission (69% in 2018 and 71% in 2020) businesses is not recovered through OM&A, Hydro One has proposed an enhanced approach to determining the reference amount that is more reflective of the actual amounts recovered in rates. More particularly, rather than determining the reference amount using the gross costs from the actuarial valuation, Hydro One proposes to calculate the reference amount based on the sum of the following, less cash expenses:

1. The full amount of OPEB costs recorded in OM&A;

2. The capitalized OPEB expense which is recovered as part of the depreciation of PP&E from the effective date of the account (2018); and

3. The annual recovery of the OPEB costs recorded in the OPEB Cost Deferral Account and recovered over a 20-year period. This component is currently subject to the OEB's determination of the appropriate treatment of the non-service cost component of OPEB, as discussed above.

Hydro One proposes to track the difference between the sum of these three amounts (less cash expenses) and the actual cash payments in the OPEB Asymmetrical Carrying Charge Account.

[244] Rebasing years of each respective application were selected for context purposes. 2018 figures are based on actual 2018 costs and allocations.

Hydro One submits that the enhanced approach to determining the reference amount, which it is proposing in the current Application for both its Transmission and Distribution businesses, is appropriate and should be approved by the OEB. Because a material portion of Hydro One's OPEB costs are not recovered through OM&A, the alternative methodology more accurately depicts the money that is effectively "lent" to the utility by customers as compared to the OEB's standard methodology, which is based on the assumption that the total gross accrual cost is recorded in OM&A. Therefore, the alternative methodology is necessary to achieve the intention of the accrual versus cash payment differential account without unfairly penalizing the utility by eroding its ability to earn a fair return. Moreover, given the materiality of the difference arising from the two calculations as summarized below, any additional complexities introduced by the alternative methodology are warranted.[245]

Table 11-2: Default vs Alternative Approach ($ millions)

	2018	2019	2020	2021	2022
Default approach					
Accrual vs cash (cumulative)	29	53	79	106	133
Carrying charge	0.8	1.5	2.3	3.1	3.8
Alternative approach					
Accrual vs cash (cumulative)	(0.2)	(9.4)	(19.4)	(30.3)	(40.3)
Carrying charge	-	-	-	-	-

Based on the foregoing, Hydro One submits that the proposal to continue capitalizing the non-current service component of OPEBs for both the Transmission and the Distribution business, as well as the proposed alternative methodology for the OPEB Asymmetrical Carrying Charge Account are reasonable and appropriate and should be approved.

[245] Interrogatory I-01-OEB-222 (e).

Issue 12: Does Hydro One's Transmission System Plan sufficiently address the unique rights and concerns of Indigenous customers and rights-holders?

Hydro One's TSP appropriately addresses the unique rights and concerns of Indigenous customers and rights-holders. The company's approach to addressing the rights and concerns of Indigenous customers and rights-holders is informed by engagement with transmission customers, as well as efforts to engage directly with Indigenous communities. In its EB-2016-0160 Decision, the OEB identified as an area for improvement that Hydro One should seek and incorporate timely and meaningful input from First Nations representatives. Hydro One has responded to this direction and developed a TSP that thoughtfully considers and appropriately addresses the unique rights and concerns of Indigenous customers and rights-holders.

An important consideration for Hydro One in seeking feedback as directed by the OEB has been that, while some of Hydro One's transmission facilities are situated upon First Nation reserve lands and other lands over which First Nations hold or assert rights, First Nation communities that are connected to the provincial grid are *indirectly* served by Hydro One's transmission system. Simply put, none of Hydro One's directly connected transmission customers consist of First Nation communities or businesses.

Hydro One therefore responded by seeking feedback from those of its LDC customers which serve Indigenous communities, as well as by leveraging its ongoing engagement activities with Indigenous communities to identify the unique needs, preferences and concerns of these customers and rights-holders, and by incorporating that feedback into its investment planning. As a result, Hydro One's TSP contemplates a range of specific investments that directly and indirectly address the identified concerns of Indigenous customers and rights-holders.

LDC Customers that Serve First Nations Communities

LDCs who serve Indigenous customers were asked for feedback on how Hydro One could improve service to these customers. Hydro One sought this feedback prior to and in

anticipation of the OEB issuing its recommendations because the OEB's EB-2016-0160 Decision was issued several months after the field work for the customer engagement survey was carried out by IRG on behalf of Hydro One.[246]

Of Hydro One's 156 total transmission customers, 103 chose to complete the survey. Of those, 28 were LDC customers and only two self-identified as serving First Nations and Métis communities. One indicated that Hydro One did not need to do anything else to better serve the specific needs of those communities and the other stated that, "The northern single circuit communities deserve more attention as they are more vulnerable in terms of supply and outage response."[247] While the amount of feedback on this issue was lower than anticipated, it was nevertheless incorporated into Hydro One's transmission planning process, as discussed below.

Ongoing Engagement with Indigenous Communities

In addition to the formal TSP-specific customer engagement survey process, and no less important, Hydro One has leveraged its ongoing engagement activities with Indigenous communities to identify the unique needs, preferences and concerns of these customers and rights-holders. These activities, including the various ways in which the transmission system impacts Indigenous communities despite not directly serving those communities, are described in Exhibit A-7-2 of the Application. For example, Hydro One has transmission assets situated on reserve lands and within traditional territories, transmission projects affecting particular communities, as well as transmission-related business partnerships with and procurement of necessary goods and services from Indigenous communities and businesses.

Hydro One's ongoing engagement activities with Indigenous communities have included numerous formal provincial and regional engagement sessions and visits to individual communities to receive feedback, address concerns, share information, and explore employment, business and community investment opportunities. While some of the

[246] Exhibit B-1-1, TSP Section 1.3, Attachment 1, p. 3.
[247] Exhibit B-1-1, TSP Section 1.3, Attachment 1, p. 56.

feedback received was in relation to the distribution side of the business, the transmission-related feedback included concerns about affordability, reliability and access rights. While Hydro One's overall planning process is generally mindful of the affordability concerns of end-use customers, the specific affordability issues identified through this engagement related primarily to the distribution side of the business and have been addressed to a significant extent by provincial policy initiatives.

Another avenue for Indigenous input into transmission system planning arises from the regional planning process, during which Hydro One undertakes extensive consultation with LDCs and the IESO to identify needs and develop plans, particularly in the 19 regions across the province where Hydro One is the lead transmitter. In areas with a large number of Indigenous communities, an Indigenous local advisory committee is established and representatives from that committee are appointed as members of the applicable Local Advisory Committee.[248] In this way, the regional planning process provides another important means through which Hydro One obtains feedback from Indigenous communities to inform its transmission system planning.

Incorporation of Feedback into the TSP

The feedback received from LDCs who serve Indigenous customers, albeit limited, was considered by Hydro One when assessing the overall pool of investments intended to address the lower performing sections of the transmission system. Hydro One actively monitors all customer delivery point performance and invests in the system to address delivery point performance and power quality concerns. Significant investment is planned to address and remediate delivery point performance, as well as wood pole replacements (where the majority of the asset population is located in northern Ontario), along with transmission line refurbishments to address poor condition assets that pose a high risk to customer reliability.[249]

[248] Exhibit B-1-1, TSP Section 1.2.2, p. 8.

[249] Exhibit B-1-1, TSP Section 1.3, p. 32.

To the extent the feedback received through ongoing Indigenous engagement relates to transmission-specific considerations (e.g., reliability, affordability and access rights), the feedback was shared with Hydro One's transmission system planners. The feedback was taken into account and tracked in the planning process, and was ultimately reflected in Hydro One's transmission system investment plans.[250] A list of planned work on transmission assets serving Indigenous communities, determined through Hydro One's transmission system planning process, was provided in response to interrogatory I-09-Anwaatin-005, part (d).

In addition, other than system and asset needs, Hydro One considers a range of capital planning drivers and considerations that helped shape and inform the TSP.[251] One such driver is the LTEP, which identifies certain planned or in-development transmission investments that are required to facilitate supply to Indigenous communities. Hydro One's TSP includes a planned investment in relation to the Wataynikaneyap Power LP Line to Pickle Lake Connection, which will enable that First Nation majority-owned transmitter to connect a number of remote First Nation communities to the provincial transmission grid.[252]

Based on the foregoing, Hydro One's TSP appropriately and sufficiently addresses the unique rights and concerns of Indigenous customers and rights-holders.

E. OPERATIONS MAINTENANCE & ADMINISTRATION COSTS:

Issue 13: Are the proposed 2020 OM&A expenditures appropriate and is the rationale for planning choices appropriate and adequately explained?

The proposed 2020 test year total OM&A expenditures (summarized in Table 13-1 below) are appropriate, and the rationale for planning choices is appropriately and adequately explained.[253]

[250] For a complete list of such investments, please refer to Exhibit A-7-2, Attachment 3.
[251] Exhibit B-1-1, TSP Section 3.2.
[252] Exhibit B-1-1, TSP Section 3.3.8, ISD SS-02.
[253] Exhibit A-3-1, pp. 40-43.

