Appendix 8 Business Case for OPG's Participation in Ontario's Fair Hydro Plan

Overview

In support of the Ontario government's proposed Fair Hydro Plan (FHP), the Minister of Energy wrote to OPG on April 13th requesting OPG's involvement in the implementation of Global Adjustment Refinancing component of the Fair Hydro Plan. The Province recognized the need to provide OPG with the necessary assurances with respect to recovery of the costs of refinancing and to enshrine those requirements in the legislation along with the required changes to OPG's governing legislation and constating documents. OPG's Board Chair responded to the Minister on April 18th committing OPG to work with the IESO and OEB to develop a plan. OPG noted that the Province's assurance regarding future cost recovery through enshrining the specific requirements identified by OPG and its financial advisors would be an important consideration for the OPG Board.

A key consideration is the Business Case for OPG to participate in Ontario's Fair Hydro Plan, including the financial benefits to OPG and the residual risk in the proposal after mitigating actions.

Investment Returns for OPG Arising from Participation in the FHP

OPG will form the Financing Entity with governance described in the separate Board memo. The Financing Entity's borrowing is described in Appendix 5 and OPG's investment is summarized in Appendix 6.

OPG as the Financial Services Manager will manage the Financing Entity and arrange for all financing into the Financing Entity. The Financing Entity will be funded using three tranches of debt of which the rate will be dependent on the allocation of risk and ratings outcomes:

	% of Financing Entity Borrowing	Source of Funds
Tranche A senior debt	51%	Public issue in capital markets at an expected rate of 4.0 – 4.5%.
Tranche B subordinated debt	39%	Investment from OPG using cash from an equity injection from the Province expected return of 4.5 – 5.5%
Tranche C subordinated debt	10%	Half of Tranche C (5% of total Financing Entity funding) will be funded by an equity injection from the province with the remaining half funded by new OPG corporate debt from capital markets. Investment from OPG expected return of 5.5 – 6.5%.

OPG is expected to earn a spread on the subordinated debt as follows:

Projected Interest Rates and Returns	% Funded	Projected Cost	Projected Rate into Financing Entity	Projected OPG Spread on Funding
Tranche A	51%	4.25%	4.25%	0%
Tranche B	39%	0% (Equity)	5.50%	5.50%
Tranche C	5%	0% (Equity)	6.50%	6.50%
	5%	5.0%	6.50%	1.50%
	100%		**5%**	

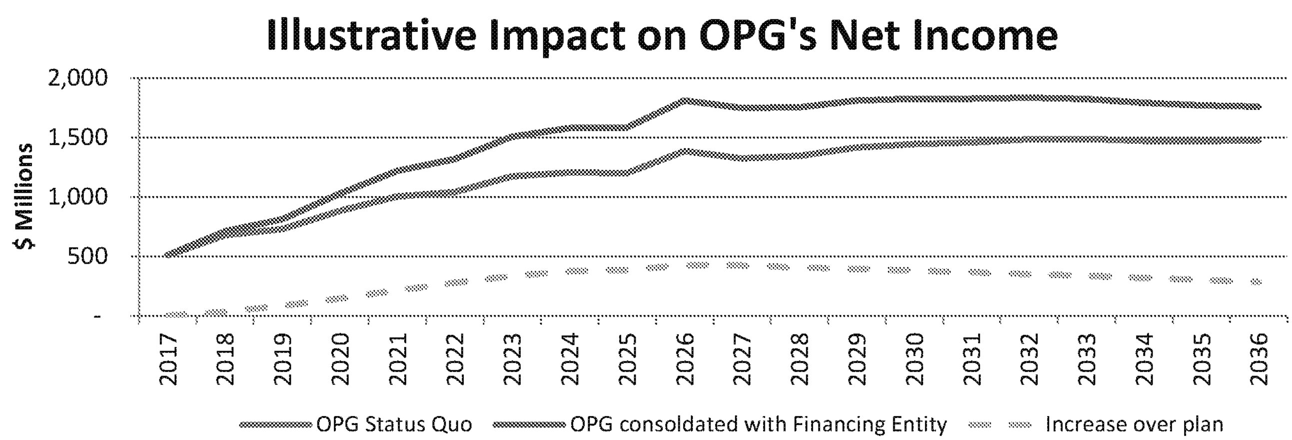
In addition OPG will earn a management fee for operating the Financing Entity. The management fee will offset additional costs incurred to manage the Financing Entity as well as provide a return to OPG.

