Ontario Power Generation Inc.
Capital Structure Recommendations

for
The Ontario Energy Board

Docket EB-2025-0297

By

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1 INTRODUCTION

1.1 Report Summary

Ontario Energy Board (OEB) staff has asked Christensen Associates Energy Consulting (CA Energy Consulting) to provide expert evidence regarding the cost of capital report filed by Concentric Energy Advisors (Concentric) on behalf of Ontario Power Generation Inc. (OPG or "the Company") in Docket EB-2025-0297.[1] In this report, we offer critiques of the analysis contained within the Concentric report and present our recommendation for OPG's capital structure based on cost of capital methods common to capital valuation and financial economics. We take into account business context and capital needs of OPG, particularly in relation to major hydroelectric and nuclear plant refurbishment projects.

The analysis of OPG's current business context and risk factors presented in this report indicates that an equity thickness of <u>between 47% and 50%</u> is appropriate for OPG's regulated assets for the 2027-2031 period and adheres to the Fair Return Standard. We recommend an authorized capital structure within this range. This finding is supported by a review of OEB precedent, an assessment of OPG's business and financial risks, a proxy group analysis of utility capital structures, and an evaluation of OPG's credit metrics.

The remainder of the report will be organized as follows:

- **Section 2** summarizes relevant fundamentals of cost of capital, defining the components of capital structure, defining risks that drive utility cost of capital, and defining the Fair Return Standard.
- **Section 3** provides market context, including jurisdictional and macroeconomic trends in North America. The analysis demonstrates elevated bond yields relative to 2016 and 2020, trends toward higher Federal deficit spending, and relatively heightened trade uncertainty.
- **Section 4** summarizes regulatory decisions pertaining to electricity utility cost of capital in Ontario and certain relevant legislative statutes. We review the OEB's decision in the 2025 Generic Cost of Capital proceeding.
- **Section 5** provides an evaluation of the Concentric report and recommendations for changes and improvements to the Concentric methodology. We focus our review on Concentric's risk analysis, proxy group analysis, and credit metric analysis.
- **Section 6** presents our capital structure study, including our recommended changes. The study contains a review of OEB precedent, an assessment of OPG's business and financial risks, a proxy group analysis of utility capital structures, and an evaluation of OPG's credit metrics.
- **Section 7** summarizes our key conclusions and findings.

[1] Attachment 1 of Exhibit C-1-1-1.

1.2 Introduction of the Witness

The primary author of this report and the testifying witness is Mr. Nicholas Crowley. Mr. Crowley is a Vice President with CA Energy Consulting. He has provided expert evidence on cost of capital in numerous rate cases both in the United States and internationally. He has also provided expert testimony on incentive regulation and cost allocation in various jurisdictions throughout North America. In Ontario, he has assisted the OEB with a review of the existing incentive regulation framework for distribution utilities[2] and reviewed Hydro Ottawa's most recent Custom Incentive Regulation proposal.[3]

Prior to joining CA Energy Consulting, Mr. Crowley was an Economist in the Office of Energy Market Regulation at the Federal Energy Regulatory Commission ("FERC"), where he supported updates to the price cap regulation of oil pipelines and the review and evaluation of natural gas pipeline rate cases. Mr. Crowley has a Bachelor of Science in economics and a Master of Science in economics from the University of Wisconsin-Madison. He is a CFA charter holder and a Certified Rate of Return Analyst. His curriculum vitae can be found in the OEB's Staff Letter dated March 6, 2026.[4]

Mr. Crowley acknowledges his duty to the OEB as an expert witness under the OEB's Rules of Practice and Procedure. A signed "Acknowledgement of Expert's Duty" form will be filed.

[2] "Advancing Performance-based Rate Regulation," Ontario Energy Board, EB-2024-0129.
[3] "Evaluation of Hydro Ottawa's Proposed Custom Incentive Regulation Framework," for the Ontario Energy Board, EB-2024-0115, October 14, 2025.
[4] Staff Letter Regarding Expert Evidence, Ontario Energy Board, March 6, 2026.

2 FUNDAMENTALS OF COST OF CAPITAL

2.1 Definitions

2.1.1 The Cost of Capital

The *cost of capital* is the underlying interest rate used by investors to discount and value the expected benefits obtained from holdings of financial assets,[5] and is also referred to as the discount rate. The cost of capital is the compensation required by investors for postponing consumption, for expected inflation, and for exposure to capital risks of various dimensions, where such risks are, on the one hand, general to macroeconomies and financial markets but also specific to the underlying investment vehicles used to underwrite capital.

The cost of capital is determined by several factors including the demand for capital, the supply of savings across macroeconomies, expectations of inflation by capital market participants, and perceptions of risks harbored by investors. The demand for capital is determined by expectations of future levels of economic activity, while expected inflation is driven largely by monetary policy over a relevant timeframe. Perceptions of risk, in turn, cover many dimensions of uncertainty including future performance of individual investments and macroeconomies, and policy of governing authorities regarding fiscal expenditures. Actions of sovereign governments have immense power to moderate, or contribute to, risk and to thus facilitate or hinder the formation of capital. In brief, the cost of capital—the discount rate stated in nominal terms—increases with rising demand for capital, with expectations of higher rates of inflation, and with heightened perceptions of risk. As a practical matter, risk is arguably the key contributing factor for the estimation of the cost of capital.

2.1.2 Components of a Utility's Capital Structure

Financial assets include debt vehicles, equity, and derivatives,[6] and are tailored to participants of capital markets including households, small businesses, corporations, and public authorities. A utility's capital structure typically consists of a mix of debt and equity. The typical components of a utility's capital structure include:

[5] Financial assets are one form of capital. More generally, Capital refers to economic resources of a durable nature that contribute to the production of goods and services or provide services directly. Capital resources of an economy include: manufacturing equipment, software, commercial buildings, residential dwellings, public infrastructure including highways, ports, airports and, importantly, the accumulation of skills and knowledge of the workforce (reference Gary S. Becker, Human Capital, National Bureau of Economic Research, 1975). Capital comes about from the accumulation of savings over time, where savings refers to the proportion of the potential output of an economy not consumed as current goods and services. Essentially, savings is the share of output (potential) held back and invested in—i.e., put into—capital resources. The cumulative level of investment over time, covering decades, constitutes the capital stock of a macroeconomy and social systems served.

[6] Derivatives are financial instruments whose value depends on investor expectations regarding the inherent value of the underlying assets. Derivatives, common forms of which include options and forward insurance contracts such as credit default swaps, also provide a basis to hedge—and to speculate on—capital risks associated with the underlying value and market worth of the asset.

1. **Long-term debt** includes mortgage bonds, debentures, and long-term notes. The interest on the principal amount of a bond defines the level of compensation. Often, the interest rate is a predefined annual rate that remains fixed over the term of the debt instrument. However, long-term debt instruments may incorporate other provisions that provide for more complete contracting by managing uncertainty through risk sharing between the debt holders (lenders) and issuers (borrowers). These provisions can include adjustments to the rate of interest to reflect contemporary market conditions and rates of inflation, call provisions, participation in the earnings of the firm, conversion rights, and voting rights in the management of the firm.

2. **Short-term debt** includes credit lines or promissory notes with commercial banks. Commercial terms may clarify that interest is to be paid monthly on the outstanding daily balance in the case of lines of credit, or quarterly in the case of a promissory note. The rate of interest applied to the outstanding balance can be tied to the interest rate on obligations of some widely known financial market vehicle, such as, the Secured Overnight Funding Rate ("SOFR"), or the Federal Funds rate, or the prime rate of commercial banks-which also varies daily or monthly.

3. **Equity** refers to the net accumulated value of contributed capital by equity investors (in this case, the province of Ontario), consists of common stock and preferred stock, and includes the accrual of retained earnings. Equity property rights are somewhat different from other financial obligations because, as owners of the firm, the returns to shareholders are residual, following the compensation to other resources employed by the firm including debt obligations and preferred stock. Common equity is essentially compensated last, and bears the burden of much of the business, regulatory, and financial risks of investor-held entities. For this reason, common equity is typically more costly than other forms of financial instruments.

In competitive markets, private companies determine their own capital structure. In regulated markets, a regulator approves an authorized capital structure following the review of evidence related to the company's risk level.

2.2 Determinants of Cost of Capital

While the market prices of other inputs including labour, materials, and energy can be easily verified with accounting data, the cost of capital requires estimation through the application of analytical methods. These methods rely on the financial theory that borrowers demand capital and investors supply capital in a competitive capital market.

The cost of capital associated with financial assets reflects the risks of the underlying capital, and is determined by investors, in view of other investment opportunities. Investors obtain capital from various sources, which ultimately flows from households.[7] Investors (savers) who hold financial assets directly or indirectly expect benefits in the form of future cash flows including

[7] Households may hold savings individually or contribute savings passively through processes including retirement plans, pensions, and various publicly-sponsored savings plans. Examples include the social security systems of the US, the pension system of the UK, and Canada's national pension plan. Household savings flow into the macroeconomy and provide the means to invest, underwriting and funding capital in the form of physical facilities, inventories, software, skills development, and knowledge acquisition.

interest payments, dividend payments, market appreciation, and return of principal. When investors supply funds to entities such as utilities and public entities (e.g., government bonds), not only are they postponing consumption by foregoing value otherwise obtained from alternative expenditures, they are also exposing funds to the potential devaluation from ongoing inflation as well as to various uncertainties and risk attending future cash flows. Investors are willing to incur these risk factors only if they are adequately compensated.

In addition to macroeconomic risks that affect all firms in the market, including a nation's institutional stability, public policy, and climate issues, a firm's risk profile also consists of idiosyncratic factors associated with specific capital resources, such as sector risks, supply chain issues, management capabilities, and technological change. Expectations of future financial conditions of the specific company also constitute idiosyncratic risks. In debt markets, investors will re-price downward the bonds of a private company should the current financial condition of the company suddenly decline or its perceived risk level increase. Deterioration in the company's current financial condition, reflected as reduced interest coverage, then causes the expectation of the future condition of the company also to decline. Similarly, expectations of deteriorating earnings growth diminish investor demand for the firm's common equity shares at a given price. The decline in prices reflects a requirement by investors for a higher rate of return.

Broadly speaking, the risks to debt and equity investors therefore include:

- **Macroeconomic risks** that are general to all firms. We address these risks in Section 3 of this report.

- **Business Risk**, which relates to the company’s operations. For utilities, these risks include operational risk (e.g., extreme weather, equipment failures, cyberattacks); regulatory risk (the possibility that the company’s regulator could deny cost recovery); and demand risk (changes in consumer demand driven by weather, technology, or other reasons).

- **Financial Risk**, focuses on the ability of the company to meet its payment obligations and generally increases with higher debt leverage. Higher debt levels increase financial risk by imposing fixed payment obligations, reducing financial capacity for future necessary projects (in other words, reduced liquidity), and potentially exposing the company to changing interest rates.

We consider these risks in our evaluation of OPG’s proposed capital structure.

2.3 Capital Structure and Principles of Market Efficiency

A company may finance capital projects using debt, equity, or a combination of both. The OEB has determined that differences in risk among regulated utilities will be addressed through adjustments to the utility’s allowed capital structure.[8] As such, OPG has proposed an allowed rate of return on equity (“ROE”) of 9.11% as a placeholder for the 2027-2031 payment amounts term. OPG has proposed that the placeholder of 9.11% will be updated in the Fall of 2026 with the allowed ROE for the 2027 rate year to be established by the OEB.[9] The cost of debt is

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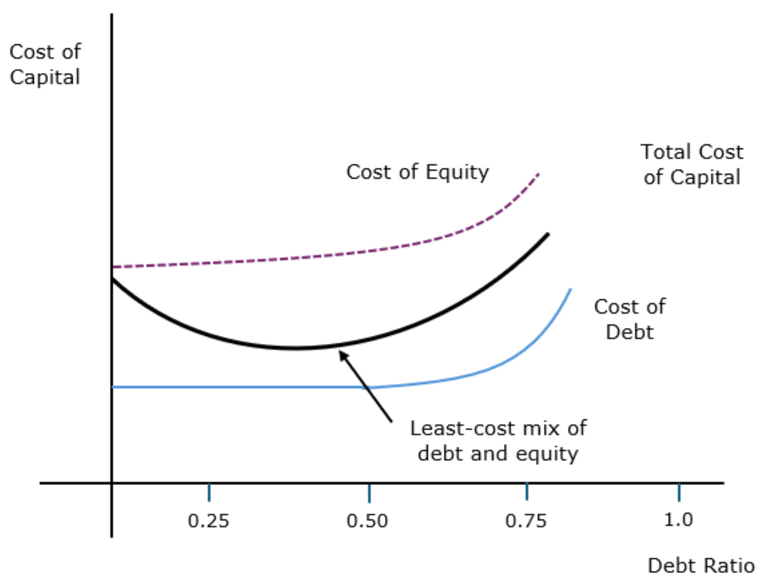
[8] Decision and Order, *Ontario Energy Board,* EB-2024-0063, March 27, 2025, pp. 35, 55-56.
[9] Exhibit C1, Tab 1, Schedule 1, p. 3.

determined on the basis of existing debt plus forecasted debt for long-term debt[10] and forecasted short-term debt borrowings.[11] Thus, OPG's capital structure constitutes the central issue we address in this report.

In regulated markets, the regulator sets the proportion of debt and equity used to calculate a company's total allowed return. Since the allowed ROE differs from the allowed recovery of debt costs, the regulator's determination of a utility's authorized capital structure will affect the utility's revenue requirement and thus the rates paid by customers. This gives rise to the question of whether an "optimal" capital structure exists for each utility.

Figure 2.1 illustrates the concept of an optimal capital structure. A utility entirely capitalized with common equity will have a relatively high weighted average cost of capital ("WACC"), given that the cost of equity generally exceeds the cost of debt. As the utility adds debt to its capital structure, the WACC declines. However, at a certain point, relatively high leverage will increase investor perceptions of risk, increasing the cost of debt, leading to a higher WACC.

Figure 2.1: Illustration of "Optimal Capital Structure" Concept



Debt financing also affects equity shareholders. As a company's leverage increases, the owners face the following factors that can impose upward pressure on the cost of equity capital:

1. The **opportunity cost** of forgoing alternative projects that could be necessary in the future. A company with lower *debt capacity* (i.e., a lower ability to issue more bonds) has less ability to borrow to pay for other expenditures like emergencies or unforeseen repairs.[12]

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[10] Exhibit C1, Tab 1, Schedule 2, p. 1.
[11] Exhibit C1, Tab 1, Schedule 3, p. 1.
[12] Brealey, R. A., Myers, S. C., & Allen, F. (2006). *Principles of Corporate Finance* (8th ed.). McGraw-Hill/Irwin.

2. **Financial risk** associated with the payment of interest. As a company adds debt to its balance sheet, the risk to the equity holders increases because the company now has a higher fixed payment obligation, in the form of an interest expense.[13] Shareholders must be compensated for this increased risk. Thus, the cost of equity increases as leverage increases. Empirical studies have supported this conclusion.[14]

A utility financed completely by debt issuances may have a higher cost of capital than a utility financed entirely by equity and may have trouble attracting capital.

Economists generally accept that capital markets exhibit semi-strong efficiency, meaning security prices (e.g., share prices, bond prices) adjust quickly to public information.[15] Investors "price in" the increased risk of higher debt, resulting in rising yields for a company's debt issuances. In an efficient market, two assets with the same cash flows and the same risk must have the same market price. Therefore, although no two utilities have the same risk factors (and therefore have different allowed rates of return), the use of proxy groups can be justified to establish cost of capital parameters if the proxy group selection process retains companies with similar risk drivers and screens out dissimilar companies.

