MINISTRY OF
ENERGY

Ontario Power Generation 2018-2021 Business Plan

March 2018

Ministry Request

- The Ministry of ENERGY is requesting that Treasury Board/Management Board of Cabinet (TB/MBC):

    1. NOTE the receipt of OPG's 2018-2021 Business Plan.

    2. NOTE that the Minister of Energy will provide concurrence with OPG's Business Plan.

Purpose

- As required by the Memorandum of Agreement (MOA) between Ontario Power Generation and the Minister of Energy, OPG provided its Business Plan for 2018-2021 to the Ministry of Energy on February 12, 2018 for concurrence.
- The Minister's concurrence requires presentation of OPG's business plan before TB/MBC.
- Ministry of Energy staff have reviewed this plan in the context of key government priorities and recommend that TB provide approval.
- The Ministry of Energy review and analysis of OPG's business plan is supported by the Corporate and Electricity Finance Division of the Ontario Financing Authority (OFA).
- The following presentation identifies the key aspects of the business plan and how they interrelate.

Overview

Business Plan Elements

- The 2018-2021 Business Plan covers an important time for OPG for several reasons:

- Rate certainty over planning horizon
- Darlington Refurb

  Pickering Extension
- New Role as FHP Financial Services Manager
- Initiating new measures to increase efficiency
- Seeking new business lines to grow revenue

Business Plan Risks

- Achieving financial performance targets is contingent on positive outcomes in a number of areas:

- Timely Completion of Capital Projects
- Competition for talent;

  Executive compensation
- CNSC licensing outcome for Pickering extension
- Outcomes of new efficiency measures
- Results of upcoming collective bargaining

OPG's ability to manage these elements & risks will determine if it is improves return to the Province and limits ratepayer costs.

Elements of Business Plan

1. Electricity Production
- ❖ Higher than approved production improves financial performance through increased revenue.
- ❖ Affected by capital projects (e.g., refurb) and Pickering Extension.

2. Production Costs
- ❖ Cost targets fluctuate due to outages, water conditions and efficiency initiatives.
- ❖ Pickering's cost performance expected to improve relative to previous plan.

3. Capital Projects
- ❖ Timely completion impacts production and project costs
- ❖ Darlington Refurbishment on track- Unit 2 online in 2020.

4. Operating Costs & Compensation
- ❖ Strategies to increase efficiencies and savings improve financial performance
- ❖ Subject to collective bargaining that will take place in 2018.

5. Fair Hydro Plan
- Adds ~$6 billion in debt by 2021; Provincial equity doubles by end of plan.
- Generates net income for OPG ($465 million over 4 years)

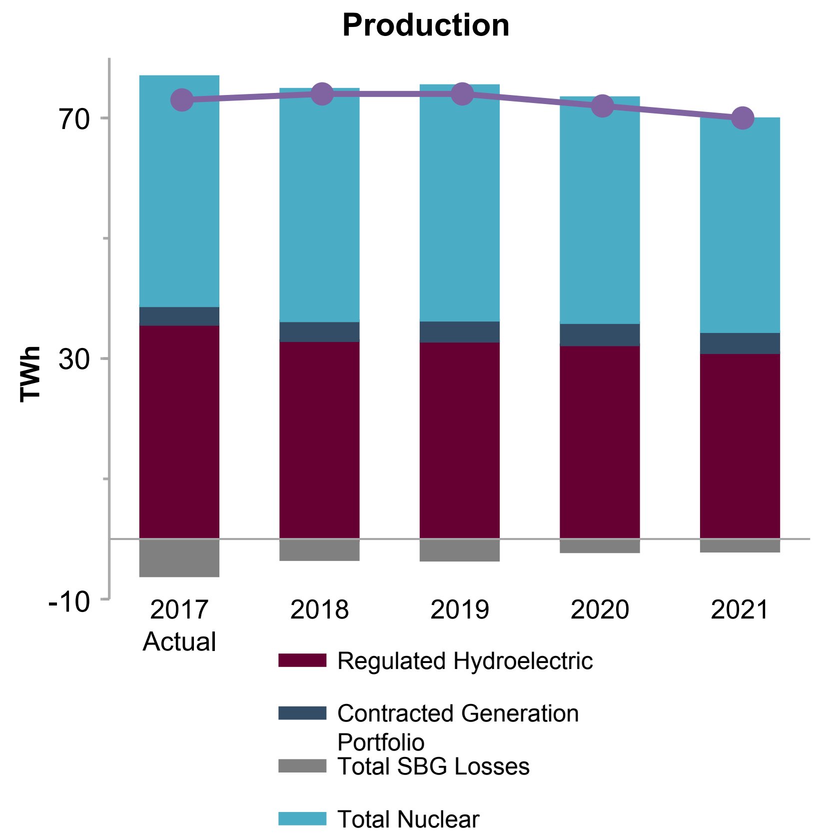
6. Business Development
- Increase revenue through modest hydro expansion, solar, nuclear services & low-carbon technology.
- Long-term need for new business lines outside of province

7. Financial Performance
- ❖ Performance impacts Provincial bottom line upon consolidation, adjustments required.
- ❖ Total Shareholder Return expected to improve over previous plans.

Electricity Production

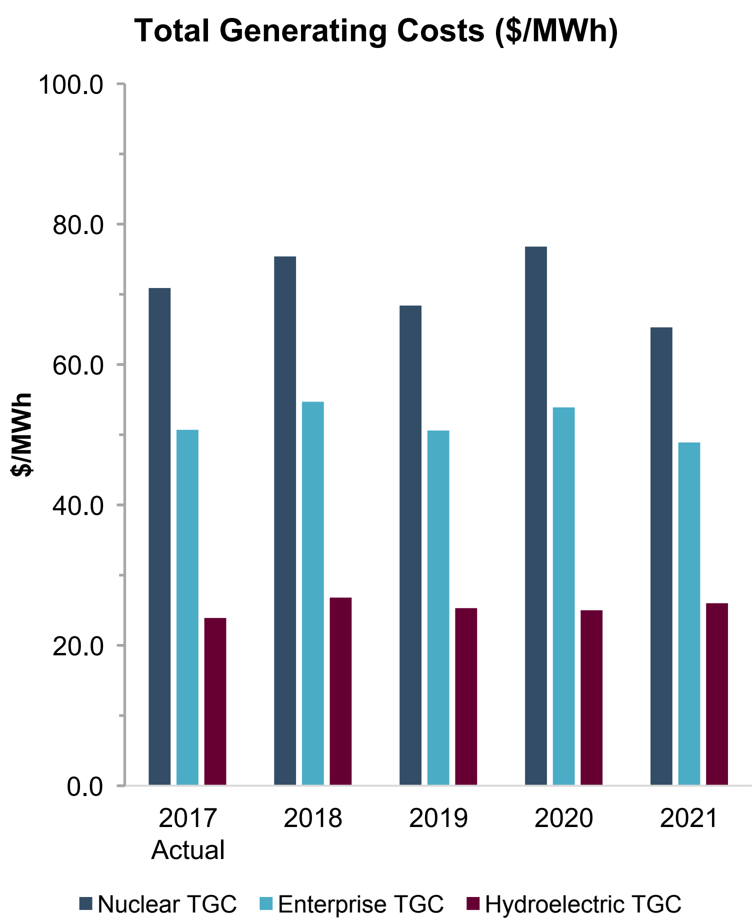
- ❖ Production increases improve financial performance through increased revenue.
- ❖ Forecasts affected by capital projects (e.g., Darlington Refurbishment); Pickering extension and efficiency strategies.

