# EXECUTIVE SUMMARY

This Exhibit describes the scope and key aspects of Hydro One's application ("the Application"), including its proposed Custom Incentive Rate-Setting ("Custom IR") approach to establishing transmission rates for the period 2020 to 2022 (the "test period"). A Blue Page update will be filed by the end of Q2 2019 to include final audited balances for 2018.

A significant portion of Hydro One's assets are reaching the end of their useful life and have deteriorated to the point where investment is required to maintain customer reliability and meet safety and environmental sustainability requirements. A safe and reliable transmission system is essential to supporting strong and successful communities and essential to supporting business development and growth that provides job opportunities and drives Ontario's economy.

Hydro One is also sensitive to the rate impact of its plan on both its transmission customers and distribution-connected customers. In 2020, a typical Hydro One medium density (R1) residential customer consuming 750 kWh/month will see an increase of $0.77/month or 0.6% on their total bill as a result of the Application. Almost half of this increase is attributable to load decline due to government conservation initiatives and lower consumption. While some of the drivers of the bill impact, such as a decline in load, are out of Hydro One's control, Hydro One has made efforts to manage its costs while meeting its asset needs. In its plan, Hydro One has identified $370 million in productivity savings over the period of the Application. Hydro One has reduced its 2020 OM&A expenses by 9% over 2018 OEB approved levels of spending which will be achieved through sustained productivity gains, and revisions to its maintenance programs. Hydro One's plan appropriately balances the needs of the system, the assets and the customer preferences regarding outcomes and rates.

Hydro One Transmission's customer base is made up of: (1) electricity generators who deliver power to the transmission system, (2) distributors who deliver power to direct customers, and (3) end-users such as mining and industrial enterprises that use the power themselves at transmission level voltage. Hydro One's transmission customers have told Hydro One that safety and reliability are the outcomes that they care most about. Over the Application period Hydro One will invest nearly $3.9 billion in its assets to keep its transmission system safe and reliable. Hydro One has implemented improvements to its planning process to ensure that its spending is targeting to the assets that are the most critical and where the funding will have the greatest impact. Hydro One's plan will address critical safety and environmental risks in its system. It will improve reliability performance by 13% to return to the top quartile performance that Hydro One's transmission customers are expecting. In addition, Hydro One will spend $552 million to add capacity to the system to accommodate new customers and businesses, enabling economic growth in Ontario in communities such as Leamington and delivering on the requirements of Regional Planning processes and the government's Long Term Energy Plan.

## 1. SCOPE OF THE APPLICATION

On March 16, 2018 the Ontario Energy Board ("OEB") issued a letter setting out its expectations regarding future distribution rate and transmission revenue requirement applications by Hydro One. The letter directed Hydro One to file a transmission revenue requirement application for a four-year test period from 2019 to 2022. On April 4, 2018 Hydro One filed a letter with the OEB indicating that it was considering the potential impact of the OEB's new expectation on Hydro One's then upcoming application, which Hydro One had expected to be a Custom IR application with a 5 year test period.

Subsequently, Hydro One experienced organizational changes in July and August, 2018, which included the appointment of a new Board of Directors. As a result, 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 stewardship of its assets with a particular focus on increasing productivity and minimizing rate increases.

To permit this review to occur and adhere to the OEB's objective of a combined transmission and distribution application in the future, Hydro One adopted a two-step approach. First, Hydro One filed an application for a one-year mechanistic adjustment to Hydro One's 2019 revenue requirement (EB-2018-0130). Second, Hydro One filed this 3-year Custom IR application with a 2020-2022 test period to allow alignment with the OEB's expectation that Hydro One file a single application for distribution rates and transmission revenue requirement for a test period commencing in 2023.

Consistent with Chapter 2 of the OEB's *Filing Requirements for Electricity Transmission Applications* ("the Filing Requirements"), Hydro One's Transmission System Plan ("TSP") has provided a summary of capital expenditures for five future years, 2020-2024, which is referred to throughout the application as the "planning period" or "TSP planning period". However, this Application seeks approval for a revenue requirement only in respect of the 3-year test period of 2020-2022.

This Executive Summary provides an overview of Hydro One's transmission business and explains how Hydro One developed the Transmission Business Plan that underpins this Application, particularly with respect to its consideration for:

- asset related needs of the system arising from condition, performance, age, environmental and regulatory compliance requirements;

- identified customer needs and preferences for new transmission facilities, connections, services and reliability performance;
- customer rate impacts;
- feedback from the OEB's decision in Hydro One's 2017 and 2018 transmission rate proceeding (EB-2016-0160); and
- the OEB's expectations under the Renewed Regulatory Framework ("RRF") as outlined in the October 18, 2012 Report of the Board, *Renewed Regulatory Framework for Electricity Distributors: A Performance Based Approach*, and further described in the OEB's October 13, 2016 *Handbook for Utility Rate Applications*.

In the Application, Hydro One is requesting the OEB's approval for:

- A transmission revenue requirement of $1,673.4 million for 2020, the underlying calculation of which is outlined in Section of 6.1 of this Exhibit;
- The charge determinants and allocation of the rates revenue requirement, by rate pool, to assist the OEB in developing Uniform Transmission Rates over the test period;
- The proposed Custom IR mechanism to be used for the determination of the revenue requirement for 2021 and 2022, as summarized in Section 4 of this Exhibit and detailed in Exhibit A, Tab 4, Schedule 1 of the Application;
- The evolved transmission performance scorecard proposed in this Application (Section 1.5 of Exhibit B, Tab 1, Schedule 1);
- The continuation or creation of the various regulatory deferral and variance accounts discussed in Section 6.10 of this Exhibit;

- The disposition of regulatory accounts with total net debit balances of $14.5 million effective January 1, 2020, to be recovered over a three-year period (Exhibit H, Tab 1, Schedule 3).

The proposed 2020 revenue requirement reflects a year-over-year increase of 4.7% versus the 2019 revenue requirement proposed in Hydro One's 2019 Transmission Application (EB-2018-0130), which is currently before the OEB. The average year-over-year increase in the revenue requirement over the 3 year test period is expected to be 4.9% per year.

The estimated total bill impact for a typical Hydro One medium density (R1) residential customer (750 kWh/month) is an increase of 0.6% ($0.77/month) in 2020. The estimated total bill impact for a typical Hydro One general service energy less than 50 kW customer (2,000 kWh/month) is an increase of 0.5% ($1.83/month) in 2020. The estimated total bill impact of this Application for a typical transmission-connected customer is an increase of 0.6% in 2020, assuming that transmission costs represent 7.4% of the average transmission-connected customer's total bill.

The 2020 total bill impacts are predominantly driven by a reduction to the load forecast underpinning rates driven by a government conservation policy change, detailed in section 6.3 of this Exhibit, and increases to rate base from capital projects placed in service that were largely completed prior to the test period of the Application. The proposed reduction to Hydro One's OM&A budget serves to mitigate these increases. Further details are provided in Section 6.11 of this Exhibit.

## 2. HYDRO ONE'S CONTINUED EVOLUTION

In late May 2016, Hydro One filed its transmission rate application for 2017 and 2018 rates (EB-2016-0160) ("the Prior Proceeding"). The Prior Proceeding was Hydro One's first major filing following the transition from a solely government-owned company, to a publicly-traded company. It was also Hydro One's first transmission revenue requirement application under the OEB's RRF. In the Prior Proceeding, Hydro One outlined the initial steps its new leadership had taken towards Hydro One's aspirations of becoming a best-in-class, customer-centric, commercial entity.

Since the Prior Proceeding, Hydro One has continued to increase its focus on customers, establish greater corporate accountability for performance and drive continuous company-wide improvements in efficiency and productivity. This has resulted in an overall customer satisfaction score of 90% for 2018 – the company's highest score ever and a 12% increase over 2016. This Application reflects Hydro One's continued efforts to enhance the customer-centric, commercial orientation of the organization and further align itself with the focus on outcomes that is articulated in the RRF.

Examples of this include:

- Hydro One's evolved regulatory transmission scorecard, as outlined in Section 1.5 of the TSP, containing new and revised metrics that incorporate the OEB's feedback in the decision from the Prior Proceeding. In addition, Hydro One developed and implemented a governance framework for the internal monitoring and reporting of performance measures within Hydro One.
- The implementation of a robust process for defining and measuring productivity savings, as outlined in Section 1.6 of the TSP, along with a commitment from Hydro One to deliver on $704 million in productivity savings over the 5-year

planning term of the TSP, of which $370 million will be achieved over the 3-year test period. Hydro One achieved $89 million in savings in 2016 through 2018[1].

- The implementation of improvements to Hydro One's investment planning process, including use of a revised risk assessment framework to ensure appropriate prioritization and optimization based on business and RRF outcomes that are informed by Hydro One's customer engagement process. Hydro One also increased the levels of enterprise engagement to ensure Hydro One's ability to execute the plan.
- An evolved customer engagement process that sought feedback on both the appropriate level and mix of investments through a determination of the outcomes that customers value most.

