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**December 6, 2016**

**VIA RESS AND COURIER**

Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto, Ontario M4P 1E4

Dear Ms. Walli:

**RE: EB-2016-0160 Hydro One Networks Inc. ("Hydro One") Transmission Rates Application – Business Plan**

Please find attached Hydro One's Business Plan approved by its Board of Directors on December 2, 2016.

Yours truly,

**McCarthy Tétrault LLP**
Per:

For: Gordon M. Nettleton

GMN


# Transmission Business Plan 2017-2021

December 2, 2016

INTERNAL and CONFIDENTIAL

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# Strategy and Business Objectives

## Corporate Vision, Values and Strategy

Hydro One is transforming to achieve its **vision** of becoming a best-in-class, customer-centric commercial entity, with a culture of continuous improvement and excellence in execution. To achieve this vision, Hydro One will execute on its **strategy** to transmit electricity safely and reliably in a manner that produces the greatest value for customers. Hydro One seeks to be excellent in every facet of its operations, to the benefit of customers, employees and shareholders.

Hydro One's **commercial** orientation means that the company will be focused on customers, demonstrate corporate accountability for performance outcomes, and drive company-wide efficiency and productivity. Understanding customers' needs and preferences and delivering transmission system outcomes that are valued by customers are critical to Hydro One's future success.

Hydro One's vision and strategy reflect **values** that are integral to the well-being of communities:

- Maintaining a safe workplace;
- Caring for customers;
- Operating as one company;
- Being people-powered; and
- Executing with excellence.

Hydro One's executive leadership and Board of Directors are committed to building a strong performance management culture and the ability to measure and track performance is essential to this vision.

Hydro One's vision, strategy and values inform everything the company does, as it works to align three competing but equally important factors: customer needs and preferences, responsible stewardship of its transmission system, and customer rates.

Hydro One understands that customers want to be assured that the company runs its transmission business as efficiently as they run their own businesses. Customers want to know that they can count on Hydro One to extract maximum value from the rates they pay and that they can depend on the company to provide the transmission system reliability they need.

At the same time, customers have made it clear that they do not want the reliability risk of the company's transmission assets to increase. Customers have also been clear that power quality issues and service disruptions cost them time and money. These customer needs and preferences have guided the development of Hydro One's five year, Transmission System Plan. The Transmission System Plan put forth in this business plan has also been informed by the needs of the transmission system assets and the effects on customer rates.

Hydro One remains committed to developing and maintaining relationships with First Nations and Metis communities that demonstrate mutual respect for one another. For example, Hydro One's ongoing engagement with First Nations and Métis communities recognizes that the Company's transmission assets in many instances reside on reserve land and in traditional territories, and therefore extends to the execution of specific transmission system projects.

# Circumstances & Challenges

Hydro One's transmission assets form the backbone of Ontario's electricity system. The system serves approximately 96% of the Province by capacity and covers some of the most challenging and diverse geography in Canada. The company's transmission system is comprised of approximately 292 transmission stations and approximately 29,000 circuit kilometres of high-voltage lines, towers and transformers, operating at 500 kV, 230 kV or 115 kV. It represents approximately $12B in assets. Hydro One's system transmits electricity from generation sources to load customers, including 47 transmission-connected local distribution companies (LDCs), Hydro One's own distribution system, and 90 large industrial customers directly connected to the transmission system. It is linked to five jurisdictions adjacent to Ontario through 27 high-voltage interconnections.

## Aging and Deteriorating Assets

Hydro One's transmission reliability is top quartile compared to peers, and has remained relatively flat or constant over time; however the system faces increasing challenges due to asset aging and deteriorating asset condition that is increasing the reliability risk of the system.

# Business Objectives

Hydro One Transmission's business objectives are directly aligned with the Ontario Energy Board's (OEB) *Renewed Regulatory Framework for Electricity* (RRFE), as shown in the table below.

**Hydro One's Values and Business Objective**

| | | |
|---|---|---|
| **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** | • Maintain top quartile reliability relative to transmission peers |
| **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 |

In order to achieve its business objectives, Hydro One continues to devise new approaches to serve its customers, form its Transmission System Plan, and operate and maintain its assets, while maintaining a strong commitment to safety and the environment. These initiatives are discussed, in turn, in the sections below.

# Customer Focus

## Customer Engagement for developing the Transmission System Plan

Hydro One's objective is to engage with customers consistently and proactively. The company's full spectrum of customer initiatives is designed to: (i) increase the company's understanding of customers' needs and preferences; (ii) enhance Hydro One's ability to provide services that meet these needs; (iii) produce outcomes that are valued by customers; and (iv) result in an improvement of customers' overall satisfaction with the service they receive.

One critical element of achieving this objective is the development of a Transmission System Plan that is designed to meet customers' needs and preferences and result in outcomes that customers value.

In the spring of 2016, Hydro One undertook a comprehensive customer engagement initiative, the purpose of which was to inform the development of Hydro One Transmission's five year Transmission System Plan. This initiative was structured to identify customer needs and preferences, result in the identification of customer needs and preferences, and allow for

identified needs and preferences to inform the Transmission System Plan that is reflected in the application for 2017 and 2018 Transmission rates that was filed with the OEB on May 31, 2016.

Hydro One engaged Ipsos, a global market research company, to assist in the design, execution, facilitation, and documentation of this customer engagement initiative. Ipsos also provided analysis of the feedback received during the engagement.

## Methodology

The customer engagement occurred in three parts. These parts were not sequential; they occurred concurrently. First, one-on-one meetings were held with 12 customers. Hydro One segmented and identified the customers for these meetings using the approach described below. Second, Ipsos facilitated five group customer consultations in Toronto, London, Ottawa, Thunder Bay and Sudbury. Twenty two customers participated in these facilitated group customer consultations. Third, an on-line consultation tool was made available to all customers, and 28 customers participated.

This three-part process was designed to ensure that all customers had an opportunity to participate in the consultation process and have their voices heard in an effective manner.

