Energy Probe Interrogatory #001

Ref:

Issue Number: 1.2
Issue: Are OPG's economic and business planning assumptions for 2011-2012 an appropriate basis on which to set payment amounts?

Interrogatory

Please provide a list of OPG's economic and business planning assumptions for 2011-2012 or indicate the exhibits in the Prefiled Evidence where they may be found.

Response

The overall business planning assumptions for 2011 – 2012 are provided in the 2010 – 2014 Corporate Business Planning Instructions found at Ex. A2-T2-S1, Attachment 1. Specific economic assumptions were identified in an internal web link in these instructions. Attachment 1 to this response provides the information accessed by that link.

As of Sep 09 (* as of 3rd qtr 2009)
Source: IHS Global Insight

	Jan-08	Jan-09	Jan-10	Jan-11	Jan-12	Jan-13	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18	Jan-19	Jan-20	Jan-21	Jan-22	Jan-23	Jan-24	Jan-25	Jan-26	Jan-27
REAL GDP						(Percent Change)										(Percent Change)				
U.S.	0.4%	-2.5%	2.1%	2.9%	3.7%	2.9%	2.6%	2.5%	2.5%	2.5%	2.7%	2.9%	3.0%	2.6%	2.6%	2.6%	2.6%	2.7%	2.6%	2.5%
Canada	0.4%	-2.6%	2.1%	3.4%	3.6%	3.2%	2.8%	2.5%	2.4%	2.3%	2.3%	2.3%	2.1%	2.1%	2.0%	2.1%	2.0%	2.0%	2.1%	2.1%
Ontario (DRI-WEFA)	-0.4%	-2.9%	1.9%	3.3%	3.5%	3.2%	2.7%	------>												
COST INDICATORS																				
CPI																				
U.S.*	2.152	2.144	2.174	2.222	2.268	2.310	2.355	2.400	2.448	2.495	------>									
Canada (2002=1.00)	114.1	114.5	116.4	118.8	121.3	123.7	126.2	128.7	131.3	133.9	136.6	139.3	142.1	144.9	147.8	150.8	153.8	156.9	160.0	163.2
Ontario (2002=100 NSA)*	113.3	114.0	116.0	118.4	120.8	123.2	125.7	128.2	130.8	133.4	136.1	138.8	141.6	144.4	147.3	150.2	153.2	156.3	159.4	162.6
U.S.	3.8%	-0.4%	1.4%	2.2%	2.0%	1.9%	1.9%	1.9%	2.0%	1.9%	1.9%	1.8%	------>							
Canada	2.4%	0.4%	1.6%	2.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Ontario (NSA)*	2.3%	0.7%	1.7%	2.1%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
GDP DEFLATOR																				
Canada	121.1	118.6	121.0	123.7	126.6	129.5	132.1	134.5	136.8	139.3	141.6	144.0	146.9	149.7	152.7	155.7	158.9	162.0	165.1	168.4
WHOLESALE PRICES																				
U.S.	9.8%	-9.4%	1.5%	4.6%	2.6%	2.0%	1.7%	1.6%	1.7%	1.1%	1.2%	1.1%	0.7%	0.6%	0.4%	0.4%	0.8%	0.9%	0.9%	1.0%
Canada IPPI*	4.3%	-3.4%	1.1%	2.6%	2.0%	1.8%	1.6%	1.3%	1.6%	1.4%	1.2%	1.5%	1.5%	1.6%	1.6%	1.8%	1.8%	1.8%	1.7%	1.7%
INDUSTRIAL PRODUCT PRICE INDEX																				
Canada (1997=100)*	120.6	116.5	117.8	120.9	123.2	125.5	127.4	129.1	131.1	132.9	134.5	136.6	138.7	140.8	143.2	145.7	148.3	151.0	153.6	156.3
AVG HOURLY EARNINGS																				
Canada - All industry	20.16	20.48	20.78	21.18	21.79	22.59	23.42	24.25	25.17	26.02	26.86	27.73	28.52	29.28	30.03	30.79	31.85	33.13	34.28	35.34
Canada - Mfg.	21.98	22.21	23.74	24.22	24.97	26.00	27.05	28.11	29.36	30.56	31.78	33.10	34.35	35.56	36.79	38.05	39.78	41.84	43.74	45.52
- Const'n*	26.45	29.38	31.07	30.66	30.85	31.60	32.43	33.38	34.75	36.01	37.28	38.69	39.94	41.18	42.47	43.84	46.02	48.73	51.12	53.30
Ontario - Mfg *	22.94	22.35	24.31	25.22	26.30	27.60	28.93	30.32	31.95	33.62	35.36	37.24	39.07	40.84	42.57	44.36	46.60	49.22	51.69	54.03
Ontario - Const'n*	26.45	27.59	28.76	29.03	29.67	30.67	31.77	32.97	34.46	35.91	37.37	38.91	40.37	41.80	43.26	44.77	46.77	49.16	51.41	53.61
INTEREST RATES (annual average)																				
PRIME (current)																				
Chartered Banks - Canada	4.73	2.39	2.69																	
Bank of Canada	3.50	0.25																		
180 DAY T-BILL																				
Canada	2.52	0.45	0.84																	
1 YEAR T-BILL																				
Canada	2.95	0.59	1.12	(est)																
1 - 3 YEAR BONDS																				
Canada	2.66	1.31	1.98																	
3 - 5 YEAR BONDS																				
Canada	2.96	2.24	2.87																	
5 YEAR BONDS																				
Canada	3.01	2.45	2.96																	
5 - 10 YEAR BONDS																				
Canada	3.36	2.94	3.59																	
10 YEAR BENCHMARK BONDS																				
Canada	3.58	3.38	3.86																	
30 YEAR BENCHMARK LONG BONDS																				
Canada	4.05	3.98	4.33																	
SCOTIA MCLEOD MED-TERM CORPORATE BONDS																				
	4.21	3.96	4.58																	
SCOTIA MCLEOD LONG-TERM CORPORATE BONDS																				
	4.92	4.83	5.23																	
OPG INTEREST RATE SPREADS OVER GOVT OF CDA (bps)																				
Source HSBC est.	**1 year**	**95**	**3 year**	**100**	**5 year**	**110**				**10 year**	**140**				**15 year**	**150**				
FOREIGN EXCHANGE																				
US$/C$	94.27	86.86	88.42	91.22	93.04	93.22	92.06	89.02	88.26	89.23	89.44	89.46	89.45	89.45	89.45	89.45	89.44	89.44	89.43	89.27
C$/US$	1.0671	1.1543	1.1310	1.0964	1.0749	1.0728	1.0863	1.1234	1.1330	1.1207	1.1181	1.1178	1.1179	1.1179	1.1179	1.1180	1.1180	1.1181	1.1182	1.1202
C$/EURO	1.5601	1.5830	1.5753	1.5841	1.5536	1.5601	1.5969	1.6739	1.7109	1.7146	1.7330	1.7549	1.7699	1.7767	1.7746	1.7902	1.7969	1.8037	1.8107	1.8207
OPG Business Planning Assumptions		**1.11**	**1.11**	**1.11**	**1.11**	**1.11**														

Energy Probe Interrogatory #002

Ref: Ex. A2-T2-S1, page 12

Issue Number: 1.2
Issue: Are OPG's economic and business planning assumptions for 2011 – 2012 an appropriate basis on which to set payment amounts?