## 3. OVERVIEW OF THE TRANSMISSION BUSINESS

Hydro One's transmission assets form the backbone of Ontario's electricity system. The system serves approximately 98% of the Province by capacity and covers some of the most challenging and diverse geographies in Canada. The company's transmission system is comprised of approximately 290 transmission stations and approximately 29,000 circuit kilometers of high-voltage lines and towers operating at 500 kV, 230 kV or 115 kV. It represents approximately $13 billion in transmission assets. Hydro One's system transmits electricity from generation sources to load customers, including 42 transmission-connected local distribution companies (LDCs), Hydro One's own distribution system, and 84 large industrial customers directly connected to the transmission system. It is linked to five jurisdictions adjacent to Ontario through 26 high-voltage interconnections. A discussion of the unique considerations and constraints

[1] 2018 achieved productivity savings are based on Q3 forecast.

on Hydro One's transmission business can be found in Section 1.1 of the TSP (Exhibit B, Tab 1, Schedule 1).

## 4. CUSTOM IR PROPOSAL

This Application is based on a Custom IR approach for a 3-year period. Hydro One's revenue requirement for the first year of the 3-year period (2020) is to be determined using a cost of service, forward test year approach. To establish the annual revenue requirements for 2021 and 2022, Hydro One is proposing a Custom Revenue Cap IR in which the revenue requirement for the test year t+1 is equal to the revenue requirement in year t inflated by the Revenue Cap Index ("RCI").

The Custom Revenue Cap Index (RCI) is expressed as:

$$RCI = I - X + C$$

Where:

- "I" is the Inflation Factor, based on a custom weighted two-factor input price index;
- "X" is the Productivity Factor that is equal to the sum of Hydro One's Custom Industry Total Factor Productivity measure and Hydro One's Custom Productivity Stretch Factor; and
- "C" is Hydro One's Custom Capital Factor, determined to recover the incremental revenue in each test year necessary to support Hydro One's proposed Transmission System Plan, beyond the amount of revenue recovered through the I – X adjustment.

A detailed discussion of these components along with the benchmarking used to inform the RCI is found in Exhibit A, Tab 4, Schedule 1. A summary of the RCI components is provided in the Table 1 below. The productivity factor of 0% is based on the recommendations of the Total Cost Benchmarking and Total Factor Productivity analyses completed by Power Systems Engineering Inc. ("PSE"). The results of PSE's analysis are provided in Attachment 1 of Exhibit A, Tab 4, Schedule 1.

**Table 1: Revenue Cap Index Components**

| Custom Revenue Cap Index by Component | 2021 | 2022 |
|---|---|---|
| Inflation Factor (I) | 1.40 | 1.40 |
| Productivity Factor (X) | 0.00 | 0.00 |
| Capital Factor ( C) | 3.64 | 3.37 |
| Custom Revenue Cap Index Total | 5.04 | 4.77 |

*Note: Inflation Factor to be updated annually. Exhibit Reference: A-4-1, Table 3.*

To align Hydro One's business interests with those of its customers and provide an additional element of protection for customers, Hydro One is also proposing the following features:

- An earnings sharing mechanism ("ESM") that will permit customers to share 50% of earnings that exceed the regulatory ROE by more than 100 basis points in any year of the Custom IR term;
- A capital in-service variance account ("CISVA") to track the cumulative difference over the Custom IR term of any under spending between: (a) the revenue requirement associated with actual in-service capital additions during a rate year; and (b) the revenue requirement associated with the OEB-approved forecast for in-service capital additions for that year, for any capital in-service additions that are 98% or lower than the OEB- approved level; and
- Z-factor and off-ramp mechanisms that apply OEB-approved criteria.

Hydro One's proposed Custom IR components, therefore, contain both OEB-approved components and other mechanisms that are designed to align the utility's needs with the interests of its customers.

## 5. HYDRO ONE'S TRANSMISSION BUSINESS PLAN

Hydro One's 2019-2024 Transmission Business Plan on which this Application is based will deliver the following outcomes:

- Optimizing the cost and performance of the existing assets through maintenance and renewal projects;
- Improving system and customer reliability to restore top quartile reliability performance as compared to the company's Canadian peers. In 2018, Hydro One's transmission reliability performance decreased from top quartile to 2nd quartile due to major storms and increased equipment-caused interruptions;
- Addressing customer needs and preferences through new customer connections, and regional development to enable growth and through system renewal to meet current requirements;
- Responding to customer power quality concerns by proactively monitoring power quality across the province and working with customers to resolve specific issues; and
- Incorporating productivity savings totalling approximately $370 million over the test period to offset the customer rate impacts of the proposed Business Plan.

Based on Hydro One's assessment of its transmission system, a significant portion of the assets are reaching the end of their useful life and have deteriorated to the point where investment is required to maintain customer reliability and meet safety and environmental sustainability requirements. A safe and reliable transmission system is essential to

supporting strong and successful communities and essential to supporting business development and growth that provide job opportunities and drive Ontario's economy.

Hydro One is sensitive to the rate impacts of the investment plan on transmission customers as well as distribution connected customers and has taken steps to ensure that its approach to investment is aligned with principles of the RRF by:

- Ensuring that the Transmission System Plan ("TSP") reflects the consideration of customer needs and preferences identified in the customer engagement survey and is consistent with the feedback obtained from various other customer consultations undertaken by the company including consultations with distribution customers;
- Optimizing asset lifecycle investments required to optimize costs and operational risks to achieve business outcomes including identifying specific opportunities where Hydro One can extend the useful life of its assets and mitigate higher capital spending requirements for asset replacements in the future;
- Working with customers, distributors and key stakeholders to ensure regional infrastructure issues are integrated;
- Actively driving cost reductions and improved productivity savings to help offset customer rate impacts of the proposed investment plan; and
- Implementing an improved performance management system to provide greater accountability for performance outcomes.

Since the Prior Proceeding**,** Hydro One revised and implemented an improved eight-step risk-based investment planning process. Key improvements to the investment planning process include the use of:

- Revised risk assessment framework to provide consistent risk assessment of safety, reliability and environmental risks;
- Clear definitions of risk impacts to enable consistent assessments across investments and calibration sessions to calibrate and align risk assessment practices; and
- Challenge sessions to engage stakeholders across the organization to review the investments and discuss potential trade-offs.

The improved eight-step risk-based investment planning process is summarized in Section 6.4.2 of this Exhibit and described in greater detail in Section 2.1 of the TSP.

The development of the Transmission Business Plan was informed by three key inputs:

1. Hydro One's strategic priorities and the OEB's expectations under the RRF;
2. Input Hydro One has received from its customers; and
3. Benchmarking studies and other analyses outlined in Section 5.3 of this Exhibit and detailed in Section 1.4 of the TSP.

These inputs provided key insights which helped shape Hydro One's 2019-2024 Transmission Business Plan. The sections that follow describe how each of these factors impacted the Transmission Business Plan, summarize how the benchmarking studies included in the Application support the investments contained within and the process used to develop the Business Plan, as well as highlighting Hydro One's commitment to continuous improvement through the productivity savings that are built into the Transmission Business Plan.

A full copy of Hydro One's 2019-2024 Transmission Business Plan is provided as Attachment 1 to this Exhibit.

## 5.1 BUSINESS OBJECTIVES AND BUSINESS PLAN OUTCOMES

Hydro One's strategic priorities provided guidance and informed the objectives that were used to develop the Transmission Business Plan. These strategic priorities are presented in Figure 1 below.


**Figure 1: Hydro One's Strategic Priorities**

The close alignment between the RRF outcomes and the outcomes that Hydro One seeks to achieve is demonstrated in the company's transmission business values and objectives, which are summarized in Figure 2, below.

| | | |
|---|---|---|
| **Customer Focus** | **Customer Satisfaction** | • Improve current levels of customer satisfaction |
| | **Customer Focus** | • Engage with our customers consistently and proactively<br>• Ensure our investment plan reflects our customers' needs and desired outcomes |
| **Operational Effectiveness** | **Cost Control** | • Actively control and lower costs through OM&A and capital efficiencies |
| | **Safety** | • Drive towards achieving an injury-free workplace |
| | **Employee Engagement** | • Achieve and maintain employee engagement |
| | **System Reliability** | • Provide top quartile reliability relative to transmission peers<br>• |
| **Public Policy Responsiveness** | **Public Policy Responsiveness** | • Ensure compliance with all codes, standards and regulations<br>• Partner in the economic success of Ontario |
| | **Environment** | • Sustainably manage our environmental footprint |
| **Financial Performance** | **Financial Performance** | • Achieve the ROE allowed by the OEB<br>• |

**Figure 2: Transmission Business Values and Objectives**

*Exhibit Reference: B-1-1, Section 1.1, Figure 7.*

Along with the strategic priorities noted above, Hydro One relied upon the findings from its 2017 Customer Engagement Survey and its ongoing interactions with its customers to inform its understanding of customer needs and preferences and inform assumptions regarding the appropriate funding envelope.

Figure 3, below, summarizes how Hydro One's Investment Plan aligns with the company's strategic priorities and business objectives and summarizes the planned investments that deliver on those objectives through the planning term.

