COST OF LONG-TERM DEBT

1.0 PURPOSE

This evidence describes how the methodology approved by the OEB in EB-2007-0905 was used to determine the long-term debt and associated cost for OPG's regulated operations for the test period. It also provides details of OPG's existing and planned annual long-term borrowing and associated costs for 2007 – 2012.

2.0 OVERVIEW

The long-term debt supporting OPG's regulated operations is comprised of existing and planned long-term debt issues plus a long-term debt provision required to reconcile OPG's regulated debt to the capital structure approved by the OEB in EB-2007-0905**.** The summary of capitalization for the test period is provided in Ex. C1-T1-S1 Tables 1 and 2.

OPG has used the same methodology to determine the regulated portion of existing and planned new debt issues as was approved by the OEB in EB-2007-0905. Section 3.0 discusses methodology, while section 4.0 presents the cost of these issues. Section 5.0 describes OPG's other long-term debt provision. OPG's existing and planned long-term debt is comprised of project-related and general corporate issues ("company-wide borrowing"). OPG has entered into financial hedges associated with certain existing and planned new debt issues to reduce its exposure to interest rate fluctuations.

3.0 METHODOLOGY

3.1 Project-Related Long-Term Debt Issues

OPG assigns all existing and planned project-related financing to regulated or unregulated operations based on whether the project is related to its regulated assets. For example, project-related financing associated with nuclear projects, or projects at R.H. Saunders or at the Niagara Plant Group, is assigned to OPG's regulated operations. All project-related financing that is not associated with OPG's regulated assets is assigned to unregulated operations. OPG also forecasts its financing requirements for projects that are still in the design/assessment phase; however these financing requirements are not assigned to OPG's regulated operations unless and until they are specifically identified as a project in OPG's capital budget for its regulated operations.

3.2 Corporate Long-Term Debt Issues

The company-wide borrowing portfolio of long-term debt remaining after project-related financing has been directly assigned must be allocated to regulated and unregulated operations for the test period. OPG has applied the allocation methodology approved by the OEB in EB-2007-0905. In summary, the book value of OPG's net fixed assets (gross fixed assets less accumulated depreciation plus construction work in progress) is the basis for allocating the company-wide borrowing portfolio of long-term debt. The net fixed asset values are adjusted to remove asset values that were financed pursuant to project specific arrangements, and nuclear liabilities (the lesser of OPG's asset retirement cost and unfunded nuclear liabilities). The adjusted relative net fixed asset ratio is then applied to OPG's company-wide borrowing portfolio of long-term debt to determine the amount of existing/planned debt to be included in the long-term debt component of OPG's capital structure for its regulated assets.

Consistent with the approach approved in EB-2007-0905, OPG has used information from its most recent audited financial statements (2009) to develop the allocation factor used to determine the amount of long-term debt for OPG's regulated operations in 2010, 2011, and 2012. The use of audited 2009 financial information is appropriate because the ratio of regulated net fixed assets to corporate net fixed assets does not change significantly from year to year (see Ex. C1-T1-S2 Table 1, line 13). In addition, this approach is simple and does not require assumptions about corporate net fixed asset growth.

For all company-wide, long-term debt issued prior to December 31, 2009, the allocation ratio is based on actual year-end values for net fixed assets in that year. For example, the allocation ratio for 2008 is determined by comparing the regulated net fixed assets at December 31, 2008 (as reflected in Exhibit B) to the total net fixed assets reflected in OPG's 2008 audited financial statements. The allocation ratios for 2007, 2008 and 2009 are provided in Ex. C1-T1-S2, Table 1.

3.3 Risk Management Activities

OPG's Executive Risk Committee ("ERC"), formerly the Risk Oversight Committee ("ROC"), is a senior management committee that has been delegated authority to review and approve financial and operational risk mitigation strategies. In November 2009, the ERC approved interest rate risk management strategy for Niagara Tunnel debt to mitigate exposure to interest rate fluctuations. This strategy permits hedging up to 50 per cent of the remaining budget for the Niagara Tunnel project of $1.1 billion. Hedging pursuant to this strategy was completed by early January, 2010.[1] The primary benefit of the interest rate hedging activity is that it fixes the interest cost on the hedged portion of the debt thereby reducing the exposure to interest rate volatility and refinancing risk.

The financial impact of the hedge transactions that have matured is amortized over the life of the underlying debt issue, in accordance with Canadian Generally Accepted Accounting Principles ("GAAP"), and is reflected in the effective interest rate cost of the debt issue. To the extent a forecast debt issue is hedged and OPG does not ultimately require the underlying debt issue, the impact of the hedge transaction is charged to unregulated operations.

