

INTERROGATORIES OF POLLUTION PROBE

1 **INTERROGATORY 1:**

2 **Reference(s):** **Exhibit D1, Tab 8, Schedule 12**

3 **Exhibit D1, Tab 8, Schedule 12, Appendix A**

4

5 Please provide a copy of Toronto Hydro's contract with Navigant Consulting Inc. for the
6 distributed generation plan/study. Please also provide copies of all other documents
7 between Toronto Hydro and Navigant Consulting Inc. regarding the terms of reference as
8 well as schedule for the distributed generation plan/study.

9

10 **RESPONSE:**

11 A copy of the Distributed Generation Consulting Services Agreement between Toronto
12 Hydro and Navigant Consulting Inc. has been attached to this Schedule as Appendix A.
13 The agreement contains the scope of work which is presently under way, the deliverables
14 and a schedule for the distributed generation study. There are no other documents
15 between the parties on these subjects.

DISTRIBUTED GENERATION CONSULTING SERVICES AGREEMENT

This Distributed Generation Consulting Services Agreement (the "Agreement") is made as of the 30th day of August, 2010 (the "Effective Date");

BETWEEN:

Toronto Hydro-Electric System Limited

(hereinafter referred to as the "Buyer")

AND

Navigant Consulting Inc.

(hereinafter referred to as the "Consultant")

In consideration of the mutual covenants and conditions contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Interpretation

- (a) **Contract.** The Contract includes this Agreement and Schedule A to this Agreement.
- (b) **Inconsistency.** In the event of any inconsistency between the provisions of this Agreement or any Schedule to this Agreement, this Agreement will prevail.

2. Retainer and Services/Deliverables

- (a) **Retainer.** The Buyer retains the Consultant, and the Consultant agrees, to perform the work and services and to deliver the deliverables as set forth in Schedule A (collectively, the "Work").
- (b) **Reporting.** The Consultant will comply with the reporting requirements as may be set forth in Schedule A.
- (c) **Consultant's Manager/Staff.** All staff of the Consultant employed in connection with the Work will have the knowledge, abilities, experience and qualifications required for the Work and will perform their tasks in a professional manner. The Consultant will provide such additional support as may be required from time to time for the completion of the Work and its proper performance.
- (d) **Inspection and Warranty.** The Buyer will have the right to inspect the Work at all times and may reject any part thereof which is found to be inappropriate or otherwise not in accordance with specifications and statements set out in the Contract or otherwise required by law. The Consultant, at no additional cost to the Buyer, will promptly redo any of the Work so rejected. This will include, but is not limited to, all reports, policy manuals, implementation plans and written work (howsoever recorded, that is, whether written or on digital media) and data prepared by the Consultant under the Contract which are found, within a period of one year from date of transmittal to the Buyer, to be incomplete or inaccurate due to a failure to comply with the Contract or with said specifications and standards.

- (e) **Laws, Regulations and Codes.** The Consultant will comply with all federal, provincial and municipal statutes, regulations, bylaws, standards and codes which are applicable to the Work or the Buyer and its operations.
- (f) **Assignment or Subcontracting.** The Consultant will not assign, subcontract or otherwise delegate the Contract, or any portion thereof, without the prior written consent of the Buyer.
- (g) **Conflict of Interest.** The Consultant is not engaged, and will not engage, in other commercial activities or retainers which conflict with the Work and/or its obligations hereunder.

3. Payment

- (a) The Consultant will be entitled to fees ("Fees") for Work rendered pursuant to this Contract at the prices and/or rates specified in Schedule A subject to this Section 3.
- (b) Notwithstanding anything else contained in this Agreement, in no event shall: the total Fees payable by the Buyer, inclusive of expenses and taxes other than GST, exceed \$242,540. The Consultant will be entitled to submit an invoice for the Fees monthly in arrears. Invoices will be delivered to the following address:

Toronto Hydro-Electric System Limited
14 Carlton Street
Toronto ON M5B 1K5

Attention: Accounts Payable

Facsimile: 416-542-2630

- (c) The Buyer will pay accepted invoices within 30 days after receipt thereof.
- (d) If at any time during the performance of the Work there are deficiencies in the Work in the opinion of the Buyer, then the Buyer will inform Consultant of such deficiencies in detail and will have the right to withhold from payment in respect of any of the Consultant's invoices rendered to it an amount that, in the Buyer's reasonable opinion, takes into account the above-noted deficiencies. Any amount withheld shall be paid 30 days after receipt of the Consultant's invoice submitted after the Buyer's approval of the correction of deficiencies, or as soon thereafter as is practicable given the circumstances.
- (e) **Taxes.** All applicable taxes will be shown separately on all invoices.
- (f) **Contractual Currency.** Unless otherwise specified in Schedule A, all payments hereunder will be made in Canadian dollars.

4. Term and Termination

- (a) **Term.** The term of the Contract will commence on the Effective Date and terminate on December 17, 2010.
- (b) **Termination by Buyer.** The Buyer shall be entitled at any time to deliver to the Consultant a written notice that the Consultant is in default of its obligations (a "Notice of Default"). The Notice of Default shall set out the nature of the default and, if curable within a reasonable time in the sole discretion of the Buyer, a date by which the default is to be cured, which in any event shall not be longer than 30 days. If the default is not curable, at any time following the cure period specified in the Notice of Default, and if the default is curable, at any time following the cure period specified in the Notice of Default if

the default was not cured by such time, the Buyer may deliver a notice to the Consultant terminating the Contract.

- (c) **Termination by Consultant.** The Consultant shall be entitled at any time to deliver to the Buyer a written notice that the Buyer is in default of its payment obligations hereunder (a "Notice of Payment Default"), which notice shall specify all relevant particulars of the payment obligation in respect of which the Buyer is in default. Provided that the invoice is not the subject of a dispute, the Consultant shall be entitled to terminate the Contract on 30 days written notice to the Buyer if such payment is not paid to the Consultant on or before the 15th day following the date of the Notice of Payment Default.
- (d) **Limitation of Liability.** Save and except for any liability arising out of a breach of the terms of section 2(e) (Laws, Regulations and Codes), section 6(b) (Workplace Safety and Insurance) and section 8 (Compliance with Privacy Laws and Confidentiality), the total liability of Consultant, its parents, subsidiaries, affiliates, officers, employees or agents, to the Buyer for all claims of any kind arising under this Agreement, whether in contract, tort or otherwise, shall be limited to the total Fees paid to Consultant under this Agreement. In the case of liability arising out of a breach of the terms of section 2(e) (Laws, Regulations and Codes), section 6(b) (Workplace Safety and Insurance) and section 8 (Compliance with Privacy Laws and Confidentiality), the total liability of Consultant, its parents, subsidiaries, affiliates, officers, employees or agents, to the Buyer shall be limited to \$500,000.

5. Relationship of the Parties

- (a) The parties hereby agree that the relationship between the Consultant and the Buyer is that of an independent business relationship and in no way does the Contract contemplate or create an relationship of principal and agent, or an employment relationship or any other type of relationship, nor does it entitle the Consultant to any benefits of employment including, without limitation, membership in health benefits and pension programs provided to employees of the Buyer. Nor does this agreement create any partnership or joint venture with the Buyer.
- (b) As an independent contractor, the Consultant is responsible for any and all payments with respect to its income and other taxes, insured health benefits coverage, Workplace Safety and Insurance, Canada Pension Plan, Employment Insurance premiums and costs, and any other costs that may apply.
- (c) The Consultant agrees to indemnify the Buyer, its affiliates, and their respective officers, directors, employees and agents (hereinafter, the Buyer's "Representatives") and save them harmless from and against any and all liabilities and claims, including payments, fines, penalties, interest and any other financial costs in any way arising out of any actual or alleged failure of the Buyer to deduct, withhold or contribute any amount in respect of its payments to the Consultant. Without limiting the generality hereof, such liabilities and claims shall include federal and/or provincial income taxes, pension plan contributions, employment insurance premiums, Workplace Safety and Insurance premiums and contributions under any federal or provincial income security program.

