EB-2007-0905

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O.1998, c.15, (Schedule B);

AND IN THE MATTER OF an application by Ontario Power Generation Inc. pursuant to section 78.1 of the *Ontario Energy Board Act, 1998* for an Order or Orders determining payment amounts for the output of certain of its generating facilities.

WRITTEN INTERROGATORIES FOR ONTARIO POWER GENERATION INC. FROM THE CONSUMERS COUNCIL OF CANADA AND THE VULNERABLE ENERGY CONSUMERS COALITION ON CAPITAL STRUCTURE AND COST OF CAPITAL

1. **Topic:** Published reports

Reference: Capital Structure and ROE methodology: C1/T1/S1/P1

Request: a) Please provide copies of all analyst reports on Ontario Power Generation since January 2004.

b) Please provide copies of all presentations made by senior members of Ontario Power Generation to rating and other financial organisations since January 2004 dealing with OPG's financial and business risk.

c) Please provide a copy of the last prospectus under which OPG raised financing;

d) Please extract the discussion of business risk factors form c) above and discuss what has changed since then;

e) Please provide copies of all "material change reports" filed with securities regulators since the last prospectus and discuss all references in those reports to changes in OPG's business risk.

2. **Topic:** Differential financial parameters

Reference: Capital Structure and ROE methodology: C1/T1/S1/P2

Request: a) Please discuss in detail whether OPG regards all of its generation assets to be of equivalent risk.
b) If OPG does not regard the assets to be of equivalent risk please discuss why it is seeking the same financial parameters for all its generating assets.
c) Does OPG use the same financial parameters (cost of capital) in capital budgeting to determine the feasibility of investing in new assets? If not please explain why not?
d) Please describe and discuss in detail the discount rate or hurdle rate used to evaluate all each of the new investments discussed in the stakeholder meetings November 2007, in particular the $338 million in nuclear capital projects compared with the Niagara tunnel and Hydro upgrades.
e) If it is accepted that nuclear and Hydro are of different risks would OPG accept that using the same cost of capital subsidises nuclear at the expense of Hydro, if not why not?

3. **Topic:** **F**inancial parameters

Reference: Capital Structure and ROE methodology: C1/T1/S1/P2

Request: a) Please provide the actual ROE and debt ratio applied to the regulated assets and OPG as whole for each year since OPG's organisation.
b) Please indicate all capital expenditures required to provide service that have been deferred due to an inability to access capital.
c) Please provide OPG's overall cost of capital (EBIT divided by total assets) for its regulated assets for each year since its organisation.
d) Please provide OPG's requested cost of capital.
e) Please confirm that the cost of capital is the minimum required rate of return to maintain the market value of the funds invested in a firm.
f) Please confirm that this minimum is a function of the particular needs and preferences of the firm's shareholders, that is, by definition it does not consider the preferences of non-investors in the firm.
g) Please confirm that the only equity investor in OPG is the people of Ontario through the Province of Ontario.
h) Please describe and discuss in full all analyses that OPG has performed to indicate that the private cost of capital estimated by Foster Associates is also the Social Cost of Capital

4. **Topic:** Term of debt

Reference: Long Term Debt: C1/T1/S2/P2

Request: a) Please discuss the matching principle in full and indicate whether this refers to the duration of the funds borrowed or the term of the interest payment reset. That is, if the debt were long term but the interest rate floated every six months would this satisfy the matching criteria?

b) Please discuss in full all studies done to consider the long term cost of 1) a fixed rate funding strategy versus 2) a short term funding strategy, for example, of rolling over commercial paper.

c) For the forecast cost of long term debt please provide the latest Consensus Economics forecast for ten year debt costs and a table showing the monthly yield on long term Canada bonds for the last five years.

d) Does OPG believe that the Canadian and US economies are going into recession or at least a slowdown and that borrowing costs increase during a slow down?

e) Further to d) please provide a brief overview of OPG's view of the Canadian economy to justify d) above and a discussion of what the shape of the yield curve currently implies for forecast interest rates.

f) Please provide a table with the indicative monthly yield of OPG's longest term outstanding debt, the equivalent Canada bond yield and the spread between the two since 2000.

g) Please provide a table of the same data requested in f) for an average industrial A rated bond and an average utility A rated bond.

5. **Topic:** Cost of Long Term of debt

Reference: Cost of long term debt: C1/T2/S2/P1

Request: a) If OPG believes in matching why in 2007 did it issue ten year debt when the markets were liquid and receptive to longer term issues?

b) Further why did it negotiate with OEFC to issue $billions with a term up to ten years, rather than a longer term to match its long duration assets?

c) Please provide the credit spread discussed on page 4 for each debt issue to OEFC since inception and OPG's DBRS credit rating at the time of the funding.

d) Please explain in detail why OPG hedges its OEFC debt issues. Is it OPG's view that the hedged interest rate cost is less variable than the rate that actually prevailed? If so, please explain why this would be the case.

e) Please provide a table of all OEFC debt issues that were hedged and the cost or benefit of the forward swap transactions so the cost can be compared to the 0.23% cost referred to on page 10.