4.0 COST OF EXISTING AND PLANNED NEW DEBT ISSUES

4.1 Existing Debt Issues

OPG's debt continuity schedules (Ex. C1-T1-S2 Tables 2 through 4) provide the actual cost of debt issued on or before December 31, 2009.

All OPG debt issues with the OEFC contain covenant conditions that apply to corporate debt issued in the public debt markets. The average remaining term of these long-term debt issues is approximately 4.7 years as at December 31, 2009.

[1] As described in EB-2007-0905, the ROC previously had approved hedging up to 75 per cent of total planned cash expenditures (net of contingencies) for the Niagara Tunnel project and up to 50 per cent of the OEFC debt maturing in the second half of 2007 and all of 2008. All heading transactions under this approval were completed by June 2007.

Existing OEFC debt will be retired or refinanced at maturity depending on OPG's liquidity at that time. OPG does not plan to redeem the debt prior to its maturity since its agreements with the OEFC contain call provisions that make it more expensive to redeem the debt compared to the potential benefit of refinancing in a lower interest rate environment.

OEFC debt outstanding at December 31, 2009 consists of both senior and subordinate notes under which the OEFC has different rights. The existence of subordinate debt in OPG's debt portfolio could make any senior issue offered into the capital market more attractive to investors. Payments on subordinated notes (issues 7 to 10 in Ex. C1-T1-S2 Tables 2, 3, 4 and 5 and issues 9 and 10 in Ex. C1-T1-S2 Table 6) are made only after full payment is made on senior notes.

OPG's long-term debt outstanding at December 31, 2009, as reflected in OPG's audited financial statements, is $4,046M. This balance consisted of corporate debt held by the OEFC of $2,745M, and project-related debt held by the OEFC related to regulated operations of $490M. The remaining $811M of OPG's long-term debt obligation outstanding as of December 31, 2009 is OEFC and non-OEFC project-related financing associated with OPG's unregulated operations. Debt issued prior to December 31, 2007 was described in detail in EB-2007-0905. Debt issued in 2008 and 2009 is described below.

OPG's 2008 debt issues are listed in Ex. C1-T1-S2 Table 3. OPG refinanced $200M out of the $400M of debt that matured in 2008. OPG retired one $200M debt issue on March 22 (Issue 3), replacing it with a $200M issue of 10-year term debt also on March 22 (Issue 20) at a rate of 5.09 per cent. These notes were issued under the $950M refinancing credit agreement with the OEFC. An effective interest rate of 5.35 per cent is applied to this $200M debt issue. This represents the blend of hedged and unhedged debt costs, and is consistent with the accounting and rate making approach used to determine the effective interest cost as described in section 3.5 below. The effective interest rate is determined in Ex. C1-T1-S2 Table 3a. OPG was able to fund the retirement of a second $200M debt issue on September 22 (Issue 6) from operations.

OPG completed three debt issues pursuant to the Credit Facility Agreement for the Niagara Tunnel Project in 2008. OPG hedged its interest rate exposure with respect to its forecast quarterly borrowing for the Niagara Tunnel project in accordance with the direction approved by OPG's ROC (now replaced by the ERC). The interest rates for the three completed debt issues (listed as Niagara 4, Niagara 5 and Niagara 6 in Ex. C1-T1-S2 Table 3) are:

- Niagara 4: $40M on January 22, 2008 at an effective rate of 5.53 per cent reflecting a rate of 3.82 per cent and an applicable spread for OPG of 1.40 per cent plus an amortization of hedging cost of 0.31 per cent.
- Niagara 5: $30M on April 22, 2008 at an effective rate of 5.90 per cent reflecting a rate of 3.79 per cent and an applicable spread for OPG of 1.63 per cent plus an amortization of hedging cost of 0.48 per cent.
- Niagara 6: $30M on July 22, 2008 at an effective rate of 5.87 per cent reflecting a rate of 3.90 per cent and an applicable spread for OPG of 1.60 per cent plus an amortization of hedging cost of 0.37 per cent.

OPG's 2009 debt issues are listed in Ex. C1-T1-S2 Table 4. OPG refinanced $100M out of the $350M debt that matured in 2009. OPG retired one $175M debt issue on March 22 (issue 3), replacing it with a $100M issue of 10-year term debt also on March 22 (issue 21) and $75M provided from operations. OPG retired a second $175M debt issue on September 22 (issue 4) funded from operations. The $100M notes on March 22, 2009 were issued at a rate of 5.65 per cent reflecting a rate of 2.74 per cent and an applicable spread for OPG of 2.91 per cent.

