Hvdro Ottawa Limited 3025 Albion Road North, PO Box 8700 3025, chemin Albion Nord, C.P. 8700 Ottawa, Ontario K1G 3S4 Tel.: (613) 738-6400 Fax: (613) 738-6403 www.hydroottawa.com

Hvdro Ottawa limitée Ottawa (Ontario) K1G 3S4 Tél.: (613) 738-6400 Téléc. : (613) 738-6403 www.hydroottawa.com



September 8, 2011

Kirsten Walli, Board Secretary **Ontario Energy Board** P.O. Box 2319 2300 Yonge Street, 27th Floor Toronto ON M4P 1E4

Dear Ms. Walli,

Re: EB-2011-0054 - Hydro Ottawa Limited 2012 Cost of Service Rate Application

Please find enclosed Hydro Ottawa's responses to most of the interrogatories from Intervenors in the above noted rate application. Of the 622 total interrogatories filed by Intervenors, Hydro Ottawa is responding to 511 or 82% of the questions today.

Due to the changes to Ontario Energy Board's filings requirements announced after Hydro Ottawa filed its application and the recent release of updated models, Hydro Ottawa has not completed all the interrogatories. A number of the interrogatories requested information that required the updated models to be completed prior to answering the questions.

The following models and their release dates directly impacted Hydro Ottawa's ability to respond to the Intervenors' interrogatories:

- June 22: Revenue Requirement Workform (RRWF) •
- July 29: Deferral/Variance Account Continuity Schedule
- August 5: Cost allocation Model
- August 23: Income Tax/PILs Workform
- August 26: RTSR Adjustment Model

The following changes to the filing requirements also directly impacted Hydro Ottawa's ability to respond to the in the interrogatories:

- the requirement to apply for the lost revenue adjustment mechanism for 2010 OA programs,
- the requirement to apply for clearance of the variance accounts for Smart Meters, special • Purpose Charge and deferred PILs 1562 and 1592 accounts
- the requirement to update the Retail Transmission Service Rates



It should be noted that as part of Procedural Order #2, the Ontario Energy Board ordered that "the interrogatories and interrogatory responses must be filed by issue". Hydro Ottawa has complied with this direction and the exhibit numbers follow the issue list. The exhibit numbers were determined based upon the issue list so Exhibit K1-1-1 refers to K for interrogatories; K1 for issue 1; K1-1 for Issue 1.1; and K1-1-1 for issue 1.1 question 1. Exhibit K4-1-11 would refer to Issue 4.1, question 11.

In order for Intervenors to correlate their questions to the exhibit numbers, Hydro Ottawa has included an index with the filing of interrogatories. This index provides the exhibit number and the corresponding Intervenor question and the date on which the response was filed.

Hydro Ottawa expects to file the responses to the remaining interrogatories as well as the updated schedules/attachments/models early the week of September 12, 2011.

Hydro Ottawa will submit two (2) sets of hard copies of all the responses with the Ontario Energy Board upon completion of this filing next week.

Yours truly,

Original signed by P. Hoey

Patrick Hoey Director, Regulatory Affairs

cc EB-2011-0054 Intervenors Violet Binette (Ontario Energy Board) Fred Cass (Aird & Berlis)



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.1 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

1 1. GENERAL

2	
3	Issue 1.1 - Has Hydro Ottawa responded appropriately to all relevant Board
4	directions from previous proceedings?
5	
6	Board Staff Question #1 - Ref: Notice of Application
7	Following publication of the Notice of Application, did Hydro Ottawa receive any letters of
8	comment? If so, please confirm whether a reply was sent from the applicant to the
9	author of the letter. If confirmed, please file that reply with the Board. If not confirmed,
10	please explain why a response was not sent and confirm if the applicant intends to
11	respond.
12	
13	Response
14	
15	Following publication of the Notice of Application, Hydro Ottawa Limited did not receive

16 any letters of comment.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.1 Interrogatory #4 Filed: 2011-09-08 Page 1 of 4

1 1. GENERAL

- 2 3 Issue 1.1 - Has Hydro Ottawa responded appropriately to all relevant Board 4 directions from previous proceedings? 5 6 CCC Question #2 - Ref: Ex. A1/T9 7 Hydro Ottawa has filed its "Conditions of Service" dated January 1, 2011. Please 8 provide a detailed list of all of the changes made since the Conditions were last filed with 9 the Board. 10 11 Response 12 13 The following Table 1 provides a detailed listing of all of the changes made to Hydro 14 Ottawa Limited's ("Hydro Ottawa") Conditions of Service, since it was last filed with the
- 15 Ontario Energy Board.
- 16
- 17

Table 1 - Detailed Summary of Conditions of Service Changes

Section Number	Subsection Title	Change Description			
1.5	Contact Information	Removed direct extension for vault maintenance and added it to the Service Desk			
1.7.1	Distributor Rights - Access	New subsection - reinforcing right to access Hydro Ottawa distribution equipment			
2.1.2	Expansions & Offer to Connect	New subsection - renewable and non-renewable generator information			
2.1.2.1	Load Customers and Generation Facilities	Expanded to include generators			
2.1.2.2	Renewable Generation Facilities	New section relating to cost responsibilities of distributor and generators			
2.1.2.3	Offer to Connect	Updated section to reflect the components of an offer to connect			
2.1.2.4	Alternate Bid	Clarified conditions for which the alternative bid option is offered and respective customer/distributor responsibilities. Expanded description of customer requirements.			
2.1.6.5	Opening & Closing Accounts	Revised minimum customer information requirements			
2.2.1	Refusal to Connect or Right to Disconnect	Merged two scenarios and expanded conditions per HOL practices. Added provision for the removal of discontinued service wires for multiple serviced			



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.1 Interrogatory #4 Filed: 2011-09-08 Page 2 of 4

		facilities			
2.2.3	Disconnection for Non-	Revised notice period from 7 to 10 days			
	payment of Overdue Amounts				
2.3.1.1	Limitations on the Guarantee of Supply -Indemnity and Liability	New subsection - relating to Indemnity and Liability			
2.3.2.2	Farm Stray Voltage	New Section - HOL farm stray voltage investigation procedures			
2.3.7.2	Interval Metering	Requirements clarified			
2.3.7.3	Meter Costs	Revised to reflect that smart meter shall be provided at no cost to the customer. Expanded upgrade options and customer cost responsibilities			
2.3.7.4	Individual Suite Metering for Newly Constructed Multi-Unit Buildings	New Section - outlining metering options available for new, multi-unit buildings. Clarification on metering options and requirements			
2.3.7.5	Existing Multiple-Unit Sites and Condo Buildings	New Section - outlining metering options available for existing multiple-unit sites and condo buildings. Revised to clarify the conditions under which smart meters and/or MCMS metering can be installed, with reference to the associated specifications. Expanded listing of common services			
2.3.7.6	Single Site and Bulk Metering	New Section - reference to bulk metering option and metering specifications GCS0008			
2.3.7.7	Meter Reading	Updated to reflect smart meter reading procedures and distributor's right to access			
2.3.7.8	Meter Reading Access	Created a separate section to address meter reading access rights			
2.4.3	Calculating the Deposit Amount	Removed option of using highest actual demand in formula, when a poor payment history is established			
2.4.3.3	Satisfactory Payment History	Removed references to residential customer			
2.4.3.6	Payment Time Lines	Revised payment duration period for non-residential consumers to 4 months			
2.4.3.9	Failure to Comply with Security Deposit Request	Extended notice period for enforcement to 10 days			
2.4.4.9	Primary Adjustment Factor	Added section explaining the metering conditions for which this factor applies			
2.4.5.1	Payment Plans	Added reference to" MyHydroLink" for payment plan application forms			
2.4.5.1a)	Payment Plans	Renamed Budget Billing to Equal Payment Plan			
2.4.5.3	Arrears Management Program	Added section offering residential customers an arrears management program			
2.4.5.4	Unprocessed Payment Charge	Renamed this specific service charge per 2008 Rate Application			
2.6.1	New Customer Rate Classification and Designation	Added MicroFIT Classification. Added condominium units to the Residential classification			
2.6.2	Existing Consumer Rate Classification and Designation	Updated to reflect revised DSC reclassification review rules			
3.0.1	Technical Documents	Revised ECG0004 – Unmetered Secondary Ownership. Replaced UTS0001 with UTS0038 – Clearances for Pad-mounted Equipment			