6. **Topic:** Cost of Short Term of debt

Reference: Cost of Short term debt: C1/T2/S3/P1

Request: a) Please discuss in detail why the bank credit facility is needed to backstop BA issues, when normally it is used to backstop commercial paper issues?

b) On page 2 the credit facility is described as costing 50-55 basis points over any issue of BA's. Is this the stamping fee and is in addition to the annual $1.3-1.4 million fixed fee?

c) What is OPG's commercial paper rating?

d) For the cost of the commercial paper program, if the dealer fee is 0.10% and the spread over BA's in 0.10% for a total cost of 20 bps over the BA rate why would OPG maintain a facility to issue BA's at 50 bps over BA or a securitisation program at 33.75 bps over the BA rate?

e) Please include a full costing as of March 31, 2008 of issuing short debt as 1) commercial paper 2) BA's 3) securitised BAs.

f) If OPG cannot forecast the future course of short term interest rates, has it considered asking for a deferral account to capture the future costs? If not, why not?

7. **Topic:** Fair Return Standard

Reference: Ms. McShane's Evidence C2/T1/S1/P12

Request: Ms. McShane asserts that stand alone principle requires that the associated cost of capital does not depend on the "happenstance" of ownership.

a) Would Ms. McShane agree that the cost of capital is the minimum required rate of return necessary to maintain market values, if not please provide references to the literature to the contrary.
b) Would Ms. McShane agree that market values always reflect the happenstance of ownership and are determined by those buying and selling the shares? If not why not?
c) Would Ms. McShane agree that OPG is government owned due to policy (political) decisions made by the people of Ontario that it is too important for its decisions to be made based on private ownership, if not why not?
d) Does Ms. McShane's "happenstance" of ownership mean that she would ignore the above political decisions and have OPG make decisions as if it were privately owned?
e) Would Ms. McShane please indicate where in her testimony she has taken into account that OPG is owned by the people of Ontario and not private investors?
f) Would Ms. McShane please indicate whether she has ever testified on the social cost of capital and where and under what circumstances it differs from the private cost of capital?

8. **Topic:** Stand alone

Reference: Ms. McShane’s Evidence, C2/T1/S1/P12

Request Ms McShane asserts that the stand alone principle means that the cost of capital should be equivalent to what the utility would face raising capital on its own. Would this conclusion continue to hold if the utility were at an ***inefficient*** scale and would not survive if the market were competitive and unregulated? If the answer is yes please explain how regulation then acts as a surrogate for competition. If the answer is no please explain how she would impute financing costs to a utility that could then not access capital on reasonable terms as a stand alone utility.

9. **Topic:** Use of Debt

Reference: Ms. McShane’s Evidence, C2/T1/S1/P12

Request Ms. McShane asserts that in the absence of income taxes and added costs related to the loss of financial flexibility the overall cost of capital would not change as the method of financing is altered.

a) Please provide empirical support for this assertion.
b) Is it Ms. McShane’s judgement that the only reason to finance with debt is because of an interest tax shield?
c) Is Ms. McShane aware that most Canadians finance their house purchase with debt and that mortgage interest is not tax deductible in Canada? Why in her judgement do Canadians finance their house purchases with debt?
d) Is Ms McShane aware that corporations used debt financing prior to it being tax deductible, even before there was a corporate income tax? Can she explain why they might have done this?
e) Given her answer to c) above would Ms. McShane qualify her assertion that interest deductibility is the only advantage of using debt?
f) Would Ms. McShane judge that the fact that corporations chose to finance with debt prior to their being an interest tax shield indicates they thought it to be value enhancing?
g) Would Ms. McShane agree that issuing debt to enhance value means the same as reducing the cost of capital?

10. **Topic:** Use of Debt

Reference: Ms. McShane's Evidence, C2/T1/S1/P14

Request Ms. McShane asserts that the capital structure and required rate of return are inter-dependent.

a) Would Ms McShane agree that this proposition is simply a restatement of the fact that financial leverage (use of debt) magnifies risk?
b) Does a) refer to the book leverage issued by a utility or the market value of leverage used by an investor or both?
c) Would Ms. McShane agree that for a utility with no business risk due to the use of deferral accounts, then the use of debt cannot magnify business risk that does not exist? If not why not?
d) If Ms. McShane were presented with evidence that a utility always earned its allowed ROE would she agree that the utility has no business risk? If not why not?

11. **Topic:** Equity Risk Premium tests

Reference: Ms. McShane's Evidence, C2/T1/S1/P23

Request Risk Free rate

a) Please provide the most recent copy of the Consensus Economics interest rate forecast and Ms. McShane's estimate of the 30 year Canada bond yield.
b) Given the weakness of the US economy and the dramatic decline in US short term interest rates please provide a justification for why interest rates would increase at this stage of the business cycle.