6. Insurance

- (a) **Maintain Insurance.** The Consultant will (i) obtain and maintain insurance covering such risks and in such amount as a prudent business owner would maintain including without limitation, where applicable, broad form commercial general liability insurance and errors and omissions insurance, (ii) obtain cross liability and severability of interest clauses in favour of the Buyer; (iii) provide evidence of insurance and of the clauses referred to in (i) and (ii) hereof to the Buyer upon request; and (iv) indemnify and save the Buyer and its Representatives harmless in respect of any failure by the Consultant to do any or all of the foregoing. Under no circumstances will the Buyer be liable to the Consultant or any employee thereof for any failure of the Consultant to obtain any insurance necessary or

desirable in relation to the subject matter of the Contract. Without limitation to the foregoing, the Consultant will have insurance in a minimum amount equal to the maximum aggregate amount payable to the Consultant under the Contract.

- (b) **Workplace Safety and Insurance Act.** If the Consultant is subject to the Workplace Safety and Insurance Act ("WSIA"), it shall, upon request of the Buyer, submit a valid clearance certificate of WSIA coverage to the Buyer prior to the commencement date of the Agreement. In addition, the Consultant covenants and agrees to pay when due, and to ensure that each of its subcontractors pays when due, all amounts required to be paid by its subcontractors, from time to time during the term of this Contract. The Consultant will indemnify and save the Buyer and the Buyer's Representatives harmless in respect of any failure by it to do any or all of the foregoing.

7. Proprietary Rights

- (a) **Existing Intellectual Property.** Each party will retain all rights to methodology, knowledge, and data brought to the Work and used therein, including without limitation any work performed or reports prepared by the Consultant for the Buyer prior to the effective date of this Agreement. No rights to proprietary interests existing prior to the start of the Work are passed hereunder other than rights to use same as provided for herein. The Consultant will not knowingly incorporate into the Work any data, software or hardware the use of which by the Buyer would violate the proprietary rights of third parties.
- (b) **Newly Created Intellectual Property.** All title and beneficial ownership interests to all intellectual property, including copyright, of any form, including, without limitation, discoveries (patented or otherwise), software, data (hard copied and machine readable) or processes, conceived, designed, written, produced, developed or reduced to practice in the course of the Work will vest in and remain with the Buyer. Furthermore, the Consultant agrees to waive any moral rights that it has, and/or cause its employees to waive any moral rights they may have, in the Work. The Consultant will not do any act which may compromise or diminish the Buyer's interest as aforesaid.
- (c) **License to Use.** The Consultant grants to the Buyer a non-exclusive paid up license to use, copy, reproduce and distribute publicly any pre-existing data, intellectual property and other proprietary items ("Consultant's Pre-existing Data") incorporated into the Work by the Consultant hereunder and explanation of the methodology used to produce such Work, in whole or in part. Provided, however, that any such copies, reproductions or distributions of the Consultant's Pre-Existing Data contain reasonable reservations of proprietary rights in favour of the Consultant (which may be included in a general reservation, but will contain the same order of legal protection as the Consultant uses when distributing such data or property to third parties) or provided the use of same does not reveal information proprietary to the Consultant. The Consultant may require that all Consultant's Pre-Existing Data that is copied, reproduced or distributed the Buyer bear the Consultant's copyright notice and a warning to third parties not to duplicate, republish or modify such Consultant's Pre-Existing Data without Consultant's permission.

8. Compliance with Privacy Laws and Confidentiality

- (a) **Personal Information and Privacy Laws.** In this section, "Personal Information" means any information about an identifiable individual, which before or after the date of the Contract, is exchanged, disclosed, transferred, stored, warehoused, accessed, processed, handled or in any way made available to the Consultant, including without limitation all Personal Information provided by the Buyer to the Consultant about the Buyer's customers. "Privacy Laws" includes the *Personal Information Protection and Electronic Documents Act* (Canada), *Freedom of Information and Protection of Privacy* (Ontario), *Municipal Freedom of Information and Protection of Privacy* (Ontario) and the provisions of any other applicable municipal, provincial or federal or other laws, regulations, decisions, orders, judgments and rulings or regulatory requirements

applicable to either party to the Contract from time to time that address the collection, use, transfer or disclosure of Personal Information.

- (b) **Compliance with Privacy Laws.** The Consultant agrees to comply with all Privacy Laws applicable to either it or the Buyer in relation to Personal Information and shall refrain from taking any action that could cause the Buyer to be in non-compliance with any such Privacy Laws. Without limiting the generality of the foregoing, the Consultant agrees to comply with the Privacy Rules attached in Schedule B hereto and further agrees to name a person (or persons) to be responsible for ensuring compliance with the obligations of this section and shall advise the Buyer of the name of such individual and any replacement(s).

(c) **Confidentiality**

- (i) The Consultant agrees to keep confidential and not to divulge or communicate to any person or use for a purpose other than delivering the Work required under this contract without the Buyer's prior written consent, any proprietary information, trade secrets or other secret or confidential, technical or commercially sensitive information belonging to the Buyer or its respective officers, stakeholders and/or third parties (the "Confidential Information"), whenever received by the Consultant and in whatever capacity. For the purposes of this clause, and by way of illustration and not limitation, information is *prima facie* secret and confidential if it relates to the Buyer's stakeholders or Representatives and/or third party contractors; power system planning information, business methods and strategies; production and delivery capabilities; clients and details of their particular requirements; costings, profit margins, and other financial information of any nature; marketing strategies and tactics; current activities and current and future plans relating to any or all of: development; production or sales/supply, including the timing of all or any such matters; development of new products, services or methods; production, operation or design secrets; raw materials; research and development; inventions; formulae and formulations; methods of treatment, processing, manufacture, construction, production, process and any confidential controls including quality controls.
- (ii) The Consultant shall limit the disclosure of the Confidential Information to only those of its employees who have a need to know it and who have been specifically authorized to have such disclosure. Upon request by the Buyer, the Consultant shall return all of the Confidential Information once the Consultant has completed its Work under this Contract and shall not retain any copies of the Confidential Information, except for automatically generated computer back-up or archival copies generated in the ordinary course of Consultant's information systems procedures, provided that Consultant makes no further use of such copies.
- (iii) These restrictions will continue to apply after the termination of this Contract, without limit in time but will cease to apply to information which enters the public domain otherwise than through unauthorized disclosure by the Consultant.

9. Buyer-Owned Equipment

- (a) **Use of Equipment; Title.** Equipment authorized by the Buyer for purchase by the Consultant (at the expense of the Buyer) or supplied to the Consultant by the Buyer, shall be used solely by the Consultant in the performance of the Work unless prior written approval is obtained from the Buyer. Title to such equipment will remain with the Buyer. When in the Consultant's possession, the Consultant will ensure the equipment will be clearly identified as the property of the Buyer. The Consultant will be responsible for safeguarding such equipment while in its custody and control or in that of any of its personnel or Consultants, agents or contractors, maintaining a system of inventory control acceptable to the Buyer, acting reasonably. The Buyer will have reasonable

access to the premises of the Consultant for the purpose of verifying the Consultant's records relating to the equipment and for auditing inventories of such equipment.