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.1 Interrogatory #4 Filed: 2011-09-08 Page 3 of 4

3.0.2	Distribution System	Revised to emphasize that non-standard service
	Requirements	equipment configurations must be brought to HOL's
		current standards, whenever customer service
		equipment work is undertaken that requires an ESA
		permit.
3.0.3	Public Access to Hydro	Added compliance conditions for attachments.
	Ottawa Equipment	Added items that are prohibited from being attached
		to Hydro Ottawa equipment
3.0.6	Vegetation Management	Added customer responsibilities for maintaining
		clearances and reference to UTS0038 technical
		document. Revised for clarification
3.0.7	Protection of Equipment	Expanded to include vegetation
3.0.10	Overhead Services General	Added customer responsibilities for maintaining
	Requirements	support structures within their building
3.0.15	Overhead Safety Clearances	New section - Overhead Safety Clearances
3.1.1.1	Point of Demarcation -	Revised demarcation point description
	Overhead	
3.1.1.2	Point of Demarcation -	Revised to include customer responsibilities and
	Underground	demarcation point for non-standard conductor
3.1.1.3	Historical and Specific	Added the requirement that the customer must own
	Agreements	conductor that meets Hydro Ottawa's standard, as
		well as, own and be responsible for support
		structures of electrical equipment on their property
3.1.2	Residential Underground	Added conditions regarding temporary distribution
	Subdivisions	system backup
3.1.3.4	Site Information	Expanded site plan information requirements
3.1.4.1	Service Information	Added requirement that service size be supported
		by a load summary, per OESC requirements and
		references to 400A and 600A services
3.1.4.2	Site Information	Expanded site plan information requirements
3.1.3.7	Servicing Cost	Revised to remove reference to upstream costs
3.2	General Services	Added agricultural to general services listing
3.2.2	Service Requirements	Added references to the provision of one service to
		each property, the handling of exceptions and
		discontinuance of 600V-Delta services
3.3.1	Point of Demarcation	Added more details on customer ownership
		responsibilities regarding support structures for
		electrical equipment on their property
3.3.2	Service Requirements	Clarified service requirements
Glossary	Basic Credit	Revised to exclude non-residential customers
	Residential Service	Expanded definition for clarification
Appendix	Economic Evaluation Model	Added reference to the removal of upstream
В		enhancement costs as of the Cost of Service Rate
		Application that follows 2010
Appendix	Generator Contracts and	Removed. Customer referred to DSC per Section
E	Connection Applications	3.5 of C of S
Appendix	Primary Service Connection	Updated Table B
F		
Appendix	Methodology for Standard	Expanded G-0, Item 5 to include work requiring an
G	Fees for Various Services	ESA permit



		Added G-0 Items 13 – 15 to include treatment of
		non standard sorvice equipment legal land rights
		non-standard service equipment, legar land rights
		and the provision of free service layouts
		G-1.1a) New Residential Infill - Item 6 revised to
		400A or less, along with customer and Hydro
		Ottawa responsibilities
		G-1.1b) Upgraded Residential Services – Revised
		customer options and responsibilities; Hydro Ottawa
		responsibilities
		G-2.2 General & Commercial Service Basic
		Connection Fees – Added clause, stating dual
		voltage supplies shall only be provided one voltage
		at the time of upgrade
		G-3 3 Deliberate Linguthorized Energy Lisage –
		Beviewed to state sustamer, east reapproxibilities
		Revised to state customer cost responsibilities
Appendix	General Notes, Item 2	Clarifies that Appendix G applies to singular
G		projects, not multiple connections
Appendix	General Notes, Item 13	Updated and expanded service standards list for
G		servicing customer equipment

1



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.1 Interrogatory #6 Filed: 2011-09-08 Page 1 of 1

GENERAL Issue 1.1 - Has Hydro Ottawa responded appropriately to all relevant Board directions from previous proceedings? <u>CCC Question #4 - Ref: Ex. A1</u> Please indicate when Hydro Ottawa intends to file its next cost of service application.

- 9 **Response**
- 10

1

2

3 4

5 6

7

8

11 Please see Exhibit K4-1-10 (Energy Probe #37).



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.1 Interrogatory #7 Filed: 2011-09-08 Page 1 of 1

1 **1. GENERAL**

2	
3	Issue 1.1 - Has Hydro Ottawa responded appropriately to all relevant Board
4	directions from previous proceedings?
5	
6	CCC Question #5 - Ref: Ex. A1
7	Please explain how Hydro Ottawa intends to meet its prescribed CDM targets. What are
8	the impacts of this on the 2012 revenue requirement? Have the internal costs
9	associated with the OPA programs been eliminated from the revenue requirement? Is
10	Hydro Ottawa fully compliant with the CDM Code. If not, please explain.
11	
12	Response
13	
14	Hydro Ottawa Limited ("Hydro Ottawa") intends to meet its prescribed Conservation and
15	Demand Management ("CDM") targets as per the revised CDM Strategy submitted to the
16	Ontario Energy Board ("the Board") on June 13, 2011. A copy is provided in Attachment
17	1 to this Exhibit.
18	
19	The CDM Program has no impact on the 2012 revenue requirement as all costs and
20	revenues associated with the Ontario Power Authority programs have been eliminated
21	from the revenue requirement and offsetting revenues.
22	

23 Hydro Ottawa is compliant with the Board's CDM code.

Hydro Ottawa Limited 3025 Albion Road North, PO Box 8700 3025, chemin Albion Nord, C.P. 8700 Ottawa, Ontario K1G 3S4 Tel.: (613) 738-6400 Fax: (613) 738-6403 www.hydroottawa.com

Hydro Ottawa limitée Ottawa (Ontario) K1G 3S4 Tél.: (613) 738-6400 Téléc. : (613) 738-6403 www.hydroottawa.com



June 13, 2011

Ms. Kirsten Walli **Board Secretary Ontario Energy Board** 2300 Yonge Street 26th floor. Box 2319 Toronto, ON M4P 1E4

Dear Ms. Walli,

Re: Hydro Ottawa Limited Conservation and Demand Management Strategy Ontario Energy Board File No. EB-2010-0215

Hydro Ottawa Limited ("Hydro Ottawa") submitted a Conservation and Demand Management ("CDM") Strategy on November 1, 2010 in accordance with the Ontario Energy Board's (the "Board") CDM Code for Electricity Distributors, issued September 16, 2010.

