

Pollution Probe Interrogatory #005

Ref: Ex. C2-T1-S1, page 6, and Ex. D2-T2-S1, Attachment 4, page 4

Issue Number: 8.2

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

Interrogatory

According to OPG's prefiled evidence:

Under the ONFA, the limit of OPG's financial exposure with respect to the cost of long-term management of used fuel was capped at \$5.94B (January 1, 1999 present value) for the first 2.23M fuel bundles. OPG is responsible for funding the incremental costs associated with the long-term management of fuel bundles in excess of 2.23M. It is currently estimated that physically, the 2.23M bundle threshold will be reached in 2012.

- a) Please provide OPG's best estimate of its financial exposure with respect to the long-term management of the used fuel which will be produced if service life of the Darlington Nuclear Station is extended by 30 years.
- b) Is there a cap on OPG's financial exposure with respect to the long-term management of the used fuel which will be produced if service life of the Darlington Nuclear Station is extended by 30 years? If yes, please state the cap on OPG's financial exposure.
- c) Please provide OPG's best estimate of the Government of Ontario's financial exposure with respect to the long-term management of the used fuel which will be produced if the service life of the Darlington Nuclear Station is extended by 30 years.

Response

- a) OPG's best estimate of its financial exposure is its liability value estimate. The incremental liability associated with the long-term management of used fuel bundles arising from the Darlington Generating Station's 30-year life extension is approximately \$779M (January 1, 2010 present value). This liability value was derived based on the approved 2006 Ontario Nuclear Funds Agreement Reference Plan baseline cost estimate.
- b) There is no cap on OPG's incremental liability with respect to the long-term management of the used fuel which will be produced from the Darlington Generating Station's 30-year life extension.

- 1 c) As indicated above, the Province of Ontario has exposure to the liability for the first
- 2 2.23M bundles generated from OPG's reactors. That volume will be achieved prior to the
- 3 Darlington Generating Station 30-year life extension. Therefore, the Province has no
- 4 financial exposure to the used fuel liability as a result of the Darlington Generating
- 5 Station's 30-year life extension.

Pollution Probe Interrogatory #007

Ref: Ex. D2-T2-S2, page 3

Issue Number: 2.2

Issue: Is OPG's proposal to include CWIP in rate base for the Darlington Refurbishment Project appropriate?

Interrogatory

According to OPG: "Inclusion of CWIP in rate base for the Darlington Refurbishment project is warranted since it meets the criteria for qualifying investments specified by the OEB in its Report" [EB-2009-0152, *Report of the Board: The Regulatory Treatment of Infrastructure Investment in connection with the Rate-regulated Activities of Distributors and Transmitters in Ontario*].

However, Pollution Probe notes that the referenced report is restricted to investments by electricity distributors and transmitters, which are natural monopolies. OPG, on the other hand, is an electricity *generator* and electricity generation is not a natural monopoly (in Pollution Probe's view).

Has the Board indicated that it believes that inclusion of CWIP in rate base could be appropriate for an electricity generator?

Response

Please see response to Board Staff Interrogatory L-01-011.

Pollution Probe Interrogatory #016

Ref: Ex. C1-T1-S1, page 1 of 6, line 22

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

OPG states that it "continues to support the use of a single cost of capital for its prescribed facilities".

- a) When evaluating the desirability of capital expenditures, does OPG use net present value ("NPV") or internal rate of return ("IRR")?
- b) If OPG uses NPV to evaluate capital expenditures:
 - i. What does OPG use as the discount rate and how is it determined?
 - ii. Does the discount rate differ for capital investments that differ in their risks?
 - iii. If the discount rate differs for capital investments with perceived risk differences, how does it differ and how are the different discount rates calculated?
 - iv. Does the discount rate differ for capital investments for hydroelectric versus nuclear operations (i.e., so-called divisional "cost of capital")?
 - v. If the discount rate so differs, how does the discount rate differ and how are the different discount rates calculated?
 - vi. Does the discount rate differ for capital investments for regulated versus non-regulated hydroelectric or nuclear operations?
 - vii. If the discount rate differs for capital investments for regulated versus non-regulated hydroelectric or nuclear operations, how does the discount rate differ and how are the different discount rates calculated?
- c) If OPG uses IRR to evaluate capital expenditures:
 - i. What does OPG use as the hurdle or cut-off rate of return for making (or are considered in making) accept/reject investment decisions?
 - ii. How is this hurdle rate determined?
 - iii. Does the hurdle rate differ for capital investments that differ in their risks?
 - iv. If the hurdle rate differs for capital investments with perceived risk differences, how does the hurdle rate differ and how is it calculated?
 - v. Does the hurdle rate differ for capital investments for hydroelectric versus nuclear operations (i.e. so-called divisional "cost of capital")?
 - vi. If the hurdle rate differs for capital investments for hydroelectric versus nuclear operations, how does the hurdle rate differ and how is it calculated?

- 1 vii. Does the hurdle rate differ for capital investments for regulated versus non-regulated
2 hydroelectric or nuclear operations?
3 viii. If the hurdle rate differs for capital investments for regulated versus non-regulated
4 hydroelectric or nuclear operations, how does the hurdle rate differ and how is it
5 calculated?
6
7

8 **Response**
9

- 10 a) Yes, OPG uses NPV in evaluating capital expenditures.
11
12 b) i. OPG uses a seven per cent discount rate to evaluate capital expenditures related to
13 Prescribed Assets. Please see the response to interrogatory L-6-002 on how this
14 discount rate is determined.
15 ii. OPG uses the same discount rate in its financial analysis for all investments with
16 respect to Prescribed Assets. Risks are taken into account in the cash flows. This is
17 consistent with the approach described to the OEB in EB-2007-0905.
18 iii. Not applicable.
19 iv. The discount rate does not differ.
20 v. Not applicable.
21 vi. OPG declines to answer this question as it relates to its unregulated operations.
22 vii. Refer to vi) above.
23
24 c) Not applicable.

Pollution Probe Interrogatory #017

Ref: Ex. C1-T1-S1, page 1 of 6, lines 2-26

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

As summarized in this passage, the Board in EB-2007-0905 determined that the cost of capital for OPG's regulated operations "shall reflect the adoption of the formula approach to setting the ROE (page 162), consistent with the OEB's expectation that risk differences in the regulated businesses are appropriately addressed through the capital structure rather than the ROE (page 162)", and that "there *may* be merit in establishing separate capital structures for the two businesses as it would enhance transparency and more accurately match costs with the payment amounts". As a result, OPG engaged Fosters whose analysis considered five different potential quantitative methodologies for isolating the cost of capital for OPG's regulated hydroelectric and nuclear generation operations.

- a) If the Board's expectation is that risk differences in the regulated businesses are appropriately addressed through the capital structure rather than the ROE, why was Foster Associates, Inc. asked to evaluate potential methodologies for isolating the cost of capital and not capital structures for OPG's regulated hydroelectric and nuclear generation operations?
- b) If the Board did not use a quantitative methodology for determining OPG's overall equity thickness, why does OPG consider it appropriate to evaluate different potential quantitative methodologies for isolating the cost of capital for OPG's regulated hydroelectric and nuclear generation operations?

Response

- a) OPG considers the cost of capital to reflect both return on equity ("ROE") and the equity component of the capital structure. OPG's request for proposal ("RFP") provided in response to Ex. L-04-011 (Attachment 1, page 13) requests that the selected cost of capital expert "assess whether a technology specific cost of capital should be developed using the same ROE and different capital structures to reflect technology specific risk" and that the expert "assess implications of assigning a specific capital structure to one technology on the implied capital structure of the other if total common equity ratio is 47 per cent for the combination of both technologies."

1 These requirements are responsive to the OEB's finding in the EB-2007-0905 Decision
2 With Reasons (page 161) which states "the Board finds that there may be merit in
3 establishing separate capital structures for the two businesses" and the OEB's conclusion
4 in the Decision (page 162) that states "the Board concludes that this is an approach
5 worthy of further investigation which will be explored in OPG's next proceeding. In
6 examining whether to set separate costs of capital, the Board intends only to examine
7 whether separate capital structures should be set for the regulated hydroelectric and
8 nuclear businesses."

9
10 The finding required OPG to consider establishing separate capital structures. OPG's
11 RFP instructions are consistent with the EB-2007-0905 Decision.

- 12
13 b) In its Decision in EB-2007-0905, despite the fact that there was expert evidence
14 presented with respect to technology-specific capital structures, the OEB concluded that
15 the evidence was not sufficiently robust to set separate parameters. OPG concluded that
16 the evaluation of different quantitative methodologies would be a reasonable means of
17 determining whether more robust evidence on technology-specific capital structures
18 could be adduced.

Pollution Probe Interrogatory #018

Ref: Ex. C3-T1-S1, page 3

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

The following premise is invoked here in Ms. McShane's report: "To the extent required by the analysis, the conversion of differences in the cost of equity among proxy samples into capital structure equivalents will be based on the premise that the overall cost of capital is constant across the relevant range of capital structures."

- a) Please have Ms. McShane specify the beginning and ending equity thicknesses (ratios) for the relevant range of capital structures over which the overall cost of capital is constant.
- b) Please have Ms. McShane provide the results of all the quantitative tests that she has conducted to determine the range of capital structures over which the overall cost of capital is constant.
- c) Please have Ms. McShane provide the results of all the quantitative tests that she has conducted to determine the robustness of the tests that she has conducted to determine the range of capital structures over which the overall cost of capital is constant.
- d) Does Ms. McShane believe that there is a relation between the range of capital structures over which the overall cost of capital is constant and bond ratings? If she does not, please explain why not. If she does, please explain what that relationship is.