OPG completed four debt issues pursuant to the Niagara Tunnel project financing agreement in 2009. The interest rates for the four completed debt issues (listed as Niagara 7, Niagara 8, Niagara 9 and Niagara 10 in Ex. C1-T1-S2 Table 4a are:

- Niagara 7: $30M on January 22, 2009 at an effective rate of 8.41 per cent reflecting a rate of 2.88 per cent and an applicable spread for OPG of 3.30 per cent plus an amortization of hedging cost of 2.23 per cent.

- Niagara 8: $35M on April 22, 2009 at an effective rate of 7.71 per cent reflecting a rate of 2.88 per cent and an applicable spread for OPG of 2.75 per cent plus an amortization of hedging cost of 2.08 per cent.
- Niagara 9: $35M on July 22, 2009 at an effective rate of 6.41 per cent reflecting a rate of 3.52 per cent and an applicable spread for OPG of 1.67 per cent plus an amortization of hedging cost of 1.22 per cent.
- Niagara 10: $50M on October 22, 2009 at an effective rate of 5.63 per cent reflecting a rate of 3.56 per cent and an applicable spread for OPG of 1.30 per cent plus an amortization of hedging cost of 0.77 per cent.

4.2 Planned New Debt Issues

The interest rate associated with OEFC debt is fixed at the time the funds are advanced. The rate of interest is determined prior to the date the funds are advanced based on the prevailing benchmark Government of Canada 10-year bond as published by a verifiable market monitoring service (currently Bloomberg) on the day prior to the date funds are advanced, plus a credit margin determined five business days before the date funds are advanced. The credit margin is determined based on a sample of quotes for OPG’s credit margin as provided by a selected group of Canadian banks.

The cost of planned new and refinanced corporate debt and project-related debt for 2010, 2011 and 2012 is based on a forecast of the 10-year Long Canada Bond as published in December 2009 by Global Insight, a third party, independent market source. The long-term interest rates forecast for the 10-year Government of Canada bonds are provided in Chart 1. As discussed below, a credit risk spread for OPG of 126 basis points is added to the Global Insight rates noted in Chart 1 to determine the forecast rate for OPG’s OEFC debt in 2010, 2011 and 2012.

Chart 1 – Forecast 10-year Long Canada Bond Rates

Year	Q1	Q2	Q3	Q4
2010	3.80	3.83	3.84	3.87
2011	3.94	4.08	4.19	4.38
2012*	4.68			

* Annual forecast

The average OPG credit spread from 2005 to 2009 was approximately 145 basis points. The average OPG credit spread from 2005 to 2007 was 86 basis points. The average OPG credit spread from 2008 to 2009 was 206 basis points which was significantly in excess of the credit spread of 130 basis points used in EB-2007-0905 for new debt issues in 2008 and 2009. The tightening of credit which began in late 2007 following the asset-backed commercial paper disruption resulted in increasing credit spreads which was further compounded by the credit crisis in the fall of 2008. These events sparked a significant spike in credit spreads that continued for the first half of 2009. The period prior to the 2007 credit disruption was a period of excess liquidity in the market, which resulted in credit spreads being compressed to unusually low levels. OPG does not expect the market to return to such low credit spreads during the bridge year or test period. During 2009, credit spreads fell from the very high levels seen at the beginning of the year to a range of about 120 to 140 basis points in the fall of 2009. OPG's credit spread at the end of 2009 was 126 basis points and this figure has been used for 2010, 2011 and 2012.

OPG incurs costs to set-up each new credit facility with the OEFC (e.g., legal fees), these costs are relatively minor and are reflected in OPG's forecast OM&A costs for its legal department in the period the credit facility is forecast to be established. OPG may incur expenses to compensate the OEFC in the event of default; however OPG has not planned to incur such expenses.

4.3 Planned Corporate Long-Term Debt Issues

The total amounts of OPG's planned debt issues are listed in the notes to Ex. C1-T1-S2, Table 5 (2010), Table 6 (2011), and Table 7 (2012). OPG will retire approximately $1.75B of debt maturing between 2010 and 2012 and plans to issue long term debt of approximately $1.43B over the same time period as summarized in Chart 2, below:

Chart 2
Planned Corporate Long-Term Debt Retirements and Issues
($M)

	2010	2011	2012	Total
Debt Issues Maturing	970	375	400	1,745
New Debt Issues	830	300	300	1,430

In EB-2007-0905 OPG indicated it was developing plans to issue new incremental corporate debt into the external market in 2009, should OPG's updated long-term borrowing requirements turn out to be greater than forecast (see EB-2007-0905 Ex. C1-T1-S2, section 2.2). This financing was not required in 2009, but OPG expects to issue debt in the external marketplace before the end of the test period. In addition, a credit facility agreement with the OEFC was executed in March 2010 to re-finance debt maturing in 2010, as required.