Other than the 2019 OM&A forecast amount, Hydro One's proposed 2020 OM&A of $374.1 million[254] is lower than both the historical OEB-approved OM&A levels and historical actuals. In 2019, Hydro One had to implement one-time maintenance reductions, find productivity, and reduce corporate costs as a result of Hydro One's 2019 application for inflationary adjustment.[255] While somewhat higher than 2019, 2020 OM&A is lower than historical levels as Hydro One has been able to sustain many of the 2019 reductions into 2020.[256] The investment plan underpinned by the proposed funding will improve reliability and maintain asset condition over the planning period. The investment plan appropriately balances the need to minimize customer rate impacts through lower than historical expenditure with the requirements of the system to provide safe and reliable transmission service.[257]

On an overall basis, between 2015 and 2018, Hydro One managed its OM&A spending within 99% of OEB-approved amounts.[258] Hydro One's forecast OM&A expenditures are largely determined through the investment planning process described in Section 2.1 of the TSP. Hydro One's total OM&A budget is comprised of the following categories: (1) sustainment, (2) development, (3) operations, (4) customer care, (5) common corporate costs and other costs, and (6) property taxes and rights payments. The proposed spending in each category is detailed in the Application and further discussed below.

[254] Undertaking J1.1.
[255] Exhibit F-1-3, p 3.
[256] Interrogatory I-01-OEB-185.
[257] Exhibit F-1-1, p. 3.
[258] Oral Hearing Transcript Vol. 5, p.96, ln. 4-10.

Table 13-1: Summary of Transmission OM&A Expenditures ($ millions)[259]

	Historical								Bridge	Test
	2015		2016		2017		2018		2019	2020
	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Forecast	Forecast
Category Level										
Sustainment	233.6	238.7	215.1	241.1	218.1	241.2	229.4	238.5	200.6	214.2
Development	6.1	12.9	4.6	13.4	5.1	4.8	5.2	5.0	6.0	6.9
Operations	59.0	58.5	62.5	59.1	61.1	61.3	53.4	62.1	46.1	48.9
Customer Care	5.1	5.5	4.5	5.5	8.5	4.0	11.0	3.9	7.3	7.5
Common Corporate Costs and Other Costs[260]	73.9	70.2	60.1	71.3	41.5	49.9	54.9	47.5	29.4	30.3
Property Taxes & Rights Payments	63.9	66.3	61.3	67.0	50.7	63.6	65.3	64.3	67.2	68.1
Adjustments										
EB-2014-0140 Settlement Reduction		-20.0		-20.0						
EB-2016-0160 Decision Reduction						-15.0		-15.0		
Removal of B2M Expense		-0.9		-0.7		-0.8		-2.1		
Pension Adjustment						-11.4		-9.9		
Directive[261]									-0.1	-0.1
Pension Adjustment Dec 31, 2018 Valuation[262]										-1.7
Envelope Level										
Total Transmission OM&A	**441.6**	**431.2**	**408.1**	**436.8**	**385.0**	**397.7**	**419.2**	**394.3**	**356.5**	**374.1**

Sustainment OM&A

Sustainment OM&A expenditures fund maintenance on transmission station and lines equipment to ensure they continue to function as originally designed. The proposed 2020

[259] The "plan" values at the category level reflect the funding levels proposed by Hydro One in its prior applications to the OEB and have not been adjusted to reflect the OEB's subsequent decisions. Reductions to the overall OM&A expenditure levels are itemized in the "adjustments" section, and are captured in the total plan values for each applicable year. As such, the "total transmission OM&A" plan values include the effect of the adjustments and represent the final plan or OEB-approved OM&A envelope for the year.

[260] Common Corporate Costs and Other Costs includes Planning (Exhibit F-2-3), CCF&S (Exhibit F-2-2), IT (Exhibit F-2-4), Cost of External Revenue (Exhibit F-2-5), and Other OM&A (Exhibit F-2-1).

[261] Directive refers to the Government Directive as detailed and defined in Exhibit F-4-1.

[262] Undertaking J1.1

test year budget is $214.2 million which is $10 million lower than average spending over the 2015-2018 period.[263]

The average age range of the major transmission system assets is 28-41 years[264], and 3%-27% of these assets are in high or very high risk condition.[265] Given this age and condition demographic, Hydro One's 2020 sustainment plan seeks an appropriate balance between the needs of the system, customer preferences regarding outcomes (including system reliability and rate impact), and compliance with mandatory obligations and requirements. The sustainment plan represents the prioritization of these competing considerations and reflects the minimum level of investment needed to ensure this balance is achieved. Sustainment OM&A is discussed in Exhibit F-1-3. The historical and test year OM&A spending is summarized in Table 13-2**Table 13-2** below.[266]

Table 13-2: Summary of Sustainment OM&A ($ Millions)[259]

Description	Historical								Bridge	Test
	2015		2016		2017		2018		2019	2020
	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Forecast	Forecast
Stations	175.0	169.0	159.3	171.6	162.7	178.5	161.4	174.8	145.7	155.4
Lines	52.6	57.8	51.4	58.8	51.5	59.8	63.8	60.8	47.7	53.4
Engineering & Environmental Support	6.0	11.9	4.4	10.8	4.0	2.9	4.1	2.9	7.2	5.3
Total Sustainment	233.6	238.7	215.1	241.1	218.1	241.2	229.4	238.5	200.6	214.2

OM&A funding in 2019 resulted in a significant one-time reduction to Sustainment OM&A. This reduction was achieved through one-time maintenance reductions which represented a managed increase in asset risk; however, these reductions are not sustainable over the

[263] $214.2M for 2020 versus $224.0M for 2015-2018 average.

[264] Exhibit B-1-1, TSP Section 2.2, Tables 3, 6, 9, 17, 20 and p. 60.

[265] Interrogatory I-11-CCC-04 (b).

[266] Note that the 'Plan' amounts at these levels were not updated to reflect prior OEB decisions.

long term, as constant deferrals and reduced maintenance cycles give rise to unacceptable safety and reliability risks.

Accordingly, the forecast 2020 Sustainment OM&A is $13.6 million higher than the forecast 2019 Sustainment OM&A.[267] The 2020 budget includes sustained reductions implemented in 2019;[268] however, these reductions have been offset by restoring certain maintenance activities and funding a larger PCB Retirement (remediation) work program[269] that is mandatory under federal PCB Regulations. Funding for Sustainment OM&A is necessary to continue condition assessments and maintenance activities on stations and lines assets. Condition assessment work supports Hydro One's capital investments by identifying and including high priority deficiencies for consideration in Hydro One's planned replacement programs. Funding at the 2020 proposed level is prudent especially at a time when power assets are experiencing significant demographic pressure and verified deteriorating condition.

Sustainment OM&A - Stations

Stations Sustainment OM&A funds work required to maintain the large fleet of power system assets located within transmission stations. This work includes:

1. Land Assessment and Remediation: to mitigate and remediate historical off-property contamination;

2. Environmental Management: to mitigate and remediate contamination located both within and beyond the station, including via the PCB Retirement program and transformer leak reduction;

3. Power Equipment Maintenance: to maintain station equipment through preventive maintenance, corrective maintenance, refurbishments and other maintenance and inspection programs;

[267] 2020: $214.2 million vs 2019: $200.6 million.
[268] Interrogatory I-01-OEB-185.
[269] $6.9 million or about 51% of the $13.6 million.

4. Ancillary Systems Maintenance: to maintain equipment such as station service systems, high pressure air systems, and grounding systems;

5. Protection, Automation and Telecom Maintenance: to sustain equipment performance and comply with applicable North American Electric Reliability Corporation ("NERC") standards;

6. Site Infrastructure Maintenance: to maintain station infrastructure such as yard drainage, fire protection and detection, Heating Ventilation and Air-Conditioning systems; and

7. Cyber Security Management: to ensure compliance with cyber security standards such as NERC Critical Infrastructure Protection standards.

The 2020 Stations Sustainment OM&A plan will focus on maintenance work at Hydro One's 306 transmission stations, which include 716 transformers, 4,774 circuit breakers, as well as numerous switches and insulators. Funding in 2020 is lower than the average historical funding levels in 2015-2018 but higher than 2019 due to mandatory PCB testing and retrofill work and restored levels of preventive maintenance for station assets. The sustainment work includes:

1. Complying with federal PCB Regulations, which require PCB-contaminated equipment that meet applicable thresholds to be removed from service by December 31, 2025. Hydro One has identified 6,267 components that require sampling, retrofill or replacement. To meet the aforementioned deadline, and to maintain the one-year buffer period, Hydro One requires increased funding to ensure that all oil sampling is complete by the end of 2024.

2. Completing preventive maintenance by (1) addressing power equipment wear and tear, (2) performing function testing of critical parts to ensure their working capability, (3) identifying and mitigating asset air, gas or oil leaks to avoid failures, and (4) providing condition inspections for external factors such as animals, rust, and salt. This level of maintenance is required to maintain transmission system integrity.

3. Responding to corrective maintenance needs by addressing unplanned failures and defects identified through preventive maintenance.

4. Complying with NERC standards related to station equipment such as protection, control and telecom equipment.

The 2020 Stations Sustainment OM&A budget has been managed as noted above and in the Power Equipment Maintenance category by: shifting from time based maintenance scheduling to a more condition based maintenance schedule; avoiding maintenance costs due to replaced assets; lowering life cycle maintenance costs due to new modern technologies (e.g., SF6 breakers); bundling maintenance activities; and utilizing online monitors to reduce the number of site visits.

Sustainment OM&A - Lines

Lines Sustainment OM&A includes:

1. Overhead Lines Maintenance (approximately 30% of the 2020 Test Year funding) includes inspections and condition assessment of overhead lines components, and planned and unplanned maintenance;

2. Vegetation Management and right-of-way ("ROW") maintenance (approximately 60% of the 2020 Test Year funding) ensures that vegetation clearances to energized equipment are maintained and includes brush control, line clearing, condition patrol; and

3. Underground Cable Maintenance (approximately 10% of the 2020 Test Year funding) includes inspection, testing, analysis and diagnostics of cable and ancillary equipment (accessories).