Response

- a) It is impossible to specify a precise range. However, for the 34 electric utilities in Schedule 3-1 and 3-2 which have Moody's ratings in the Baa category (Baa1 to Baa3), the five-year equity ratios averaged 44 per cent range from 31 per cent to 58 per cent, with a standard deviation of approximately 6 per cent. The standard deviation of 6 per cent means that two-thirds of the observations lie within a 12 percentage point range, i.e., between 38 per cent and 50 per cent. These ranges provide some insight into the possible range over which the overall cost of capital does not change materially at different capital structures for the industry. Presumably, if management considered that there was a material advantage to be gained in terms of a lower cost of capital (and a higher market value of the firm) by changing the capital structure, a smaller range of actual capital structures would be observed.

1 It bears noting that, although Ms. McShane indicated in the report that the translation of
2 cost of equity differences would be translated into capital structure differences on the
3 premise that the cost of capital is constant across the relevant range of capital structures,
4 this assumption was never applied. The results of the various tests conducted did not
5 yield results that were sufficiently robust to allow the translation of cost of equity
6 differences among proxy firms into capital structure differences.
7

8 b) Ms. McShane has not conducted any quantitative tests. The assumption for the purpose
9 of the analysis that the cost of capital is constant for purposes of translating cost of equity
10 differences among proxy companies into differences in common equity ratios was
11 premised on (1) the recognition that the overall cost of capital is, in the first instance, a
12 function of business risk, which should not be expected to change as long as the financial
13 risks do not interfere with the firm's ability to operate efficiently; (2) the relatively small net
14 tax benefit to leverage when the impact of both corporate tax rates and personal tax rates
15 on interest and dividends are taken into account; (3) the observed range of capital
16 structures maintained by firms in the same industry as illustrated in response to part (a);
17 and (4) the expectation (confirmed in the analysis) that the range of average capital
18 structures among samples of proxy companies in the same industry from which the
19 translation of cost of equity differences would be made would be relatively narrow.
20

21 c) Not applicable.
22

23 d) Theoretically, yes, it makes logical sense that there would be a relationship. Bond ratings
24 are a function of both business and financial risk. Financial risk is typically assessed by
25 bond rating agencies by reference to a number of quantitative credit metrics, which
26 include, but are not limited to, capital structure. Other key measures include coverage
27 ratios such as Funds from Operation to Total Debt and Funds from Operations Interest
28 Coverage. Companies with ratings in the BBB category generally would face a higher
29 cost of capital than companies rated in the A category. If two regulated companies face a
30 similar level of business risk, but one has credit ratings in the A category and one has
31 credit ratings in the BBB category solely because it faces higher financial risk than the
32 one rated A, the BBB rated company will have a higher cost of capital than the A rated
33 company. It would follow that, as the cost of capital would not be constant across bond
34 ratings, the cost of capital would not be constant (for a particular level of business risk)
35 outside of the range of capital structures consistent with a particular bond rating.

Pollution Probe Interrogatory #019

Ref: Ex. C3-T1-S1, page 5, last 3 sentences of point F

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

According to this part of the prefiled evidence: "In principle, the CAPM measures the return requirement for nondiversifiable risks, that is, not company-specific risks, but risks that are attributable to market-wide factors, e.g., inflation, commodity prices, and interest rates. From a CAPM perspective, production and operating risks are company specific, largely unrelated to capital market or economy-wide events and thus should be largely diversifiable, i.e., reduced or eliminated in a portfolio of investments. The CAPM assumes that these risks are not "priced" by the capital markets."

- a) Please have Ms. McShane explain why she believes that production and operating risks are company specific, largely unrelated to capital market or economy-wide events.
- b) If Ms. McShane believes that production and operating risks are company specific, largely unrelated to capital market or economy-wide events, why does she discuss the impact of the passage of the Green Energy and Green Economy Act on the regulated hydroelectric and nuclear operations under point 1 of page 4 of Exhibit C3-1-1?
- c) Please have Ms. McShane explain and discuss what firm-specific business risks are not linked to capital market or economy-wide events.

Response

- a) Production and operating risks are the risks that a regulated company will not recover a compensatory return on its investment or fully recover the investment itself due to factors that are largely attributable to the characteristics of the assets themselves, not to economy-wide factors. In the case of OPG, they are largely generation technology-specific. As regards the hydroelectric generation, the principal production and operating risk relates to the availability of water. In the case of nuclear generation, the principal production and operating risks relate to the complexity of the technology and the related risks of unanticipated costs of repair and loss of production, both temporary and potentially permanent.
- b) The referenced sentence in the preamble to the interrogatory, which described the premise of the capital asset pricing model ("CAPM") with respect to compensation for risk, was intended to recognize the limitations of the model for the purpose of the estimation of technology-specific capital structures. The point was simply that in theory

1 the model does not capture company-specific risks. It was not intended to suggest that
2 company-specific risks are not relevant to the estimation of an appropriate capital
3 structure.
4

- 5 c) Firm-specific risks are those which are independent of systemic factors which impact
6 companies or securities to differing degrees depending on the nature of their business,
7 e.g., energy prices, inflation, interest rates, and economic growth. Examples of firm-
8 specific factors include the operating and production characteristics that are unique to a
9 company or industry, changes in regulations or legislation that would impact a single
10 company or industry, strikes, technological advances unique to an industry, weather,
11 geography (which, for example, in the case of electric utilities would be a factor in
12 generation technologies), and management.

Pollution Probe Interrogatory #020

Ref: Ex. C3-T1-S1, page 9, point O

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) If the Board did not use a quantitative methodology for determining OPG's overall equity thickness, why does Ms. McShane consider it inappropriate to similarly use a degree of judgment to determine indicative equity thicknesses for OPG's regulated hydroelectric and nuclear generation operations?
- b) Please have Ms. McShane explain why judgment can be used to conclude that OPG's regulated "nuclear generations face materially higher business risks than the hydroelectric operations" and to then use this conclusion in determining the OPG's overall capital structure, but that judgment is not appropriate for determining indicative and separate capital structures for OPG's regulated hydroelectric and nuclear generation operations.

Response

- a) Ms. McShane recognizes that, in any cost of capital assessment, judgment is required. However, judgment needs to be restrained by quantitative analysis. There was evidence presented to the OEB in EB-2007-0905 regarding technology-specific capital structures. However, in its Decision, the OEB concluded that the evidence was not sufficiently robust to set separate parameters. The objective of Ms. McShane's analysis was to identify an approach or approaches that would address the OEB's finding. However, as stated at page 9 of Ms. McShane's report, "...given the constraints of the available market data and the lack of proxy companies that are comparable to each of the two technologies, none of the analyses conducted were able to provide any quantitative insight into reasonable differential capital structures for the two operations. Any specification of technology-specific capital structures would be **largely** a judgmental exercise and lack any degree of precision. Given the degree of judgment that would be required and the absence of robust parameters upon which to base that judgment, there is no compelling basis for the Board to adopt technology-specific capital structures." (emphasis added).
- b) Ms. McShane does not accept the premise of the question. While Ms. McShane did conclude in EB-2007-0905 (as in EB-2010-0008) that the nuclear operations face materially higher business risks than the regulated hydroelectric operations, that conclusion was not the basis for her estimation of the capital structure for OPG's

1 regulated operations as a whole. Rather the estimate of the capital structure for OPG's
2 regulated capital structure reflected the conclusion that the composite generation
3 operations face higher business risks than "wires" or "pipes" utilities.
4

5 The conclusion that the nuclear operations are exposed to a higher degree of business
6 risk than the regulated hydroelectric operations is qualitative in nature. It does not provide
7 any quantitative basis for differentiating between capital structures for the nuclear and
8 regulated hydroelectric operations. As stated at page 36 of Ms. McShane's report, "The
9 estimation of the cost of capital for OPG's prescribed assets as a whole is a challenge
10 because there are no stand-alone regulated generators with capital market data which
11 can serve as proxies for the estimation of the cost of capital for OPG's prescribed assets
12 as a whole. The absence of proxy companies operating under a framework similar to
13 OPG's renders the initial point of departure, that is, the estimation of the cost of capital for
14 regulated generation as a whole, subject to significant judgment. The isolation of the cost
15 of capital for regulated generation by technology entails even more judgment." (footnotes
16 omitted).

Pollution Probe Interrogatory #021

Ref: Ex. C3-T1-S1, page 21, section D.1, second paragraph

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 relevant passage for this interrogatory is: "It is important to recognize that the application of a "pure" stand-alone approach for rate setting purposes will result in a higher cost of capital than one which reflects the impacts of diversification."

- a) Please have Ms. McShane explain how this is consistent with the value discount associated with diversified versus focused entities.
- b) Please have Ms. McShane explain why investors would value the diversification when they could do it themselves.
- c) Please have Ms. McShane explain why investors would value the diversification when they lose the flexibility of deciding themselves where and how they want to diversity when the choice of diversification is instead made by the utility.