Interrogatory

The Prefiled Evidence states that OPG's Business Case Summaries ("BCS") Guidelines have established 7 per cent as the current discount rate for OPG's economic evaluations for regulated assets.

Please provide the specific data used to calculate that discount rate.

Response

The data used to calculate the seven per cent discount rate used for OPG's economic evaluations for regulated assets is reviewed periodically. Currently, the data assumed is as follows:

- Debt / Equity Ratio = 53 / 47
- Debt Rate = 5.94 per cent
- ROE = 9.85 per cent
- Tax Rate = 25 per cent

The results are generally rounded to the nearest percent, which results in seven per cent in this instance.

Energy Probe Interrogatory #003

Ref: Ex. A2-T2-S1, page 12

Issue Number: 1.2
Issue: Are OPG's economic and business planning assumptions for 2011-2012 an appropriate basis on which to set payment amounts?

Interrogatory

The Prefiled Evidence states that OPG's discount rate is based on "OPG's long term view of the financial markets".

a) Please indicate how OPG's long term view of the financial markets affected the calculation of the 7 percent discount rate currently in effect.

b) Please provide a copy of the BCS Guidelines if the document is not confidential.

c) To illustrate how OPG uses that discount rate, please provide a non-confidential example of the calculation that it performed in a specific business case including, inter alia, the cash flows that are the subject of the discounting process.

Response

a) As noted in Ex. C1-T1-S2, page 7, Chart 1, the current forecast of long-term Canada Bond rate is 4.68 per cent. Adding 126 basis points for OPG credit spread results in a long-term debt rate of 5.94 per cent that is used in calculating the current discount rate.

b) Refer to Attachment 1 to this response for a copy of the guidelines on discount rates for project analysis. The effective date of the discount rate reflected in Attachment 1 is April 26, 2006. OPG reviews the discount rate calculation periodically. While the rates/ratios underlying the determination of the discount rates illustrated in Ex. L-6-002 have fluctuated since 2006 the resulting discount rate remained at 7 per cent as OPG policy requires rounding to the nearest per cent.

c) Please see response to the interrogatory in Ex. L-12-047, Attachment 1 for an example on the use of the 7 per cent discount rate.

Filed: 2010-08-12
EB-2010-0008
L-06-003
Attachment 1

Current Discount Rates

Economic Evaluation Rates

For economic analysis, the Weighted Average Cost of Capital is used as the appropriate discount rate. Effective April 26, 2006, the following discount rate is to be used for business case analysis.

	Discount Rate
Investments related to the manufacturing and processing of electricity for all generating facilities excluding Regulated nuclear and base loaded hydroelectric facilities.	[redacted]
Investments related to the manufacturing and processing of electricity for Regulated nuclear and base loaded hydroelectric facilities.	7.0%

For projects and business opportunities that are clearly outside of OPG's core business, or are not related to the manufacturing and processing of electricity, then the project's cost of capital should be used. Please contact Corporate Finance – Corporate Investment Planning for assistance.

Financing Decisions (e.g., Lease, third party funded projects)

Please contact Corporate Finance – Director - Financial Strategy and Performance Management for assistance.

Energy Probe Interrogatory #004

Ref: Ex. F1-T1-S1, Attachment 1 - Regulated Hydroelectric 2010 - 2014 Business Plan

Issue Number: 6.8
Issue: Are the 2011 and 2012 human resource related costs (wages, salaries, benefits, incentive payments, FTEs and pension costs) appropriate?

Interrogatory

Page 18 of the business plan refers to "Strategic Complement" – Strategy of "over hiring" to account for unexpected attrition, high turnover, and long lead times required to hire staff.

a) Please describe the "over hiring" strategy in more detail.

b) How many extra staff have been hired using this strategy? How many are attributed to the prescribed Hydro Electric facilities?

c) Please describe any incidents of "unexpected attrition" and "high turnover" that OPG has experienced in the recent past.

d) What are the reasons for "long lead times to hire staff"?

Response

a) "Strategic over hiring", or pre-hiring, refers to hiring more staff than vacant positions available in anticipation of attrition. Pre-hiring has been used at R.H. Saunders Generating Station in order to accommodate the necessary time for new hires to acquire the training and experience to replace retiring employees. The Niagara Plant Group does not hire for positions that are not vacant. However, the Niagara Plant Group does have a succession plan to deal with demographic concerns that is part of its approved business plan. The succession plan is discussed in Board staff interrogatory L-01-041.

b) Currently two staff have been pre-hired for the R.H. Saunders Generating Station.

c) The Niagara Plant Group is currently experiencing high rates of attrition. The majority of the attrition is related to retirements. Due to attrition, the Niagara Pump Generating Station lost 17 regular staff in 2008, 22 regular staff in 2009, and 19 regular staff through mid-year 2010. This represents an annual loss of approximately 7 - 10 per cent of the total regular staff complement. R.H. Saunders Generating Station has not experienced unusual rates of attrition recently.

d) The hiring process for a vacant position can be lengthy. When hiring for vacancies the Hydroelectric plant groups are required to abide by collective agreements and OPG's

hiring policies and procedures. The hiring process typically takes between three to six months, but can occasionally take longer, depending on whether an internal posting is successful or external recruitment is required. The process includes: approval, posting, screening, interview, testing, selection, security clearance (for external hires), offer, acceptance and the relocation process. Release times between OPG work locations can be considerable, up to six months. Security clearance lead times range from two weeks to six months.

Energy Probe Interrogatory #005

Ref: Ex. A1-T3-S1, page 5 of 9

Issue Number: 2.1
Issue: What is the appropriate amount for rate base?

Interrogatory

The Prefiled Evidence indicates that the regulated hydro rate base decreases over the period 2007-2012 and that the rate base for nuclear facilities is expected to remain stable over the period 2010-2012.

Does OPG expect the rate bases to grow beyond 2012? If so, what is the expected growth rate?

Response

The specific growth rates for hydroelectric and nuclear rate base beyond 2012 will depend on events beyond the test period. The major factors currently apparent are:

- The growth rate of the regulated hydroelectric rate base will be affected by the addition of the Niagara Tunnel upon its completion and the completion of appropriate regulatory reviews and approvals.

- The growth rate of the nuclear rate base will depend on a number of factors related to planned operations and investments including:
  - The Continuing Operations initiative at Pickering B Generating Station, which will impact depreciation lives and investment levels.
  - Scope and pace of progress on Darlington Refurbishment.
  - Potential changes in nuclear asset retirement obligations.

Energy Probe Interrogatory #006

Ref: Ex. C1-T1-S1

Issue Number: 3.3
Issue: Should the same capital structure and cost of capital be used for both OPG's regulated hydroelectric and nuclear businesses? If not, what capital structure and/or cost of capital parameters are appropriate for each business?