2020 Lines Sustainment OM&A will focus on maintenance and assessment work across portions of Hydro One's 29,107 overhead conductors, 82,500 hectares of ROWs, 52,250 steel structures, 42,000 wood poles and underground cables. Funding in 2020 is lower than the average historical funding levels in 2015-2018 but higher than 2019 due to restored

levels of overhead line assessment work and vegetation management work on 115kV lines. The sustainment work includes:

1. Completing preventive maintenance by restoring brush control and line clearing activities on 115kV on non-critical circuits;

2. Restoring foot patrols assessments on all flyable circuits as this activity offers a greater level of condition assessment information;

3. Responding to corrective maintenance by addressing unplanned failures and defects identified through preventive maintenance and assessments; and

4. Complying with NERC standards related to Transmission Vegetation Management (FAC-003) applicable to 230kV and 500kV transmission ROWs.

2020 Lines Sustainment OM&A has prioritized condition assessments for critical transmission lines located in publicly accessible areas and those connected to critical customers. Funding below the 2020 level will delay the retrieval of condition information to identify high priority deficiencies and risks the exclusion of these deficient assets in planned replacement programs. This risk jeopardizes customer supply and system reliability. 2020 funding further reflects the restoration of brush control and line clearing activities on 115kV circuits from 2019 levels, to enhance reliability on these circuits which are generally radial and supply large industrial customers in northern Ontario. Finally, 2020 funding includes the management of underground cables (located in major urban centers - Toronto, Ottawa and Hamilton) which permits Hydro One to focus on high priority corrective maintenance and regulatory cable locates.

Sustainment OM&A - Engineering and Environmental Support

Engineering and Environmental Support Sustainment OM&A funds work required to manage records, drawings, databases and provision of specific technical information, technical support including specialized studies, outage assessments conducted by the IESO, event investigation and incidents response. Funding in 2020 is in line with the average

historical funding levels in 2015-2018 and lower than 2019 due to streamlining design and engineering processes and reassigning teams to other departments.

Development OM&A

Development OM&A consists of expenditures incurred by Hydro One Transmission in the course of developing required technical standards, technical approaches and solutions, and associated bodies of knowledge. These activities benefit Hydro One's customers and are critical for Hydro One's business success.

The proposed Development OM&A spending for the 2020 test year represents an increase of $0.9 million relative to the 2019 bridge year forecast expenditures. Of this increase, $0.5 million is attributable to the Research Design & Development ("RD&D") program to assess applications and impacts of emerging technologies, such as transmission level energy storage and grid modernization, as well as to address transmission-related initiatives arising from innovation and policy initiatives (e.g., the OEB's Advisory Committee on Innovation, and the IESO's Innovation Roadmap and Market Renewal). The remaining $0.3 million is for the Transmission Standards Program to revise existing standards and maintenance procedures to account for new equipment and technologies, and address compliance requirements.

Operations OM&A

Hydro One's Operations function continuously manages the transmission system in real time from a centrally located control centre at the OGCC, or via the Back-Up Control Centre ("BUCC") in case the OGCC becomes unavailable. The Operations function monitors and controls transmission assets, coordinates and schedules planned outages, reacts to system contingencies, and provides customer notifications and reports regarding transmission system performance. Hydro One operates its transmission system in accordance with the requirements established by the IESO Market Rules and regulatory authorities (e.g., NERC and NPCC), and in accordance with good utility practice.

Hydro One manages Operations OM&A by dividing program expenditures into the following categories:

1. Operations accounts for the staff and work activities required to ensure the safe and reliable operation of the transmission system, including the planning, scheduling and execution of transmission outages;

2. Operations Support ensures that the various operating computer tools and systems are kept current and functional; and

3. Environment, Health and Safety supports the environmental, health and safety initiatives required to meet legal obligations, due diligence requirements and Hydro One's commitments to the safety of its employees, customers, the public and the environment.

The proposed Operations OM&A spending for the 2020 test year is designed to reflect Hydro One's commitment to: meet customer needs, manage health, safety and environmental risks, maintain regulatory compliance, and reliably operate the transmission system. The proposed spending for 2020 represents an increase of $2.8 million relative to the 2019 bridge year forecast expenditures. The increase is necessary to reinstate the Operations Support work programs that were part of the unsustainable reductions in 2018 and 2019 as noted below. Even with this increase, the 2020 proposed level remains below the previous OEB-approved amounts.

Customer Care OM&A

This category of OM&A expenditures pertains to the delivery of customer care functions to Hydro One's transmission customers. Relevant activities under the customer care function and corporate affairs function (including Indigenous relations, corporate communications, and external relations) are undertaken by Hydro One's Customer Care and Corporate Affairs Department. Within that department, the Large Customer Account Management Group provides customers with a single point of contact at Hydro One. Specific customer care functions include:

1. responding to customer inquiries and concerns (e.g., regarding service levels or power quality);
2. engagement through account executives;
3. meter data aggregation;
4. billing and settlement activities;
5. customer connection requests; and
6. communications regarding sustainment and system development plans and projects.

Hydro One is committed to deliver and improve customer service while prudently managing operational expenditures. In light of this objective, Customer Care OM&A levels are forecasted to remain relatively constant over the planning period. Relative to the 2019 bridge year forecast, Hydro One plans to spend an additional $0.2 million in Customer Care OM&A in the 2020 test year. This will allow the Customer Care and Corporate Affairs Department to meet its commitments. [270]

Common Corporate Costs and Other OM&A

Common Corporate Costs and Other OM&A include costs associated with Common Corporate Functions and Services ("CCF&S"), asset management planning, IT, and cost of sales for external work.[271]

CCF&S includes the following functions and services which are shared across Hydro One's businesses: corporate management, finance, human resources, corporate relations, general counsel and corporate secretariat, regulatory affairs, security management, internal audit, and real estate and facilities.

Other OM&A includes expenses such as environmental provision, indirect depreciation and other costs. As reflected by its 2019-2024 business plan, Hydro One is strongly committed

[270] Exhibit F-1-6.
[271] Exhibit F-2-1.

to reducing corporate costs across the organization, which is evident from the lower 2019 and 2020 expenditures in this category, relative to both actual and planned historical expenditures. These lower expenditures were achieved primarily through a reduction in vacancies and by limiting consulting and contract engagement to critical functions, as discussed further under Exhibit F-2-1. Furthermore, Hydro One's IT line of business was able to recognize sustained cost reductions resulting from the renegotiated Inergi outsourcing agreement.[272]

Property Taxes and Rights Payments

Hydro One incurs expenses related to taxes other than income and capital taxes in carrying out its Transmission business. These expenses result from obligations to pay property taxes and to make rights payments and have been appropriately forecasted.

Hydro One is responsible for the payment of property taxes like any other landowner in Ontario. These taxes are levied on Hydro One by approximately 400 municipalities each year in respect of land and buildings, including service centres, transmission stations and transmission lines. Hydro One's property tax expense includes amounts paid annually to various First Nations for payments in lieu of taxes with respect to transmission assets located on reserve land. For the 2020 test year, Hydro One forecasts total property taxes of $61.2 million. The Application includes a detailed breakdown and discussion of Hydro One's property tax expense, including the methodologies used to forecast this expense for stations, buildings and lines.[273]

In addition, Hydro One is responsible for payments for certain land rights procured under agreements or permits, including rights for transmission facilities to cross and/or occupy properties owned by railway companies and governmental bodies, as well as First Nations reserves. Whereas property taxes, as noted above, include payments to various First Nations in lieu of taxes, the rights payments that are made to various First Nations are made pursuant to permits or agreements granted by the federal government with the consent of

[272] Exhibit F-2-4.

[273] Exhibit F-7-4, pp. 1-4.

the affected First Nations. Rights payments are subject to change in accordance with the terms of the relevant agreements, permits or governance framework. For example, charges may be tied to changes in land values or subject to negotiation between the relevant parties. These land rights are necessary to support the ongoing operation of Hydro One's transmission facilities that cross and/or occupy the relevant lands. It is difficult for Hydro One to predict the timing and outcome of its negotiations to secure crossing or occupation rights with railway companies, or the amounts of payments required to secure consents from relevant First Nations. However, based on best available information (i.e., historical experience, anticipated land rights during the test period, and current status of ongoing negotiations), Hydro One has forecast a total rights payment amount of $6.9 million for 2020.[274]

In respect of the land rights required from First Nations, as stated in its Annual Report, Hydro One notes the following:

> "If the Company cannot reach satisfactory agreements with the relevant First Nation to obtain federal permits, it may have to relocate these assets to other locations and restore the lands at a cost that could be substantial. In a limited number of cases, it may be necessary to abandon a line and replace it with diesel generation facilities. In either case, the costs relating to these assets could have a material adverse effect on the Company if the costs are not recoverable in future rate orders."[275]

Issue 13 Recap

Hydro One submits that the proposed 2020 OM&A expenditures should be accepted, as they are necessary to sustain transmission assets, develop technical solutions and standards, operate the transmission system, provide customer care, carry out common corporate functions and fund property taxes and rights payments. The proposed 2020 OM&A is lower than both the historical OEB-approved OM&A levels and historical actuals (despite upward inflationary cost pressures), reflecting Hydro One's commitment to minimize customer rate impacts while providing safe and reliable transmission service.