Hydro One chose to meet one-on-one with customers that met a number of criteria. Selected customers:

- represented at least five percent of Hydro One Transmission's overall revenue;
- were among the largest within each sub-segment, i.e. Local Distribution Companies (LDCs), large industrial end users and generators;
- gave a range of scores on 2015 Hydro One Transmission's customer satisfaction survey;
- experienced a range of reliability performance; and
- were geographically diverse.

## Results of Customer Engagement

Based on the information collected during this engagement process, the following customer needs and preferences were identified:

- predictable, reliable power at the current level of performance or higher, particularly, with respect to frequency of interruptions, especially large industrial end users who otherwise face unacceptable economic, environmental and health and safety risks;
- competitive or low cost of service, but not at the expense of deteriorated service;
- improved outage planning and notification (specifically, minimization of the number of planned outages and improved communication);
- continuing communication of Hydro One Transmission's long-term investment plans; and
- greater focus on power quality driven by the increased sensitivity of their equipment.

# How the Transmission System plan reflects Customer Needs and Preferences

The Transmission System Plan filed by Hydro One with the OEB on May 31, incorporated the results of the customer engagement process in the following ways:

- The plan mitigates the risk to current service levels posed by asset deterioration;
- The plan supports Hydro One's ability to continue to provide first quartile reliability in a safe manner; and
- The plan optimizes the life of assets to avoid unnecessary capital expenditures.

The plan seeks to meet customers' needs regarding service levels, while controlling costs; it is responsive to customers' preference for low or competitive costs. Hydro One recognizes that customers are sensitive to the total delivered price of power. The Transmission System Plan will result in higher customer rates. As such, Hydro One is committed to driving company-wide efficiency and productivity, even though less than10% of transmission-connected customer's total bill is attributable to the cost associated with the provision of transmission service by Hydro One.

# Impact of the Plan on Customer Rates and Bills

The table below shows the average bill impacts of the applied-for changes in transmission revenue requirement and load forecast in 2017 and 2018.

The estimated increase of the total bill for Hydro One general service energy customers (2000 kWh/month) is 0.1% and 0.2% in 2017 and 2018. For Hydro One medium density residential customers (750 kWh/month), the estimated increase is 0.2% in 2017 and 0.3% in 2018. The estimated bill impact for transmission connected-customers is 0.3% in 2017 and 0.4% in 2018, assuming that transmission represents 8.3% of the average transmission-connected customer's total bill.

**Average Bill Impacts on Transmission and Distribution-Connected Customers**

| | 2016F | 2017 | 2018 |
|---|---|---|---|
| Rates Revenue Requirement ($ millions)* | **1,480.7** | **1,511.4** | **1,589.4** |
| % Increase in Rates RR over prior year | | 2.1% | 5.2% |
| % Impact of load forecast change | | 2.1% | 0.0% |
| **Net Impact on Average Transmission Rates** | | **4.2%** | **5.2%** |
| Transmission as a % of Tx-connected customer's total bill | | 8.3% | 8.3% |
| ***Estimated Average Bill impact*** | | ***0.3%*** | ***0.4%*** |
| Transmission as a % of Dx -connected customer's total bill | | 6.8% | 6.8% |
| ***Estimated Average Bill Impact*** | | ***0.3%*** | ***0.3%*** |

* This amount is net of $0.3 million in wholesale meter service revenue

The total bill impact for Hydro One medium density residential (R1) customers consuming 350 kWh, 750 kWh and 1800 kWh monthly is determined based on the forecast increase in the customer's Retail Transmission Service Rates.

# The Transmission System Plan to Achieve Business Objectives

## System Planning Process

Infrastructure asset management is the combination of management, financial, economic, engineering, and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner. It includes management of the entire lifecycle - including design, construction, commissioning, operating, maintaining, repairing, modifying, replacing and decommissioning/disposal - of physical and infrastructure assets.

Hydro One Transmission's asset management process is designed to identify and scope the optimal timing of asset maintenance and capital investments in order to mitigate incremental risk to Hydro One's business objectives, while optimizing total cost and managing customer rate impacts.

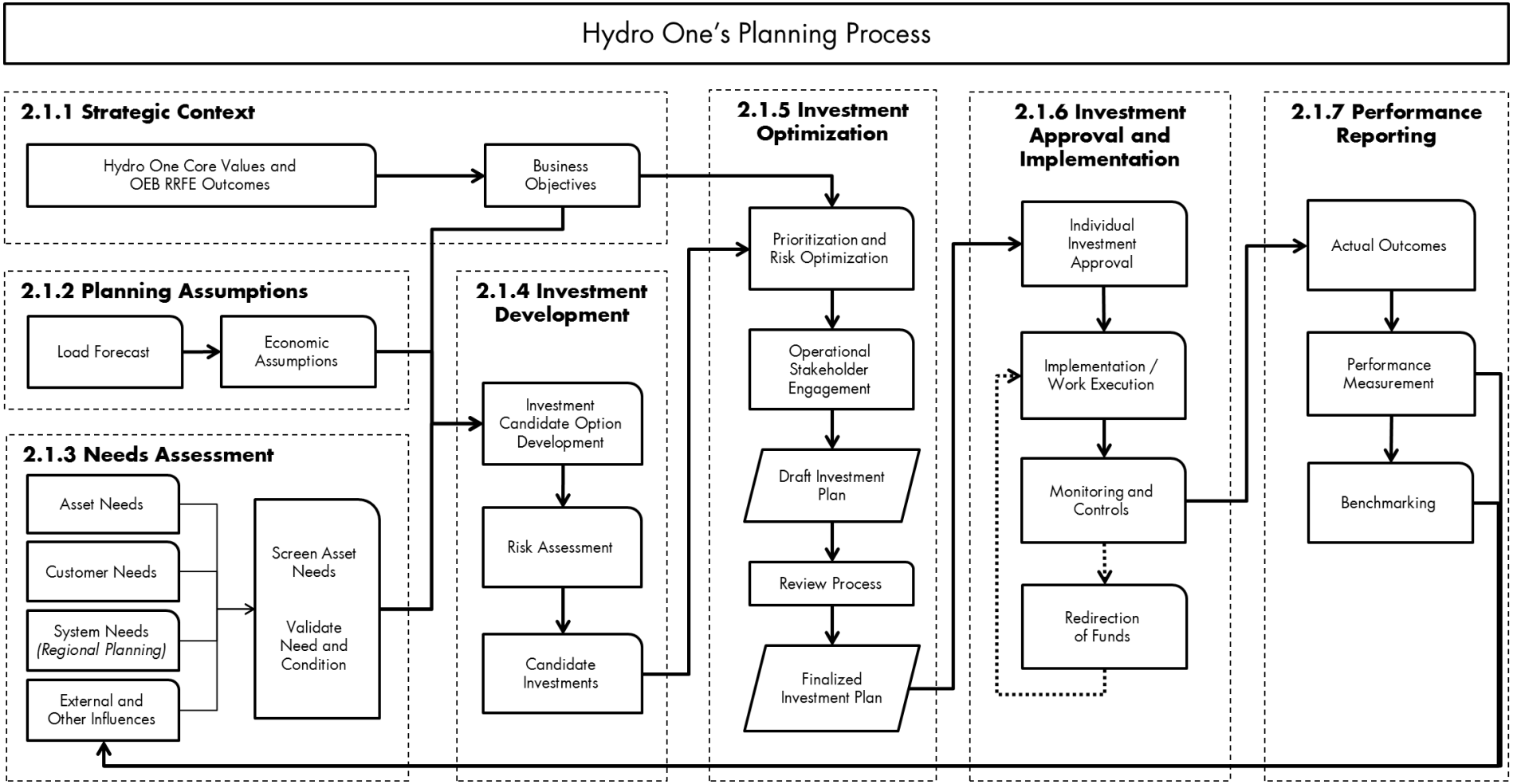
Hydro One's planning process is an ongoing cyclical process that develops an annual budget for Operations, Maintenance and Administration (OM&A) and capital investments, and a five-year planning forecast that is consistent with the OEB's filing requirements for a consolidated five-year capital plan. All investments follow this same process. The planning process cycle in 2016, which underpins Hydro One's investments in its Transmission System Plan, included the 2017 to 2021 period.