Benefits to OPG

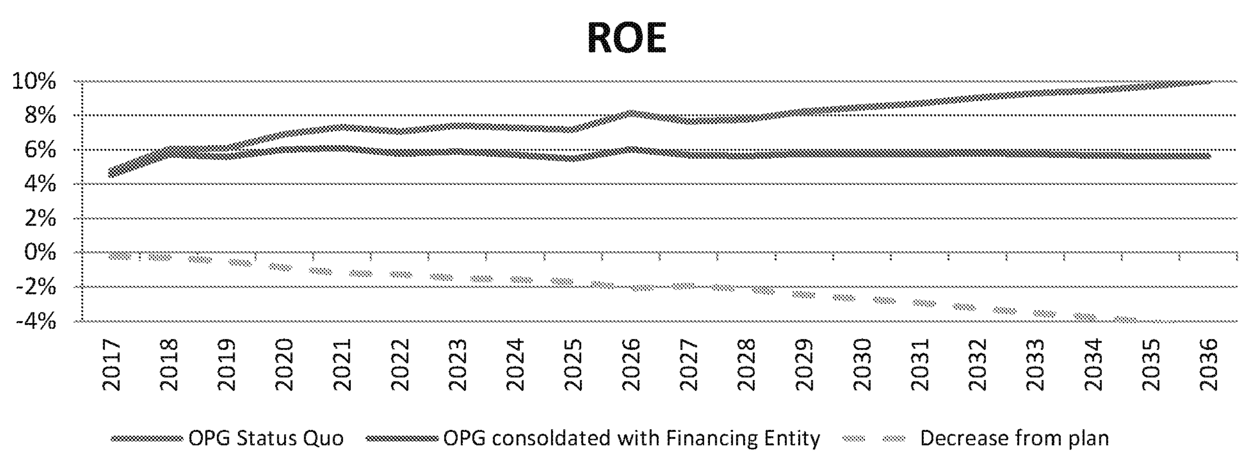
Financial Benefits

OPG would derive financial benefit from its debt investment in the Financing Entity. Net income is forecast to increase by an average of $290 million per year and a total of $5.8 billion over the period from 2017 to 2036. OPG's earnings would be derived via the spread between the interest rate charged to the Financing Entity and the cost of OPG's debt and equity, as noted above.

In addition, OPG expects to earn both fixed and variable management fees for operating the Financing Entity: the fixed fees are in the range of 5 – 10 basis points of the Financing Entity's total debt (or a peak of $12.5 million annually @ 5 bps) and variable fees are expected to be no greater than +/-$1 million per year, subject to accounting treatment. These fees will be offset by an estimated $1.5 million in annual costs, primarily driven by labour. OPG's return from the fee will be subject to OEB review to determine whether it is reasonable.



The investment requires a significant $11 billion equity injection into OPG. The high proportion of equity as a source of funding combined with the nature of the investment (a loan to the Trust) lead to a lower return than the ~9% regulated Return on Equity (ROE) that OPG targets in its existing regulated business. As a result, it will create negative pressure on OPG's ROE. OPG's ROE is expected to be reduced by approximately 2% per year on average, as illustrated below.



OPG's sole shareholder has requested OPG to consider the investment in the Trust with an understanding of the benefits and risks to OPG. There are significant elements of this investment that suggest it should not be evaluated using the same methodology as more traditional OPG investments. First, OPG would not have access to the equity injection from the Province for alternative investments. As a result, the return on that investment should not be compared to the return of alternative investments. Second, the shareholder is aware of the returns that can be achieved using its equity indicating implicit acceptance of that level of return for a debt investment and that these returns would be reflected in the Province's fiscal plan upon consolidation of OPG's results.