4.4 Planned Project-Related Long-Term Debt Issues

Approximately $800M in new borrowing is needed to finance the Niagara Tunnel project over the 2010 - 2012 period. OPG does not plan to undertake other project-related financing for the regulated assets during the test period.

OPG has an agreement in place with the OEFC to provide debt financing for the Niagara Tunnel project. This agreement enables OPG to issue notes each quarter with a term of up to 10 years to meet OPG's financing obligations for this project. OPG may borrow up to $1B over the duration of the project to meet the financial requirements of the project. OPG is pursuing an amendment to this agreement to increase the maximum amount available to $1.6B which is consistent with the revised cost estimate. Borrowings under project-related credit facility agreements between OPG and the OEFC are on an unsecured basis for the purpose of financing construction requirements of specific projects.

The total amount for each of OPG's planned debt issues for the Niagara Tunnel Project is shown in the notes to Ex. C1-T1-S2 Table 5 (2010), Table 6 (2011) and Table 7 (2012). OPG expects to borrow $800M over 2010 through 2012 as summarized in Chart 3, below.

Chart 3
Planned Niagara Tunnel Project Related Long Term Debt Issues ($M)

	2010	2011	2012	Total
New Debt Issues	200	300	300	800

OPG has partially hedged all expected debt issues during this period. The impact of hedging activities on OPG's effective debt cost for project-related debt is described below. To the extent that a portion of the debt is hedged in any period, the interest rate cost for each specific debt issue reflects a weighted average of the hedge amount and the unhedged amount.

Details of hedge transactions that have a maturity date after December 31, 2009 are provided in Ex. C1-T1-S2 Table 10 for the Niagara Tunnel project. The financial impact of these hedge transactions cannot be determined until the issue reaches maturity. For illustrative purposes the market value (market-to-market) of each of the hedges as at December 31, 2009 has been shown in the tables. A negative market value corresponds to a payment owing by OPG if the hedge had to be settled as at December 31, 2009, similarly a positive market value corresponds to a payment owing to OPG. The consolidated market value of all hedges that had not matured as at December 31, 2009 and that are forecast to mature prior to the end of the test period amounts to a positive $0.6M.

5.0 OTHER LONG-TERM DEBT

As discussed above, OPG finances long-term assets with long-term financing. Consistent with the methodology approved in EB-2007-0905, OPG has used 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. OPG's other long-term debt provision is determined based on:

- The difference between the debt resulting from the application of OPG's proposed capital structure to its proposed regulated rate base.
- The project-related and corporate long-term debt assigned or allocated to OPG's regulated operations as discussed above.
- The portion of short-term debt allocated to regulated operations. This calculation is described in Ex. C1-T1-S3.

In EB-2007-0905, the OEB required OPG to use the hedged interest rates rather than the unhedged rates to calculate the interest rate on the debt provision. Accordingly, for 2008 and 2009, the hedged interest rate for debt issued each year for both corporate and project-related borrowing purposes is added together and divided by the number of debt issues in that year to determine the interest rate attributable to the other long-term debt provision for those years. OPG has provided a calculation identifying all debt issued in the year, the hedged interest rate and the resulting average interest rate applicable to its other long-term debt provision in the footnotes of Ex. C1-T1-S2 Table 2a (2007), Table 3a (2008), Table 4a (2009).

As discussed in Ex C1-T1-S1, OPG has used the cost of capital methodology contained in the OEB's Report on the Cost of Capital for Ontario's Regulated Utilities in EB-2009-0084 ("Cost of Capital Report"). OPG's other long-term debt provision is consistent with the definition used by the OEB to describe the deemed debt component of the approved capital structure for electricity distributors. Page 54 of the Cost of Capital Report states that "the deemed long-term debt rate will be used where an electricity distribution utility has no actual debt". For 2010 and subsequent years, OPG will apply the OEB's approved methodology for determining the interest rate associated with deemed debt. The applicable interest rate is determined by the OEB as "an estimate based on the long (30-year) Government of Canada bond yield forecast plus the average spread between an A-rated Canadian utility bond yield and 30-year Government of Canada bond yield for all business days in the month three (3) months in advance of the (proposed) effective date for the rate changes." (Cost of Capital Report, page 58). OPG has applied the rate of 5.87 per cent to its Other Long-Term Debt for 2010, 2011 and 2012. This rate was determined by the OEB and published in its letter of

February 24, 2010 regarding Cost of Capital Parameter Updates for 2010 Cost of Service Applications. When calculating the final payment amounts, OPG proposes that this rate be updated using data for the month that is three months prior to the effective date of the new payment amounts as required by the Cost of Capital Report.