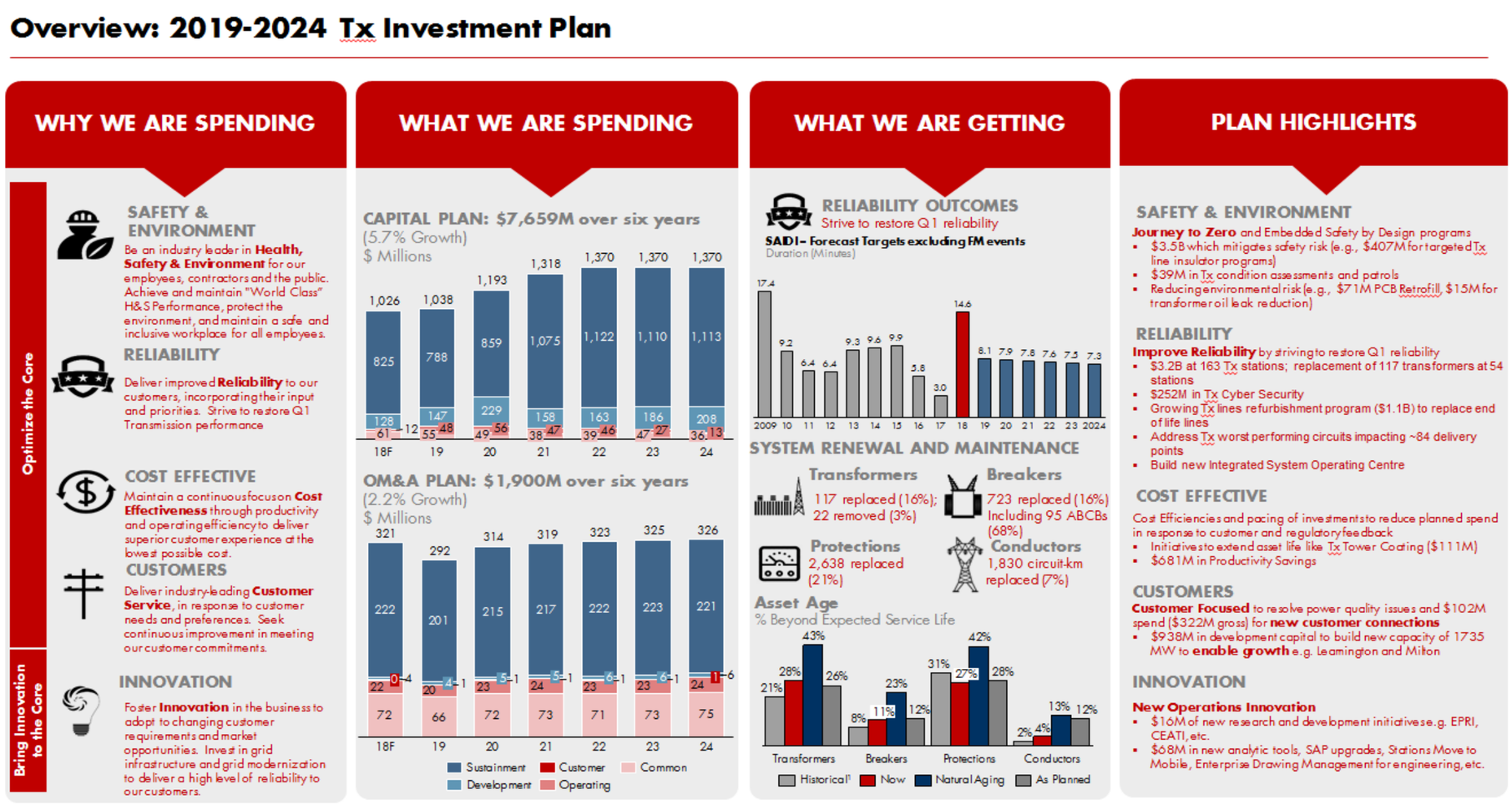


**Figure 3: Alignment Between Strategic Objectives and Planned Investments**

*Exhibit Reference: B-1-1, Section 1.1, Figure 6*

Witness: Frank D'Andrea

## 5.2 CUSTOMER ENGAGEMENT

Through its broad range of customer engagement activities, Hydro One has developed a clear understanding of the needs and preferences of its customers. In 2017, Hydro One undertook a formal customer engagement survey to obtain feedback on the needs and preferences of its customers to inform the development of its Transmission System Plan. This formal customer engagement exercise was the second such exercise undertaken by Hydro One for its transmission business.[2] The 2017 engagement survey implemented enhancements in consideration of the feedback that was received from OEB staff and intervenors on Hydro One's first customer engagement exercise through the course of the Prior Proceeding and through the Stakeholder Session held in March 2017.

Hydro One's 2017 Transmission Customer Engagement Survey sought customer feedback to inform both the level and mix of investments in its Business Plan. Among other things, the survey asked probative questions seeking to identify the outcomes that customers valued most and asked customers to consider trade-offs between reliability and cost through the use of illustrative scenarios.

The key messages received by Hydro One from the 2017 Transmission Customer Engagement Survey, in respect of the needs and preferences of its transmission customers, were as follows:

- Safety, reliability and outage restoration are customers' top prioritized outcomes;

[2] Hydro One's first customer engagement exercise for its transmission customers was undertaken in preparation for the Prior Proceeding.

- All customer segments prefer to see investments spread out over time versus investing now with higher rates in the short term and lower future increases or delaying investments with lower rates in the short term and higher future rates;
- Reducing the frequency of outages is more important than reducing the duration of outages. However, the most important issue is to reduce the number of day-to-day interruptions;
- When presented with several investment scenarios, the majority of customers preferred investment levels in line with the investment plan that was before the OEB in the Prior Proceeding by at least a three to one margin. It is seen as reflective of the current approach which has served the system well, and a less risky option; and
- About half of end-user participants (19 of 38) rate power quality as an "extremely important" outcome.

The feedback provided through the customer engagement process informed the enhancements made to the improved investment planning process as follows:

- The revised risk assessment process focuses on assessing operational risks related to safety, reliability and environment**.** These outcomes are among the top customer priorities identified and validated through Hydro One's customer engagement. As such, the risk assessments that evaluate candidate investments for inclusion within the investment plan will reflect customers' top priorities in the assessment and prioritization of work.
- The probability factor as part of the risk assessment framework was also revised to incorporate outage frequency to reflect customers' preference and level of importance attributed to reducing the frequency of outages.

In addition to its customer engagement survey, Hydro One engages with its customers on an ongoing basis through its dedicated account executives who act as a "single point of contact" for transmission customers, large customer conferences, focused planning meetings with customers and various oversight committees and working groups. The feedback from these ongoing efforts aligns with the outcomes articulated in Hydro One's 2017 Customer Engagement Survey.

Further details regarding Hydro One's 2017 Transmission Customer Engagement Survey as well as Hydro One's ongoing customer engagement initiatives are provided in Section 1.3 of the TSP. A detailed discussion regarding how identified customer needs and preferences are reflected in the Transmission Business Plan can be found in Section 3.2 of the TSP.

Hydro One serves eighty eight First Nation communities representing close to 22,000 distribution system customers. Hydro One has developed an Indigenous Relations Strategy that focuses on investing in the development and maintenance of Hydro One's relationship with the Indigenous communities it serves which allows Hydro One to execute its work program, establish and renew permits on First Nation lands and ensure its transmission assets on reserve are properly maintained. Hydro One aims to become the primary business partner to Indigenous communities by 2021.

Further details of Hydro One's ongoing engagement with First Nations communities, the issues identified and actions Hydro One is taking to address them can be found in Exhibit A, Tab 7, Schedule 2.

## 5.3 BENCHMARKING

In support of the Application, Hydro One engaged independent experts to undertake 17 benchmarking studies and asset condition analyses. The resulting reports are included in this Application and are discussed in Section 1.4 of the TSP, in Exhibit A, Tab 4, Schedule 1, and in Exhibit F, Tab 4, Schedule 1. The findings from these studies were used by Hydro One to inform or assess: (i) the pacing of investments, and the condition of Hydro One's key transmission assets, (ii) the quality of Hydro One's investment planning and asset condition assessment processes, as ordered by the OEB in the Prior Proceeding, (iii) total compensation costs, and (iv) total factor productivity and total cost performance.

In the Prior Proceeding, the OEB expressed concerns with Hydro One's planning process and ordered Hydro One to seek an independent expert review of its investment planning and asset condition assessment processes. Hydro One engaged the Boston Consulting Group (BCG) to review its improved investment planning process and Metsco Energy Solutions Inc. to review its asset condition assessment process. The reports resulting from these reviews are discussed and provided as Attachments to Section 1.4 of the TSP. The review of Hydro One's investment planning process by BCG concluded that Hydro One had implemented a consistent and thorough planning process that meets or exceeds expectations for a typical utility planning process in all areas. The review of Hydro One's asset condition assessment process concluded that Hydro One's asset management process was comparable to other frameworks found elsewhere in the industry and is sufficiently rigorous and robust.