The standalone Internal Rate of Return (IRR) for OPG's investment at risk related to the FHP, ignoring the province's flow through equity, is ~13.5%.[1]

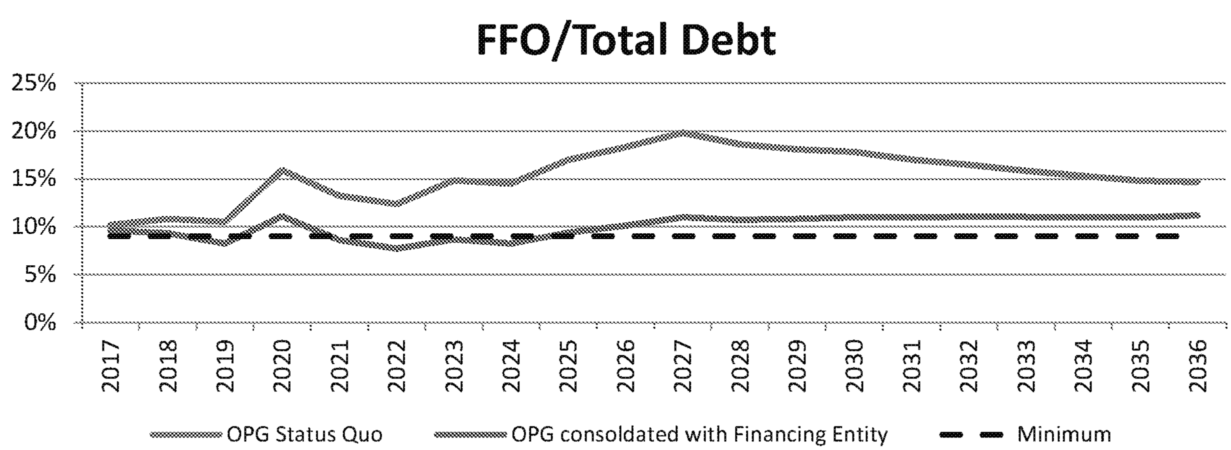
The primary risk to OPG's economics would be if spreads on OPG's lending to the Trust do not materialize as expected. It should be noted that the return will be commensurate with risk that is transferred from the senior debt to the subordinated debt. Lower return would indicate less risk transfer required for the senior debt to achieve its maximum rating (target AAA).

Impact on OPG's Existing Business

The financing of the Financing Entity has been structured to minimize the impact on OPG's existing business by establishing the level of debt and equity that keeps FFO/Total Debt within a specified limit. The impact on OPG's credit rating metrics and balance sheet are manageable, but will be dependent on Rating Agencies' level of focus on consolidated results. The legislation has been drafted to fully ring-fence the Financing Entity from OPG. Initial discussions with Rating Agencies indicate that the Financing Entity may be excluded from their consolidated assessment of OPG with the expectation that the Financing Entity will have neutral impact on OPG's credit rating.

Rating Agencies focus on two key metrics for OPG: Debt/EBITDA and FFO/Total Debt with greater emphasis on FFO/Total Debt. Rating Agencies assess metrics over a number of years so that there is a higher likelihood of downgrade where metrics exceed the limits over a few periods with greater emphasis on forecast periods. With Debt/EBITDA exceeding the limit in most years, the FFO/Total Debt metric increases in importance from a credit rating perspective.

OPG remains consistently above Rating Agency requirements for FFO/Total Debt under the status quo scenario. In addition, by financing its investment using 44% equity, OPG continues to be able to demonstrate adherence to Rating Agency requirements for FFO/Total Debt upon consolidation of the Financing Entity.



[1] This calculation of IRR ignores the Province's flow-through equity that is injected into OPG and then immediately lent to the Financing Entity. From this perspective, OPG's investment at risk would be limited to the 5% OPG corporate debt it loans to the Financing Entity. The calculation also factors in the source and cost of the Province's equity. The Province is expected to use debt borrowed at an average 4% rate to fund its equity injection into OPG. The IRR calculation nets this 4% fee paid to the Province from returns.

OPG also faces financial risk associated with the timing of its next rate case because it is scheduled in the same timeframe as large FHP increases in customers' bills following the period of inflationary increases. OPG will develop a regulatory strategy to mitigate the risk.