2.4 Fair Return Standard

Canadian regulatory law, as established in *Northwestern Utilities* (1929)[16] and reaffirmed in *TransCanada PipeLines* (2004)[17] and other cases requires that a utility be granted the opportunity to earn a return that is commensurate with the risk of the enterprise, maintains its financial integrity, and allows it to attract capital on reasonable terms. This legal principle is known as the Fair Return Standard ("FRS").

When establishing the components of a revenue requirement, the Fair Return Standard concept typically applies to the utility's authorized ROE and the deemed capital structure. A utility recovers its cost of capital through an allowed return on debt costs and an allowed ROE, weighted according to the proportion of debt and equity within total capital found on the utility's balance sheet. The utility calculates the return component of its revenue requirement by multiplying the allowed return (a percentage) by rate base, or the net dollar value of the utility's productive assets plus working capital.

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[13] Modigliani, F., & Miller, M. H. (1958). "The Cost of Capital, Corporation Finance and the Theory of Investment." *The American Economic Review*.

[14] See, for example: Hamada, R. S. (1972). "The effect of the firm's capital structure on the systematic risk of common stocks." *The Journal of Finance*, *27*(2), 435–452.

[15] Malkiel, Burton G. (2003/Updated). *A Random Walk Down Wall Street, p. 196.* Also see: Fama, Eugene F. "Efficient Capital Markets: A Review of Theory and Empirical Work." *The Journal of Finance* 25, no. 2 (1970): 383-417; and Malkiel, Burton G. "The Efficient Market Hypothesis and Its Critics." *Journal of Economic Perspectives* 17, no. 1 (2003): 59-82.

[16] Northwestern Utilities Ltd. v. Edmonton (City), [1929] SCR 186.

[17] TransCanada PipeLines Limited v. National Energy Board et al. [2004] F.C.A 149. Para. 6.

The OEB has found that the FRS "does not involve the balancing of interests between the utility and its customers but is singularly focused on ensuring that a utility is furnished with the necessary financing to carry out its responsibilities of service to its customers."[18] Under the FRS, a utility is permitted the opportunity to earn a rate of return equal to its cost of capital, no more and no less.[19]

We consider the Fair Return Standard in our evaluation of OPG's request for an allowed capital structure.

[18] Decision and Order, *Ontario Energy Board,* EB-2024-0063, March 27, 2025, p. 34.
[19] Ontario (Energy Board) v. Ontario Power Generation Inc., [2015] 3 SCR 147.

3 MONETARY POLICY, INTEREST RATES, AND THE MACROECONOMY

Developments in the macroeconomy affect the asset returns required by investors. Since utilities obtain capital from a global market of investors, cost of capital evaluations require a review of current trends and risk factors across international capital markets. We offer a brief review of trends in bond yields, a snapshot of fiscal policy in North America, and current events that likely affect the cost of capital for all firms. This information provides context for OPG's proposed WACC parameters. A substantial portion of these macroeconomic effects will be reflected in the OEB's ROE formula, described in Section 4.1.

3.1 Trends in US and Canadian Treasury Yields

Monetary policy has a major influence on the cost of capital assigned to financial assets. Monetary policy, as exercised by the US Federal Reserve System in the form of targets to overnight lending rates and quantitative easing, has a marked impact on interest rates of all maturities worldwide. Government interest rates affect utility cost of capital as corporate bond yields generally change in response to changes in government bond yields. The cost of equity also adjusts to changes in central bank lending rates.

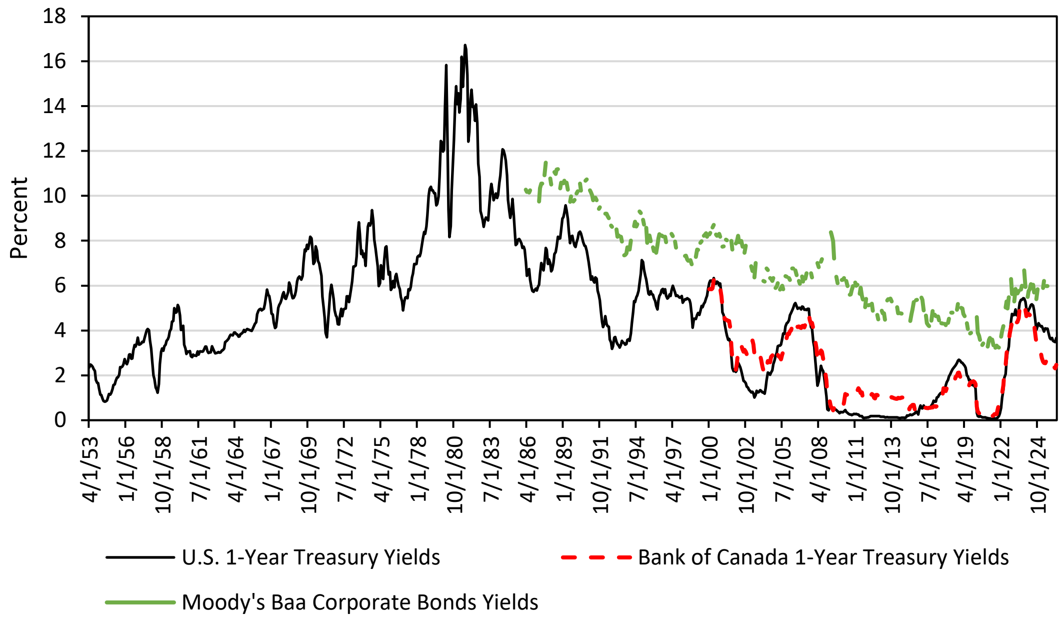
The US Federal Reserve's policy to reduce interest rates in 2008 was supplemented with quantitative easing, a vast expansion of money supply in the form of cash equivalents. Quantitative easing was exercised through open market operations whereby the US Federal Reserve purchased sizable quantities of financial assets, concentrated in mid-term US Treasury securities. Such expansion of the money supply, first implemented on a large scale by the US Federal Reserve beginning in 2011, was instrumental in returning western economies to near full employment, following the depths of the world recession, 2007-2009/10. The Federal Reserve's balance sheet holdings grew from $900 billion 2007 to nearly $9 trillion before a brief period of quantitative tightening which was paused in December 2025.[20]

Figure 3.1 provides yields on 1-Year Constant Maturity US Treasury debt since 1950 (in black), average yields on 1- to 3-year bonds issued by the BOC[21] (in red) and returns on Moody's United States BAA corporate bonds (in green).[22] Canadian yields have tracked US yields relatively closely over the past 10 years, differentiated primarily by faster declines in the last two years. One-year BOC bond yields fell from 2.60% on average in March 2025 to 2.46% on average in March 2026.[23] During the same period, yields for Moody's Baa remained flat. This suggests a potentially moderated cost of capital across capital markets since the OEB's Generic Cost of Capital decision in March 2025.

We understand that changes in yields will be reflected in the OEB's ROE formula, as discussed in Section 4.1. However, other macroeconomic headwinds suggest upward pressure on the cost of capital, broadly speaking, as we discuss in Sections 3.2 and 3.3.

[20] See here: https://fred.stlouisfed.org/series/WALCL.
[21] The Bank of Canada is the nation's central bank, issuing currency, setting the Canadian interest rate, and managing public debt.
[22] Due to availability of public data, we only can track yields on Canadian treasury debt since 2001.
[23] Bank of Canada data Treasury Bills, 1 Year, Series V80691346 found at https://www.bankofcanada.ca/rates/interest-rates/t-bill-yields/.

Figure 3.1: Yields on 1-Year Treasuries (1953-2026)[24]



3.2 Fiscal Conditions in the US and Canada

Fiscal policy also affects private investment positions. Increased deficit spending, along with natural fluctuations in funding needs relative to tax revenue, requires federal governments to issue debt securities in the form of Treasury bills and bonds. US debt issuances are considered to be among the most secure bonds available in the global marketplace, providing a near risk-free security for investors. As a result, large issuances of US debt securities, particularly when issued at higher rates, can result in "crowding out" of other investment instruments.[25]

Competition with Treasury securities can create challenges for private sector firms to attract capital. In addition, demand for capital by the US Treasury has been met with somewhat muted enthusiasm in recent auctions.[26] Figure 3.2 depicts the deficit spending in the United States and Canada as a percentage of each country's GDP, showing that both countries have experienced extended durations of debt financed government spending (a negative number means a higher deficit relative to GDP). In nominal terms, the US Congressional Budget Office projects US deficit levels will reach $1.9 trillion in 2026 and increase up to $3.1 trillion by 2036.[27] Although the myriad consequences of this escalation of debt is difficult to predict, economic principles herald

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[24] Sources: Treasury Yields are Series ID GS1 produced by the Federal Reserve of St. Louis (FRED). Bank of Canada Yields are Bond Yields produced by the Bank of Canada. Moody's Corporate Bond Yields are series DBAA published made available by FRED.

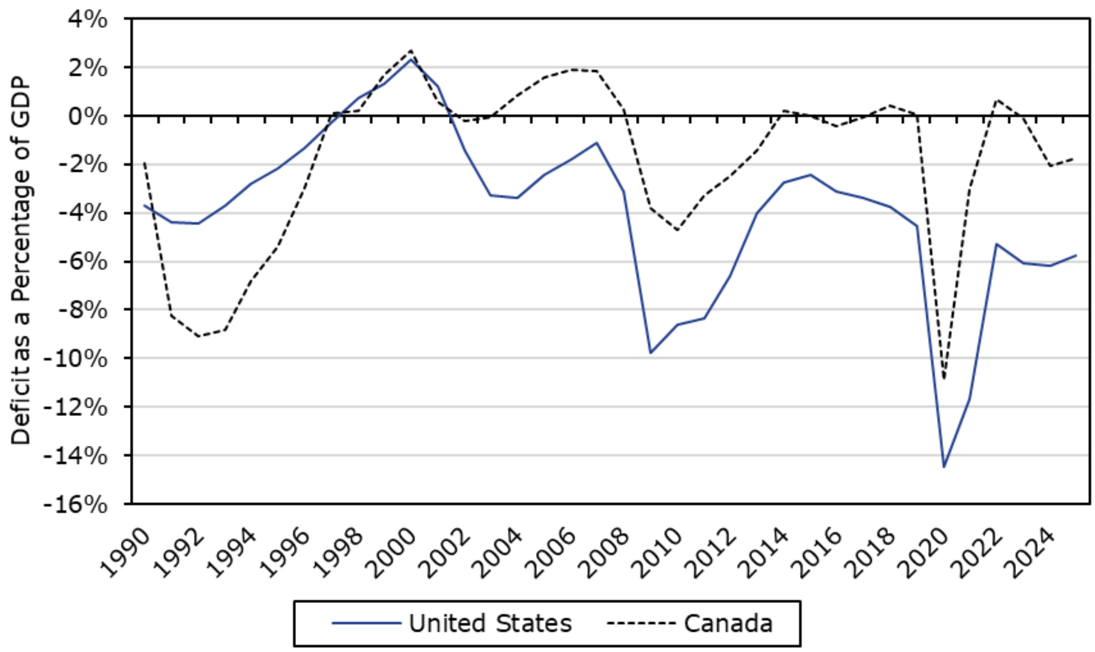
[25] *Macroeconomics*, Gregory Mankiw, Seventh Edition, 2009, p. 69.

[26] "Weak Auction Underscores Risk of our Growing Debt Burden," Committee for a Responsible Federal Budget, March 31, 2026. https://www.crfb.org/blogs/weak-auctions-underscore-risks-our-growing-debt-burden.

[27] "The Budget and Economic Outlook: 2026 to 2036," Congressional Budget Office, February 11, 2026. https://www.cbo.gov/publication/61882.

an increase in real interest rates assuming a continuation of this trend, leading to a higher cost environment for private investment.

Figure 3.2: United States and Canada Deficit as a Percentage of GDP[28]



Increased deficit spending by major North American governments could raise the cost of utility capital as investors demand higher bond yields to compensate for default risk, but also due to the crowding out effect. Utilities must compete for capital against the Canadian and United States governments, just as they compete for capital against other entities in the marketplace.

Heightened government spending by the US, Canada, and western economies is expected to continue. A component of increased spending arises from recent policy initiatives by the US and Canada proposing to embark on a major structural overhaul including large scale investment focused on:

- Climate change mitigation and adaptation, particularly as it relates to electric utility operations (e.g., investment in renewable energy technologies, transmission infrastructure, system hardening);[29]
- Improved efficiency in transportation sectors[30];

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[28] Sources: CA Energy Consulting created using FRED Series GDP, FYFSD, GDPXDCCAA, and Statistics Canada Table 10-10-0015-01.

[29] In Canada, there were 215 energy and forest projects classified as related to clean technology, representing $194.2 billion in potential investment. See https://natural-resources.canada.ca/science-data/data-analysis/natural-resources-major-projects-planned-under-construction-2024-2034#a2d.

[30] The Canadian federal budget in 2025 included major transportation investments including the $5 billion Trade Diversification Corridors Fund. See https://tc.canada.ca/en/corporate-services/consultations/strengthening-one-canadian-economy-through-trade-transportation.

- Advanced artificial intelligence and chips manufacturing[31]; and,
- Much improved access to information systems in less developed regions.[32]

The Canadian Government's 2026 Spring Economic Outlook presents a relatively positive outlook for the Canadian economy, citing minimal job losses and consistent consumer spending despite geopolitical uncertainty. The government of Canada predicts positive nationwide economic growth for the year 2026.[33]

3.3 Current Events and the Cost of Capital

The contemporary North American trade environment has experienced a shift toward protectionist policies, including significant tariff escalations and an uncertain future, which has the potential to introduce structural risks for all firms, including utilities. A transition from current integrated cross-border supply chains could increase the costs and lengthen timelines for the procurement of physical capital used by electric utilities. Investors may require higher returns to compensate for increased volatility in input costs resulting from supply chain reallocations.

The US war in Iran, which began in February 2026, has disrupted global supply chains as the Strait of Hormuz has remained closed for an extended period. Prior to the war, approximately a quarter of global crude oil shipments passed through the strait,[34] and approximately a third of fertilizer passed through the strait.[35] Since the closure of the strait, oil and fertilizer prices have spiked. Global conflict has also continued in the form of Russia's war in Ukraine, which shocked grain and energy markets not just in Europe, but around the world. The initial escalation of the conflict between Russia and Ukraine contributed to the inflation of 2022 and 2023, which peaked in June 2022 at an annual rate of 9.1 percent, as measured by the BLS Consumer Price Index and 8.1 percent as measured by the Bank of Canada Consumer Price Index. Prolonged conflict in the Middle East could result in sustained pressure on global prices, resulting in higher inflation.

Even before the war in Iran, inflation trended above target levels in North America. The global political landscape remains highly uncertain, with the ongoing wars in Ukraine and in the Middle East. Despite accommodative monetary policy aiming to promote economic growth through lower interest rates in 2024 and 2025, the countervailing macroeconomic factors discussed above portend substantial demand for capital and a sustained rate of inflation above 2.0 percent in the coming years. To date in 2026, both the Federal Reserve and the Bank of Canada have suspended their easing cycles, opting to leave benchmark rates unchanged. This is the context in which OPG has filed its rate application.

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[31] The Government of Canada sponsors the AI Compute Access Fund, designed to help small businesses get access to AI tools. See https://ised-isde.canada.ca/site/ised/en/canadian-sovereign-ai-compute-strategy/ai-compute-access-fund.

[32] The Government of Canada's Universal Broadband Fund helps get broadband access to rural communities; https://ised-isde.canada.ca/site/high-speed-internet-canada/en/universal-broadband-fund/selected-universal-broadband-fund-projects.

[33] Government of Canada, *Spring Economic Update 2026*, April 28,2026 pp. 29-30.

[34] "Strait of Hormuz Factsheet," *International Energy Agency*, February 2026. https://www.iea.org/about/oil-security-and-emergency-response/strait-of-hormuz.