Hydro One's proposed RCI is informed by an independent expert assessment of total factor productivity ("TFP") and a total cost benchmarking study, each of which were performed by Power Systems Engineering ("PSE"). PSE analyzed the TFP of the

transmission industry, as well as Hydro One's TFP performance relative to itself. PSE determined that Hydro One's TFP has consistently been greater than that of the transmission industry as a whole. This was further confirmed by PSE's findings from the total cost benchmarking study, which showed that Hydro One's actual costs are well below benchmarked costs. The results of PSE's analysis are provided in Attachment 1 of Exhibit A, Tab 4, Schedule 1.

## 5.4 PRODUCTIVITY SAVINGS

To further its commitment to delivering outcomes that are valued by its customers, Hydro One has developed a comprehensive and rigorous process for identifying, developing, implementing, monitoring and measuring productivity initiatives that will reduce costs while maintaining or improving service quality and work outputs. Within this framework, quantifiable productivity improvements are included in the Business Plan and corporate scorecards with clear accountabilities for delivering the anticipated savings. The framework is outlined in detail in Section 1.6 of the TSP.

Hydro One has identified expected productivity savings in Capital and OM&A totaling approximately $704M over the TSP planning period, approximately $370M of which is expected during the test period. These savings have been directly embedded into the cost forecasts underpinning the Business Plan and the TSP. A summary of Hydro One's forecast productivity savings for the 2020-2024 planning period is provided in Table 2.

**Table 2: Productivity Savings Forecast Summary ($Millions)**

| $mm | 2020 | 2021 | 2022 | 2023 | 2024 | Total |
|---|---|---|---|---|---|---|
| Operations | 47 | 52 | 53 | 53 | 54 | 259 |
| Operations Progressive (Defined) | 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** |
| Operations Progressive (Undefined) | 11 | 27 | 49 | 68 | 81 | 237 |
| **Grand Total** | **$98** | **$126** | **$146** | **$161** | **$173** | **$704** |
| Progressive (Defined) | 6 | 12 | 12 | 10 | 10 | 49 |
| Progressive (Undefined) | 11 | 27 | 49 | 68 | 81 | 237 |
| Progressive Placeholder | 17 | 39 | 61 | 78 | 91 | 286 |

*Exhibit Reference: B-1-1, Section 1.6*

The Operations, Information Technology and Corporate savings above reflect the expected quantifiable productivity savings for initiatives that have been identified by each group and verified through Hydro One's productivity governance framework. In addition, the Operations group has committed to identifying additional productivity savings over the planning period in the form of Progressive Productivity. Progressive Productivity is a further reduction in cost that Hydro One has included in the final Transmission Business Plan in response to concerns that were raised in the OEB's decision in the Prior Proceeding regarding the level of investment. It represents a commitment from Hydro One to find further efficiencies over the planning period when

executing the necessary planned investments in its transmission system without reducing work volumes.

Progressive Productivity savings total $286 million over the planning period and are included in the Transmission Business Plan in the form of:

1. $49 million in Progressive (Defined) savings associated with initiatives that have been identified but which have not yet been proven and verified through the productivity governance framework; and
2. $237 million in Progressive (Undefined) savings which are included as placeholder in the Business Plan to be allocated to any future initiatives that have not yet been identified.

Hydro One's commitment to these savings in this Application is to the benefit of ratepayers because the capital expenses underpinning the proposed revenue requirements are reduced by these amounts. Over the Planning Period, any proposed Progressive Productivity measures will be reviewed against the governance framework and, if approved, will be credited against the savings target.

## 6. KEY ELEMENTS OF THE APPLICATION

### 6.1 REVENUE REQUIREMENT

Hydro One's 2020 transmission revenue requirement is shown in Table 3. The revenue requirement in subsequent years of the test period will be determined using the RCI, which is described in Section 4 of this Exhibit and detailed in Exhibit A, Tab 4, Schedule 1.

**Table 3: Revenue Requirement ($ Millions)**

| Components | 2018[1] | 2019[2] | 2020 | Reference |
|---|---|---|---|---|
| OM&A | 394.3 | - | 375.9 | Exhibit F, Tab 1, Schedule1 |
| Depreciation and Amortization | 468.6 | - | 471.5 | Exhibit F, Tab 6, Schedule 1 |
| Income Taxes | 57.2 | - | 52.7 | Exhibit F, Tab 7, Schedule 2, Attachment 1 |
| Return on Capital | 703.6 | - | 773.2 | Exhibit G, Tab 1, Schedule 1 |
| **Total Revenue Requirement** | **1,623.8** | **1,642.3** | **1,673.4** | |
| Deduct External Revenues and Other [3] | (54.7) | (54.5) | (55.0) | |
| **Rates Revenue Requirement** | **1,569.1** | **1,587.8** | **1,618.4** | |
| Regulatory Deferral and Variance Accounts Disposition / Foregone Revenue | (58.4) | (37.6) | 4.8 | Exhibit H, Tab 1, Schedule 3 |
| **Rates Revenue Requirement (with Deferral and Variance Accounts)** | **1,510.7** | **1,550.2** | **1,623.3** | |
| **Year Over Year %** | | 2.6% | 4.7% | |

*Note 1: Represents OEB approved 2018 revenue requirement from Hydro One Transmission's 2017 to 2018 rate application in EB-2016-0160*
*Note 2: The 2019 revenue requirement is based on proposed revenue requirement in EB-2018-0130*
*Note 3: External Revenue and Other includes External Revenue, MSP Revenue, Export Tx Service Revenue and Low Voltage Switch Gear Credit*

*Exhibit Reference: E-1-1, Table 1.*

The drivers of the increase in the 2020 revenue requirement compared the 2018 OEB approved revenue requirement are summarized by component in Table 4. The increase is predominantly driven by two years' worth of rate base growth and an increase in the regulatory deferral account balance being disposed of, which is partially offset by lower OM&A costs. The 2020 total revenue requirement is $49.6 million greater than the 2018 OEB amounts; however, the 2020 total revenue requirement is $16 million lower than

what it would have been had the 2018 OEB approved revenue requirement been adjusted for inflation in 2019 and 2020[3].

**Table 4: Changes to Individual Components of Rates Revenue Requirement Since Most Recent Rebasing**

| Description | 2020 vs. 2018 ($ millions) | 2020 vs. 2018 (%) |
|---|---|---|
| Increase in OM&A | -18.4 | -1.2% |
| Rate Base Growth | 80.1 | 5.3% |
| Lower cost of debt | -7.5 | -0.5% |
| Tax | -4.6 | -0.3% |
| **Impact on Revenue Requirement** | **49.7** | **3.3%** |
| External Revenue | -0.3 | 0.0% |
| Regulatory Deferral and Variance Accounts Disposition | 63.2 | 4.2% |
| **Total Change** | **112.6** | **7.5%** |

*Exhibit Reference: E-1-1, Table 6*

## 6.2 BUDGETING ASSUMPTIONS

In developing its Investment Plan, Hydro One utilized the Ontario Consumer Price Index ("CPI") for its assumptions about inflation. A CPI of 2% was assumed over the planning period. The Global Insight exchange rate forecast was used for other variables such as fleet vehicle related costs, which are typically obtained in US dollars. The exchange rate was forecast to range between 0.793 and 0.803 over the planning period. Further details

[3] The 2019 and 2020 total revenue requirements would be $1,656.3 and $1,689.4, respectively. This assumes that the 2018 OEB approved total revenue requirement is adjusted by an annual inflation rate of 2%.

regarding the economic assumptions underpinning the Investment Plan can be found in Section 2.1 of the TSP.

## 6.3 LOAD FORECAST SUMMARY

Hydro One uses econometric (top-down) and end-use (bottom-up) models to forecast the transmission system load. For the top-down approach, both monthly and annual econometric models are used. For the bottom-up approach, end-use models are used to analyse the transmission system load by sector (i.e. residential, commercial and industrial customers). Key information used in the analysis includes economic data, demographics, industrial production and commercial floor space forecast provided in the economic forecast. The purpose of using both the econometric and end-use forecast models is to arrive at a balanced forecast that represents a consistent set when looked at from macro (econometric) and micro (end-use) perspectives. This forecasting methodology was reviewed and approved by the OEB in previous Hydro One transmission rate cases and is detailed in Exhibit E, Tab 3, Schedule 1.

The proposed test period billing determinants arising from Hydro One's load forecast are summarized in Table 5.

**Table 5: Hydro One's 2020-2022 Load Forecast (12-Month Average Peak in MW)**

| | Ontario Demand | Hydro One Rate Categories (Charge Determinants) | | |
|---|---|---|---|---|
| | | Network Connection | Line Connection | Transformation Connection |
| 2020 | 19,586 | 19,604 | 19,071 | 16,252 |
| 2021 | 19,451 | 19,469 | 18,941 | 16,142 |
| 2022 | 19,304 | 19,322 | 18,800 | 16,021 |

*Exhibit Reference: E-3-1, Table 1*

Witness: Frank D'Andrea

Table 6 summarizes the change in billing determinants as compared to 2018 OEB-approved amounts from the Prior Proceeding.