In a November 11, 2010 letter, the Board directed Hydro Ottawa to provide estimated, prospective budgets for planned Ontario Power Authority ("OPA") -Contracted Province-Wide CDM Programs and Board-Approved CDM Programs. In order to have all information contained in one document, we are submitting an amended CDM Strategy.

The budget information is Hydro Ottawa's best estimate and includes proposed program administration costs, participant based funding and customer incentives. Hydro Ottawa proportioned the proposed OPA funding formula based on its annual targets.

We trust that this is satisfactory. If you have any questions, or if you require further information, please contact the undersigned at 613-738-5499 ext. 7499.

Yours truly,

Original signed by

Jane Scott Manager, Rates and Revenue

Hydro Ottawa Limited

Conservation and Demand Management Strategy 2011 – 2014

Amended June 13, 2011 to add budget information and show the final CDM targets

Submitted to: Ontario Energy Board

Submitted on June 13, 2011

- 1. Distributor's Name: Hydro Ottawa Limited
- 2. Total Reduction in Peak Provincial Electricity Demand Target: 85.26 MW
- 3. Total Reduction in Electricity Consumption Target: 374.73 GWh

4. Hydro Ottawa CDM Strategy 2011-2014

4.1. Overview

On November 1, 2010 Hydro Ottawa Limited ("Hydro Ottawa") filed a Conservation and Demand Management ("CDM") Strategy. In its acknowledgement letter of November 11, 2010, the Ontario Energy Board (the "Board") indicated that the Strategy was incomplete and directed Hydro Ottawa to file an addendum that contains estimated prospective budgets for planned Ontario Power Authority ("OPA") Contracted Province-Wide CDM Programs and Board Approved CDM Programs. Hydro Ottawa has chosen to submit an amended CDM strategy to have all information contained in one document.

Hydro Ottawa intends to deliver all available OPA-Contracted Province-Wide CDM Programs within its licensed service area. At this time, based on experience to date with the OPA initiatives, Hydro Ottawa does not foresee a need for Board-Approved programs to support its achievement of targets. As these are early estimates, Hydro Ottawa will review this decision at a future date if required.

4.2. Projection of OPA-Contracted Province-Wide Program Results

The OPA has developed and made available a Resource Planning Tool for use by distributors. The tool assists with the allocation of aggregate province-wide savings projections to an individual electricity distributor. Hydro Ottawa has used the OPA's planning tool to project electricity demand and consumption savings related to the province-wide Consumer, Commercial & Institutional, and Industrial Programs.

In addition to the tool, the OPA has provided residential customer profile data to each distributor. The data provides a useful comparison of key customer demographic information pertinent to the distributor's service area, along with a comparison to the provincial average. Hydro Ottawa has also used this data in projecting the savings potential of the province-wide programs.

Through the use of the planning tool and the residential profile data, Hydro Ottawa has prorated the OPA's projected province-wide program savings using the Board's 2009 Yearbook customer count data, with minor adjustments to reflect known deviations between its customer attributes and the provincial average. The accuracy of this methodology is clearly dependent upon the accuracy of the OPA's province-wide savings projections.

4.3. Annual Savings and Budget Projections

The following two tables summarize Hydro Ottawa's current annual projections of progress towards its 2014 peak demand and electricity consumption reduction targets and associated budgets:

	Pro	Budget Estimate				
Program	2011	2012	2013	2014	Total	by Program (\$M)
Consumer Program	4.64	8.12	8.41	7.83	29.00	\$31.2
Commercial & Institutional Program	6.88	12.04	12.47	11.61	43.00	\$30.3
Industrial Program	2.20	3.84	3.98	3.70	13.72	\$9.6
Total all Programs	13.72	24.00	24.86	23.14	85.72	\$71.1
Budget Estimate (\$M)	\$25.1	\$21.3	\$14.3	\$10.4	\$71.1	

4.3.1.Net Peak Demand Reductions by Program and Budget Summary

4.3.2.Net Energy Reductions by Program

Brogram	Projected Electricity Consumption Reduction (MWh)					
Flogram	2011	2012	2013	2014	Total	
Consumer Program	24,960	43,680	45,240	42,120	156,000	
Commercial & Institutional Program	23,840	41,720	43,210	40,230	149,000	
Industrial Program	11,216	19,628	20,329	18,927	70,100	
Total all Programs	60,016	105,028	108,779	101,277	375,100	

4.3.3.Milestones

	2011	2012	2013	2014
Peak Demand Reduction (MW)	13.72	24.00	24.86	23.14
Cumulative Peak Demand Reduction (MW) as % of Target	16%	44%	73%	101%
Electricity Consumption Reduction (MWh)	60,016	105,028	108,779	101,277
Electricity Consumption Reduction (MWh) as % of Target	16%	44%	73%	100%

4.4. Consumer Program

- 4.4.1.Years of Operation: 2011-2014
- **4.4.2.Target Customers:** Residential customers (including Low Income)
- **4.4.3.Description:** The following table summarizes and describes the elements of the OPA-Contracted Province-Wide Consumer Program. Full program details are available on the OPA's website at http://icon.powerauthority.on.ca/ :

Initiative	Description
Instant Discounts (Coupons)	Annual couponing and bi-annual in-store instant discounts on select energy efficient measures
Midstream Electronics Incentive	Incentives for distributors of cable and satellite TV services and retailers to stock and promote the sale of high-efficiency set top boxes and televisions
Midstream Pool Incentive	Incentives for contractors and retailers to stock, sell and install efficient pool pumps
HVAC Rebates	Contractor initiated, on-line rebates on replacement of high efficiency heating/cooling systems
Appliance Retirement	Free pick-up/decommissioning of old, working inefficient appliances
Exchange Events	Room air conditioner and dehumidifier exchange events at retailers

Initiative	Description
Residential New Construction	Incentives for builders to construct efficient, smart, and integrated new single-family homes
Residential Demand Response	Free, installed direct load control devices and in- home display systems/capability. Non-DR offers: subsidized in-home display systems/capabilities
Low Income Program	Educate low income consumers in the management of their electricity use, Improve the electric efficiency of the existing housing stock and coordinate the delivery of electric and natural gas low income consumer offerings.

4.4.4.Projected Savings

The projected energy and demand reductions for the Consumer Program are provided in the following table.