[35] "The Other Global Crisis Stemming from the Strait of Hormuz's Blockage," *Carnegie Endowment for International Peace, March 12, 2026.* https://carnegieendowment.org/emissary/2026/03/fertilizer-iran-hormuz-food-crisis.

4 COST OF CAPITAL METHODOLOGY IN ONTARIO

4.1 The OEB's Generic Cost of Capital Methodology

Electric utilities in Ontario adhere to a Generic Cost of Capital framework established by the OEB through periodic proceedings in which utilities and stakeholders (e.g., intervenors) submit evidence. The OEB's generic framework sets the methodology used to calculate an allowed ROE, the rules governing the recovery of debt costs, directions regarding capital structure, and other regulations related to the recovery of capital costs. The most recent Generic Cost of Capital decision also states that "[a]ny proposal by OPG to change its capital structure will be reviewed by the OEB on its merits" as part of the review of the Company's payment amounts proposal.[36]

4.1.1 Allowed Return on Equity

In the most recent generic cost of capital decision under Docket EB-2024-0063, the OEB established an allowed ROE for all rate-regulated electricity and gas utilities in the province according to a formula based on the Long Canada (30-year Government of Canada) Bond Forecast (LCBF) and the 30-year A-rated Utility Corporate Bond spread (UtilBondSpread), as follows.[37] Effective for 2026 and forward cost-based rate applications, the OEB's annual ROE adjustment formula was set as follows.

$ROE_t = 9.00\% + 0.5 \times (LCBF_t - 3.13\%) + 0.5 \times (UtilBondSpread_t - 1.38\%)$

The most recent generic cost of capital decision stated:

> "[…]the OEB currently adjusts the ROE each year. The adjustment attempts to adapt the base ROE to align with macroeconomic and market changes. The annual ROE adjustment formula currently modifies the base ROE by 50% of the annual changes in the LCBF and the A-Rated Utility Bond Yield Spread, compared to values employed when the base ROE was first set."[38]

This ROE formula applies to all rate-regulated utilities, including electric distribution, electricity transmission, natural gas utilities, and rate-regulated electricity generation companies. In other jurisdictions, the allowed ROE of a particular company may reflect the risk profile of that company, such that allowed ROEs differ from utility to utility. However, the most recent generic cost of capital decision stated:

> "The OEB does not agree that the ROE is the vehicle to address differences in OEB regulated utilities. It will continue the practice of addressing material differences through the capital structure, as discussed in Section 3.3 of this decision."[39]

[36] Decision and Order, *Ontario Energy Board*, EB-2024-0063, March 27, 2025. p. 55.
[37] Decision and Order, *Ontario Energy Board*, EB-2024-0063, March 27, 2025. p. 49.
[38] Decision and Order, *Ontario Energy Board*, EB-2024-0063, March 27, 2025. p. 49.
[39] Decision and Order, *Ontario Energy Board*, EB-2024-0063, March 27, 2025. p. 35.

4.1.2 Debt Cost Rates

The utilities recover the cost of long-term debt on the basis of embedded debt costs, both actual and forecast. In prescribed circumstances, a "deemed" long-term debt rate ("DLTDR") may be used as a cap on the allowed cost of long-term debt for electricity distributors and transmitters.[40] This cap applies, for example, when there is no debt or debt without a fixed term. Electricity distributors and transmitters apply a deemed short-term debt rate ("DSTDR") based on Bloomberg's BVCAUA3M BVLI Index.[41]

The methodology set forth in the generic cost of capital decision for establishing OPG's debt cost rates differs somewhat from electricity distributors and transmitters in the province.[42] Whereas electricity distributors and transmitters may face a cap on cost rates for long-term debt, this cap does not generally apply for OPG. With regard to short term debt, the OEB does not require OPG to assume the DSTDR. The cost of debt for OPG is determined on the basis of existing debt plus forecasted debt for long-term debt[43] and forecasted short-term debt borrowings.[44] Consistent with the methodology approved in prior OPG proceedings, OPG's application reflects a provision for long-term debt to reconcile the debt component of OPG's regulated capital structure with the proposed rate base that financing supports.[45]

4.1.3 Capital Structure

The OEB's generic cost of capital decision maintains a single deemed capital structure for all electricity distribution and transmission utilities equal to 60% debt and 40% equity and a separate capital structure for OPG equal to 55% debt and 45% equity.[46, 47] The decision also stated that the OEB would review changes to OPG's existing deemed capital structure as part of the next payment amounts application (the current proceeding).

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[40] Decision and Order. Ontario Energy Board. EB-2024-0063. March 27, 2025. PP. 72-73. The formula for the annual update of the DLTDR is $DLTDR_t = LCBF_t + UtilBondSpread_t$, where:

> $LCBF_t$ is calculated using the actual Long Canada (30-year Government of Canada) Bond yield (taken from Bank of Canada series V39056) as at September 30 for year t.
>
> $UtilBondSpread_t$ is calculated as the spread between the 30-year A-rated Utility Corporate Bond yield (taken from ticker Bloomberg BVCAUA30 BVLI Index) and the Long Canada (30-year Government of Canada) Bond yield (taken from Bank of Canada series V39056) as at September 30 for year t.

[41] Decision and Order. Ontario Energy Board. EB-2024-0063. March 27, 2025. P. 78. The formula for the annual update of the DSTDR is $DSTDR_t$ = BVCAUA3M $BVLI_t$, where:

> BVCAUA3M $BVLI_t$ is the Bloomberg ticker BVCAUA3M BVLI Index (3-month) which tracks utility bond yields, with the data point as at September 30, taken from Bloomberg LP, for year t.

[42] EPCOR Natural Gas LP has the same treatment as electricity distributors and transmitters.

[43] Exhibit C1, Tab 1, Schedule 2, p. 1.

[44] Exhibit C1, Tab 1, Schedule 3, p. 1.

[45] Exhibit C1, Tab 1, Schedule 2, p. 9.

[46] Decision and Order, *Ontario Energy Board*, EB-2024-0063. March 27, 2025. p. 55.

[47] Decision and Order, *Ontario Energy Board*, EB-2024-0063. March 27, 2025. p. 56. For EPCOR Natural Gas LP (Aylmer service territory), the OEB approved a settlement agreement in which parties agreed to a 40% equity ratio. EPCOR Natural Gas' 36% equity ratio for the South Bruce service territory was to continue to remain in place until its next rebasing. For Enbridge Gas Inc. the OEB approved an equity thickness of 38%, effective January 1, 2024.

The OEB's decision in the 2025 Generic Cost of Capital proceeding also commented on methods for establishing utility capital structures. Regarding the use of US companies in a proxy group to set the deemed capital structure, the OEB stated:

> "While some of the expert evidence in this proceeding has suggested that Ontario's utilities have lower deemed equity thicknesses compared to the selected North American proxy sample, thereby implying a competitive disadvantage, the OEB is not persuaded that a change in the current capital structure is warranted. As noted elsewhere in this Decision, the determination on cost of capital parameters and capital structure arising from comparison to the decisions of regulators in U.S. jurisdictions must be scrutinized to ensure comparability and relevance. Differences in utility risk often reflected in the higher betas for U.S. energy utilities make conformance unlikely[...]"[48]

The OEB supported its decision to maintain existing deemed capital structures with the observation that Ontario utilities have consistently secured financing on favorable terms under the incumbent framework. The OEB also observed that Ontario utilities have capital structures that are "broadly consistent" with those approved for utilities in other Canadian provinces.[49]

4.2 Prior OEB Findings

4.2.1 Past OEB Decisions Related to OPG

In OPG's payment amounts proceeding under Docket EB-2013-0321, the OEB reaffirmed that hydroelectric generation entails lower relative business risk than nuclear generation and relied on that finding to support a lower approved equity thickness.[50] In EB-2016-0152, as part of a request to increase the Company's equity thickness, OPG and Concentric stated that the substantial capital investment associated with the Darlington Refurbishment Project ("DRP") would increase OPG's exposure to nuclear generation risk and cited the OEB's decision in docket EB-2013-0321. The OEB rejected this inference, noting that, while the nuclear rate base would increase materially over the test period, nuclear energy production would not increase, and would at times decline as units were taken out of service during refurbishment. As a result, the relative contribution of nuclear generation to revenues would not increase in a manner that would justify a higher equity ratio.[51]

More broadly, while acknowledging that nuclear generation carries higher inherent business risk than hydroelectric generation, the OEB concluded that these risks were substantially mitigated in OPG's case by existing regulatory protections, including O. Reg. 53/05 and the use of deferral and variance accounts, such as the Capacity Refurbishment Variance Account ("CRVA"), which materially limited OPG's cost recovery risk.[52] The OEB approved continuation of the existing capital structure of 45% equity and 55% debt as opposed to the OPG proposed 49% equity and 51% debt split. The OEB found that OPG had not established that there was a change in business

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[48] Decision and Order, *Ontario Energy Board*, EB-2024-0063, March 27, 2025. pp. 57 and 58.
[49] Decision and Order, *Ontario Energy Board*, EB-2024-0063, March 27, 2025. p. 58.
[50] Decision with Reasons, *Ontario Energy Board,* EB-2013-0321, November 20, 2014. pp. 112-115.
[51] Decision and Order, *Ontario Energy Board*, EB-2016-0152, December 28, 2017. pp. 99-112.
[52] Decision and Order, *Ontario Energy Board*, EB-2016-0152, December 28, 2017. pp. 102-103.

risk that warranted an increase in the level of equity to 49%.[53] The approved ROE was set at 8.78%, resulting in a WACC of 6.30% to 6.40% over the payments period.[54]

OPG's payment amounts for the period from January 1, 2022 to December 31, 2026 were set in accordance with a settlement proposal between OPG and most of the intervenors in EB-2020-0290. While OPG initially proposed a 50% equity and 50% debt capital structure, the settlement retained the capital structured approved in EB-2016-0152 – 45% equity and 55% debt.[55] For this period, the approved ROE was 8.66%, resulting in a cost rate that ranged between 5.76% to 5.90% over the payments period.[56]

A notable feature of the EB-2020-0290 settlement was the use of a reduced rate of return, based on the long-term debt rate (and not the allowed ROE rate), for $358 million of the actual 2017-2021 in-service capital additions that are in excess of OPG's forecasted and OEB-approved amounts set out in OPG's 2017-2021 payment amounts proceeding.[57] While implemented through a different mechanism, the practical effect is comparable to applying a lower allowed ROE to the equity share of rate base.

Table 4.1 provides a summary of proposed and approved equity thickness ratios in past decisions.

Table 4.1: Equity Thickness in Past Decisions

Case No.	Proposed	Approved
EB-2007-0905[58]	57.5%	47%
EB-2010-0008[59]	47%	47%
EB-2013-0321[60]	47%	45%
EB-2016-0152[61]	49%	45%
EB-2020-0290[62]	50%	45%

4.2.2 Recent and Upcoming Changes in OPG's Operations

OPG has concluded the DRP, and the refurbished units are now in service. The Company is now undertaking another larger nuclear refurbishment project, the Pickering Refurbishment Project ("PRP"). PRP is a multi-year program to refurbish units 5-8 at Pickering to allow continued safe and reliable operation for an additional thirty-eight years. The cost estimate to refurbish all four

[53] Decision and Order, *Ontario Energy Board*, EB-2016-0152, December 28, 2017. p. 100.
[54] Payment Amounts Order, Appendix A, Tables 11-15, *Ontario Energy Board,* EB-2016-0152, March 29, 2018.
[55] Decision and Order, *Ontario Energy Board*, EB-2020-0290, November 15, 2021, Exhibit 0, Tab 1, Schedule 1, p. 24.
[56] Payment Amounts Order, Appendix A, Tables 11-15, *Ontario Energy Board,* EB-2020-0290, January 27, 2022.
[57] Decision and Order, *Ontario Energy Board*, EB-2020-0290, November 15, 2021. p. 4.
[58] Decision and Order, *Ontario Energy Board*, EB-2016-0152, December 28, 2017. p. 99.
[59] Ibid.
[60] Ibid.
[61] Decision and Order, *Ontario Energy Board*, EB-2016-0152 December 28, 2017. p. 100.
[62] Ontario Power Generation Inc. Settlement Proposal, *Ontario Energy Board*, EB-2020-0290, Exhibit 0, Tab 1, Schedule 1. July 16, 2021. p. 24.

units is $26.8 billion including interest, escalation and contingency.[63] Once completed, the refurbished Pickering plant will have a peak capacity of 2,200 MW. The refurbishment of all four Pickering units is planned to be completed in July 2034, with defueling starting in September 2026 and execution starting in January 2027. The first unit, Unit 5, is planned to be completed with a return to service date of May 2031. OPG will be refurbishing all four units at the same time, with a staggered return to service schedule.[64]

According to OPG's 2025-2031 business plan, the company expects to spend approximately $6.5 billion in hydroelectric sustaining capital investments.[65] Over the IR term, OPG expects to make capital investments to sustain approximately 1,500 MW of existing hydroelectric fleet capacity and add an estimated incremental capacity of approximately 50 MW.[66]

In addition to the PRP, OPG is also undertaking the Darlington New Nuclear Project ("DNNP"). The project is set up as a special purpose vehicle and as such is separate from the rest of OPG's business. For that reason it is out of the scope of this report and is not included in our analysis.

4.3 Ontario Regulation 53/05

On January 1, 2026, the provincial government of Ontario enacted new amendments within Ontario Regulation 53/05 under *the Ontario Energy Board Act, 1998*. The amendments allow for OPG to recover revenue related to construction-period interest for the DNNP and the PRP.

Ontario Regulation 53/05 requires the OEB to set payment amounts that allow OPG to recover prudently incurred costs arising from prescribed assets, including capital, non-capital, financing, and decommissioning costs. Under the updated version of Ontario Regulation 53/05, the OEB is required to allow OPG annual recovery of revenue equal to the cost of debt financing for the DNNP and PRP while those projects are still in development. Specifically, the OEB must allow OPG to recover, each year, an amount equal to the forecasted cumulative capital costs of the project multiplied by OPG's long-term debt rate.[67]

The amendments to Ontario Regulation 53/05 provide a form of Concurrent Cost Recovery ("CCR") for OPG's financing costs related to the DNNP and PRP. The approach resembles cost recovery under Construction Work in Progress ("CWIP"), wherein utilities place a portion of investment capital, i.e., the value of CWIP, into rate base prior to the completion of construction projects to begin recovering a return. The CWIP approach to cost recovery typically allows the utility to recover a return equal to the Company's WACC for a portion of the unfinished asset's net plant. The CCR set forth in Ontario Regulation 53/05 differs from CWIP cost recovery, which is not allowed to be included in rate base by the OEB,[68] in that it only allows OPG to recover revenue equal to the Company's cost rate on long term debt.

[63] Exhibit A1, Tab 3, Schedule 1, pp. 7-9.
[64] Pickering Refurbishment Program Overview, *Ontario Energy Board*, EB-2025-0297, Exhibit D2, Tab 3, Schedule 1. p. 2. December 12, 2025.
[65] Exhibit A2-2-1 Attachment 1, p. 21.
[66] Exhibit A1, Tab 3, Schedule 1, p.12.
[67] Payments Under Section 78.1 of the Act, Ont. Reg. 53/05, s. 6(2)11.1 and 12.1.
[68] OEB "Filing Requirements for Electricity Distribution Cost of Service Rate Applications – 2026 Edition for 2027 Rate Applications", December 2025, p. 20.