- The plan forecasts a total increase of 5.4 TWh compared to the last business plan.
- Increases are driven by higher production at Pickering Generating Station.
  - OPG will increase time between routine outages, allowing units to run longer.
  - Other reliability improvements reduce Pickering's 'forced loss rate'- (i.e., losses from unplanned shutdowns.)
- The forecasts assume CNSC will grant Pickering license extension to 2024.
- Production decreases in 2020 when Darlington Unit 2 returns to service and Unit 3 is taken offline. There is also a lengthy planned outage at Pickering.
- The current Thunder Bay biomass energy supply agreement expires in January 2020. The station may participate in a future capacity auction



Cost of Production

- Cost targets fluctuate due to outages, water conditions and efficiency initiatives.
- Pickering's cost performance expected to improve relative to previous plan.



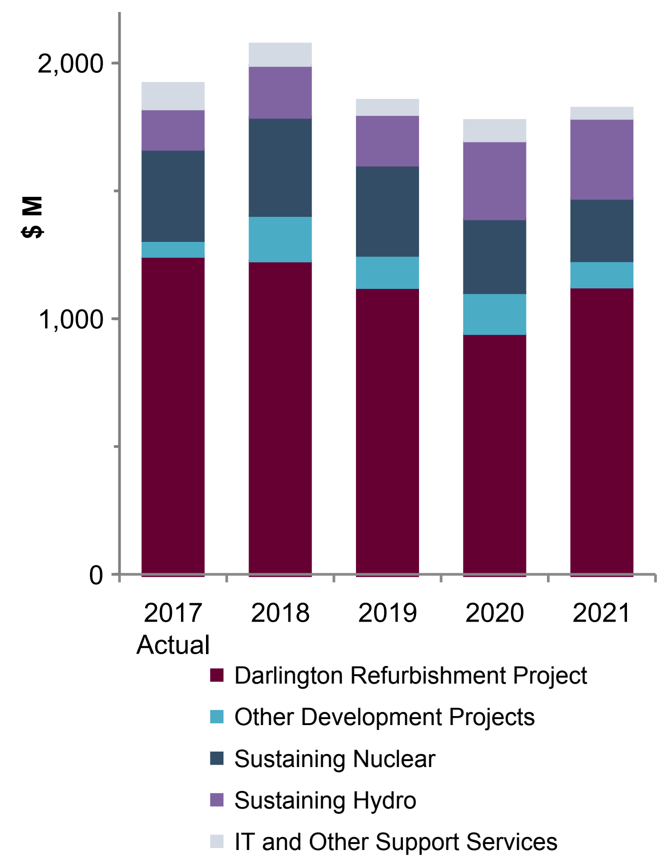
- Total Generating Cost (TGC) per MWh is OPG's measure of operational cost effectiveness.
  - TGC is a performance metric for executive compensation
  - Darlington Generating Station's TGC performance will be how OPG measures the long-term success of its OPG25 restructuring initiative.
- TGC targets fluctuate due to nuclear outages, efficiency initiatives and surplus-baseload generation adjustments due to high water levels.
- The production and cost forecasts are consistent with its OEB rate application. The set rates through 2021 provide planning stability.
  - If OPG exceeds production forecasts, it generates additional revenue. It must absorb costs if production is lower than forecast.

Capital Projects

- ❖ Timely completion impacts production output and costs.
- ❖ Costs deemed imprudent for regulated projects negatively impact financial performance

- The plan includes $4.4 billion in capital expenditures for the Darlington Refurbishment project (DRP). Unit 2 is planned for return to service in early 2020.
- The plan includes $105 million in capital expenditures for the Heavy Water Storage(D2O) project, an enabling sub-project for the DRP that previously experienced delays and cost overruns (note: overall refurbishment has remained within budget and schedule).
- In its rate decision, OEB confirmed it will take a holistic view to assessing DRP costs, evaluating overall project performance against approved budget rather than an individual sub-project basis.
- Other capital expenditures include:
  - Ranney Falls re-development (2019 completion)
  - Nanticoke Solar (2019 completion)
  - Beck generating station upgrades (2022 completion)
  - Other sustaining capital (Hydro unit overhauls; equipment upgrades)
- The plan accelerates capital expenditures for OPG's digital transformation in support of improved efficiency.

Total Capital Expenditures



Operating Costs (OM&A)

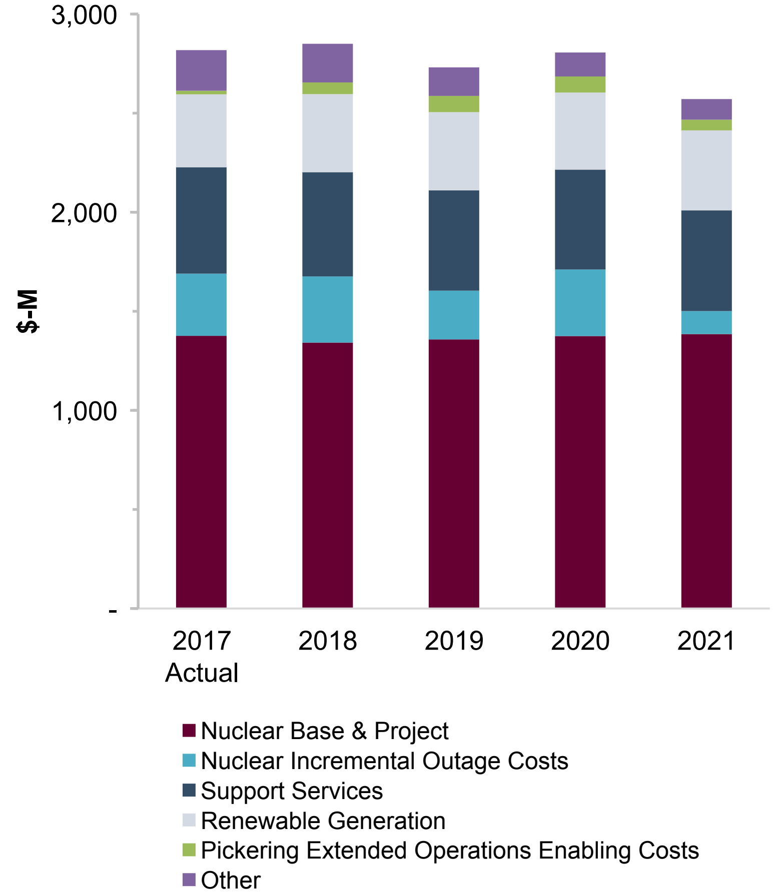
- ❖ Incremental efficiencies/savings improve financial performance
- ❖ OEB Decision reduces OM&A / compensation