Consumer Program Projections	2011	2012	2013	2014
Peak demand reduction (MW)	4.64	8.12	8.41	7.83
Electricity consumption reduction (MWh)	24,960	43,680	45,240	42,120

4.5. Commercial and Institutional Program

- **4.5.1. Years of Operation:** 2011 2014
- **4.5.2. Target Customers:** Commercial and Institutional customers, owners of multi-family buildings and agricultural facilities.
- **4.5.3. Description:** The following table summarizes and describes the elements of the OPA-Contract Province-Wide Commercial and Institutional Program. Full program details are available on the OPA's website at http://icon.powerauthority.on.ca/ :

EXISTING BUILDING RETROFIT PROJECTS – Small Business Customers

Initiative	Description
Direct Installed Lighting	Targets customers classified as General Service <50kW. Lighting retrofit incentive of \$1,000 equipment upgrade plus further incentives available for eligible equipment beyond the base offering
Direct Serviced Space Cooling	Roof-top or ground-mounted air conditioning systems of 25 tons or less qualify for an incentive of up to \$750 the service and labour of air conditioning unit(s)
Demand Response (Small Commercial)	Free, installed direct load control devices and display systems/capability. Non-DR offers: subsidized display systems/capabilities

EXISTING BUILDING RETROFIT AND COMMISSIONING PROJECTS – Medium and Large Business Customers

Initiative	Description
Pre-Project Assessments	Eligible participants will receive incentives to complete energy audits or studies of potential energy and demand savings from equipment replacement projects, operational practices and procedures, and participation in DR initiatives.
Equipment Replacement	Traditionally categorized as ERIP, incentives will be based on type of approach taken: Prescriptive, Engineered or Custom.
Existing Building Commissioning	Existing GS>50kW or Large User accounts with single buildings/ premises greater than 50,000 sq.ft with chilled water plants are eligible. Services pertain to commissioning activities.
Demand Response 1 (DR1)	An initiative where distribution-connected electricity customers voluntarily provide DR capability to reduce system peak demand and increase system reliability
Demand Response 3 (DR3)	An initiative for distribution-connected electricity customers to provide DR capability to mandatorily reduce system peak demand and increase system reliability.

NEW CONSTRUCTION – All Buildings and Customer Types

Initiative	Description
New Construction	For all C&I customers, this initiative provides incentives for new buildings to exceed existing codes and standards for energy efficiency utilizing Prescriptive and Custom approaches.

CAPABILITY BUILDING

Initiative	Description
Capability Building	3 types of capability building activities will be offered to C&I customers: Training and Certification, Energy Efficiency Solutions Provider, and Education.

4.5.4. Projected Savings

The projected energy and demand reductions for the Commercial and Institutional Program are provided in the following table.

Commercial and Institutional Program Projections	2011	2012	2013	2014
Peak demand reduction (MW)	6.88	12.04	12.47	11.61
Electricity consumption reduction (MWh)	23,840	41,720	43,210	40,230

4.6. Industrial Program

4.6.1. Years of Operation: 2011 – 2014

- 4.6.2. Target Customers: Industrial customers
- **4.6.3. Description:** The following table summarizes and describes the elements of the OPA-Contracted Province-Wide Industrial Program. Full program details are available on the OPA's website at http://icon.powerauthority.on.ca/ :

Initiative	Description
Demand Response 1 (DR1)	An initiative where distribution-connected electricity customers voluntarily provide DR capability to reduce system peak demand and increase system reliability.
Demand Response 3 (DR3)	An initiative for distribution-connected electricity customers to provide DR capability to mandatorily reduce system peak demand and increase system reliability.
Industrial Equipment Replacement	Traditionally categorized as ERIP, incentives will be based on type of approach taken: Prescriptive, Engineered or Custom.
Industrial Accelerator (IA)/ "Accelerator"	Initiative aimed at improving the energy efficiency of equipment and production processes. Accelerator offers capital incentive and enabling initiatives.

4.6.4. Projected Savings

The projected energy and demand reductions for the Industrial Programs are provided in the following table.

Industrial Program Projections	2011	2012	2013	2014
Peak demand reduction (MW)	2.20	3.84	3.98	3.70
Electricity consumption reduction (MWh)	11,216	19,628	20,329	18,927

5. Potential Board-Approved CDM Programs

It is Hydro Ottawa's opinion that Board-Approved programs will not be necessary to achieve our CDM targets. However, if the program results fail to materialize as expected, Hydro Ottawa may reconsider this decision. At that time, we will assess existing Ontario Local Distribution Companies' ("LDCs") applications for Board-Approved CDM Programs and will also conduct independent assessment of other potential Board-Approved Programs. Where these programs are pertinent to Hydro Ottawa's customer base and can be cost effectively delivered, Hydro Ottawa may submit an application for Board-Approved programs at a later date to ensure accomplishment of Hydro Ottawa's CDM targets

6. Program Mix

As stated in section 4.1, Hydro Ottawa intends to deliver all available OPA-Contracted Province-Wide CDM Programs within its service area. With this comprehensive menu of OPA programs, we believe all customer types will be adequately addressed. This is exhibited in the following table:

Program Co	overage by Cu	ustomer Type		
		Custor	ner Type	
Initiative or Program Element	Residential	Residential Low Income	Commercial, Institutional, Multi-family Buildings & Agricultural	Industrial
Instant Discounts (Coupons)	Х	Х		
Midstream Electronics Incentive	Х	Х		
Midstream Pool Incentive	Х	Х		
HVAC Rebates	Х	Х		
Appliance Retirement	Х	Х		
Exchange Events	Х	Х		
Residential New Construction	Х	Х		
Residential Demand Response	Х	Х		
Residential Low Income		Х		
Direct Installed Lighting			Х	
Direct Serviced Space Cooling			Х	
Demand Response (Small Commercial)			Х	
Pre-Project Assessments			Х	
Equipment Replacement			Х	
Existing Building Commissioning			Х	
Demand Response 1 (DR1) – C&I			Х	
Demand Response 3 (DR3) – C&I			Х	
New Construction			Х	
Capability Building			Х	
Demand Response 1 (DR1) - Industrial				Х
Demand Response 3 (DR3) - Industrial				Х
Industrial Equipment Replacement				Х
Industrial Accelerator (IA)				Х

7. CDM Programs Co-ordination

Hydro Ottawa has been very involved in the support and development of the OPA Province-Wide Programs. This has been accomplished through participation in a number of committees and working groups that have made contributions to the development of the new programs. These include:

- The Electricity Distributors Association ("EDA") CDM Caucus
- The EDA/OPA Consumer Program development committee
- The EDA/OPA Commercial & Institutional Program development committee
- The EDA/OPA Marketing Committee

Hydro Ottawa is committed to making the province-wide programs a success, and will continue to provide support as resources permit.

Hydro Ottawa will provide the OPA Contracted Province-Wide Programs to all customer types within the Hydro Ottawa service territory as appropriate to ensure fair and open access for all customer types to CDM programs that will enable them to improve their energy efficiency and better manage their demand for electricity.