Response

- a) The referenced sentence from Ms. McShane's report related to diversification across different functions performed by companies operating in regulated businesses, not to the broader context of corporate diversification across industries. In the broader context of corporate diversification, a review of the academic literature indicates that the value discount that has been associated with diversified entities may be the result of factors such as (1) the diversifying entities and their acquisition targets trading at a discount before diversification (e.g., underperformance leads to diversification rather than diversification causing underperformance); (2) cross-subsidization or sub-optimal resource allocation among business units; and (3) the degree of diversification and diversification into unrelated businesses, resulting in inefficiencies in operations. A 2004 study, Belén Villalonga, "Diversification Discount or Premium? New Information from the Business Information Tracking Series", *Journal of Finance*, Vol. LIX, No. 2, April 2004, pages 479-506, found a diversification premium when business segments were more consistently and objectively defined. A recent paper, Rebecca Hann, Maria Ogneva, Oguzhan Ozbas, Corporate Diversification and the Cost of Capital, September 18, 2009, Rock Center for Corporate Governance at Stanford University Working Paper No. 58; Marshall School of Business Working Paper No. FBE 32-09, shows that "diversified firms have a lower cost of capital than portfolios of comparable stand-alone firms and that the

1 reduction is strongly related to the correlation of business unit cash flows, consistent with
2 a coinsurance effect.”

3
4 b) In the specific context of Canadian utilities, Dominion Bond Rating Service specifically
5 refers to the diversified portfolio of assets of a number of the companies it rates as a
6 “Strength” (e.g., CU Inc., Enbridge Inc., TransCanada PipeLines and Fortis Inc.).
7 Similarly, Standard & Poor’s references the diversified nature of the businesses or asset
8 portfolios of Canadian Utilities Ltd., Enbridge Inc., TransCanada PipeLines and Fortis Inc.
9 as strengths.

10
11 c) Reasons investors would value diversification across different regulated functions or
12 across related businesses include the ability of the diversified company to take
13 advantage of economies of scale and scope (joint operations), enhanced ability to
14 coordinate operations across industry segments, the ability in the case of generation
15 capability to offset the unavailability of one source with another source that is available,
16 the ability in some cases to take advantage of natural hedges (e.g., high market prices for
17 generation act as an offset to fixed retail prices at the consumer level), the ability to apply
18 management expertise in other geographic markets, the creation of value through the
19 ability to bundle service packages, the potential ability to generate tax savings, and
20 increased flexibility to raise and deploy capital resources.

21
22 d) The companies themselves would have superior capabilities to exploit the benefits of
23 diversification across related lines of business and functions than secondary market
24 investors (i.e., investors in the securities).

Pollution Probe Interrogatory #022

Ref: Ex. C3-T1-S1, page 38, first full paragraph

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

This paragraph states that “reliance on income trusts as proxies is problematic from a cost of capital perspective due to the change in the Income Tax Act announced by the Department of Finance in the 2006 Tax Fairness Plan which will subject the distributions from income trusts to income tax as of 2011.”

- a) Please provide the results of any tests that Ms. McShane has conducted to support her contention that the “reaction of the capital markets to the announcement would have an impact on market measures of risk (e.g., beta) that is unrelated to the fundamental operating risks to which the underlying assets of the trusts may be subject”.
- b) Please provide references to all studies that Ms. McShane is aware of that have tested the reaction of the capital markets to the announcement by Department of Finance. Please also provide copies of any studies that are not readily available (e.g. not published).

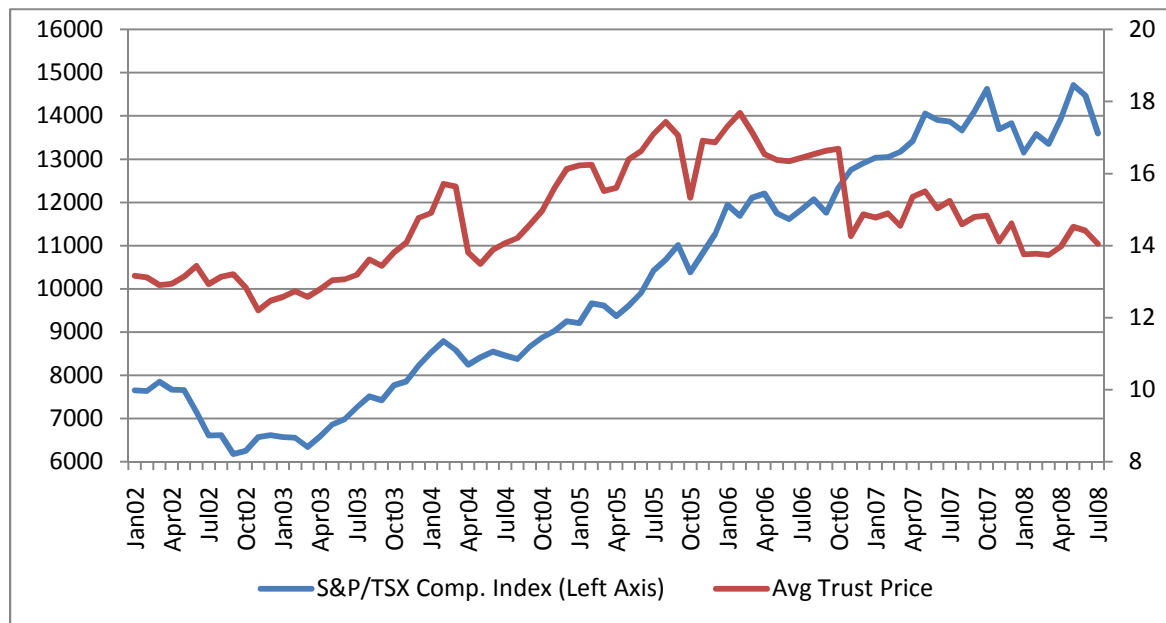
Response

- a) The tax changes announced in October 2006, the so-called Halloween Surprise, did not become effective for trusts in existence on October 31, 2006 until January 1, 2011, but prices in the income trust sector fell almost 20 per cent overnight.¹

The chart below shows monthly closing prices for the S&P/TSX Composite Index and an average price of 15 income trusts and limited partnerships in the utility and energy sector between January 2002 and August 2008 (which eliminates both the tech bubble and recent financial crisis from the picture).² The graph clearly shows a sharp decline in the price at the end of 2006 coincident with the government's announcement. The equity market composite at the time moved in the opposite direction.

¹ TSX Review

² Algonquin Power, AltaGas, Boralex, Brookfield Renewable Power, Capital Power, Enbridge Income Fund, Fort Chicago, Gaz Métro LP, Innergex Power Income Fund, Inter Pipeline Fund, Just Energy, Keyera Facilities, Macquarie Power and Infrastructure, Northland Power, Pembina Pipeline.



- 1
 2
 3 b) The only study of which Ms. McShane is aware of is Lawrence Kyrzanowski and Ying
 4 Lu, "In Government We Trust: Rise and Fall of Canadian Business Income Trust
 5 Conversions", *Managerial Finance*, Vol.35, No. 9, 2009, pages 784-802.

Pollution Probe Interrogatory #023

Ref: Ex. C3-T1-S1, pages 47-61, section A

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

- a) Would Ms. McShane agree that all of the tests conducted in this section of her report deal with estimating betas? If not, please explain.
- b) Would Ms. McShane agree that betas are useful for calculating the required return on equity but not for determining equity thickness? If not, please explain.
- c) Please have Ms. McShane indicate which bond rating agency uses equity betas in the determination of bond ratings for utilities.
- d) Please have Ms. McShane show any capital-structure-specific tests that she has conducted.

Response

- a) Yes.
- b) A beta cannot be used to directly determine capital structure. However, an investment beta reflects both business and financial risk (capital structure) and the required ROE is a function of both business risk and financial risk. When the ROE for two operations is assumed to be the same, as is the premise for this analysis (as per OEB's Decision in EB-2007-0905), the total (business plus financial) risk of the two is effectively the same. The challenge then is to estimate the capital structures for the two operations that will equate their costs of equity. If the two operations have similar costs of equity, theoretically, their betas should be the same. If proxy companies can be identified with similar business risks to the operations in question, in principle, it should be possible to segregate the betas of those proxy firms into their business risk and financial risk components to assess how much of the difference in total risk is attributable to each. Delevering the betas of proxy firms (removing the financial risk component) at the existing capital structures results in an estimate of the business risk betas. The difference in the proxy firms' business risk betas can then be used to determine what the difference in capital structure needs to be for the two operations in order to equate their total (business plus financial) risk and produce similar relevant investment risk betas and similar costs of equity.
- c) None. The rating agencies are not in the business of estimating the cost of capital.

- 1
- 2 d) The studies that Ms. McShane conducted are included in the report filed as Ex. C3-T1-
- 3 S1.

Pollution Probe Interrogatory #024

Ref: Ex. C3-T1-S1, page 49, first full paragraph

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

This paragraph states that: "The instability of betas from measurement period to measurement period may be problematic for analyses that attempt to measure differences in return requirement for investments exposed to fundamentally different levels of business and/or financial risk."

Please have Ms. McShane explain why time-variation in betas is more problematic for more differentiated investment (such as nuclear generation) as opposed to less differentiated investment (such as operation in vertical integrated hydroelectric).

Response

Ms. McShane was not referring to more differentiated investment as opposed to less differentiated investment. The referenced sentence was a general statement intended to indicate that, the more stable the relationships between series of market data, the easier it is to determine the "true" relationships among the series being investigated. In this case, the greater the instability of betas from period to period, the more difficult is the task of accurately measuring differences in return requirements between companies exposed to fundamentally different levels of business and/or financial risk. Please see, for example, the subsequent discussion at page 49, in which Ms. McShane illustrates the issue by reference to the considerable variation in the estimated betas of the energy, financial and utilities sectors of the S&P/TSX Composite over the period 1997 - 2008.