**Table 6: 2018 vs. 2020 Changes in Billing Determinants**

| Year | | Hydro One Rate Categories (Charge Determinants) (MW) | | |
|---|---|---|---|---|
| | Ontario Demand | Network | Line Connection | Transformation Connection |
| 2018 (OEB-approved) | 20,378 | 20,410 | 19,746 | 16,876 |
| 2020 | 19,586 | 19,604 | 19,071 | 16,252 |
| % Change | (3.9)% | (3.9)% | (3.4)% | (3.7)% |

The proposed decrease in the 2020 charge determinant load forecast relative to the currently approved 2018 load forecast (per EB-2016-0160) results in an estimated 3.8% impact on rates due to load. The key drivers of the reduction in the 2020 load forecast are (i) the actual Ontario demand in 2018 was 3.5% lower than the forecast approved in the Prior Proceeding for the year 2018, and (ii) the Ontario demand is expected to further decline by 0.4% between 2018 and 2020 due to a combination of slow economic growth and conservation initiatives during this period.

The reduction in the actual load relative to the previously approved load forecast is primarily driven by the impact from the expanded Industrial Conservation Initiative (ICI) program on Ontario demand. In September 2016, the Government of Ontario expanded the ICI program to include more than one thousand newly eligible Class A customers with monthly peak demand greater than one megawatt, down from the previous eligibility threshold of three megawatts. Sector restrictions were also removed so that institutional

and commercial businesses became eligible to participate. In April 2017, the Government of Ontario further reduced the ICI threshold from 1 MW to 500 kW to make Ontario consumers/market participants in targeted manufacturing and industrial sectors eligible to opt-in to the ICI. The reduction in peak demand driven by the new Class A customers participating in the ICI program was not reflected in Hydro One's approved load forecast for 2017 and 2018 in the Prior Proceeding.

## 6.4 TRANSMISSION SYSTEM PLAN

This section summarizes the major drivers and elements of Hydro One's 5-year TSP (Exhibit B, Tab 1, Schedule 1). It summarizes Hydro One's capital planning process and details the proposed capital spending over the planning period of the TSP. Hydro One has aligned the presentation of the capital expenditures in its TSP with the standard categories outlined in the OEB's *Consolidated Distribution System Plan Filing Requirements*[4] which are: System Renewal, System Access, System Service and General Plant.

Hydro One's Capital Planning Process consists of two interrelated functions. First is a thorough and ongoing asset management process that involves monitoring and reviewing transmission assets and assessing their condition, as well as identifying and scoping investment candidates ("Asset Management"). This is followed by a risk-based investment planning process through which investment candidates are reviewed, prioritized and optimized, and narrowed into an achievable set of planned investments

[4] Chapter 5 of the OEB's *Filing Requirements for Electricity Transmission and Distribution Applications: Consolidated Distribution System Plan Filing Requirements*, dated July 12, 2018.

that help drive Hydro One towards achieving its intended outcomes ("Investment Planning").

### 6.4.1 ASSET MANAGEMENT

The Asset Management process encompasses the initial stages of Hydro One's Capital Planning Process. During this process, Hydro One undertakes extensive and detailed technical reviews of its assets to identify a set of investment candidates. Investment candidates are potential programs and projects that are put forth for further consideration during the Investment Planning process, which is discussed in the next section.

Hydro One's Asset Management process starts with a thorough and systematic review of its transmission investment needs. The needs assessment identifies and evaluates individual asset needs that drive the development of candidate investments and includes a risk assessment of the operational risks using the revised risk assessment framework. The needs assessment considers (i) asset needs, (ii) customer needs and preferences, (iii) system needs (including as identified through participation in regional planning), and (iv) other external influences. The needs assessment also identifies potential hazards, vulnerabilities, threats and other risk sources that could present obstacles to achieving Hydro One's business objectives.

Hydro One carries out an Asset Risk Assessment ("ARA") process to determine individual asset needs which rely on asset condition data, engineering analysis and other information, including the input of experienced planning professionals. The asset analytics system enables Hydro One planners to review aggregated information from various enterprise reporting systems. This drives efficiencies and effective planning decisions by ensuring a consistent view of asset information for all planners. The information contained within the asset analytics system includes condition information

driven by deficiency and preventative maintenance reports, demographic information (including make, model, type and criticality to the transmission system), performance data based on equipment outages, utilization information, and economics. In essence, the quantitative asset analytics system combines information from various Hydro One databases to provide a common understanding of asset health to aid Hydro One planners in identifying asset risks and making asset lifecycle investment decisions to optimize risks and costs. Hydro One's planners also take into account additional factors such as load forecasts, equipment ratings, operating restrictions, security incidents, environmental risks and requirements, compliance obligations, equipment defects, obsolescence, and health and safety considerations to ensure capital expenditures target the most appropriate mix of assets.

The ARA process is primarily concerned with the major equipment groups that directly affect system reliability, namely transformers, conductors, breakers, and protection and control systems, and evaluates them on the following six risk factors:

- Condition – Risk related to the increased probability of failure that assets experience when their condition degrades over time.
- Demographics – Risk related to the increased probability of failure exhibited by assets of a particular make, manufacturer, and/or vintage.
- Criticality – Represents the impact that the failure of a specific asset would have on the transmission system.
- Performance - Risk that reflects the historical performance of an asset, derived from the frequency and duration of outages.
- Utilization - Risk that reflects the increased rate of deterioration exhibited by an asset that is highly utilized.
- Economics - Risk based on the economic evaluation of the ongoing costs associated with the operation of an asset.

When assessing individual asset needs, Hydro One's planners engage in a process of grouping identified needs into logical, functional and geographic groups. For example, a customer need for increased capacity and an asset need to replace transmission station equipment, such as a transformer or switchgear, might be grouped together if the same transmission station is involved. Through this process, diverse individual needs are brought together to form potential projects or programs that may be brought forward as candidate investments. These groupings of potential candidate investments are then scoped and defined based on identified asset needs, customer feedback and other inputs.

As part of the process of developing candidate investments, on-site assessments are conducted to ensure factors such as the physical design/clearances/constructability and safety options requiring geographic flexibility, etc. are considered. During these on-site assessments, planners and field personnel validate and confirm asset condition and related information identified through enterprise reporting systems and asset analytics. Planners will speak directly with Hydro One personnel who are involved in the day-to-day management and maintenance of the equipment in order to get additional insights into deficiencies and asset needs.

For high-value assets, such as transformers, Hydro One's subject matter experts perform a thorough analysis, advise on issues such as equipment obsolescence and manufacturer support, and conduct "repair vs. replace" evaluations. All transformer replacements require review by subject matter experts who prepare Transformer Assessment Reports that are used to validate investment decisions.

The result of the aforementioned ARA process is that a portfolio of specific candidate investments is submitted for further consideration through the Investment Planning process. In that process, specific investments are prioritized to align with intended

outcomes based on corporate priorities and strategic objectives, regulatory requirements, investment risks and identified constraints.

Hydro One's Asset Management and ARA process is described in greater detail in the TSP.

### 6.4.2 INVESTMENT PLANNING

Since the Prior Proceeding**,** Hydro One revised and implemented an improved eight-step risk-based investment planning process. Key improvements to the investment planning process include the use of:

- Revised risk assessment framework to provide consistent risk assessment of safety, reliability and environmental risks;
- Clear definitions of risk impacts to enable consistent assessments across investments and calibration sessions to calibrate and align risk assessment practices; and
- Challenge sessions to engage stakeholders across the organization to review the investments and discuss potential trade-offs.

The improved eight-step risk-based investment planning process is designed to provide a prioritized, consistent and common understanding of risk so as to enable Hydro One to cost effectively deliver the highest value investments and service for its customers. This allows candidate investments to be consistently assessed and prioritized based on the level of risk mitigated and the cost and value delivered toward achieving business objectives.

The Investment Planning process generates an annual budget for the Operations, Maintenance and Administration ("OM&A") work program and capital investments, and a six-year planning forecast that allows Hydro One to meet the OEB's filing requirements for a consolidated five-year capital plan.

The Investment Planning process consists of the following steps:

1. Investment Planning Context: Hydro One draws on multiple sources of input in developing and prioritizing the investment plan consistent with Hydro One strategic priorities and the OEB's RRF. The investment plan is guided by: (i) strategic vision, (ii) planning and other relevant economic assumptions, (iii) customer engagement feedback, (iv) delivery of key outcomes, and (v) overall assessment of the needs of Hydro One's assets, customers and other stakeholders;
2. Candidate Investment Development: Through the Asset Management process described above, candidate investments are identified, developed and submitted for possible inclusion in the investment plan;
3. Investment Assessment and Calibration: Investments are assessed for safety, reliability and environmental risk mitigation using clear and consistent risk taxonomies. Special non-risk considerations are also flagged (e.g. strategic, compliance). Once candidate investments have been assessed and flagged, the assessments are reviewed in facilitated discussions with investment owners in calibration sessions;
4. Prioritization and Optimization: The results of the risk assessment are translated into risk scores, which are used to generate an initial prioritization and optimization of investments. Following the initial prioritization and optimization, facilitated challenge sessions are held with a broad set of stakeholders to (i) review the prioritized portfolio, (ii) confirm non-risk considerations including productivity, (iii) discuss investments on the margin, and (iv) make trade-offs;

5. Enterprise Engagement: Executing lines of business review the investment plan for operational/execution feasibility, strategic alignment and to challenge investment needs and assumptions;
6. Develop Final Plan: Final decisions are made to arrive at a final version of the investment plan and its outcomes against strategic, customer, and risk considerations;
7. Review and Approval: The investment plan and associated outcomes are reviewed and approved by VPs, the Executive Leadership Team and the Hydro One Board of Directors; and
8. Execution and Performance Monitoring: The execution of the plan is monitored to ensure it is delivered as efficiently as possible.