Hydro Ottawa will continue to develop efficiencies in program development and delivery through ongoing cooperation with various industry stakeholders including other Ontario LDCs, social service agencies, the Ontario Power Authority, the Coalition of Large Distributors, the Electricity Distributors Association, Enbridge and Union Gas, the Ministry of Energy and the Ontario Energy Board. Synergies and processes are already in place with many of these agencies to share development, procurement, legal and marketing services, and delivery costs where possible.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.1 Interrogatory #8 Filed: 2011-09-08 Page 1 of 1

1 1. GENERAL

2	
3	Issue 1.1 - Has Hydro Ottawa responded appropriately to all relevant Board
4	directions from previous proceedings?
5	
6	SEC Question #1 - Ref: General
7	Please confirm that there are 246 publicly funded schools in its Applicant's franchise
8	area, including 65 in the GS <50 Kw class and 181 in the GS >50 kW class.
9	
10	Response
11	
12	According to Hydro Ottawa Limited's records, there are 236 publicly funded schools in
13	our service territory, with 73 General Service < 50 kW accounts and 212 General
14	Service > 50 kW accounts. Note that some schools have more than one account.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #1 Filed: 2011-09-08 Page 1 of 2

1	1. GENERAL
2	
3	Issue 1.2 - Are Hydro Ottawa's economic and business planning assumptions for
4	2012 appropriate?
5	
6	Board Staff Question #2Ref: Exh D1-1-2, p8
7	Hydro Ottawa has used an inflation rate of 2% for 2011 and 2012 costs that are not
8	related to compensation. Please identify the source document for the inflation
9	assumptions.
10	
11	Response
12	
13	The general inflation rate of 2% used by Hydro Ottawa Limited ("Hydro Ottawa") is a high
14	level estimate arising from consideration of several sources. The GDP IPI increase for
15	the past 2 years has been 1.3%. The published rate for Q1 2011 confirms a forecast
16	increase in that rate. Review of CPI from Statistics Canada also validates the
17	assumption, as follows:
18	
19	January 2011: Consumer prices rose 2.3% in the 12 months to January 2011, following
20	the 2.4% increase posted in December 2010.
21	
22	February 2011: Consumer prices rose 2.2% in the 12 months to February, following
23	the 2.3% increase posted in January.
24	
25	March 2011 Consumer prices rose 3.3% in the 12 months to March, the largest year-
26	over-year increase since September 2008. This advance follows a 2.2% increase in
27	the 12 months to February.
28	
29	In addition, there are several ongoing contracts and costs within Hydro Ottawa's OM&A
30	that are known to or forecast to increase by an amount greater than a general



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

- 1 assumption of 2%. These include fuel costs, audit fees, and IT maintenance contracts.
- 2 Overall the 2% assumption for non-compensation costs is considered appropriate.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #3 Filed: 2011-09-08 Page 1 of 2

1. (GENERAL
lss	ue 1.2 - Are Hydro Ottawa's economic and business planning assumptions for
20 ⁻	12 appropriate?
En	ergy Probe Question #3 - Ref: Exhibit A2, Tab 2, Sch. 2, page 4
a)	Is the cost of service application based on the preliminary draft budget for 2012 that
	was presented to the Board of Directors on February 1, 2011?
b)	If the response to part (a) is yes, then please indicate if any changes to the draft
	budget for 2012 have been made subsequent to February 1, 2011 and whether or
	not these changes have been approved by the Board of Directors. Please provide
	details on the changes made.
c)	If the response to part (a) is no, then please indicate when the Board of Directors
	approved the final budget for 2012 that was used as the basis for the current cost of
	service application.
d)	Have any discussions taken place with the Board of Directors of whether or not
	Hydro Ottawa will be filing for a 2013 cost of service application? If yes, please
	provide the details.
Re	sponse
a)	No, the cost of service application is not based on the preliminary draft budget for
	2012 presented to the Board of Directors on February 1, 2011. The preliminary draft
	budget was a starting point for information only. All assumptions and major
	initiatives were subsequently reviewed and validated in the development of the cost
	of service application.
b)	Not applicable.
	 1. (Iss 20' En: a) b) c) d) Re a) b) b)



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #3 Filed: 2011-09-08 Page 2 of 2

- 1 c) The Board of Directors approved the submission of the rate application on June 1,
- 2 2011. The Board of Directors meeting to review and approve the 2012 Budget has
- 3 been scheduled for December, 2011. Please see Exhibit K1-2-5 (SEC #2)
- 4
- 5 d) Please see Exhibit K4-1-10 (EP #37).



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	1. GENERAL
2	
3	Issue 1.2 - Are Hydro Ottawa's economic and business planning assumptions for
4	2012 appropriate?
5	
6	CCC Question #6 - Ref: Ex. A2/T2/S2
7	Hydro Ottawa has provided the Budget Guidelines for it 2011 Cost of Service Rate
8	Application. Please explain, in detail how the 2012 budget was prepared. Hydro
9	Ottawa has set out the strategic initiatives that were to be included in the 2011 Business
10	Plan. Please indicate to what extent each of those were initiatives were undertaken in
11	2011, or deferred to 2012.
12	
13	
14	Response
15	
16	The 2012 budget was prepared with corporate assumptions for general inflation,
17	compensation increases as per Collective Bargaining Agreement, workforce planning
18	(Exhibit D1-5-1), and other strategic initiatives including Customer Service Strategy
19	(Exhibit D1-4-4). The capital plan was prepared as per asset life cycle, asset
20	management plan (Exhibit B6-1-1), and strategic initiatives include Customer Information
21	System (Exhibit B1-2-6), IT Strategy (Exhibit B1-2-3), Facilities Strategy (Exhibit B1-2-4).
22	
23	The strategic initiatives included in the 2011 Business Plan include Information
24	Technology Strategy, Facilities Strategy, CIS Transition Project, and Environment
25	Sustainability Strategy. All are progressing in 2011. (Exhibit B1-2-3 to Exhibit B1-2-7).
26	



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #5 Filed: 2011-09-08 Page 1 of 1

1 1. GENERAL

- 2
- 3 Issue 1.2 Are Hydro Ottawa's economic and business planning assumptions for
- 4 **2012** appropriate?
- 5
- 6 SEC Question 2 Ref:
- 7 Please provide all reports, presentations and other documents provided to the Hydro
- 8 Ottawa Limited or the Hydro Ottawa Holding Inc. Board of Directors with respect to this
- 9 application.
- 10
- 11 Response
- 12
- 13 Please see Attachment 1 and 2 for the presentations provided to the Hydro Ottawa
- 14 Limited Board of Directors on June 1, 2011 and August 25, 2011 respectively.

2012 Rate Application

Hydro Ottawa Limited Board of Directors June 1, 2011





2012 Rate Application Update

- Cost of Service Rate Application last approved for 2008 rates
 - Rate adjustments in all subsequent years have been in accordance with 3rd Generation Incentive Regulation Mechanism (3GIRM) inflation factor
- Rate Application to be filed in June requesting new rates to be effective January 1, 2012
 - In the past, rates have been effective May 1st of each year, but this misaligns revenues and costs
- Ongoing strategic initiatives incorporated in plans
- Electricity consumption load assumptions revised
- Variance and deferral accounts are cleared (regulatory assets/liabilities)
- Cost of application roughly \$500K legal, consulting, OEB costs, intervenor costs, administration
 - To be funded within 2011 Approved Budget



2012 Rate Application Highlights

- Distribution revenue increased as per revised cost structure, load forecast, and rate of return
- Compensation and OM&A increases as per Collective Bargaining Agreement, workforce planning, strategic initiatives and general inflation provision
- Rate Structure requested to provide for all ongoing priority initiatives:
 - Workforce Planning;
 - Customer Service Strategy;
 - Environmental Sustainability Strategy;
 - Real Estate Strategy;
 - IM/IT Strategy
- Estimated bill impact for typical residential customer projected to be 1.0% to 2.0% of total bill.
- Rate of return set by OEB at time of rate decision (Dec/11)
 - Rate application using 9.58% as a placeholder (per OEB for 2011 rate applications)
 - Expected ROE will be in 9.4% to 9.9% range