[274] Exhibit F-7-4, pp. 4-5

[275] Exhibit A-6-6, Attachment 2, p. 50.

Issue 14: Are the methodologies used to allocate Common Corporate Costs and Other OM&A costs to the transmission business appropriate?

The methodologies used to allocate Common Corporate Costs and Other OM&A costs to the transmission business are appropriate. Common Corporate Costs are comprised of costs incurred for the provision of Customer Care, Asset Management Planning, IT and other shared functions referred to as Common Corporate Functions and Services (or CCF&S), which provide common services to all business units.[276] Other OM&A costs are comprised of credits associated with capitalized overheads which are determined from the Black & Veatch *Review of Overhead Capitalization Rates (Transmission) – 2019* (see Issue 9), environmental provisions, indirect depreciation and other costs.[277] Hydro One allocates Common Corporate Costs to its Distribution and Transmission businesses and to each Hydro One affiliate based on clearly articulated shared functions and services and an established cost allocation approach based on cost causality principles.

More particularly, the methodology used to allocate Common Corporate Costs to the transmission business consists of a planning process whereby corporate costs are charged out to and collected from the relevant lines of business and allocations are applied in a manner consistent with the Black & Veatch *Review of Allocation of Common Corporate Costs (Transmission) - 2019*. The allocation methodology is based on clearly articulated shared functions and services and an established cost allocation approach that is based on cost causality principles.

Prepared in early 2019, the Black & Veatch study was an independent third-party review of Hydro One's methodology for allocating common corporate costs. Black & Veatch confirms that "Hydro One's current cost allocation methodology continues to be appropriate for Hydro One because it achieves the purposes for which it was designed (to distribute costs in a

[276] CCF&S includes corporate management, finance, human resources, corporate affairs and outsourcing services, general counsel and corporate secretariat, regulatory affairs, security management, internal audit, and real estate and facilities.

[277] Further details are provided under Exhibit F-2-2.

manner that is consistent with OEB precedent and regulatory practice) and promotes transparency and efficiency".[278]

The methodology used to allocate Common Corporate Costs in this Application is consistent with allocation methodologies that were previously reviewed by Black & Veatch and approved by the OEB, including as part of Hydro One's application for 2017-2018 transmission revenue requirement (EB-2016-0160) and, more recently, as part of Hydro One's application for 2018-2022 distribution rates (EB-2017-0049).[279] On this basis, Hydro One submits that the methodology used to allocate Common Corporate Costs to the transmission business remains appropriate. Hydro One also notes that, similar to what was stated under Issue 9 in respect of the methodologies used to allocate Common Corporate Capital expenditures, pursuant to the OEB's Decision and Order in EB-2017-0049 the allocation methodology will be examined in detail as part of Hydro One's application for 2023-2027 distribution rates and transmission revenue requirement.[280]

Issue 15: Are the amounts proposed to be included in the revenue requirement for income taxes appropriate, including consideration of the Accelerated Investment Incentive (Federal Bill C-97)?

The amounts that Hydro One has proposed to be included in its revenue requirement for income taxes, and the manner in which Hydro One has considered the Accelerated Investment Incentive, are appropriate. The methodology that Hydro One has used for calculating Income Tax expenses for the purpose of recovery through transmission rates is consistent with the OEB's Filing Requirements[281] and supported by detailed calculations, reconciliations and supporting schedules.[282] The income tax expenses contemplated in the Application include an allocation of tax savings to ratepayers that arose from Hydro One's

[278] Exhibit F-2-6, Attachment 1, p.7.

[279] EB-2017-0049 Decision, p.119.

[280] EB-2017-0049 Decision, p.119.

[281] Filing Requirements for Electricity Transmission Applications, Chapter 2 - Revenue Requirement Applications, p. 30.

[282] See Exhibit F-7-2, including supporting attachments.

departure from the Payments in Lieu of Federal and Provincial Corporate Tax ("PILS") regime and incorporates the impact of the Accelerated Investment Incentive (Bill C-97).

Background

As a result of Hydro One's initial public offering of its shares in 2015, Hydro One exited the PILS regime and entered the federal income tax regime. This event led to Hydro One being deemed to have disposed of its assets at fair market value ("FMV") under the PILS regime, and to have re-acquired the same assets at the same value under the federal income tax regime. Hydro One was obligated to pay a one-time PILS departure tax of approximately $2.3 billion triggered by the deemed disposition, and recognized deferred tax benefits relating to the deemed acquisition at FMV for federal income tax purposes. The difference in value between the sale price and the tax cost (the "FMV Bump") provides additional capital cost allowance ("CCA") related tax savings in the future (the "Tax Benefits").

The allocation of tax savings to ratepayers due to departure from the PILS regime is appropriate

The methodology used in the Application to allocate the aforementioned Tax Benefits to transmission ratepayers is consistent with the methodology that Hydro One utilized in its Draft Rate Order in the prior distribution rates proceeding (EB-2017-0049), which was subsequently approved by the OEB.[283] Under this methodology, Hydro One applies the allocation percentage prescribed by the OEB in the EB-2016-0160 Decision to the maximum allowable annual Tax Benefits[284] to determine the portion of tax savings allocable to ratepayers.

In the EB-2016-0160 Decision, the OEB acknowledged that "the difference in value between the sale price and the tax cost … is available to the asset owner to provide CCA related tax savings in the future", confirming and effectively defining tax savings to be the CCA related

[283] EB-2017-0049 Draft Rate Order (April 5, 2019); and EB-2017-0049 Draft Rate Order Reply Submission (May 9, 2019).
[284] The maximum allowable CCA deduction permitted under the federal *Income Tax* and Ontario's *Taxation Act, 2007* that Hydro One may claim in computing its annual tax for federal and Ontario tax purposes.

to the FMV Bump.[285] This acknowledgment supports using the maximum allowable Tax Benefits as the most appropriate allocation basis (to apply the allocation percentage), as compared to regulatory tax, as previously adopted,[286] because the benefits shared with ratepayers are based on an allocation of the annual tax benefits derived by Hydro One from the FMV Bump.

Hydro One further notes that, in Procedural Order No. 4 in the current proceeding, the OEB indicated that the issue of future tax savings resulting from the Government of Ontario's decision to sell its ownership interest in Hydro One Limited as a result of the initial public offering will not be re-litigated in this proceeding since this matter is the subject of an appeal to the Divisional Court.[287] Given the direction from the OEB and the fact that Hydro One's methodology has previously been approved by the OEB, the proposed methodology for allocating tax savings to transmission ratepayers is appropriate.

Moreover, since the tax appeal before the Divisional Court is ongoing, it is appropriate for the OEB in the present proceeding to provide for the potential outcome of a successful appeal.[288] Hydro One has therefore requested approval from the OEB to establish a variance account to track the difference between Hydro One's revenue requirement underlying its approved transmission rates and its transmission revenue requirement after reflecting the outcome of a successful appeal, if applicable. As the amounts that are the subject of the appeal were used by the OEB to offset Hydro One's transmission revenue requirement commencing January 1, 2017, Hydro One requests a corresponding effective date for the proposed variance account of January 1, 2017. Hydro One expects this will facilitate the recovery of any amounts that the appeal decision may determine to be recoverable and which relate to periods dating back to January 1, 2017. Upon receiving the appeal decision, if successful, Hydro One intends to record the relevant amounts in the account, along with applicable interest, and to apply to the OEB for disposition of the

[285] EB-2016-0160 Decision, p. 84.

[286] Regulatory tax was the basis for allocation that was adopted in the Original Decision. Regulatory tax is not an appropriate basis as there is no relationship between the annual regulatory tax being recovered and the maximum allowable Tax Benefits (i.e., tax benefits derived from additional CCA provided by the FMV Bump).

[287] Procedural Order No. 4 (August 22, 2019), p. 3.

[288] Interrogatory I-08-PWU-23.

recorded balance over such period and in such manner as it considers appropriate at that time.

Accelerated CCA is Reflected in the Current Revenue Requirement

Hydro One has incorporated the reduction relating to the Accelerated Investment Incentive (the "Accelerated CCA") in the income tax amounts that are to be included in the revenue requirement and has also provided the supporting taxable income calculations and CCA schedules. Consequently, Hydro One's proposed revenue requirement decreased by approximately $85 million over the test years.[289] The impact of Accelerated CCA was not originally reflected in Hydro One's blue-page update to its pre-filed evidence because the evidence update was provided on June 19, 2019 and Bill C-97 was not enacted until June 21, 2019. The impact of Accelerated CCA for 2019 is currently tracked in the appropriate sub-account[290] and will be returned to customers as part of the next rebasing application.[291] Hydro One does not intend to record any amounts in the sub-account beyond 2019 as, starting in 2020, the revenue requirement proposed for approval reflects the Accelerated CCA assumptions.[292]

Issue 16: Is Hydro One's proposed depreciation expense appropriate?

Hydro One's proposed depreciation expense is appropriate. As described in Exhibit F-6-1, Hydro One retained Foster Associates to prepare an independent depreciation study that involved a review of Hydro One's existing depreciation rates and the provision of updated depreciation rates (the "Depreciation Study").[293] The first Depreciation Study was prepared in June 2006, and in subsequent applications Hydro One has provided a number of updates

[289] Interrogatory I-01-OEB-208(b).

[290] Sub-account of Account 1592 - PILs and Tax Variances – CCA Changes.

[291] Interrogatory I-01-OEB-208(d).

