

Board Staff Interrogatory #013

Ref: Ex. C1-T1-S1
Ex. C1-T1-S3, Table 2

Issue Number: 3.1

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

Interrogatory

OPG proposes that the cost of capital parameters be updated in accordance with the Board's 2009 Cost of Capital Report based on data three months prior to the proposed effective/implementation date of March 1, 2011. This would correspond to using data from Bloomberg, Consensus Forecasts and Bank of Canada for November, 2010.

OPG proposes that the return on equity ("ROE") and the deemed long-term debt rate based on November, 2010 data would be used for both the 2011 and 2012 revenue requirement calculations. However, OPG has provided separate forecasts for each of 2011 and 2012 for the short-term debt rate and for its actual/embedded debt.

- a) Please explain why OPG believes that it is appropriate to use different estimates for 2011 and 2012 for some of the cost of capital parameters but not for all.
- b) OPG has forecasted a deemed short-term debt rate under its commercial paper program of 0.61% for 2010, 1.94% for 2011 and 3.43% for 2012. These amounts appear to be based on the Global Insight forecasts of 0.46% for 2010, 1.79% for 2011 and 3.28% for 2012 plus 15 basis points. However, OPG is proposing that the deemed long-term debt rate, for the unfunded portion of deemed long-term debt capitalization, and the ROE be held constant for setting the 2011 and 2012 revenue requirements. Please provide an explanation for why OPG believes that forecasted market conditions that affect the bankers' acceptance rate (and hence the short-term debt rate that OPG may have to face) will not also affect rates for medium and long-term debt and for market-based rates of return.

Response

- a) OPG used different estimates for 2008 and 2009 for some cost of capital parameters, but not for all and this was accepted by the OEB in EB-2007-0905.
- b) OPG's evidence does not reflect the use of medium term debt. Factors affecting Banker's Acceptance rates are relevant to setting short-term rates. OPG's forecast of planned long-term debt issues reflects the market conditions applicable to long-term debt. Similarly, the market-based rate of return in the OEB's approved ROE adjustment methodology reflects changes in 30-year Long-Canada Bond yields and 30-year A-rated

1 Canadian utility bonds. While the underlying factors that influence bankers' acceptance
2 rates are similar to those that influence long-term debt rates and the cost of equity (e.g.,
3 expected inflation, the phase of the business cycle), the impacts of those factors on the
4 costs of different types of capital (short-term versus long-term, debt versus equity) differ.

CCC Interrogatory #011

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

Issue Number: 3.1

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

Interrogatory

OPG retained Foster Associates to examine potential methodologies for developing technology specific costs of capital. Was the Foster Study tendered? If not, why not? Please provide the terms of reference. What were the costs of the study and how were those costs recovered?

Response

Foster Associates, Inc. was engaged to conduct the study through an invitational competitive Request for Proposal ("RFP") process. The terms of reference for the engagement are provided in Attachment 1. The scope of the assignment is in Appendix C - Specifications.

The cost of the study was \$82,937 (U.S. dollars). The costs were recovered through the approved payment amounts.



REQUEST FOR PROPOSAL

for

**CAPITALIZATION & COST OF CAPITAL
CONSULTING SERVICES**

Issue Date: October 02, 2009

Ontario Power Generation Inc. RFP Number: AM-2009-070

Closing Date and Closing Time: 4:00 p.m. (Toronto time) on October 23, 2009

Closing Location: Proposal Depository, HG103, 700 University Avenue, Toronto, Ontario, Canada M5G 1X6

Ontario Power Generation Inc. Supply Chain Representative: Amir R. Mirshahi, Sr. Supply Chain Specialist, 700 University Avenue, H07A14, Toronto, ON M5G 1X6 (416) 592-6876, amir.mirshahi@opg.com



Amir R. Mirshahi
Sr. Supply Chain Specialist

Corporate Supply Chain

700 University Avenue, H07A14, Toronto, Ontario M5G 1X6

Tel: 416-592-6876 Fax: -416-592-2649
Email address: amir.mirshahi@opg.com

October 02, 2009

Dear Sirs/Madams:

Capitalization & Cost of Capital Consulting Service (the “Project”)

This request for proposals, as cancelled, amended or clarified from time to time (collectively, this “RFP”), is for inviting firms to provide Proposals for professional services to assist OPG in Capitalization & Cost of Capital Consulting Service.

This letter (the “**Invitation Letter**”) is an invitation to you to submit a Proposal to provide services for the Project. The terms that govern this RFP are set forth in the enclosed RFP Rules (the “**RFP Rules**”), and all capitalized terms used in the Invitation Letter are as defined in the RFP Rules).

Your Proposal, and other proposals that may be received by OPG, may be subject to negotiation. **This RFP is expressly not a call for tenders.**

The RFP Process:

Kindly execute below to confirm your agreement with the RFP Rules and to indicate whether or not you intend to participate in this RFP, and return it within two business days of receipt of this RFP. We confirm that you have been invited to participate in this RFP based on your agreement that the confidentiality provisions in the RFP Rules will apply immediately.

Only Qualified Proponents who meet minimum qualification requirements (the “**Mandatory Criteria**”) as determined by OPG, will be invited to participate in the Final Selection Process. Final Proposals will be evaluated on the Mandatory Criteria, certain rated criteria (the “**Rated Criteria**”) and on price/cost.

In addition, this RFP includes the following documents:

1. Contract document for the Project, (the “**Agreement**”), including
 - (a) the commercial terms Contract Standard A29-2009;
 - (b) all schedules to the commercial terms, including the specifications set out in Appendix “C (the “**Specifications**”);
 - (c) OPG’s Business Expense Schedule 2009
 - (d) Information and Consent Form set out in Appendix “D”;
2. the enclosed proponent information form (the “**Proponent Information Form**”);
3. the enclosed pricing submission form (the “**Pricing Submission Form**”);
4. OPG Confidentiality Agreement; and
5. all other documents that are made part of this RFP under the RFP Rules.

The information that you require to complete a Proposal is contained in the enclosed documents, subject to any Amendments or Clarifications that you may receive from OPG. Kindly complete your Main Proposal in the form of the Proponent Information Form and Pricing Submission Form in accordance with the RFP Rules.