- The plan targets a total decrease in OM&A expenditures of $600 million over four years. Annual spending decreases by $280 million in 2021 compared to 2018.
- The reductions will be achieved through new processes, technology upgrades and reducing nuclear plant outage frequencies.

OPG25 Initiative

- OPG25 is a plan to restructure OPG due to the closure of Pickering in 2024.
- The objective of OPG25 is to ensure operations remain cost-effective and that OPG is positioned for growth.
- The long-term target for the plan is having Darlington operate in the top-quartile for total generating costs.
- The initiative includes a staffing transition work stream, making interaction with unions critical.
- The 2018-21 business plan's cost reductions will help move OPG towards achieving the total target reductions post Pickering operations.

OM&A Expenses from Operations



Compensation

Executive Compensation

- ❖ Executive compensation program implemented in January 2017
- ❖ Compensation program benchmarks against comparator organizations

- OPG implemented an Executive Compensation Program in 2017 compliant with *O.Reg 304/16.*
- The program is designed to provide compensation that is at the 50th percentile of the market and focused on at-risk, performance based pay.
- In 2017, TB/MBC approved exemptions allowing OPG to compare against private sector and international companies.
- Overall compensation for all management group staff increases at 2% based on assumed inflation each year in the plan.

2018-2020 executive medium-term incentive performance metrics

- **Return on Equity**
- **Total Generating Cost**
- **Darlington Refurbishment Major Milestones**

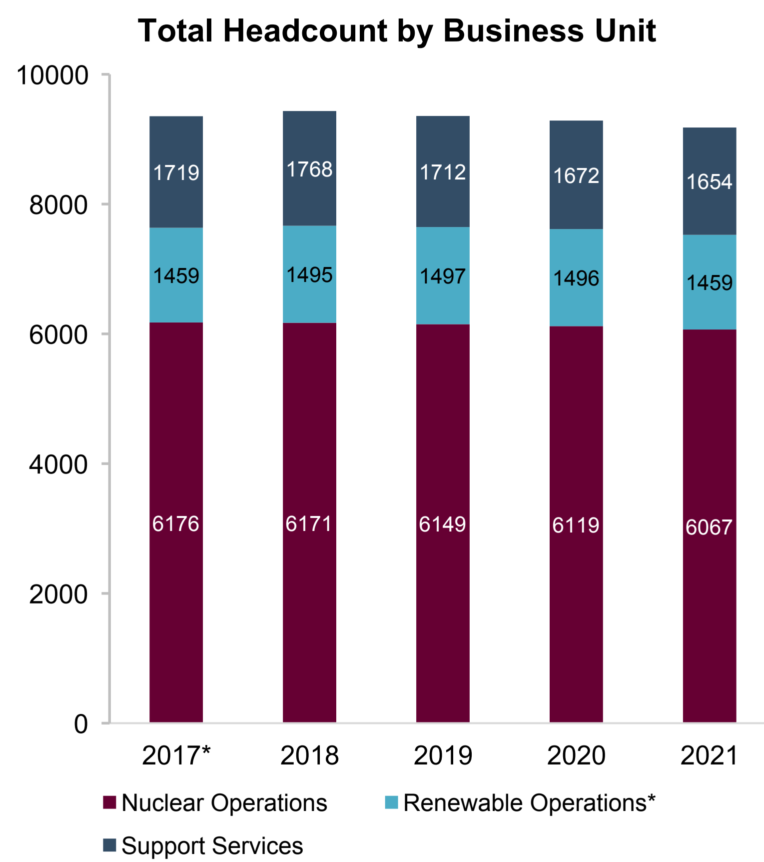
- Long-term incentives are based on corporate scorecard, a combination of measures on
  - Social License: Total Recordable Injury Frequency; no significant events impacting OPG's reputation
  - Financial Strength: Earnings Before Tax excluding the Nuclear Waste Management segment and Fair Hydro Plan; Operating OM&A Expenses
  - Operational Excellence: Total OPG production adjusted for Surplus Baseload Generation (SBG)
  - Project Excellence: DRP costs and schedule; Nanticoke solar and Ranney Falls redevelopment milestones; total in-service capital

Compensation

Collective Bargaining

- ❖ Collective agreements expire in 2018.
- ❖ Results of collective bargaining will impact efficiency and cost-optimization initiatives.

- Collective bargaining impacts OPG's ability to reduce OM&A. Most employees belong to either the Power Workers Union (PWU) or Society of Energy Professionals (Society).
- Collective agreements with Society & PWU expire in 2018. Negotiated outcomes will impact OPG's ability to meet the plan's savings forecasts. Through collective bargaining, OPG hopes to:
  - Manage wage increases
  - Reduce future workforce costs including pension and benefits
  - Ensure future staff capability
  - Reduce downsizing costs resulting from Pickering closure*
- The plan identifies an accounting risk related to Pickering downsizing costs materializing prior to the next OEB rate application. This would affect net income in the year the costs were recognized.