[292] During the Oral Hearing, Panel Member Anderson asked that Hydro One clarify as part of its Argument-in-Chief whether it is requesting to close this account and/or the sub-account. As this is a standard OEB account with a standard sub-account, established pursuant to the OEB's Uniform System of Accounts, Hydro One does not believe it is appropriate to request its closure. The account and sub-account would continue to exist, and be available, but is not currently expected to be used. See Oral Hearing Transcript, Vol. 6, p. 121.

[293] Exhibit F-6-1, Attachment 1 (2017 Depreciation Rate Review - Hydro One Transmission Operations).

to its depreciation rates based on the methodology set out in the Depreciation Study. The OEB has previously accepted the Depreciation Study and the methodology set out therein for calculating depreciation rates and expenses, including in Hydro One's application for its 2017-2018 transmission revenue requirement (EB-2016-0160).[294]

Hydro One submits that the proposed depreciation rates and the associated depreciation expense for the test period are appropriate as they are based on the previously accepted methodology and achieve the objectives of depreciation accounting to appropriately allocate costs over the economic life of assets in proportion to the consumption of the service potential of the assets. Hydro One further notes that implementing the proposed depreciation rates results in a lower depreciation expense by approximately $14 million over the 2020-2022 rate period, relative to maintaining the existing depreciation rates.[295]

F. COMPENSATION COSTS:

Issue 17: Are the compensation related costs appropriate?

Hydro One's compensation related costs are appropriate in respect of, and having regard to, its various categories of employees.[296] Hydro One has taken meaningful steps (as highlighted below) to keep costs as low as reasonably possible, responsive to feedback in this respect from the OEB, customers and other stakeholders. It has made progress in limiting compensation costs, and actively managing the efficiency and size of its workforce. This has included significant steps to reduce pension costs. At the same time, accomplishing the significantly growing work programs and delivering on the important outcomes to which the company is committed requires Hydro One to attract, retain and motivate a highly skilled

[294] EB-2016-0160 Decision, p. 65.

[295] Interrogatory I-04-LPMA-11(a).

[296] Hydro One's regular employee workforce is organized into three main categories: (i) Management and Non-Represented Staff (approximately 10 percent of the regular employees); (ii) Power Workers' Union (approximately 65 percent of the regular employees); and (iii) Society of United Professionals (approximately 25 percent of the regular employees). Hydro One also has three additional categories of non-regular employees: (i) Temporary Workers (engage in work that is not continuous in nature -- hired for a fixed term, generally not exceeding 12 to 15 months), (ii) Casual Workers (perform construction trades work, and are hired through the hiring halls to perform specific work programs), and (iii) Contract Staff (independent contractors and are not on Hydro One's payroll -- they are engaged for varying amounts of time and paid varying wages commensurate with their skillsets and market rates).

and high performing workforce with appropriate compensation systems. Hydro One's balanced compensation framework achieves these objectives. [297]

While the 2020 transmission-allocated costs represent an increase over 2019 levels, the increase is reasonable and necessary, as it is mainly driven by additional resourcing requirements necessary to execute Hydro One's expanded work programs over the test period, and by negotiated wage increases in compensation for Hydro One's represented staff. These increases are offset by the reduction in vacancies for common corporate functions, and also by the further 7% reduction in staffing budget dollars that was layered in at the end of the budgeting process.[298]

As evidence of the reasonableness of the Transmission compensation costs, the Transmission work program is increasing by approximately 26% between 2019 and 2022, but compensation costs are increasing by only 12% over the test period, or 4% per annum.[299] Compensation costs as a percentage of total work program costs are improving from 48% in 2014 to 44% in 2022. Further, compensation costs as a percentage of total Transmission costs are improving from 49% in 2014 to 40% in 2022. [300] This is a reflection of Hydro One's improved productivity and cost control measures.

The company has also reflected the impact of Bill 2 within the associated allocations to the Transmission business, resulting in a revenue requirement reduction. Consistent with what was filed in the 2018-2022 distribution rate application (EB-2017-049), compensation costs associated with the Executive Leadership Team have not been allocated to Transmission, i.e. the 2020 revenue requirement excludes all Executive Leadership compensation.[301]

[297] Exhibit F-4-1, p.1.

[298] Exhibit F-2-1, p. 1, Oral Hearing Transcript Vol. 5, p. 106 ln. 16 to p. 108 ln. 18.

[299] Exhibit F-4-1, p.32.

[300] Exhibit F-4-1, p.32.

[301] Exhibit F-4-1, pp. 34-36.

Compensation Benchmarking Studies

Consistent with direction from the EB-2016-0160 Decision, Hydro One has conducted a number of compensation benchmarking studies.[302] When assessing compensation positioning relative to the external market, a competitive range of ±5% from market median is the desired positioning (due to limitations in published compensation data and fluctuations in market data year over year).[303] The benchmarking studies show improvements by Hydro One in respect of its compensation levels relative to market median, with various categories of employees being at (or very close to) market median levels. By way of example, in respect of management and non-represented staff, the Mercer study shows that total compensation is positioned 1% above market median.[304] In respect of represented staff, while Hydro One remains above market median, Hydro One has made successive progress in this regard, and must work within the constraints of the existing bargaining process and collective agreements.

Five total compensation studies have been conducted by Mercer over the years, comparing Hydro One compensation to market median. These study results show that Hydro One has made successful strides in balancing the competing pressures of reducing compensation costs and attracting and maintaining an engaged workforce – improvements relative to market median from 2008 to 2017.[305] Table 17-1 below shows the results of these studies. The 2017 study shows that on an overall weighted average, Hydro One was positioned approximately 12% above market median. Since the first study in 2008, Hydro One has improved its positioning relative to market median by 5%.[306]

[302] Exhibit F-4-1, Section 7.7.
[303] Exhibit F-4-1, p. 36.
[304] Detailed in Exhibit F-4-1, Section 7.7.3.
[305] Exhibit F-4-1, Section 7.7.3.
[306] Exhibit F-4-1, Section 7.7.3, Table 8.

Table 17-1: Mercer Total Compensation Studies - High Level Results

Employee Group	2008 Survey Results	2011 Survey Results	2013 Survey Results	2016 Survey Results	2017 Survey Results	Total Change from 2008 to 2017
Management	-1%	-17%*	-1%	2%	1%	2%
Society	5%	5%	9%	11%	12%	7%
PWU	21%	18%	12%	16%	12%	-9%
Overall	**17%**	**13%**	**10%**	**14%**	**12%**	**-5%**

**Management employee group positioning of -17% to market median likely impacted by legislative freeze for non-represented compensation.*

Compensation and Pension Strategy and Framework

Management and Non-Represented Staff

Hydro One has a multi-faceted and disciplined approach to management and non-represented employee compensation founded on a set of key principles that inform the various elements of compensation.[307] The company's framework includes the following best practices for management compensation programs, allowing Hydro One to attract, retain, and engage its management and non-represented workforce, while ensuring that the company's compensation related costs are appropriate: [308]

1. Pay for performance – aligns pay with both corporate and individual performance and uses several performance measures to avoid undue focus on any particular measure;

2. Pay at risk – places some portion of compensation "at risk" or variable for all non-represented employees (the more senior the level, the greater percentage of compensation is "at risk");

[307] As described in Exhibit F-4-1, pp. 18-19.

[308] Exhibit F-4-1, section 7.2.

3. Balances target pay between fixed and variable pay, and between short and long-term incentives;

4. Aligns target awards with market median (P50);

5. Share ownership – requires all executives to own Hydro One shares, and includes share ownership guidelines and post-retirement equity hold periods for executives;

6. Leverages a segmented role approach (Operations and Core Services);[309]

7. Caps payout opportunities within the Short Term Incentive Plan ("STIP") and Long Term Incentive Plan ("LTIP") programs;

8. Grants LTIP awards annually and includes overlapping performance periods thereby requiring substantially higher levels of performance to achieve results;

9. Includes clawback and anti-hedging policies; and

10. Provides the Human Resource Committee of the Board with independent compensation advice from an independent advisor.

Hydro One has also aligned the organizational structure with the longer-term strategy and key business objectives. Key to this initiative has been the introduction of a new job evaluation system for non-represented positions and an update to the compensation level structure. For example, by creating an additional level for both the Vice-President and Director roles, there is a lower base rate cap for these positions effectively limiting the pay opportunity at these levels. Through the segmented salary structure, the salary range for Core Services roles was also reduced to align with market. [310]

[309] To refine the market for which Hydro One resources talent, non-executive roles have been segmented into either Core Services or Operations. Operations roles require specific education, skills and knowledge in a professional area that is directly related to the Transmission, Distribution or regulation of power. Core Services positions require education, skills and/or knowledge not necessarily specific to the utility business. This segmentation enables Hydro One to establish a market median target for each segment. New pay bands have been established for each segment resulting in lower top-end rates for Core Services roles.

[310] Exhibit F-4-1, p.21.

Further, key Transmission targets were incorporated into the company's Team Scorecard to link the company's goals and objectives with performance-based compensation. Hydro One's overall performance against these targets is reported to stakeholders by means of regulatory scorecards for each of the Transmission and Distribution businesses, as well as through Hydro One's Team Scorecard and Operational Scorecard. The incentives that are embedded in Hydro One's compensation plans support continuous improvement in Hydro One's performance measures and are designed to both increase efficiency and deliver outcomes that customers value.