The CCR provides for variance accounts to track the difference between allowed cost recovery and actual recovery during construction. In accordance with the approved CCR mechanism, OPG is seeking to recover revenue equal to "an amount calculated by multiplying the forecast cumulative capital costs incurred in respect of the PRP by OPG's long-term cost of debt rate."[69] The proposed mechanism to recover this amount will be an "account that records the difference between the forecast PRP CCR amount included in OPG's revenue requirement […] and an amount calculated by multiplying the actual cumulative capital costs incurred by OPG in respect of the PRP by OPG's long-term cost of debt rate."[70]

Ontario Regulation 53/05 also established specialized accounts to track deviations between the forecast amount included in the OPG's revenue requirement and actual costs or revenues that are incurred during the project's development. These include:

- Nuclear Liability Deferral Account – Records the revenue requirement impact of changes in OPG's nuclear asset retirement obligations.[71]
- Nuclear Development Variance Account – Captures differences between actual and approved costs for planning and developing new nuclear facilities.[72]
- Darlington Refurbishment Rate Smoothing Deferral Account – Works to prevent rate shock upon completion of the Darlington refurbishment project.[73]
- Pickering Closure Costs Deferral Account – Records any employment related or non-capital costs related to Pickering closure activities.[74]
- Pickering B Variance Account – Records the difference between revenues earned and costs incurred due to the closure and refurbishment of Pickering.[75]
- Pickering B Refurbishment Project Variance Account – Captures difference between actual and approved costs for the refurbishment of the Pickering B plant.[76]

4.4 OPG's Proposed Cost of Capital Changes

In the present payment amounts application, OPG has requested a change to its capital structure. The Company has requested an increase of its deemed equity participation rate of 45% to 52%. OPG proposes to adhere to the existing methodology for setting other cost of capital parameters, as follows:

1. **Allowed ROE** – OPG has adopted the OEB's generic ROE methodology in its present application, resulting in allowed ROE of 9.11 percent for the current year, and proposes to update this value when the OEB approves a new ROE in Fall 2026 for 2027 rates.[77]

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[69] Exhibit A1, Tab 1, Schedule 1, p. 4.
[70] Summary of Application, *Ontario Energy Board*, EB-2025-0297, Exhibit I1, Tab 1, Schedule 3, pp. 1-2.
[71] Payments Under Section 78.1 of the Act, Ont. Reg. 53/05, s. 5.2.
[72] Payments Under Section 78.1 of the Act, Ont. Reg. 53/05, s. 5.4.
[73] Payments Under Section 78.1 of the Act, Ont. Reg. 53/05, s. 5.5.
[74] Payments Under Section 78.1 of the Act, Ont. Reg. 53/05, s. 5.6(i).
[75] Payments Under Section 78.1 of the Act, Ont. Reg. 53/05, s. 5.7(i).
[76] Payments Under Section 78.1 of the Act, Ont. Reg. 53/05, s. 5.8(i).
[77] Exhibit C1, Tab 1, Schedule 1, p. 3.

OPG proposes to maintain the updated allowed ROE value through the duration of the payment amounts period.

2. **Long Term Debt Cost Rate** – OPG's proposed long-term debt amounts consist of existing and planned long-term debt issuances, plus a long-term debt provision to reconcile OPG's regulated debt to its OEB-approved capital structure.[78] OPG has updated its methodology to forecast long-term debt costs in this proceeding.

3. **Short Term Debt Cost Rate** – OPG's short-term debt amount, as filed, reflects the Company's forecast amount of corporate short-term borrowings. The cost of short-term debt reflects OPG's forecast of the corporate short-term borrowing cost.[79] OPG's filed approach to determining debt-related costs aligns with the methodology established in the OEB's decision in Docket EB-2024-0063. OPG has updated its methodology to forecast short-term debt costs in this proceeding.

[78] Exhibit C1, Tab 1, Schedule 2, pp. 9 and 10.
[79] Exhibit C1, Tab 1, Schedule 3, p. 1.

5 RESPONSE TO CONCENTRIC REPORT

5.1 Concentric's Cost of Capital Evaluation Criteria

OPG engaged Concentric to conduct an analysis of the Company's authorized capital structure. In accordance with the OEB's findings in EB-2024-0063, Concentric's report focused on OPG's deemed capital structure and did not address issues of allowed ROE or debt rates.[80] However, the Company's total rate of return, set equal to a weighted average of debt and equity cost rates, depends on the deemed capital structure. Concentric's recommended change to OPG's capital structure, therefore, constitutes a change to the Company's allowed rate of return.

5.1.1 Defining the Fair Return Standard

The Concentric report refers to the Fair Return Standard as a basis for the evaluation of OPG's deemed capital structure. In particular, Concentric cites the following three requirements of the fair return standard:[81]

1. **The Capital Attraction Standard** – allows the utility to attract capital necessary for the provision of safe and reliable service.

2. **The Financial Integrity Standard** – provides the utility with the ability to maintain its financial integrity.

3. **The Comparability Standard** – comparable to returns required on investments of similar risk.

We agree that these are the principal elements of the FRS that must be considered in evaluating a utility's allowed return, which includes both the authorized capital structure as well as the allowed ROE.

In addition, Concentric states that a utility's allowed return must be evaluated on the basis of the "Stand Alone Principle." According to the Stand Alone Principle, a utility should be regulated as if it raised capital as an independent company. This means that the regulator determines an allowed return on the basis of a company's business and financial characteristics rather than the company's ownership structure. As stated by the OEB in the most recent Generic Cost of Capital decision:

> *"[T]he OEB is firmly of the view that the cost of capital should be determined based on the use of funds and the risk profiles of utilities, rather than their ownership type or capital source. The approach to setting the authorized ROE and capital structure, consistent with longstanding policy, allows for a fair, predictable, and transparent regulatory framework. Differentiating based on ownership and capital source would*

[80] Exhibit C1, Tab 1, Schedule 1, Attachment 1, p. 4.
[81] Exhibit C1-1-1, Attachment 1, p. 9.

> *introduce unnecessary complexity without a clear financial justification and could create potential inequities in rate treatment."*[82]

We agree that this definition of the Stand Alone Principle applies to the determination of OPG's capital structure.

5.1.2 Utility Risk Factors

Concentric evaluates OPG on the basis of business and operating risk, environmental and weather related risk, cybersecurity risk, regulatory risk, and financial risk.[83] Regarding business and operating risk, Concentric considers changes to OPG's asset mix (i.e., OPG's ratio of nuclear to hydroelectric generation) and the scale of OPG's capital program.[84] In assessing financial risk, Concentric evaluates credit ratings from credit rating agencies (S&P, DBRS, and Moody's), the amendment to Ontario Regulation 53/05 allowing CCR, certain credit metrics, and credit spreads.

Although we group these risks into two general categories: business risk and financial risk, we generally agree that these are the risk factors that should be considered in evaluating a utility's cost of capital and authorized capital structure. We comment on Concentric's evaluation methodology and conclusions in Sections 5.2 and 5.3.

5.2 Concentric's Evaluation of Business Risk

The Concentric report states that OPG's business risks have increased in the years since the Company's last payment amounts application. We agree with this assessment generally, though we find some of the conclusions in the Concentric report lack complete empirical support in the filed evidence. For example, the Concentric report does not provide detailed information about how climate change is expected to affect OPG specifically during the five-year payment amounts term, but provides general statements about climate change, an example of recent flooding, and an example of recent wildfires. In this section, we respond to Concentric's statements about operating risk including changes in consumer demand for electricity, increased capital expenditures, change in asset mix and planned outages, weather risk, cybersecurity risk, and regulatory risk.

The key components of OPG's operating risk, according to the Concentric report, arise from a rapid growth in demand for electricity and a series of major capital investments during the five-year payment amount period. These investments will result in large increases in OPG's plant-in-service, as well as a change in asset mix, particularly the ratio of nuclear to hydroelectric generation assets contained in rate base, and several planned outages during multi-year refurbishment projects. We have reviewed Concentric's statements and corresponding workpapers and agree that OPG faces heightened operating risk relative to the recent past, though these risks are tempered somewhat by new regulatory mechanisms like CCR, which includes both a recovery mechanism for costs accrued during construction or refurbishment of major nuclear projects. In addition, OPG will adopt new deferral and variance accounts (see Section 4.3 for a list of some of these accounts) that help mitigate risk by allowing OPG to

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[82] OEB Decision EB-2024-0063, March 27, 2025, p. 18.
[83] Exhibit C1-1-1, Attachment 1, pp. 30-53.
[84] Exhibit C1-1-1, Attachment 1, p. 33.

recover unplanned expenses. Furthermore, OPG's hydroelectric payment amounts will no longer be frozen as they were during the 2021 to 2026 period.[85]

5.2.1 OPG's Increased Capital Expenditures

A utility that increases capital expenditures generally faces heightened operating risk for several reasons. First, if the utility does not have access to some form of CCR (e.g., CWIP), it faces regulatory lag on the commencement of recovery of its capital costs. During this time, the utility incurs financing costs but is not able to collect revenue to pay these costs, resulting in a strain on cash flows.[86] Second, the utility carries risk that certain incurred costs will be disallowed by the regulator. Third, the utility faces execution risk arising from issues that arise during the construction process that slow the project or result in cost overruns. (Increased capital expenditures also affect financial risk, as major projects generally require financing that increase a utility's debt levels.)

The Concentric report states that OPG plans to undertake $28.0 billion in regulated capital expenditures during the 2027 to 2031 term.[87] The report provides a breakdown of this capital spending as follows: $18.1 billion for the PRP; $4.8 billion related to hydroelectric generation capital spending; and $5.2 billion related to other nuclear spending.[88] These projects do not include the DNNP. The report provides empirical support that OPG's planned capital spending during the payment amount period exceeds past capital spending by comparing the $28.0 billion spending forecast to the Company's capital spending of $15.2 billion in its most recent payment amount period (2022-2026) and $8.1 billion in the period before that (2017-2021).[89] The Concentric report also compares OPG's planned capital expenditures to the planned capital expenditures of the proposed peer group.[90]

We agree that OPG's increased capital expenditures during the five-year term place upward pressure on the Company's operating risk.[91]

5.2.2 OPG's Asset mix: Increased Nuclear Generating Plant

As explained in Section 4.2, the OEB has found that nuclear power generation poses a greater risk than hydroelectric power. Nuclear plants have very high fixed costs and are generally "must-run" facilities, which means that utilities with a high proportion of nuclear power cannot easily scale output with demand—particularly if demand falls. This means that generation costs remain high for the utility even as revenue falls. In addition, because nuclear plants produce such a large amount of energy, a utility with a high proportion of nuclear generation plant is more likely

[85] OEB Regulation 53/05, s. 6(2)13.
[86] The utility eventually recovers these costs, if they are deemed prudently incurred, in rates set during the subsequent rate case. In the interim, the utility must manage between rate cases without cost recovery through rates.
[87] Exhibit C1-1-1, Attachment 1, p. 11.
[88] Exhibit C1-1-1, Attachment 1, p. 30.
[89] Exhibit C1-1-1, Attachment 1, pp. 28-33.
[90] Exhibit C1-1-1, Attachment 1, p. 33.
[91] As discussed in Section 5.4 and Section 6, we recommend changes to the peer group, which would change the comparison of capital expenditures.

to face concentration risk.[92] An asset mix with a higher proportion of nuclear generation increases the risk profile of the utility, all else equal.

The Concentric report provides data on OPG's shifting generation mix. According to the filed evidence, OPG's rate base consisted of 32.8% nuclear generation plant in 2017, 58.9% in 2024 and will consist of 66.3% nuclear generation plant at the end of the proposed payment amounts period in 2031.[93] Hydroelectric plant will constitute a lower proportion of rate base, accordingly.

However, the Concentric report states that OPG will experience a decline in nuclear generation output during the PRP.[94] As discussed in Section 4.2.1, the OEB has found in a past decision that increases in nuclear rate base, alone, are not sufficient to justify a higher equity ratio.[95] The OEB found that since nuclear power production was not expected to increase, and would at times decline as units were taken out of service during the DRP, the relative contribution of nuclear generation to OPG revenues would not increase.

The evidence demonstrates that OPG's asset mix will continue to trend towards a higher proportion of nuclear generation plant during the payment amounts term, while at the same time the proportion of nuclear power output is expected to decrease during the current payment amounts period.[96] The evidence indicates a high likelihood that risk will increase in the future as a result of increased nuclear generation. However, the effect on current risk is more ambiguous as a result of two countervailing forces:

1. Decreased Risk – according to OEB precedent, OPG will face lower risks as the proportion of nuclear power in OPG's generation mix decreases (and hydroelectric power generation will increase, in relative terms) as nuclear facilities go offline for construction and refurbishment.

2. Increased Risk – the dollar value per MWh produced by nuclear will increase, increasing the Company's concentration risk. It is not clear the extent to which these risks will offset one another.

5.2.3 OPG's Planned Outages

Complex refurbishment projects also introduce risks like any other capital project: execution risk, delays, and cost overruns. As such, planned outages generally correspond to increased risk in

[92] If a single nuclear unit goes offline due to a mechanical failure or a safety inspection, the utility loses a large percentage of its total generation capacity.
[93] Exhibit C1-1-1, Attachment 1, p. 27.
[94] Exhibit C1-1-1, Attachment 1, p. 52.
[95] "In this case, while the nuclear rate base will increase substantially over the five-year term, the MWh generated by nuclear will not increase, and in fact will decrease at times as units are taken out of service at Darlington. The relative contributions of revenue from hydroelectric and nuclear will not change in favor of nuclear, so it is not axiomatic that the equity thickness should be increased on this basis." (Decision and Order, *Ontario Energy Board,* EB-2016-0152, December 28, 2017. p. 102.)
[96] "OPG forecasts to produce just 126 TWh from nuclear sources in the 2027-2031 rate period, a 28% decrease from the 2022-2026 total of 175 TWh and a more than 39% decrease from the 2017-2021 historical total of 209 TWh." Exhibit C1-1-1, Attachment 1, p. 27.

the near term. However, planned outages with approved budgets can reduce risk in the long run by catching and fixing maintenance issues before they result in larger problems.

The Concentric report states that the PRP carries inherent "mega project" risks, plus several other risks.[97] These risks include uncertainties arising from the age of the Pickering units, scope differences relative to the recent DRP, schedule risks as multiple major projects overlap, potential issues obtaining skilled labor, risks arising from Pickering's proximity to Toronto, and regulatory risks arising from pending approvals from the Canadian Nuclear Safety Commission. The Concentric report also states that OPG's hydroelectric refurbishment projects carry risks arising from uncertainty regarding the condition of aged plant.[98]

The Concentric report states that when the Pickering plant is offline for refurbishment there will be a significant decline in nuclear generation output. Concentric states that this decline creates additional risk because each MWh of nuclear generation becomes more financially valuable as the generation recovering nuclear revenue requirement is reduced.[99] This is a form of concentration risk.

While the Concentric report presents a reasonable qualitative assessment of the risks associated with OPG's planned outages, the magnitude of the effect of these outages on the Company's risk is not clear. We understand that OPG has numerous variance accounts designed to account for refurbishment project cost recovery. For example, the CCR established in the 2025 amendment to Ontario Regulation 53/05 allows for recovery of a portion of OPG's financing costs for the PRP (i.e., CCR), as well as an associated variance account. The net effect of the overlapping refurbishment projects likely increases OPG's operating risks, but these risks are offset somewhat by variance accounts that allow for related cost recovery. In addition, OPG's nuclear payment amounts are based on a forecast of required revenue which can reduce regulatory lag assuming accurate forecasts of spending and output.

These planned refurbishment projects likely provide long-run stability to OPG's operations, which could place downward pressure on the Company's risk in the long run.[100] However, OPG's major refurbishment projects will not be completed during the 2027 to 2031 payment amounts period. For this reason, we do not consider the risk reduction effects of the Company's refurbishment projects to be germane to the present authorized capital structure analysis. These effects could be considered in the next payment amounts application. Overall, the planned outages are likely to increase OPG's risk slightly.