The Hydro One planning process consists of seven stages and is outlined in the figure below.

1. **Strategic Context**: Incorporation of strategic direction from Hydro One's Board of Directors and Executive Leadership Team that is used to focus the identification of needs and appropriately prioritize the candidate investments.
2. **Planning Assumptions**: Incorporation of load forecast and economic assumptions to guide the development of investments.
3. **Needs Assessment**: Assessment of needs based on the existing assets, customer needs and preferences, system requirements and other influences.
4. **Investment Development**: Development of candidate investments to address the identified needs.
5. **Investment Optimization**: Risk-based Prioritization of the proposed investments to yield an optimized investment plan.

6. **Investment Approval and Implementation**: Management of the investments within the optimized investment plan from planning, final approval and through execution to project completion.
7. **Performance Reporting**: Monitoring the plan through a set of performance metrics.

**Hydro One's Investment Planning Process**



# System Investment Requirements

Based on Hydro One's assessment of its transmission system, a significant portion of its assets have deteriorated to the point where they pose a risk to its business objectives of maintaining current levels of reliability and improving customer satisfaction.

Hydro One continues to strike a careful balance between: (i) addressing customer needs and preferences; (ii) developing the transmission system, building new infrastructure and sustaining existing assets to maintain the health of the system; and (ii) customer rates. Between 2009 and 2012, Hydro One invested significantly in system development, to comply with government policies related to the connection and integration of renewable energy generation and the retirement of coal-fired generation. Since then, system development needs have declined while system sustainment and renewal needs have increased to the point of creating risk to current reliability levels.

Hydro One has modified its asset management approach to include reliability risk as a leading indicator of future transmission system performance. Hydro One's approach has been informed by the development of this approach in other jurisdictions. This approach is new for Hydro One, and the company intends to further develop the reliability risk approach and refine its application.

Reliability risk is a relative, outcome metric that is derived using a probabilistic calculation based on asset demographics and the historical relationship between asset age and the occurrence of failure or replacement. Reliability risk is used by Hydro One as an outcome measure in its asset management process to gauge the impact of its investments on future transmission system reliability. The reliability risk concept is also used to provide a directional indicator to inform the appropriate level and pacing of sustainment investments. The reliability risk model is not used to identify specific asset needs and investments. Instead, these are determined by condition assessments and other asset-specific information.

The table below reflects the relative change in risk for each critical asset class and for the system as a whole, as a result of 2017 and 2018 investments. With the planned investments, overall reliability risk would improve (i.e. decline) by 2% by 2019. Without the applied-for investments, overall reliability risk would deteriorate (i.e., increase) by 10%.

**Relative Change in Reliability Risk**

| | Relative Change in Risk from Jan. 1, 2017 to Dec. 31, 2018, as per proposed investment | Relative Change in Risk from Jan. 1, 2017 to Dec. 31, 2018, without investment | % of Interruption Duration* |
|---|---|---|---|
| Lines | -2% | 11% | 69% |
| Transformers | -9% | 14% | 9% |
| Breakers | 1% | 17% | 6% |
| Other | - | - | 16% |
| **Total*** | **-2%** | **10%** | |

* Total is calculated by weighting the change in risk by the asset class' contribution to interruption duration.

In addition to incorporating customer feedback and the new reliability risk outcome metric, Hydro One also considered and incorporated the results of a total cost benchmarking study into the development of its Transmission System Plan. The study, completed in 2016, found that Hydro One's historical capital spending levels were significantly below the median of its peer group. For the purposes of developing its investment plan, Hydro One used the total cost benchmarking study as a reference tool to further validate the proposed increases in spending associated with its Transmission System Plan. Based on the results of the total cost benchmarking study and Hydro One's investment proposal, the 2017 and 2018 total expenditure (capital and OM&A) will still remain at or below median levels relative to the company's peer group.

# Transmission System Plan

As part of Hydro One's Transmission Rates Application for 2017 and 2018, the company developed and filed with the OEB a five-year Transmission System Plan, which sets out Hydro One's anticipated capital plans for 2017 through 2021. Since capital expenditures are tied to Operations, Maintenance and Operations costs, the Transmission System Plan is based on certain assumptions related to the level of OM&A costs during the planning period.