Interrogatory

a) Recognizing that the Foster Associates report did not recommend separate capital structures for nuclear and hydro, what risks might support different capital structures for those two businesses?

b) In particular, are those risks the same as the risks to be taken into consideration in estimating the costs of equity for regulated hydro and nuclear?

c) Please indicate whether, from a financial perspective, weather risk and regulatory risk are properly regarded as business-specific risks of regulated hydro and nuclear respectively or part of market risk for the purpose of estimating the respective costs of equity.

d) Is there empirical support for the conclusion in the Foster Associates report that:

"Average market value – All other things equal, larger firms have the benefit of diversification of assets and greater financial resources to weather economic downturns. Therefore, the larger the market value of the firm, the lower is the expected beta." (Appendix B, p.3)

Response

a) As summarized at page 34 of Ex. C3-T1-S1, the key business risk factors that would distinguish the two operations are the higher operating and production risks, operating leverage and financial risk (related to the nuclear liabilities) of the nuclear operations relative to the regulated hydroelectric operations and the risk mitigation effect of the Water Conditions Variance Account on the production risks of the regulated hydroelectric operations.

b) In principle, as discussed in the response in Ex. L-6-007, differences in business risks such as those referenced in response to a) can be reflected in return on equity ("ROE") and/or capital structure. In EB-2007-0905, the OEB opted to recognize OPG's relatively higher business risks relative to a benchmark utility in capital structure, as it has done for the preponderance of the utilities that it regulates.

c) Ms. McShane presumes that the term “market risks” refers to capital market risks. The referenced risks are business-specific risks, which can be recognized in capital structure and/or the allowed ROE.

d) Yes. The studies that are conducted annually by Ibbotson Associates with respect to the size premium demonstrate that there is consistently an inverse relationship between market value and beta. See, for example, Morningstar, *Ibbotson SBBI, 2010 Classic Yearbook, Market Results for Stocks, Bonds, ills, and Inflation 1926-2010*, Chapter 7 “Firm Size and Return”, pages 86-96.

Energy Probe Interrogatory #007

Ref: Ex. C1-T1-S1, page 1
Ex. C3-T1-S1

Issue Number: 3.3
Issue: Should the same capital structure and cost of capital be used for both OPG's regulated hydroelectric and nuclear businesses? If not, what capital structure and/or cost of capital parameters are appropriate for each business?

Interrogatory

The Foster Associates report notes (p.13) that the Board's ROE formula is for a "benchmark utility" and that differences in business risk between that benchmark and a specific regulated utility are to be reflected in differences in capital structure.

a) Presuming there is a benchmark utility for generation, does OPG have higher or lower business risk than that utility?

b) What benchmark capital structure should OPG's proposed capital structure (47% debt, 53% equity) be compared with?

c) Should all differences in business risk be reflected in capital structure, or only those that investors cannot eliminate through diversification?

Response

a) There is no benchmark generation utility. While there are vertically integrated electric utilities whose generation is regulated, OPG is unique in that its regulated operations are solely generation. However, it is not necessary that there be a benchmark generation utility, only that there be a benchmark, or average business risk, utility for which the cost of equity can be estimated. To the extent that a specific utility's business risks are higher or lower than average, the difference can be reflected in that utility's capital structure. Relative to the benchmark, or average business risk utility, OPG's business risks are higher.

b) While the average common equity ratio adopted for regulated companies in Canada is approximately 40 per cent, there is no single benchmark capital structure, because capital structure is frequently used as the means to differentiate utilities based on business risk. When the OEB set the allowed common equity ratio for OPG's regulated operations in EB-2007-0905, for example, it compared that equity ratio with the equity ratios adopted for other regulated companies under its jurisdiction, and concluded that OPG's higher business risk relative to those utilities warranted a 47 per cent common equity ratio.

c) As a general proposition, business risks, both diversifiable and non-diversifiable, can be reflected in capital structure, return on equity ("ROE") or a combination of both. There is no single "correct" approach, as long as the overall allowed return (ROE plus capital structure) meets all three requirements of the fair return standard. The benchmark utility ROE is estimated by reference to multiple tests which have different premises. The Capital Asset Pricing Model ("CAPM"), for example, is based on the premise that only non-diversifiable risks are measured in the cost of equity, so theoretically, differences in the diversifiable risks between proxy companies used to apply the CAPM and the benchmark utility would have to be reflected in capital structure. Similarly, theoretically, differences in diversifiable risks between the benchmark utility and a specific regulated company would be reflected in the capital structure. The discounted cash flow ("DCF") approach applied to a sample or samples of proxy companies would capture both the diversifiable and non-diversifiable risks applicable to those companies in the estimated cost of equity. In principle, then, when a DCF-based ROE is used to establish a benchmark ROE, differences in the level of total business risks (both diversifiable and non-diversifiable) between the proxy companies and a benchmark utility would be reflected in capital structure, as would the difference in the level of total business risks between a benchmark utility and a specific regulated company. Under the OEB's approach, where the benchmark utility ROE is estimated using multiple tests, in principle, differences in both diversifiable and non-diversifiable risks are reflected in capital structure.

Energy Probe Interrogatory #008

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries
Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 2 of the BCS refers to "comprehensive geological studies" preceding the decision to proceed with the project.

a) Did the geological studies identify the weakness in the Queenston shale formation that resulted in the tunneling problems subsequently encountered by the contractor?

b) If yes, please explain what design features and/or construction methods were intended to deal with that weakness? Why did they not provide the expected risk mitigation?

c) If no, please explain why the studies did not identify the weakness and what other studies could have been undertaken to identify the weakness.

Response

a) Geotechnical investigations and analysis of rock samples completed for this project on the Queenston shale indicated its relatively lower strength, lower rock mass, lower quality, higher variability and higher horizontal stresses relative to the overlying sedimentary rock formations. This information was provided to the design build contractor as part of OPG's Request for Proposals in 2004.

b) The selected tunnel boring machine and construction methodology provided for installing initial rock support (steel ribs, wire mesh, rockbolts and shotcrete) in the tunnel crown immediately behind the tunnel boring machine cutterhead. At times the Queenston shale failed over the top of the cutterhead, before initial rock support could be installed. Rock is not a uniform material and can vary considerably over a short distance, and rock behaviour during tunneling cannot be precisely predicted from investigative boreholes and adits. These provide representative data for only a small percentage of the rock to be excavated. Consequently, tunnel designs and construction methods are based on experience and interpretation of the geotechnical parameters. Actual rock conditions and behaviour during tunnel construction cannot be fully known before the excavation is complete. Subsurface conditions always remain a significant risk to both design and construction of tunnel projects.

c) Not applicable. See response to part a).

Energy Probe Interrogatory #009

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries
Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 2 of the BCS refers to "significant challenges excavating and supporting the Queenston shale formation, due to overstressing and insufficient, unsupported stand-up time".

a) Please explain the causes of the "overstressing" in the Queenston shale formation. Was this overstressing condition identified by the geological studies undertaken prior to the project proceeding?

b) How long was the shale expected to stand up without support during the tunnelling operation?

c) Please describe the system intended to support the tunnel crown in the original design.

d) Please describe the measures taken to mitigate the lower than expected unsupported stand-up time? What impact did these measures have on the expected tunnelling progress?

Response

a) Overstressing in the Queenston shale resulted from a combination of the relatively high horizontal stress, the relatively weak rock mass and the relatively thin layers in the rock mass. While the presence of high horizontal stress and relatively weak rock mass were known from the geotechnical investigations, the thin bedding was not apparent in the boreholes or the exploratory adit. During tunnel excavation, the high in-situ horizontal stress in the rock gets redistributed around the opening and stresses are concentrated in the crown and invert. The thin layers within the Queenston shale were unable to support their own weight, the rock fractured and overbreak resulted before the planned initial rock support could be installed.

b) At the contractor's originally predicted average tunnel boring machine ("TBM") advance rate of 14.5 metres per day, stand-up time for the unsupported rock was expected to be about nine hours.

c) Initial rock support in the tunnel crown included steel ribs, wire mesh, rockbolts and shotcrete in various combinations depending on the rock conditions encountered during TBM excavation.

d) Modifications were made to the initial support area on the TBM to facilitate the installation of pipe spile umbrellas, in some areas. These were used to pre-support the overlying Queenston shale and to facilitate the safe advance of the TBM. They also facilitated the removal of loosened rock over the cutterhead with subsequent support of the stable rock mass up to four metres above the intended profile. With pipe spile umbrellas, TBM advance was limited to an average of about two metres per day. With removal of the loosened rock above the cutterhead, the contractor was able to achieve TBM advance rates averaging about eight metres per day in the Queenston shale.