Sensitivities – Impact on Financing Entity

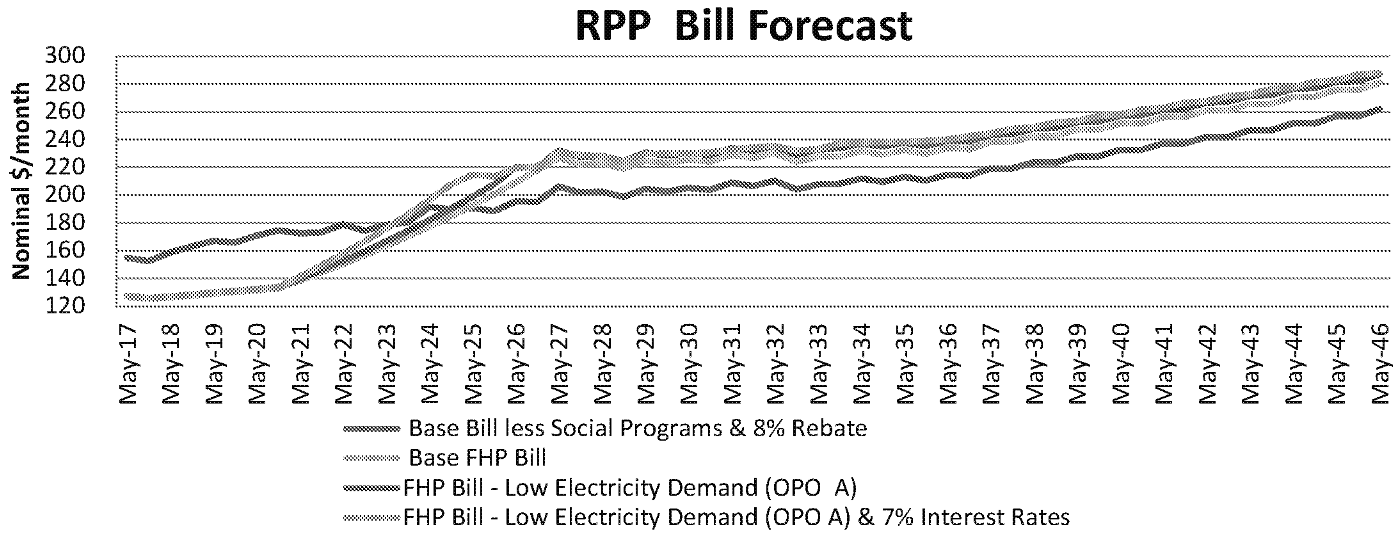
During drafting of the FHP legislation, OPG analyzed a variety of scenarios to ensure that the proposed legislation provides the Financing Entity with enough flexibility to manage borrowing. There are a number of variables that could change over time to impact both the amount of debt the Financing Entity can support as well as the ratepayer impact over the Straight-line Increase Period and the Amortization Period. Sensitivities can be broadly categorized in two areas: electricity system sensitivities and other factors.

Actual electricity system costs will have a significant impact on the FHP because it essentially fixes electricity bills for the next 4 years. If actual electricity system costs are higher than expected, more debt will have to be taken on to maintain bills at the fixed level and bills will need to increase faster during the Straight-line Increase Period. OPG has analyzed sensitivities on a variety of key electricity system cost drivers including electricity demand, natural gas prices, carbon prices, nuclear refurbishment cost, exchange rates, and delivery charges. Results from the most extreme sensitivities are presented below.