Alternative Proposals are permitted and may be evaluated; however Alternative Proposals are also subject to the Criteria (including Mandatory Criteria) as set out below. If you wish to submit an Alternative Proposal, it should be included as a schedule to your Main Proposal and therefore any Alternative Proposal should be attached as a schedule to the Proponent Information Form. The pricing information for the Alternative Proposal should be clearly identified and included as a schedule to your Pricing Submission Form.

After the Closing Date for the receipt of Proposals, OPG will evaluate the various Proposals based on the Criteria and Criteria weightings set out below, using the evaluation methodology set out in the RFP Rules and determine which Proponent(s) (if any) it will short-list. These Proponents may be invited to present further clarification of their Proposals, if required. These presentations will be scored in accordance with the evaluation criteria set out for phase 2 in the RFP Rules. When this evaluation is complete, OPG will determine which Proponent(s) (if any) it will negotiate with. OPG may negotiate with more than one Proponent from time to time.

This RFP will be complete, and the RFP Rules will terminate, either when this RFP is cancelled by OPG, or when OPG enters into a contract with one of the Proponents. Notwithstanding the foregoing, the confidentiality provisions in the RFP Rules will survive such termination.

Criteria for Evaluating Proposals:

OPG will evaluate each Proposal in a three stage sequential process based on the following Criteria, and in the form below, to determine which Proposal(s) are best suited to OPG's requirements as set out in the RFP:

Stage 1 Mandatory Criteria

Each Proponent is required to satisfy Mandatory Criteria in totality.

"MANDATORY CRITERIA"	SATISFIED (YES)	SATISFIED (NO)
Proponents must demonstrate that key staff assigned to the project can complete the deliverables in the prescribed timelines		
Proponents must confirm that they have the capability/resources to deliver the required services under tight timelines typically associated with the Project, including the capability to manage reasonable schedule changes.		
Proponents must provide at least 3 relevant references.		
Qualification & Experience of the Proponents set out in Appendix "C must have experience testifying before a regulatory tribunal		

OPG may discontinue the evaluation of, and reject, any Proposal that does not satisfy any of the Mandatory Criteria.

Stage 2 Rated Criteria

Each Proposal must include a completed Proponent Information Form including all schedules.

“RATED CRITERIA”	WEIGHTING- Points
expertise and Success of key individuals; including experience Recency and Success providing Testimony, experience in Quasi Judicial hearing processes, knowledge of Ontario generation market and OPG, Nuclear & Hydroelectric generation experience-identify risks,	40
Methodology and approach including understanding of Specifications and RFP Instructions, detailed work plan for deliverables in Specification,	15
Timeliness/availability/independence including availability of key staff to meet project deadline.	5
Historical performance- references believe including key staff have the skills to undertake this work,	10
TOTAL	70

OPG may discontinue the evaluation of, and reject, any Proposal that does not meet the Minimum Rated Criteria threshold.

Each Proposal must score a minimum 50 points in the Rated Criteria to be considered to Stage 3.

Stage 3 Pricing Submission Form

The Rated Criteria will account for 50% of the total evaluation. The Pricing Submission Form will account for 50% of the total evaluation.

OPG reserves the right to not evaluate the Pricing Submission Form if any Mandatory Criteria or minimum Rated Criteria are not met.

OPG reserves the right to not evaluate the Pricing Submission Form if any Mandatory Criteria or minimum Rated Criteria threshold of any Rated Criteria are not met.

In the case of a tie in total evaluation score, the Proponent with lowest overall price will be selected.

If further information is required, please contact me.

Yours truly,

ONTARIO POWER GENERATION INC.

Amir R. Mirshahi, *C.P.P., C.P.M.*
Sr. Supply Chain Specialist

APPENDIX "A"
PROPONENT ACKNOWLEDGEMENT

October 02, 2009

Ontario Power Generation Inc.
700 University Avenue, H7A14,
Toronto, M5G 1X6, Ontario, Canada

Attention: Amir R. Mirshahi, Sr. Supply Chain Specialist
e-mail: amir.mirshahi@opg.com

Dear Sirs/Madams:

Capitalization & Cost of Capital Consulting Service
Ontario Power Generation Inc. RFP Number#AM-2009-070
Closing Date: October 23, 2009

We confirm receipt of this RFP relating to the Capitalization & Cost of Capital Consulting Service..
We have reviewed this RFP and we have decided that:

___ we will submit one or more Proposals in the form of the Proponent Information Form and Pricing Submission Form on or before the Closing Date and we have read, understood and agree with the terms set out in this Invitation Letter and the RFP Rules; or

___ we decline to submit a Proposal and are returning this RFP to the above address and confirm that the confidentiality provisions in the RFP Rules apply. We are not submitting a Proposal because _____

_____.

Send all communications to us respecting this RFP to:

Company:
Address:
Attention:
Telephone:
Fax:
E-mail:

Name of Proponent:

Name of Authorised Signatory:
Title:

APPENDIX “B”

RFP Rules Capitalization & Cost of Capital Consulting Service

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RFP Rules

Capitalization & Cost of Capital Consulting Service

Definitions

In these Instructions, the following terms have the respective meanings set out below.

- (a) **Agreement** is defined in the Invitation Letter.
- (b) **Alternative Proposal** is defined in section 0.
- (c) **Amendments** means extensions to the Closing Date or revisions, deletions, additions or substitutions of terms or other information respecting this RFP that are issued to Proponents in writing by the OPG Supply Chain representative referenced in section 0.
- (d) **Clarifications** means explanations or interpretations respecting this RFP that are issued to Proponents in writing by the OPG Supply Chain representative referenced in section 0.
- (e) **Closing Date** is defined in section 0.
- (f) **Closing Time** is defined in section 0.
- (g) **Confidential Information** is defined in section 0.
- (h) **Criteria** is defined in section 0.
- (i) **Declarant** is defined in section 0.
- (j) **Due Diligence Information** is defined in section 0.
- (k) **Invitation Letter** means the letter included in this RFP inviting each Proponent to submit a Proposal to provide goods and/or services for the Project.
- (l) **Main Proposal** is defined in section 0.
- (m) **Mandatory Criteria** is defined in the Invitation Letter.
- (n) **Minimum Rated Criteria** is defined in the Invitation Letter.
- (o) **OPG** means Ontario Power Generation Inc.
- (p) **Preferred Proponents** is defined in section 0.
- (q) **Pricing Submission Form** is defined in the Invitation Letter.
- (r) **Project** is defined in the Invitation Letter.
- (s) **Proponent** means a prospective proponent of this RFP.
- (t) **Proponent Information Form** is defined in the Invitation Letter.
- (u) **Proposal** means a Main Proposal and/or an Alternative Proposal.
- (v) **Rated Criteria** is defined in the Invitation Letter.
- (w) **Representatives** means OPG's subsidiaries and all employees, officers, directors, agents and representatives of OPG or any of its subsidiaries.
- (x) **RFP** is defined in the Invitation Letter.
- (y) **RFP Rules** means these RFP Rules including any Amendments and Clarifications.
- (z) **Specifications** is defined in the Invitation Letter.