- (b) **Return of Equipment.** Following completion of the work or termination of the Contract, the Consultant will, unless otherwise directed, deliver to, or make all such equipment immediately available for pick up by, the Buyer. The Consultant shall be liable for the repair, refurbishment or replacement of any and all such Buyer-owned equipment that becomes damaged or lost while in the custody or control of the Consultant. At the Buyer's request and expense, the Consultant will maintain insurance, in which the Consultant and the Buyer will be named jointly as insured, covering the full replacement value of all such equipment against the risk of loss or damage.

10. Offshore Consultants; Non-residents

- (a) **Permits, etc.** If applicable, the Consultant is responsible for applying, at its own expense, to Immigration Canada for admission of personnel into Canada and for obtaining work permits where required.
- (b) **Withholding Tax.** All payments made by the Buyer to non-residents of Canada will be made net of any required taxes or withholdings.

11. Force Majeure.

If the performance of the Contract, or any obligations thereunder, is materially prevented, restricted, or interfered with by reason of: fire, flood, earthquake, explosion, or other casualty or accident or act of God; strikes or labour disputes; inability to procure or obtain delivery of parts, supplies, power or software from suppliers; failure, delay, interruption or other adverse impact caused by telecommunications carriers, internet service providers, and other intermediaries; war or other violence; any law, order proclamation, regulation, ordinance, demand or requirement of any governmental authority; or any other act or condition whatsoever beyond the reasonable control of the affected party (a "Force Majeure"), the party so materially affected, upon giving prompt notice to the other party, will be excused from such performance to the extent of the material delay caused by such prevention, restriction or interference; provided, however, that the party so affected will take all reasonable steps to avoid or remove such Force Majeure and will resume performance hereunder with dispatch whenever such causes are removed.

12. Accounts and Right to Audit

The Consultant will keep proper accounts and records of the work in form and detail satisfactory to the Buyer. Such accounts and records, including invoices, receipts, time cards and vouchers will at all reasonable times be open to audit, inspection and copying by Buyer. Accounts and records will be preserved and kept available for audit until the expiration of two years from the date of completion of the Work or termination of this Contract.

13. Miscellaneous

- (a) **Entire Agreement.** The Contract constitutes the entire agreement and understanding of the parties with respect to its subject matter and supersedes all oral communication and prior writings with respect thereto. There are no warranties, conditions or representations, express or implied, and there are no agreements in connection with such subject matter except as specifically set forth or referred to in the Contract. No reliance may be placed on any warranty, representation, opinion, advice or assertion of fact made either prior to, contemporaneous with, or after entering into this Contract, or any amendment or supplement thereto, by any party hereto or its directors, officers, employees or agents, to any other party hereto or its directors, officers, employees or agents, except to the extent that the same has been reduced to writing and included as a term of the Contract, and none of the parties hereto has been induced to enter into the

Contract or any amendment or supplement by reason of any such warranty, representation, opinion, advice or assertion of fact.

- (b) **Amendments.** No amendment, modification or waiver in respect of the Contract will be effective unless in writing (including a writing evidenced by electronic transmission) and executed by each of the parties.
- (c) **No Waiver of Rights.** A failure or delay in exercising any right, power or privilege in respect of the Contract will not be presumed to operate as a waiver, and a single or partial exercise of any right, power or privilege will not be presumed to preclude any subsequent or further exercise, of that right, power or privilege or the exercise of any other right, power or privilege.
- (d) **Further Assurances.** Each of the parties shall, from time to time, on written request of the other party, do all such further acts and execute and deliver or cause to be done, executed and delivered all such further things as may be reasonably required in order to fully perform and to more effectively implement the terms of the Contract.
- (e) **Headings.** The headings used in the Contract are for convenience of reference only and are not to affect the construction of or be taken into consideration in interpreting the Contract.
- (f) **Severability.** If any provisions of the Contract will for any reason be held illegal or unenforceable, such provision will be deemed separable from the remaining provisions of the Contract and will in no way affect or impair the validity or the enforceability of the remaining provisions of the Contract.

14. Governing Law

The Contract shall be governed by, and interpreted in accordance with, the laws of the Province of Ontario including the laws of Canada as applicable therein and each party irrevocably and unconditionally submits to the non-exclusive jurisdiction of the courts of such province and all courts competent to hear appeals therefrom.

15. Notices

- (a) **Effectiveness.** Any notice or other communication in respect of the Contract may be given in any manner described below to the address or number or in accordance with the email details set forth below:

If to the Buyer:

Toronto Hydro-Electric System Limited
500 Commissioners St.
Toronto, Ontario M4M 3N7

Attention: Devinder (Dave) Jutla
Manager, Capacity Planning, Asset Management

Telephone : 416-542-2953
Facsimile : 416-542-2630
Email : DJutla@torontohydro.com

If to the Consultant:

Navigant Consulting Inc.
1 Adelaide Street East, Suite 2601

Toronto, Ontario M5C 2V9

Attention: Todd Williams
Director

Telephone : 647-288-5204
Facsimile : 416-777-2441
Email : twilliams@navigantconsulting.com

- (b) Notices given pursuant to Section 15(a) will be deemed effective only against the party to whom it is delivered, and only as indicated:
- (i) if in writing and delivered by person or by courier, on the date it is delivered;
 - (ii) if sent by facsimile transmission, on the date it is received by a responsible employee of the recipient in legible form (it being agreed that the burden of proving receipt will be on the sender and will not be met by a transmission report generated by the sender's facsimile machine);
 - (iii) if sent by certified or registered mail or the equivalent (return receipt requested), on the date it is delivered or delivery is attempted; or
 - (iv) if sent by e-mail, on the date it is delivered.
- (c) **Invoices.** Notwithstanding the foregoing invoices may be delivered by mail only and will be effective upon actual receipt by the Buyer.
- (d) **Change of Details.** Either party, may by notice to the other, change the address, facsimile number or email details at which notices or other communications are to be given to it.

16. Execution of Contract

- (a) **Counterparts.** The Contract may be executed in one or more counterparts, each of which will be deemed to be an original copy of the Contract and all of which, when taken together, will be deemed to constitute one and the same agreement.
- (b) **Facsimile.** The exchange of copies of the Contract and of signature pages by facsimile or e-mail (in web browser compatible format) transmission shall constitute effective execution and delivery of the Contract as to the parties and may be used in lieu of the original Contract for all purposes.
- (c) **Signatures.** Signatures of the parties transmitted by facsimile or e-mail (in web browser compatible format) shall be deemed to be their original signatures for any purposes whatsoever.

IN WITNESS WHEREOF the parties hereto execute the Contract under the hands of their respective proper officers duly authorized on their behalf, with effect from the date specified on the first page of this document.

NAVIGANT CONSULTING INC.

TORONTO HYDRO ELECTRIC SYSTEM
LIMITED

By:



Name: Todd Williams
Title: Director

By:



Name: Ivano Labricciosa
Title: Vice-President, Asset
Management

SCHEDULE A

to the

DISTRIBUTED GENERATION CONSULTING SERVICES AGREEMENT

Made as of August 30, 2010

Between

TORONTO HYDRO ELECTRIC SYSTEM LIMITED (herein referred to as "THESL")

and

NAVIGANT CONSULTING INC. (herein referred to as "Navigant")

A. BACKGROUND

On August 28, 2009, THESL filed as part of its 2010 application a study by Navigant (the "Navigant study") entitled "Distributed Generation in Central and Downtown Toronto". The Navigant study concludes that distributed generation may be able to serve some future electricity supply for Central and Downtown Toronto, but that further analysis is required to more fully understand how distributed generation could serve the needs of Central and Downtown Toronto and how it could serve the provincial government's policy objectives.