Although filed with the OEB as part of the Filing Requirements, the Transmission System Plan for 2019-2021 is not subject to OEB approval in the current rates proceeding. As a result, the capital and the underlying OM&A costs will be refined in future business plans to reflect more current planning information.

The proposed five-year capital plan reflects Hydro One's assessment of the investments required to align: (i) asset related needs of the transmission system arising from age and condition; (ii) customer needs and preferences relating to reliability and reliability risk; and (iii) effect on customer rates.

Hydro One expects the transmission system plan to result in the following key outcomes that are valued by customers:

- Mitigation of reliability risk arising from aging and deteriorating assets;
- Creation of conditions that enable Hydro One to continue to provide first quartile reliability in a safe manner to its customers;
- Avoidance of larger capital replacement costs by extending asset life, where feasible;
- Ongoing compliance with regulatory, environmental and reliability standards; and
- Drive towards an injury-free workplace.

To achieve these outcomes, Hydro One has shifted the balance of its capital investment towards sustainment capital, with an increasing focus on lines investments. The company has also approached the timing and pacing of investments with a long-term view. In its previous transmission revenue requirement application for the 2015-2016 period, the company put forth a capital program that began to address the need for higher sustainment investments, by focusing on stations assets in poor condition that were a significant driver of reliability performance. Since its last filing, Hydro One has focused on developing an improved understanding and knowledge of the condition of its transmission system.

Through an ongoing process to test critical assets and an expansion of the scope of condition assessments, combined with information collected about the actual performance (including failures) of individual assets, Hydro One has improved its understanding and knowledge of the condition of its transmission system. Hydro One has also been developing a greater understanding of how equipment unavailability, due to condition and demographics, is a leading indicator of future reliability issues and contributes to higher reliability risk. As a result of these practices, Hydro One has enhanced its ability to prioritize asset replacements for the purpose of maintaining top quartile reliability and reducing the reliability risk of the system.

Hydro One has historically relied on maintenance programs to extend the lifespan of assets by addressing asset condition deficiencies, where practical, as a means of deferring large capital expenditures. As a result, many assets are being operated beyond their expected service life. Although this approach defers capital investments, it increases maintenance costs and the risk that assets will fail, deteriorate significantly, or become obsolete as spare parts and manufacturer support become unavailable. Recent examples of this manifest risk include equipment failures in 2015 and 2016 at Elgin TS, Horning TS, Bridgman TS, and Frontenac TS.

As a result of its recent efforts to invest in the sustainment of stations assets, Hydro One has made significant strides in stabilizing the reliability risk from its stations assets. However, lines assets have continued to deteriorate and are now contributing to a larger proportion of the system's reliability risk. Hydro One's proposed Transmission System Plan reflects an increased emphasis on lines-related sustainment investments, beginning in 2018, while maintaining an appropriate level of stations investment in order to continue to mitigate reliability risk.

In developing its Transmission System Plan, Hydro One was aware that execution of the plan will take place in the context of the broader Ontario power system. In determining the timing and pacing of its investments, Hydro One considered both its own ability to execute capital work

efficiently and the ability to secure planned outage time to minimize impacts on customers and other stakeholders in Ontario. Due to the planned refurbishment of large nuclear power plants in 2021 and beyond, Hydro One expects to face greater constraints to outage scheduling in the future. As a result, it has planned the pace of sustainment work so that certain critical work to reduce risk on the system could be completed in the next five years to ensure that transmission assets are in service before expected outage constraints make that work more difficult to complete.

Hydro One is sensitive to the impacts of the investment plan on its customers, and thus has taken steps to ensure that its approach to investment is and continues to be in alignment with principles of RRFE by:

- ensuring that the Transmission System Plan reflects the consideration of customer needs and preferences identified in the customer engagement process and is consistent with the feedback obtained from the various other customer consultations undertaken by the company;
- identifying specific opportunities (e.g., steel tower coating) where the company can extend the useful life of its assets and mitigate higher capital spending requirements for asset replacements in the future;
- actively driving cost reduction and improved productivity and efficiency to help offset the customer rate impacts of the proposed investment plan; and
- implementing an improved performance management system to provide greater accountability for performance outcomes to the OEB, customers, and Hydro One's management, and to create confidence that targeted work is completed in an efficient manner, while delivering the promised outcomes for Hydro One's customers.

Hydro One's capital expenditure forecast for 2017 is $1,076 million for 2017 and $1,122 million for 2018. The table below summarizes the capital investment plan.

**Summary of Transmission Capital Budget ($ Millions)**

| | Historic | | | | Bridge Year | Test Years | | Forecast | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| Sustaining | 389.3 | 480.0 | 621.3 | 694.3 | 724.3 | 776.8 | 842.1 | 825.7 | 915.2 | 1118.1 |
| Development | 329.4 | 171.7 | 131.6 | 166.0 | 166.0 | 196.4 | 170.2 | 244.0 | 254.0 | 258.3 |
| Operations | 15.2 | 17.7 | 28.4 | 15.6 | 30.1 | 25.4 | 30.8 | 58.8 | 21.1 | 24.7 |
| Common Corporate Costs Capital | 42.1 | 49.1 | 63.4 | 67.1 | 83.5 | 77.6 | 79.1 | 79.1 | 78.2 | 73.8 |
| **Total** | **776.0** | **718.5** | **844.6** | **943.0** | **1003.8** | **1076.1** | **1122.2** | **1207.5** | **1268.6** | **1474.9** |

# Operations, Maintenance and Administration Expense

A summary of forecast OM&A expenses for 2017 and 2018 is shown below. Forecast OM&A expenses are expected to demonstrate a declining trend in 2016 and in the 2017 and 2018 test years, despite upwards pressure from inflation of approximately 2% per year, a growing asset base, and increasing compliance costs arising from new regulatory standards, such as the North American Electric Reliability Corporation's (NERC) Critical Infrastructure Protection Cyber Security reliability standards.