Energy Probe Interrogatory #010

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries
Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

On page 3 of the BCS reference is made to a "target cost of $985 M".

a) Does the target cost of $985 M include the cost incurred to the date of the new DBA?

b) If no, is it coincidental that the target cost is the same as the original release cost of the project?

Response

a) Yes.

b) Not applicable. See response to part a).

Energy Probe Interrogatory #011

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries
Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

On page 3 of the BCS reference is made to "a vertical realignment to exit the Queenston shale and move to the overlying rock formations where tunneling conditions are expected to improve".

a) How will OPG measure whether tunneling conditions have improved?

b) Who bears the risk if the tunneling conditions do not result in improved progress of the tunneling machine?

c) What is the potential cost increase if the tunneling conditions do not improve as expected?

Response

a) OPG will measure improvement in conditions by the tunnel boring machine ("TBM") advance rate and reduced overbreak in the tunnel crown.

b) Risk is shared between OPG and the contractor through agreed baselines for progress and overbreak in the remaining sections of the tunnel.

c) The potential cost increase would depend on the conditions encountered, but OPG has high confidence that cost and schedule contingencies in the approved Business Case Summary ("BCS") address the risks to OPG associated with remaining tunnel construction.

Energy Probe Interrogatory #012

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries – Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 4 of the BCS refers to a "10-year holiday for Gross Revenue Charge (GRC) payments".

a) Please explain what the Gross Revenue Charge is.

b) What will the annual cost increase be once the 10-year holiday from GRC ends?

Response

a) As described in Ex. F1-T4-S1, the Gross Revenue Charge ("GRC") refers to taxes and charges that owners of hydroelectric generating stations must pay under section 92.1 of the *Electricity Act, 1998*. The GRC consists of two components: water rentals and property tax.

b) The method of calculating is defined in O. Reg. 124/02. This regulation also provides for the ten-year holiday from GRC. The GRC is determined by multiplying a station's annual generation by a deemed rate of $40/MWh and by the appropriate GRC rate. The Sir Adam Beck Generating Station pays highest marginal total GRC rate of 36 per cent of gross revenues on production over 700 GWh per year. Therefore, using the current GRC rates, the incremental 1.6 TWh of production expected as a result of the Niagara Tunnel Project will result in an additional GRC cost of approximately $23M annually after the expiration of the GRC holiday.

Energy Probe Interrogatory #013

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries
Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 7 of the BCS contains a sensitivity analysis of the project costs including potential incremental costs.

a) Overall reduction of 5% in Niagara River Flow is evaluated. Please explain what conditions might lead to a reduction of 5% in river flow and what the probability of those conditions arising is.

b) Higher capital costs of 10% is evaluated. Please explain how the 10% amount was arrived at. What is the probability that this amount will occur or be exceeded?

c) How does the higher capital cost (10% of going forward costs or about $100 M) differ from the "Project Costs $100 M Higher" eventuality also evaluated?

d) How was the increased interest during construction rate of 50 basis points arrived at? What is the probability of this rate occurring?

Response

All sensitivities have been run to stress the Levelized Unit Energy Cost ("LUEC"), Power Purchase Agreement ("PPA") and revenue requirement values should the forecast of cost or production information change from the base assumptions. The levels of the sensitivities are chosen as typical values.

a) Typical conditions that might lead to a change in river flow include variation in precipitation and snowmelt. The 5 per cent reduction in river flow represents a typical amount used for sensitivity analysis when testing the financial evaluation results. The probability was not rated.

b) Higher capital costs of 10 per cent is a typical amount used for sensitivity analysis when testing the financial evaluation results. The probability was not rated.

c) At the time of creating the Superseding Release for the Niagara Tunnel Project (Ex. D1-T1-S2, Attachment 1), the current project costs incurred were approximately $0.5B (as

per footnote 3 on page 7). For this reason, the "Higher Capital Costs (+10% going forward costs)" and the "Project Costs $100M Higher" are not fundamentally different values ($110M versus $100M respectively). As such, the sensitivity impacts are not fundamentally different.

d) The 50 basis point increase in interest during construction was deemed to be an appropriate level to be used to measure and evaluate the sensitivity resulting from this change on the financial results. The probability was not rated.

Energy Probe Interrogatory #014

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries
Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 9 of the BCS shows an Explanation of Cost Variances for the project.

a) OPG Project Management costs are forecast to be 36% higher than originally approved because of the increased duration of the project. Owner's Representative costs are forecast to be 59% higher for the same reason. Please explain why the Owner's Representative costs should be higher on a percentage basis than OPG Project Management costs.

b) Please provide a breakdown of the Tunnel Contract variance of $458.1 M.

Response

a) The estimated costs for the Owner's Representative include provisions for additional monitoring associated with the extended duration of activities, such as the tunnel boring machine mining, and for several concurrent tunnel construction activities (e.g. invert concrete lining, profile restoration, arch concrete lining, contact grouting, and pre-stress grouting).

b) Details of the Tunnel Contract variance of $458.1M are confidential. OPG declines to provide this information as it is not relevant to the "status update" review that the OEB is undertaking for this project in this Application.

Energy Probe Interrogatory #015

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries – Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 12 of the BCS states that "The Niagara Tunnel design life is 90 years without the need for any planned maintenance".

a) The sensitivity analysis on page 7 evaluates a shorter service life of only 30 years. Please explain why a 30-year service life was selected for evaluation when the design life is 3 times as long.

b) What conditions might result in the lower service life?

c) Page 1 of Appendix B to the BCS notes "annual incremental OM&A costs of $0.1M" in Operating Cost Assumptions for the tunnel project. Please reconcile this statement with the one above, i.e., "The Niagara Tunnel design life is 90 years without the need for any planned maintenance."

Response

a) The 30-year service life sensitivity is an extreme case to test the robustness of the tunnel economics to service life assumptions. As identified in part b), the premature failure of the tunnel lining with an inability to repair it could be a possible reason for shortening the life of the tunnel.

b) Premature failure of the tunnel lining requiring earlier than planned tunnel dewatering and repair.

c) The estimated annual average OM&A costs cover testing, inspection and maintenance on the tunnel outlet gate's mechanical, electrical and control systems; tunnel performance monitoring; and, periodic testing to confirm flow rates.

Witness Panel: Hydroelectric

Energy Probe Interrogatory #016

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries
Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Appendix C contains the Niagara Project Major Risks Table.

a) Please identify what party(ies) are responsible for the costs associated with what risks.

b) Are the risks arranged in decreasing probability of occurrence? If not, please explain how the risks are ordered.

c) Please identify the probability of each risk occurring.

d) The risk of lower than expected tunnel boring machine progress due to harder rock conditions than expected does not appear to be evaluated. Please explain why this risk is not included in the table.