Central and Downtown Toronto face a number of potential electricity system reliability challenges in the next five to seven years. Some of these challenges include additional area supply capacity, infrastructure renewal, and supply diversity to mitigate high impact - low probability events.

For its upcoming EDR filing, THESL needs to present a plan for the incorporation of distributed generation ("DG") into the central and downtown area. The plan will need to identify the scope of the work associated with the "next steps" in the Navigant study and a schedule of key milestones. Also to be included in the plan is the need to identify actual system costs and benefits for interconnecting significant levels of DG.

Although the OEB decision (and Navigant's earlier report) focused on the Central and Downtown area of Toronto, this study will cover all of THESL's service territory. This is important given the high level of interest in the OPA's Feed-in-Tariff and the requirement for THESL to develop a plan to accommodate DG as required under the Green Energy and Economy Act.

Incorporation of DG in Toronto remains a challenge despite recent program initiatives. Many customers and developers have expressed interest in connecting renewable energy to THESL. While there has been significant interest in the FIT program from THESL customers, with over 615 applicants and over 25.6 MW of potential power projects, there is only limited capacity in the Central and Downtown area of Toronto (with relatively more capacity in the suburban areas of Toronto, such as the previous municipalities of North York and Scarborough).

B. SCOPE OF WORK

Further work is required for the incorporation of DG in order to meet supply needs in central and downtown Toronto. The next steps from Navigant Consulting report, as quoted in the Ontario Energy Board Decision, are outlined below:

1. Collect information on the a) options and costs for upgrading short circuit capacity of both transmission and distribution system and b) local CDM impacts and evaluate the end of life Asset Replacement plant for transmission system serving the Central and Downtown Area.

2. Identify and analyze potential Local Area Integrated Electrical Service options for the area; based on this analysis, identify the preferred solution. Assess local system impacts and examine the short-term, midterm and long-term benefits and costs for each option.
3. Develop a high-level implementation plan for the preferred solution, which could include additional CDM programs, lowering barriers to DG, and transmission and distribution system reinforcement.

It is important to note that next steps as identified by Navigant in the Navigant study as summarized above were not intended solely for THESL, but rather were intended for "THESL and / or the OPA". In fact, certain activities, such as upgrades to the transmission system, are beyond THESL's mandate. Toronto Hydro will pursue further study of distributed generation as directed by the Board and in harmony with the Navigant recommendations under THESL's jurisdiction.

The following scope of work, deliverables and associated fees reflect Navigant's understanding that THESL or an engineering consultancy retained by THESL will undertake any system modelling required during the course of this analysis. As appropriate, Navigant will collect the results of such system modeling and integrate into its analysis.

1.0 Costs and Options

- 1.1 Navigant will collect information on the options and costs for upgrading short circuit capacity on THESL's distribution system. In doing so, Navigant shall:
 - 1.1.1 Establish the "base case" for the analysis based on a review of THESL's current configuration and system refurbishment / upgrade plans through end of 2012 and reflective of station loading net of THESL's forecast CDM impacts.
 - 1.1.2 For all equipment on the THESL side of the 35 transformer stations serving THESL's service territory, review (and augment as necessary) information THESL has compiled with respect to available fault duty limits, calculated maximum single and three phase fault current and other station-specific information necessary for other tasks in the study.
 - 1.1.3 Identify and characterize feeder / system configurations that are representative of THESL's distribution system. These are expected to include the downtown secondary grid network serving the financial district, 4 kV and 13.8 kV feeders serving the older portions of Toronto and 27.6 kV feeders serving the suburban areas of Toronto. Approximate the percentage of THESL's distribution system and relative mix of customers served by each of these configurations. This higher level approach avoids the need for a feeder-by-feeder analysis and recognizes that THESL's system is comprised of a limited number of relatively homogeneous network "topologies."
 - 1.1.4 Identify typical "base" generator configurations and their key electrical parameters (including short circuit contributions) of each DG type. The DG types would include synchronous (such as large CHP), induction (such as small gas engines) and inverter-based equipment (such as PV).
 - 1.1.5 For each of the feeder / system configurations, identify short circuit constraints within the THESL network for each of the base DG generation configurations connected at 1) the station busbar, 2) midway down the feeder and 3) the end of the feeder.
 - 1.1.6 Identify incremental upgrade equipment / bundles and their associated costs to increase distribution system short circuit capacity levels for each of the representative feeder / system and DG configurations from above. As appropriate, identify incremental equipment / bundles and associated costs to increase the ability to connect DG on the THESL side of each of the transformer stations serving THESL. Identify the incremental DG capacity by type enabled by each of the upgrades.
 - 1.1.7 Provide a qualitative discussion of any potential physical or electrical impacts on customer from the upgrades (e.g., will customers need to upgrade the short circuit capacity of their equipment?). Estimate potential mitigation costs, where possible.

Deliverables:

- Description of relevant "Base case" network configuration / parameters reflecting THESL's system refurbishment / upgrade plans through end of 2012.
- Assessment of available fault duty limits, maximum single and three phase fault current and other relevant station-specific information for all equipment on the THESL side of the 35 transformer stations serving THESL's service territory.
- Characterization of feeder / system configurations representative of THESL's network with approximation of the percentage of THESL's distribution system and relative mix of customers served by each of these configurations.
- Characterization of typical "base" generator configurations and their key electrical parameters (including short circuit contributions) of each DG type.
- For each of three locations (1-at the station busbar, 2-midway down the feeder and 3-the end of the feeder) and for each of the representative feeder / system configurations, estimate the short circuit constraints within the THESL network for each of the base DG generation configurations
- Incremental upgrade equipment / bundles and their associated costs to increase distribution system short circuit capacity levels for each of the representative feeder / system and DG configurations from above and estimates of incremental DG capacity by type enabled by each of the upgrades.
- Discussion of any potential physical or electrical impacts on customer facilities and equipment from the upgrades

1.2 Navigant will embark on a review to ensure there are no bottlenecks on the distribution system, by:

- 1.2.1 Using the same analytic structure as for 1.1 above (i.e., station-by-station, representative feeder / network configuration and for different types of DG connected at different locations on the feeder) and leveraging available information from THESL, assess any other bottlenecks to DG. The bottlenecks could include minimum loading constraints, feeder ampacity limits, voltage regulation criteria, feeder tie capacity and protective relay settings and coordination.
- 1.2.2 Identifying incremental upgrade equipment / bundles and associated costs to eliminate the bottlenecks. Identify the incremental DG capacity by type enabled by each of the upgrades.

Deliverables:

- Similar to deliverables for 1.1 above but addressing any other bottlenecks impacting THESL's ability to connect DG. These other bottlenecks could include, but are not limited to: minimum loading constraints, feeder ampacity limits, voltage regulation criteria, feeder tie capacity and protective relay settings and coordination.

1.3 Navigant will engage Hydro One Networks Inc. (HONI) and the Ontario Power Authority (OPA) as necessary to identify any constraints on DG currently imposed by the transmission system serving THESL, and to explore the implications of upgrades and end of life Asset Replacement plans being considered for the transmission system serving THESL on DG. Navigant understands these options are described in HONI's most recent Transmission rate submission and could include upgrades to the Leaside, Manby and Hearn transformer stations and the transmission network serving these stations. Navigant's work in this respect shall include:

- 1.3.1 Review the relevant sections of the most recent HONI Transmission rate submission relating to HONI's transmission system connections to the THESL system
- 1.3.2 Discussions with HONI (and OPA as necessary) to fully understand the options being considered and their implications.