12. **Topic:** Equity Risk Premium tests

Reference: Ms. McShane's Evidence, C2/T1/S1/P24-31

Request Ms. McShane's estimate of the market risk premium of 6.5%

a) Please indicate the market risk premium used by Ms. McShane, either alone or with Dr. Sherwin, in each case before the OEB since 1995.
b) Ms. McShane starts her estimation period in 1947. Please indicate when interest rate controls were removed in Canada and what she understands by the Accord.
c) Ms. McShane estimates the overall equity return at 11.5-12.25% (page 30), would Ms. McShane accept a long run inflation estimate of 2% ? If not why not?
d) Given her answer to c) above what would be Ms. McShane's estimate of the real equity return consistent with her nominal return in c)?
e) Can Ms. McShane please provide her estimate of the real return earned on Canadian equities since 1922, 1947 and 1956 and discuss whether her current estimate is consistent with realised real equity returns in Canada.
f) Does Ms. McShane believe that the market risk premium is constant? If she does please provide statistical support for this proposition.
g) Does Ms McShane believe that the market risk premium is constant across markets where there are different amounts of risk and where investors may differ in terms of their risk aversion?
h) Please provide all evidence to support a view that the US and Canadian markets have similar risk levels and Canadians and Americans are equally risk averse.

13. **Topic:** Referenced materials

Reference: Ms. McShane's Evidence, C2/T1/S1/

Request: Please provide copies of all the referenced materials in Ms. McShane's testimony.

14. **Topic:** Relative Risk Adjustment

Reference: Ms. McShane's Evidence, C2/T1/S1/P31

Request:

a) Please provide all references to finance theory that determines required rates of return based on relative standard deviations.
b) Please indicate whether Ms. McShane believes that the equity markets are dominated by retail or institutional buyers and whether this has changed over the last 20 years?
c) Given her answer to b) does Ms McShane believe that institutional investors hold undiversified portfolios?
d) Can Ms. McShane explain what a Sharpe ratio is and how it is used?

15. **Topic:** Relative Risk Adjustment

Reference: Ms. McShane's Evidence, C2/T1/S1/P31

Request:

a) Can Ms. McShane confirm that OPG is owned by the province of Ontario?
b) Would Ms. McShane please assess the risk of OPG relative to the stream of tax revenues expected to accrue to the province and whether this risk assessment is the same as that for the beta coefficient she estimates?
c) Would Ms. McShane generally agree that since provincial tax revenues are a percentage of the profits *and wages* earned in the province, it is more diversified than the stock market claims on profits? If not why not?
d) If the beta of OPG is smaller as indicated in c) above such that the province requires a lower rate of return would economic theory indicate that these efficiency gains in terms of lower required levels of profit should be ignored? Please discuss in full.
e) Given that the Canadian institute of Actuaries data goes back to 1922 explain in detail why Ms. McShane decided to start her estimation period in 1947.
f) Please provide Ms. McShane's estimate of the realised excess return of Canadian equities over bonds for the period 1947-1956.
g) Please explain in detail how the four factors in footnote 18 lead to the choice of 1947 as the start date rather than some other date.

16. **Topic:** Relative Risk Adjustment

Reference: Ms. McShane's Evidence, C2/T1/S1/P32

Request:

a) Would Ms. McShane please provide the financial justification for adjusting betas upwards from the observed market betas?
b) Would Ms. McShane agree that at times bond betas have been very significant in Canada? If not please provide statistical support for the absence of such a premium in bond yields.
c) Please estimate the correlation coefficient between the utility sub index and the TSE300/Composite index for ten year periods with annual rates of return since 1956.
d) In Ms. McShane's judgement would holding the utility sub index separately as a diversified portfolio violate modern portfolio theory based on the correlation estimates in c)?

e) Can Ms. McShane provide any supporting evidence to justify the implication that investors might just hold utility shares and no other investments?

17. **Topic:** Beta Estimation

Reference: Ms. McShane's Evidence, C2/T1/S2/P36,

Request: a) Can Ms. McShane confirm that in using five year estimation windows to estimate betas she implicitly assumes that all risks materialise during that five year window?

b) Alternatively can Ms. McShane confirm that if a risk does not materialise during a five year estimation window that the use of a five year window means that she will not estimate that risk in her beta estimates?

c) Does Ms. McShane believe that estimation procedures require the use of judgment in for example looking at sample periods?

d) Is Ms McShane aware of any research that indicates that utility betas do not regress towards 1.0 as she assumes in her adjustment model, but instead they regress towards their grand mean?

e) What is Ms. McShane's estimate of the grand or overall mean of the utilities in her Table 2?

f) Can Ms. McShane "update" her table by assuming instead a 50% adjustment towards the utility mean she estimates in d) above?

g) Can Ms. McShane confirm from her Schedule 8 that at no time since the 1989-1993 estimation period has the average unadjusted beta of Canadian utilities been above 0.52? If not, why not?