Each capitalised term not otherwise defined in these Instructions has the meaning given to it in the Invitation Letter.

Interpretation

In these Instructions and in the Invitation Letter, words importing the singular include the plural and vice versa and the term “including” means “including without limitation”. All matters respecting this RFP and any Proposals are governed by, and are to be construed and interpreted in accordance with the laws of Ontario and the laws of Canada applicable in Ontario. Subject to section 0, each of the Proponents irrevocably submits to the exclusive jurisdiction of the courts of Ontario in respect of all matters respecting this RFP.

Amendments and Clarifications to this RFP

OPG may, at any time, cancel, amend or clarify this RFP by issuing a written notice to this effect to the Proponents. **No Proponent may rely on any oral explanation or interpretation respecting this RFP by OPG or any of the Representatives. No Proponent may rely on any cancellation, Amendment or Clarification unless it is issued by the OPG Supply Chain representative referenced in section 4. Accordingly this RFP will not be considered to be amended or clarified by any oral explanation or interpretation respecting this RFP by OPG or any of the Representatives.**

OPG will issue all Amendments to this RFP as numbered authorised Amendments. All cancellations, Amendments or Clarifications respecting this RFP that are issued by OPG will become part of this RFP. Each Proponent must include in its Proposal a statement that the Proponent has taken into account in the preparation of its Proposal each Amendment and Clarification. If a Proponent has not sought a Clarification and there is a subsequent controversy respecting the interpretation of a term of this RFP, including the Agreement, OPG’s interpretation will govern. OPG strongly encourages each Proponent to contact the OPG Supply Chain representative at the address set out in section 4 at least five business days before the Closing Date to confirm that such Proponent has received all Amendments and Clarifications.

Each Proponent is strongly encouraged not to make any assumptions and to seek Clarifications of any questions that such Proponent might have, particularly related to any error or discrepancy in this RFP identified by a Proponent. Proponents may not rely on any assumptions made or on any errors or discrepancies. Proponents are responsible for seeking a Clarification respecting any questions they may have respecting commercial, technical, site or other issues. Proponents must submit in writing to the Supply Chain representative at the address set out in section 4 all questions respecting commercial, technical, site or other issues arising in respect of this RFP.

OPG may issue any notices or other communication to any Proponent by hand, fax, courier, mail or e-mail. OPG encourages Proponents to submit questions and other communications (excluding Proposals) to OPG by e-mail.

Except as otherwise provided in these Instructions, OPG will neither be bound by responses to oral questions nor answer any questions received by OPG within five business days of the Closing Date. OPG will respond to written questions received more than five business days prior to the Closing Date.

Communications with OPG

Except as set out in section 13, every notice or other communication of a Proponent required or permitted in respect of this RFP must be in writing and may be delivered by hand, fax, courier, mail or e-mail to OPG as follows:

Name: Amir R. Mirshahi, Sr. Supply Chain Specialist
Ontario Power Generation Inc. RFP Number AM-2009-070
Closing Date: October 23, 2009

Address: Ontario Power Generation Inc.
700 University Avenue,
H7A14 , Toronto , M5G 1X6,
Ontario, Canada

Telephone: 416-592-6876
Fax: 416-592-2649
E-mail: amir.mirshahi@opg.com

Standards and Information

A Proponent may obtain any OPG internal documents referred to, but not included, in this RFP by contacting the OPG Supply Chain representative at the address set out in section 4. Each Proponent must itself obtain any documents prepared by a standards, regulatory or other organisation referred to in this RFP or any collective agreement applicable to the services or goods. Each Proponent must ensure that it has the current version of all such documents, collective agreements and OPG internal documents referred to or applicable to this RFP and take these documents and agreements into account in the preparation of any Proposal.

Credit Information

Each Proponent authorises OPG to make credit enquiries about the Proponent and any of its affiliates and to receive and exchange credit information from credit reporting agencies or other persons with which the Proponent or any of its affiliates has or may expect to have financial dealings. Each Proponent must provide OPG with the Proponent's (and, on request by OPG, any of the Proponent's affiliate's) audited financial statements for the last three financial years for which they are available and financial statements for any period after the last audited period. If a Proponent submits audited financial statements from a parent company to satisfy this requirement, the Proponent will be required to provide OPG with a parental indemnity if the Proponent enters into an agreement with OPG. Each Proponent will also provide OPG with any other legal or financial information respecting the Proponent or any of its affiliates that OPG may reasonably request.

Conflict of Interest

Each Proponent and, if the Proponent is a joint venture or some other form of consortium, each member of the consortium and each advisor retained by the consortium (each a "**Declarant**") must disclose to OPG any actual or potential conflict of interest that might be relevant to this RFP process. Each Declarant will disclose this information by completing, signing and returning

to the OPG Supply Chain representative referenced in section 0 a declaration in the form included in the Proponent Information Form.

Proponent's Due Diligence

Before submitting a Proposal, each Proponent must thoroughly examine all the terms and other information contained in this RFP and, in particular, all the information contained in the Specifications. Each Proponent is responsible for being fully informed prior to submitting a Proposal of all terms of the Agreement. OPG will make no allowance to any Proponent (whether by an extension to the Project schedule, by an additional payment or otherwise) because of any failure to carry out sufficient examinations or any failure to obtain any due diligence information.

By submitting a Proposal, each Proponent represents and warrants to OPG that all the information contained in the Proponent Information Form is accurate, complete and not misleading.

No Proponent may share information or otherwise communicate, either directly or indirectly, with any other Proponent in respect of this RFP. No Proponent will engage in any conduct that compromises, or could reasonably be perceived to compromise, the integrity of this RFP process. Specifically, no Proponent will communicate with any person with a view to obtaining preferred treatment respecting this RFP.