- 1.3.3 Assess the degree to which the current transmission system capability would serve as a constraint to DG connection relative to 1) current short circuit capacity from 1.1 above and with current system bottlenecks from 1.2 above and 2) short circuit capacity from 1.1 above with upgrades and system bottlenecks addressed from 1.2 above.
- 1.3.4 Assess the degree to which the upgraded transmission system capability for the options being considered would serve as a constraint to DG connection relative to 1) current short circuit capacity from 1.1 above and with current system bottlenecks from 1.2 above and 2) short circuit capacity from 1.1 above with upgrades and with system bottlenecks addressed from 1.2 above.

Deliverables:

- Discussions with HONI (and OPA as necessary) to fully understand the options being considered and their implications.
- Based on information provided by HONI, assessment of degree to which the current transmission system capability would serve as a constraint to DG connection relative to limits determined in 1.1 and 1.2 above.
- Based on information provided by HONI, assessment of degree to which the upgraded transmission system capability would serve as a constraint to DG connection relative to limits determined in 1.1 and 1.2 above.

- 1.4 Navigant will develop a simplified overview of the potential distribution and transmission upgrades and their impact on DG connection capacity within the THESL system to clarify their interaction and inter-dependency. These upgrades on the THESL system could include feeder capacity upgrades, upgraded relaying, substation equipment changeout, etc. For larger DG, the upgrades could include express feeders directly to transformer stations.

Deliverables:

- Overview of the potential distribution and transmission upgrades and their impact on DG connection capacity within the THESL system to clarify their interaction and inter-dependency. This overview would be a key vehicle for communicating the findings from this task to a non-technical audience (such as OEB Board members and stakeholders).

2.0 Develop a Prudent Approach to Enabling Additional DG

- 2.1 Navigant will develop criteria for the optimization of alternatives and derivation of the preferred solution. Consideration is to be given to both social and economic benefits. Further, the evaluation of benefits is to take place in recognition of related DG, system expansion and policy developments and associated timeframes. Navigant's work in this respect shall include:

- 2.1.1 Review provincial OEB policies, past decisions and, as appropriate, methodologies used elsewhere to inform evaluation methodology and criteria (including consideration of social and economic benefits provided by DG and CDM). Given the focus on THESL steps to enable DG connection, one criterion THESL proposes to employ is that any THESL upgrades should enhance its ability to connect DG given potential upstream constraints on the transmission system. The approach could also consider the level of effective peak coincident DG capacity that is enabled on a dollar per effective coincident peak MW as one of the criteria.

Deliverables:

- Proposed evaluation framework and criteria for selecting upgrades to enable incremental DG on THESL system, with rationale, precedence, etc.

2.2 Navigant will identify the preferred solution from the Local Area Integrated Electrical Service options through the application of relevant criteria. Navigant's work in this respect shall include:

- 2.2.1 Rank and prioritize possible THESL upgrades from 1.1.6 and 1.2.2 above based on the evaluation methodology from 2.1.1
- 2.2.2 Select the most appropriate combinations and sequence of upgrades and the key drivers (such as DG connection requests) that would influence the timing and scope of these upgrades, as appropriate.
- 2.2.3 Describe ancillary benefits the THESL upgrades will provide such as increased feeder capacity, voltage regulation, delivery efficiency, and enhanced tie capacity that may be realized independent of the level of DG that might be installed.

Deliverables:

- Assessment and ranking of potential upgrades identified 1.1.6 and 1.2.2 to evaluation framework developed in 2.1
- Discussion of factors (such as DG connection requests) that could affect the ranking and sequence of potential upgrades
- Discussion of ancillary benefits upgrade would provide to THESL beyond enabling incremental DG connection.

2.3 Navigant will assess local system impacts and examine the short-term, midterm and long-term benefits and costs for each option. Navigant's work in this respect shall include:

- 2.3.1 Assess local THESL system impacts, particularly in terms of available DG connection capacity, in the short, medium and long-term based on the most appropriate combinations and sequence of upgrades and key drivers from 2.2.2 above. DG connection capacity will be evaluated for applicable DG technologies, including synchronous, induction and inverter-based devices.
- 2.3.2 Determine the relative merits provided by the solution in terms of additional DG that can be accommodated for DG technologies by location. This task includes development of interconnection scenarios where DG is installed on various locations on the representative feeders described in 1.1.3.
- 2.3.3 Assess non-quantitative factors, including potential impacts in feeder performance, reliability, operating flexibility, protection coordination, and system planning criterion. Also assess societal benefits in terms of reduced emissions and attainment of OEB and provincial policy goals for distributed resources, including those contained in the Green Energy and Economy Act.
- 2.3.4 Describe the factors and conditions that would limit additional DG penetration for each option, including fault limits, tie capacity, maximum feeder loading (e.g., reverse power flows), secondary grid networks (impact on network protectors); with consideration given to how various DG technology influences these constraints.

Deliverables:

- Assessment of local THESL system impacts, particularly in terms of available DG connection capacity (by type), in the short, medium and long-term based on the upgrades identified in 2.2.2 covering interconnection scenarios where DG is installed on various locations on the representative feeders described in 1.1.3.
- Assessment of non-quantitative factors, including potential impacts in feeder performance, reliability, operating flexibility, protection coordination, and system planning criterion) and societal benefits and achievement of government policy objectives, in the short, medium and long-term based on the upgrades identified in 2.2.2.

- Description of factors and conditions that would limit additional DG penetration for each option.

3.0 Implementation Plan

3.1 Navigant will develop a plan for THESL which shall include all of the entities involved in the implementation of an effective overall strategy to incorporate distributed generation. Navigant's work in this respect shall include:

- 3.1.1 The plan shall be based on most appropriate combinations and sequence of upgrades and key drivers from 2.2.2 above. Note that some of the upgrades would be triggered by external key drivers, such as requests for DG connections, whereas others could be implemented over the short, medium and long-term on a "no regrets" basis to enable incremental DG connection capacity regardless of external drivers.
- 3.1.2 Prepare a Long Term Plan for the THESL system based on the preferred solution that balances the cost of enabling additional levels of DG versus the economic and societal benefits provided by expected levels of DG, and the value the upgrades would provide independent of the level of incremental DG installed.
- 3.1.3 Request feedback and input from HONI and possibly, the OPA to confirm the THESL is consistent with longer term strategies proposed for the higher voltage transmission and bulk power system. Also confirm with HONI the proposed solutions will not compromise or exceed equipment fault limits or create capacity constraints. THESL also will seek input from HONI and OPA regarding the effective level of firm capacity provided by DG from a transmission and bulk power system perspective.
- 3.1.4 Develop an Implementation Plan that documents the timing, cost and impacts of the preferred strategy documented in THESL's Long Term Plan. The strategy should outline a prudent course of action based on the relative benefits of the strategy with regard to enabling additional DG on the THESL system, the value it provides to the power delivery system absent increased levels of DG penetration and overall attainment of OEB and provincial policy objectives.
- 3.1.5 Document the implementation plan in a formal report to be filed before the OEB. This report will describe the methods, criteria and value assessment employed to support the recommended Plan. The Plan will incorporate the input and plans proposed by other entities that would include HONI and the OPA.