5.2.4 OPG's Weather and Cybersecurity Risk

Cyberattacks in the form of malware and phishing pose a risk to utilities, as does extreme weather. The Concentric report states that cyberattacks on energy companies have increased in recent years, and states that the North American Electric Reliability Corporation ("NERC") has

[97] Exhibit C1-1-1, Attachment 1, p. 34.
[98] Exhibit C1-1-1, Attachment 1, p. 37.
[99] Exhibit C1-1-1, Attachment 1, pp. 12-13.
[100] Concentric also acknowledges this in response to C1-SEC-031(a): "The replacement of life-limited components as part of the Darlington and Pickering refurbishments reduces failure risk, and the modernization of systems reduces the risk of degradation-driven outages..."

adopted 14 new or revised standards applicable to OPG since 2020.[101] The Concentric report also states that weather-related damage to utility infrastructure has increased, and that these risks have led to an increase in regulatory directives and reliability standards for utilities.[102] The Concentric report does not comment on whether OPG's weather-related risk levels differ from other utilities in North America.

We agree that weather risks are likely to increase for utilities, generally speaking, over time as climate change worsens. Power generation facilities may need to adapt to demand fluctuations and potentially milder winters, on average, interspersed with more volatile temperature swings.[103,104] In this way, OPG's weather risks are potentially somewhat greater than during the last payment amounts proceeding. However, OPG's existing variance accounts reduce this risk. For example, the Hydroelectric Water Conditions Variance Account provides revenue support in case of low water levels across the system, relative to forecasts.[105] The Hydroelectric Surplus Baseload Generation Variance Account provides revenue recovery for water spillover during periods when power generation exceeds demand.[106] The Concentric report does not quantify the increase in weather risk borne by investors in light of these variance accounts.

We also agree that cybersecurity risks have increased in recent years. The evidence indicates that, in isolation, climate and weather risks have increased relative to OPG in its last payment amounts proceeding. However, we suggest that the introduction of new reliability standards related to weather and cybersecurity risks such as the Extreme Cold Weather Preparedness and Operations Standard (NERC Number EOP-012-3)[107] may help reduce these risks somewhat.[108] The overall effect is ambiguous as it is not clear how much OPG's existing variance accounts and the new NERC reliability standards will offset the increase in weather and cybersecurity risks.

5.2.5 OPG's Regulatory Risk

Rate regulation can result in both risk reduction and risk increases for a utility. A utility may experience lower risk under a framework establishes stable revenue recovery over time (for example, a forecasted multi-year rate plan). Regulatory tools like variance accounts and exogenous cost factors also support investor confidence that the utility will be able to recover revenue associated with difficult-to-forecast costs.

Regulatory lag and the risk of cost recovery disallowance constitutes two of the key drivers of heightened risk associated with regulation. Under traditional forms of cost-of-service regulation,

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[101] Exhibit C1-1-1, Attachment 1, p. 39.

[102] Exhibit C1-1-1, Attachment 1, pp. 37-39.

[103] Khan, Z., Iyer, G., Patel, P., Kim, S., Hejazi, M., Burleyson, C., & Wise, M. "Impacts of long-term temperature change and variability on electricity investments." *Nature Communications*. (2021). https://www.nature.com/articles/s41467-021-21785-1.

[104] The US experienced about two times more weather-related outages during the period from 2014 to 2023 than during 2000 to 2009 (see: https://www.climatecentral.org/climate-matters/weather-related-power-outages-rising).

[105] Exhibit A2-1-1, Attachment 4, p. 131.

[106] Exhibit A2-1-1, Attachment 4, p. 130.

[107] Extreme Cold Weather Preparedness and Operations, NERC, EOP-012-3. https://www.nerc.com/globalassets/standards/approved-standards/eop/eop-012-3.pdf.

[108] For example, if adherence to the fourteen new NERC standards related to cybersecurity help improve OPG's cybersecurity, then the recent increase in cybersecurity risk will be mitigated somewhat.

the utility incurs costs and does not recover those costs directly each year. Instead, the utility files periodic rate cases, providing the regulator with test year accounting costs which the regulator may or may not allow the utility to recover in rates. Even assuming the regulator allows the recovery of all costs, the utility will be required to manage its cash flow without recovering revenues associated with the cost of capital, or portions of the cost of capital, over a period of time insofar as the utility is not permitted cost recovery through rates until the completion of a subsequent rate case. This regulatory lag can be reduced by CCR or by including CWIP in rate base.

Cost recovery disallowance occurs if the regulator does not allow recovery of certain costs already incurred, in which case the utility experiences a reduction in net income. In some cases, legislative or regulatory assurances can reduce the risk that costs will be deemed imprudent and the associated revenue recovery will be disallowed.

The Concentric report states that S&P categorizes the province of Ontario as a "Most Credit Supportive" jurisdiction for utilities. Concentric notes that OPG maintains deferral and variance accounts that mitigate certain of the Company's risks.[109] In addition, Concentric states that OPG will implement CCR in accordance with the 2026 amendment to Ontario Regulation 53/05. Concentric states that the use of CCR "is seen as credit positive due to the improved near-term cash flows."[110] Concentric states that OPG's regulatory risk has remained relatively stable since the previous two payment amount applications.[111]

Our evaluation of the evidence indicates that OPG's regulatory risk has likely decreased slightly since the most recent payment amounts decisions, EB-2020-0290 and EB-2016-0152, which preceded the changes to Regulation 53/05. The establishment of CCR for the PRP provides a risk reduction tool that was not present in the previous rate framework. As discussed in Section 4.2.1, the OEB has found that OPG's deferral and variance accounts help to reduce risk for the company. Table 5.1 summarizes OPG's current and previous deferral and variance accounts. Other potential changes such as the lifting of the hydroelectric rate freeze established in the EB-2020-0290 proceeding also reduce risks somewhat.[112]

We find that although the PRP and the increase in nuclear generation may increase other categories of risk for OPG, the introduction of new regulatory tools would offset these risks somewhat. However, we note that some of these tools have been proposed but have not yet been approved.

[109] Exhibit C1-1-1, Attachment 1, pp. 40 and 41.
[110] Exhibit C1-1-1, Attachment 1, p. 42.
[111] Exhibit C1-1-1, Attachment 1, p. 44.
[112] O. Reg. 53/05, s. 6(2)13.

Table 5.1: OPG's Current and Previous Deferral and Variance Accounts[113]

Account	EB-2016-0152	EB-2020-0290	EB-2025-0297
Hydroelectric Water Conditions Variance Account	✓	✓	✓
Hydroelectric Incentive Mechanism Variance Account	✓	✓	X
Hydroelectric Surplus Baseload Generation Variance Account	✓	✓	✓
Ancillary Services Net Revenues Variance Account – Hydroelectric	✓	✓	✓
Income and Other Taxes Variance Account	✓	✓	✓
Capacity Refurbishment Variance Account	✓	✓	✓
Pension and OPEB Cost Variance Account	✓	✓	✓
Pension & OPEB Forecast Accrual versus Actual Cash Payment Differential Variance Account	✓	✓	✓
Gross Revenue Charge Variance Account	✓	✓	✓
Nuclear Liability Deferral Account	✓	✓	✓
Nuclear Development Variance Account	✓	✓	✓
Bruce Lease Net Revenues Variance Account	✓	✓	✓
Nuclear Deferral and Variance Recovery Variance Account	✓	✓	✓
SR&ED ITC Variance Account	✓	✓	✓
Rate Smoothing Deferral Account	X	✓	✓
Impact for IFRS Deferral Account	X	✓	✓
Earnings Sharing Deferral Account	X	✓	✓
Impact Resulting from Optimization of Pickering Station End-of-Life Dates Deferral Account	X	✓	✓
Pickering Closure Costs Deferral Account	X	X	✓
Pickering B Variance Account	X	X	✓
Pickering B Refurbishment Project Variance Account	X	X	✓
Change of Laws Deferral Account (OPG)	X	X	✓
Global Hydroelectric Capital Variance Account	X	X	✓
Clean Electricity ITC Variance Account (OPG)	X	X	✓
Payment Amount Shaping Deferral Account	X	X	✓
Pension & OPEB Cash Payment Variance Account	✓	✓	*
Pension & OPEB Cash Versus Accrual Differential Deferral Account	✓	✓	*
Incremental Cloud Computing Arrangement Deferral Account	X	X	*
Niagara Tunnel Project Pre-Dec. 2008 Disallowance Variance Account	✓	✓	*
Clarington Corporate Campus Deferral Account	X	✓	*
Sale of Unprescribed Kipling Site Deferral Account	X	✓	*
Fitness For Duty Deferral Account	✓	✓	*
Pickering Life Extension Depreciation Variance Account	X	X	*
Impact Resulting from Changes in Station End-of Life Dates (2015) Deferral Account	✓	X	*
Impact Resulting from Changes in Station End-of Life Dates (2017) Deferral Account	X	✓	*

** Accounts are proposed to record only amortization and interest of the existing balance, with no new additions to the account during the payment amounts period. See Exhibit H1, Tab 1, Schedule 1, p. 4-5.*

[113] Exhibit L, C1-CCC-025, April 22, 2026. pp. 4-8. This interrogatory response by OPG does not include one variance account that was included in the original application: Hydroelectric Deferral and Variance Over/Under Recovery Variance Account.

5.3 Concentric's Evaluation of Financial Risk

Financial risk relates to a firm's ability to pay its bills. Whereas business risk, as defined above, considers a company's exposure to factors that may reduce profitability, financial risk arises from a company's capital structure (for example, a higher level of debt on a firm's balance sheet generally increases the firm's financial risk). Heightened levels of financial risk can increase a firm's cost of capital. Therefore, an evaluation of a utility's WACC requires an analysis of financial risk.

A utility's financial risk can be assessed using measures of liquidity and solvency. Liquidity is defined as a firm's ability to meet near term obligations and is measured by "current" assets (e.g., cash and cash equivalents, accounts receivable, inventory) and "current" liabilities (e.g. short-term debt, accrued expenses, taxes payable, payroll liabilities). Measures of liquidity include the current ratio, defined as current assets divided by current liabilities, and other similar measures. Solvency refers to a firm's long-term financial strength. Measures of solvency include long-term assets (e.g., property, plant, and equipment) and liabilities (e.g., long-term debt). Other relevant ratios used to assess financial risk include interest coverage ratios and measure of free cash flow to debt.

The Concentric report states that OPG will experience elevated financial risk levels during the 2027 to 2031 payment amounts period.[114] We have reviewed Concentric's evidence and find that OPG may experience slightly elevated financial risk in the near term (if its equity ratio remains at 45%), but not substantially elevated risk, as there is little evidence that OPG's credit worthiness will decline, and potential financial risks are in part offset by the approval of the CCR in Ontario.

5.3.1 Credit Rating Agency Assessments of OPG

Credit rating agencies like S&P, Moody's, and Morningstar DBRS periodically publish analysis of the security issuances of firms across industries. These assessments offer investors and stakeholders insights into the risk factors affecting a given firm's creditworthiness. Utility executives and regulators monitor credit ratings, as a credit rating downgrade will increase the cost rates of the utility's debt.

The Concentric report cites recent publications by S&P, Moody's, and Morningstar DBRS in its analysis of OPG's financial risk. Concentric provides segments of analysis from Morningstar DBRS that note increases in capital spending and expectations of substantial new debt issuances.[115] Concentric also quotes Moody's and Morningstar DBRS publications that credit upgrades for OPG are unlikely (as well as "highly unlikely", as noted by S&P). These publications note that credit rating downgrade changes could occur if capital projects face substantial cost overruns/delays, if the province indicates a lack of support for OPG, or if there is a prolonged deterioration in credit metrics.

We have reviewed the credit rating publications cited in the Concentric report as well as the credit rating publications provided by Concentric in response to interrogatories.[116] In addition to

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[114] Exhibit C1-1-1, Attachment 1, p. 53.
[115] Exhibit C1-1-1, Attachment 1, p. 46.
[116] Exhibit L, A2-Staff-010, Attachments 2 and 3.

the Morningstar DBRS quotation included in the Concentric report regarding elevated capital expenditures, Morningstar DBRS also states:

> "All trends are Stable […] The Stable trends reflect the Company's key credit metrics, which remain reasonable despite the complex and substantial capital expenditures (capex) program."[117]

And

> "Morningstar DBRS has factored into OPG's current credit ratings that its key credit metrics will weaken moderately over the medium term, and expects the key credit metrics to remain reasonable for the A(low) credit rating." [118]

These statements suggest that the Morningstar DBRS publications expect OPG may face slightly elevated financial risk during the Company's major capital investment projects, but not enough to warrant a change in outlook. The capital spending plan has already been factored into the current stable credit rating. Both Morningstar DBRS and Moody's also expect OPG's credit rating to remain stable.[119, 120] These stable credit ratings outlooks were reaffirmed by S&P and Morningstar DBRS in April 2026.[121]

Although the credit rating publications cited in Concentric's report acknowledge a possible future increase in OPG's financial risk,[122] the evidence does not support expectations of substantial increases in OPG's present financial risk.

5.3.2 OPG's Application of CCR

The update to Ontario Regulation 53/05, as discussed in Section 4.3, will provide OPG with improved cash flow during the 2027 to 2031 payment amounts period relative to a regulatory framework that lacks a CCR mechanism. Cash flow support in the form of CCR generally reduces a utility's near term financial risk by improving liquidity. Morningstar DBRS notes: "[w]e believe that the proposed amendments [the CCR] are credit positive and will support OPG's credit metrics through the construction phase of DNNP and the Pickering Refurbishment."[123]

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[117] Morningstar DBRS, "Morningstar DBRS Confirms Ontario Power Generation Inc. at A(low)/R-1(low) with Stable Trends," April 11, 2025, p. 1. https://dbrs.morningstar.com/research/451908/morningstar-dbrs-confirms-ontario-power-generation-inc-at-a-lowr-1-low-with-stable-trends.

[118] Morningstar DBRS, "Morningstar DBRS Confirms Ontario Power Generation Inc. at A(low)/R-1(low) with Stable Trends," April 11, 2025, p. 2. https://dbrs.morningstar.com/research/451908/morningstar-dbrs-confirms-ontario-power-generation-inc-at-a-lowr-1-low-with-stable-trends.

[119] Moody's Ratings, "Ontario Power Generation Inc.," June 30, 2025, pp. 1-2.

[120] A2-Staff-010, Attachment 2, page 1 of 8, and A2-Staff-010, Attachment 3, p. 1 of 5.

[121] Exhibit L, A2-Staff-010, Attachments 2 and 3.

[122] Exhibit C1-1-1, Attachment 1, pp. 44-45.

[123] Morningstar DBRS, "Ontario's Nuclear Outlook Brightens: Proposed Regulatory Amendments Seen as Credit Positive for SMRs and Refurbishment," June 3,2025, p. 1. https://dbrs.morningstar.com/research/455536.

The Concentric report acknowledges that OPG's CCR for the PRP will provide support to the Company's existing creditworthiness.[124]

We agree that CCR causes upward impacts to OPG's creditworthiness relative to a framework that includes no means of concurrent cost recovery. However, the CCR mechanism only provides OPG with revenue recovery according to its long-term debt rate. The CCR mechanism does not recover OPG's WACC, as it does not include the cost rate of equity financing. Therefore, CCR, as designated under Ontario Regulation 53/05, likely provides a slight reduction to OPG's financial risk relative to the previous payment amounts period, when no such mechanism existed.

5.3.3 OPG's Credit Metrics

Ratios of accounting information from a firm's financial statements can be helpful in assessing a firm's financial risk. Credit metrics, if calculated correctly with accurate data, provide direct insight into a firm's capacity to meet debt obligations and make critical expenditures.