Confirmation of Completion on Time

Each Proponent will confirm in its Proposal that it can carry out the services described in its proposed work plan by the completion date associated with each of the project stages described in the deliverables section of the Specifications.

Equal Access to Information

If OPG discovers that it has provided any Amendment or Clarification to any Proponent and such Amendment or Clarification has not been provided to all the Proponents, OPG will provide such Amendment or Clarification to all the Proponents and, in OPG's sole discretion, OPG may extend the Closing Date by an Amendment.

Pricing

Ontario Energy Board's ("OEB") process requirements are not certain; therefore the consulting services requested have been divided into 4 phases as described in Appendix C. Phase 1 is titled "*Analysis and Preparation of a Report and Prefiled Evidence*". The Proponent's Main Proposal will include a fixed price bid for the completion of Phase 1 with a budget reflecting its fixed hourly rate and the hours to conduct specific activities leading to deliverable outlined in Phase 1.

Phases 2 to 4 are dependent on the review requirements of the OEB. The Proponent's Main Proposal will include a budget for Phases 2 to 4 using fixed hourly prices as described below. The budget should be based on the assumption that two stakeholders submit analysis and evidence on the subject matter of this RFP, the analysis and evidence is contested in an oral public hearing, and assistance will be required by OPG to prepare written interrogatories, interrogatory responses, argument and reply argument.

Each Proponent must submit a Proposal denominated in Canadian dollars, for the completion of the entire Project. The prices offered by each Proponent in its Proposal must include all applicable taxes and duties except Canadian goods and services tax. Each Proponent must include in its Pricing Submission Form a breakdown of the pricing information [including any Ontario retail sales tax and duties] that will allow OPG to understand how the pricing for each component of the services and goods was calculated. The Pricing Submission Form should be submitted as part of the Proposal with the Proponent Information Form, but the Pricing Submission Form must be in a separate sealed envelope. The evaluation of the Pricing Submission Form will only take place after the evaluation of the Mandatory Criteria and the Rated Criteria as set out below. OPG reserves the right to exclude any Proposal that includes any pricing information in its Proponent Information Form.

Main Proposal

OPG strongly encourages each Proponent to complete its Proposal in accordance with all the requirements of this RFP, both commercially and technically. Any Proposal containing any amendments, qualifications or other changes to the requirements of this RFP or that is otherwise incomplete will be considered to be an Alternative Proposal. Unless specifically designated as such or clearly intended as such, in the sole judgement of OPG, OPG will assume that any explanatory or descriptive material included in a Proposal does not constitute such an amendment, qualification or other change. Each Proponent must submit a Proposal in English and is strongly encouraged to submit a Proposal in the form of the Proponent Information Form and Pricing Submission Form. Failure to submit a Proposal in the form of the Proponent Information Form and Pricing Submission Form may result in the Proposal being excluded from evaluation.

Alternative Proposal

A Proponent may also submit any number of Proposals in a single submission. If a Proponent wishes to make any amendments, qualifications or other changes to the requirements of this RFP, the Proponent is strongly encouraged to submit one Proposal which is in accordance with all such requirements (the “**Main Proposal**”) and any other Proposals containing all such amendments, qualifications or other changes (any one of which is referred to as an “**Alternative Proposal**”). OPG may, however, reject or subject to adverse weighting in the Proposal evaluation process any Proposal that contains any amendments, qualifications or other changes to the requirements of this RFP. It is for this reason that all Proponents are advised of this risk if a Proponent chooses to submit only an Alternative Proposal and no Main Proposal.

Nevertheless, OPG welcomes all Alternative Proposals that a Proponent considers advisable in light of its technical and commercial knowledge. A Proponent should make clear in any Alternative Proposal the advantages of the proposed alternative. Each Proponent must state expressly in any Alternative Proposal, all of its amendments, qualifications and other changes to the requirements of this RFP, including all amendments, qualifications and other changes to the Agreement, set out precisely on a line by line basis in a blackline format. Each Proponent is deemed to have offered to agree to each term in this RFP that the Proponent has not expressly amended, qualified or otherwise changed. Each Proponent which submits an Alternative Proposal will provide OPG (by the time specified by OPG) with such information, if any, as OPG may request to evaluate the Alternative Proposal.

OPG may reissue a request for proposals based on an Alternative Proposal, except to the extent that an Alternative Proposal is based on trade secrets of the Proponent and the Proponent has identified such trade secrets in an Alternative Proposal.

Submission of Proposals

Each Proponent will submit four paper copies of each Proposal, together with an electronic copy in Microsoft Word, preferably on a compact disk. Each Proponent will submit its Proposals in a sealed package identified and addressed as follows:

Capitalization & Cost of Capital Consulting Service	Check	_____	Proposal
Ontario Power Generation Inc. RFP Number AM-2009-070	either:	_____	No Proposal
Closing Date: October 23, 2009			

to: Ontario Power Generation Inc.
Proposal Depository, HG103
700 University Avenue
Toronto, Ontario
Canada M5G 1X6

OPG will not accept responsibility for the delivery of any Proposal that is delivered to any location other than the Proposal Depository. OPG, in its sole discretion, may reject any Proposal opened by unauthorised personnel or opened before the Closing Time. If the name of the Project, the OPG RFP number and the Closing Date are not displayed prominently on the outside of a Proponent's Proposal, that Proposal may be opened inadvertently and may be rejected by OPG, in OPG's sole discretion.

Proponents must deliver their Proposals by hand, courier or mail. Proponents must ensure that their Proposals are delivered no later than **4:00 p.m.** Toronto time (the "**Closing Time**") on **October 23, 2009** (the "**Closing Date**"). OPG may, in its sole discretion, accept or reject any Proposals received after the Closing Time. OPG will not accept faxed, e-mailed or oral Proposals or faxed, e-mailed or oral modifications to Proposals. OPG will not return any Proposals.

Upon receipt of each Proposal, OPG will mark each Proposal with the date and time received and will store it in secure custody with all other Proposals until the Closing Time.