18. **Topic:** Benchmark Utility Risk Premium

Reference: Ms. McShane's Evidence, C2/T1/S1/P37

Request: Ms. McShane estimates the benchmark utility risk premium at 4.25-4.50% for her bare bones equity cost estimate

a) Please provide the ROE adjustment mechanisms currently in use by this board, The National Energy Board, The BC Utilities Commission, the Alberta Utilities Commission (former AEUB) and the Regie.

b) Please indicate the allowed ROEs and associated utility risk premiums implied by the above adjustment mechanisms for each year since 2000 and contrast them with her estimated utility risk premium.
c) Please indicate any Canadian utility on the above adjustment mechanisms that has failed to attract capital to finance its operations during this period.
d) Would Ms. McShane accept that the ROE adjustment mechanisms are fair and reasonable and provide references to any and all statements she has made during this period either to the effect that they are or are not reasonable?

19. **Topic:** Historic (Experienced) Utility Risk Premiums

Reference: Ms. McShane's Evidence, C2/T1/S1/P37

Request:

a) Can Ms McShane confirm that if the allowed ROE has been consistently set too high and not been downwardly adjusted to reflect lower interest rates, then this could explain why utility prices and realized returns have been higher than expected in the same way that bond returns have been higher than expected?
b) Would Ms. McShane agree that looking at realized returns from utility stocks can be seen as circular reasoning and not reflecting risk but simply regulatory lag in failing to adequately adjust allowed ROEs? If not why not?
c) Can Ms. McShane please indicate any Canadian regulator that has specifically accepted looking at the realized return performance of Canadian utilities as a proxy for their risk and the required level of ROE?

20. **Topic:** Consensus estimates

Reference: Ms. McShane's Evidence, C2/T1/S1/P39

Request: Ms. McShane justifies her use of US data in part because of the availability of analyst forecast data.

a) Has Ms. McShane aver agreed that stock market analysts are optimistic, such that their growth forecasts consistently over estimated actual growth rates?
b) Is Ms. McShane aware of what the "global settlement" was? If so can she briefly explain what it was?
c) Would Ms. McShane agree that if a) is correct her DCF estimates over estimate the fair rate of return, if not why not?

d) Is Ms McShane aware of any academic evidence that supports the view that analyst growth forecasts are unbiased?

21. **Topic:** Risk premium regression

Reference: Ms. McShane's Evidence, C2/T1/S1/P41

Request: a) Please provide all the underlying data necessary to replicate the risk premium estimates reported in footnotes 40-44.

b) How are we to interpret the regression estimate on page 41 when the long term interest rate appears as both a dependent variable (through the risk premium) as well as the independent variable?

c) Why does Ms. McShane support a 0.75 adjustment mechanism when her estimates from the US utilities is 0.606% adjustment of the risk premium with changes in long term interest rates? Please explain how these results are related to her adjustment mechanism recommendation.

d) Please report the results of the same regression estimate where Ms. McShane's dependent variable is 1) the overall DCF equity return, 2) the dividend yield component of the equity return 3) the growth component of the equity return.

22. **Topic:** Two Stage Growth Model

Reference: Ms. McShane's Evidence, C2/T1/S1/P43

Request: In the second stage of her DCF estimates Ms. McShane assumes that utilities growth rates will be the same as GDP.

a) Would Ms. McShane agree that with a constant proportion of after tax profits to GDP the overall market growth rate will be the same as GDP? If not, why not?
b) Would MS. McShane then agree that with the overall market dividend yield and the GDP growth rate we can then estimate a DCF return for the market as whole? If not, why not?
c) Please provide the estimate from b) for both Canada and the US.
d) Please provide all statistical support for the notion that utility profits can grow at the same rate as GDP.

Topic: Financial Flexibility

Reference: Ms. McShane's Evidence, C2/T1/S1/P45

Request: Ms. McShane justifies her 0.50% financial flexibility adjustment on the basis that this is to adjust upward the ROE for the cost of equity to allow the utility stock price to be 105-110% of book value.

a) Would Ms. McShane agree that the observation that actual market to book ratios are well above 105-110% indicates that this adjustment is not necessary, if not why not?
b) Would Ms. McShane agree that in previous hearings before the OEB she has used the DCF model to estimate the financial flexibility adjustment and that it depends on the dividend payout rate? If not why not?
c) Would Ms. McShane agree that if 100% of the equity capital has been raised through retained earnings and this is expected to continue then no financial flexibility adjustment is needed? If not, why not?
d) Can Ms. McShane please indicate the proportion of OPG equity that has come from retained earnings and the proportion that has borne issue costs.