Unionized Staff

Under the Ontario *Labour Relations Act*, Hydro One is legally obligated to negotiate collective agreements with its employees' bargaining representatives. Hydro One inherited collective agreements from Ontario Hydro, which established terms of employment. These legacy collective agreements have established the 'floor' upon which future negotiations have been and will continue to be based. While legacy collective agreements inevitably continue to strongly influence current Hydro One collective agreements, Hydro One has nonetheless done much to change the status quo. It has been successful in incrementally reducing costs and/or increasing productivity through collective bargaining.[311] Over the 2016-2019 period, Hydro One has managed to contain its wage increases to a level below the consumer price index ("CPI"). The average CPI increase over this period was 1.8%; whereas the average wage increase for Society of United Professionals ("SUP") employees was 0.9%, and for Power Workers Union ("PWU") employees was 1.45%.[312] Managing base wage costs has a multiplier effect on savings in labour burdens including pension, benefits and overtime costs.

Casual Construction Employees

The casual construction workforce has a favourable compensation cost structure in several aspects. These aspects include that this workforce: (1) is paid an industry standard wage

[311] Exhibit F-4-1, Section 7.5.

[312] Oral Hearing Transcript, Vol. 6, p. 57, ln. 12 to p. 58, ln. 15.

(for building trades governed by Electrical Power Systems Construction Association collective agreements) or wages that are either competitive and in some cases less than other rates in the industry; (2) does not join the Hydro One pension plan or group benefit plan; and (3) does not have entitlement to sick leave benefits or paid scheduled vacation time off. In addition, this workforce is more easily deployed to work throughout the province, is more easily dismissed when work load fluctuates, and is accessed through the union hiring halls to perform specific work programs and then laid off when no longer required.[313]

Hydro One appropriately balances the use of its casual workforce to scale up and down to achieve work program requirements.

Reasonableness of Pension Costs

Hydro One has taken meaningful steps to reduce pension costs. These include steps to increase employee contributions and reduce benefits with all employee groups. Hydro One has demonstrated this commitment to reducing pension costs by: [314]

1. closing the defined benefit pension plan for new externally hired management employees as of September 30, 2015, in favour of a new and lower cost defined contribution pension plan;

2. introducing lower cost defined benefit plans for Management Compensation Plan employees (2004) and SUP employees (2005);

3. increasing employee pension plan contributions for all employee groups - total annual saving from 2018 to 2022 resulting from increased employee pension contributions is over $111 million for both Transmission and Distribution[315] - this, in turn, means lower customer costs; and

4. reducing future service benefits for all current PWU and future PWU employees as well as SUP legacy pension plan members by adjusting the number of years for

[313] Exhibit F-4-1, Section 7.5.5.
[314] Exhibit F-4-1, Section 8.
[315] Exhibit F-4-2, Table 9.

determining the final average earnings from three years to five years and increasing the early undiscounted pension eligibility from Rule of 82 to Rule of 85 (both effective March 31, 2025).

As a result of these steps taken by Hydro One, over the 6 year period from 2013 to present, employee contributions have increased from 20% to over 40% as a whole (i.e. Hydro One has made significant strides towards the ultimate goal of 50-50 cost sharing, and this has resulted in a meaningful reduction to costs borne by customers).[316] For the years 2018 and 2019, this has resulted in savings for customers of approximately $22 million annually (on average) and this level of savings is expected to continue in the 2020 to 2022 period.[317]

Recovery of Legally Required Pension Contribution Costs in Rates

In the EB-2017-0049 Decision, the OEB disallowed the recovery of Hydro One's pension costs stating that there was "a significant surplus in its pension plan and there is no justification for continued inclusion of additional pension contributions in rates".[318] The OEB effectively concluded that a surplus allowed Hydro One to take a pension contribution holiday. However, for purposes of the current Application, and based on recent changes to the law relating to pension contribution holidays and the current funded status of the pension plan, Hydro One will not legally be permitted to take a pension contribution holiday in 2020, 2021 or 2022.[319]

The obligation to make pension contributions is governed by the *Pension Benefits Act* ("PBA") and regulations under it. Historically, an employer could take a contribution holiday provided that their plan was fully funded on both a going concern basis[320] and on a solvency basis[321] if a cost certificate was filed annually confirming that the plan continued to be in a

[316] Oral Hearing Transcript Vol. 4, p. 117 ln. 13-15.

[317] Exhibit F-4-1, Table 9.

[318] EB-2017-0049 Decision, p. 94.

[319] Exhibit F-5-1, p. 3.

[320] "Going concern basis" valuations assume that a pension plan will continue indefinitely. The value of benefits is calculated using long-term assumptions that reflect the investment policy of the pension fund.

[321] "Solvency basis" valuations assume that a plan is terminated on a specific date. The value of benefits is calculated assuming members' benefits are settled through either a purchase of annuities or the transfer of

surplus position (the "Pre-May 1, 2018 Rules"). However, effective May 1, 2018, section 55.1 of the PBA and associated regulations (O. Reg. 250/18) were amended, and then further amended on May 21, 2019 pursuant to O. Reg. 105/19 (together, the "New Rules"). The New Rules provide that a private employer like Hydro One may only take a contribution holiday in a year if an actuary certifies the plan has a funded ratio of at least 105% calculated on a wind-up basis.[322]

The current December 31, 2018 valuation report, which is operative until December 31, 2021[323] and is governed by the New Rules, indicates that Hydro One's pension plan is only 73% funded on a wind-up basis. This is well below the 105% funding threshold required to take a contribution holiday under the New Rules. Therefore, it is not expected that the wind-up funded position of Hydro One's pension plan will meet the new 105% threshold at any time during the test period.[324] The oral hearing testimony confirmed that it will be "virtually impossible" for Hydro One to take a contribution holiday.[325]

Since there is almost no chance Hydro One will be able to take a pension contribution holiday under the New Rules in the 2020-2022 period, the OEB should allow the recovery of its legally required pension contributions, which have historically been accepted by the OEB as prudently incurred costs for the provision of the rate regulated services Hydro One provides to its customers. These costs will continue to be prudently incurred under, and in accordance with, the legislative scheme governing pension contribution obligations. Further,

---

commuted values on that specified date. The assumptions therefore reflect the estimated cost of annuities and the prescribed assumptions for commuted values and the interest rates tend to fluctuate on a monthly basis. Solvency valuations may exclude the value of future indexation of benefits and certain other benefits, which are required to be included in the wind-up liabilities for purposes of the wind-up valuation. In Hydro One's case, the value of indexation is excluded in preparing the solvency basis valuation.

[322] "Wind-up basis" valuations assume the plan is terminated and wound up on a specified date with all members' benefits being settled through either a purchase of annuities or the transfer of commuted values and the interest rates tend to fluctuate on a monthly basis. The assumptions therefore reflect the estimated cost of annuities and the prescribed assumptions for commuted values. The value of all benefits, including future indexation of benefits, is included in a wind-up valuation.

[323] Undertaking JT2.31, Attachment 1 (Updated October 17, 2019).

[324] The *Expert Report in Respect of Pension Issues Related to Hydro One Networks Inc.* (I-1-OEB-203 Attachment 3, p. 6) confirmed that the chances of Hydro One being able to take a contribution holiday during the test period are extremely remote -- there is 0.0% chance of the Hydro One pension plan's transfer ratio being above 105% at January 1, 2020, only a 0.3% chance of it being above 105% at January 1, 202, and only a 1.2% chance of it being above 105% at January 1, 2022.

[325] Oral Hearing Transcript Vol. 4, p.141 ln. 25 to p. 142 ln. 10.

Hydro One will continue to use the existing Pension Cost Differential Variance Account to track any difference between pension costs recovered in rates and pension payments made to the Hydro One pension plan.[326]

In summary, for the reasons outlined above, Hydro One's compensation related costs are appropriate, particularly given: (1) the progress that has been made in reducing/limiting compensation costs as evidenced by improving benchmarking results; (2) that the increase in transmission compensation costs is relatively low compared to the increase in the work program; (3) Hydro One's overall compensation and pension framework and strategy; and (4) the progress that has been made in reducing pension costs and in respect of collective bargaining (including having regard to the reality of the collective agreements Hydro One inherited from Ontario Hydro).

G. RATE BASE AND COST OF CAPITAL:

Issue 18: Are the amounts proposed for rate base (including the working capital allowance amounts) reasonable?

The proposed 2020-2022 rate base amounts, which were provided in detail in Exhibit C-1-1 and further updated as part of undertaking response J8.5[327] including the working capital allowance amounts, have been correctly determined and are appropriate.

Hydro One determines transmission rate base based on the net book value of fixed assets, which are forecast on a mid-year average basis, plus a working capital allowance. Net fixed assets are calculated as gross plant in service, including the forecasted in-service additions for a year, minus accumulated depreciation.[328]

Hydro One's depreciation expense is appropriate for the reasons set out under Issue 16, above. Further, the planned in-service additions are appropriately forecasted based on the utility's proposed capital expenditures, which, as explained in connection with Issue 9

[326] Exhibit H-1-2, p. 3.
[327] See Table 2: Summary of Revenue Requirement Components.
[328] Exhibit C-1-1, p. 1.

above, are derived through a robust investment planning process that underpins the TSP. Hydro One determined the in-service addition amounts by combining the best forecast available for all projects within its transmission portfolio that have assets planned for capitalization during the test years.[329]

Working capital allowance amounts are appropriate as the underlying methodology is supported by Navigant's updated lead-lag study, which examined the working capital requirements of Hydro One's transmission business.[330] Pursuant to the OEB's direction in the EB-2016-0160 Decision, Hydro One has provided a comparison with the prior study to show material changes in study results, which are attributable to an overall increase in revenue lag.[331]

For the reasons highlighted above and detailed in the Application, Hydro One's proposed rate base amounts are appropriate and should be used to determine revenue requirement for the 2020-2022 test period.