2012 Rate Application Capital Plan

- Distribution Sustainment \$54.4 million
 - Consistent with 2011 funding and Asset Management Plan

General Plant \$22.6 million

- 2011 levels maintained, adjusted as follows:
- CIS upgrade \$7.8 million
- Facilities Strategy \$4.0 million
- Customer Service Strategy \$0.9 million, \$0.3 million increase from 2011 Budget
- Ongoing facilities work, MDMR costs, and Enterprise System project funding reduced from 2011 levels

Demand (net) \$13.6 million

- City's light rail boring machine \$1.2 million (fully recoverable)
- Underground wiring of Bank Street through Glebe \$2.0 million
- Contributed Capital reduced as per OEB Code changes



2012 Rate Application Filed Under Modified IFRS

- On March 15, 2011, the Ontario Energy Board released a letter indicating that Cost of Service Rate Applications for 2012 rates are required to be filed in both Canadian GAAP (CGAAP) and International Financial Reporting Standards (IFRS), this was contrary to the OEB IFRS report issued in July 2009 and amendments to such report in November 2010
- The OEB has stated that it will generally comply with IFRS except in certain instances such as rate regulated accounting, they refer to their version of IFRS as Modified IFRS



Next Steps - Schedule

- Submission of Application to OEB: June 2011
- Interrogatories and responses: Mid Summer 2011
- Technical Conference: Early Fall 2011
- Settlement Conference (if applicable) : Late Fall 2011
- Hearing (if required): Late Fall 2011
- Final approval: anticipated for December 2011
- Implementation: January 1, 2012

Annex 'A'

2012 Rate Application

Hydro Ottawa Limited Board of Directors August 25, 2011





2012 Rate Application Highlights

- Rate Application was filed on June 17, 2011 requesting new rates to be effective January 1, 2012
 - In the past, rates have been effective May 1st of each year, but this misaligns revenues and costs
- Ongoing strategic initiatives incorporated in plans
- Electricity consumption load assumptions revised
- Major capital investments incorporated in application including new CIS system and new real estate strategy
- Additional staffing incorporated in application to address workforce planning initiate
- New rates based upon accounting under OEB modified IFRS rules



2012 Rate Application Highlights

 Hydro Ottawa's costs are increasing for 2012 but they are offset by reductions in one time adjustments which result in overall rate reductions for the average customer

- Overall impact on rates
 - Average residential customer will see 5 cents per month reduction
 - Average general service customer will see 43 cents per month reduction


Next Steps - Schedule

- Procedural Order #1
 - Receive Interrogatories
 - Respond to Interrogatories
 - Technical Conference
 - Settlement Conference
 - Settlement Proposal filed
 - Hearing

August 22

September 7

September 26/27

October 13/14

October 27, 2011

November 7/8



Intervenors

- Following parties sought intervenor status and their costs
 - Consumers Council of Canada
 - Vulnerable Energy Consumers Coalition
 - School Energy Coalition
 - Energy Probe
 - Ecology Ottawa
 - Envirocentre
- Hydro Ottawa opposed Ecology Ottawa and Envirocentre receiving their costs. The OEB has ruled that neither Ecology Ottawa and Envirocentre will receive their costs.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #8 Filed: 2011-09-08 Page 1 of 2

and 2010 and

1.	GENERAL
lss 20 ⁻	sue 1.2 - Are Hydro Ottawa's economic and business planning assumptions for 12 appropriate?
VE	CC Question #2 - Ref: Exhibit A1-9-1, Appendix B, page 79 Economic Expansion
<u>Mc</u>	<u>odel</u>
a)	Ottawa Hydro stats that I shall cease to apply a per kilowatt enhancement costs
	(aka. Upstream costs) as part of the Economic Evaluation for its distribution system.
	Please provide the amount collected in 2009 and 2010 under this provision
b)	Where is the recovery of the lost revenues associated with this change found in the
	evidence?
Re	sponse
a)	Hydro Ottawa Limited's capital contributions for 2009-2012 are as shown in Table 6
,	of Exhibit B5-5-1. An estimate of the upstream costs collected in 2009 and 2010 and

budgeted in 2011 are shown in the Table below: 18

19 20

17

1

2

7 8

9

10

11

Table 1 – Capital Contributions

Year	Actual/ Budget	New Commercial Development \$000	Plan Relocation & Upgrade \$000	Residential Subdivision \$000	Misc.	Capital Contributions \$000	Upstream Costs \$000
2009	Actual	8,469	4,162	6,306	1,956	20,893	2,182
2010	Actual	7,763	5,009	5,577	2,595	20,944	2,063
2011	Budget	6,840	2,765	5,087	3,002	17,695	1,701
2012	Budget	7,896	4,694	3,601	3,032	19,223	0
2012	Without removal of Upstream costs	7,896	4,,889	4,718	3,032	20,535	1,312

21

22 It is not possible to provide an exact figure of the actual upstream costs for each

23 year, as they are recorded by project and may span a number of years.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #8 Filed: 2011-09-08 Page 2 of 2

b) The recovery of the lost revenues associated with this change is found in the
evidence related to the reduced contributed capital, i.e. Exhibit B5-5-1, Section 5.0.
Capital contributions would have been \$1,312k higher had the upstream cost
provision not been removed. As a result of capital contributions being lower, capital
expenditures are higher, so rate base in higher resulting in a higher return on capital
and revenue requirement.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #9 Filed: 2011-09-08 Page 1 of 2

1	1.	GENERAL
2		
3	lss	ue 1.2 - Are Hydro Ottawa's economic and business planning assumptions for
4	20	12 appropriate?
5		
6	VE	CC Question #5 - Ref: Exhibit A, Tab9, Schedule 1, Attachment G, page 36
7	<u>Co</u>	nditions of Service – Deposits
8	a)	At 2.4.3.6 of Hydro Ottawa's Conditions of Service it states that Consumers may
9		request any assessed security deposit to be paid over four (4) months. New Board
10		customer service rules which come into effect October 1, 2011 allow for a six (6)
11		month period for payment. Please explain this apparent discrepancy?
12	b)	New Board rules on customer service include a number of provisions for low income
13		consumers. Please explain how these provisions are being implemented by Hydro
14		Ottawa and what steps are being taken to communicate these provisions to low
15		income consumers?
16		
17	Re	sponse
18		
19	a)	Section 2.4.3.6 of Hydro Ottawa Limited's ("Hydro Ottawa") Conditions of Service
20		refers to Commercial consumers only. In accordance with Section 2.4.20 of the
21		Distribution System Code ("DSC"), a distributor shall permit the customer to provide
22		a security deposit in equal installments paid over at least 4 months.
23		
24		The new Ontario Energy Board customer service rules allowing for a 6-month
25		payment period, effective January 1, 2011, apply to residential customers, who are
26		not deemed to be low-income residential customers. Low-income consumers are not
27		required to pay a deposit. Hydro Ottawa no longer collects deposits from residential
28		customers, as detailed in Exhibit K2-3-28 (SEC #34).
29		
30	b)	Hydro Ottawa is fully compliant with the Code changes that have been made with
31		respect to the new customer service and low income consumer rules. Hydro Ottawa
32		established an internal stakeholder team to plan and co-ordinate implementation