**Summary of Transmission OM&A Budget ($ Millions)**

| | Historic | | | | Bridge Year | Test Years | | Forecast | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| Sustaining | 204.7 | 221.0 | 228.6 | 233.6 | 227.5 | 241.2 | 238.5 | 238.1 | 240.1 | 241.8 |
| Development | 8.5 | 8.6 | 7.5 | 6.1 | 5.3 | 4.8 | 5.0 | 6.4 | 6.5 | 7.2 |
| Operations | 54.8 | 56.7 | 56.6 | 59.0 | 60.0 | 61.3 | 62.1 | 61.1 | 62.0 | 63.0 |
| Customer Care | 4.4 | 5.3 | 5.4 | 5.1 | 4.1 | 4.0 | 3.9 | 3.6 | 3.8 | 3.7 |
| Common Corporate and Other OM&A | 80.7 | 75.8 | 37.2 | 73.9 | 72.3 | 50.1 | 47.8 | 52.1 | 49.2 | 42.5 |
| Taxes Other Than Income Taxes | 62.1 | 21.2 | 64.1 | 63.9 | 62.9 | 63.6 | 64.3 | 64.1 | 64.9 | 65.8 |
| Pension Adjustment | - | - | - | - | -11.0 | -11.4 | -9.9 | -6.5 | -6.2 | -5.0 |
| B2M LP Adjustment | - | - | - | - | -0.2 | -0.8 | -2.1 | 0.0 | 0.0 | 0.0 |
| **Total** | 415.2 | 388.4 | 399.5 | 441.6 | 420.9 | 412.9 | 409.6 | 419.0 | 420.3 | 419.1 |

*Note – These numbers extend past the current requirements of the Tx Rate application, into the next IRM regime 2019-2023

Total OM&A expenditures for 2017 are forecast to be $412.9 million, which is a decrease of $8 million or 1.9% from the 2016 bridge year. Total OM&A expenditures for 2018 are forecast to further decrease by $3.3 million or 0.8% versus 2017. The expenditures in these regulatory test years are required to address the increasing maintenance requirements of a deteriorating, but expanding transmission system.

# Corporate Common Costs

Hydro One utilizes a centralized shared services model to deliver its common services to its transmission and distribution businesses and to its affiliated companies. Each business and affiliate pays their share of these costs based on a cost allocation methodology developed by Black and Veatch Corporation and approved by the OEB which utilizes a breakdown of activities and drivers based on cost causality principles.

**Summary of Common Corporate OM&A Costs 2012-2021 ($ million)**

| | Historic | | | | Bridge Year | Test Years | | Forecast | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Description** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| Asset Management | 32.3 | 31.8 | 32.6 | 31.0 | 36.6 | 36.5 | 35.8 | 34.1 | 34.1 | 34.5 |
| Common Corporate Functions & Services | 80.5 | 87.7 | 93.1 | 95.7 | 98.9 | 98.5 | 97.9 | 101.5 | 102.9 | 103.8 |
| Information Technology | 60.7 | 61.1 | 55.2 | 55.1 | 61.4 | 59.8 | 57.6 | 57.1 | 56.3 | 56.4 |
| Cost of Sales | 11.4 | 13.9 | 11.1 | 8.8 | 5.0 | 5.0 | 5.0 | 4.4 | 4.4 | 4.4 |
| Other OM&A | -104.2 | -118.6 | -154.8 | -116.8 | -129.6 | -149.7 | -148.5 | -145.1 | -148.5 | -156.6 |
| **Total** | **80.7** | **75.8** | **37.2** | **73.9** | **72.3** | **50.1** | **47.8** | **52.1** | **49.2** | **42.5** |

# Productivity and Performance Savings Measurement

## Productivity Strategy

Hydro One's executive leadership and Board of Directors are committed to building a strong performance management culture and the ability to measure and track performance is essential to this vision. The Company has aligned its planning, execution and reporting functions around performance outcomes that are consistent with the OEB's RRFE outcomes that are reflected in the regulatory scorecards for both Transmission and Distribution. The RRFE has four outcome categories: Customer Focus, Operational Effectiveness, Policy Responsiveness and Financial Performance. The correlation between Hydro One's values and business objectives and the OEB's RRFE performance outcomes, is set out in the Table on page 5.

Although Hydro One's outcome measures scorecard has been designed for regulatory purposes, the measures will be used in the company operations to determine whether the execution of the company's investment and operating plans create outcomes that are valued by customers. Performance outcomes will also be tied directly to the variable or "at risk" portion of management compensation, ensuring managers are rewarded for achieving or exceeding performance outcomes that are aligned with outcomes that are valued by customers.

Hydro One will measure the impact of cost reduction strategies associated with implementing industry best practices and strategic initiatives by using a variety of metrics to baseline its historical performance and track progress. Despite increasing external cost pressures and inflation, Hydro One will improve its performance each year in line with its vision of creating a

continuous improvement culture. For strategic initiatives or projects that enable productivity improvements, Hydro One will define measures that specifically track the effectiveness of each initiative. Each line of business will be accountable for planning and executing its respective productivity initiatives and will provide a plan to Hydro One's Finance department for review and implementation that will include measures to track performance outcomes based on the RRFE principles.

Performance measures from productivity enabling projects and work program spending will be tracked and reported by the Finance department. These results will be consolidated and reported quarterly to the Executive Leadership Team.

## Productivity in the Business Plan

Over the past year, Hydro One completed a company-wide internal evaluation seeking to reduce costs without compromising service quality or work outputs. The purpose of the evaluation was to assess operations for potential efficiency gains and to align the company with industry best practices, freeing up additional resources that could be used to improve RRFE performance outcomes. The recommendations from this review were then investigated to determine if they were feasible and if they could create sustainable improvements. Quantifiable improvements were then embedded in the business plan and were tied to the work programs that they impact so that managers would be accountable for delivering the savings. The key sources for potential productivity savings include:

- More effective procurement programs, including investments in new processes and tools;
- Reductions in administrative expenditures through improved processes and optimization of internal staff skills;
- Rationalization of Hydro One's IT spending;
- Improved field efficiency through improved work planning; and
- Improved execution through the consolidation of stations work.