Concentric presents two credit metrics: (1) Funds from Operations ("FFO") to Debt; and (2) Cashflow from Operations ("CFO") to Debt. Figure 10 in Concentric's report depicts FFO/Debt and CFO/Debt that indicate higher level of cash flow under a capital structure with 52% equity during the years 2027 to 2031, compared to 45% equity.[125] Concentric presents statements from S&P and Moody's that suggest OPG's current credit rating requires a minimum FFO/Debt ratio of 13% and a minimum CFO/Debt ratio of 15%.[126] Concentric states that a 45% equity ratio "is not sufficient to maintain OPG's key credit metrics within the range required for its current ratings."[127] Concentric's table of FFO/Debt and CFO/Debt does not present any historical information about these ratios.

We agree that the FFO/Debt and CFO/Debt ratios are helpful for assessing a utility's financial risk, particularly with respect to liquidity. The liquidity analysis would benefit from the inclusion of historical data, allowing for an assessment of how these ratios are expected to change during the payment amounts period relative to recent history. Additionally, comparisons with other similar utilities would be helpful for placing OPG's financial risk among its peers. The Concentric analysis of credit metrics provides help in comparing OPG's financial risk with requirements by credit rating agencies. The evidence indicates that the OPG's current equity ratio of 45% is likely to increase the Company's financial risk over the 2027 to 2031 term. However, in Section 6, we show that OPG's financial risk is expected to remain the same relative to recent history under an equity ratio of 48.5%, and that an equity ratio of 52% is not required to maintain the minimum levels required by S&P and Moody's.

5.3.4 OPG's Credit Spreads

Bond prices reflect market-wide assessments of risk as investors buy and sell debt securities using relevant information about a particular company's financial risk. The yield of a bond is the rate of return that equates the present value of the bond's future payouts to its current market

[124] Exhibit C1-1-1, Attachment 1, pp. 42, 47, 48.
[125] Exhibit C1-1-1, Attachment 1, p. 101-102.
[126] Exhibit C1-1-1, Attachment 1, p. 49.
[127] Exhibit C1-1-1, Attachment 1, p. 49.

price. As a particular bond's price rises, (for example, because investors perceive reduced risk in that particular bond) the yield falls. Bond yields can be compared to benchmark yields, like yields on Treasury securities, to assess the market's perception of a bond's risk level. The difference between two yields is called the "spread." Higher bond spreads reflect elevated perceptions of risk by the market for a given security relative to the benchmark security.

The Concentric report presents two figures (Figure 11 and Figure 12) containing credit spreads for OPG securities over time: (1) a spread of OPG's 10-year bonds relative to a benchmark of 10-year bonds issued by A-Rated Canadian Utilities; and (2) a spread of OPG's 30-year bonds relative to 30-year issuances by the same A-Rated Canadian Utilities. The figures indicate a positive spread, meaning OPG bonds exhibit a higher yield than the benchmark yield. Concentric states that this means investors perceive a higher risk for OPG's bonds compared to "similarly rated utilities."[128]

Interpreting a credit spread requires knowledge of the credit ratings of the target security and the benchmark securities. In this case, the target securities are OPG long-term bonds. The benchmark securities are a composite of long-term bonds issued by Hydro One, Inc., Enbridge Gas, Inc., EPCOR Utilities Inc., CU Inc., Toronto Hydro Corp., and Alectra. Figure 5.1, below, provides the credit ratings of six of the utilities used in Concentric's analysis of credit spreads.[129,130] This figure demonstrates that all companies in the benchmark have equal or higher credit ratings relative to OPG. All utilities listed are a part of the Bloomberg A-rated utilities list. OPG, conversely, is a part of the Bloomberg BBB-rated utilities index.[131] Only one company, EPCOR Utilities Inc., appears to have the same credit rating from Morningstar DBRS. All companies in Concentric's analysis of credit spreads have a higher S&P credit rating.

The credit rating information suggests that investors will require a higher yield for OPG's bonds relative to companies in the benchmark group. In other words, it is self-evident that OPG credit spreads would exceed this benchmark. An evaluation of the credit spreads does not provide substantial new information that a comparison of credits ratings does not already provide.

[128] Exhibit C1-1-1, Attachment 1, p. 50.
[129] EB-2025-0297, Exhibit L C1-Staff-050, p. 2.
[130] Note that not all utilities included in the analysis presented in Figures 11 and 12 in Exhibit C1-1-1, Attachment 1 are included in the above table. Only utilities requested in Exhibit L, C1-Staff-050 are included.
[131] Bloomberg A-Rated utilities index: Alectra Inc, Canadian Utilities Ltd, CU Inc, Enbridge Gas Inc, EPCOR Utilities Inc, FortisAlberta Inc, FortisBC Energy Inc, Hydro One Inc, Hydro One Ltd, Toronto Hydro Corp. Bloomberg BBB-Rated utilities index: AltaGas Ltd, ATCO Ltd, Brookfield Infrastructure Finance ULC, Brookfield Renewable Partners LP, Bruce Power LP, Capital Power Corp, Emera Inc, ENMAX Corp, Fortis Inc, FortisBC Inc, Nova Scotia Power Inc, Ontario Power Generation Inc, and Trisummit Utilities Inc. See EB-2025-0297, Exhibit L, C1-Staff-028, pp. 4 and 5 of 10.

Figure 5.1: Credit Ratings for the Benchmark Utilities[132]

Chart 1 – Credit Ratings for Six Utilities

	DBRS	S&P	Moody's	Fitch
Hydro One Inc.	A(high)	A	A3	n/a
Enbridge Gas Inc.	A	A-	n/a	n/a
EPCOR Utilities Inc.	A(low)	n/a	n/a	A-
CU Inc.	A(high)	n/a	n/a	A-
Toronto Hydro Corp	A	A+	n/a	n/a
Alectra	A	A-	n/a	A-
OPG	*A(low)*	*BBB+*	*A3*	*n/a*

An analysis of credit spreads that relied on a benchmark of companies with the exact same credit score would provide information about risk perception differences not captured by credit ratings information. However, this data is not readily available. We find that the comparison of OPG's bond yields to this set of A-rated Canadian Utilities does not provide support for or against heightened financial risk for OPG relative to prior years.

5.4 Concentric's Empirical Analysis

The "optimal" capital structure discussed in Section 2.3 cannot be calculated or observed directly. The use of proxy group analysis constitutes one common approach to estimating a utility's reasonable capital structure. A proxy group analysis assumes that a set of similar utilities exists, and that the allowed capital structure of this set of utilities is, by some average measure, near the optimal capital structure for the target utility. Proxy group analysis also assists the regulator with its obligation to meet the Comparability Standard (see Section 5.1.1) of the FRS.

5.4.1 Concentric's Proxy Group Methodology and Results

Concentric conducted a proxy group analysis to inform its recommendation of OPG's capital structure. To select companies for the proxy group, Concentric screened utilities according to the following criteria. The companies must:[133]

1. Be a publicly traded North American investor-owned utility.
2. Own generation assets that are included in rate base.
3. Own regulated nuclear and/or hydroelectric generation.
4. Have regulated revenue and regulated net income that make up greater than 60% of total revenue and total income for the consolidated company.
5. Have regulated electricity revenue and net income that make up greater than 80% of revenue and income for the consolidated company's regulated operations.
6. Have an investment grade credit rating similar to that of OPG.

Because no Canadian utilities passed this screen, Concentric included three holding companies with headquarters in Canada in the analysis (Algonquin Power & Utilities Corporation, Emera

[132] Exhibit L, C1-Staff-050, p. 2.
[133] Exhibit C1-1-1, Attachment 1, pp. 62-65.

Inc., and Fortis Inc.).[134] However, these companies do not pass the screens above. Rather, they are added after the screen to fulfill the objective of including Canadian companies in the proxy group.[135]

Concentric's Main proxy group in Figure 16 exhibits an average actual equity participation of 52.96% and a median of 52.80%, and an average authorized equity participation of 50.17% and 51.57%.[136] Concentric reports a central tendency range among the proxy group of 50% to 53% equity.[137] Concentric states that OPG faces higher risks resulting from its business profile of 100% generation, its forecasted capital expenditures, and a relatively high exposure to a 100% variable rate for nuclear production, and that this justifies an authorized equity participation "towards the upper end of the range of analytical results."[138]

In addition, the Concentric report presents authorized and actual equity participation rates for two subsets of the Main proxy group: (1) a hydroelectric group; and (2) a nuclear group.

5.4.2 A Critique of the Concentric Proxy Group Analysis

Concentric clearly documented its proxy group analysis in the form of Excel files. The initial proxy group was updated during discovery to include Virginia Electric and Power Company's operations in Virginia.[139]

In addition to this update, we suggest changes to the screening process as follows.

1. We recommend eliminating the screen to require all firms in the proxy group to be publicly traded North American investor-owned utilities.

   OPG is a Crown Corporation, 100% owned by the province of Ontario. The purpose of obtaining a proxy group is to obtain summary statistics related to the capital structure of a set of similar utilities. To screen out other Crown Corporations, as well as many municipally owned utilities, from the proxy group does not advance this objective.

2. We recommend removing Algonquin Power & Utilities Corporation and Fortis Inc. from the proxy group, as well as the Emera subsidiary Tampa Electric Company.

   These three companies were included in the proxy group because the headquarters for each holding company is located in Canada.[140] However, no data from any Canadian subsidiaries of these companies are used in Concentric's analysis. Instead, Concentric used the capital structures of US subsidiaries. Regarding Fortis Inc., only capital structure data from Central Hudson Gas & Electric (New York), Tucson Electric Power Company (Arizona), and UNS Electric Inc. (Arizona) were included in the analysis. The

[134] Exhibit C1-1-1, Attachment 1, p. 65.
[135] Exhibit L C1-Staff-304, Exhibit L C1-Staff-305, Exhibit L C1-Staff-306.
[136] The numbers presented in this report are updated in accordance with the adjustment Concentric made to their analysis presented in Exhibit L, C1-Staff-298, Attachment 1 Figures 1, 16, 17_20260422.xlsx.
[137] Exhibit C1-1-1, Attachment 1, p. 67.
[138] Exhibit C1-1-1, Attachment 1, p. 76.
[139] Exhibit L C1-Staff-302.
[140] Exhibit L C1-Staff-304, Exhibit L C1-Staff-305, Exhibit L C1-Staff-306.

only subsidiaries of Algonquin Power & Utilities Corporation used in the analysis are Liberty Utilities (CalPeco Electric) LLC (California), Liberty Utilities (Granite State Electric) Corp. (New Hampshire), and The Empire District Electric Company (Missouri, Kansas, Oklahoma, and Arkansas). Concentric also included Tampa Electric Company (Florida), an Emera subsidiary.

The rationale for factoring the capital structures of these companies into the analysis was that they are Canadian companies. In fact, none of the capital structures used in the analysis for Algonquin Power & Utilities Corporation or Fortis Inc. were approved in any Canadian jurisdiction, nor they operate in any Canadian jurisdiction. Given that these companies do not pass Concentric's screening criteria, do not reflect Canadian operations, and do not reflect decisions by Canadian regulators, we recommend removing these companies from the sample.[141]

3. We recommend removing Ameren Corporation from the sample.

   Ameren Corporation has two subsidiaries in the data: Ameren Illinois Company and Union Electric Company. Ameren Illinois Company does not own substantial generating assets, and therefore does not pass Concentric's screening criteria. Union Electric Company does own generating assets. However, Concentric's analysis relies upon the capital structure of Ameren Illinois Company, and not the capital structure of Union Electric Company.

   Concentric states that the analysis "is conducted at the consolidated parent company level."[142] However, it is Ameren Illinois Company's capital structure—not the capital structure of the holding company—that is used in the analysis. Given that this subsidiary does not pass Concentric's screening criteria, we recommend removing this data from the proxy group analysis.

4. We recommend including only companies whose combined regulated nuclear and hydroelectric capacity represents at least 15% of their total generation. While 15% is not a bright line, this criteria requires that nuclear and hydroelectric generation constitutes a non-trivial proportion of total plant for utilities in the sample.

   This recommendation is a modification of Concentric's third criteria. The Concentric analysis includes companies into the proxy group with a combined regulated nuclear and hydroelectric capacity of at least 5% of total generation.[143] However, OPG's generation asset mix consists primarily of nuclear and hydroelectric plant. Therefore, a 5% threshold for nuclear and hydroelectric capacity percentage is too small.

[141] In Exhibit L C1-Staff-304, Concentric stated: "…North American utilities compete for capital in integrated capital markets across Canada and the United States. From that perspective, it is appropriate to include companies in the proxy group that derive a substantial portion of their operating income from regulated electric utility operations, as Algonquin does, regardless of whether the company's operating subsidiaries are located primarily in Canada or the United States." However, the capital structures used in the analysis were not parent company capital structures—they were US subsidiary capital structures approved by US regulators. This argument could be plausible if these companies passed Concentrics selection criteria, but they do not.
[142] EB-2025-0297, Exhibit L, C1-Staff-303, p. 2.
[143] Footnote 128, Exhibit C1-1-1, Attachment 1, p. 63.

Other than these modifications, we agree with the approach to the proxy group analysis presented by Concentric. In Section 6, we provide the results of these adjustments to the proxy group analysis.

6 CA ENERGY CONSULTING RECOMMENDATION

The objective of our analysis is to recommend an authorized capital structure for OPG such that the Company's debt levels produce the lowest possible WACC without compromising credit quality, overall financial stability, or the Fair Return Standard. We arrive at our recommendation through an assessment of the filed evidence, an evaluation of the Company's idiosyncratic risks, a review of previous decisions by the OEB,[144] and empirical analysis of the capital structures of peer utilities. The recommendation considers whether OPG will experience an increase in risk relative to recent history, particularly in relation to the last payment amount application where the OEB approved a 45% equity thickness for OPG.[145] Increased risk would warrant a change in capital structure characterized by an increase in OPG's authorized equity ratio, which would in turn allow the Company to recover a higher WACC. The peer utility analysis supports the identification of the appropriate level of equity participation given changes to OPG's risk levels.

We recommend a capital structure with a deemed equity ratio of between 47% and 50%. This analysis excludes consideration of the DNNP, which is a separate entity from OPG (in the form of a special purpose vehicle).

6.1 Evaluation of Changes in OPG's Risk Levels

6.1.1 Changes to OPG's Business Risk

During its upcoming payment amounts period (2027 to 2031), OPG will operate in a changing business environment characterized by increased demand for electricity at the same time that the Company undertakes major refurbishment projects. Taken together, OPG will likely face elevated business risk relative to previous payment amounts periods.

The forecasted capital expenditures amounting to $28 billion for the PRP, certain hydroelectric refurbishment projects, and additional nuclear spending reflect a substantial expansion in the Company's capital investments relative to the past. Planned outages associated with this capital spending will contribute to concentration risk in OPG's generation portfolio. In addition, OPG's aggressive capital plan will increase the Company's business risk during the payment amounts period.

Weather and cybersecurity risk are legitimate concerns for utilities, generally speaking. The consensus of the scientific community is that climate change will increase the frequency and severity of major storms.[146] Cybersecurity threats have increased in frequency in recent years.[147] The level of risk faced specifically by OPG, a regulated generation company with variance accounts that recover revenue lost due to certain kinds of sales volatility, is less clear.

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[144] Previous relevant OEB decisions and regulation includes prior OPG payment amount applications (EB-2020-0290 and EB-2016-0152), amendments to OEB regulations including the recent update to OEB Regulation 53/05, as well as the recent generic OEB proceeding on Cost of Capital (EB-2024-0063).

[145] OEB Decision and Order in EB-2020-0290, Exhibit 0, Tab 1, Schedule 1, p. 24.

[146] Yale Climate Connections. *Global warming is making the strongest hurricanes stronger. April 15, 2026*.