Pollution Probe Interrogatory #025

Ref: Ex. C3-T1-S1, pages 56-57, last paragraph that carries over

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

- a) Would Ms. McShane agree that her betas are estimates and thus are subject to sampling variation? If not, please explain.
- b) Are the beta comparisons across the two samples based on the average betas of each of the 7 utilities in the High Nuclear subsample and of the 28 individual utilities in the High Generation subsample? If not, please explain, what was used in the comparisons.
- c) Please confirm that: only one of the 7 utilities in the High Nuclear subsample has an S&P debt rating of A-; that the other six utilities have an S&P debt rating of BBB; and that the mean and median S&P debt rating for this subsample is BBB. If not, please explain.
- d) Please provide the level of significance for the differences referred to in: "In one period, the estimated nuclear generation beta was significantly higher than the generation betas, but in the other period, the nuclear generation beta was materially lower than the generation betas."

Response

- a) Yes.
- b) Both the average and median betas for the samples were utilized. See response to part d) below.
- c) Yes, as shown in Schedule 5.
- d) The term significant was not used in a statistical context, but referred to the absolute differences among the estimated betas. The following table outlines the betas for the wires sample, the high generation sample, the calculated residual generation only betas and nuclear generation betas. Looking at the 2008 and 2009 columns, the 2008 nuclear generation beta of 1.26 is much higher than the 0.89 generation only beta while the 2009 nuclear generation beta of 0.75 is much lower than the 0.91 generation only beta.

1

Monthly Unadjusted Betas	2006	2007	2008	2009
Wires Sample				
Average	0.45	0.73	0.39	0.35
Median	0.35	0.69	0.35	0.27
Average of All	0.40	0.71	0.37	0.31
High GX Sample				
Average	0.66	0.67	0.62	0.61
Median	0.58	0.66	0.61	0.59
Average of All	0.62	0.66	0.62	0.60
High GX Sample – Residual GX Only Beta				
Average	0.85	0.59	0.88	0.91
Median	0.80	0.52	0.89	0.92
Average of All	0.82	0.56	0.89	0.91
Nuclear Sample				
Average	0.46	0.38	0.68	0.63
Median	0.51	0.41	0.68	0.56
Average of All	0.49	0.40	0.68	0.60
Nuclear Sample - GX Only Beta				
Average	0.51	-0.08	1.00	0.90
Median	0.35	-0.36	0.96	0.85
Average of All	0.43	-0.22	0.98	0.88
Nuclear Gx Beta	-2.16	-5.28	1.26	0.75
Non-Nuclear Gx Beta	1.18	1.25	0.84	0.93

2

Pollution Probe Interrogatory #026

Ref: Ex. C3-T1-S1, page 67, last paragraph

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

Please provide the names of the companies, along with their bond ratings from both bond rating agencies, that were excluded from each proxy sample because they did not have investment grade debt ratings (i.e. BBB- and Baa3 or higher) by both Standard and Poor's and Moody's.

Response

The three companies excluded due to non-investment grade ratings of Ba1 by Moody's were Allegheny Energy (S&P BBB-), Centerpoint Energy (S&P BBB) and Otter Tail Corp (S&P BBB-).

Pollution Probe Interrogatory #027

Ref: Ex. C3-T1-S1, Appendix A, page 1

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

Please provide the names of the utilities that were removed from the sample of 59 utilities, along with their bond ratings from S&P, because they are rated below investment grade as well as the names of the utilities that were removed from the sample of 59 utilities because they were not rated by S&P.

Response

The following companies were removed because of a non-investment grade S&P rating or because they were not rated by S&P:

Central Vermont Public Service	BB+
Evergreen Energy	na
Florida Public Utility	na
Maine & Maritimes	na
NV Energy	BB
PNM Resources	BB-
UIL Holdings	na
UniSource Energy	na
Unitil Corp.	na

Pollution Probe Interrogatory #028

Ref: Ex. C3-T1-S1, Appendix B, Table B-1, page 4

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

- a) Please discuss how multicollinearity was dealt with in the regressions reported in Table B-1.
- b) Please discuss how the endogeneity problem was dealt with in the regressions reported in Table B-1.

Response

a) and b)

Collinearity is often suspected when the R^2 is high, typically 0.7 to 1.0, and none or very few of the estimated coefficients are statistically significant. The estimated R^2 for the regressions presented in Table B-1 were not high enough to cause serious concern regarding multicollinearity. However, the relatively few significant explanatory variables suggested that certain variables could have been collinear. As a result, the regression results utilizing all eight explanatory variables, were supplemented with regressions utilizing only those variables which were significant in the initial regressions thereby removing possible collinear variables. The results of these subsequent analyses were presented in the paragraph at the bottom of Appendix B, page 5 "Additional regressions were run including only those three independent variables which were of the right sign in both the initial (eight variable) five-year and ten-year regressions and whose coefficients were statistically significant at no less than a 90 per cent confidence level. When estimated using 10-year data, the S&P rating value, standard deviation of returns on equity and the ROE beta were significant at a 95 per cent confidence level and of the expected sign. Using the five-year betas, while all of the independent variables had the expected sign, only the S&P rating was significant."

Endogeneity refers to a concern that the right-hand side (independent) variables may not be truly independent of the left-hand side (dependent) variable, resulting in biased estimates of the coefficients. One way of correcting for this problem is through use of a two-stage model; first estimating values for the endogenous right-hand side variable using variables not included in the initial model and then running the initial model with the new, independent right hand side variable. As there was no reason to assume that the betas estimated over either five or ten years (dependent variable) determined the values of the S&P rating value, standard deviation of returns on equity or the ROE beta, no further analysis was conducted on this issue.

1 Further to the above, the purpose of the analysis was to seek to define an empirical
2 relationship between market betas and technology specific variables, such as the proportion
3 of generation relative to wires or nuclear generation production. The results of the analysis
4 did not find such a relationship. Therefore, the methodology would not provide a sufficient
5 basis for estimating technology-specific capital structures even if sufficient data had been
6 available for OPG, which it was not.

Pollution Probe Interrogatory #029

Ref: Ex. C3-T1-S1, Appendix E, section 2, page 2

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

Which I/B/E/S consensus earning growth forecasts were used to estimate “g” in the growth component for each utility? (e.g., one-year forward? long-term growth rate? etc.)

Response

The 5-year I/B/E/S consensus earnings growth forecast was used to estimate “g” in the growth component for each utility.

Pollution Probe Interrogatory #030

Ref: Ex. C3-T1-T1, schedules 6 and 7

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

Please provide the allowed rate of return on regulated assets for each of the utilities for each of the years in these two schedules (i.e., 2003-2008).

Response

The allowed returns on equity as available from Regulatory Research Associates are attached as Attachment 1.