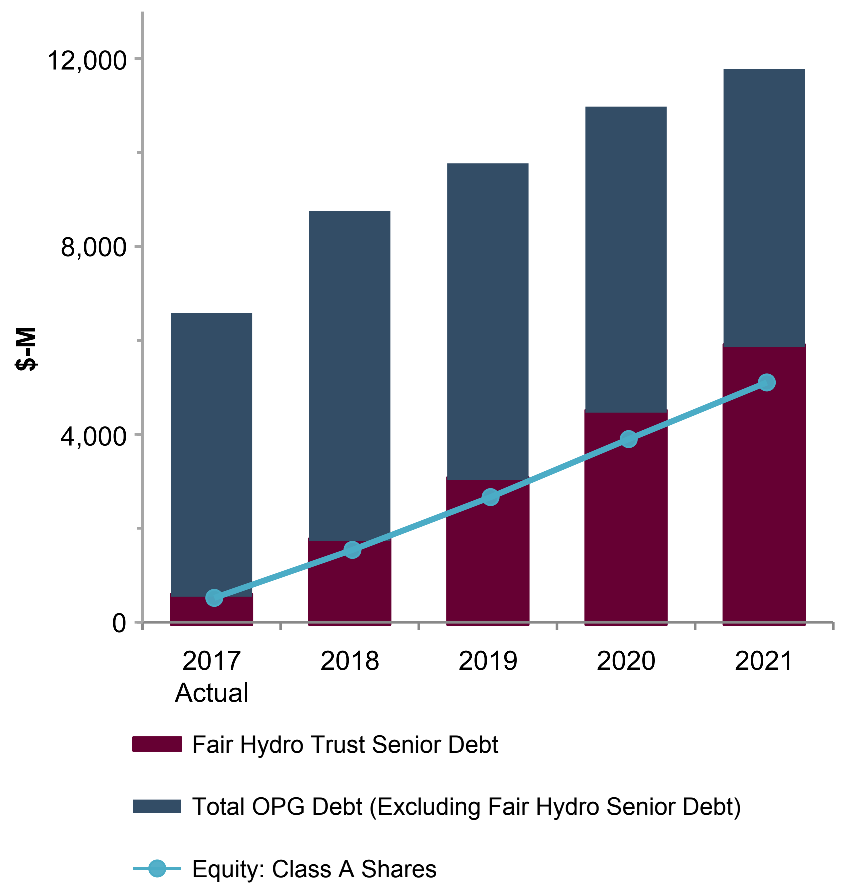


Fair Hydro Plan

- ❖ FHP is managing the deferral of a portion of Global Adjustment (GA) costs.
- ❖ OPG earns revenue and incurs debt; Provincial equity in OPG doubles by 2021.
- ❖ While a new source of revenue for OPG, revenue is paid by Ontario ratepayers.

- In 2017, OPG began its role as OFHP Financial Services Manager (FSM).
- The Fair Hydro Trust contributes to increasing amounts of net income, growing from $10 million in 2018 to $225 million in 2021.
  - This reflects the spread earned on the equity contributions from the Province to fund 44% of OPG's financing of the Trust.
- As the Province provides more funding to facilitate asset purchases in exchange for shares in the company, the government's equity increases, lowering ROE.
- The Fair Hydro Trust external senior debt is projected to increase to $5.9 billion by 2021.

Total Consolidated Debt and Equity



Business Development

- ❖ OPG hopes to grow its business and increase revenue through modest hydro expansion, solar, nuclear services & low-carbon technology.
- ❖ Long-term need for new business lines outside of province.

- OPG hopes to grow its business by investing in commercial innovation, project development and asset acquisition.
- The business plan references organic and non-organic investments:
  - Organic investments are in-house project development of generation and energy products in Ontario. The plan allocates incremental capital funding of ~$200 million for organic investments.
  - Non-organic investments are new opportunities in Ontario. These investments are not included in the plan, however, OPG forecasts up to $3 billion would be available for such investments.

Business Development investment categories:

Innovation & Services
OPG will consider investing in near commercial emerging technologies

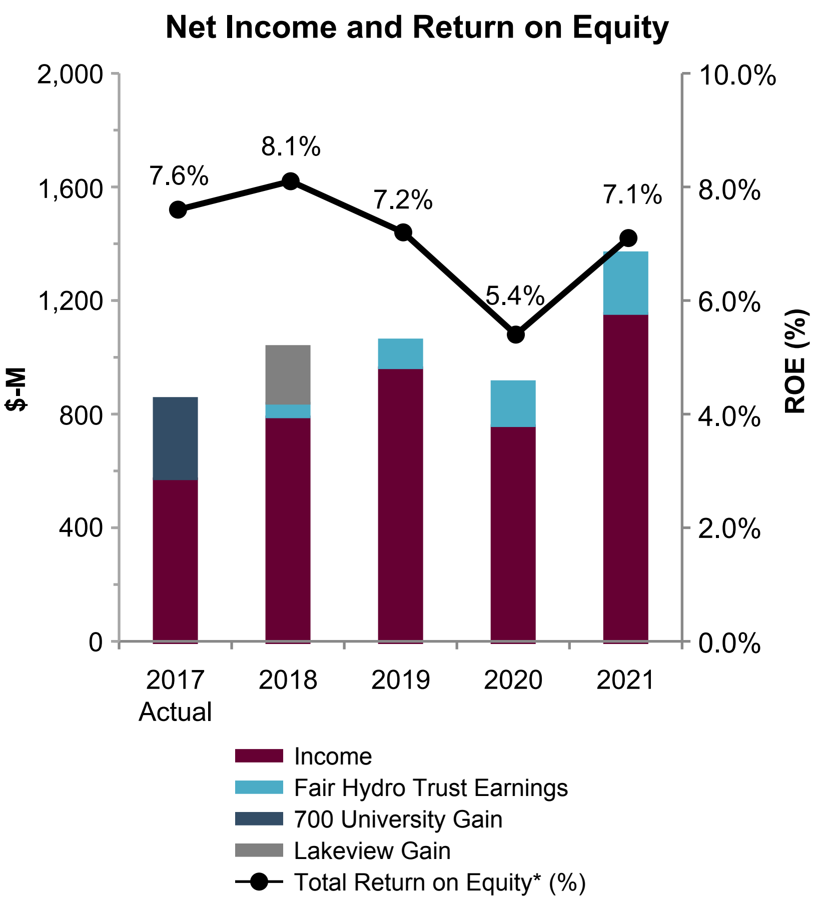
Acquisition and Development
OPG will develop assets and consider acquisitions in Ontario and other North American markets

- As the Shareholder, the Province may need to provide approvals for certain investments (e.g., development and acquisitions).
  - The Ministry of Energy plans to develop a policy framework to guide these approvals.

Financial Performance

Business Plan Results as presented by OPG

- ❖ Performance impacts provincial bottom line upon consolidation.
- ❖ OEB Decision provides rate stability over the planning period.



- OPG shareholder return (Net income + PILS) are consolidated to the Province.
- The plan reflects the Ontario Energy Board's (OEB) December 2017 Decision on OPG's regulated rates through 2021, providing stability in the planning period.
- Return on Equity (excluding impact of Fair Hydro Trust) increases from 5.3% in 2017 to 8.1% in 2021. ROE is a performance metric for executive compensation.
- Should OPG fail to meet targets for production, operating cost reductions or capital expenditures, net income improvements may not materialize.
- Net income in 2017/18 is impacted by one-time asset sales (Head Office and Lakeview), which will be credited to the Trillium Trust.