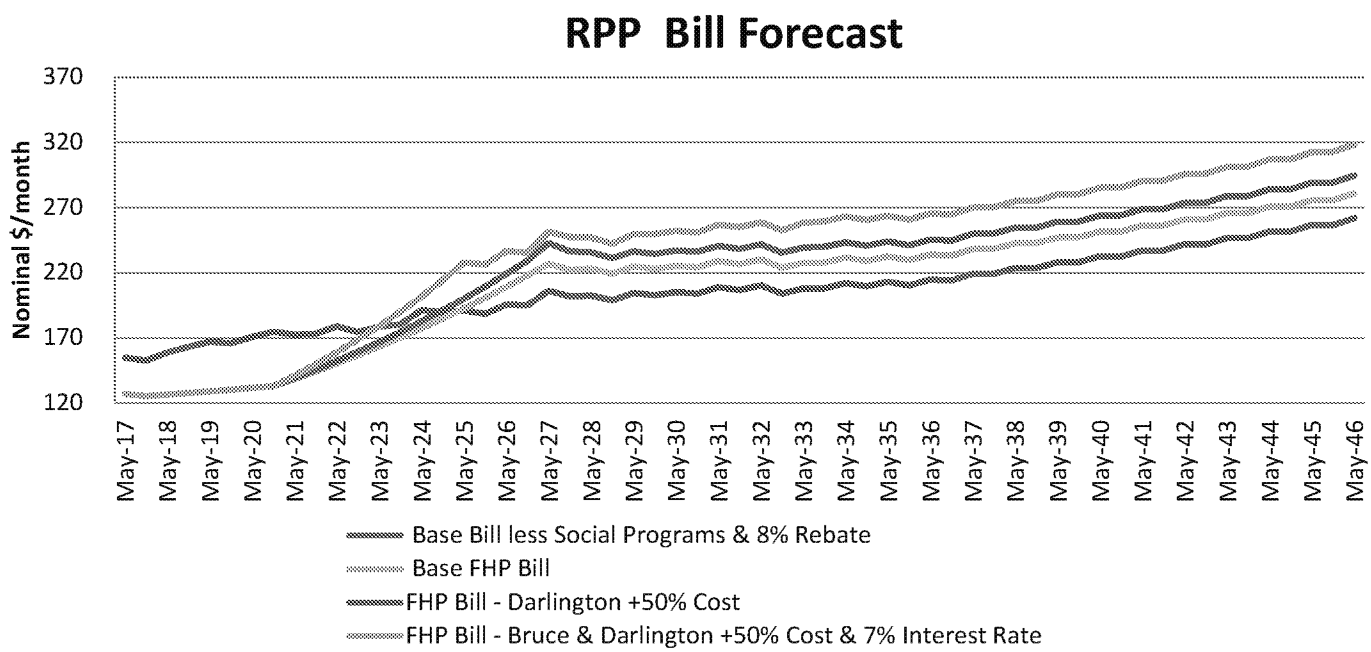
Other factors outside of the electricity system could also impact the Financing Entity including interest rates and the Harmonized Sales Tax (HST) rate. Interest rates will impact the Financing Entity's cost of borrowing. A key Moody's ratings consideration is that the charge paid by ratepayers during the Amortization Period to repay debt must not exceed 10% of customer bills. Based on current forecasts of bills, this 10% limit corresponds to a total of about $2.2 billion per year from all eligible ratepayers. During the Amortization Period, ratepayers must pay interest and repay principal and both amounts must be contained within the $2.2 billion cap. If interest rates increase, interest payments would take up more of the $2.2 billion charge, decreasing the amount of principal that can be repaid. As a result, higher interest rates would decrease the amount of debt that the Financing Entity can take on.

The latest draft FHP legislation has provided significant flexibility in managing electricity system sensitivities. The Inflation Period was reduced from 4 years to 3 years allowing electricity bills to rise earlier, reducing borrowing requirement. As a result, the Financing Entity is able to handle fairly extreme scenarios with manageable outcomes.

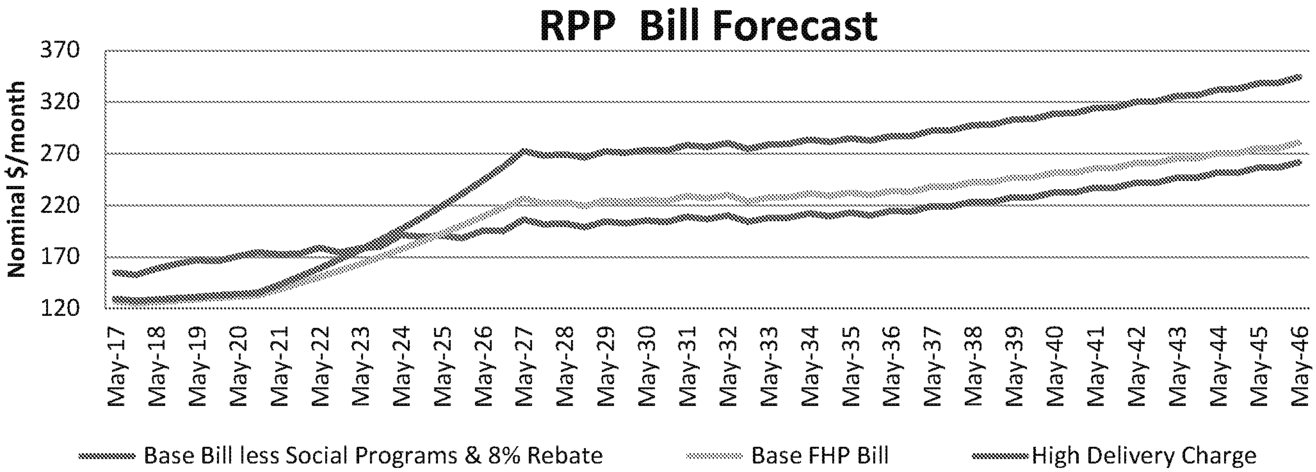
Low electricity demand will have a negative impact on the Financing Entity because repayment of debt will occur over a smaller amount of consumption. Under a low demand scenario with high interest rates (+2% throughout period), bills would have to increase by 11.6% per year during the Straight-line Period to maintain borrowing within the Financing Entity's capacity. This is relative to an 8.6% annual increase under the base FHP scenario.