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #9 Filed: 2011-09-08 Page 2 of 2

1	which included information technology changes, changes to customer service and
2	financial procedures, staff training, documentation revisions, revised customer forms,
3	bills and notices, internal and external stakeholder communications, including social
4	service agency partners. Front line employees have information to refer customers
5	to, with respect to billing and payment options, as well as, external support options,
6	such as City and local social service agency contacts and LEAP funding. As of
7	January 1, 2011, assistance information was printed on Hydro Ottawa's
8	disconnection notices, in accordance with Section 4.2.2.4(f1) of the DSC.
9	



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.2 Interrogatory #10 Filed: 2011-09-08 Page 1 of 1

1 1. GENERAL 2 3 Issue 1.2 - Are Hydro Ottawa's economic and business planning assumptions for 4 2012 appropriate? 5 6 VECC Question #6 - Ref: Asset Management Plan page 21 7 Figure 4 of the Asset Management Plan shows that there is no discernible improvement 8 in SAIFI (excluding loss of load) for the period 2001 through 2010. In fact 2009 was the second worst year and 2010 was the 5th worst year. Why is there no discernible trend 9 10 toward improved reliability? 11 12 Response 13 14 Hydro Ottawa Limited ("Hydro Ottawa") has direct influence over the following reliability 15 factors: Human Element, Defective Equipment, and Scheduled Outages. In an effort to 16 mitigate these influences, Hydro Ottawa invests in training and development, 17 deployment of the asset management plan, and improved system design. Strategically, 18 Hydro Ottawa has consistently been focused on maintaining overall system reliability 19 statistics by dealing effectively with worst-performing areas. With a system comprised 20 largely of aging infrastructure, as quickly as Hydro Ottawa is done resolving one problem 21 area, another problem area soon arises.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.3 Interrogatory #1 Filed: 2011-09-08 Page 1 of 2

1	1. GENERAL
2	
3	Issue 1.3 - Is service quality, based on the Board specified performance
4	indicators, acceptable?
5	
6	Ref: Exh B6-1-1, Attachment W (BS #3)
7	The 2011 Asset Management Plan provides bar charts of the primary causes of SAIFI
8	and SAIDI outages for the period 2007 to 2010. One of the primary causes is Human
9	Element, which is defined as, "Customer interruptions due to the interface of distributor
10	staff with the system." The Human Element contributions are separate from scheduled
11	outages, and are similar to tree contacts in %contribution as a cause of SAIFI and SAIDI.
12	a) Please provide a more detailed description of Human Element.
13	b) What measures is Hydro Ottawa taking to reduce SAIFI and SAIDI due to Human
14	Element?
15	
16	Response
17	
18	a) The Ontario Energy Board's "Electricity Reporting and Record Keeping
19	Requirements" document defines Human Element as "Customer interruptions due to
20	the interface of distributor staff with the distribution system". This type of interruption
21	typically occurs from incorrect record keeping or errors in switching operations
22	procedures.
23	
24	b) Human Element outages account for approximately 5% of outages over this time
25	period. Hydro Ottawa Limited ("Hydro Ottawa") reviews each interruption that is
26	influenced by Human Element and incorporates this information into the distribution
27	staff's ongoing training and development. With regards to records improvement;
28	Hydro Ottawa's Geographic information System ("GIS") holds more than 20 million
29	pieces of information about the distribution system including how customers are
30	connected from their homes back to each sub-station, information on the age of
31	assets, asset condition and many other important attributes. This information is
32	updated and managed on a daily basis in an effort to provide the most accurate



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.3 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

- 1 information to distribution staff. Feedback is provided by field staff and our locate
- 2 contractor when data requires to be updated. Hydro Ottawa also produces all of its
- 3 new construction drawings directly from the GIS reducing the potential for errors.
- 4 Keeping the distribution records as accurate as possible will continue reducing
- 5 interruptions due to switching errors.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.3 Interrogatory #2 Filed: 2011-09-08 Page 1 of 2

1 1. GENERAL 2 3 Issue 1.3 - Is service quality, based on the Board specified performance 4 indicators, acceptable? 5 6 VECC Question #3 - Ref: Exhibit A1, Tab 9, Schedule 1, Attachment G, page 22 7 Conditions of Service- Disconnection Section 2.2.1 8 a) Pursuant to section 2.2.1 item 8 of the Conditions of Service- please provide the 9 number of times in 2009 and 2010 that potential customers have been refused 10 service due to lack of "identification and pertinent account information....have not 11 been confirmed". 12 b) Please provide an explanation as to the most common type(s) of issues that arise 13 under which Hydro Ottawa relies 14 15 Response 16 17 a) Section 2.2.1 of Hydro Ottawa Limited's ("Hydro Ottawa") Conditions of Service 18 identifies several conditions that may result in a refusal to connect or right to 19 disconnect electrical service. Item 9 applies to circumstances whereby "the 20 identification and pertinent account information of the Customers or Consumers 21 responsible for electricity usage at the premise have not been confirmed to Hydro 22 Ottawa." 23 24 Section 2.1.6.5 of Hydro Ottawa's Conditions of Service outlines the customer 25 information required to set up an account. Often accounts are closed before 26 information on the prospective occupant is confirmed. Customers who request an 27 account in their name are not refused. There are no records of refusals. 28 29 When requests for service are received from third parties, Section 2.8 of the 30 Distribution System Code requires distributors to verify account responsibility with 31 the customer, prior to holding that customer financially responsible for electrical 32 services. Specifically...."where a distributor has opened an account for a property in



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.3 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

1 the name of a person at the request of a third party, the distributor shall not seek to 2 recover from that person any charges for service provided to the property unless the 3 person has agreed to be the customer of the distributor in relation to the property." 4 5 When the aforementioned conditions have not been met, Hydro Ottawa is deemed to 6 have no customer at the premise concerned and so, electrical service is terminated. 7 8 b) If a customer refuses to provide the mandatory personal information outlined in 9 Section 2.1.6.5 of Hydro Ottawa's Conditions of Service, an account cannot be 10 opened up in their name. This is not a common occurrence.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.3 Interrogatory #3 Filed: 2011-09-08 Page 1 of 2

1	1. GENERAL
2	
3	Issue 1.3 - Is service quality, based on the Board specified performance
4	indicators, acceptable?
5	
6	VECC Question #4 - Ref: Exhibit A1, Tab 9, Schedule 1, Attachment G. page 36
7	Conditions of Service Customer Deposits.
8	a) What was the average balance of customer deposits in: 2009; 2010?
9	b) What was the average return on the balance of customer deposits in 2009; 2010?
10	c) What was the average return provided to customers in 2009, 2010 on their deposit?
11	
12	Response
13	
14	a) The average and total balance of customer deposits in 2009 and 2010 are shown in
15	Table 1, as follows:
16	
17	Table 1 – Average and Total Balance of Customer Deposits