Financial Performance

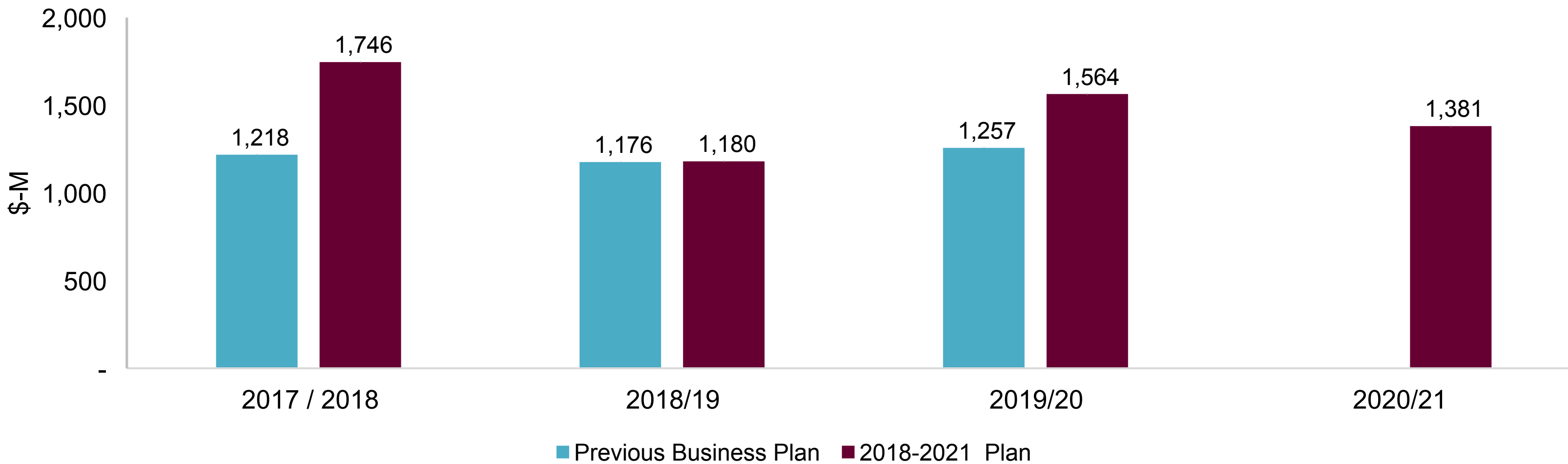
2018-21 Business Plan compared to previous plan

- ❖ Improved net income and shareholder return over previous plans.
- ❖ Projections impacted by efficiency measures and one-time real estate gains.

- The plan's total shareholder return is higher than last year's 2017-19 business plan.
- The financial performance reflects increased efficiency leading to revenue increases from higher production and lower operating costs
- The plan assumes the sale of Lakeview will be complete in 2017/18, resulting in $200M in net income and $70 million in PILS. The sale was not included in last year's plan.
  - OPG has a purchase agreement for Lakeview site, anticipated to close in March, 2018.

Total Shareholder Return

2018-21 BP vs. Previous Business Plan



Financial Performance

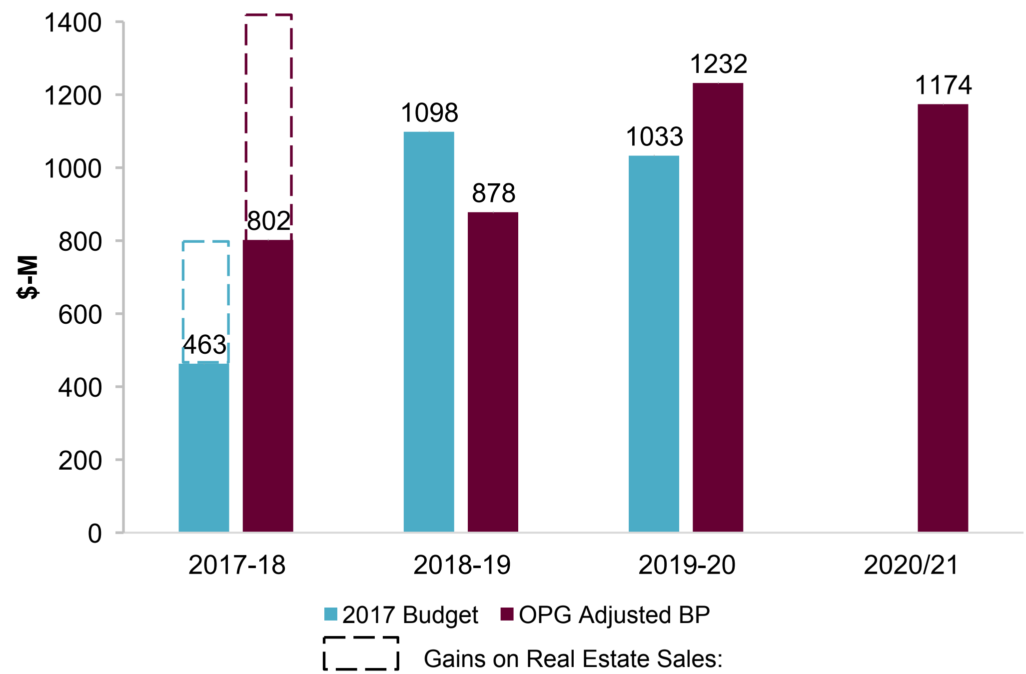
Fiscal Plan Impacts upon Consolidation into Province's financials

- ❖ Fiscal planning process requires adjustments to OPG's forecasts.
- ❖ Return to shareholder in 2018/19 lower than forecast in Budget 2017 due to adjustments.

- The Ministry of Finance adjusts OPG's reported net income when preparing the fiscal plan:
  - **IFRS:** OPG uses US GAAP accounting standards for financial reporting. The Province consolidates OPG's results using International Financial Reporting Standards (IFRS).
  - **Real Estate:** Gains removed from OPG income and reported on "Sales and Rentals" line.
  - **Fair Hydro Income:** OPG's Financial Services Manger revenue added to net income.

Total Shareholder Return

Adjusted Business Plan vs 2017 Budget



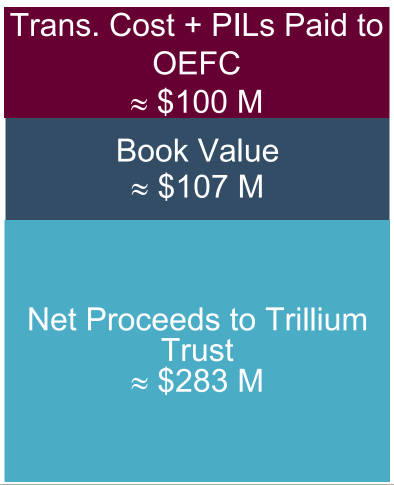
OPG BP adjusted to match method used for Budget 2017: 1) IFRS adjusted 2) Real estate gains removed from net income and PILS 3) OFHP income included. 2017 Budget includes real estate gains from Head Office. Adjusted Business Plan includes Head Office and Lakeview.