Issue 19: Is the proposed cost of capital (interest on debt, return on equity) and capital structure reasonable?

Hydro One's proposed capital structure and cost of capital are reasonable and, for the reasons that follow, should be accepted by the OEB.

Hydro One Transmission's deemed capital structure for rate-making purposes is 60% debt and 40% common equity of utility rate base. This capital structure is consistent with the approved structure in Hydro One's last transmission rebasing revenue requirement proceeding,[332] as well as the capital structure approved in Hydro One's most recent distribution rates proceeding.[333] It is also consistent with the *Report of the Board on the Cost*

[329] As noted on Exhibit C-2-1, p. 1, the timing of in-service additions is subject to inherent and unavoidable uncertainties associated with work execution, including outage constraints, external approvals, material delivery, site conditions, evolving customer needs, changing priorities and emergent investments.

[330] Exhibit C-5-1, Attachment 1.

[331] Differences between the current study and previous study are set out at Exhibit C-5-1, Attachment 1, p.19.

[332] EB-2016-0160 Decision, p.43.

[333] EB-2017-0049 Decision, p.85.

of Capital for Ontario's Regulated Utilities, dated December 11, 2009 (EB-2009-0084). The 60% debt component consists of 4% deemed short-term debt and 56% long-term debt.

The deemed short-term debt rate of 2.75% was updated by Hydro One for the 2020 to 2022 test years based on the 2020 deemed short-term debt rate, which was calculated and released by the OEB on October 31, 2019.[334]

Hydro One has calculated its long-term debt rate to be 4.33% for 2020 to 2022 based on the weighted average rate on embedded debt, new debt and forecast debt planned to be issued in 2020. The 2020 revenue requirement was reduced due to 2019 actual debt issuances and the updated cost of capital parameters issued by the OEB On October 31, 2019.[335]

For the ROE component of the cost of capital, the Application reflects an ROE of 8.52% (as updated in response to undertaking J8.5), which is based on the OEB's latest cost of capital parameters and calculated in accordance with the OEB's formulaic approach set out in Appendix B of the *Cost of Capital for Ontario's Regulated Utilities* report, dated December 11, 2009 (EB-2009-0084).

The proposed cost of capital and capital structure, and the approaches outlined above for determining the short-term and long-term debt components as well as the ROE component of the cost of capital, are reasonable and are consistent with that which has been approved by the OEB in the EB-2016-0160 Decision[336] and in the EB-2017-0049 Decision.[337]

[334] In response to undertaking J8.5, Hydro One updated the revenue requirement to reflect the updated Cost of Capital Parameters issued by the OEB on October 31, 2019.

[335] Undertaking J8.5, Table 1.

[336] EB-2016-0160 Decision, p.43.

[337] EB-2017-0049 Decision, pp. 85-87.

H. LOAD & REVENUE FORECAST:

Issue 20: Is the load forecast methodology (including consideration of CDM impacts) and the resulting load forecast appropriate?

Hydro One's load forecast methodology and the resulting load forecast are appropriate. The load forecast methodology used by Hydro One in this Application is consistent with the OEB-approved load forecast methodology that has been used for transmission rates since 2007 and was most recently approved in Hydro One's 2017-2018 transmission application (EB-2016-0160). Hydro One uses a number of inputs, such as econometric (top-down) models, end-use (bottom-up) models, customer forecast surveys and hourly load shape analyses to produce the forecasts required for its transmission business.

The load forecast was prepared in December 2018 and relies upon a consistent set of CDM assumptions over the historical and forecast period per the 2013 LTEP, as well as the latest information provided by the IESO. The only changes from the previously approved forecasting methodology are changes to some model variables to account for the latest available information, so as to improve forecast accuracy.[338] As explained during the oral hearing, Hydro One has continued to improve its forecast accuracy by looking at each aspect of the methodology and by assessing the extent to which changes improve its accuracy.[339] Hydro One's forecast of the average 12-month peak load for 2020 to 2022, for Ontario as a whole and for each of the three transmission rate pools, is presented in Exhibit E, Tab 3, Schedule 1, Table 1 at p. 1. Hydro One's load forecast methodology has proven, year-over-year, to result in an accurate load forecast, as shown in Exhibit E, Tab 3, Schedule 1, Table 5 at p. 24.[340]

Hydro One's resetting of the load forecast for 2020 results in a drop of 3.9% relative to the load forecast built into the currently approved Uniform Transmission Rates ("UTRs"). The

[338] Interrogatory I-01-OEB-152.

[339] Oral Hearing Transcript Vol. 8, p. 143, ln. 7-26.

[340] As explained at Exhibit E-3-1, p.23, higher variances associated with the 2015 row and the 2016 row in Table 5 are largely attributable to the load reductions driven by the impact of the expanded Industrial Conservation Initiative program.

decrease in the 2020 load forecast is due to the fact that the actual peak load in 2018 was 3.5% lower than the currently approved load forecast, primarily driven by the impact of the expanded Industrial Conservation Initiative ("ICI"), as well as the further decline of 0.4% between 2018 and 2020 due to a combination of slow economic growth and higher Conservation and Demand Management ("CDM") that are forecast during this period.[341]

In light of the above considerations, Hydro One submits that its load forecast methodology and resulting load forecast are appropriate.

Issue 21: Are Other Revenue (including export revenue) forecasts appropriate?

Hydro One's Other Revenue forecasts, including its export revenue forecasts, are appropriate. Hydro One's Other Revenues consist of revenues that are received by Hydro One from sources other than transmission rates and which are applied as an offset to Hydro One's revenue requirement for the purpose of determining its rates revenue requirement. This has the effect of reducing the amount of revenue that is collected from ratepayers through UTRs. Hydro One's Other Revenues are comprised of external revenues,[342] wholesale meter service revenues,[343] funding for Low Voltage Switch Gear ("LVSG") credit[344] and export transmission service revenues.[345]

Hydro One's forecasts of Other Revenues are clearly linked to existing service agreements, consistent and predictable work volumes, and existing work commitments driven by IESO requirements, and are thereby appropriate.

In respect of Hydro One's Export Transmission Service ("ETS") revenue[346], Hydro One notes that it is applied as an offset to the Network pool revenue requirement and is

[341] Oral Hearing Transcript Vol. 7, pp. 144-147.
[342] Exhibit E-2-1
[343] Exhibit I2-3-1
[344] Exhibit I1-1-3
[345] Exhibit I2-4-1
[346] Exhibit I2-4-1, Table 2.

calculated using the currently approved ETS tariff of $1.85/MWh and the three-year historical rolling average of electricity exports.

Although Hydro One has proposed in the Application to maintain the current ETS tariff (see Issue 25 below), in the event the OEB concludes that a different ETS tariff should be used, Hydro One would revise its rates revenue requirement to reflect the OEB's Decision and Order with respect to the ETS tariff as part of the Draft Rate Order to be submitted in this proceeding.

I. DEFERRAL & VARIANCE ACCOUNTS:

Issue 22: Are the proposed amounts, disposition and continuance of Hydro One's existing deferral and variance accounts appropriate?

Hydro One has a total of sixteen Regulatory Accounts in respect of its Transmission business. These are set out at Table 2 of Exhibit H-1-1, page 3. The proposed amounts, disposition and continuance of Hydro One's existing Regulatory Accounts, as summarized below, is appropriate.

In the Application, Hydro One is seeking to dispose of the forecast balances, as at December 31, 2019, for twelve of the Regulatory Accounts. These twelve accounts, as set out in Table 22-1 below, have a total audited debit balance of $20.5 million, which reflects the principle balances of the accounts as at December 31, 2018, plus forecast interest and less any amounts approved for disposition in 2019 by the OEB. Hydro One is seeking approval to refund this amount to customers by means of offsets to its revenue requirement of $6.8 million per year over a three-year period commencing January 1, 2020, as shown in Exhibit H-1-4. With the exception of the OEB Cost Differential Account, Hydro One is also seeking to continue each of these Regulatory Accounts.[347]

[347] See Exhibit H-1-1, pp. 11-12 regarding the OEB's prior approval for the discontinuation of the OEB Cost Differential Account.

Table 22-1: Transmission Regulatory Account Balances for Disposition ($ millions)[348]

Description	Forecast Balance as at December 31, 2019[349]
Excess Export Service Revenue	4.8
External Secondary Land Use Revenue	(10.4)
External Stations Maintenance, E&CS & Other External Revenue	4.5
Tax Rate Changes	0.0
Rights Payments	2.4
Pension Costs Differential	(4.5)
Long-Term Transmission Future Corridor Acquisition and Development	0.0
LDC CDM and Demand Response Variance Account	23.6
External Revenue – Partnership Transmission Projects Account	(0.0)
OEB Cost Differential Account	(0.1)
Waasigan Transmission Line Deferral (Formerly NWBTL)	0.9
In-Service Capital Additions Variance	(0.6)
Total Regulatory Accounts for Disposition	**20.5**

Hydro One is not seeking disposition of the remaining four Regulatory Accounts in respect of its Transmission business. Two of these accounts - the East West Tie Deferral Account and the Supply to Essex County Transmission Reinforcement ("SECTR") Deferral Account - are tracking accounts which provide visibility to the OEB as to the costs associated with both projects[350]. The third account, the OPEB Cost Deferral Account, which is discussed under Issue 11, is subject to the OEB's determination regarding the capitalization of the non-current service component of OPEBs. The fourth account, OPEB Asymmetrical Carrying Charge Account, which is also discussed under Issue 11, has a zero balance and is subject to Hydro One's request for approval of an alternative methodology for calculating the

[348] Note that figures presented may not add to the total due to rounding.