The cost savings anticipated from these productivity initiatives, along with a number of additional, more recent initiatives, have been included in the table below that illustrates the measurable savings that have been embedded in the business plan.

# Productivity Improvements in Business Plan 2017-2021

| $M | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| Procurement | $ 11.2 | $ 21.4 | $ 29.6 | $ 33.1 | $ 34.2 |
| Operations | $ 0.8 | $ 0.8 | $ 0.8 | $ 0.8 | $ 0.8 |
| **Capital** | **$ 12.0** | **$ 22.2** | **$ 30.4** | **$ 33.9** | **$ 35.0** |
| Procurement | $ 2.1 | $ 2.8 | $ 2.9 | $ 4.0 | $ 4.7 |
| Operations | $ 2.9 | $ 3.5 | $ 3.5 | $ 3.5 | $ 3.5 |
| IT | $ 3.4 | $ 4.5 | $ 5.7 | $ 5.7 | $ 5.7 |
| **OMA** | **$ 8.4** | **$ 10.8** | **$ 12.1** | **$ 13.2** | **$ 13.9** |
| **Grand Total** | **$ 20.4** | **$ 33.0** | **$ 42.5** | **$ 47.1** | **$ 48.9** |

The major drivers of the savings in each category are highlighted below.

## Procurement

- Will achieve cost reduction by bundling multiple contracts with a single supplier and negotiating volume discounts across multiple categories and contracts; maximize competitive pressure through multiple feedback rounds; installation of catalogue buying via new SAP tools and enforcement of compliance with procurement contracts; and
- Standardization of spend and specifications will enable direct, like-for-like comparisons across bidders, reducing procurement costs and inventory requirements.

## Operations

- As a result of optimized planning stations services will reduce overtime on corrective and preventative maintenance; and
- Purchasing regularly used heavy equipment will result in cost reductions compared to externally contracting the work.

## Information Technology

- 3rd Party contractor rate reduction will reduce costs by 20-30% effective 2017;
- Backup and storage optimisation will reduce SAP storage costs by 75% without a material change in risk profile; and
- Infrastructure and database decommissioning of 138 servers and 38 databases that had very little or no utilization and reduced monthly server and database fees; plans for additional decommissioning in 2017.

# Defined Benefit Pension Cost Reductions

Hydro One engaged Willis Towers Watson to prepare an updated actuarial valuation report relating to Hydro One's defined benefit pension plans as at December 31, 2015. As a result of changes in employee contribution rates, updated investment returns, changes in employee

benefits and updated actuarial assumptions, Hydro One's pension contribution declined, for the three years, as follows, allowing reductions in OM&A by $32 million and capital by $56 million for the three years, providing a significant reduction in customer rates. These savings are in addition to the productivity savings identified in the Productivity Improvements in Business Plan above.

| $M | 2016 | 2017 | 2018 |
|---|---|---|---|
| OM&A | 11 | 11 | 10 |
| Capital | 18 | 19 | 19 |
| **Total** | **29** | **30** | **29** |

The capital reductions are offset by additional reinvestment, and the OM&A reductions are included in the OM&A amounts.

## Proposed Transmission Scorecard

Hydro One is committed to achieving the outcomes outlined in the RRFE: customer focus, operational effectiveness, public policy responsiveness and financial performance. The ability to measure performance, make year over year comparisons and benchmark against peers provides important information for measuring operational effectiveness and identifying areas for improvement. The establishment of a scorecard is one of the key elements of performance measurement under the OEB's new Filing Requirements for Electricity Transmission Applications.

The scorecard enables Hydro One to demonstrate improvement over time and share a comprehensive view of the company's performance with the OEB and with customers. The Transmission scorecard is supported by the Company's systems and internal key performance indicators and has been informed by stakeholder input.

Once approved by the OEB, Hydro One will submit the transmission scorecard on an annual basis to the OEB and post it on the Hydro One external website enabling the OEB and stakeholders to monitor company performance against the performance metrics set out in the scorecard.

## Process to Develop Scorecard Metrics

Hydro One identified potential metrics drawn from internal and external sources that include: Hydro One's past performance management metrics, benchmarking studies, scorecards and metrics of other utilities in the public domain. The identified metrics were screened to select metrics that are relevant, objective, measurable and actionable. The company benefited significantly from knowledge obtained by working on benchmarking committees, networking with other utilities, and having contributed to several international and national benchmarking studies that provided best practice knowledge on metric selection.

Metrics were selected that promote behaviors that will drive desired outcomes for customers, stakeholders and shareholders. The proposed framework aligns customer and transmitter interests, supports the achievement of important public policy objectives, and places a greater focus on delivering long term value for money.