If the refurbishment of Darlington goes poorly, its output cost will rise over time and require a 9.5% increase in bills per year during the straight-line period. When this scenario is combined with cost overruns during Bruce Power refurbishment and a high interest rate scenario (+2%), bills would need to increase at 12.7% per year in order for the Financing Entity to maintain borrowing within its capacity.



Electricity bills are also driven by transmission and distribution costs. If these delivery charges rise faster than expected, the Financing Entity will need to borrow more to maintain bills at the levels stipulated in the FHP. The Financing Entity is expected to be able to manage a gradual 50% increase in delivery charges by increasing bills 11.3% per year during the Straight-line Increase Period.



<u>Qualitative Benefits</u>

OPG is expected to derive other qualitative benefits from the implementation of the GA Refinancing. Direct benefits include amendments to OPG's formative legislation and constating documents that would eliminate the restrictions on OPG's corporate structure and allow OPG to issue public debt and operate through subsidiaries. This will facilitate OPG's growth plan over the longer term. Other qualitative benefits support customer cost reductions that enhance the long term viability of the Financing Entity. OPG will seek support and commitments that include Shareholder commitments to continued support of Pickering to 2024 and the Deep Geologic Repository project as well as support for other OPG initiatives such as redevelopment of OPG's regulated hydro and an extension of the Lennox contract with the IESO. All of these assets underpin the value of the energy system and support the viability of the Financing Entity. A more detailed description of these potential benefits is included in Attachment 1.

Key Risks and Mitigation

Risk Description	Mitigation
Operational Risks	
The Fair Hydro Plan gets wound up through a change in government or through a legal challenge OPG risk relates to its ability to recover its subordinated debt investment in the Financing Entity.	Provision in the legislation to prevent changes and backed by a contractual guarantee from Province Initially, the Financing Entity will finance using short-term debt to avoid significant penalties if the program is wound up. Any debt issued externally cannot be "undone"
The Financing Entity is unable to secure external financing to fund the regulatory asset Risk to OPG: • Could lead to reputational damage	The Financing Entity is not obligated to buy the regulatory asset. As such, in extreme stress circumstances where the Financing Entity cannot secure external financing, the Financing Entity can decline to buy the asset.
Accounting and Consolidation Risk	
The Financing Entity structure must meet a number of accounting tests to demonstrate control by OPG rather than the Province. If OPG fails to meet the tests, the debt from the Financing Entity will be consolidated on the	External accounting advice has been incorporated into the legislation. Future failure of the accounting tests presents financial risk to the Province rather than OPG.

	province's books. Risk to OPG: • Could lead to reputational damage.	
Reputational risk		
	OPG may sustain long-term, negative publicity due to its association with the Fair Hydro Plan. In the longer-term, the Financing Entity is envisaged to be recovering significant costs from electricity customers and OPG could be perceived as the cause of future rate increase due to its role (i.e. setting borrowing / recovery amounts, timing).	Communication plan is being developed and will be executed with the intent of highlighting that although the Fair Hydro Plan didn't originate from OPG, it is working with the Province to effectively implement the plan.
Financial Risk		
	The impact of investments into the Financing Entity and consolidation of the Financing Entity into OPG's statements may lead to a downgrade in OPG's credit rating which may restrict borrowing or increase the cost of borrowing for OPG's operations.	The Financing Entity will be separate and distinct from OPG and its operation will be ring-fenced. In addition, OPG Investment Strategy and operation of the Financing Entity's Financing Plan will mitigate risks to OPG's credit rating through balanced equity injection and debt.
	OPG's return may not materialize as expected: • Expected spread between cost of capital and return on investment. may be lower, than expected, • The OEB may determine that the Management Fee is unreasonable or the Province may push to reduce the fee.	• Reduction to risk of OPG's investment in the Financing Entity through stronger credit rating with lower impact of subordinated features on investment return. • OPG Treasury has experience with multi-billion debt management program and has included a contingency to proposed structure.