23. **Topic:** Comparable Earnings

Reference: Ms. McShane's Evidence, C2/T1/S1/P46-50

Request: With reference to the use of comparable earnings estimates:

a) Can Ms. McShane indicate the last time a Canadian regulator ***specifically*** incorporated a comparable earnings estimate into the allowed ROE? Please provide the full documentary support with reference to the decision.
b) Can Ms. McShane confirm that the last time the OEB placed any weight on comparable earnings testimony it was with a market to book adjustment to lower the ROE estimate to be consistent with estimates of the investor's fair rate of return?
c) Can Ms. McShane indicate when she has ever used comparable earnings testimony in her recommendations when they were ***below*** the DCF and equity risk premium estimates?
d) Does Ms. McShane believe that an estimate that is 2.25%-2.625% above the average values of her other estimates is reasonable? In other words is a difference of this order of magnitude within a reasonable range?

24. **Topic:** Two Factor Model

Reference: Ms. McShane's Evidence, C2/T1/S1/P156-158

Request: **M**s. McShane presents a two-factor model where utility returns are driven by a market factor and a bond factor.

a) Can Ms. McShane confirm that the market beta for her utilities falls from 0.58 to 0.48 once an interest rate factor is included?
b) Can Ms. McShane also confirm that the long bond includes 100% of this interest rate factor?
c) Can Ms. McShane confirm that the yield on the long bond includes the risk premium attached to the long bond risk factor?
d) Can Ms. McShane estimate the risk premium currently embedded in long Canada bonds given her current and forecast yield curve.
e) Can Ms. McShane confirm her overall equity return of 11.5-12.25% (page 30) and forecast bond yield of 5% (page 24)?
f) Can Ms. McShane confirm that her estimates of utilities as 50% as risky as the market and 50% as risky as the long bond means a utility fair return in a range of 8.25% (0.5*11.5%+0.5*5%) to 8.625% (0.5*12.25% + 0.5*5%) ? If not why not?

25. **Topic:** Two Factor Model

Reference: Ms. McShane's Evidence, C2/T1/S1/P53

Request: With respect to the perceived support of the province as a shareholder

a) Would Ms. McShane agree that this support reflects the vital importance of electricity generation to the Province and is simply a part of their business risk? If not why not?
b) Would Ms. McShane agree the government, electricity ratepayers and the people of the province are all largely the same? If not why not?
c) In terms of the cost of capital would Ms. McShane agree that for existing assets there are no welfare implications of the tax payers subsidising ratepayers if they are largely the same group since these are simply wealth transfers? If not why not?
d) In contrast to c) above would Ms. McShane agree that there are welfare implications if an incorrect cost of capital is used to justify new investment? If not why not?
e) Is it Ms. McShane's view that the same cost of capital should be used for utility rate making (pricing) as for investment purposes? If it is please provide all support from economic theory for such a proposition?
f) Given her answer to e) above would Ms. McShane judge crown corporations and the activities of the old Ontario Hydro to be inefficient? If so please explain in detail.

26. **Topic:** Long Term Risks

Reference: Ms. McShane's Evidence, C2/T1/S1/P55

Request: With respect to the statement that longer term risks tend to be downplayed

a) Can Ms. McShane give an example of a long run risk that either she or Dr. Sherwin have advanced for any Ontario utility that has actually materialised to the harm of their shareholders?
b) In any examples given in a) above can Ms. McShane provide the dollar exposure and its impact on the ROE during the period it occurred?
c) In any examples in a) above can Ms. McShane provide the actual and allowed ROE for that utility from the time the event occurred until 2007 and can she assess whether throughout the time period the utility in question on average earned its allowed ROE, under-earned or over-earned.

27. **Topic:** Electricity Demand

Reference: Ms. McShane's Evidence, C2/T1/S1/P57

Request: With respect to Ms. McShane's demand forecast and the impact of conservation and operating leverage

a) Please provide the peak demand forecast for 2025 so that the 6300 MWs of savings can be compared to the 2025 forecast versus the 2006 peak.
b) Please confirm that operating leverage refers to volume risks? If not why not?
c) Given b) above will Ms. McShane confirm that volume risk for baseload generating plants is low, if not why not.
d) Can Ms. McShane forecast (quantitatively) the sensitivity of OPG's ROE to revenue changes and how this is expected to evolve over the next ten years?
e) Can Ms. McShane confirm that the obligation to serve is normally represented as a risk factor, whereas in this instance she appears to say that its absence increases OPG's risk? Can she explain whether in her judgement does the obligation to serve increase or reduce a utility's risk?