ALLOWED RETURNS ON EQUITY FOR HIGH GENERATION U.S. ELECTRIC UTILITY SAMPLE

	Subsidiary	State	Type of Utility	2003 ¹¹	2004	2005	2006	2007	2008
Allegheny Energy	Potomac Edison Co	Maryland	Electric	11.90%	11.90%	11.90%	11.90%	11.90%	11.90%
	Potomac Edison Co	Virginia	Electric	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%
	Monongahela Power Co	Ohio	Electric	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%
	Monongahela Power Co	West Virginia	Electric	10.85%	10.85%	10.85%	10.85%	10.50%	10.50%
	West Penn Power Co	Pennsylvania	Electric	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%
ALLETE	ALLETE (Minnesota Power)	Minnesota	Electric	11.60%	11.60%	11.60%	11.60%	11.60%	11.60%
Alliant Energy	Interstate Power & Light Co	Iowa	Electric	11.15%	11.15%	10.97%	10.97%	10.97%	10.97%
	Interstate Power & Light Co	Iowa	Gas	11.05%	11.05%	10.40%	10.40%	10.40%	10.40%
	Interstate Power & Light Co	Minnesota	Electric	11.00%	11.25%	11.25%	10.39%	10.39%	10.39%
	Wisconsin Power and Light Co	Wisconsin	Electric	12.00%	12.00%	11.50%	11.50%	10.80%	10.80%
	Wisconsin Power and Light Co	Wisconsin	Gas	12.00%	12.00%	11.50%	11.50%	10.80%	10.80%
Ameren Corp.	Central Illinois Light Co	Illinois	Electric	NA	NA	NA	NA	10.12%	10.65%
	Central Illinois Light Co	Illinois	Gas	10.54%	10.54%	10.54%	10.54%	10.54%	10.68%
	Central Illinois Public	Illinois	Electric	12.28%	12.28%	12.28%	12.28%	10.08%	10.65%
	Central Illinois Public	Illinois	Gas	10.46%	10.46%	10.46%	10.46%	10.46%	10.68%
	Illinois Power Co	Illinois	Electric	12.40%	12.40%	12.40%	12.40%	10.08%	10.65%
	Illinois Power Co	Illinois	Gas	11.24%	11.24%	10.00%	10.00%	10.00%	10.68%
	Union Electric Co	Missouri	Electric	NA	NA	NA	NA	10.20%	10.20%
American Electric Power	Southwestern Electric Power Co	Arkansas	Electric	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%
	Southwestern Electric Power Co	Louisiana	Electric	11.10%	11.10%	11.10%	11.10%	11.10%	11.10%
	Indiana Michigan Power Co	Indiana	Electric	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
	Indiana Michigan Power Co	Michigan	Electric	13.00%	13.00%	13.00%	13.00%	13.00%	13.00%
	Columbus Southern Power Co	Ohio	Electric	12.46%	12.46%	12.46%	12.46%	12.46%	12.46%
	Ohio Power Co	Ohio	Electric	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%
	Public Service Co of Oklahoma	Oklahoma	Electric	NA	NA	NA	NA	NA	10.00%
	Kingsport Power Co	Tennessee	Electric	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
	AEP Texas Central Co	Texas	Electric	10.02%	10.02%	10.02%	10.13%	10.13%	9.96%
	AEP Texas North Co	Texas	Electric	11.38%	11.38%	11.38%	11.38%	11.38%	11.38%
	Appalachian Power Co	Virginia	Electric	11.40%	11.40%	11.40%	11.40%	10.00%	10.00%
	Appalachian Power Co	West Virginia	Electric	12.00%	12.00%	12.00%	10.50%	10.50%	10.50%
	Avista Corp	Idaho	Electric	10.75%	10.40%	10.40%	10.40%	10.40%	10.20%
Avista Corp.	Avista Corp	Idaho	Gas	NA	10.40%	10.40%	10.40%	10.40%	10.20%
	Avista Corp	Oregon	Gas	10.25%	10.25%	10.25%	10.25%	10.25%	10.00%
	Avista Corp	Washington	Electric	11.16%	11.16%	11.16%	10.40%	10.40%	10.20%
	Avista Corp	Washington	Gas	11.16%	11.16%	11.16%	10.40%	10.40%	10.20%
	Avista Corp	Washington	Gas	11.16%	11.16%	11.16%	10.40%	10.40%	10.20%
Constellation Energy	Baltimore Gas and Electric Co	Maryland	Electric	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
	Baltimore Gas and Electric Co	Maryland	Gas	11.05%	11.05%	11.05%	11.00%	11.00%	11.00%
Dominion Resources	Virginia Electric & Power Co	North Carolina	Electric	11.80%	11.80%	11.80%	11.80%	11.80%	11.80%
	Virginia Electric & Power Co	Virginia	Electric	11.40%	11.40%	11.40%	11.40%	11.40%	11.40%
	Hope Gas Inc	West Virginia	Gas	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%
DPL Inc.	Dayton Power and Light Co	Ohio	Electric	13.00%	13.00%	13.00%	13.00%	13.00%	13.00%
	Dayton Power and Light Co	Ohio	Gas	13.00%	13.00%	13.00%	13.00%	13.00%	13.00%
DTE Energy	Detroit Edison Co	Michigan	Electric	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
	Michigan Consolidated Gas Co	Michigan	Gas	11.50%	11.50%	11.00%	11.00%	11.00%	11.00%
Empire District Electric	Empire District Electric Co	Missouri	Electric	10.00%	10.00%	11.00%	11.00%	10.90%	10.80%
Entergy Corp.	Entergy Arkansas Inc	Arkansas	Electric	11.00%	11.00%	11.00%	11.00%	9.90%	9.90%
	Entergy Gulf States LA LLC	Louisiana	Electric	11.10%	11.10%	11.10%	11.10%	11.10%	11.10%
	Entergy Gulf States LA LLC	Louisiana	Gas	NA	NA	10.50%	10.50%	10.50%	10.50%
	Entergy Louisiana Holdings	Louisiana	Electric	10.50%	10.50%	10.25%	10.25%	10.25%	10.25%
	Entergy Mississippi Inc	Mississippi	Electric	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
	Entergy Texas Inc	Texas	Electric	11.40%	11.40%	11.40%	11.40%	11.40%	11.40%
	Entergy Texas Inc	Texas	Electric	11.40%	11.40%	11.40%	11.40%	11.40%	11.40%

ALLOWED RETURNS ON EQUITY FOR HIGH GENERATION U.S. ELECTRIC UTILITY SAMPLE

	Subsidiary	State	Type of Utility	2003 ^{1/}	2004	2005	2006	2007	2008
Exelon Corp.	Commonwealth Edison Co	Illinois	Electric	12.28%	12.28%	12.28%	10.05%	10.05%	10.30%
	PECO Energy Co	Pennsylvania	Electric	12.75%	12.75%	12.75%	12.75%	12.75%	12.75%
FirstEnergy Corp.	Jersey Central Power & Light Co	New Jersey	Electric	9.50%	9.50%	9.75%	9.75%	9.75%	9.75%
	Cleveland Electric Illuminating Co	Ohio	Electric	12.59%	12.59%	12.59%	12.59%	12.59%	12.59%
	Ohio Edison Co	Ohio	Electric	13.21%	13.21%	13.21%	13.21%	13.21%	13.21%
	Toledo Edison Co	Ohio	Electric	12.59%	12.59%	12.59%	12.59%	12.59%	12.59%
	Metropolitan Edison Co	Pennsylvania	Electric	11.25%	11.25%	11.25%	11.25%	10.10%	10.10%
FPL Group	Florida Power & Light Co	Florida	Electric	12.80%	12.80%	12.80%	12.80%	12.80%	12.80%
Great Plains Energy	Kansas City Power & Light	Missouri	Electric	NA	NA	NA	NA	11.25%	10.75%
	KCP&L Greater Missouri Op Co	Missouri	Electric	10.75%	10.75%	10.75%	10.75%	10.25%	10.25%
IDACORP, Inc.	Idaho Power Co	Idaho	Electric	11.00%	10.25%	10.25%	10.60%	10.60%	10.60%
MGE Energy	Madison Gas and Electric Co	Wisconsin	Electric	12.30%	12.00%	11.50%	11.00%	11.00%	10.80%
	Madison Gas and Electric Co	Wisconsin	Gas	12.30%	12.00%	11.50%	11.00%	11.00%	10.80%
Pinnacle West Capital	Arizona Public Service Co	Arizona	Electric	11.25%	11.25%	10.25%	10.25%	10.75%	10.75%
PPL Corp.	PPL Electric Utilities Corp	Pennsylvania	Electric	11.50%	11.50%	10.70%	10.70%	10.70%	10.70%
Progress Energy	Florida Power Co	Florida	Electric	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
	NC Natural Gas Corp	North Carolina	Gas	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
Public Service Enterprise Group	Public Service Electric Gas	New Jersey	Electric	9.75%	9.75%	9.75%	9.75%	10.00%	10.00%
	Public Service Electric Gas	New Jersey	Gas	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
SCANA Corp.	South Carolina Electric & Gas	South Carolina	Electric	12.45%	12.45%	10.70%	10.70%	10.70%	10.70%
	South Carolina Electric & Gas	South Carolina	Gas	NA	NA	10.25%	10.25%	10.25%	10.25%
	Public Service Co of NC	North Carolina	Gas	11.40%	11.40%	11.40%	11.40%	11.40%	10.60%
Southern Co.	Gulf Power Co	Florida	Electric	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
	Georgia Power Co	Georgia	Electric	12.50%	12.50%	11.25%	11.25%	11.25%	11.25%
	Savannah Electric & Power Co	Georgia	Electric	NA	NA	10.75%	10.75%	10.75%	10.75%
	Mississippi Power Co	Mississippi	Electric	12.88%	12.88%	12.88%	12.88%	12.88%	12.88%
TECO Energy	Tampa Electric Co	Florida	Electric	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
	Peoples Gas System	Florida	Gas	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%
Westar Energy	Kansas Gas and Electric Co	Kansas	Electric	11.02%	11.02%	11.02%	10.00%	10.00%	10.00%
	Westar Energy Inc	Kansas	Electric	11.02%	11.02%	11.02%	10.00%	10.00%	10.00%
	Westar Energy Inc	Kansas	Gas	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%
Wisconsin Energy	Wisconsin Electric Power Co	Wisconsin	Electric	12.20%	12.20%	12.20%	12.20%	12.20%	10.75%
	Wisconsin Electric Power Co	Wisconsin	Gas	12.20%	12.20%	12.20%	11.20%	11.20%	10.75%
	Wisconsin Gas LLC	Wisconsin	Gas	11.80%	11.80%	11.80%	11.20%	11.20%	10.75%
Xcel Energy	Public Service Co of Colorado	Colorado	Electric	10.75%	10.75%	10.75%	10.75%	10.50%	10.50%
	Public Service Co of Colorado	Colorado	Gas	11.00%	11.00%	11.00%	10.50%	10.25%	10.25%
	Northern States Power Co-MN	Minnesota	Electric	11.47%	11.47%	11.47%	10.54%	10.54%	10.54%
	Northern States Power Co-MN	Minnesota	Gas	11.40%	11.40%	10.40%	10.40%	9.71%	9.71%
	Northern States Power Co-MN	North Dakota	Electric	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
	Northern States Power Co-MN	North Dakota	Gas	NA	NA	NA	NA	10.75%	10.75%
	Northern States Power Co-MN	South Dakota	Electric	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
	Northern States Power Co-WI	Wisconsin	Electric	11.90%	11.90%	11.90%	11.00%	11.00%	10.75%
	Northern States Power Co-WI	Wisconsin	Gas	11.90%	11.90%	11.90%	11.00%	11.00%	10.75%
	Southwestern Public Service Co	New Mexico	Electric	NA	NA	NA	NA	NA	10.18%

^{1/}The allowed Return on Equity represents the most recently awarded ROE.