Response

a) Cost and schedule impacts associated with risks included in this table are the responsibility of OPG and have been addressed through cost and schedule contingencies included in the approved Business Case Summaries.

b) No. The risks are listed in the order in which they were identified.

c) When the BCS was developed, the probability of occurrence of these risks was assessed as follows:
- Risks 1, 2, 3, 5 and 15 were all Low.
- Risks 4, 7, 8, 9, 10, 11, 12, 13 and 14 were all Medium.
- Risk 6 was High.
- Risks 16, 17, 18 and 19 were not rated.

d) The risk was not considered to be a major risk requiring evaluation because none of the sedimentary rock layers expected to be encountered along the Niagara Tunnel route is particularly hard and because the tunnel boring machine had no difficulty excavating through any of the rock layers overlying the Queenston shale on the decline from the outlet portal.

Witness Panel: Hydroelectric

Energy Probe Interrogatory #017

Ref: Ex. D1-T1-S2, Attachment 1, Tab 1 – Business Case Summaries
Niagara Tunnel Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

"*Report of the Board: The Regulatory Treatment of Infrastructure Investment in connection with the Rate-regulated Activities of Distributors and Transmitters in Ontario*" issued January 10, 2010 provides options for accelerated cost recovery.

a) Does OPG consider that the mechanisms for accelerated cost recovery would apply to any of its prescribed hydroelectric facilities?

b) If yes, please explain why they would apply with reference to the Board report noted above.

c) Has OPG considered applying for accelerated cost recovery for the Niagara Tunnel Project? Please explain how the decision was made.

Response

a) Yes.

b) Please see the response to the interrogatory in Ex. L-1-011.

c) OPG considered applying for inclusion of Construction Work In Progress ("CWIP") in rate base for the Niagara Tunnel Project, but decided against it. The project was very far advanced and therefore most of the advantages of CWIP in rate base treatment would not be realized. The in-service amount for the project could not be sufficiently reduced to avoid rate shock and the majority of the funding for the project was already assured.

Energy Probe Interrogatory #018

Ref: Ex. D1-T1-S2, Attachment 1, Tab 2 – Business Case Summaries
DeCew Falls 1 Penstock and Saddle Replacement

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 3 of the BCS refers to "negative production impacts on the City of St. Catharines at their existing downstream Heywood GS, their proposed Schickluna GS and OPG's proposed Lake Gibson GS."

a) Please explain why not replacing the penstocks at DeCew Falls I impacts downstream stations.

b) Is a runner upgrade planned for the units during the time they are out of service for the penstock project? If yes, what is the expected cost? If no, please explain why this is not an advantageous project?

Response

a) The natural river flow in 12 Mile Creek is much lower than the water flow introduced into the river via the DeCew Falls I and II Generating Stations. Since there are no sluiceways to pass water around the DeCew Falls I and II Generating Stations, if the penstocks are not replaced at DeCew Falls I Generating Station then less water would flow from the Welland Canal, through DeCew Falls, and into 12 Mile Creek. This loss of flow would lower the available water and energy production for both upstream and downstream hydroelectric stations, including the existing Heywood Generating Station and the proposed Lake Gibson and Schickulan Generating Stations.

b) No, runner upgrades are planned to be installed after the completion of the penstock project. Due to the time required to complete the model testing necessary to design more efficient runners, and the time to procure new runners for installation, the upgrades could not be completed during the current station outage.

Witness Panel: Hydroelectric

Energy Probe Interrogatory #019

Ref: Ex. D1-T1-S2, Attachment 1, Tab 3 – Business Case Summaries – R.H. Saunders Generating Station Protection and Control Upgrade Project

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 4 of the BCS refers to "Project Strategy is to award the work to a single experienced contractor who has done similar work at our stations to minimize risk to OPG".

a) Does this statement mean that a sole source supplier will do the work or does it mean that one contractor (as opposed to multiple contractors) will do the work involved in the Protection and Control upgrade?

b) If the former, please explain why a sole source supplier is necessary.

c) Please describe the "risk to OPG" referred to in the statement?

d) Is the project currently on time and budget? If not please identify and explain any variances.

Response

a) One contractor will do all of the work related to the R.H. Saunders Generating Station Protection and Control Upgrade Project as opposed to multiple contractors. Competitive bids were sought for this project.

b) Not applicable. See response to part a).

c) The process control system affects many different aspects of the plant operation. Integration of all plant systems is essential. Multiple contractors could lead to potential conflicts between different systems where OPG would be responsible for making the systems work with each other and bearing the associated cost. A single contractor is commercially responsible under the contract to ensure all systems and sub-systems are integrated and work well together.

d) The project is currently on time and on budget.

Witness Panel: Hydroelectric

Energy Probe Interrogatory #020

Ref: Ex. D1-T1-S2, Attachment 1, Tab 5 – Business Case Summaries Cornwall Energy and Information Centre

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Page 1 of the BCS describes the construction of an information center in Cornwall to be used for "the delivery of information regarding OPG and its generating facilities and the history of the development and construction of the Seaway and how it affected the local communities".

Please explain why this project should be included in the prescribed facilities rate base?

Response

See the response to Interrogatory L-01-018.

Energy Probe Interrogatory #021

Ref: Ex. D1-T1-S2, Attachment 1, Tab 5 – Business Case Summaries Cornwall Energy and Information Centre

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

The first paragraph on Page 1 contains the following statement: "The Centre will also provide stakeholders with a venue to deliver information on their areas of interest."

Please describe the stakeholders that might be expected to use the centre and the information that they might be expected to deliver.

Response

The list of stakeholders is included on page 3 of the Business Case Summary:

- City of Cornwall
- United Counties of Stormont, Dundas and Glengarry
- Iroquois and South Dundas Chamber of Commerce
- Akwesasne First Nation
- Lost Villages Historical Society
- St. Lawrence Seaway Management Corporation
- Cornwall and Seaway Valley Tourism
- St. Lawrence College
- St. Lawrence River Institute of Environmental Sciences
- St. Lawrence Parks Commission

Each stakeholder can present information which relates to the impacts of the construction and operation of the St. Lawrence Seaway and the R.H. Saunders Generating Station.

Energy Probe Interrogatory #022

Ref: Ex. D1-T1-S2, Attachment 1, Tab 5 – Business Case Summaries Cornwall Energy and Information Centre

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

The second paragraph on Page 1 refers to a previous centre housed in the Saunders plant that was closed in 1992.

Please explain why a new centre is now necessary if the old one hasn't been in operation for 18 years.

Response

As described in response to interrogatory Ex. L-01-018, OPG is responding to the expressed concerns of local community leaders in the Cornwall area.

Energy Probe Interrogatory #023

Ref: Ex. D1-T1-S2, Attachment 1, Tab 5 – Business Case Summaries Cornwall Energy and Information Centre

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

On page 2 of the BCS it is noted that "NYPA has also closed their information centre at the Franklin D. Roosevelt Power Project and have subsequently constructed a new off-site facility in view of their station".

Please explain why NYPA's decision to provide an information facility is relevant to the Board's consideration of OPG's request to include its information centre costs in rate base for prescribed facilities.

Response

The New York Power Authority ("NYPA") power project is physically connected in the middle of the river with the R.H. Saunders Generating Station. The operation of their facility is similar to OPG's. NYPA has a long-term relationship with the communities in which it operates and requires support from them just like OPG. Therefore, comparisons are normal and appropriate. The reference in the business case summary to the NYPA Energy Information Center is intended to illustrate why a location physically separate from the generating station is necessary to mitigate security concerns.