# Proposed Transmission Regulatory Scorecard Results

| | | | Historical Years | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Performance Outcomes** | **Performance Categories** | **Measures** | **2011** | **2012** | **2013** | **2014** | **2015** | **Trend** |
| **Customer Focus**<br>**Services are provided in a manner that responds to identified customer preferences.** | **Service Quality** | Satisfaction with Outage Planning Procedures (% Satisfied) | Note 1 | 78 | Note 1 | 86 | 92 | ▲ |
| | | Customer Delivery Point (DP) Performance Standard Outliers as % of Total DPs | 13.8 | 10.8 | 12.8 | 11.8 | Note 2 | ▲ |
| | **Customer Satisfaction** | Overall Customer Satisfaction in Corporate Survey (% Satisfied) | 85 | 76 | 81 | 77 | 85 | - |
| **Operational Effectiveness**<br>**Continuous improvement in productivity and cost performance is achieved; and distributors deliver on system reliability and quality objectives.** | **Safety** | Recordable Incident Rate<br>(# of recordable injuries/illnesses per 200,000 hours worked) | 3.7 | 2.3 | 2.5 | 1.8 | 1.7 | ▲ |
| | **System Reliability** | T-SAIFI-S (Ave. # Sustained Interruptions per Delivery Point) | 0.60 | 0.61 | 0.57 | 0.60 | 0.59 | - |
| | | T-SAIFI-M (Ave. # Momentary Interruptions per Delivery Point) | 0.60 | 0.65 | 0.69 | 0.48 | 0.50 | ▲ |
| | | T-SAIDI (Ave. Minutes of Interruptions per Delivery Point) | 127.9 | 71.5 | 66.0 | 36.6 | 44.3 | ▲ |
| | | System Unavailability (%) | 0.50 | 0.48 | 0.37 | 0.48 | 0.66 | ▼ |
| | | Unsupplied Energy (minutes) | 21.6 | 14.0 | 20.9 | 12.2 | 11.8 | ▲ |
| | **Asset Management** | In-Service Capital Additions (% of OEB approved plan) | 95 | 75 | 90 | 106 | 85 | ▲ |
| | | CapEx as % of Budget | 78 | 81 | 73 | 90 | 106 | ▲ |
| | **Cost Control** | Total OM&A and Capital per Gross Fixed Asset Value (%) | 9.8 | 8.6 | 7.6 | 8.4 | 9.0 | ▲ |
| | | Sustainment Capital per Gross Fixed Asset Value (%) | 2.6 | 2.8 | 3.3 | 4.2 | 4.6 | Note 3 |
| | | OM&A per Gross Fixed Asset Value (%) | 3.4 | 3.0 | 2.7 | 2.7 | 2.9 | ▲ |
| **Public Policy Responsiveness**<br>**Transmitters deliver on obligations mandated by government.**<br>**(e.g. in legislation and in regulatory requirements imposed further to Ministerial directives to the Board)** | **Connection of Renewable Generation** | % on time completion of renewables connection impact assessments | 100 | 100 | 100 | 100 | 100 | - |
| | **Market Regulatory Compliance** | NERC/NPCC Reliability Standards Compliance | | | | | | |
| | | - Number of High Impact Violations (Note 4) | N/A | N/A | N/A | 20 | 2 | |
| | | - Number of Medium/Low Impact Violations (Note 4) | N/A | N/A | N/A | 5 | 10 | |
| | **Regional Infrastructure** | Regional Infrastructure Planning progress - % Deliverables met | N/A | N/A | N/A | 100 | 100 | |
| **Financial Performance**<br>**Financial viability is maintained; and savings from operational effectiveness are sustainable.** | **Financial Ratios** | Liquidity: Current Ratio (Current Assets/Current Liabilities) | 0.24 | 0.29 | 0.80 | 0.69 | 0.13 | |
| | | Leverage: Total Debt (includes short-term & long-term debt) to Equity Ratio | 1.27 | 1.22 | 1.10 | 1.16 | 1.39 | |
| | | Profitability: Regulatory Return on Equity — Deemed (included in rates) (%) | 9.66 | 9.42 | 8.93 | 9.36 | 9.30 | |
| | | Profitability: Regulatory Return on Equity — Achieved (%) | 10.95 | 12.41 | 13.22 | 13.12 | 10.93 | |

Note 1: Customer Satisfaction survey not done in 2011 and 2013.

Note 2: Results will be available in July 2016.

Note 3: In 2014 strategic decision made to increase sustainment capital.

Note 4: Results from 2011 to 2013 are excluded due to a lack of consistant data compared to 2014 and 2015.

**Legend:**
▲ up
▼ down
- flat

# Benchmarking

In the Hydro One Networks Inc. 2015-2016 Transmission Rate Application Settlement Agreement in proceeding EB-2014-0140, Hydro One agreed to complete an independent Transmission Cost Benchmarking Study to be filed with Hydro One's next Transmission Rates application.

In the Settlement Agreement, Hydro One agreed stakeholders would:

- be consulted regarding the Terms of Reference (TOR) for the request for proposal;
- have an opportunity to review the successful proponent's Study proposal to help ensure it meets the requirements of the TOR; and
- be provided with an opportunity to review and provide comments on the preliminary results prior to finalizing the Study.

Consistent with the Settlement Agreement, Hydro One conducted three stakeholder sessions from February 2015 to January 2016. All stakeholder sessions were held in accordance with the principles, objectives, participation format, and consultation format and Hydro One retained the services of a professional facilitator to moderate and document the discussion.

There were eight main best practice recommendations in the Transmission Total Cost Benchmarking Study. These recommendations were reviewed as part of the business planning process and their associated impacts are included below.

| Best Practice Recommendation | Impact | Actions |
|---|---|---|
| Reassess and adjust performance indicators across all levels of the organization | Reduce costs, improve performance, build culture of continuous improvement | Hydro One reviewed the applications of other utilities and has leveraged best practices in terms of KPI selection. Significant focus was placed on selecting KPIs which appropriately measure productivity in the deployment of capital and execution of operations, maintenance and administrative activities, in order to evaluate cost efficiency progress and the delivery of increasing customer value. |
| | | As part of the scorecard development process, Hydro One took the opportunity to re-evaluate the use of KPIs in measuring performance across the organization and to develop more robust KPIs to facilitate performance management. Hydro One will continue to develop a performance management system in which KPIs for the lines of business are aligned with the OEB scorecard and business objectives, to actively drive cost reductions and productivity improvement. |
| Continue building on | Reduced | The portion of the engineering portfolio completed |

| Best Practice Recommendation | Impact | Actions |
|---|---|---|
| use of external resources for engineering, to create a pipeline of construction-ready projects | underspend, improved schedule performance | externally has continued to grow over recent years, from roughly 14% in 2012 to roughly 25% in 2015. This has assisted in advancing engineering deliverables earlier in the project lifecycle to create an intentional backlog of construction-ready projects. |
| Manage the contingency budgets at the portfolio / corporate level | Frees funds for other priority investment opportunities | In assessing this recommendation, Hydro One is developing the tools necessary to analyze and manage contingency dollars at a portfolio level. Senior management discretion will determine the size of the contingency pool available to line managers and the establishment of a management reserve to enable strategic decision making. |
| Target a corrective maintenance spend that is ~25% of total corrective and preventative | Eventually anticipate better (lower cost) results if more is preventive than corrective. | Hydro One is aware of Transmission Total Cost Benchmarking Study recommendation with respect to ratio of corrective maintenance to total maintenance. At present time we are going through a process of rationalizing this target considering our system design philosophy and demographics of our asset base (which has been noted in the quoted Benchmarking Study).<br><br>However, Hydro One is actively working on decreasing its corrective maintenance spend in stations. Initiatives include:<br><br>• A new integrated planning and scheduling tool will facilitate more preventative work being completed in a timely manner to reduce the amount of corrective maintenance;<br>• A decrease in corrective maintenance will also be realized with the replacement of assets in poor condition through the sustainment capital program;<br>• Asset Management staff are working towards identifying the criteria for opting to replace equipment that has high maintenance costs through a more in-depth detailed analysis; |
| | | Investment in a new integrated planning and scheduling tool will also assist in preventative maintenance being performed in a timely manner which should also reduce corrective maintenance costs. |
| Work to reduce administrative costs | Eventually identify opportunities for cost reduction | Hydro One is currently investigating areas of opportunity to reduce administrative costs. The Procurement initiatives are part of this strategy along |