Source: Regulatory Research Associates

ALLOWED RETURNS ON EQUITY FOR WIRES, HIGH NUCLEAR GENERATION, AND HIGH HYDROELECTRIC GENERATION U.S. UTILITY SAMPLES

	Subsidiary	State	Type of Utility	2003 ^U	2004	2005	2006	2007	2008
WIRES SAMPLE									
CenterPoint Energy	CenterPoint Energy Houston	Texas	Electric	12.55%	12.55%	12.55%	12.55%	12.55%	12.55%
	CenterPoint Energy Resources	Arkansas	Gas	10.70%	10.70%	9.45%	9.45%	9.65%	9.65%
	CenterPoint Energy Resources	Louisiana	Gas	11.75%	10.25%	10.25%	10.25%	10.25%	10.25%
	CenterPoint Energy Resources	Minnesota	Gas	11.00%	11.00%	10.18%	10.18%	9.71%	9.71%
	CenterPoint Energy Resources	Oklahoma	Gas	10.75%	10.75%	10.25%	10.25%	10.25%	10.25%
	CenterPoint Energy Resources	Texas	Gas	NA	NA	NA	NA	NA	10.06%
CH Energy Group	Central Hudson Gas & Electric	New York	Electric	10.30%	10.30%	10.30%	9.60%	9.60%	9.60%
	Central Hudson Gas & Electric	New York	Gas	10.30%	10.30%	10.30%	9.60%	9.60%	9.60%
Consolidated Edison	Rockland Electric Co	New Jersey	Electric	9.75%	9.75%	9.75%	9.75%	9.75%	9.75%
	Consolidated Edison Co of NY	New York	Electric	11.10%	11.10%	10.30%	10.30%	10.30%	9.10%
	Consolidated Edison Co of NY	New York	Gas	11.50%	10.30%	10.30%	10.30%	9.70%	9.70%
	Orange & Rockland Utils Inc	New York	Electric	10.40%	10.40%	10.40%	10.40%	9.10%	9.40%
	Orange & Rockland Utils Inc	New York	Gas	11.65%	11.65%	11.65%	9.80%	9.80%	9.80%
Laclede Group	Laclede Gas Co	Missouri	Gas	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%
Nicor Inc.	Northern Illinois Gas Co	Illinois	Gas	11.13%	11.13%	10.51%	10.51%	10.51%	10.51%
Northeast Utilities	Connecticut Light & Power Co	Connecticut	Electric	10.30%	9.85%	9.85%	9.85%	9.85%	9.40%
	Yankee Gas Services Co	Connecticut	Gas	11.00%	11.00%	9.90%	9.90%	10.10%	10.10%
	Western Massachusetts Electric	Massachusetts	Electric	12.50%	12.50%	9.85%	9.85%	9.85%	9.85%
	Public Service Co of NH	New Hampshire	Electric	NA	NA	NA	NA	9.67%	9.67%
Northwest Natural Gas	Northwest Natural Gas Co	Oregon	Gas	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%
NSTAR	Cambridge Electric Light Co	Massachusetts	Electric	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
	Commonwealth Electric Co	Massachusetts	Electric	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
	NSTAR Electric Co	Massachusetts	Electric	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
Piedmont Natural Gas	Piedmont Natural Gas Co	North Carolina	Gas	11.30%	11.30%	11.30%	11.30%	11.30%	10.60%
	Piedmont Natural Gas Co	South Carolina	Gas	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
	Piedmont Natural Gas Co	Tennessee	Gas	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%
Southwest Gas	Southwest Gas Corp	Arizona	Gas	11.00%	11.00%	11.00%	9.50%	9.50%	9.50%
	Southwest Gas Corp	California	Gas	NA	10.90%	10.90%	10.90%	10.90%	10.50%
	Southwest Gas Corp	Nevada	Gas	11.55%	10.50%	10.50%	10.50%	10.50%	10.50%
WGL Holdings Inc.	Washington Gas Light Co	Washington DC	Gas	10.60%	10.60%	10.60%	10.60%	10.60%	10.60%
	Washington Gas Light Co	Maryland	Gas	10.75%	10.75%	10.75%	10.75%	10.75%	10.00%
	Washington Gas Light Co	Virginia	Gas	10.50%	10.50%	10.50%	10.50%	10.00%	10.00%

ALLOWED RETURNS ON EQUITY FOR WIRES, HIGH NUCLEAR GENERATION, AND HIGH HYDROELECTRIC GENERATION U.S. UTILITY SAMPLES

	Subsidiary	State	Type of Utility	2003 ^{1/}	2004	2005	2006	2007	2008
HIGH NUCLEAR GENERATION SAMPLE									
Constellation Energy	Baltimore Gas and Electric Co	Maryland	Electric	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
	Baltimore Gas and Electric Co	Maryland	Gas	11.05%	11.05%	11.05%	11.00%	11.00%	11.00%
Dominion Resources	Virginia Electric & Power Co	North Carolina	Electric	11.80%	11.80%	11.80%	11.80%	11.80%	11.80%
	Virginia Electric & Power Co	Virginia	Electric	11.40%	11.40%	11.40%	11.40%	11.40%	11.40%
	Hope Gas Inc	West Virginia	Gas	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%
Entergy Corp.	Entergy Arkansas Inc	Arkansas	Electric	11.00%	11.00%	11.00%	11.00%	9.90%	9.90%
	Entergy Gulf States LA LLC	Louisiana	Electric	11.10%	11.10%	11.10%	11.10%	11.10%	11.10%
	Entergy Gulf States LA LLC	Louisiana	Gas	NA	NA	10.50%	10.50%	10.50%	10.50%
	Entergy Louisiana Holdings	Louisiana	Electric	10.50%	10.50%	10.25%	10.25%	10.25%	10.25%
	Entergy Mississippi Inc	Mississippi	Electric	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
	Entergy Texas Inc	Texas	Electric	11.40%	11.40%	11.40%	11.40%	11.40%	11.40%
Exelon Corp.	Commonwealth Edison Co	Illinois	Electric	12.28%	12.28%	12.28%	10.05%	10.05%	10.30%
	PECO Energy Co	Pennsylvania	Electric	12.75%	12.75%	12.75%	12.75%	12.75%	12.75%
FirstEnergy Corp.	Jersey Central Power & Light Co	New Jersey	Electric	9.50%	9.50%	9.75%	9.75%	9.75%	9.75%
	Cleveland Electric Illuminating Co	Ohio	Electric	12.59%	12.59%	12.59%	12.59%	12.59%	12.59%
	Ohio Edison Co	Ohio	Electric	13.21%	13.21%	13.21%	13.21%	13.21%	13.21%
	Toledo Edison Co	Ohio	Electric	12.59%	12.59%	12.59%	12.59%	12.59%	12.59%
	Metropolitan Edison Co	Pennsylvania	Electric	11.25%	11.25%	11.25%	11.25%	10.10%	10.10%
PPL Corp.	PPL Electric Utilities Corp	Pennsylvania	Electric	11.50%	11.50%	10.70%	10.70%	10.70%	10.70%
Public Service Enterprise Group	Public Service Electric Gas	New Jersey	Electric	9.75%	9.75%	9.75%	9.75%	10.00%	10.00%
	Public Service Electric Gas	New Jersey	Gas	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
HIGH HYDROELECTRIC GENERATION SAMPLE									
Avista Corp.	Avista Corp	Idaho	Electric	10.75%	10.40%	10.40%	10.40%	10.40%	10.20%
	Avista Corp	Idaho	Gas	NA	10.40%	10.40%	10.40%	10.40%	10.20%
	Avista Corp	Oregon	Gas	10.25%	10.25%	10.25%	10.25%	10.25%	10.00%
	Avista Corp	Washington	Electric	11.16%	11.16%	11.16%	10.40%	10.40%	10.20%
	Avista Corp	Washington	Gas	11.16%	11.16%	11.16%	10.40%	10.40%	10.20%
IDACORP, Inc.	Idaho Power Co	Idaho	Electric	11.00%	10.25%	10.25%	10.60%	10.60%	10.60%

^{1/}The allowed Return on Equity represents the most recently awarded ROE.

Source: Regulatory Research Associates

Pollution Probe Interrogatory #031

Ref: Ex. C3-T1-S1, page 24

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

Ms. McShane states here that: "The Ontario economy generally and the manufacturing sector specifically, which accounts for a significant portion of the electricity consumed in the Province, have been relatively hard hit by the global recession." The text goes on to quote the 2009 *Ontario Economic and Outlook and Fiscal Review*.

Does this forecast require any updating to be applicable to the test period? If so, please provide all updates applicable for the test period that Ms. McShane deems relevant.

Response

The purpose of the statement from Ms. McShane's report referenced in the question was to provide an illustration of the statement from Ms. McShane's EB-2007-0905 testimony that appears in the preceding paragraph, i.e., "While the diversity and strength of the economy are positive for the overall business risk assessment of OPG, the challenges to the manufacturing sector expose the regulated operations to some risk of lower revenues due to decreased demand, both from cyclical declines and long-term demand destruction." That statement from EB-2007-0905 was in the context of longer-term challenges to the Ontario economy. The relevant update to the referenced section of Ex. C3-T1-S1 is the IESO's forecast of electricity demand.

The most recent (May 2010) IESO 18-Month Outlook for June 2010 to November 2011 anticipates growth in normal weather electricity energy consumption of 1.3 per cent and 1.0 per cent in 2010 and 2011 respectively, compared to 0.4 per cent and 0.8 per cent in its November 2009 Outlook cited at page 24 of Ms. McShane's report. The IESO stated in its May 2010 outlook that "The fragile nature of the recovery will mean that growth will be slower leading to modest increases in electricity demand for 2010 and 2011. Some of this is due to the return of production in the automotive and steel industries, which experienced periods of shut downs or low production in 2009. Ultimately, this forecast still faces considerable downside risk due to the debt concerns of a number of nations." Further the Outlook concluded, "Industrial demand will not return to pre-recession levels but will show improvement over the lows of 2009. The high dollar will continue to act as a moderator on Ontario's electrically intensive export-based industries."