Financial Performance

Contribution to the Trillium Trust

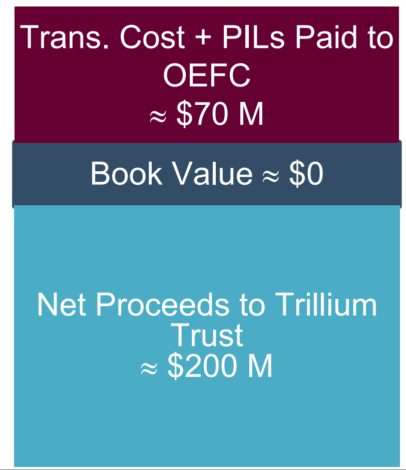
- Net proceeds from the sale of OPG's its Head Office (700 University) and Lakeview site are paid to the CRF and credited to the Trillium Trust.
- The Province will receive a dividend payment from OPG for the gains on these sales.
- The Head Office sale closed in April 2017. Lakeview expected to close in 2018.

<u>Head Office:</u> Designated Proceeds to Trillium Trust from OPG



- Shareholder Declaration & Resolution received: December 2015
- Sale closed: April 2017
- Amount credited to Trillium Trust: Mar 2018

<u>Lakeview:</u> Estimated Proceeds to Trillium Trust from OPG



- Shareholder Declaration & Resolution received: June 2016
- Expected sale: March 2018
- Regulation required to prescribe amounts to Trillium trust

Considerations

- Based on these materials, ENERGY is seeking approval to provide OPG with business plan concurrence.

- At this point OPG has rate stability through the planning period and has demonstrated success in key projects including Darlington refurbishment. The plan is in line with government expectations on reducing costs in order to drive value for Ontario ratepayers and the Province, as Shareholder.

- OPG identified risks that the Ministry will continue to monitor. These include
  - Meeting efficiency targets for cost-savings and production.
  - Successful collective bargaining negotiations with PWU and Society; and
  - Completion of capital projects on budget and schedule

- OPG will continue to seek new business opportunities within Ontario and other jurisdictions. OPG will seek comfort from the Province for any new acquisitions.

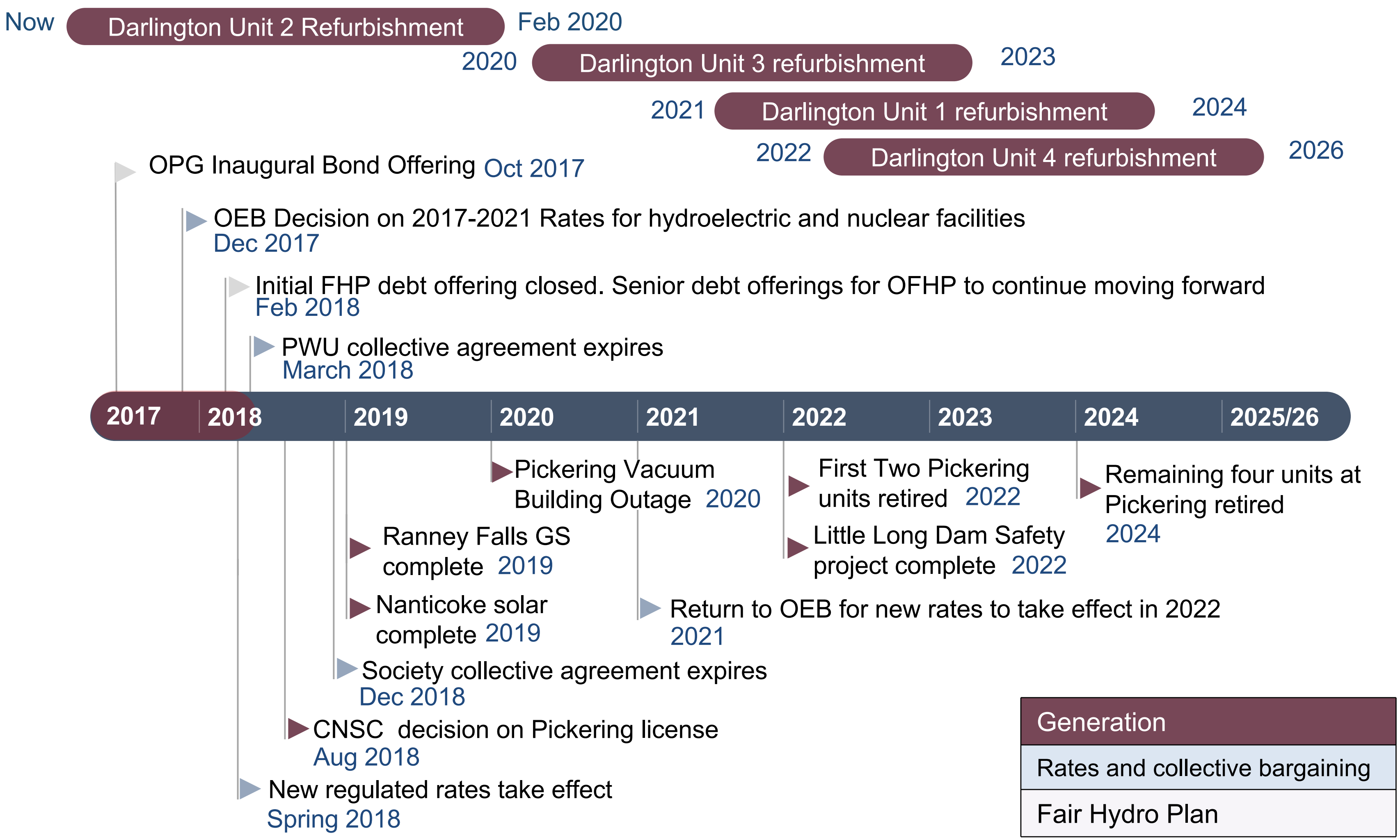
  - The Ministry of Energy plans to develop a policy framework to guide these approvals.

- OPG will consider investing in near-commercial emerging technologies, acquisitions and development.