Energy Probe Interrogatory #024

Ref: Ex. D1-T1-S2

Issue Number: 4.2
Issue: Are the capital budgets and/or financial commitments for 2011 and 2012 for the regulated hydroelectric business appropriate and supported by business cases?

Interrogatory

Lines 19-21 on Page 11 of the exhibit makes the following statement: "The project will allow OPG to more effectively deliver its hydroelectric communications (e.g., water safety) while improving community support for continued operation of OPG's second largest hydroelectric generating station."

a) How many visitors to the centre does OPG expect annually?

b) Please explain how the project will assist with delivery of the water safety message.

c) Has OPG experienced a decline in community support for the Saunders plant? Please provide any documentation that demonstrates this decline.

Response

a) Exact visitor numbers are not available. However, OPG is expecting this venue to be quite busy based on: 1) the popularity of the former energy information center located on the sixth floor of the plant administration building, and 2) the response received from stakeholders.

b) The water safety message will be integrated with the story of how the generating station was built and the ongoing impact and importance of hydroelectric energy production in the province of Ontario.

c) The recent community issues centre around the fact that OPG does not pay municipal taxes to the City of Cornwall since the introduction of Gross Revenue Charges in 2001 (see Ex. F1-T4-S1). These issues are described in a speech made by John Murphy, Executive VP – Hydroelectric, to the City of Cornwall Chamber of Commerce in 2008, which is Attachment 1 to this response.

John Murphy
Executive Vice President: Hydro
Ontario Power Generation
Cornwall Ontario
February 11, 2008

NOTES FOR REMARKS

Introduction
Thank you for that introduction, John. Good afternoon, everyone. I appreciate the opportunity to meet with you and talk a bit about OPG. I have looked forward to this event for some time. I enjoy the Cornwall area and am looking forward to getting to know many of you better.

OPG and the Cornwall community share a long and productive history going back some 50 years and more. Over the next few minutes, I'd like to share with you my thoughts on our relationship and some of the ways we intend to enhance it going forward.

Overview of OPG
Before doing that, I want to first give a brief update of OPG and our operations. As you'll see, a lot has been happening that you may find interesting.

For those who may not be familiar with us, OPG was established as a commercial company in 1999. 100 per cent of the company's shares are owned by the Province of Ontario.

Our primary business is to generate electricity. Unlike our predecessor, Ontario Hydro, we are not responsible for generating virtually all of Ontario's electricity needs. We are one of several producers within Ontario's hybrid electricity market.

We are, however, the largest electricity producer in Ontario and generate about 70 per cent of the electricity consumed in the Province. We do this through our balanced and flexible portfolio of nuclear, fossil-fuelled, and hydroelectric generating stations. As you will hear from me today, we are proud of the role we fulfill in the market and the electricity we provide to Ontario.

Nuclear Operations
The nuclear side of our business consists of three nuclear stations in the Durham region east of Toronto. We operate 10 nuclear reactors at these facilities and are in the process of placing two others in safe storage. Our nuclear units represent about 30 per cent of our installed generating capacity. In 2007, they produced about 29 per cent of all the electricity consumed in Ontario.

Our Darlington nuclear station, which had an excellent year in terms of performance, produced nearly 18 per cent of Ontario's electricity in 2007. Darlington is recognized by its peers as one of the top performing nuclear stations in North America.

Filed: 2010-08-12
EB-2010-0008
L-06-024
Attachment 1

We are currently exploring the prospect of building potential new nuclear units at our Darlington site, to meet Ontario's growing electricity needs. If approved by our Shareholder, this will be a significant undertaking, creating major employment and other opportunities for many local communities in Ontario.

We are also exploring the possibility of refurbishing our Pickering B and Darlington nuclear stations as they approach the end of their performance lives. Since we're a commercial company, any decision to proceed with either of these refurbishments will be based on a solid business case.

Fossil Operations

OPG also operates five fossil-fuelled stations across Ontario, accounting for approximately 30 per cent of our capacity. These stations are used primarily to help meet periods of peak electricity demand each day and are especially valuable in meeting electricity needs when demand is at its highest – such as in the summer. Their ability to start up and shut down relatively quickly makes them ideal for this task. OPG takes pride in operating its fossil stations in an environmentally responsible manner. Today, they generate fewer smog-producing emissions than in the 1980s, while generating the same amount of electricity or more. We have also launched a biomass testing program at some of our fossil plants to help reduce carbon dioxide emissions.

Another of our fossil initiatives is the Portlands Energy Centre which we are constructing in downtown Toronto in partnership with TransCanada Energy. Portlands is a 550 MW combined cycle gas facility. The project is on budget and on time and will be producing its first power this summer. It will be fully operational in 2009.

Turning from gas to coal, OPG has been directed by our Shareholder to stop burning coal at its coal-fired stations by 2014. Between now and then, we will continue to operate them efficiently, productively and responsibly – with targeted investments to maintain their operational strength. This strategy has contributed to improved reliability at our fossil stations. In 2007, our fossil reliability was the best it's been since 2000.

Hydroelectric Operations

I now want to turn to what I consider the best part of generating fleet – our hydroelectric business. OPG owns and operates 64 hydroelectric stations and over 238 dams on 26 rivers across Ontario. These stations have an average age of 73 years – the youngest being 13 years and the oldest being 108 years old. Our Chats Falls station on the Ottawa River recently celebrated 75 years of service.

As you would expect, it's critical to keep these assets well maintained. And we do. Since 1992 our runner upgrade program has added over 425 MW to our hydroelectric capacity – including 12 MW in 2007.

Filed: 2010-08-12
EB-2010-0008
L-06-024
Attachment 1

Good maintenance and equipment reliability also contributed to the excellent availability of our hydro stations. In 2007, our hydro stations were available to produce electricity well over 90 per cent of the time when the water was there. That is the best availability rate we have had since 1984 and represents top quartile performance with the industry.

Overall, our hydro stations account for 31 per cent of OPG's capacity and in 2007 produced 21 per cent of all electricity consumed in Ontario.

Hydroelectric Expansion

Our hydroelectric stations are extremely valuable assets for the Province. The power they produce is clean, renewable, cost effective and reliable. This is no small advantage in a world deeply concerned about preserving clean air and mitigating climate change.

The Ontario government has recognized the importance of hydropower and has made it part of OPG's mandate to expand our hydroelectric presence in Ontario. We currently have two design-build projects whose construction we are overseeing.

One is the Niagara Tunnel, which is a 10.4 kilometre tunnel being excavated under the city of Niagara Falls. It will allow our Beck generating stations to increase their average annual energy output by 1.6 TWh – which is enough energy to power a city twice the size of Niagara Falls**.** Once constructed, the tunnel will remain in service for about 100 years before any maintenance is needed. I wish I could say that same thing about my car's operating performance!

Our other project is the 12.5 MW Lac Seul hydroelectric station in northwest Ontario, which we expect to have finished later this year.

In addition to these initiatives, we also have a number of proposed hydroelectric projects in various stages of development across Ontario. These include a major expansion project on the Lower Mattagami River that would add about 450 MW to our hydro capacity…as well as smaller potential projects on the Upper Mattagami, Abitibi, Montreal, and Little Jackfish Rivers and elsewhere.

In addition, this past December the Ontario Ministry of Energy directed a key agency – the Ontario Power Authority – to negotiate Energy Supply Agreements on many of these proposed projects. This will provide revenue certainty to OPG and will significantly facilitate their progress.