Proponents to Obtain RFP Only Through Biddingo™

This RFP is available only through Biddingo™, the electronic tendering system used by OPG. A Proponent who has not obtained this RFP through Biddingo™ may have its Proposal disqualified unless a third party has requested this RFP from Biddingo™ on that Proponent's behalf and that Proponent has identified the third party on the Proposal Return Label for its Proposal. Failure to identify the third party in this manner may result in disqualification of a Proposal.

Withdrawal or Revision of Proposals

A Proponent may withdraw any previously submitted Proposal at any time by submitting a notice signed by an authorised signatory of the Proponent requesting the removal of the Proponent's

submitted Proposal. The Proponent must deliver its notice to the OPG Supply Chain representative at the address set out in section 4.

A Proponent may revise all or part of a previously submitted Proposal at any time up to the Closing Time by submitting a new Proposal to the address referred to in section 0. Subject to section 0 relating to the submission of one or more Alternative Proposals, the last Proposal submitted by a Proponent will supersede all previously submitted Proposals by that Proponent. At the opening of the Proposals, OPG will discard unopened all superseded Proposals. It is the responsibility of each Proponent to clearly indicate to OPG in writing which Proposals, if any, are to be discarded.

Criteria for Evaluating Proposals

OPG will evaluate each Proposal based on the Mandatory Criteria, Rated Criteria and Pricing Submission Form listed in the Invitation Letter (the “**Criteria**”) to determine which Proposal(s) are best suited to OPG’s requirements as set out in this RFP.

After the Closing Date for the receipt of Proposals, OPG will conduct the evaluation of Proposals in a three-stage sequential process to determine which Proposal(s) are best suited to OPG’s requirements as set out in the RFP.

Stage 1: Stage 1 will consist of a review to determine which Proposal comply with all of the Mandatory Criteria. Only Proponents who satisfy all of the Mandatory Criteria will be considered for Stage 2 and 3.

Stage 2: This stage will consist of a scoring by OPG of each Final Proposal on the basis of the Mandatory Criteria and the Rated Criteria.

Stage 3: Upon completion of Stage 2 for all Qualified Proponents, the sealed pricing envelope provided by each Qualified Proponent containing the Pricing Submission Form will then be opened and Stage 3 will consist of the scoring of the pricing submitted.

Pricing set out in the Pricing Submission Form will be scored based on a scale of 1 to 10 (with 10 being the highest).

Cumulative Score and Selection of Highest Scoring Proponent

At the conclusion of Stage 3, all scores from Stage 2 and Stage 3 will be added and, subject to satisfactory reference checks and the express and implied rights of OPG, the highest scoring Proponent(s) will be short-listed. These Proponents may be invited to present further clarification of their Proposals, if required. These presentations will be scored in accordance with the evaluation criteria set out above for phase 2.

Entry into Agreement or Negotiations

Each Proposal will constitute an offer by the Proponent to OPG to enter into an Agreement on the terms of that Proposal. After the Closing Date, OPG may interview any Proponent and may specifically seek clarification or additional information in any format whatsoever in respect of the Proponent’s Proposal. The response received by OPG from a Proponent will, if accepted by OPG, form part of that Proponent’s Proposal. OPG may verify with the Proponent or any third

party any information set out in the Proponent's Proposal. OPG may check any references of a Proponent in addition to any references submitted in the Proponent's Proposal. Each Proponent authorises OPG to make any enquiries about the Proponent, any affiliates of the Proponent and the Proponent's Proposal respecting the verification of any such information or in respect of any references. If OPG receives information at any time that, in OPG's view, reveals that earlier information submitted by the Proponent is inaccurate, incomplete or misleading, OPG may, in its sole discretion, re-evaluate the Proponent's Proposal based on the Criteria and take such other actions as OPG considers appropriate in the circumstances.

Nothing in this RFP constitutes an offer of any kind whatsoever to any Proponent. OPG is not obliged to accept the lowest priced Proposal, negotiate with the Proponent offering the lowest priced Proposal, accept any Proposal whatsoever or negotiate with any Proponent whatsoever. Accordingly, OPG may reject all Proposals, cancel this RFP or accept or negotiate any Proposal in whole or in part at OPG's sole discretion. OPG may seek additional Proposals. OPG may contract with others, use its own resources to carry out any services or extend an existing contract for goods and/or services that are the subject of this RFP.

Once OPG has undertaken its evaluation (and any re-evaluation for any reason) of each of the Proposals based on the Criteria, OPG may, in its sole discretion, and without taking into account any custom, usage or agreement in the industry or trade, any other policy or practice or any other term in this RFP, take any of the following three actions:

- (a) enter with the Proponent into an amended Agreement (which will be a conformed contract) for the services and goods which are the subject of this RFP (based on the offer of such Proponent set out in a Proposal) which OPG has determined, in its sole discretion, has submitted the Proposal which is best suited to OPG's requirements as set out in this RFP;
- (b) select one or more preferred Proponents (the "**Preferred Proponents**") with whom to commence negotiations on an amended Agreement (which will be a conformed contract) to determine which Proposal, if any, in OPG's sole discretion, best satisfies the Criteria; or
- (c) cancel this RFP and not enter into an agreement for the services and goods contemplated under this RFP, or issue a new RFP, tender or otherwise.

If OPG proceeds in the manner described in section 0(b), OPG may change the scope of services contained in this RFP or change any other terms or other information contained in this RFP and otherwise negotiate with the Preferred Proponents the Agreement, including the Specifications, in any manner whatsoever. Based on these negotiations and the Criteria, OPG will choose, in its sole discretion, the Preferred Proponents, if any, to enter into the Agreement with on agreed terms. OPG will not provide any such changes to any Proponent that is not a Preferred Proponent. If OPG proceeds in the manner described in section 0(b), OPG may, in its sole discretion, subsequently proceed under section 0(c) for any reason whatsoever.

Except with the approval of a Proponent, under no circumstances, however, will OPG disclose any information contained in the Proposal of that Proponent to any other Proponent, including a Preferred Proponent. OPG will, however, disclose that part of any Proposal that OPG is obliged to disclose under the *Freedom of Information and Protection of Privacy Act* (Ontario). In addition, OPG may disclose, on a confidential basis, to OPG's advisers any information contained in a Proposal.