The Investment Planning process is described in greater detail in Section 2.1 of the TSP.

### 6.4.3 CAPITAL EXPENDITURES

Table 7 below summarizes Hydro One's planned capital expenditures by category over the TSP planning period along with the Progressive Productivity savings for each year. The 2020 capital expenditures, net of Progressive Productivity savings, represent a $192 million (or 19%) increase over 2018 OEB-approved levels.

**Table 7: Bridge Year and Planning Year Capital Expenditure Summary**

| OEB Category | Historical | | | Bridge | Forecast | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2018 | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| | OEB Approved | F/Cast[5] | Var | F/Cast | Test | Test | Test | Plan | Plan |
| | $M | $M | % | $M | $M | $M | $M | $M | $M |
| **System Access** | 24.3 | 35.8 | 47% | 45.1 | 24.8 | 11.3 | 11.7 | 12.7 | 4.1 |
| **System Renewal** | 780.4 | 797.2 | 2% | 773.3 | 865.2 | 1,103.1 | 1,172.8 | 1,177.4 | 1,193.8 |
| **System Service** | 75.6 | 79.1 | 5% | 103.8 | 204.1 | 148.2 | 151.8 | 174.3 | 204.2 |
| **General Plant** | 119.7 | 97.5 | -19% | 116.3 | 115.4 | 94.4 | 94.7 | 83.6 | 58.9 |
| **Progressive Productivity** | 0.0 | 0.0 | 0% | 0.0 | -17.0 | -39.0 | -61.0 | -78.0 | -91.0 |
| **Total** | **1,000.0** | **1009.5** | | **1,038.5** | **1,192.5** | **1,318.0** | **1,370.0** | **1,370.0** | **1,370.0** |
| **System OM&A*** | **394.3** | **399.4** | 1% | **356.6** | **375.9** | * | * | N/A | N/A |

** System OM&A includes Operations, Maintenance and Administration expenses. System OM&A for 2021 to 2022 is determined based on the RCI described in Section 4 of this Exhibit.*

*Exhibit Reference – B-1-1, Section 3.3, Table 2.*

Over the TSP planning period, Hydro One plans to spend approximately $6.6 billion in capital, representing an annual growth rate of 5.4% from 2018 OEB approved levels to restore transmission reliability performance to top quartile as compared to its Canadian peers[6], address customer needs and preferences and mitigate asset and operational risks. The proposed investments are targeted at the highest risk assets and will eliminate all critical safety and environmental risks.

The majority of the forecast spending in the TSP is in the System Renewal category and is for investments that are required to address the condition of critical assets and prevent

[5] 2018 values are based on a forecast. 2018 actuals will be provided in the Blue Page updated which is expected to be filed in mid-2019.
[6] As detailed in Exhibit D, Tab 2, Schedule 1, Hydro One's reliability performance is benchmarked with its Canadian peers with the Canadian Electricity Association.

further degradation of the overall fleet of assets as a result of demographic pressure that Hydro One is experiencing for key asset classes - primarily stations and lines.

Hydro One's TSP reflects the need for continued station renewal investments at a cost of $3.5 billion, or approximately 53%, of the total planned capital expenditures over the planning period, $1.9 billion of which is required over the test period to address deteriorated station assets including transformers, circuit breakers, protection, control and telecom equipment. Over the TSP planning period, these replacements are expected to approximately maintain the proportion of transformers on the system that are beyond their expected service life at 26%, approximately maintain the proportion of protection systems operating beyond their expected service life at 28% and maintain the number of breakers that are beyond their expected service life at 12%. This includes the replacement of 72% of the air-blast circuit breakers (ABCBs) at a cost of $594M. ABCBs are about 10 times more expensive to maintain and about 4 times less reliable than their equivalent SF6 circuit breakers.

The TSP also delivers an increased emphasis on line renewal investments at a cost of approximately $2.0 billion over the planning period, $1.2 billion of which is required over the test period, to refurbish and replace end of life transmission lines, underground cables, insulators and wood poles, while continuing with tower coating of steel structures to extend their useful life, but at a reduced pacing consistent with direction from the OEB in the Prior Proceeding. Detailed condition assessments are being conducted for lines exceeding 50 years of age to inform the line refurbishment program. While the planned rate of refurbishment does not keep up with lines demographics, the risk is managed by prioritizing line refurbishment investments based on detailed asset condition assessments. The pace at which a transmission line deteriorates varies depending on location and environmental and system conditions.

The TSP includes $947 million in proposed System Access and System Service capital that is required over the TSP planning period, $552 million of which is required over the test period, to provide transmission access and additional capacity for new customer connections and to implement regional development plans that were developed jointly with customers, transmitters, distributors and the IESO. These investments will result in the addition of seven new transformer stations, ten customer-owned stations and 272 circuit km of new or upgraded transmission lines. Major projects include the development work for the North-West Bulk transmission expansion, new transmission switching and lines facilities to support load growth in the Leamington area, transformation and lines at Milton Switching station, and upgrades/expansion in Barrie and Toronto areas.

The TSP also includes $447 million of general plant capital that is required over the planning period, $304 million of which is required over the test period, to support day-to-day business and operations activities such as buildings, tools, equipment, rolling stock, as well as information technology hardware and software. This includes investing $189 million in operating infrastructure and control facilities. This amount includes the new Integrated System Operating Centre ("ISOC"), which represents an investment of $45 million over the planning period, as well as an upgrade to Hydro One's Network Management System – used for grid control, and a refresh of Hydro One's integrated voice communication telephony system.

Further details regarding the demographics of Hydro One's transmission assets and the drivers of capital spending can be found in Chapters 2 and 3 of the TSP, respectively.

## 6.5 RATE BASE

The requested rate base over the test period is provided in Table 8 below. Details are provided in Exhibit C, Tab 1, Schedule 1. The 2020 rate base represents a $1,250.3 million (11%) increase over 2018 OEB-approved levels.

**Table 8: Transmission Rate Base ($ Millions)**

| Description | OEB-approved | Bridge | Test | | |
|---|---|---|---|---|---|
| | 2018 | 2019 | 2020 | 2021 | 2022 |
| Mid-Year Gross Plant | 17,537.1 | 18,516.2 | 19,414.2 | 20,523.7 | 21,755.4 |
| Mid-Year Accumulated Depreciation | (6,416.3) | (6,714.7) | (7,052.3) | (7,442.2) | (7,848.8) |
| **Mid-Year Net Plant** | **11,120.8** | **11,801.5** | **12,362.0** | **13,081.5** | **13,906.6** |
| Cash Working Capital | 15.0 | 22.5 | 24.4 | 26.5 | 27.6 |
| Materials and Supply Inventory | 12.2 | 11.7 | 12.0 | 12.2 | 12.4 |
| **Transmission Rate Base** | **11,148.0** | **11,835.7** | **12,398.3** | **13,120.2** | **13,946.6** |

*Exhibit Reference: C-1-1, tables 1 and 2*

## 6.6 PERFORMANCE AND REPORTING

Consistent with the OEB's findings in the Prior Proceeding, Hydro One has included in the Application an improved Transmission Scorecard for approval by the OEB. The revised measures reflected in the scorecard are aligned with the OEB's performance outcomes under the RRF and have been influenced by internal and external factors, including Hydro One's past performance management measures, benchmarking studies, and scorecards and measures of other utilities in the public domain. In addition, Hydro One has set performance targets for the TSP planning period that reflect the expected outcomes of Hydro One's planned investments and show Hydro One's commitment to continuous improvement. The scorecard measures, along with their associated RRF performance outcomes, are shown in Figure 4. Further details regarding the proposed

measures, along with Hydro One's historical performance and performance targets, are detailed in Section 1.5 of the TSP.