Our progress on many of these projects is dependent on reaching successful settlements – including equity participation agreements – with First Nations groups. OPG has an official First Nations policy approved by our Board of Directors. We also have a number of outreach initiatives underway within First Nations communities. In 2007, we settled two past grievances with First Nations groups and signed Agreements in Principle with three others to resolve outstanding issues. We are currently conducting a number of additional negotiations and discussions with other First Nations communities. We look forward to their positive outcome.

Filed: 2010-08-12
EB-2010-0008
L-06-024
Attachment 1

OPG and the Cornwall Community

As you can see, hydroelectric power and its ongoing development are very much on OPG's agenda. We are committed to hydropower and we are committed to communities that host our hydroelectric facilities and other assets. This includes the Cornwall community – where we've had a relationship, as I said, for more than 50 years.

And the foundation of our relationship – its bedrock, if you will – is the R.H. Saunders generating station right out there on the great St. Lawrence River.

Saunders is celebrating its 50th year of operation this year. It's the flagship station in our hydroelectric fleet. Along with our Beck generating stations near Niagara Falls, it is the most prestigious and storied of all our assets. It's also a symbol of our commitment to this community.

That commitment is strong. It's based on trust, accountability, openness and responsibility – a responsibility to do our part and to give back to the community by contributing to its quality of life and economic development.

Over the years, OPG has lived up to its responsibility. Here are a few examples of how we contribute:

- Since 1990, OPG and its predecessor company – Ontario Hydro – have invested about $140 million dollars in the Saunders generating station to maintain the plant's high level of reliability. We plan to continue to make investments that will improve the performance of the station. These investments often benefit local businesses and other elements of the community.

- Also at Saunders, we employ about 65 employees. Many live in the region, own homes and raise their families here. In doing so, they contribute around $4 million annually to the local economy through consumer spending

- In 2007, our Corporate Citizenship Program contributed $95,000 to help support nearly 50 local initiatives. These included the Cornwall Community Hospital; Future Arena Project; Liftoff 2008; the City of Cornwall Alert Network; Seaway Valley Crime Stoppers, the St. Lawrence River Institute; and the Eastern Ontario Children's Water Festival.

- Our most recent effort was a $25,000 donation made last month to the Cornwall Community Hospital Foundation to help fund a new ultrasound machine.

- OPG also helps support many cultural, environmental, health-related, and amateur sports initiatives across the community. In June of last year, we contributed substantially to the construction of a new beach house for the Village of Iroquois.

Filed: 2010-08-12
EB-2010-0008
L-06-024
Attachment 1

- On the safety front, around 3,000 students in Cornwall and the United Counties received information last year on water safety. This information was communicated through presentations in schools; at local fairs; at community events; and at venues like the Eastern Ontario Children's Water Festival.

- We also supported, through advertising, the new Akwesasne Lacrosse Stadium field.

- In keeping with our commitment to openness and transparency, we mailed out last December more than 140,000 copies of our Ottawa/St. Lawrence Plant Group newsletter – *Neighbours* – to residents throughout our host communities.

- Each year OPG also provides achievement awards to six area high schools to help graduating students. Two awards are given to each school and are individually valued at $500.

These are representative examples only. If I added up all the initiatives OPG has helped support in Cornwall over the past three years, they would total more than 100 – at a value of about $150,000. This is in addition to the numerous hours of volunteer work our employees willingly perform in the community.

These contributions are not hand-outs or charity. They are investments that we believe help contribute to the quality of life in the Cornwall area. You have given us your advice, your trust and the licence to operate in your community. As a good corporate citizen, it is only natural that we would want to invest in the community that has given us so much. This is a “win-win” situation. I believe it’s helped solidify the bonds between OPG and Cornwall and contributed to a more positive and effective partnership between us.

Tax Issue

Even the best relationships, however, are sometimes subject to strain through misunderstanding – which brings me to the recent issue involving the Saunders generating station and payments in lieu of property taxes.

This issue dates back to 2001 when the Ontario Government, our Shareholder, passed legislation changing the tax treatment of hydroelectric facilities owned by OPG and other power producers.

Under that legislation, property taxes paid to municipalities and school boards by hydroelectric generators were eliminated. In their place, the legislation created a Gross Revenue Charge into which hydro producers like OPG made payments that we had previously made to municipalities. In return, the new legislation provided for full compensation of municipalities for the money they had received under the older system. This compensation is in the form of grants-in-lieu of property taxes and is paid by the provincial government.

Filed: 2010-08-12
EB-2010-0008
L-06-024
Attachment 1

Here's where the problem arises. **Since that time,** property values of hydroelectric stations – including Saunders – have been reassessed significantly higher by the Municipal Property Assessment Corporation (MPAC). These assessments are independent of the grants-in-lieu paid by the province.

The whole issue is a tax policy issue and falls under the authority of the Ontario Ministry of Finance. Despite this, it's been suggested that OPG is somehow the bad guy. That is simply not true. We are paying our fair share under the Gross Revenue Charge mechanism – as we have done since the legislation was changed in 2001. We will continue to pay our fair share of these taxes – as mandated by law – under the GRC.

In my opinion, your best course of action is to take this matter up with the Ontario government. This is not an OPG issue. It's an issue between the Cornwall area community and the Province. That is the level where the matter should be discussed and hopefully settled.

I'm glad to have the opportunity to address this issue. It does a disservice to our record of involvement in the community and to the positive relationship we have fostered with you over the years. I truly hope that as we go forward it will be resolved to everyone's satisfaction.

New Information Centre and Saunders 50th Anniversary Celebration

Having made that point, we will not allow this issue – or any issue – to overshadow our relationship with you, which is most important to us.

Our commitment to Cornwall will continue to be strong, active and ongoing.

It is in this spirit that OPG is establishing a major public information centre adjacent to the Saunders generating station. Among its functions, the Centre will be a setting for the Cornwall community to tell its story about its role in the development and success of Saunders over the past 50 years.

It will also act as a focal point to showcase the historical contribution hydroelectric power has made to Ontario – and continues to make, as a source of clean, renewable and affordable power. Few Ontarians today appreciate the full significance that hydroelectricity, Saunders and Cornwall have played in their history. This Information Centre will help address that, by giving us the opportunity to communicate the facts to a wide audience.

In addition, the Centre will provide valuable information on OPG's safety initiatives – including our public water safety program.

We also believe the new Centre will attract more tourists to the region and encourage them to extend their visits here – overnight and even longer.

Filed: 2010-08-12
EB-2010-0008
L-06-024
Attachment 1

To ensure that all stakeholders were represented and their views heard, we held several meetings late last year. Some of you were at those meetings. As a result, a strong consensus for the Centre has been achieved, and we are ready to move this important initiative forward. The project is now in the design stage, but we hope to start construction soon. We are targeting the Centre to be open to the public in 2010.

Parallel to this initiative, we will – as I mentioned – be celebrating in June of this year the 50th anniversary of the official opening of Saunders. It will be a premier event, worthy of the heritage of this great power facility and its performance as a safe, reliable and clean producer of electricity. Planning is well underway. It includes arrangements for an official ceremony, an open house, station tours and displays highlighting the history of the station.

On the evening of June 27, which is a Friday, there will be an event at St. Lawrence for employees, retirees and our stakeholders. As some of our most important stakeholders, you are all invited to attend and we look forward that.