Confidentiality of RFP Information

The fact that OPG is conducting this RFP and the material contained in this RFP or disclosed in respect of this RFP is confidential information of OPG (“**Confidential Information**”). This RFP is the sole property of OPG. Each Proponent will use, and will ensure that each person to whom the Proponent discloses this RFP, in whole or in part, will use, the Confidential Information solely for the purpose of preparing a Proposal and, if applicable, negotiating the Agreement with OPG and carrying out the Proponent’s obligations under a signed Agreement, if any.

At any time, at OPG’s request, a Proponent will deliver promptly to OPG all, or an OPG-specified portion of, the Confidential Information, together with all copies, extracts or other reproductions in whole or in part of the Confidential Information. In addition, at any time, at OPG’s request, a Proponent will destroy, demonstrably, promptly and irrevocably, all such copies, extracts or other reproductions of Confidential Information, or an OPG-specified portion of the Confidential Information, which cannot, because of the device on which such information is stored, be removed from the possession of the Proponent by delivery to OPG. Following such delivery and destruction, the Proponent will promptly provide OPG with written confirmation of completion. In any event, the Proponent will complete all such actions within 30 days of receipt of OPG’s initial request. If OPG does not exercise any of its rights under this section 0 and a Proponent is not the successful Proponent, such Proponent will destroy, promptly and irrevocably, all Confidential Information and all such copies, extracts or other reproductions of Confidential Information in the Proponent’s possession or control. In any event, the Proponent will complete all such actions within 60 days of being informed or becoming aware that it was not the successful Proponent. The ongoing obligations under this section 0 shall survive the termination or expiry of this RFP.

Cost of Preparation

Each Proponent will be solely responsible for all of its costs and other expenses in respect of this RFP and the preparation and negotiation of any Proposal or Agreement.

No OPG Guarantees

OPG has included statements of facts and other information in this RFP merely for the general information of the Proponents. Neither OPG nor any of the Representatives make any representation, warranty or guarantee, express, implied or otherwise, as to the accuracy or completeness of any of these statements or other information or any subsequent written or oral statements of fact or other information provided to any Proponent. Each Proponent releases OPG and all Representatives from all claims, demands and other complaints in respect of all such statements, other information and any representation, warranty or guarantee contained in, or omitted from, this RFP or in any subsequent written or oral statements of fact or other information provided to any Proponent.

Finality

OPG has designed a request for proposals process that balances fairness to Proponents and flexibility for OPG. OPG has become concerned about the increasing degree of litigation and threats of litigation in the request for proposals and tendering processes across North America. Litigation and threats of litigation increase costs, delay projects and reduce the certainty for successful Proponents. Accordingly each Proponent agrees that OPG’s ultimate selection of the

successful Proponent is final and binding on all Proponents. All the terms of this RFP are expressly set out in this RFP and there are no implied terms respecting this RFP. Notwithstanding any other term in this RFP, no Proponent may make any claim, demand or other complaint respecting OPG or any of the Representatives to any court, other adjudicative body, governmental authority or regulatory authority respecting this RFP, including respecting the conduct of the process or the selection of the successful Proponent. In particular, without limiting the generality of the foregoing, no Proponent may seek any judgement, order, decree or other relief that such Proponent's Proposal was the "lowest" or "best" Proposal, that such Proponent is or should be chosen as the successful Proponent, that OPG erred in its evaluation of any of the terms of any Proposal of any Proponent as compared to the successful Proponent or that OPG or any of the Representatives otherwise exercised any discretion or conducted the process in an inappropriate or unfair manner. Each Proponent releases OPG and all Representatives from all such claims, demands and other complaints.

Should a Proponent have any complaint or concern regarding this RFP, the Proponent is encouraged to submit such complaint or concern in writing to OPG's Director – Corporate Procurement and Business Services, 700 University Avenue, H7, Toronto, Ontario, Canada, M5G 1X6.

The Proponent will defend and indemnify OPG and all Representatives in respect of all claims, demands or other complaints made against OPG or any of the Representatives by any subcontractor of any tier or proposed subcontractor of any tier to the Proponent in respect of this RFP.

Acceptance of Terms

By submitting a Proposal, each submitting Proponent is deemed to agree to the terms of the Invitation Letter and these Instructions.

APPENDIX “C” SPECIFICATIONS

1. Introduction

Ontario Power Generation (OPG) is an Ontario-based electricity generation company whose principal business is the generation and sale of electricity in Ontario. Our focus is on the efficient production and sale of electricity from our generation assets, while operating in a safe, open and environmentally responsible manner.

OPG's generating portfolio has a total capacity of over 22,000 megawatts (MW) making us one of the largest power generators in North America. Our generating mix includes Nuclear, Hydroelectric, Fossil and Wind generating stations. OPG currently has approximately 11,000 employees. Approximately 90% of employees belong to a union

2. Service Required

OPG is seeking a capitalization and cost of capital expert to conduct a study to support the examination of whether a separate cost of capital can be established for OPG's nuclear and regulated hydroelectric business segments with sufficient rigour to enable the OEB to rely upon the results in establishing OPG's nuclear and regulated hydroelectric payment amounts.

The expert may also be required to support the examination of this report in a regulatory process to be determined by OEB. This support may include responding to the questions and arguments relating to the study and preparing a critique of proposals submitted by other experts involved in the examination of OPG's capitalization and cost of capital issues.

3. Deliverables:

The OEB's process requirements are not certain; therefore the consulting services requested have been divided into stages.

Phase 1:

Analysis and Preparation of a Report and Prefiled Evidence: Preparation of a Capitalization and Cost of Capital Study (the “Study”) addressing the analysis requirements and issues outlined in the Specifications and the development of pre-filed evidence. A first draft of the Study shall be provided by November 30, 2009. The final Study is due December 14, 2009. First Draft of prefiled evidence is due December 22, 2009. The final prefiled evidence is due January 15, 2010.

Phase 2:

Preparing for Regulatory Process: The Proposal should assume an oral hearing process involving prehearing activities such as, but not limited to, preparing pre-filed evidence, updating results for more current information from the selected sample(s) of comparative companies for the period ended December 31, 2009, addressing any implications resulting from the OEB's review of its cost of capital policy (OEB proceeding EB-2009-0084, [Consultation Process on Cost of Capital Review](#)), providing responses to interrogatories posed by interested parties to OPG's proceeding, and providing a critique of studies submitted by other experts involved in the examination of OPG's capitalization and cost of capital issues. The expert may also be asked to participate in cost of capital and nuclear liability witness training sessions and technical conferences. Timing will be determined based on the requirements of the OEB regulatory process.