28. **Topic:** Electricity Competition

Reference: Ms. McShane's Evidence, C2/T1/S1/P59

Request: With respect to baseload competition

a) Can Ms McShane confirm that wind power is currently uneconomic and if it competes with OPG's regulated assets it will only be because of provincial subsidies?
b) Does Ms. McShane believe that OPG's shareholder (The Province of Ontario) should get a risk premium due to the fact that it might subsidise a competitor (wind power)?
c) Can Ms. McShane confirm that it was the provincial government that decided to lease the Bruce Power generating assets.
d) Does Ms. McShane believe that OPG's shareholder (The Province of Ontario) should get a risk premium due to the fact that it decided to lease generating assets to a third party?

e) Does Ms. McShane believe that OPG's shareholder should get a risk premium due to actions that it voluntarily undertook? If so please provide examples from economic theory that support such a proposition.

29. **Topic:** Regulation

Reference: Ms. McShane's Evidence, C2/T1/S1/P59

Request: With respect to the comment that regulation can expose utilities to enormous risks

a) Is it Ms. McShane's judgement that regulation has evolved in Ontario over the last thirty years to increase the risk exposure of Ontario utilities? If so please provide specific examples where an Ontario utility has been exposed to a material increase in risk due to decisions of the OEB.

b) In each of the following examples of regulatory change over the last thirty years can Ms. McShane indicate whether on balance it has tended to increase or decrease a utility's risk:
   a. The introduction of forward test years;
   b. The introduction of fuel pass through accounts such as for purchased gas costs;
   c. The introduction of normalised weather or full weather volume deferral accounts;
   d. The introduction of ROE adjustment mechanisms;
   e. The removal of competitive services from the regulated operations, such as water heaters;
   f. The reduction of regulatory lag;
   g. Ring fencing to isolate regulated operations from the actions of unregulated parents;
   h. The widespread adoption of deferral accounts to pass on all costs to ratepayers.

c) With respect to political risk (page 64) does Ms. McShane believe that the province as the shareholder of OPG should get a higher risk premium due to the possible actions of the province as the government? If so please explain in detail the logic behind this argument.

30. **Topic:** Deferral Accounts

Reference: Ms. McShane's Evidence, C2/T1/S1/P62

Request:

a) Can Ms. McShane quantify the risk reduction associated with the following deferral accounts:
   a. Nuclear liabilities deferral account;
   b. Capacity increases/additions and refurbishments deferral account;

c. Water conditions deferral account.

b) Would Ms. McShane agree that a) and b) are the major risks faced by OPG with respect to its nuclear facilities, if not why?

c) Would Ms. McShane agree that c) is the major risk associated with OPG's hydro plants, if not why not?

d) Ms. McShane notes that all utilities have the ability to apply for deferral accounts. In her judgement how prevalent are deferral accounts in the US?

e) Does NB Power have similar nuclear deferral accounts with respect to its nuclear plant?

f) Does FortisBC, BC Hydro, Manitoba Hydro and Quebec Hydro have similar water conditions deferral accounts?

g) Given her answers to e) and f) above would she say that OPG has more or less regulatory protection than the referenced utilities? Please explain in full.

h) Please provide specific support for the statement on page 63 that OPG has more regulatory risk that the typical regulated utility.

31. **Topic:** Hydro operations

Reference: Ms. McShane's Evidence, C2/T1/S1/P65

Request:

a) Is Ms McShane saying that if OPG's baseload regulated generating plants had their costs recovered through a fixed price contract rather than volume based cost recovery, they would have no (or very little) risk?

b) Can Ms. McShane provide examples of any Canadian utility that has suffered harm, ie., failed to earn its allowed ROE due to the adoption of incentive regulation.

c) Can Ms. McShane please provide the allowed and actual earned ROE for FortisBC, Terasen Gas and GMI for the period that they have been on incentive regulation?

d) Ms. McShane refers to the impact of the water deferral account as putting OPG onto a similar footing as other hydro generating utilities. Can Ms. McShane provide the allowed ROE and common equity ratios for these utilities? In particular would she regard FortisBC as a useful comparator? Can she please provide FortisBC's allowed common equity ratio and its allowed ROE?

32. **Topic:** Nuclear operations

Reference: Ms. McShane's Evidence, C2/T1/S1/P68

Request:

a. Ms McShane notes that nuclear's costs are over 90% fixed and the remaining fuel costs will be covered by a proposed deferral account. Can she please explain what costs (in $ and a % of total costs) nuclear is exposed to that are either not fixed or covered by deferral accounts?
b. Please indicate whether the costs of repairing nuclear facilities are covered by the capacity increases/additions and refurbishments deferral account.
c. Please indicate whether nuclear is exposed to maintenance costs for its nuclear facilities if they are on a forward test year basis and whether this is any different to any other regulated utility.
d. In terms of the impact of outages, please indicate whether nuclear is exposed to unanticipated or anticipated outages. If unanticipated please confirm that it is only exposed to unanticipated outages beyond the forecast levels.