Pollution Probe Interrogatory #032

Ref: Ex. C3-T1-S1, page 25

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

Ms. McShane states here that: "The development of green energy projects under the Feed-in Tariff program will potentially lead to an increasing occurrence of surplus baseload generation. The adoption of the *Green Energy and Green Economy Act* and the potential softening of demand support the conclusion that the dispatch risk to which OPG's regulated operations are exposed is rising."

- a) Please provide Ms. McShane's views on the percentage of energy that will be supplied by green sources during the test period.
- b) Please provide all analyses conducted by Ms. McShane along with all relevant sources used to reach her conclusion that green energy is increasing OPG's dispatch risk.

Response

- a) All green sources would include wind, solar, biomass, and hydroelectric, including all of OPG's regulated hydroelectric generation. Limiting the hydroelectric generation to solely that which is under contract to the Ontario Power Authority ("OPA"), as of the end of the first quarter of 2010, the OPA reported in *A Progress Report on Electricity Supply: First Quarter 2010*, that it had 3,785 MW of contracted renewable energy capacity in operation and under development, of which 50 per cent is wind, 31.5 per cent is hydroelectric and the remainder is bioenergy and solar. Of this amount 3,688 MW were expected to be in operation by 2012. On the assumption that total electricity energy demand in 2012 is equal to the IESO May 2010 forecast of 144 TWh for 2011 (*18-Month Outlook From June 2010 to November 2011*), the total percentage of energy produced by these resources could be about 10 per cent of the total during the 2012 test year (assuming that 100 per cent of the resources are operating for the entire year). Wind and bioenergy alone could account for 4 per cent of the total assuming an average 30 per cent capacity factor. The Navigant Consulting *Wholesale Electricity Market Price Forecast for the Period May 1, 2010 through October 31, 2010* presented to the Ontario Energy Board, April 7, 2010 observes that renewable generation under contract with the OPA supplied generation equivalent to 3 per cent of Ontario demand in 2009 and anticipates that renewable generation under contract with the OPA will supply generation equivalent to 9 per cent of Ontario demand in 2011.
- b) Ms. McShane has not performed any specific analyses. The conclusion that OPG's dispatch risk is increasing was based on a review of documentation on both the OPA and

1 IESO website and discussions with OPG. The IESO website states, for example, "It is
2 expected that incidences of surplus baseload generation ("SBG") may increase as
3 Ontario's supply mix continues to change. Current economic conditions have increased
4 the frequency of SBG as overall electricity demand has declined." The changing supply
5 mix to which the IESO refers is a trend toward an increasing proportion of total available
6 resources being baseload generation, which includes wind.

7
8 The incidence of SBG is most common when demand is low (e.g., during off-peak, i.e.,
9 night time or weekend hours or during shoulder seasons, spring and fall when heating
10 and air conditioning load are lower). The IESO website also indicates that periods of SBG
11 can be exacerbated in the spring when water levels are high due to snow melt, periods
12 when most generators are available, and when there is high production from variable
13 generation such as wind.

14
15 OPG's 2009 Annual Report (page 15) discusses the high incidence of SBG conditions in
16 2009 due to the combination of a weak economy, a cool summer, high output from
17 nuclear and hydroelectric stations, combined with high output from wind. Other factors
18 which exacerbated SBG conditions in 2009 included a reduction in export capabilities and
19 commissioning of gas-fired units.

20
21 Wind generation is intermittent; it can only be produced when the wind is blowing. Wind
22 generation is frequently available when demand is relatively low (e.g., off-peak hours and
23 spring), but it is highly variable.

24
25 The Feed-in Tariff ("FIT") Program which was developed following passage of the *Green*
26 *Energy Act* led to initial applications to the OPA for more than 9,000 MW of renewable
27 energy production, of which close to 80 per cent was wind (IESO, *Fit Dispatch and*
28 *Operability*, March 10, 2010).

29
30 OPG's 2009 Annual Report (page 15) states "New wind capacity is expected to have the
31 largest impact on Ontario supply. About half of the wind energy is likely to be produced in
32 off-peak hours and is expected to exacerbate SBG conditions. Whether this increases the
33 amount of water spilled at OPG's generating stations and results in more manoeuvring
34 or shutdown of OPG's nuclear units will depend on the application of curtailment
35 provisions being developed by the IESO to address SBG conditions." The Annual Report
36 also indicates (page 15) that the factors considered by the IESO include safety,
37 regulation, environment, and potential equipment damage.

38
39 The introduction of significant variable wind generating capacity into the Ontario
40 generation supply mix, uncertainty with respect to what generation will be curtailed first in
41 instances of SBG, combined with potentially softening demand, increases the dispatch
42 risk (which, as indicated at page 34 of Ex. C3-T1-S1, represents an increased forecasting
43 risk).

Pollution Probe Interrogatory #033

Ref: Ex. C3-T1-S1, page 27, first full paragraph

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

Ms. McShane states here that: 'The Board declined to approve OPG's proposed payment structure, instead adopting a 100% energy-based regulated payment. The Board concluded that OPG should be fully incented to produce as accurate a forecast of nuclear production as possible and should be at risk if actual output falls short of forecast. The adoption of a 100% energy-based regulated payment in lieu of a payment that partially recovers the revenue requirement in a fixed charge results in higher revenue risk to the regulated nuclear operations than anticipated in the 2007 business risk assessment and increases the business risk of OPG's nuclear operations relative to that of the hydroelectric operations.'

- a) Please provide the details of all deferral accounts that relate to forecasting risk.
- b) Please explain the role of such deferral accounts in mitigating forecasting risk.

Response

- a) OPG has the following variance and deferral accounts that relate to forecasting risk:

- Nuclear Liability Deferral Account
- Nuclear Development Variance Account
- Hydroelectric Water Conditions Variance Account
- Ancillary Services Variance Account
- Capacity Refurbishment Variance Account
- Nuclear Fuel Expense Variance Account
- Income and Other Taxes Variance Account
- Bruce Lease Net Revenues Variance Account

The specifics of these accounts are described in the OEB's Decision in EB-2007-0905, Chapter 7 and in Exhibit H of OPG's filing in EB-2010-0008. All of these accounts, except the Bruce Lease Net Revenues Variance Account, were proposed by OPG in EB-2007-0905. The Bruce Lease Net Revenues Variance Account was ordered by the OEB as a result of its decision to treat the Bruce lease differently from what had been proposed by OPG. In EB-2007-0905, OPG had also proposed a pension/OPEB variance account, which the OEB declined to approve. OPG has requested one new variance account in this

1 proceeding, an IESO Non-energy Charges Variance Account, described in Ex. H-T3-S1,
2 for an expense which is beyond management's control, is difficult to forecast and has
3 exhibited significant variability.
4

- 5 b) The use of deferral and variance accounts mitigates forecasting risks related to costs
6 over which the utility has little or no control, or are difficult to forecast. The extent to which
7 deferral accounts lower the forecasting risk is a function of the scope of the accounts and
8 the materiality of the costs that are covered by those accounts. The existence of such
9 accounts does not, however, guarantee recovery of the costs nor does it change the
10 utility's fundamental risks.

Pollution Probe Interrogatory #034

Ref: Ex. C3-T1-S1, page 28, first and last full paragraphs

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

The first full paragraph here states that: "In this application OPG has adjusted its nuclear production forecast methodology to include an allowance (2 TWh) for major unforeseen events based on its historical experience. While the refinement of the forecasting methodology to better take account of its actual experience reduces the production forecasting risk, OPG had not been fully compensated for that risk, as was made clear in the *Decision*".

The last full paragraph here states that: "In light of the Board's findings regarding compensation for forecasting risk, there is no change in the absolute or relative risk of the hydroelectric and nuclear operations arising from the proposed nuclear production forecasting approach. With no other material changes arising from or since the *Decision*, at this time, there has been no significant change in the relative or absolute production/operating risks of the nuclear and hydroelectric operations."

- a) Please provide Ms. McShane's view on the correctness of the Board decision referred to in the citation above.
- b) Please explain why the adjustment in OPG's nuclear production forecast is necessary in light of the conclusion that there is no change in forecasting and production/operating risks.

Response

- a) Ms. McShane agrees with the principle that it is incumbent on any regulated firm to produce the best forecasts possible, recognizing that any forecast is made with a margin of error. It should be expected that any regulated company would continuously endeavor to improve its forecasting of all elements of its revenue requirement. While the cost of capital would in principle reflect the uncertainty inherent in forecasting, the allowed return should neither reward a regulated company for poor forecasting nor penalize a utility for improved forecasting.