Attachment 1 Qualitative Benefits

FHP Financing Entity Implementation Benefits				
	Shareholder Commitments	**Benefit to Shareholder**	**Benefit to OPG**	**Implementation**
1	Amendment of Electricity Act and Articles of Incorporation to allow external financing and implementation of a holding company structure (**Ele Act Amendments**)	Enhanced governance, customer savings, and improved equity returns over the long term	Improved corporate governance, financing flexibility and operational flexibility	Legislation

Customer Cost Reductions that Enhance the Long Term Viability of the FHP Financing Entity				
	Shareholder Commitments	**Benefit to Shareholder**	**Benefit to OPG**	**Implementation**
1	Continued demonstration of strong government support for operation of Pickering Station until 2024 (**Pickering**)	Provides customer savings and is a key contributor to meet the Government's ambitious climate change targets **$0.5-0.6B (2015$) system benefit**	Customer savings, greenhouse gas emission reductions, financially beneficial for OPG and allows sufficient time for an orderly ramp down of Pickering operations	LTEP Business Plan Concurrence Letter
2	Commitment to enhance operation of Beck Pumped Generating Station through market rule and other changes. Demonstration of government support for redevelopment and extension of OPG's regulated hydro (i.e. SAB G1/G2, Ranney, Calabogie, Coniston, etc.) (**Hydro**)	Provides customer savings, leverages OPG expertise, provides shareholder returns and contributes to climate change goals **PGS would provide customers $2M annual savings (2016$)** **SAB G1/G2 provides NPV system benefits of $83M (2016$)** **Hydro redevelopments are lower cost than other new hydro developments and lower cost than decommissioning**	Opportunity to improve operations of Beck PGS to the benefit of customers. Continued measured build-out of hydro fleet supports climate change objectives and provides modest financial benefits to OPG	LTEP Business Plan Concurrence Letter
3	Demonstration of government support of DGR (**DGR**)	Provides public signal of provincial support to the Federal Government and reduces uncertainty around need for alternative sites and approaches. **Cost to restart DGR process $4-6B (constant $)**	Increased regulatory certainty, significantly cheaper than other alternatives resulting in customer benefits.	LTEP Business Plan Concurrence Letter

Customer Cost Reductions that Enhance the Long Term Viability of the FHP Financing Entity				
4	Contract extension for Lennox (**Lennox**)	Helps ensure longer term system reliability benefits of 2000 MW of low cost existing peaking capacity. Lennox size would distort a capacity auction process **Lennox contract is 1/3 of the cost of new capacity and about 1/2 the cost of current demand response offers**	Provides stability with implementation of capacity markets and retains OPG's reasonably favourable contract terms	Business Plan Concurrence Letter
	Shareholder Commitments	**Benefit to Shareholder**	**Benefit to OPG**	**Implementation**
5	Continued support for OPG to maintain its current site license for nuclear new build at Darlington and preference for OPG to develop any new build nuclear project in Ontario (**New Nuclear**)	Preserving Darlington site provides best opportunity for proceeding with new nuclear. New low emission baseload generation will likely be required to achieve electrification needed to meet the Government's ambitious climate change targets **Cost of maintaining licence of $3-10M/year provides an economical option for new baseload supply**	Investment opportunity to expand OPG's generation portfolio in support of the OPG's long term goals and financially beneficial to OPG. Maintains OPG's leadership in the nuclear industry	LTEP Business Plan Concurrence Letter
6	Province/IESO to check with OPG before committing to new capacity to see if OPG can undertake to mitigate GA Refinancing impacts (**OPG Capacity**)	Leverages OPG expertise, provides shareholder returns and potentially lowers costs and reduces risks of new, innovative investments **Lower cost and contract terms to align with Fair Hydro Plan timing**	Investment opportunity aligned with long term goals and financially beneficial to OPG	Other – Chair/CEO discussion
7	Mandate for generation acquisitions in Ontario (**Acquisition**)	Contracts for a significant amount of capacity are expiring over the next 10 – 15 years. OPG could opportunistically acquire generation over this period providing flexibility as contracts expire **Lower cost and contract terms to align with Fair Hydro Plan timing**	Investment opportunity to expand OPG's generation portfolio in support of the OPG's long term goals	Other – Chair/CEO discussion Business Plan Concurrence Letter