The following day – Saturday, June 28, from 10AM to 3PM – there will be an Open House at Saunders for the general public. We hope to see to you there as well. During the open house, there will be an unveiling of a special commemorative plaque at 1PM. Full details of the entire celebration will be available shortly, so stay tuned.

We expect the event will generate considerable spin-off benefits for the community. We are very excited.

Conclusion

If I had to sum up in a few words what I just spent the last 20-30 minutes talking about it would simply be that OPG is an integral part of the Cornwall community. As part of this community, we believe we have a responsibility to you. This means many things.

It means operating our facilities safely, efficiently and in a manner that sustains the environment.

It means contributing to the community and supporting those institutions that help make the Cornwall area a better place to live – for everyone.

And it means having pride in the community – pride in our heritage; pride in who we are; and pride in what we can together accomplish going forward.

I believe OPG is fulfilling its responsibility in all these areas. We will continue to do so. The Cornwall area community can depend on OPG.

Thank you. I'd be happy to answer any questions.

Energy Probe Interrogatory #025

Ref: Ex.E1-T1-S1, page 5 of 7

Issue Number: 3.3
Issue: Should the same capital structure and cost of capital be used for both OPG's regulated hydroelectric and nuclear businesses? If not, what capital structure and/or cost of capital parameters are appropriate for each business?

Interrogatory

The Prefiled Evidence indicates that surplus baseload generation ("SBG") increased in 2009 due to reduced electricity demand resulting from depressed economic conditions and relatively moderate temperatures as well as an increase in electricity supply. As a result, production at Niagara was reduced.

Does this indicate that, from a financial perspective, OPG's regulated hydro business is more exposed to market risk than nuclear which, as the Prefiled Evidence indicates, serves baseload generation and is not intended to vary with market demand (Exh. E2/T1/S1/p.2 of 13)?

Response

Note that both the hydroelectric and nuclear prescribed assets are baseload generation. If the term "market risk" is intended to refer to dispatch risk, then yes, the regulated hydroelectric generation is exposed to higher dispatch risk than the nuclear operations.

Regulated hydroelectric operations are more likely to be curtailed in circumstances of low demand than OPG nuclear generation, as experience in the market in 2009 indicates that Bruce Power's nuclear units are taking outages or maneuvering to address the vast majority of SBG that cannot be exported. OPG generally assumes for forecast purposes in the test period that hydroelectric spill will occur at the prescribed facilities, specifically the Sir Adam Beck generating station, prior to spilling from non-regulated generating stations. The Sir Adam Beck Generating Stations have significant spill capability and are the preferred location for spill for safety reasons. In any given year however, local conditions related to the amount and timing of precipitation and run off can require that a large proportion of the spill occur at plants other than Sir Adam Beck generating station as was the case in 2009 described in Ex. L-01-035. Thus the operation of the regulated hydroelectric facilities would generally be more exposed to the risk of curtailment than the nuclear facilities in the case of reduced demand during depressed economic conditions.

If the term "market risk" is intended to refer to capital market risk, then yes, regulated hydroelectric generation is more exposed to market (systematic) risk than nuclear generation on this specific element of market risk. The regulated hydroelectric facilities would generally

be more exposed to the risk of curtailment in the case of reduced demand during depressed economic conditions and economic conditions reflect a systematic market risk. Please see the response in Ex. L-6-026 for a more detailed discussion of the market risks related to nuclear and hydroelectric generation.

Energy Probe Interrogatory #026

Ref:

Issue Number: 3.3
Issue: Should the same capital structure and cost of capital be used for both OPG's regulated hydroelectric and nuclear businesses? If not, what capital structure and/or cost of capital parameters are appropriate for each business?

Interrogatory

The Foster Associates report states:

> Nuclear capacity – A priori, it is expected that a higher proportion of nuclear capacity would be associated with relatively higher business risk and a higher beta. (Appendix B, p.3)

a) If beta is a measure of non-diversifiable exposure to market risk, would it not be reasonable, a priori, that the beta of nuclear would be lower than the beta of hydro?

b) If so, what does this imply about differences in the costs of equity for nuclear and hydro?

Response

a) The citation in the question was not a comparison of the beta of nuclear to the beta of hydroelectric. The a priori expectation referenced in the context of an instrumental variables analysis was that electric utilities with a higher proportion of nuclear capacity would have a higher beta than utilities with less or no nuclear capacity. There were an insufficient number of electric utilities with a significant proportion of total assets or total generating capacity to include hydroelectric generation ownership as a separate independent variable in the analysis. Ms. McShane would not expect the beta for nuclear generation to be lower than the beta of hydroelectric generation. Factors that would point to a higher beta for nuclear generation than for hydroelectric generation include: (1) the findings in other instrumental variables analyses that earnings variability was a significant explanatory of market betas (Ex. C3-T1-S1, see pages 43 and 44 of Ms. McShane's report); (2) the higher operating leverage of nuclear generation, which results in greater sensitivity of the earnings to unanticipated changes in costs and revenues; (3) the higher risks of unanticipated costs of repair for nuclear operations, which would result in higher sensitivity to changes in inflation; (4) the uncertainty of costs of nuclear construction, which would result in higher sensitivity to inflation and interest rates; (5) higher decommissioning costs of nuclear generation, which are sensitive to inflation; and (6) the sensitivity of the returns on decommissioning trusts to market returns.

b) Not applicable.

Witness Panel: Cost of Capital & Nuclear Liabilities

Energy Probe Interrogatory #027

Ref: Ex. A1-T3-S2 – Drivers of Revenue Deficiency

Issue Number: 1.3
Issue: Is the overall increase in 2011 and 2012 revenue requirement reasonable given the overall bill impact on consumers?

Interrogatory

Page 2 of the exhibit refers to "prior period tax losses to eliminate any income tax obligations as a mitigation measure".

a) Does OPG have any more prior period tax losses that it can bring forward to continue mitigating rate increases should the Board direct that mitigation is necessary?

b) If yes, please describe the tax losses available and what impact bringing them forward for the test years would have on the proposed payment amounts.

c) If no, what other means does OPG have to mitigate the payment amounts?

Response

a) No.

b) Not applicable.

c) In its application, OPG has proposed extending the amortization period for the Tax Loss Variance Account to 46 months to lessen the impact on consumers of the recovery of the balance in this account. OPG is proposing no other mitigation measures.

Energy Probe Interrogatory #028

Ref: Ex. C2-T1-S1, Nuclear Waste Generation and Decommissioning

Issue Number: 8.2
Issue: Is the revenue requirement amount for nuclear liabilities related to nuclear waste management and decommissioning costs appropriately determined?

Interrogatory

Page 3 of the exhibit refers to the management of low level and intermediate level radioactive waste storage and disposal.

Radiation hormesis (also called radiation homeostasis) is the hypothesis that chronic low doses of ionizing radiation are beneficial, having the opposite effect in small doses than in large doses. Extensive research on radiation hormesis has been undertaken by the French Academy of Sciences – National Academy of Medicine. Would acceptance of this hypothesis result in substantial reduction in the costs associated with the management of low level waste?

Response

OPG does not know the impact of acceptance of this hypothesis. The scope of OPG's program for low and intermediate level waste ("L&ILW") storage and disposal is based on the Nuclear Safety and Control Act, and associated Regulations, which are managed by the Canadian Nuclear Safety Commission ("CNSC"). Any changes to the scope (and therefore cost) of nuclear waste management would occur in response to a change in the regulations from the CNSC.