Phase 3:

Public Review: The Proposal should assume an oral hearing process involving, among other things, direct examination of the expert, cross examination of the expert by the OEB and interested parties, providing responses to undertakings provided during examination of the expert and providing support for the cross-examination of competing experts on capitalization and cost of capital. Timing will be determined based on the requirements of the OEB regulatory process.

Phase 4:

Post Hearing Activities: The Proposal should assume OPG will require assistance in the review of arguments from interested parties and provision of technical support in developing OPG's argument-in-chief and reply arguments. Timing will be determined based on the requirements of the OEB regulatory process.

4. Detailed Analysis Requirements:

The OEB's EB-2007-0905 Decision With Reasons determined that the cost of capital for OPG's regulated operations:

- 1) Shall be established based on the stand-alone principal (Page 140 to 142);
- 2) Shall be established using a 47% common equity ratio (Page 149);
- 3) Shall reflect the adoption of a formula approach to setting the ROE. The Board will adopt the existing ROE adjustment formula outlined in its report on cost of capital and 2nd generation incentive regulation (Page 162). Setting the ROE through a formula is consistent with the Board's expectation that risk differences in the regulated businesses are appropriately addressed through the capital structure rather than the ROE. (Page 162);
- 4) Shall be established using a 3.4% risk premium over the long Canada Bond yield resulting in a "bare bones" ROE (page 157, 158). The "bare bones" ROE will be increased by 50 basis points for financing flexibility (page 158);
- 5) Shall reflect the OEB's views that "OPG's regulated nuclear business is riskier than regulated distribution and transmission utilities in terms of operational and production risk, but is less risky than merchant generation" (Page 149);

Issues:

These findings of the OEB govern the cost of capital for OPG's combined nuclear and hydroelectric operations. The cost of capital was attributed to nuclear and hydroelectric operations using a rate base allocation factor. The OEB further found 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" (Page 162). The Proposal shall include a work plan to provide a thorough study and prefiled evidence addressing the technology specific cost of capital issue, and will specifically include a review of the following considerations:

- Identify and evaluate the merits of potential approaches. In particular, potential approaches identified in the financial literature for estimating the stand-alone cost of capital for a division of a firm should be identified and evaluated.
- Identify issues associated with the application of these potential approaches to OPG's regulated operations.
- Determine the technology specific cost of capital for potential approaches determined to be of sufficient merit to warrant consideration by the OEB
- Develop suitable selection criteria and select samples of companies which will permit attempts to isolate cost of capital by generation technology and break down by generation

(Gx), distribution (Dx), transmission (Tx) and other, as well as generation by technology (hydroelectric, nuclear and other). The selection criteria and the sample selection process must be described in detail.

- 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% for the combination of both technologies.
- Assess whether a technology specific cost of capital should be developed using the same ROE and different capital structures to reflect technology specific risk differences.
- Review the business risk profile of OPG hydroelectric and nuclear operations and assess relative risk based on findings of the Board in EB-2007-0905. In particular, Assess implications of the OEB's findings on the treatment of nuclear liabilities as regards to relative risk of the two generation technologies and the proper equity component of nuclear rate base if ARO/unfunded liabilities are effectively treated as a form of debt.
- Assess and quantify changes in OPG's business risks since the EB-2007-0905 Decision and the implications on each technology;
- Address the implications of any changes to the cost of capital methodology, in particular the automatic return on equity adjustment mechanism currently under review by the OEB (EB-2009-0084);
- Perform sensitivity analysis to assess robustness of results.
- Assess whether a separate cost of capital can be established for OPG's nuclear and regulated hydroelectric business segments with sufficient rigour to enable the OEB to rely upon the results in establishing OPG's nuclear and regulated hydroelectric payment amounts.

APPENDIX "D"
INFORMATION AND CONSENT FORM

Ontario Power Generation Inc. (OPG) and 'Consultant' have entered into an Agreement (the "Agreement") for services dated xxxx, 2009.

I have read the following conditions and acknowledge and confirm that:

1. I agree to provide services to OPG in accordance with the terms of the Agreement.
2. OPG has my consent to perform such security and/or reference checks as it may, in its sole discretion, deem necessary.
3. I hereby acknowledge that I am not an employee of OPG for purposes of providing services under the Agreement or for any purpose under any applicable statute, including the Employment Standards Act, the Workers' Compensation Act, the Occupational Health and Safety Act, the Human Rights Code, the Income Tax Act, the Canada Labour Code, the Labour Relations Act and the Unemployment Insurance Act.
4. I further acknowledge that OPG is not responsible to pay or remit any required taxes, Workers' Compensation premiums, unemployment insurance and pension levies in relation to services that I provide.
5. *OPG has sole ownership and intellectual property rights in any work that I perform for OPG and I expressly waive in favour of OPG any ownership or intellectual property right, claim or interest that I might otherwise have been able to assert.*
6. I will cooperate with OPG in the protection of intellectual property rights and the protection including, execution of any kind of documentation, applications for patent, copyright and the like and/or certificates in this regard.
7. I will keep confidential and will not further disclose (except as expressly authorized in writing by OPG) any information, whether tangible or intangible, which has or may come into my possession, control or knowledge during the period that I am providing services to OPG under the terms of the Agreement. I further agree that I will maintain this confidentiality even after I cease to provide services under the terms of the Agreement. I have read the section in the Agreement on entitled Confidentiality agree to be bound by its terms, and will enter into a Confidentiality Agreement as required by OPG..
8. I will protect OPG's property and computer resources against damage and waste including, following all rules established for protection against computer viruses.
9. I will use any OPG resources, computer time and software that become available to me or which are within my control, solely for the purposes of performing work for OPG under the terms of the Agreement.
10. I will obey all rules and regulations established by OPG regarding the premises to which I have access and the projects on which I perform work.
11. *I have received and read OPG's "Code of Business Conduct" in full and I fully agree to conduct all of my activities in accordance with the principles contained in the Code.*

SIGNED, this day of , 2009

(Consultant - print name)

CCC Interrogatory #012

Ref: Ex. C1-T1-S1, page 2

Issue Number: 3.1

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

Interrogatory

OPG is applying the Board's Cost of Capital Report in order to determine its forecast ROE for the test years. Please provide any correspondence between OPG and its shareholders regarding the decision to apply for a higher ROE. If the Board grants OPG approval for rate base treatment of CWIP for the Darlington Project how would this impact OPG's requested ROE or capital structure?