Deliverables:

- Long Term Plan for enabling incremental DG on the THESL system reflecting results from Task 1 and 2 that balances the cost of enabling additional levels of DG versus the economic and societal benefits provided by expected levels of DG, and the value the upgrades would provide independent of the level of incremental DG installed.
- Discussions (via THESL) with HONI and, possibly, the OPA to confirm the Long Term Plan is consistent with longer term strategies proposed for the higher voltage transmission and bulk power system.
- Implementation Plan summarizing the timing, cost and impacts of the preferred strategy documented in THESL's Long Term Plan.
- The Long Term Plan and associated Implementation Plan will be suitable for submission by THESL to the OEB and will describe the methods, criteria and value assessment employed to support the recommended Plan. The Plan will incorporate the input and plans proposed by other entities that would include HONI and the OPA.

C. SCHEDULE

The schedule for the contract shall be based on the figure shown below.

		August		September				October				November				December					
		23-Aug	30-Aug	6-Sep	13-Sep	20-Sep	27-Sep	4-Oct	11-Oct	18-Oct	25-Oct	1-Nov	8-Nov	15-Nov	22-Nov	29-Nov	6-Dec	13-Dec	20-Dec	27-Dec	
Task 1: Costs and Options	1.1																				
	1.2																				
	1.3																				
	1.4																				
Task 2: Develop Prudent Approach to Enabling DG	2.1																				
	2.2																				
	2.3																				
Task 3: Implementation Plan	3.1																				

D. PRICING AND RATES

Subject to the terms of Section 3 of the Agreement, and in exchange for the performance of the Work and the delivery of all deliverables in this contract, THESL agrees to pay Navigant the Fees calculated at the following rates:

Team Member	Hourly Billing Rate	Task 1: Costs and Options			Task 2: Develop Prudent Approach to Enabling DG			Task 3: Impl. Plan		Project Total
		1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	
Hours										

Total Labour & Direct Costs	\$36,820	\$30,100	\$13,440	\$27,240	\$24,620	\$22,880	\$21,500	\$65,940	\$242,540
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NB: Costing reflects Navigant Consulting's understanding that THESL or an external engineering firm under contract to THESL will undertake any system modeling required during this project

SCHEDULE B
PRIVACY RULES

- (a) **Compliance with Privacy Laws.** The Consultant shall comply with all Privacy Laws with respect to any Personal Information it collects, uses or discloses in connection with this Contract, and shall indemnify and hold harmless the Buyer and the Buyer's Representatives from and against any and all claims, demands, suits, losses, damages, causes of action, fines or judgements (including related expenses and legal fees) that they may incur related to or arising from any non-compliance therewith. This provision shall survive termination of this. The Consultant shall at all times comply strictly with this Contract in such manner as to ensure that its acts or omissions do not knowingly result in the Buyer being in violation of any applicable Privacy Laws. The Consultant shall immediately advise the Buyer if it believes that any practice or procedure in which it is engaging contravenes applicable Privacy Laws, or if the Consultant or any of its Representatives receives or learns of any complaint or allegation to that effect. If the Buyer determines that a practice or procedure would result in violation of applicable Privacy Laws, then the parties may by mutual agreement amend this Contract to vary or eliminate such practice or procedure.
- (b) **No Disclosure of Personal Information.** Except as expressly permitted herein, the Consultant shall not, without the prior written consent of the Buyer, (i) disclose any of the Personal Information to any affiliated or unaffiliated third party, or (ii) transmit or provide access to the Personal Information to any of the Consultant's personnel who are not directly involved in the matters pertaining to this Contract, or to any facility, outside Ontario.
- (c) **Complaints.** Any privacy related requests or complaints received by the Consultant in relation to this Contract shall be immediately referred to the Buyer's Authorized Representative, as identified in this Contract. If the Consultant receives any inquiry or complaint relating to Personal Information that has been collected, used or disclosed by it under this Contract, the Consultant shall immediately notify the Buyer thereof in such form and manner, and with such particulars, as the Buyer may reasonably request. The Consultant agrees to cooperate with the Buyer to comply with any access requests for Personal Information, and to amend Personal Information as required by Privacy Laws, only upon receiving instructions to do so from the Buyer, its personnel or other individual to whom the Personal Information relates.
- (d) **Audit of Privacy Practices.** The Buyer may on reasonable notice, audit the Personal Information practices of the Consultant and may specifically audit the Consultant's compliance with Privacy Laws. The Buyer shall not have any duty to conduct such an audit and shall not incur any liability or obligation by reason of doing or not doing so.
- (e) **Security Measures.** All of the Personal Information shall be stored in a secure physical and electronic environment meeting or exceeding then-current industry standards and satisfactory to the Buyer in its sole discretion. Promptly upon notice from the Buyer, the Consultant will undertake, at its sole cost and expense, to remedy any security deficiency or improvement reasonably requested by the Buyer.
- (f) **Notification of Unauthorized Activities.** The Consultant shall promptly notify the Buyer in writing upon becoming aware of the loss, theft, or unauthorized access, disclosure, copying, use or modification of any Personal Information.
- (g) **Limitations of Access.** The Consultant, as applicable, shall:
 - (i) ensure that only such of their respective employees and agents as have a need to know the Personal Information for the performance of this Contract have access to the Personal Information;

- (ii) ensure that each person who has such access (a "User") is familiar with the privacy obligations under the Contract;
- (iii) ensure that upon termination or expiry of this Contract, each User's ability to access Personal Information is terminated, any and all Personal Information in the possession of any such User is returned or, at the Buyer's option, destroyed (provided the Buyer is provided with a certificate from an officer of the Consultant attesting to such destruction), and such User is reminded of the continuing obligation of confidentiality with respect to all Personal Information;
- (h) **Termination.** In the event that the Consultant is not in compliance with any Privacy Law, then the Buyer shall be able to terminate this Contract immediately and without further notice to the Consultant, without prejudice to any other rights or remedies the Buyer is entitled to at law or in equity.
- (i) **Return of Personal Information.** In the event of any termination of this Contract, the Consultant shall forthwith return to the Buyer, as directed, all the Personal Information held by the Consultant pursuant to this Contract, or, at the Buyer's option, destroy such Personal Information as directed.
- (j) **Survival.** The obligations in this SCHEDULE "B" shall survive the expiration or termination of this Contract.

INTERROGATORIES OF POLLUTION PROBE

INTERROGATORY 2:

Reference(s): Exhibit M1, Tab 1, Schedule 1, page 7

- a) Please provide the formula that Toronto Hydro uses to calculate the dollar value of the annual difference between actual and forecast losses in the RSVA Power variance account.
- b) Please provide the dollar values of the annual differences between the actual and forecast losses in the RSVA Power variance account for each of the past five years.
- c) Would Toronto Hydro oppose a proposal to exclude the dollar value of the annual difference between actual and forecast losses from the RSVA Power variance account? If yes, please explain why.

RESPONSE:

- a) THESL is currently undertaking a review of the RSVAPower account details and process for booking amounts to this account (which include amounts related to the cost of power as well as amounts related to Global Adjustment). An amount of \$5,596, not including amounts related to Global Adjustment, is currently booked in this account.
- b) Please see response to part (a).
- c) THESL would oppose a proposal to assume the risk of variances between actual and deemed losses because THESL cannot reasonably control actual losses on its distribution system. While THESL can attempt to minimize losses operationally and through investments in lower-loss equipment, the objective of loss minimization must

INTERROGATORIES OF POLLUTION PROBE

1 be balanced against other operational objectives (such as reliability) and must also be
2 undertaken on a cost-effective basis.

3

4 Furthermore, for any given state and configuration of distribution equipment and set
5 of operating procedures, losses vary exponentially (as the square) with current, as a
6 matter of physics. Therefore actual losses will be highly dependent on demand
7 conditions which THESL cannot control and which themselves depend on factors
8 such as temperature and economic activity.