[147] Verizon. *2025 Data Breach Investigations Report.*

As explained in Section 5.2.5, our evaluation of the evidence indicates that OPG's regulatory risk has likely decreased since the past payment amounts decisions. The establishment of CCR for the PRP provides a tool that was not present in the previous rate framework. In addition, a larger proportion of OPG's revenue will be forecasted rather than operate under a price cap, as the proportion of nuclear generation in the Company's asset mix increases. New deferral and variance accounts will also reduce financial risk, if they are approved (see Table 5.1). Although the PRP and the increase in nuclear generation increase other categories of risk for OPG, the introduction of new regulatory tools, along with a change in the rate setting framework for hydroelectric plan after payment amounts were frozen under OEB Regulation 53/05,[148] offset these risks somewhat relative to the Company's previous payment amounts framework.

Further analysis of these risks can be found in our response to the Concentric report in Section 5.2.

6.1.2 Changes to OPG's Financial Risk

The evidence suggests that OPG may experience slightly elevated financial risk in the near term, but not substantially elevated risk. As noted in Section 3, inflation has remained elevated in North America, though inflation expectations remain below the consumer price increases experienced in aftermath of the Covid-19 pandemic. As explained in Section 5.3.1, credit rating agencies have published evaluations of OPG's credit risk and rated the Company as "stable." Credit rating agencies have not indicated elevated financial risks for OPG in recent reports.[149]

To the extent that OPG's credit metrics would place upward pressure on investor perceptions of the Company's risks under the current equity ratio of 45%, these credit metrics improve and remain above the ratings agencies required minimum levels under the midpoint of the range of equity ratios we recommend (48.5%). Table 6.2 adds to Concentric's Figure 10 to provide the FFO/Debt and CFO/Debt ratios under different equity participation rates. We also recommend consideration of additional credit metrics, including Debt to EBITDA and FFO to interest. Table 6.1 defines the ratios used in our analysis.

[148] OEB Regulation 53/05, s. 6(2)13.
[149] Exhibit L, A2-Staff-010, Attachments 2 and 3.

Table 6.1: Credit Metrics Used to Assess OPG's Capital Structure

Ratio	Formula	Definition
FFO to Debt[150]	$\frac{(Net\ Income + Dep\&Amort - Sales\ of\ Property)}{Total\ Debt}$	This ratio provides insight into a company's ability to pay debts using cash generated from operations. It is a useful measure in industries with substantial depreciation expenses, like the utility industry, as depreciation is a non-cash expense. A higher ratio is considered more favorable.
CFO to Debt	$\frac{(Net\ Income + Dep\&Amort - Gains + Losses + \Delta WC)}{Total\ Debt}$	Like the FFO to Debt ratio, this CFO to debt is a coverage ratio that provides information about a company's ability to pay its existing debt using cash from operations. The key difference between these ratios is the inclusion of working capital in CFO, which is ignored in FFO. A higher ratio is considered more favorable.
Debt to EBITDA	$\frac{Total\ Debt}{EBITDA}$	The ratio of a firm's debt to earnings before interest, taxation, depreciation and amortization (EBITDA) provides an estimate of how many years it would take for a company to pay back its debt if net debt and EBITDA were held constant. For example, a ratio of 4.0 suggests that it would take four years of operational earnings to retire all debt. A lower ratio is considered more favorable.
FFO to Interest	$\frac{(Net\ Income + Dep\&Amort - Sales\ of\ Property)}{Interest\ Expense}$	The funds from operations to interest evaluates the company's ability to pay its interest expense. This measure provides a more immediate measure of liquidity (whereas FFO to debt measures solvency). A higher ratio indicates the company has more funds available to cover its current debt-related expenses.

[150] For the FFO/Debt and CFO/Debt ratios, we calculated Total Debt using the same method as Concentric, which is based on the Moody's and S&P methods, respectively. See Exhibit L, C1-Staff-351, p. 2.

Table 6.2 provides the calculated results of each of the four credit metrics during the past payment period, 2022 through 2026, during which the Company's authorized equity thickness was 45%. OPG experienced variation in FFO/Debt and CFO/Debt during this time period, with an FFO/Debt range of 11.3% to 16.1% and a CFO/Debt range of 10.2% to 17.1%. Debt/EBITDA increased to 5.7 in 2024 and 2026 at the same time that FFO/Debt, CFO/Debt, and FFO/interest fell, which reflects increased leverage by the Company.

Table 6.2: Historical Credit Metrics for OPG[151]

	2021	2022	2023	2024	2025	2026
Historical Credit Metrics at **45% Equity Thickness**						
FFO/Debt	12.9%	16.1%	16.1%	11.9%	13.9%	11.3%
CFO/Debt	12.7%	17.1%	16.5%	10.2%	15.1%	11.8%
Debt/EBITDA	4.2	4.0	3.9	5.7	4.5	5.7
FFO/Interest	4.9	4.9	5.3	3.6	4.0	3.0

The values in Table 6.3 provide forward-looking estimates of these ratios using data from Concentric's workpapers. At an equity thickness of 48.5%, OPG's FFO/Debt ratio would remain above 13% and the Company's CFO/Debt ratio would remain above 15% for all years between 2027 and 2031. OPG's Debt/EBITDA ratio would range from 4.6 to 4.8 during this period at an equity thickness of 48.5%. Based on OPG's projected data, an equity thickness of 45% would result in a Debt/EBITDA ratio above 5.0 each year of the 2027-2031 payment amounts period, which would reflect elevated leverage. In addition, an equity thickness of 45% would cause the Company's FFO/Debt and CFO/Debt ratios to fall, in expectation, below credit-supportive levels (13% and 15% respectively) identified by S&P and Moody's.[152] An equity ratio of 47%, at the lower end of the recommended range, causes OPG's CFO/Debt ratio to fall below the Moody's threshold of 15% in all but one year.

On the other hand, an equity ratio of 52% results in credit metrics substantially above the required minimum thresholds stated by S&P and Moodys and well above OPG's performance on FFO/Debt and CFO/Debt in recent history (see Appendix A).

We note that these metrics are calculated on the basis of OPG's historical and forecasted financial data. To the extent that these forecasts are adjusted at the conclusion of this proceeding, the recommended equity ratio range may require an update, as the recommendation is based, in part, on these forecasted values.

[151] Sources: Historical data compiled by OPG in L-C1-CCC-026_Attachment 2_20260505.xlsx.
[152] Exhibit C1-1-1, Attachment 1, page 49. Also see: S&P Global Ratings, Ontario Power Generation Inc., August 14, 2024, at 3. Moody's Ratings, Ontario Power Generation Inc., June 30, 2025, at 3.

Table 6.3: OPG Credit Metrics Under Different Equity Ratios[153]

	2027	2028	2029	2030	2031
Key Credit Metrics at **45% Equity Thickness**					
FFO/Debt	12.4%	12.6%	12.6%	12.5%	12.6%
CFO/Debt	13.5%	13.9%	14.2%	14.0%	13.8%
Debt/EBITDA	5.2	5.0	5.0	5.0	5.1
FFO/Interest	3.2	3.1	3.0	2.9	2.9
Key Credit Metrics at **47% Equity Thickness**					
FFO/Debt	13.1%	13.3%	13.3%	13.2%	13.3%
CFO/Debt	14.3%	14.7%	15.0%	14.9%	14.7%
Debt/EBITDA	5.0	4.8	4.8	4.8	4.8
FFO/Interest	3.4	3.3	3.2	3.1	3.0
Key Credit Metrics at **48.5% Equity Thickness**					
FFO/Debt	13.6%	13.8%	13.8%	13.8%	13.9%
CFO/Debt	15.0%	15.4%	15.7%	15.6%	15.4%
Debt/EBITDA	4.8	4.7	4.6	4.6	4.7
FFO/Interest	3.5	3.4	3.3	3.3	3.2
Key Credit Metrics at **50% Equity Thickness**					
FFO/Debt	14.2%	14.4%	14.4%	14.4%	14.5%
CFO/Debt	15.7%	16.1%	16.5%	16.3%	16.1%
Debt/EBITDA	4.6	4.5	4.4	4.4	4.5
FFO/Interest	3.7	3.6	3.5	3.4	3.3
Key Credit Metrics at **52% Equity Thickness**					
FFO/Debt	15.0%	15.2%	15.3%	15.2%	15.3%
CFO/Debt	16.7%	17.2%	17.5%	17.4%	17.1%
Debt/EBITDA	4.4	4.3	4.2	4.2	4.3
FFO/Interest	3.9	3.8	3.7	3.6	3.5

6.2 Jurisdictional Analysis of Utility Capital Structures

We conducted a peer analysis of utility capital structures to assist in developing a recommended level of equity participation. However, we note that jurisdictional analysis of regulated utility capital structures provides somewhat more limited value to the evaluation of OPG than it might for other utilities. This is because no set of regulated utilities in North America focuses solely on power generation, as OPG does. Most regulated utilities that own generation are vertically integrated. Many other entities that own generation, like Independent Power Producers ("IPPs"),

[153] These numbers were calculated using data contained in "CEA Exhibits – Credit Metric Analysis Workpaper.xlsx", as per Excel L-A1-Staff-002_Attachment 07_20260422.

are not regulated because they operate in competitive markets for generation services, taking the market price of energy rather than receiving a regulated payment amount, as OPG does.[154]

In addition, OPG is a Crown Corporation, 100% owned by the province of Ontario. Unlike other Crown Corporations that receive explicit debt guarantees, however, OPG does not receive explicit financial backing in the form of debt guarantees from its provincial owner. Still, the Company does receive direct equity injections from the province.[155] OPG was created as a business corporation owned by the province, and its debt issuances are considered corporate debt. Other Crown Corporations, like Hydro Quebec, receive debt guarantees from the province. This makes OPG somewhat unique among Crown Corporations.

Given OPG's unique characteristics, the purpose of our jurisdictional analysis is not to provide an exact value for OPG's authorized capital structure using data from a proxy group, but rather to provide information about the capital structures of utilities with some similarities, according to a defined set of criteria. Each individual utility in the sample carries a set of traits that align it with OPG, as well as some traits that set it apart. The goal is to evaluate a reasonable range of equity ratios for OPG on the basis of an average across a set of peers with a similar mix of key traits.

6.2.1 Proxy Group Selection Methodology

We select a proxy group based on the following criteria. The companies must:

1. Own generation assets that are included in rate base.
2. Have regulated nuclear and hydroelectric capacity that, combined, represents <u>at least 15%</u> of the company's total generation.
3. Have regulated revenue and regulated net income that make up greater than 60% of total revenue and total income for the consolidated company.
4. Have electricity revenue and net income that make up greater than 80% of revenue and income for the consolidated company's regulated operations.
5. Have an investment grade credit rating similar to that of OPG.

These criteria reflect the changes to the Concentric screening criteria we discuss in Section 5.4.2.

This screen results in a sample of twelve companies, three of which are Canadian Crown Corporations.[156] Table 6.4 lists the companies included in the CA Energy Consulting sample.

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[154] As Concentric states in a response to interrogatory in Exhibit L, C1-SEC-032, p. 1 of 4:

"…IPPs have a different revenue model than OPG's regulated businesses in that their revenues are set in the market, not through cost-based ratemaking, and IPPs do not have access to deferral and variance accounts and other regulatory cost recovery mechanisms that are available to regulated utilities. As such, these companies present a different risk profile for investors than does OPG as a rate-regulated entity..."

[155] Exhibit L, C1-Staff-022, pp. 1-2.

[156] This sample excludes the following companies that were included Concentric's analysis: Ameren Corporation, Algonquin Power & Utilities Corporation, Emera Inc., Fortis Inc., American Electric Power Company, Inc., Evergy, Inc., NextEra Energy, Inc., Portland General Electric Company, Xcel Energy Inc.

Table 6.4: Capital Structure Proxy Group Companies

<table>
<tr><th>United States</th><th>Canada</th></tr>
<tr><td>ALLETE, Inc.</td><td rowspan="3">New Brunswick Power Corporation</td></tr>
<tr><td>Dominion Resources Inc.</td></tr>
<tr><td>Duke Energy Corporation</td></tr>
<tr><td>Edison Internation</td><td rowspan="3">British Columbia Hydro and Power Authority</td></tr>
<tr><td>Entergy Corporation</td></tr>
<tr><td>IDACORP, Inc.</td></tr>
<tr><td>Pinnacle West Capital Corporation</td><td rowspan="3">Newfoundland and Labrador Hydro.</td></tr>
<tr><td>TXNM Energy, Inc.</td></tr>
<tr><td>Southern Company</td></tr>
</table>

In discussing why Crown Corporations were not included in the Concentric analysis, Concentric stated:

> "[…]many government-owned utilities have credit ratings that are materially higher than OPG's (e.g., British Columbia Hydro and Power Authority ("BC Hydro") is rated A+ by S&P, and Hydro-Québec is rated A+ by S&P, and Newfoundland and Labrador Hydro is rated A by S&P). These ratings reflect explicit provincial or federal support rather than stand-alone utility credit risk: BC Hydro, Hydro-Québec, Manitoba Hydro and Newfoundland and Labrador Hydro have provincially guaranteed debt with ratings that move in lockstep with their respective provinces."[157]

We agree that this is a drawback to including Crown Corporations, given the Stand Alone Principle discussed in Section 5.1.1. However, including US companies in the sample also has drawbacks. We understand that the OEB has recently cautioned against the use of US companies in proxy group analysis. In its decision regarding the Generic Cost of Capital decision, the OEB stated:

> "Substantial differences remain between Canadian, and U.S.-based utilities principally associated with risk, regulatory oversight and the engagement of U.S. regulated utilities in non-regulated business operations. As well, holding company structures and business holdings, operating in the U.S. and not in Canada, decrease comparability of regulatory results. The OEB concludes that the "home bias" of the Canadian investor to invest in Canadian utilities is a factor in giving less weight to U.S. comparators...[158]
>
> "[…] the use of U.S. regulated utility data as equivalent to Canadian regulated utility data in any computation is questionable."[159]
>
> "[…] Current financial conditions demonstrate that Canadian and U.S. financial markets have been stable and well-functioning, and any potential short-term volatility is unpredictable. Therefore, there may be less justification for placing the same degree of

[157] Exhibit L C1-Staff-053.
[158] Decision and Order, *Ontario Energy Board,* EB-2024-0063, March 27, 2025. p. 36.
[159] Decision and Order, *Ontario Energy Board,* EB-2024-0063, March 27, 2025. p. 37.

> reliance on U.S. comparators, without discarding appropriate U.S. comparators out of hand."[160]

The reality in this case is that no peer companies perfectly match OPG. The screening process aims to include a mix of peers that may be individually imperfect but, taken together, provide helpful information to guide the selection of a reasonable range of equity ratios. Therefore, although the OEB has stated "there may be less justification" for relying on US companies in proxy group analysis, we include US utilities because only three Canadian utilities pass the screening process. We believe the inclusion of additional companies with relatively similar characteristics to OPG is warranted, even though they operate in the United States. Therefore, we have not discarded appropriate US comparators out of hand.

Similarly, the Canadian companies in the sample pass all of the criteria and were not retroactively included for the sake of supplementing the sample with utilities from Canada. The Canadian utilities also have higher levels of hydroelectric generation capacity than any of the US comparators. Although the Canadian peer utilities are Crown Corporations, like OPG, these utilities were not selected *because* they are Crown Corporations, but rather because they passed the selection criteria. In addition, they constitute only three of twelve companies in the sample. Therefore, the proxy group analysis does not violate the Stand Alone Principle.

6.2.2 Proxy Group Characteristics

Our proxy group established using the updated selection criteria in Section 6.2.1 produces a set of utilities with characteristics that align more closely with OPG. The average amount of generation plant as a percentage of total plant in service in our proxy group is 44%, compared to 38% in the original Concentric proxy group.[161] Figure 6.1 presents an updated version of Figure 19 from the Concentric report, depicting data from the updated proxy group.