Appendix

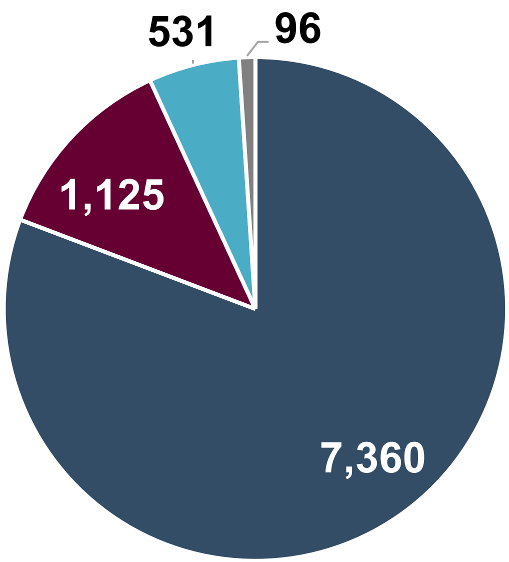
Timeline

- Outcomes from the Business Plan are impacted by the following events:



Company Profile

2017 Average Full-Time Employees



Total: 9,111

- Regulated – Nuclear Generation 1
- Regulated – Hydroelectric
- Contracted Generation Portfolio
- Services, Trading, and Other Non-Generation 2

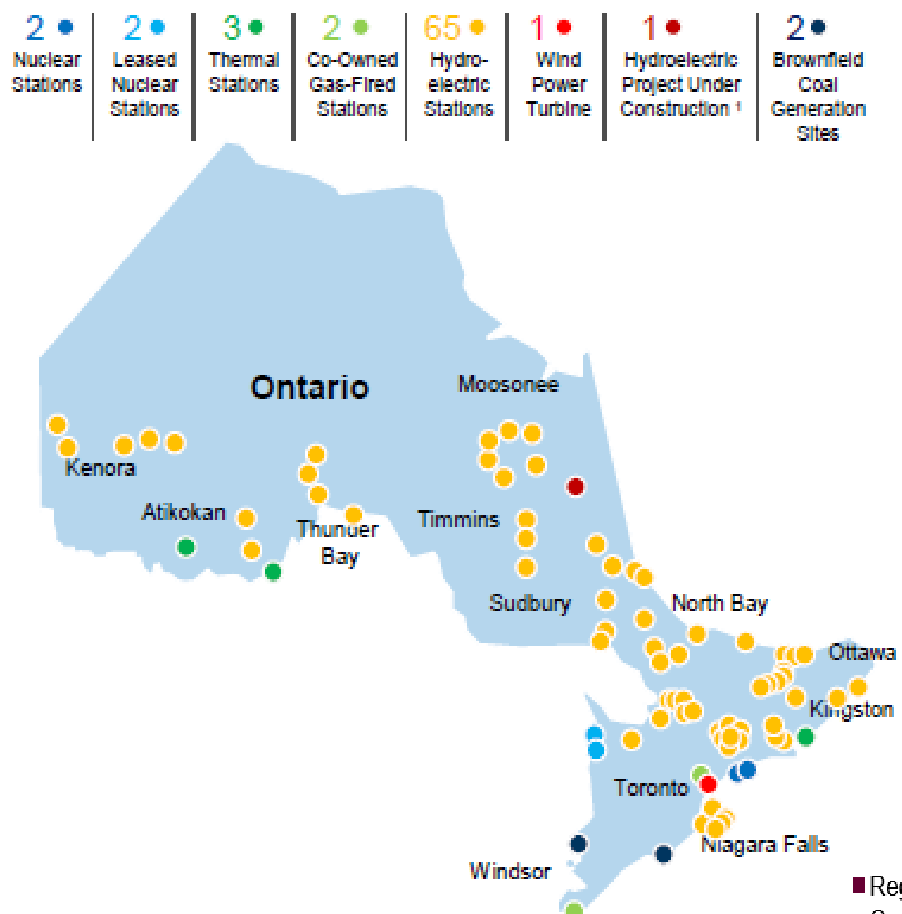
- Majority of OPG's employees are represented by one of two unions:

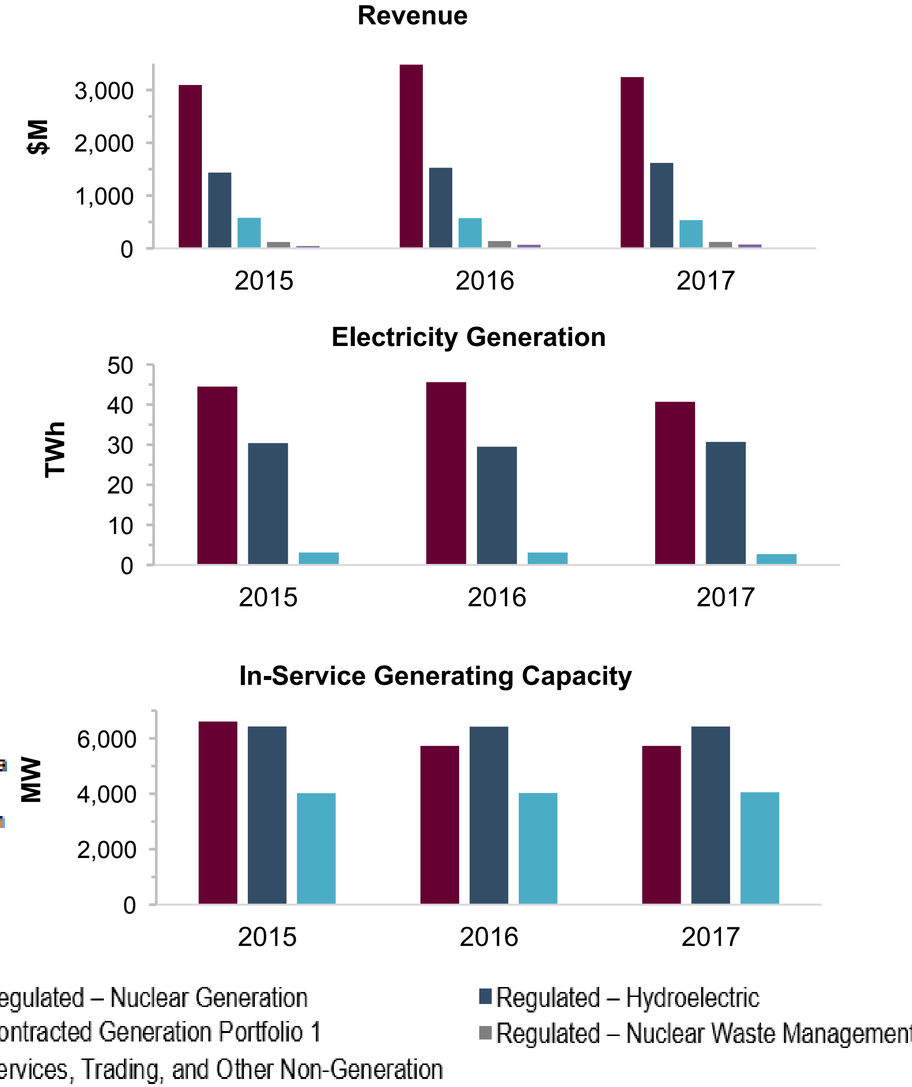
    1. The Power Workers' Union (PWU); and
    2. The Society.