Response

There is no correspondence between OPG and its shareholder regarding the decision to apply the OEB's Cost of Capital Report to determine its forecast ROE.

OPG expects that there would be no impact on its requested ROE or capital structure if the OEB grants approval for rate base treatment of CWIP for the Darlington Refurbishment Project.

CME Interrogatory #018

Ref: Ex. C1-T1-S1, Tables 1-7

Issue Number: 3.1

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

Interrogatory

What is the total dollar amount for equity return that OPG seeks to recover in the 24-month test period?

Response

The return on equity ("ROE") for the 24-month test period is \$591.2M, comprised of \$298.5M in 2012 (Ex. C1-T1-S1, Table 1) and \$292.7M in 2011 (Ex. C1-T1-S1, Table 2).

OPG expects that in the final Payment Amounts Order, the equity return will be determined using an ROE based on data for the month that is three months prior to the effective date of the new payment amounts, consistent with the OEB's Cost of Capital Report.

CME Interrogatory #020

Ref: Ex. C1-T1-S1, Tables 1-7

Issue Number: 3.1

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

Interrogatory

Based on the audited corporate financial statements for OPG as a whole, what was OPG's actual ROE for the years ending December 31, 2008 and December 31, 2009?

Response

OPG does not determine a corporate return on equity ("ROE") for external purposes. OPG has provided an ROE for its regulated operations for 2008 and 2009 at Ex. C1-T1-S1, Table 7.

CME Interrogatory #021

Ref: Ex. C1-T1-S1, Tables 1-7

Issue Number: 3.1

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

Interrogatory

Based on the segregated financial statements provided by OPG at Exhibit A2, Tab 1, Schedule, Attachment 3, what is the indicated ROE for each of the periods ending December 31, 2008 and December 31, 2009? Please show how OPG derives the ROE for each year from these statements.

Response

The return on equity ("ROE") is (\$92M) in 2008 and \$31.6M in 2009. These values are found at line 18 of Ex. C1-T1-S1, Table 7.

The Income (Loss) before interest and income on the Consolidated Statements of Income on page 2 of the segregated financial statements shows a loss of \$228M in 2008 and income of \$606M in 2009. These amounts are the starting point for Ex. C1-T1-S1, Table 7 titled Reconciliation to Audited Financial Statements for Prescribed Facilities (see footnote 1 of Ex. C1-T1-S1, Table 7a).

The ROE on a percentage basis is calculated for 2008 and 2009 in Ex. C1-T1-S1, Tables 4 and 5, respectively, as the cost of capital divided by the principal value in line 5 of those tables.

CME Interrogatory #022

Ref: Ex. C1-T1-S1, Tables 1-7

Issue Number: 3.1

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

Interrogatory

Please provide segregated financials for the year ending December 31, 2010 based on three month actuals and nine month forecast in a format comparable to the statements provided at Exhibit A2, Tab 1, Schedule, Attachment 3 and reconcile these segregated financial statements to the determination of 2010 forecast return on equity shown at Exhibit I1, Tab 1, Schedule 1, Table 5.

Response

OPG does not produce financial statements for the prescribed facilities with three months actuals and nine months forecast based on Canadian generally accepted accounting principles ("GAAP") for internal business or for regulatory purposes. OPG declines to produce the requested financial statements because:

- a substantial amount of work would be required,
- a significant portion of the allocation information necessary to prepare financial statements for the prescribed facilities is not generated until year end, and
- certain information that would be necessary at the OPG-wide level to produce these statement is not prepared at all on a forecast basis.

As such, OPG cannot complete the requested reconciliation since it depends on these financial statements.

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 #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).

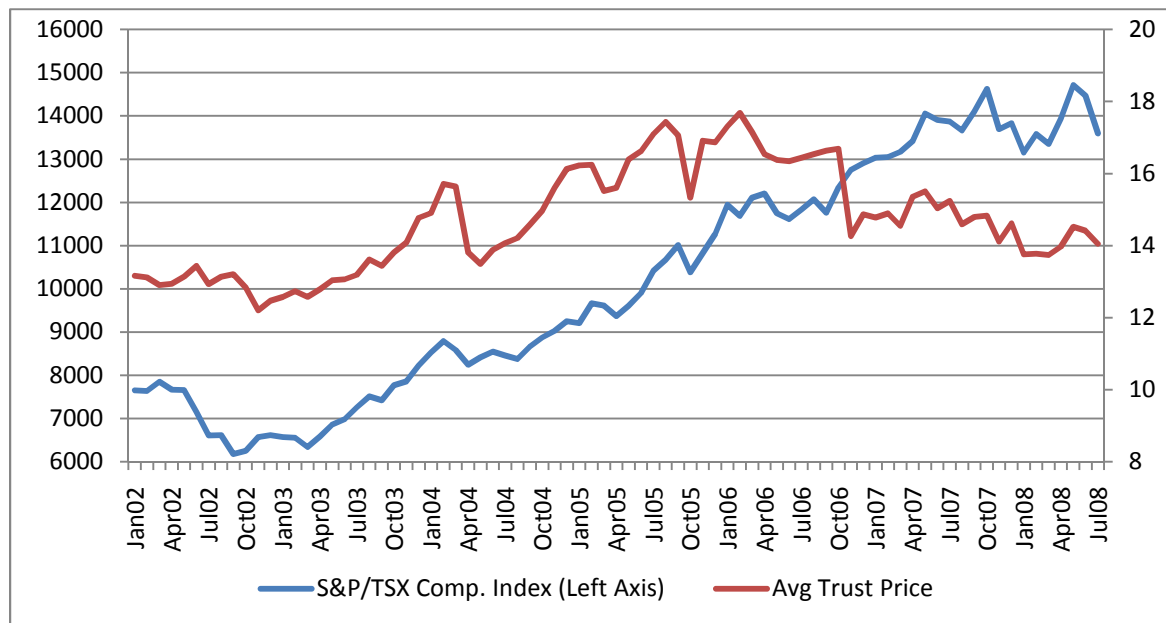
Response

- 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.

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 #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.