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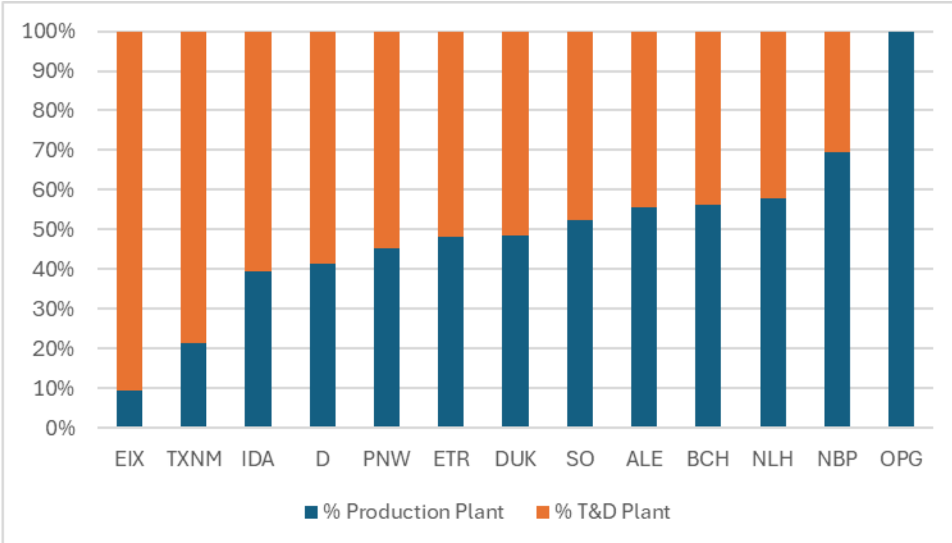
[160] Decision and Order, *Ontario Energy Board,* EB-2024-0063, March 27, 2025. p. 38.
[161] The average is a simple average of percentage of generation plant across all utilities in the sample.

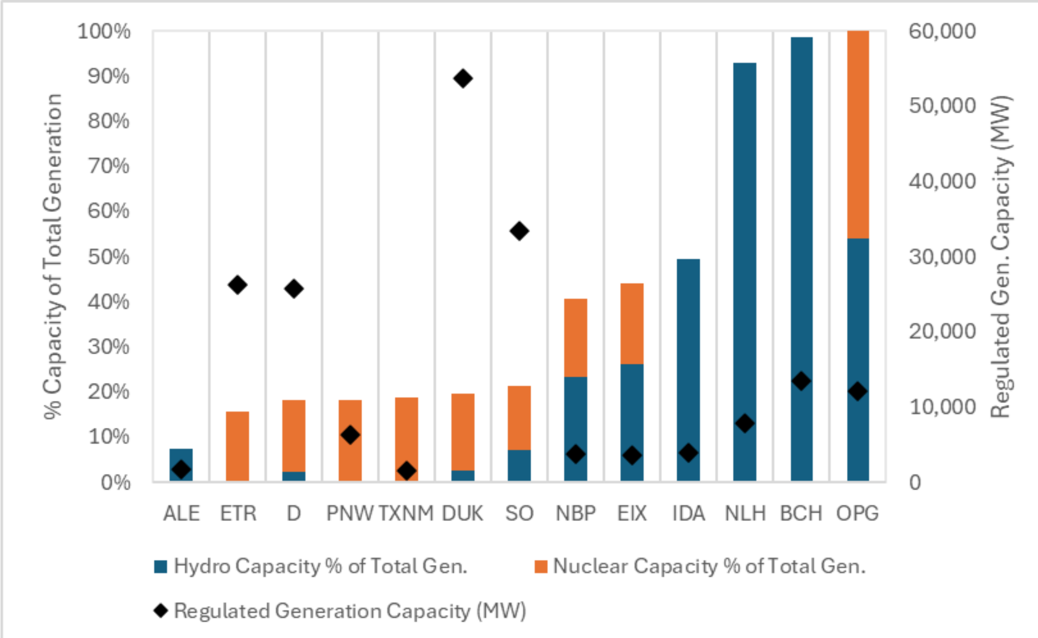
Figure 6.1: Amount of Generation Plant as a Percentage of Total Plant in Service[162]



In addition, the average amount of hydroelectric or nuclear generation plant in our updated proxy group is 30%. Figure 6.2 re-creates Figure 20 from the Concentric report using our proxy group. The figure shows that the addition of three Canadian vertically integrated utilities drives an increase in the average percentage of hydroelectric and nuclear generation, compared to the percentages shown in Figure 20 of the Concentric report.

[162] Exhibit C1-1-1 Attachment 1, p. 70. Canadian company data obtained from individual company annual reports.

Figure 6.2: Nuclear and Hydroelectric Plant as a Percentage of Generation Plant[163]



6.2.3 Proxy Group Capital Structure Summary Statistics

The mean authorized capital structure among our proxy group consists of 46.95% equity, and the actual equity ratio among the proxy group is 45.27%. Table 6.5 contains the actual and authorized equity ratios of each company in the proxy group.

We identify New Brunswick Power Corporation ("NB Power") as an outlier, with an authorized equity ratio of 19%. However, because the Company passed the characteristics screen we do not remove this data from the analysis. The sample median serves as a measure of central tendency that is unaffected by this outlier.

[163] Exhibit C1-1-1 Attachment 1, p. 71. Canadian company data obtained from individual company annual reports.

Table 6.5: Review of Peer Utility Capital Structures[164]

Holding Company Name	Average Authorized Equity Ratio of Peer Utilities 2020-2024 Average	Average Actual Equity Ratio of Peer Utilities 2020-2024 Average
ALLETE, Inc.	53.00%	59.70%
Dominion Resources, Inc.	52.35%	53.39%
Duke Energy Corporation	52.05%	53.07%
Edison International	n/a	46.56%
Entergy Corporation	50.61%	48.59%
IDACORP, Inc.	50.00%	52.54%
Pinnacle West Capital Corporation	51.93%	50.90%
TXNM Energy, Inc.	48.00%	50.25%
Southern Company	54.50%	54.90%
New Brunswick Power Corporation	19.00%	9.67%
British Columbia Hydro and Power Authority	40.00%	23.35%
Newfoundland and Labrador Hydro	45.00%	40.38%
MEAN	46.95%	45.27%
MEDIAN	50.61%	50.57%

[164] Averages for US utilities can be found in L-C1-Staff-298_Attachment 3 Authorized Equity Ratio Analysis Workpaper_20260422 and L-C1-Staff-298_Attachment 1 Figures 1, 16, 17_20260422. Canadian Utility statistics can be found in: BC Hydro's 2024/2025 Annual Service Report Plan, August 2025, NB Power's 2024/2025 Annual Report, and NL Hydro's 2024 Annual Report.

7 CONCLUSION

7.1 Capital Structure Recommendation

This report evaluates OPG's proposal to update the Company's allowed capital structure. Given that OPG proposes to use the generic ROE applicable generally to Ontario utilities, OPG's capital structure takes on heightened significance in this proceeding. We suggest that an equity ratio within the range of 47% and 50% will result in limited change to OPG's financial risk during the payment amounts period assuming broadly stable operating conditions.

7.2 Basis for the Recommendation

No definitive analytical framework exists to calculate a mathematically "correct" capital structure. However, regulated entities often develop capital structure proposals on the basis of precedent (i.e., the OEB's authorization of the current 45% equity ratio), qualitative assessments of risk, proxy group analysis, and credit metrics (i.e., ratio analysis using financial data). We have provided a recommendation using these methods. In particular:

1. A qualitative review of OPG's business and financial conditions during the 2027-2031 payment amount period indicates heightened risk. As explained in this report and summarized in Table 7.1, the principal risk-reducing factor for OPG relative to the prior payment amounts decision is the collection of certain revenues through CCR. However, this reduction risk is eclipsed by the combined effect of major capital expenditures and increased planned outages. This suggests that, directionally, OPG's equity thickness requires an increase relative to the authorized capital structure of 45% set in by the OEB in OPG's previous payment amounts decision.

2. A proxy group analysis indicates that OPG's current equity ratio falls below measures of central tendency for somewhat similar utilities. Our proxy group, which consists of a set of utilities selected according to a set of operating characteristics, has an average authorized equity ratio of 46.95% and a median authorized equity ratio of 50.61%. This provides a range among measures of central tendency for a group of somewhat similar companies.

3. A review of four relevant credit metrics suggests that an equity ratio 48.5% supports OPG's stable credit rating. In contrast, the data indicate that an equity ratio of 45% will not be sufficient to maintain OPG's existing credit rating. This suggests the reasonable range of OPG's equity ratio should be symmetrical around 48.5% but be narrow enough to exclude 45%. A symmetrical band of 150 basis points above and below 48.5% would exclude the existing equity ratio of 45%.

Taken together, precedent and qualitative analysis suggest OPG's equity ratio merits an increase. The empirical results provide support for a range between 47% and 50%, around a midpoint of 48.5%. The analysis indicates that equity ratios within this range satisfy the Fair Return Standard.

7.3 Summary of Analysis

OPG currently has a deemed capital structure comprised of 45% equity and 55% debt. This capital structure was established in EB-2013-0321 and has been reaffirmed in two subsequent proceedings (in dockets EB-2016-0152 and EB-2020-0290). Since that time, macroeconomic changes and changes to OPG's company-specific risk have occurred. Major capital investments, including the PRP and other projects, pose risks related to cost recovery disallowances, potentially reduced cash flow, and execution uncertainties. The Company's asset mix has also transitioned toward nuclear, including growth in nuclear rate base as a proportion of total rate base and nuclear generation revenue as a proportion of total revenue. Upcoming planned outages will increase OPG's concentration risk, as nuclear units are down for refurbishment. Other risks, such as those associated with weather and cybersecurity, have increased somewhat across the industry since past payment amounts applications, but the overall change in these risks to OPG specifically has not been demonstrated in the evidence.

Our evaluation does not find that OPG's risk levels have increased enough to warrant the capital structure of "no less than 52%" recommended by the Concentric report. We find a slight reduction in the Company's regulatory risk with the introduction of CCR and the unfreezing of OPG's hydroelectric payment amounts. In addition, the evidence does not support that OPG's financial risk will increase during the payment amounts period between 2027 and 2031 if the Company were to operate with an equity ratio of 48.5%, the midpoint of our recommended range. OPG is supported by numerous variance accounts, including new proposed variance accounts, which, *ceteris paribus*, reduce the Company's financial risk. Reports by credit rating agencies suggest the company's financial risks are stable, in part due to the amendments to Ontario Regulation 53/05, which provides CCR for the PRP. Common credit metrics used to evaluate OPG's financial risk (e.g., FFO/Debt and CFO/Debt) meet or exceed the minimum thresholds required by credit rating agencies when an equity ratio of 48.5% is assumed.

A jurisdictional review of peer utilities provides some context in an analysis of appropriate authorized capital structures for OPG, but we suggest a proxy group analysis offers somewhat less value in this case relative to other utility rate cases due to the unique, generation-only nature of OPG's operations. No single company in our sample or the Concentric sample closely matches OPG's characteristics. However, we provide an updated sample that aligns more closely, on average, than the sample used in the Concentric analysis. This proxy group has an average authorized equity ratio of 46.95% and a median authorized equity ratio of 50.61%. While this updated proxy group analysis provides some value in assessing a reasonable range of equity ratios, we place lower emphasis on these findings for the reasons explained above.

Our analysis focuses on whether OPG's overall risk has increased since past payment amounts proceedings. In this sense our recommendation relies, in part, on precedent. Table 7.1 summarizes our evaluation of changes to OPG's risk relative to the Company's condition when the OEB set the authorized capital structure currently in effect. OPG's substantial capital plan and planned outages during the 2027-2031 payment amounts period increase risk more than the introduction of CCR reduces risk, suggesting a higher equity ratio than previous periods, but a lower equity ratio than the proposed 52% proposed by Concentric.

For these reasons, we recommend an increase in the allowed equity ratio from 45% to fall within a range of 47% to 50%. As required by the Fair Return Standard, this range is likely to provide OPG with the ability to attract capital, maintain financial integrity, and provide the Company's shareholder (the Province of Ontario) with returns comparable to investments of similar risk.

Table 7.1: Summary of Findings

Risk Category	Risk Factor	Report Section	Concentric Position	CA Energy Consulting Evaluation	Summary of Risk Effect
Business Risk	Capital Expenditures	Sect. 5.2.1 Sect. 6.1.1	Planned large scale projects increase risk.	Planned large scale projects increase risk.	Increased risk.
	Asset Mix	Sect. 5.2.2 Sect. 6.1.1	Increased nuclear generation in rate base increases risk.	Planned outages will reduce nuclear production but increase concentration risk.	Ambiguous effect.
	Planned Outages	Sect. 5.2.3 Sect. 6.1.1	Mega-projects lead to increased risk associated with outages.	Overlapping refurbishment projects likely increases OPG's operating risks, but these risks are offset somewhat by variance accounts.	Slightly increased risk.
	Weather and Cybersecurity	Sect. 5.2.4 Sect. 6.1.1	Climate change and increases in cyber attacks lead to increased risks.	Increases in weather and cybersecurity risk effect utilities across the industry, but the effect on OPG is not clearly established.	Ambiguous effect.
	Regulatory	Sect. 5.2.5 Sect. 6.1.1	Regulatory risks have remained relatively stable over time.	Introduction of the CCR leads to decreased regulatory risk relative to the status quo.	Decreased risk.
Financial Risks	Credit Agency Ratings	Sect. 5.3.1 Sect. 6.1.2	Potential for downgrades in credit worthiness leads to increased risk.	Stable outlooks from credit rating agencies across the board do not indicate increased financial risk.	Stable.
	Application of CCR	Sect. 5.3.2 Sect. 6.1.2	Slight decrease in risk due to CCR.	Decrease in risk as the CCR allows OPG to recover a portion of financing costs during the payment amounts period.	Decreased risk.
	Credit Metrics	Sect. 5.3.3 Sect. 6.1.2	An authorized 52% equity thickness allows OPG to reach target FFO/Debt and CFO/Debt metrics.	A comparison to historical credit metrics shows that OPG can operate under reasonable parameters at an equity thickness of 48.5%.	A status quo equity ratio of 45% could increase investor perceptions of OPG's financial risk.
	Credit Spread	Sect. 5.3.4 Sect. 6.1.2	A benchmark analysis shows that investors perceive a higher risk for OPG's bonds relative to other benchmark utilities.	Concentric's credit spread analysis contains A-rated utilities that do not provide a complete picture, as OPG has a lower credit rating than the sample utilities.	Inconclusive.
Empirical Analysis	(Proxy group capital structure analysis)	Sect. 5.4 Sect. 6.2	<u>Authorized</u> Mean: 50.17% Median: 51.57% <u>Actual</u> Mean: 52.96% Median: 52.80%	<u>Authorized</u> Mean: 46.95% Median: 50.61% <u>Actual</u> Mean: 45.27% Median: 50.57%	Peer group analysis suggests a reasonable range of equity ratios between 47% and 50%.

APPENDIX A

Figure A.1 depicts the credit metrics presented in Table 6.2 and Table 6.3 using historical data from 2021 to 2026 and projected data from 2027 to 2031. Each panel contains a straight blue line across all years, reflecting the historical average value over the 2021 to 2026 period. For example, the FFO/Debt panel depicts a straight line at the historical average of 13.7%. When OPG's equity ratio is set equal to 48.5%, the Company's FFO/Debt ratio is expected to remain approximately equal to the historical average over the payment amounts period. CFO/Debt ratios are projected to remain above the 6-year historical average at any equity thickness above 45%, though only equity ratios above 48.5% are expected to produce CFO/Debt ratios above Moody's stated minimum value of 15%. FFO/Interest is below the 6-year historical average at all the equity ratios tested.

Figure A.1: Impact of Authorized Equity Thickness on Credit Metrics