33. **Topic:** Nuclear Decommissioning

Reference: Ms. McShane's Evidence, C2/T1/S1/P73

Request:

a) Does Ms. McShane see a difference between OPG versus the Province of Ontario paying future decommissioning costs? If so please explain?
b) Would Ms. McShane expect any excess decommissioning costs to be allocated as an electricity surcharge or recovered from ratepayers through some other means?
c) Is Ms. McShane aware that Ontario ratepayers are currently paying a "stranded debt cost" on their monthly electricity bills? If so can she explain how this charge was arrived at?
d) Would Ms. McShane agree that ultimately the residents of the Province of Ontario will pay the nuclear decommissioning costs either through OPG charges, an electricity surcharge, or higher taxes? As long as OPG is owned by the residents of the province does Ms. McShane see any difference in these payment options? If so please explain.
e) If OPG's nuclear plants become economic does Ms. McShane envisage that some of the costs will be moved to ratepayers as a separate charge as has happened in the past or that they will be paid directly by the Province either by reduced profits by OPG or the transfer of some assets away from OPG?
f) Given her answers to e) above would Ms. McShane believe that the residents of Ontario, or OPG, bear the risk of nuclear decommissioning costs?
g) Would Ms. McShane please indicate how many nuclear plants are in existence in the US and which ones are privately owned and which ones state owned either directly as state owned enterprises (Crowns) or are majority owned by government organisations?

h) Further to g) above would Ms. McShane indicate whether US privately owned nuclear plants have the same regulatory protection through deferral accounts as OPG?

i) Given her answer to g) above would Ms. McShane agree that it is reasonable for the US Department of Energy to be responsible for used fuel disposal (page 74), whereas in Ontario since OPG is government owned it makes little difference? If not please explain in detail.

j) Given her answers to g) and h) above would Ms. McShane believe that S&P's risk assessment is the same whether nuclear plants are government or privately owned?

34. **Topic:** Bond Ratings

Reference: Ms. McShane's Evidence, C2/T1/S1/P79-80

Request: Ms. McShane states that OPG needs an A rating

a) Will Ms. McShane confirm that in her schedule 28 only 3 out of 24 "high-generation" electric utilities have A ratings?

b) Please explain why Ms. McShane believes that OPG without an obligation to serve has to have a higher bond rating than is typical for US high generating utilities?

c) Would Ms. McShane agree that the median and average common equity ratio for these high generating US utilities is 45%?

d) Would MS. McShane explain why she feels that OPG with greater regulatory protection and a higher bond rating than these US comparators needs significantly more common equity?

35. **Topic:** Bond Ratings

Reference: Ms. McShane's Evidence, C2/T1/S1/P81-88

Request:

a) Please provide copies of all the referenced rating reports

b) Can Ms. McShane amplify on the comment that there are no regulated generating companies (page 88). Can she explain in detail how generating companies are regulated in the US?

   a. Are integrated companies regulated?
   b. Is generation generally unbundled and competitive?

c. Are nuclear plants in the US generally not regulated on a cost of service basis? Please explain in detail how they are regulated.

c) Please provide data (names, bond ratings, type of generation, debt ratio) for all "high-generation" utilities that have bond ratings that are not investment grade (page 92).

36. **Topic:** Levered Beta Adjustment

Reference: Ms. McShane's Evidence, C2/T1/S1/P93-96

Request: Ms. McShane uses the betas of "high-generating" utilities to imply an adjustment for OPG

a) Can Ms. McShane confirm that none of these utilities are regulated on a cost of service basis like OPG?
b) Can Ms. McShane confirm that regulation, particularly in Canada, normally reduces a utility's risk?
c) Can Ms. McShane confirm that she has used adjusted betas to get her estimates?
d) Can Ms. McShane confirm that by adjusting betas upward with 1.0 she has increased the risk assessment of US "high-generating" utilities?

37. **Topic:** Views of rating Agencies and Utility Analysts

Reference: Ms. McShane's Evidence, C2/T1/S1/P101-106

Request: Would Ms. McShane agree that neither the bond rating agencies nor utility analysts represent rate payers? Further, would she agree that utility analysts are primarily interested in higher stock prices and rating agencies lower risk debt (higher bond prices) and neither of these are consistent with the interests of ratepayers or the responsibilities of the Board to render "just and reasonable" rates?

38. Topic: Reports

Reference: Ms. McShane's Evidence, C2/T1/S1

Request: Please provide copies of all referenced reports contained in Ms. McShane's evidence.