| Best Practice Recommendation | Impact | Actions |
|---|---|---|
| | | with IT initiatives to automate some reporting. Hydro One is also reviewing legacy processes of storing and backing up files and documents. |
| Allocate project management resources to improve effectiveness | Improve project cost and schedule performance | Several organizational re-alignments have occurred to improve lateral integration throughout the capital project process, providing increased visibility for the management team to identify potential efficiencies. Examples include: Engineering resources have been consolidated into a single division; reallocation of Project Management resources to provide optimal support for projects; and Project Managers and Project Schedulers have been re-assigned to projects based on geographical zones rather than project magnitude and complexity. |
| Formalize a rolling two year capital budget and project portfolio and reporting framework, including projected earned value analysis | Provide the flexibility needed to reschedule projects within a two-year rolling window; improves ability to achieve planned annual investments | As recommended in the Transmission Total Cost Benchmarking Study, Hydro One is working to formalise a rolling two-year capital budget and project portfolio with a reporting framework that includes parameters, authorizations and associated key performance indicators to promote continuous improvement. |
| Refresh formal driver training program | Reinforces driver safety and provides employees with focused behind-the-wheel training | Defensive driving and driver safety program training programs are being revised in 2016 and delivered to staff. |

# Revenue Requirement

## Revenue Requirement ($ Millions)

| Comparison of Rates Revenue Requirement | Board - approved 2016 | 2017 | 2018 |
|---|---|---|---|
| OM&A | 436.7 | 412.7 | 409.3 |
| Depreciation | 397.3 | 435.7 | 470.7 |
| Income Taxes | 72.2 | 88.1 | 96.2 |
| Cost of Capital | 661.5 | 676.1 | 714.9 |
| **Total Revenue Requirement** | **1,567.6** | **1,612.6** | **1,691.1** |
| Deduct External Revenues | (32.2) | (28.2) | (28.5) |
| **Revenue Requirement less External Revenues** | **1,535.4** | **1,584.4** | **1,662.6** |
| Deduct Export Revenue Credit | (31.7) | (39.2) | (40.1) |
| Deduct Regulatory Accounts Disposition | (36.1) | (47.8) | (47.8) |
| Add Low Voltage Switch Gear | 13.0 | 14.0 | 14.7 |
| **Rates Revenue Requirement** | **1,480.7** | **1,511.4** | **1,589.4** |
| **Rate Increase Required, excl. Load** | | **2.1%** | **5.2%** |
| Estimated Load Impact | | 2.1% | 0.0% |
| **Rate Increase Required** | | **4.2%** | **5.2%** |

The increase in total rates revenue requirement is largely attributable to the impact of rate base growth, as reflected in the increase in depreciation and the return on capital. Higher income taxes and lower external revenues also contribute to the difference. These are partially offset by a lower cost of debt, lower OM&A costs, increased regulatory account disposition, and a higher export revenue credit.

## Load Forecast Summary

The table below sets out Hydro One's 2017-2018 transmission system load forecast, which includes the impact of conservation and demand management and embedded generation.

**Hydro One's 2017-2018 Load Forecast (12-Month Average Peak in MW)**

| | Ontario Demand | Hydro One Rate Categories (Charge Determinants) | | |
|---|---|---|---|---|
| | | Network Connection | Line Connection | Transformation Connection |
| **2017** | 20,373 | 20,405 | 19,741 | 16,872 |
| **2018** | 20,378 | 20,410 | 19,746 | 16,876 |
| **Comparison to Board-approved Forecast for 2016** | | | | |
| **2017** | -2.6% | -1.9% | -2.1% | -2.6% |
| **2018** | -2.6% | -1.9% | -2.1% | -2.6% |

The forecast was developed using the econometric and end-use approaches. The forecast base year was corrected for abnormal weather conditions, and growth rates were applied to the normalized base year value. Consistent with the Independent Electricity System Operator's approach, normal weather data is based on the average weather conditions experienced over the last 31 years.

# Key Financial Results

Following is a summary of principal financial outcomes for Transmission for 2017-2021.

| Key Financial Results | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| Revenue requirement | $ 1,613 | $ 1,691 | $ 1,733 | $ 1,801 | $ 1,905 |
| Net income | $ 413 | $ 433 | $ 455 | $ 483 | $ 516 |
| Achieved ROE | 8.6% | 8.6% | 8.8% | 8.8% | 8.8% |
| Allowed regulatory ROE | 8.8% | 8.8% | 8.8% | 8.8% | 8.8% |
| OM&A | $ 413 | $ 410 | $ 419 | $ 420 | $ 419 |
| Capital expenditures | $ 1,076 | $ 1,122 | $ 1,208 | $ 1,269 | $ 1,475 |
| Total rate base | $ 10,554 | $ 11,226 | $ 11,864 | $ 12,667 | $ 13,598 |
| Total fixed rate debt to rate base | 56.0% | 56.0% | 56.0% | 56.0% | 56.0% |

Required revenue for Transmission is consistent 2017 and 2018 rate application. It is forecasted that the Transmission business will achieve the allowed ROE with the exception of 2017 and 2018, where industrial conservation initiatives announces post filing will have a negative impact to anticipated earnings. OM&A expenditures are in line with the evidentiary record, including amounts not requested through rates as described in the technical conference hearing.