[349] The amounts are rounded to millions and include actual balances.

[350] East West Tie Deferral Account is discussed further under Exhibit H-1-1, Section 3.1 and SECTR Deferral Account is discussed further under E H-1-1, Section 3.2.

balance. Hydro One is seeking to continue each of these four Regulatory Accounts for which it is not currently seeking disposition.

All of the Regulatory Accounts reported by Hydro One Transmission have been established consistent with the OEB's requirements as set out in the Accounting Procedures Handbook, subsequent OEB direction, or as per specific requests by Hydro One Transmission.

The forecast interest for 2019 is calculated by applying interest on the December 31, 2018 year-end principal balances, less any amounts approved for disposition in 2019 using OEB prescribed interest rates, as per the Bankers' Acceptances three month rate plus a spread of 25 basis points.

Hydro One has provided detailed descriptions of each account for which it seeks continuance and disposition, or continuance only, in Exhibit H-1-1. Hydro One submits that each of these proposals, for disposition and continuance or for continuance only, is appropriate in the circumstances for the reasons detailed in that exhibit.

Issue 23: Are the proposed new deferral and variance accounts appropriate?

Hydro One is seeking approval to establish three new Regulatory Accounts – a Foregone Transmission Revenue Deferral Account, an ESM Deferral Account and a CCRA True-up Variance Account. These proposed new accounts, as well as a proposed modification to the In-Service Capital Additions Variance Account for which continuance is requested, are discussed below.

Proposed New Regulatory Accounts

Foregone Transmission Revenue Deferral Account

Hydro One filed an accounting order on October 10, 2017[351] pursuant to the OEB's decision on its transmission rates for 2017 and 2018, which established a Foregone Transmission Revenue Deferral Account for the purpose of capturing any differences between revenue

[351] Exhibit A-6-1, p. 3.

earned by Hydro One Transmission under any interim UTR, and the revenues that would have been received under the approved 2017 UTR based on the OEB-approved 2017 load forecast ("Foregone Revenue"). That accounting order was approved on November 9, 2017 and, as part of the OEB's April 25, 2019 decision in EB-2018-0130, the OEB determined that the account should be discontinued. In this Application, Hydro One is proposing a similar account, which would capture the Foregone Revenue from January 1, 2020 to the date when the approved 2020 UTRs are reflected in the revenue earned by Hydro One Transmission. The draft accounting order for this proposed new account is provided in Exhibit H-1-2, Attachment 1. See also the submissions regarding the proposed effective date under Issue 4 above.

ESM Deferral Account

The proposed ESM protects customers by ensuring that 50% of any over-earnings over 100 basis points are shared with customers. The ESM is asymmetrical to the benefit of the customer: Hydro One will share earnings with customers if it over-earns but if Hydro One suffers lower than expected earnings, the customers are not affected. The sharing of any over-earnings above 100 basis points is the mechanism approved in the recent Hydro One distribution rates proceeding (EB-2017-0049). The customers' share of the earnings will be adjusted for any tax impacts and will be credited to the ESM Deferral Account, which will be put forward for disposition at the time of Hydro One's next rebasing application. A draft accounting order is provided in Exhibit H-1-2, Attachment 3. See also the submissions regarding the proposed account under Issue 5 above.

CCRA True-up Variance Account

Hydro One proposes to establish a new variance account to track the differences between components of revenue requirement and actual results related to load true-ups performed in accordance with Section 6.5.3 of the TSC, as discussed further in Exhibit C-7-1. A draft accounting order is provided in Exhibit H-1-2, Attachment 4.

Proposed Modification to In-service Capital Additions Variance Account

In addition to the three proposed new accounts noted above, Hydro One proposes to continue the existing In-Service Capital Additions Variance Account (which was most recently approved by the OEB for 2017-2018 transmission revenue requirement), with certain modifications as discussed below.

This account helps protect customers as it tracks the difference between the revenue requirement associated with actual in-service capital additions during the rate year and the revenue requirement associated with the OEB-approved in-service capital additions for that year. The revenue requirement associated with the amounts forecast in annual in-service additions will be tracked, and if Hydro One's actual cumulative in-service additions are 98% or less of the forecast amounts, the value associated with this difference will be recorded in the variance account on an annual basis. In Hydro One's next transmission rebasing application, any balance in the account will be brought forward for disposition to customers.

The 2% "deadband", which results in the 98% amount, is necessary to ensure that appropriate behavior is being incented by the account and to align incentives with the proposed revenue cap index's stretch mechanism. Also, Hydro One proposes to exclude verifiable productivity savings from the calculation of this account to ensure that true productivity savings are incented throughout the term of the CIR plan. The process associated with achieving and quantifying verifiable savings places the onus on Hydro One to prove the achievement of these savings in future rate proceedings. An illustrative example of the account is provided in Exhibit H-1-2, Attachment 5. See also the submissions regarding the proposed account under Issue 5 above.

Based on the foregoing, Hydro One submits that the proposed new Regulatory Accounts, as well as the modifications to the existing account, are appropriate and should be approved by the OEB.

J. COST ALLOCATION:

Issue 24: Is the transmission cost allocation proposed by Hydro One appropriate?

The cost allocation proposed by Hydro One to allocate its rates revenue requirement into the Network, Line Connection and Transformation Connection rate pools is appropriate. The transmission cost allocation methodology that Hydro One is proposing in the current Application[352] has not changed from that which was approved by the OEB in Hydro One's 2017/2018 transmission revenue requirement proceeding (EB-2016-0160).

The derivation of Hydro One's rates revenue requirement which is used for cost allocation purposes is set out in Exhibit I1-1-1. The rates revenue requirement is based on Hydro One's total revenue requirement, offset by Other Revenues consisting of external revenue, wholesale meter service revenue, regulatory assets, export transmission service revenue and funding for the low voltage switchgear credit. The rates revenue requirement amounts by rate pool are the amounts that Hydro One seeks to recover through UTRs.

To allocate the rates revenue requirement into rate pools in the first year of the 3-year CIR period, Hydro One applied the cost allocation methodology that was approved in EB-2016-0160 to its 2020 rates revenue requirement. Consistent with the CIR framework proposed in this Application, Hydro One will not re-run the cost allocation model in the subsequent years of the CIR period, but rather will determine the rates revenue requirement by rate pool using the methodology approved by the OEB in EB-2018-0130 for Hydro One's 2019 transmission revenue cap adjustment. The resulting allocation of rates revenue requirements for each year by rate pool is summarized in Exhibit I1-1-1, Table 2.

Hydro One's proposed transmission cost allocation methodology is consistent with the approach previously approved, is fair, and is responsive to OEB requirements. It is therefore appropriate for use in connection with this Application.

[352] As detailed in Exhibits I1-1-2 and I1-1-3.

K. EXPORT TRANSMISSION SERVICE RATES:

Issue 25: Is the Export Transmission Rate of $1.85 and the resulting ETS revenues appropriate?

The currently approved ETS rate of $1.85/MWh, as well as the resulting revenues, are appropriate. Hydro One owns and operates assets, as part of its transmission system, which are used to facilitate export transactions at the points of interconnection with Ontario's neighbouring markets. The IESO collects ETS revenues from export transactions and remits them to Hydro One for the use of its assets in facilitating these transactions. Hydro One's ETS revenues serve as an offset to its revenue requirement. Historically, the ETS rate has been determined through a combination of OEB decisions and settlement agreements that have been accepted by the OEB. Though these outcomes have been informed by OEB-directed cost allocation studies performed by the IESO and Hydro One, the ETS rate has historically not been set strictly based on principles of cost causality.[353]

In this Application, Hydro One is proposing to maintain the ETS rate at the existing level of $1.85/MWh. Hydro One has updated the 2015 Elenchus cost allocation model based on the latest available information, and this update identifies a rate of $1.25/MWh based on the cost allocation scenario recommended in the Elenchus study.[354] However, it is Hydro One's view that the existing ETS rate of $1.85/MWh should be maintained. Hydro One recognizes there are a range of possible cost-based ETS rates[355] and is concerned that a decrease in the current ETS rate would adversely impact Ontario electricity customers by reducing the amount of Hydro One's transmission revenue requirement that is offset by ETS tariff amounts. While the impact of a change in the ETS rate would be neutral to Hydro One, Hydro One does not support an outcome that would provide a benefit to extra-jurisdictional market participants at the cost of Ontario transmission customers.

---

[353] Undertaking JT1.36-Q02, Attachment 4, Section 2 ("Background"); and Oral Hearing Transcript Vol. 7, p. 177, ln. 6-11.

[354] As indicated by Hydro One's witnesses at the oral hearing, the Elenchus study identified total of seven scenarios upon which a cost-based ETS rate could be set and recommended one of the seven scenarios. Hydro One updated the recommended scenario only. See Oral Hearing Transcript Vol. 9, p.2, ln. 24-28.

[355] *Ibid*.

1 All of which is respectfully submitted this 22nd day of November 2019.

HYDRO ONE NETWORKS INC.
By its Counsel, Torys LLP

for _____
Charles Keizer & Arlen Sternberg