| Performance Outcomes | Performance Categories | Measures | |
|---|---|---|---|
| Customer Focus | Customer Satisfaction | Satisfaction with Outage Planning Procedures (% Satisfied) | |
| | | Overall Customer Satisfaction (% Satisfied) | |
| | Service Quality | Customer Delivery Point (DP) Performance Standard Outliers as % of Total DPs | |
| Operational Effectiveness | Safety | Recordable Incidents (# of recordable injuries/illnesses per 200,000 hours worked) | |
| | System Reliability | T-SAIFI-S (Ave. # Sustained interruptions per Delivery Point) | |
| | | T-SAIFI-M (Ave. # of Momentary interruptions per Delivery Point) | |
| | | T-SAIDI (Ave minutes of interruptions per Deliver Point) | |
| | | System Unavailability (%) | |
| | | Unsupplied energy (minutes) | |
| | Asset & Project Management | Transmission System Plan Implementation Progress (%) | |
| | | CapEx as % of Budget | |
| | | OM&A Program Accomplishment (composite index) | |
| | | Capital Program Accomplishment (composite index) | |
| | Cost Control | Total OM&A and Capital per Gross Fixed Asset Value (%) | |
| | | OM&A per Gross Fixed Asset Value (%) | |
| | | Line Clearing Cost per kilometer ($/km) | |
| | | Brush Control Cost per Hectare ($/Ha) | |
| Public Policy Responsiveness | Connection of Renewable Generation | % on-time completion of renewables customer impact assessments | |
| | Regional Infrastructure Planning (RIP) & Long-Term Energy Plan (LTEP) Right-Sizing | Regional Infrastructure Planning progress - Deliverables met, % | |
| | | End-of-Life Right-Sizing Assessment Expectation | |
| Financial Performance | Financial Ratios | Liquidity: Current Ratio (Current Assets/Current Liabilities) | |
| | | Leverage: Total Debt (includes short-term and long-term debt) to Equity Ratio | |
| | | Profitability: Regulatory Return on Equity | Deemed (included in rates) |
| | | | Achieved |

**Figure 4: Evolved Electricity Transmitter Scorecard Measures**[7]

[7] Exhibit Reference: B-1-1, Section 1.5, Figure 1

## 6.7 OPERATIONS, MAINTENANCE AND ADMINISTRATION (OM&A) EXPENSE

A summary of forecast OM&A expenses for the 2020 test year is provided in Exhibit F, Tab 1, Schedule 1. These amounts have been reduced by the OM&A productivity savings outlined in Table 2 of this Exhibit. As shown in Table 9, 2020 OM&A expenses are expected to be $18.4 million lower (4.7%) than the 2018 OEB-approved (plan) funding envelope and are $34 million lower than what they would be if 2018 OEB-approved funding levels were increased at a 2% rate of inflation in 2019 and 2020.[8] OM&A reductions will be achieved through operating efficiencies, particularly the management of maintenance cycles, and a company-wide exercise undertaken by Hydro One to review and reduce corporate common costs. The review resulted in a significant commitment by business units to reduce corporate costs across the organization. These reductions were achieved primarily through a reduction in vacancies and by limiting consulting and contract engagements to critical functions, which also assist in strengthening and building internal capabilities. Hydro One's TSP is designed to utilize approved funding, in both capital and OM&A, to improve reliability and maintain asset condition over the planning period. In this manner, the plan appropriately balances customer rate impacts with the requirements of the system.

2019 OM&A expenditures are lower than the proposed test year OM&A as a result of the need to align to the funding envelope afforded in Hydro One's 2019 transmission revenue cap adjustment application (EB-2018-0130). This maintenance reduction has included reductions in activities including a one year extension of planned maintenance and asset

[8] 2018 OEB-approved OM&A inflated by 2% would have resulted in OM&A of $402 million in 2019 and $410 million in 2020

condition assessments and represents a managed increase in asset risk that may manifest in terms of increased corrective/demand failures and/or reduced asset useful life but can be contained with a one year reduction in work and will be managed and mitigated in future years. Hydro One expects safety and reliability performance to be maintained over the TSP planning period at the proposed funding levels. Further details regarding Hydro One's OM&A expenses can be found in Exhibit F.

**Table 9: Summary of Transmission OM&A Expenditures ($ Million)**

| | Historical | | | | | | | | Bridge | Test |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | | 2016 | | 2017 | | 2018 | | 2019 | 2020 |
| | Actual | Plan | Actual | Plan | Actual | Plan | Forecast | Plan | Forecast | Forecast |
| **Category Level** | | | | | | | | | | |
| Sustainment | 233.6 | 238.7 | 215.1 | 241.1 | 218.1 | 241.2 | 221.3 | 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 | 56.6 | 62.1 | 46.1 | 48.9 |
| Customer Care | 5.1 | 5.5 | 4.5 | 5.5 | 8.5 | 4.0 | 10.4 | 3.9 | 7.3 | 7.5 |
| Common Corporate Costs and Other Costs[9] | 73.9 | 70.2 | 60.1 | 71.3 | 41.5 | 49.9 | 41.1 | 47.5 | 29.4 | 30.3 |
| Property Taxes & Rights Payments | 63.9 | 66.3 | 61.3 | 67.0 | 50.7 | 63.6 | 64.7 | 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 | | |

[9] *Common Corporate Costs and Other Costs* includes Planning, (exhibit F-02-03), CCF&S (exhibit F-02-02), Information Technology (exhibit F-02-04), Cost of External Revenue (exhibit F-02-05), and Other OM&A (exhibit F-02-01).

| Envelope Level | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Transmission OM&A** | **441.6** | **431.2** | **408.1** | **436.8** | **385.0** | **397.7** | **399.4** | **394.3** | **356.6** | **375.9** |
| % Change Year over Year | | | -7.6% | | -5.6% | | 3.7% | | -10.7% | 5.4% |
| Variance to Plan | 10.4 | | -28.7 | | -12.7 | | 5.1 | | | |

*Exhibit Reference: F-1-1, Table 1.*

The "Plan" values shown in Table 9 at an individual investment category level for the historical and bridge years reflect the funding levels previously proposed by Hydro One in applications to the OEB for the applicable years. Values at the category level have not been adjusted in response to reductions to the overall OM&A expenditure levels approved in the applicable OEB decisions as the OEB's findings were at an envelope level. As such, OEB-reductions are included as a separate line item under "Adjustments" and are reflected in the total transmission OM&A "Plan" values at envelope level for the historical and bridge years. For further details, please see Exhibit F, Tab 1, Schedule 1.

Hydro One will manage its OM&A budget over the test period to 2020 levels as adjusted by the RCI discussed in Section 4 above.

Hydro One's 2019 and 2020 total transmission-allocated compensation costs are summarized in Table 10. The 2020 transmission-allocated costs represent an 8.0% increase over 2019 levels. Increases are driven by negotiated wage increases in compensation for Hydro One's represented staff and due to additional resourcing requirements necessary to execute Hydro One's work programs which are increasing over the test period. These increases are offset by the reduction in vacancies for common corporate functions, noted above. Hydro One has revised the presentation of its compensation costs in consideration of the OEB's findings in the Prior Proceeding. Further details are provided in Exhibit F, Tab 4, Schedule 1, Attachment 1.

**Table 10: Summary of Total Transmission-Allocated Compensation Costs ($)**

| | 2019 | 2020 | Change |
|---|---|---|---|
| **Total Capital Transmission Comp** | 456,985,537 | 505,243,466 | 48,257,929 |
| **Total OM&A Transmission Comp** | 176,094,700 | 178,968,609 | 2,873,909 |
| **Total Transmission Compensation** | **633,080,237** | **684,212,075** | **51,131,837** |

Hydro One re-engaged Mercer (Canada) Ltd. to prepare an updated total compensation cost benchmarking study, a copy of which is provided as Attachment 2 to Exhibit F, Tab 4, Schedule 1. The study showed an improvement in Hydro One's benchmarked compensation costs relative to peers, as compared to the study that had been filed in the Prior Proceeding.

## 6.8 COST OF CAPITAL

Table 11 below summarizes the return of capital for the 2020 rebasing year.

**Table 11: 2020 Cost of Capital**

| Amount of Deemed | ($M) | % | Cost Rate (%) | Return ($M) |
|---|---|---|---|---|
| **Long-term debt** | 6,806.2 | 54.9 | 4.52 | 307.7 |
| **Short-term debt** | 495.9 | 4.0 | 2.82 | 14.0 |
| **Deemed Long-Term debt** | 136.9 | 1.1 | 4.52 | 6.2 |
| **Common equity** | 4,959.3 | 40.0 | 8.98 | 445.3 |
| **Total** | 12,398.3 | 100.0 | 6.24 | 773.2 |

*Exhibit Reference: G-1-1*

Hydro One's deemed capital structure for rate-making purposes is 60% debt and 40% common equity of utility rate base. The 60% debt component is comprised of 4% deemed short-term debt and 56% long-term debt. Hydro One proposes to adopt the final 2020

return on equity and short-term debt rates as determined by the OEB for the purposes of determining its return on capital. The long-term debt rate is calculated as the weighted average rate on embedded debt, new debt and forecast debt to be issued. Further details regarding the cost of capital can be found in Exhibit G, Tab 1, Schedule 1.

## 6.9 COST ALLOCATION AND RATE DESIGN

Hydro One continues to follow the OEB-approved methodology from the Prior Proceeding to allocate the transmission rates revenue requirement into three rate pools: Network, Line Connection and Transformation Connection. The methodology is outlined in detail throughout Exhibit I1.

The rate pools are based on functional categories of assets and their associated costs. The allocation of the rates revenue requirement by rate pool is summarized in Table 12.