In the context of depreciation, the National Energy Board ("NEB") has expressed a similar principle. In Reasons for Decision, TransCanada PipeLines Limited, RH-2-2004, Phase II, April 2005, at page 46, the NEB stated:

1 The Board is of the view that there are two distinct aspects to risk as it relates to
2 business risk and depreciation rates. The first is that the current best estimate of
3 economic life, which is reflected in the depreciation rates, may ultimately prove to
4 be wrong. Various business factors, including changes to supply or competitive
5 forces, could alter the economic life of the Mainline. This possibility cannot be fully
6 mitigated and therefore should be compensated through cost of capital.
7

8 The second aspect of depreciation-related risk is that the depreciation rates in use
9 may not actually reflect the estimates of economic life that would be selected if
10 assessed at that point in time. A company can mitigate the risk that the estimates
11 in use are not current by bringing forward an application to reconsider its
12 depreciation rates. The part of this risk that is mitigable should not be
13 compensated through the cost of capital. Should it become apparent that
14 depreciation rates do not adequately reflect current estimates of economic life, it
15 is incumbent on the management of the company to seek to change depreciation
16 rates, not to expect incremental compensation through the cost of capital.
17

18 The same principle should apply to other elements of the revenue requirement and rates
19 over which management has control and/or can reasonably forecast.
20

- 21 b) As indicated at page 28 of her report, Ms. McShane understands that OPG's forecast of
22 nuclear production represents a refinement of its forecasting methodology, which
23 incorporates the actual historic experience.

Pollution Probe Interrogatory #035

Ref: Ex. C3-1-1, page 30, first full paragraph

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

Ms. McShane identifies here a regulatory risk related to the return on segregated funds: "The market value of the funds is determined by the performance of the capital markets. The methodology for recovery of nuclear liability costs does not take account of the performance of the segregated funds and thus OPG is at risk for the performance of those funds (as they relate to Pickering and Darlington). The capital market experience of 2008, during which the return on the S&P/TSX Composite was – 33%, highlights that risk."

- a) Please provide Ms. McShane's view of the degree to which capital market experience subsequent to 2008 has modified the market risk.
- b) Please provide Ms. McShane's view of the likelihood of a repeat of the 2008 crash during the test period.

Response

- a) The capital markets have improved markedly since early 2009 and capital market indicators (e.g., the MVX) point to lower market volatility at the present time (mid-2010). The TSX Composite has recovered from its financial crisis trough (having lost 50 per cent of its value between mid-June 2008 and early March 2009), but at the end of July 2010, it was still over 20 per cent below its 2008 peak. There are still significant risks of a significant market correction, given the persistence of global imbalances, the potential for a double-dip recession and the sovereign debt crisis in Europe.
- b) Ms. McShane is of the view that a market crash of the magnitude experienced during 2008 - 2009 during the test period is not likely, but, as noted in response to part a), there are risks of a significant market correction. However, the risk related to the performance of the segregated funds is not solely a test period risk; it is a longer-term risk. As stated at pages 29-30 of Ms. McShane's report, "The disparity between the liabilities and the net plant will continue to grow over time, with the result that the accounting earnings of the nuclear operations will increasingly come from the earnings on the associated segregated funds, rather than from the operation of the productive assets themselves."

Pollution Probe Interrogatory #036

Ref: Ex. C3-1-1, Page 31, first full paragraph through Page 33, first full paragraph

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

Ms. McShane discusses here the financial leverage and capital structure impacts of the Board's approach to determining net assets. She conducts calculations to support her argument that the "effective" leverage ratio for OPG is below that of each of two U.S. nuclear power producers (i.e. Exelon and Entergy).

- a) Please provide the calculations supporting the view expressed that the "approach adopted by the Board" leads to effective equity ratios of 40% for composite assets and 32% for nuclear.
- b) In comparing equity ratios among OPG and these two U.S. nuclear producers, are there any other factors that should be considered beyond those discussed in the cited passage? Please provide Ms. McShane's view on this question together with her thinking on how such factors might impact the comparisons.

Response

- a) The calculations presented in the report were based on OPG's preliminary estimates of 2010 rate base and capitalization. The corresponding values based on the as-filed values for 2010 are as follows:

	\$ Million	
2010 Hydroelectric Rate Base	\$ 3,815.70	Exhibit B1, Tab 1, Schedule 1, Table 1
2010 Nuclear Rate Base	<u>\$ 3,912.00</u>	Exhibit B1, Tab 1, Schedule 1, Table 2
Total Rate Base	\$ 7,727.70	
Adjustment for Lesser of UNL or ARC	<u>\$ 1,556.50</u>	Exhibit C1, Tab 1, Schedule 1, Table 5
Adjusted Nuclear Rate Base	\$ 2,355.50	=\$3,912.00 - \$1,556.50
Approved Equity Ratio	47%	
Nuclear Equity (\$M)	\$ 1,107.09	=47%*\$2,355.50
Equity % of Nuclear Total Rate Base	28%	=\$1,107.09/\$3,912.00
Equity % of Hydroelectric Rate Base	47%	
Hydroelectric Equity (\$M)	\$ 1,793.38	=47%*\$3,815.70
Composite Prescribed Assets Equity %	38%	=(Nuclear \$ Equity + Hydro. \$ Equity)/Total Rate Base

1 b) The objective of the analysis presented at pages 32-33 was to isolate the impact of the
2 nuclear liabilities on the capital structures. If financial obligations other than the debt
3 reported on the balance sheet are explicitly considered as part of the capital structure,
4 the resulting book value capital structures will change. For example, Exelon has material
5 purchased power obligations which S&P imputes as debt, whose inclusion in the book
6 value capital structure would lower the measured common equity ratio. At the same time,
7 S&P notes that the book value of Exelon's nuclear plants are materially undervalued, so it
8 views the book value debt to capital ratio as an imperfect indicator of financial risk, noting
9 that (as of the August 2009 report) on a debt to market equity basis, the leverage is
10 approximately 25 per cent. The largest adjustment that S&P makes to the book value
11 debt and equity capital structures of Exelon and Entergy, as well as to OPG, is an
12 imputation of debt related to unfunded pension and post-retirement benefit obligations.
13 To put this in perspective, the adjustments to reported debt made by S&P raised OPG's
14 2008 consolidated debt ratio by 11 percentage points from the debt/total capital ratio
15 using debt and equity as reported; approximately 90 per cent of the increase is related to
16 post-retirement benefits. The adjustments to Entergy's reported debt and equity amounts
17 by S&P raised its 2009 debt ratio by 3 percentage points; 90 per cent of that increase
18 was due to post-retirement benefits. The adjustments to Exelon's June 2009 reported
19 debt and equity amounts raised the debt ratio by approximately 8.5 percentage points;
20 approximately 60 per cent of the increase was attributable to post-retirement benefits and
21 30 per cent to purchased power obligations.

Pollution Probe Interrogatory #037

Ref: Ex. C3-1-1, page 34, third full paragraph

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

After discussing changes in business risk (not including regulatory risk), Ms. McShane concludes here that: "The associated impact on the cost of capital for either the hydroelectric or the nuclear operations during the test period is likely to be small, not amenable to quantification and unlikely to materially change the relative business risk of the two regulated operations."

Based on the quoted passage, please provide Ms. McShane's view and explanation as to whether the capital structure awarded by the Board in its last Decision was a fair one.

Response

The quoted passage is unrelated to the issue of whether the OEB's decision on capital structure was fair. It was intended to summarize the differences in relative business risks between nuclear and regulated hydroelectric operations arising from the OEB's decision in EB-2007-0905 compared to the relative business risks as assessed in light of the proposed regulatory framework which had been requested by OPG. As noted on page 10 of Ms. McShane's report, in EB-2007-0905, "the Board stated that the inquiry would be limited to the issue of separate capital structures and that it intended to apply the same ROE to both types of generation, consistent with the Board's general approach of setting a benchmark ROE and recognizing risk differences in the capital structure." While Ms. McShane recommended a higher common equity ratio for OPG in EB-2007-0905 than adopted by the OEB, for the purpose of the analysis she was asked to undertake, she accepted the OEB's decision regarding the capital structure applicable to the total regulated operations of OPG as the point of departure.

Pollution Probe Interrogatory #038

Ref: Ex. C3-T1-S1, page 34, last paragraph continuing on page 35

Issue Number: 3.1

Issue: What is the appropriate capital structure and rate of return on equity?

Interrogatory

With regard to regulatory risk, Ms. McShane states here that: "With respect to changes in relative risk that result from the *Decision*, the difference in the business risk profiles is greater than was anticipated in EB-2007-0905, largely due to the Board's decision not to adopt the proposed fixed payment for the nuclear operations and to vary the proposed ratemaking treatment of the nuclear liabilities."

Is it logical for the Board to base its capital structure decisions in the present case, on alleged regulatory risk created by its Decision in the last rate case? Please provide Ms. McShane's view of this issue and any corresponding explanations.

Response

It is logical for a regulator to take into account the risks that are inherent in the regulatory framework which it has adopted when it determines the capital structure for a regulated company. The regulatory framework is a key factor in determining the level of short-term risks faced, that is, the ability of a regulated company to earn its allowed rate of return. While the longer-term risks (which include the potential for the regulatory model to change) are an important consideration in making capital structure decisions, the regulatory model adopted by a regulator impacts the cost of capital faced by companies subject to that model.

It is reasonable, therefore, to conclude that the OEB took into account the risks to which the prescribed assets would be subject as a result of declining to approve the proposed fixed payment for the nuclear operations and the treatment of the nuclear liabilities and would continue to do so in a subsequent proceeding. From the OEB's perspective, therefore, these two factors would not be incremental risks, although the option selected for the treatment of the nuclear liabilities was not fully canvassed in the EB-2007-0905 proceeding and the extent of the resulting risk may not have been fully appreciated. Nevertheless, the point that Ms. McShane was making in the referenced statement was that her risk assessment in EB-2007-0905 had not factored in these two factors, and therefore relative to her assessment, the risks of the nuclear operations are higher than was anticipated.