9

10 Therefore THESL takes the view that the responsible approach to the issue of
11 minimizing losses is not for utilities to assume risk for variances between actual and
12 deemed losses (however they would be determined), but rather for loss minimization
13 to be among the objectives sought to be furthered in operational procedures (together
14 with safety and reliability among others) and in the investments THESL makes in its
15 distribution system.

INTERROGATORIES OF POLLUTION PROBE

1 **INTERROGATORY 3:**

2 **Reference(s):** **Exhibit M1, Tab 1, Schedule 1, page 2**

3

4 Please provide the dollar values of the lower and the upper bounds for the Residential and
5 General Service (i.e. less than 50 kW) monthly service charges for 2011 as per the EB-
6 2007-0667 Report of the Board.

7

8 **RESPONSE:**

9 The dollar values of the lower and the upper bounds for the proposed 2011 monthly
10 service charges for all rate classes are filed in Exhibit L1, Tab 2, Schedule 1, page 25.

INTERROGATORIES OF POLLUTION PROBE

1 **INTERROGATORY 4:**

2 **Reference(s):** **Exhibit M1, Tab 1, Schedule 1, page 2**

3

4 Please re-calculate the volumetric charges for the Residential and General Service (i.e.
5 less than 50 kW) for 2011 assuming that the fixed monthly service charges are held
6 constant at the current 2010 levels. Please conduct this recalculation under each of the
7 following scenarios:

- 8 a) The lost monthly service charge revenues are instead recovered by increases to their
9 volumetric charges during all hours of the year; and
10 b) The lost monthly service charge revenues are instead recovered by increases to their
11 peak period volumetric charges only.

12

13 Please also provide a bill impact analysis for each of the above scenarios for a
14 representative sample of customers.

15

16 **RESPONSE:**

17 a) Please see table provided in Appendix A to this Schedule.

18

19 b) Distribution rates are not differentiated by time period, and therefore there is no peak
20 period volumetric charge specifically.

Bill Impact Table

RESIDENTIAL - 800 kWh	Current			Proposed			Impact	
	Volume	Rate \$	Charge \$	Volume	Rate \$	Charge \$	Change \$	Change %
Service Charge (per 30 days)	1	18.25	18.25	1	18.25	18.25	-	0.0%
Distribution	800	0.01572	12.58	800	0.02241	17.93	5.35	42.5%
Smart Meter Rider (per 30 days)	1	0.68000	0.68	1	0.68000	0.68	-	0.0%
SSM Rider	800	0.00006	0.05	-	-	-	(0.05)	-100.0%
LRAM Rider	800	0.00044	0.35	-	-	-	(0.35)	-100.0%
Regulatory Assets - Deferral/Variance	800	(0.00189)	(1.51)	800	(0.00189)	(1.51)	-	0.0%
Regulatory Assets - Global Adjustment - RPP	-	-	-	-	-	-	-	0.0%
Regulatory Assets - 2011 Rate Rider				800	0.00089	0.71	0.71	0.0%
Contact Voltage		-	-	1	0.41	0.41	0.41	0.0%
Sub Total A - Distribution			30.39			36.47	6.07	20.0%
RTST - Network	830.08	0.00663	5.50	830.08	0.00648	5.38	(0.12)	-2.3%
RTSR - Connection	830.08	0.00535	4.44	830.08	0.00487	4.04	(0.40)	-9.0%
Sub Total B (including Sub-Total A) - Distribution			40.34			45.89	5.55	13.8%
Wholesale Market Rate	830.08	0.00520	4.32	830.08	0.00520	4.32	-	0.0%
RRRP	830.08	0.00130	1.08	830.08	0.00130	1.08	-	0.0%
DRC	800	0.00700	5.60	800	0.00700	5.60	-	0.0%
Standard Supply Service Charge	1	0.25	0.25	1	0.25	0.25	-	0.0%
SPC	830.08	0.00037	0.31	830.08	0.00037	0.31	-	0.0%
Cost of Power Commodity - 1st Tier (May 1st 2010)	600.00	0.06500	39.00	600.00	0.06500	39.00	-	0.0%
Cost of Power Commodity - 2nd Tier (May 1st 2010)	230.08	0.07500	17.26	230.08	0.07500	17.26	-	0.0%
Total Bill (including Sub-Total B)			108.15			113.70	5.55	5.1%

kWh

Consumption Details	800
Total Loss Factor	1.0376

Bill Impact Table

GS < 50 kWh with 2,000 kWh	Current			Proposed			Impact	
	Volume	Rate \$	Charge \$	Volume	Rate \$	Charge \$	Change \$	Change %
Service Charge (per 30 days)	1	24.30	24.30	1	24.30	24.30	-	0.0%
Distribution	2,000.00	0.02270	45.40	2,000.00	0.02692	53.84	8.44	18.6%
Smart Meter Rider (per 30 days)	1	0.68000	0.68	1	0.68000	0.68	-	0.0%
SSM Rider	2,000.00	0.00003	0.06	-	-	-	(0.06)	-100.0%
LRAM Rider	2,000.00	0.00009	0.18	-	-	-	(0.18)	-100.0%
Regulatory Assets - Deferral/Variance	2,000.00	(0.00179)	(3.58)	2,000.00	(0.00179)	(3.58)	-	0.0%
Regulatory Assets - Global Adjustment - RPP	-	-	-	-	-	-	-	0.0%
Regulatory Assets - 2011 Rate Rider				2,000.00	0.00075	1.50	1.50	n/a
Contact Voltage		-	-	1	0.42	0.42	0.42	n/a
Sub Total A - Distribution			67.04			77.16	10.12	15.1%
RTST - Network	2,075.20	0.00664	13.78	2,075.20	0.00627	13.01	(0.77)	-5.6%
RTSR - Connection	2,075.20	0.00546	11.33	2,075.20	0.00440	9.13	(2.20)	-19.4%
Sub Total B (including Sub-Total A) - Distribution			92.15			99.31	7.16	7.8%
Wholesale Market Rate	2,075.20	0.00520	10.79	2,075.20	0.00520	10.79	-	0.0%
RRRP	2,075.20	0.00130	2.70	2,075.20	0.00130	2.70	-	0.0%
DRC	2,000.00	0.00700	14.00	2,000.00	0.00700	14.00	-	0.0%
Standard Supply Service Charge	1.00	0.25	0.25	1.00	0.25	0.25	-	0.0%
Special Purpose Charge	2,075.20	0.00037	0.77	2075.20	0.00037	0.77	-	0.0%
Cost of Power Commodity - 1st Tier (May 1st 2010)	750.00	0.06500	48.75	750.00	0.06500	48.75	-	0.0%
Cost of Power Commodity - 2nd Tier (May 1st 2010)	1,325.20	0.07500	99.39	1,325.20	0.07500	99.39	-	0.0%
Total Bill (including Sub-Total B)			268.80			275.96	7.16	2.7%

kWh

Consumption Details	2,000.00
Total Loss Factor	1.0376

INTERROGATORIES OF POLLUTION PROBE

1 **INTERROGATORY 5:**

2 **Reference(s):** **Exhibit M1, Tab 1, Schedule 1, page 2**

3

4 Please re-calculate the volumetric charges for the Residential and General Service (i.e.
5 less than 50 kW) for 2011 assuming that their fixed monthly service charges are reduced
6 by \$2 per month relative to the current 2010 levels. Please conduct this recalculation
7 under each of the following scenarios:

8 a) The lost monthly service charge revenues are instead recovered by increases to their
9 volumetric charges during all hours of the year; and

10 b) The lost monthly service charge revenues are instead recovered by increases to their
11 peak period volumetric charges only.