**Table 12: Summary of Rates Revenue Requirement by Rate Pool ($Millions)**

| Year | Network | Line Connection | Transformation Connection | Total |
|---|---|---|---|---|
| 2020 | $974.7 | $186.2 | $462.4 | $1,623.3 |
| 2021 | $1,024.5 | $195.7 | $486.0 | $1,706.2 |
| 2022 | $1,075.8 | $205.5 | $510.3 | $1,791.6 |

*Exhibit Reference: I1-1-1, Table 2.*

## 6.10 DEFERRAL AND VARIANCE ACCOUNTS

Hydro One requests disposition of a $14.5 million debit balance in the regulatory accounts detailed in Table 13. Hydro One Transmission is requesting disposition of the forecast Regulatory Account values as at December 31, 2018 (to be update with actual audited balances as part of blue-page update) plus forecast interest accrued in 2019, on

the principal balances as at December 31, 2018 less any amounts approved for disposition in 2019 by the OEB in Hydro One's 2019 Transmission Rate Application (EB-2018-0130). Hydro One proposes to dispose of this balance as an adjustment to its revenue requirement over a three-year period, effective January 1, 2020.

**Table 13: Transmission Disposition of Regulatory Account Balances ($ Millions)**

| Description | Forecast Balance as at Dec 31, 2019 |
|---|---|
| Excess Export Service Revenue | 5.7 |
| External Secondary Land Use Revenue | (0.2) |
| External Stations Maintenance, E&CS & Other External Revenue | (0.0) |
| Tax Rate Changes | 0.0 |
| Rights Payments | 0.0 |
| Pension Cost Differential | (5.3) |
| Long-Term Transmission Future Corridor Acquisition and Development | 0.0 |
| CDM Variance Account | 13.6 |
| External Revenue – Partnership Transmission Projects Account | (0.0) |
| OEB Cost Differential Account | (0.0) |
| North West Bulk Transmission Line | 0.8 |
| **Total Regulatory Accounts for Approval** | **14.5** |

*NOTE: Balances shown are forecast values. Final audited balances will be provided in the Blue Page update planned for mid-2019.*

*Exhibit Reference: H-1-3, Table 1.*

Hydro One is requesting approval to continue all existing accounts and to establish the following accounts, as detailed in Exhibit H, Tab 1, Schedule 2:

1. Earnings Sharing Mechanism (ESM) Deferral Account which proposes to record and share with customers 50% of any over-earnings that exceed the OEB-allowed regulatory ROE by more than 100 basis points realized during any year of the four-year test period; and
2. CCRA True-Up Deferral Account which proposes to track the differences between components of revenue requirement and actual results related to load true-ups performed in accordance with Transmission System Code section 6.5.3.

## 6.11 BILL IMPACTS

Exhibit I2, Tab 5, Schedule 1 provides the bill impacts that would result from approval of the Application along with illustrative bill impacts for 2021 and 2022. Table 14 shows the average 2020 bill impacts of the proposed changes in transmission rates revenue requirement and load forecast.

**Table 14: Average Bill Impacts on Transmission and Distribution-connected Customers**

| | 2019* | 2020 |
|---|---|---|
| Rates Revenue Requirement ($ millions) | **$1,550.2** | **$1,623.3** |
| % Increase in Rates RR over prior year | | 4.7% |
| % Impact of load forecast change | | 3.8% |
| **Net Impact on Average Transmission Rates** | | **8.5%** |
| Transmission as a % of Tx-connected customer's Total Bill | | 7.4% |
| ***Estimated Average Bill impact*** | | ***0.6%*** |
| Transmission as a % of Dx-connected customer's Total Bill | | 6.2% |
| ***Estimated Average Bill Impact*** | | ***0.5%*** |

** 2019 revenue requirement is as proposed in Hydro One's 2019 Transmission Application (EB-2018-0130). Exhibit Reference: I2-5-1, Table 2.*

Approximately 3.8% of the average increase to transmission rates in 2020 resulting from the Application is driven by a reduction to Hydro One's load forecast relative the forecast currently underpinning rates, which is driven by factors that are beyond Hydro One's control as explained in Section 6.3 of this Exhibit. Of the remaining 4.7% of the average increase to transmission rates resulting from the Application, only 1.3% is due to proposed capital spending in 2020 that is placed in service that year. The remainder of the impact is predominantly driven by an increase in rate base from capital projects placed in service that were largely completed prior to the test period of the Application. The regulatory account balances credit position from the EB-2018-0130 proceeding is no longer being applied to offset the revenue requirement causing an increase which is mostly offset by the proposed decrease in OM&A spending levels.

The 2020 total bill impact for a typical Hydro One medium density residential (R1) customer consuming 400 kWh, 750 kWh and 1,800 kWh monthly is determined based on

the forecast increase in the customer's Retail Transmission Service Rates ("RTSR") as detailed below in Table 15.

**Table 15: Typical Medium Density (R1) Residential Customer Bill Impacts**

| | **Typical R1 Residential Customer** | | |
|---|---|---|---|
| | **400 kWh** | **750 kWh** | **1800 kWh** |
| Total Bill as of May 1, 2018[1] | $84.33 | $123.51 | $241.03 |
| RTSR included in 2017 R1 Customer's Bill (based on 2016 UTR) | $4.78 | $8.96 | $21.50 |
| *Estimated 2019 Monthly RTSR*[2] | $5.09 | $9.55 | $22.92 |
| **2019 increase in Monthly Bill** | **$0.12** | **$0.23** | **$0.55** |
| *2019 increase as a % of total bill* | *0.1%* | *0.2%* | *0.2%* |
| *Estimated 2020 Monthly RTSR*[3] | $5.50 | $10.32 | $24.77 |
| **2020 increase in Monthly Bill** | **$0.41** | **$0.77** | **$1.85** |
| *2020 increase as a % of total bill* | *0.5%* | *0.6%* | *0.8%* |

[1]*Total bill including HST, based on time-of-use commodity pricing effective May 1, 2018 and 2017 distribution rates approved per Distribution Rate Order EB-2016-0081 (includes impacts of all components of the Fair Hydro Plan).*

[2]*2019 Monthly RTSR is an estimated value that incorporates the impacts of changes in UTR in 2017 and 2018 and rates revenue requirement proposed in 2019 Transmission Application (EB-2018-0130).*

[3]*The impact on RTSR is assumed to be the net impact on average Transmission rates, as per Table 14, adjusted for Hydro One's revenue disbursement allocator per 2019 Interim UTR Order (EB-2018-0326).*

*Exhibit Reference: I2-5-1, Table 3.*

The 2020 total bill impact for a typical Hydro One General Service Energy less than 50 kW ("GSe < 50 kW") customer consuming 1,000 kWh, 2,000 kWh and 15,000 kWh monthly is determined based on the forecast increase in the customer's Retail Transmission Service Rates ("RTSR") as detailed below in Table 16.

**Table 16: Typical General Service Energy Less Than 50 kW (GSe < 50 kW) Customer Bill Impacts**

| | GSe Customer Monthly Bill | | |
|---|---|---|---|
| | **1,000 kWh** | **2,000 kWh** | **15,000 kWh** |
| Total Bill as of May 1, 2018[1] | $201.89 | $373.66 | $2,606.65 |
| RTSR included in 2017 R1 Customer's Bill (based on 2016 UTR) | $10.63 | $21.26 | $159.47 |
| *Estimated 2019 Monthly RTSR*[2] | $11.33 | $22.67 | $169.99 |
| **2019 increase in Monthly Bill** | **$0.27** | **$0.55** | **$4.10** |
| *2019increase as a % of total bill* | *0.1%* | *0.1%* | *0.2%* |
| *Estimated 2020 Monthly RTSR*[3] | $12.25 | $24.49 | $183.70 |
| **2020 increase in Monthly Bill** | **$0.91** | **$1.83** | **$13.71** |
| *2020 increase as a % of total bill* | *0.5%* | *0.5%* | *0.5%* |

*[1]Total bill including HST, based on time-of-use commodity pricing effective May 1, 2018 and 2017 distribution rates approved per Distribution Rate Order EB-2016-0081 (includes impacts of all components of the Fair Hydro Plan).*

*[2]2019 Monthly RTSR is an estimated value that incorporates the impacts of changes in UTR in 2017 and 2018 and rates revenue requirement proposed in 2019 Transmission Application (EB-2018-0130).*

*[3]The impact on RTSR is assumed to be the net impact on average Transmission rates, as per Table 14, adjusted for Hydro One's revenue disbursement allocator per 2019 Interim UTR Order (EB-2018-0326).*

*Exhibit Reference: I2-5-1, Table 4.*

## 7. CONCLUSION

Hydro One's Application balances the needs of its system, assets and customer preferences regarding outcomes and rates. Hydro One has aligned its Application with the OEB's expectations under the RRF and the feedback provided in the Prior

Proceeding. The Application reflects Hydro One's continued evolution towards becoming a best-in-class, customer-centric, commercial entity.

Hydro One's TSP will deliver outcomes that customers value in the form of improvements to reliability performance, the elimination of critical safety and environment risks and enabling the connection of customers and businesses in the growing communities in Ontario while balancing customer concerns over rate impacts.