- The PWU includes most workers below the level of first line manager
- The Society includes supervisors, professional engineers, scientists and other professionals.
- Construction work is performed through 19 craft unions.

Company Profile

Map of OPG Generating Stations:





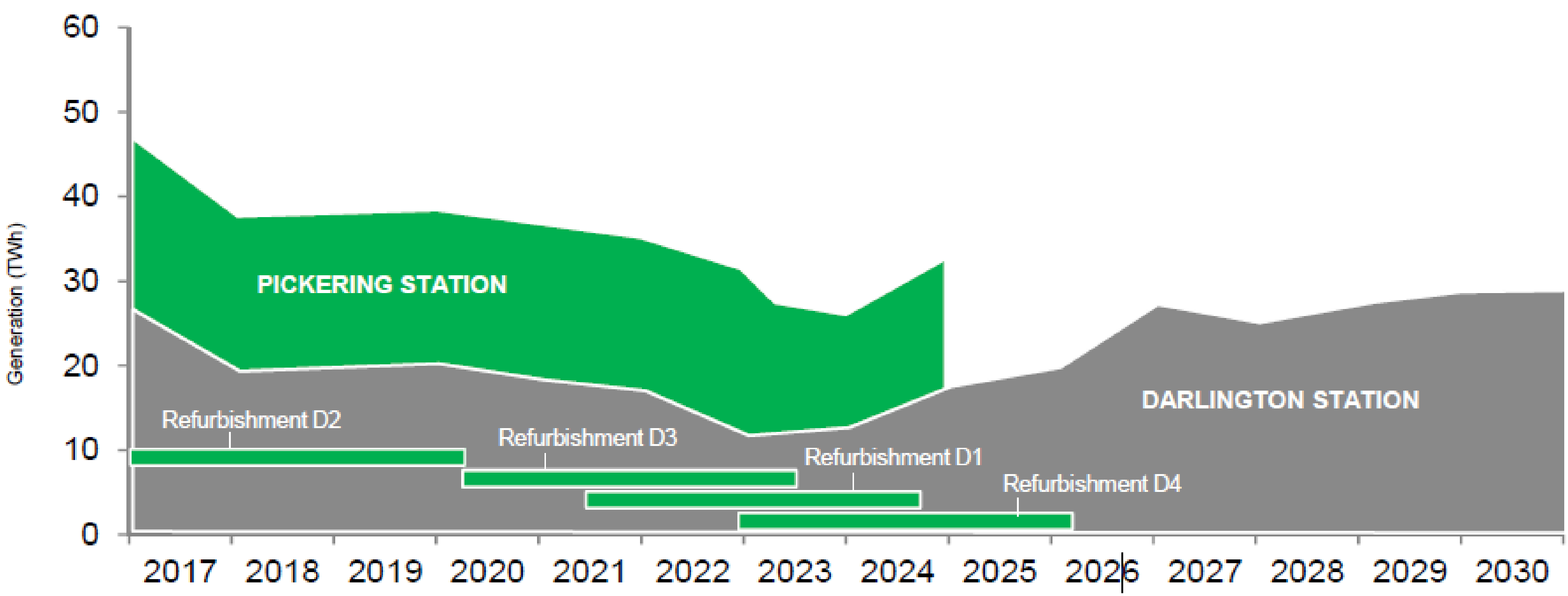
Key Projects: Nuclear

1. Pickering Extension

- OPG is continuing work to extend operations of the Pickering GS to 2024. It is currently licensed to operate to 2020.
- OPG has applied for a license renewal from the CNSC. The ruling is expected in August 2018.

2. Darlington Refurbishment

- OPG is refurbishing the Darlington Nuclear station to extend the operating life of the station by 30 years.
- Status: tracking on schedule and budget.
- Total Budget: $12.8 billion.



Source: OPG Initial Public Debt Program, 2017

Key Projects: Renewables

Biomass

1. **Atikokan**
   - Capacity: 205 MW
   - Converted from coal in 2014
   - Capex: ~$170M
2. **Thunder Bay**
   - Capacity: 153 MW
   - Converted from coal in 2014

Indigenous Relations

OPG's corporate governance includes an Indigenous Relations policy to help build and develop mutually beneficial working relationships with Indigenous communities proximate to the Company's present and future operations.

Renewables

Hydroelectric

1. **Peter Sutherland Sr.**
   - Capacity: 28 MW
   - Completed: March 2017
   - Capex: <$300M
2. **Lower Mattagami**
   - Capacity: 438 MW
   - Completed: 2014
   - Capex: $2.5BN

Solar

1. **Nanticoke Solar**

Project partnership between OPG and a subsidiary of the Six Nations of Grand River Development Corporation to build the new facility.

- Capacity: 44 MW
- Commenced: Q4 2017
- Expected completion: 2019

Role of OFHP Financial Services Manager

- In June 2017, the Province enacted the *Ontario Fair Hydro Plan Act, 2017* in order to ensure the costs and benefits associated with the Province's clean energy initiatives are allocated fairly between present and future electricity consumers.
    - The policy goals of the Act are being achieved through the refinancing of a portion of the Global Adjustment (GA).
    - OPG was appointed Financial Services Manager (FSM) under the Act.

- OPG's duties as FSM include:
    - Establishing one or more financing entities to incur funding obligations. OPG established the Fair Hydro Trust in 2017.
    - Preparing a financing plan to evaluate how and when funding obligations should be incurred.
    - Administering investment assets purchased from IESO
    - Determining the monthly clean energy adjustment for each reference period
    - Establishing and charging fees to recover costs, expenditures and earn a return
    - Seeking best available terms for incurrence of a funding obligation
    - Fulfilling various reporting requirements

Board of directors

- OPG's Board of Directors is made up of 14 individuals. Each Director holds office until he or she resigns or a successor is elected or appointed:

Director	Role	Appointed
1. Bernard Lord	Chair	November 2013
2. Jeffrey Lyash	President and CEO of OPG	August 2015
3. William Coley	Director	January 2013
4. Elisabeth DeMarco	Director	April 2014
5. Jean Paul Gladu	Director	November 2015
6. John Herron	Director	November 2013
7. Ani Hotoyan-Joly	Director	March 2017
8. Wendy Kei	Director	March 2017
9. M. George Lewis	Director	February 2005
10. Margaret Mulligan	Director	December 2005
11. Yezdi Pavri	Director	September 2015
12. Gerry Phillips	Director	January 2013
13. Jim Reinsch	Director	August 2015
14. James Sheppard	Director	March 2017