12

13 Please also provide a bill impact analysis for each of the above scenarios for a
14 representative sample of customers.

15

16 **RESPONSE:**

17 a) Please see table provided in Appendix A to this Schedule.

18

19 b) Distribution rates are not differentiated by time period, and therefore there is no peak
20 period volumetric charge specifically.

RESIDENTIAL - 800 kWh	C urrent			Proposed			Impact	
	Volume	Rate \$	Charge \$	Volume	Rate \$	Charge \$	Change \$	Change %
Service Charge (per 30 days)	1	18.25	18.25	1	16.25	16.25	(2.00)	-11.0%
Distribution	800	0.01572	12.58	800	0.02545	20.36	7.78	61.9%
Smart Meter Rider (per 30 days)	1	0.68000	0.68	1	0.68000	0.68	-	0.0%
SSM Rider	800	0.00006	0.05	-	-	-	(0.05)	-100.0%
LRAM Rider	800	0.00044	0.35	-	-	-	(0.35)	-100.0%
Regulatory Assets - Deferral/Variance	800	(0.00189)	(1.51)	800	(0.00189)	(1.51)	-	0.0%
Regulatory Assets - Global Adjustment - RPP	-	-	-	-	-	-	-	0.0%
Regulatory Assets - 2011 Rate Rider				800	0.00089	0.71	0.71	0.0%
Contact Voltage		-	-	1	0.41	0.41	0.41	0.0%
Sub Total A - Distribution			30.39			36.90	6.51	21.4%
RTST - Network	830.08	0.00663	5.50	830.08	0.00648	5.38	(0.12)	-2.3%
RTSR - Connection	830.08	0.00535	4.44	830.08	0.00487	4.04	(0.40)	-9.0%
Sub Total B (including Sub-Total A) - Distribution			40.34			46.32	5.98	14.8%
Wholesale Market Rate	830.08	0.00520	4.32	830.08	0.00520	4.32	-	0.0%
RRRP	830.08	0.00130	1.08	830.08	0.00130	1.08	-	0.0%
DRC	800	0.00700	5.60	800	0.00700	5.60	-	0.0%
Standard Supply Service Charge	1	0.25	0.25	1	0.25	0.25	-	0.0%
SPC	830.08	0.00037	0.31	830.08	0.00037	0.31	-	0.0%
Cost of Power Commodity - 1st Tier (May 1st 2010)	600.00	0.06500	39.00	600.00	0.06500	39.00	-	0.0%
Cost of Power Commodity - 2nd Tier (May 1st 2010)	230.08	0.07500	17.26	230.08	0.07500	17.26	-	0.0%
Total Bill (including Sub-Total B)			108.15			114.13	5.98	5.5%

kWh

Consumption Details	800
Total Loss Factor	1.0376

GS < 50 kWh with 2,000 kWh	C urrent			Proposed			Impact	
	Volume	Rate \$	Charge \$	Volume	Rate \$	Charge \$	Change \$	Change %
Service Charge (per 30 days)	1	24.30	24.30	1	22.30	22.30	(2.00)	-8.2%
Distribution	2,000.00	0.02270	45.40	2,000.00	0.02767	55.34	9.94	21.9%
Smart Meter Rider (per 30 days)	1	0.68000	0.68	1	0.68000	0.68	-	0.0%
SSM Rider	2,000.00	0.00003	0.06	-	-	-	(0.06)	-100.0%
LRAM Rider	2,000.00	0.00009	0.18	-	-	-	(0.18)	-100.0%
Regulatory Assets - Deferral/Variance	2,000.00	(0.00179)	(3.58)	2,000.00	(0.00179)	(3.58)	-	0.0%
Regulatory Assets - Global Adjustment - RPP	-	-	-	-	-	-	-	0.0%
Regulatory Assets - 2011 Rate Rider				2,000.00	0.00075	1.50	1.50	n/a
Contact Voltage		-	-	1	0.42	0.42	0.42	n/a
Sub Total A - Distribution			67.04			76.66	9.62	14.4%
RTST - Network	2,075.20	0.00664	13.78	2,075.20	0.00627	13.01	(0.77)	-5.6%
RTSR - Connection	2,075.20	0.00546	11.33	2,075.20	0.00440	9.13	(2.20)	-19.4%
Sub Total B (including Sub-Total A) - Distribution			92.15			98.80	6.65	7.2%
Wholesale Market Rate	2,075.20	0.00520	10.79	2,075.20	0.00520	10.79	-	0.0%
RRRP	2,075.20	0.00130	2.70	2,075.20	0.00130	2.70	-	0.0%
DRC	2,000.00	0.00700	14.00	2,000.00	0.00700	14.00	-	0.0%
Standard Supply Service Charge	1.00	0.25	0.25	1.00	0.25	0.25	-	0.0%
Special Purpose Charge	2,075.20	0.00037	0.77	2,075.20	0.00037	0.77	-	0.0%
Cost of Power Commodity - 1st Tier (May 1st 2010)	750.00	0.06500	48.75	750.00	0.06500	48.75	-	0.0%
Cost of Power Commodity - 2nd Tier (May 1st 2010)	1,325.20	0.07500	99.39	1,325.20	0.07500	99.39	-	0.0%
Total Bill (including Sub-Total B)			268.80			275.45	6.65	2.5%

kWh

Consumption Details	2,000.00
Total Loss Factor	1.0376

INTERROGATORIES OF POLLUTION PROBE

1 **INTERROGATORY 6:**

2 **Reference(s):** **Exhibit M1, Tab 1, Schedule 1, page 7**

3 **Exhibit M1, Tab 5, Schedule 1**

4

5 Please describe the actions that Toronto Hydro is taking in 2010 and will take in 2011 to
6 reduce its distribution system losses. Please describe additional cost-effective actions
7 that Toronto Hydro could take to reduce its distribution system losses. In both responses,
8 please quantify the potential impact in MWh of these actions on Toronto Hydro's losses.

9

10 **RESPONSE:**

11 There are a number of transformer replacement and voltage conversion projects in 2010
12 and 2011 that will provide distribution system efficiencies, as a secondary benefit. The
13 impact of these projects on system losses in MWh is not known with any precision but
14 would likely be in the order of 5-10 GWh.

INTERROGATORIES OF POLLUTION PROBE

INTERROGATORY 7:

Reference(s): Exhibit M1, Tab 1, Schedule 1, page 2

Please provide Toronto Hydro's fixed monthly service charges for Residential and General Service customers for each of the last 20 years.

RESPONSE:

The following table shows the fixed monthly service charges for the Residential and General Service classes since 2000. Prior to 2000, distribution rates were not separated from commodity rates and therefore are not comparable.

Fixed Monthly Service Charge (\$/customer/30 Days)				
	Residential	GS <50 kW	GS 50-999 kW	GS 1000-4999 kW
May-00	9.46	12.70	20.18	557.00
May-01	10.80	14.50	23.06	637.00
May-02	14.03	18.59	29.61	815.60
May-03	14.03	18.59	29.61	815.60
May-04	14.03	18.59	29.61	815.60
May-05	13.64	18.27	29.23	803.72
May-06	11.96	16.02	25.74	715.08
May-07	12.00	16.07	25.82	717.42
May-08	14.85	19.37	29.78	725.80
May-09	16.85	21.44	32.69	705.35
May-10	18.25	24.30	35.49	659.80
Notes: GS 50-999 kW class is for interval-metered prior to 2008				