39. **Topic:** Composition of the TSX and Canadian equity markets

Reference: Ms. McShane's Evidence, C2/T1/S1/P134

Request:

a) Please indicate where in financial theory it indicates that an index should be "balanced" across different sectors?
b) Please confirm that one of the biggest difference between the US and Canadian market indexes is health care, which is a direct result of provincial health plans and public policy.
c) Further to b) would Ms. McShane be happier with the Canadian equity market if we privatised health care and increased out spending on health care to the same share of GDP as in the US?
d) Would Ms. McShane agree that the extra performance of income trusts was due to the fact that distributions were structured to be free of corporate income tax? Would Ms. McShane further agree that if the 16.4% return had actually paid corporate income taxes of say 40% then the return to investors would have only been 0.6*16.4% or 9.8% roughly the same as that on the TSX? Further would Ms. McShane agree that the Halloween 2006 tax changes have removed this tax advantage to income trusts so their extra performance can not be regarded as indicative of future performance or sub par equity market performance?
e) If Ms. McShane believes the foreign property restriction has increased Canadian equity returns by 0.50-1.0% (page 138) has she taken this into account in reducing her historic estimates of the Canadian market risk premium?

40. **Topic:** Comparable Earnings

Reference: Ms. McShane's Evidence, C2/T1/S1/P170

Request:

a) Can Ms. McShane confirm that before this Board her previous collaborator, Dr. Sherwin, told the Board to ignore comparable earnings estimates since at that time they were unreliable?
b) Can Ms. McShane confirm that her current comparable earnings estimates are higher than either her DCF or risk premium estimates?
c) Can Ms. McShane confirm that as a simple matter of arithmetic if comparable earnings estimates are only included when they are higher than the DCF and risk premium estimates that if accepted by the Board the utility would earn more than her sample of comparable firms? If not why not?

d) Please provide any theoretical support for the use of betas to compare accounting returns (page 171)?

e) Please explain in full why the market to book ratio of a regulated utility should be about 1.0 (page 175).

f) Please confirm that only for utilities are book values a basis for pricing, that is, for unregulated competitive firms the book value has no specific meaning since it reflects sunk costs.

g) Please confirm that the "Fed Model" that Alan Greenspan used to forecast the US asset bubble in 1996 was a modified Gordon growth model relative to the actual value of the S&P500 and not a Q model.

h) Please provide the data and references to replicate the graph in Figures F1 and F2.

i) Please confirm that the asset bubble in Figure F2 indicates that the US market is more prone to "speculative excess" than is the Canadian market in that their values deviate more from their underling values

j) Would MS. McShane agree that the US market is now in the process of unwinding from a similar "speculative excess" in the sub-prime and real estate markets? If not why not?

k) Given the more speculative nature of the US market as indicated by F1 and J) would Ms. McShane expect equity risk premiums to be higher or lower in the US than Canada. Please explain in full.

41. **Topic:** Financial Flexibility Adjustment

Reference: Ms. McShane's Evidence, C2/T1/S1/P183

Request:

a) Please estimate and explain the financial flexibility adjustment (add on to the bare-bones estimate) required to target the median market to book ratio of the Canadian utility sample used by Ms. McShane.

b) Please explain in full why any financial flexibility adjustment is needed when

   a. The equity in OPG has been raised by utility ratepayers as retained earnings and not contributed from the equity market?
   b. OPG is owned by the Province of Ontario and has no publicly issued equity so there can not be a "market break" or decline in the stock price when equity is issued to raise capital to serve?

42. **Topic:** Integration

Reference: Ms. McShane's Evidence, C2/T1/S1/P190

Request:

a) Please indicate whether Ms. McShane uses the phrase integrated in a technical sense or a general sense?
b) Please cite any research that has shown that Canadian and US equity markets are integrated in the technical sense that the "law of one" (LOP) price holds.
c) Please explain what the LOP is.

43. **Topic:** Beta Estimation

Reference: Ms. McShane's Evidence, C2/T1/S1/P194

Request:

a) Please confirm that the Fuller et al research follows from the general result that the beta of a portfolio is a weighted average of the betas of the securities in the portfolio.
b) Please confirm that when applied to the division of a firm this implies that there be:
    a. No relationship between the divisions
    b. No corporate overheads
    c. No coinsurance effect from imperfectly correlated assets increasing the firm's debt capacity
    d. No holding company discount.
c) In Ms. McShane's judgment are the assumptions in b) reasonable?

44. **Topic:** Beta Estimation

Reference: Ms. McShane's Evidence, C2/T1/S1/P199

Request:

a) Ms. McShane estimates the extra risk premium for OPG at 1.25-1.50%, please confirm, that these estimates are based on
    a. Ms. McShane's 6.5% market risk premium;
    b. Ms. McShane's *adjusted* betas;
    c. The "high-generation" beta for non-regulated firms
    d. The Fuller et al methodology as indicated in #44
b) Please confirm that the common equity ratios for the OPG comparables in Table I-3 are in the range 43%-44.2%
c) Please confirm that if the Board finds its adjustment mechanism to be fair and applies it to the existing 45% common equity ratio then Ms. McShane's evidence indicates that the extra risk premium required is less than her 1.25-1.50% risk premium due to a) above and the fact that OPG has slightly more common equity than her comparables.