	2009	2010
Average Short Term Deposit (12 months or less)	\$ 270	\$ 277
Average Long Term Deposit (greater than 12 months)	\$ 2,722	\$ 2,610
Total Balance of Short Term Deposits at Year End	\$11,842,945	\$11,056,875
Total Balance of Long Term Deposits at Year End	\$10,618,571	\$11,310,194

18

- b) Hydro Ottawa Limited ("Hydro Ottawa") received a return of Prime, less 2 percent on
 cash balances. The average return on the balance of customer deposits in 2009 and
- 21 2010 are shown in Table 2, as follows:

22

23

Table 2 – Average Return on Balance of Customer Deposits

		2009	2010
	Average Return on Customer Deposits	0.4 %	0.6%
24			

25



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.3 Interrogatory #3 Filed: 2011-09-08 Page 2 of 2

- 1 c) Hydro Ottawa provided customers an average return on deposits of Prime, less 2
- 2 percent, in accordance with the Distribution System Code, Section 2.4.21. The
- 3 average return provided to customers are shown in Table 3, as follows:
- 4

5 **Table 3 – Average Return Provided to Customer Deposits**

	2009	2010
Average Return Provided to Customer Deposits	0.4%	0.6%

6



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.4 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

1 1. GENERAL

2	
3	Issue 1.4 - Is the proposal to align the rate year with Hydro Ottawa's fiscal year,
4	and for rates effective January 1, 2012 appropriate?
5	
6	Board Staff Question #4 - Ref: Exh A1-2-2, p5
7	Hydro Ottawa noted that as part of the IR process, it is typical to update the bridge year
8	data, which could include actual information to June 30. Please update bridge year data
9	as part of the IR responses due on September 7, 2011.
10	
11	Response
12	
13	Hydro Ottawa Limited has updated the bridge year data with actual information to June

14 30th, as part of the interrogatory responses.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.4 Interrogatory #5 Filed: 2011-09-08 Page 1 of 2

1 **1. GENERAL**

2		
3	lss	ue 1.4 - Is the proposal to align the rate year with Hydro Ottawa's fiscal year,
4	and	d for rates effective January 1, 2012 appropriate?
5		
6	En	ergy Probe Question #5 - Ref: Exhibit A1, Tab 2, Sch. 2, page 5
7	The	e evidence indicates that if Hydro Ottawa is subject to the IRM adjustment for 2013
8	rate	es that the inflation index used would be that reported for the period October 2011
9	thro	bugh September 2012.
10	a)	Please indicate approximately when all of this information would be available from
11		Statistics Canada.
12	b)	Is this the same period used for Union Gas and Enbridge Gas Distribution under their
13		IRM periods that also adjust rates effective January 1 of each year?
14	c)	If the response to part (b) is no, please explain why a different period should be
15		used.
16	d)	Is the period proposed by Hydro Ottawa consistent with the intent in the June 22,
17		2011 version of Chapter 3 of the Filing Requirements for Transmission and
18		Distribution Applications?
19		
20	Re	sponse
21		
22	a)	Hydro Ottawa Limited's ("Hydro Ottawa") understanding is that Statistics Canada
23		publishes the quarterly Gross Domestic Product Implicit Price Index Final Domestic
24		Demand ("GDP-IPI-FDD") information on a quarterly basis, 2-3 months after the end
25		of the quarter.
26		
27	b)	Yes, it is Hydro Ottawa's intent that the proposed period be the same period used for
28		Union Gas and Enbridge Gas Distribution.
29		
30	c)	N/A
31		



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.4 Interrogatory #5 Filed: 2011-09-08 Page 2 of 2

d) The June 22, 2011 version of Chapter 3 of the Filing Requirements for Transmission
and Distribution Applications states "For those distributors whose rate year has been
aligned with their fiscal year, the annual percentage change in the GDP-IPI for the
period 2010 Q3 to 2011 Q2 to 2009 Q3 to 2010 Q2 will be used in the final rate
application model." It was Hydro Ottawa's intent that the period proposed is
consistent with the above.



Hydro Ottawa Limited EB-2011-0054 Exhibit K1 Issue 1.4 Interrogatory #6 Filed: 2011-09-08 Page 1 of 1

1 1. GENERAL

2	
3	Issue 1.4 - Is the proposal to align the rate year with Hydro Ottawa's fiscal year,
4	and for rates effective January 1, 2012 appropriate?
5	
6	Energy Probe Question #6 - Ref: Exhibit A1, Tab 2, Sch. 2, page 5
7	Is it Hydro Ottawa's current plan to file a cost of service application for 2013? If yes,
8	please explain why Hydro Ottawa would not be under IRM for the 2013 through 2015
9	years.
10	
11	Response
12	

13 Please see Exhibit K4-1-10 (EP #37).



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.1- Is the proposed rate base for the test year appropriate?
4	
5	Board Staff Question #7 - Ref: Exh B1-1-1, p3 and Exh B5-2-1, p1
6	In the first reference, 2008 approved capital expenditures (net of contributed capital) is
7	\$56,681,000. In the second reference, 2008 approved capital expenditures (net of
8	contributed capital) is \$66,451,000. Please explain the difference.
9	
10	Response
11	
12	Exhibit B1-1-1 page 3 shows the 2008 approved capital expenditures of \$56,681k (net of
13	contributed capital). This represents the capital expenditures approved as part of the
14	Settlement Agreement for EB-2007-0713 which included removing Smart Meter capital
15	for the period May 1, 2007 to December 31, 2008 from rate base. Exhibit B5-2-1 page 1
16	shows the 2008 capital expenditures of \$66,451k (net of contributed capital) before the
17	adjustment as per the Settlement.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	Board Staff Question #8 - Ref: Exh B1-2-4, p1
6	Hydro Ottawa has included \$4M in the capital budget for 2012 for the acquisition of land
7	for a new East Operations Centre and a new Administration Building. This results in \$2M
8	being added to 2012 rate base. To what extent will the land be used and useful in the
9	test year?
10	
11	Response
12	
13	The test for inclusion in rate base is used <u>or</u> useful.
14	
15	Land is eligible for inclusion in the rate base in the year it is purchased because at that
16	point in time it is useful and is available to support the construction of buildings planned

17 for it.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.1 - Is the proposed rate base for the test year appropriate?
4		
5	En	ergy Probe Question #7 - Ref: Exhibit B1, Tab 1, Sch. 1, page 4
6	a)	What was the property at 90 Maple Grove used for while it was in rate base?
7	b)	Please provide further detail of the changes that resulted in the removal of the
8		property from rate base.
9	c)	What is the current net book value of property? Please provide the response based
10		on the value of the land and the building separately.
11	d)	Has Hydro Ottawa sold the property as of the current date? If yes, please provide
12		the proceeds from the sale. If no, please provide an estimated sale value.
13		
14	Re	sponse
15 16	a)	The property at 90 Maple Grove was the former Kanata Hydro site prior to
17		amalgamation. Between amalgamation and 2005 the site was used as the west end
18		operations centre. In 2005, a new operations centre was constructed on the same
19		site and the property became a rental property.
20		
21	b)	The application to sever the property located at Maple Grove into two properties is
22		the event that triggered the removal of 90 Maple Grove from rate base. The west
23		end operations centre built in 2005 at 100 Maple Grove remained in the rate base.
24		
25	c)	The net book value of 90 Maple Grove as at December 31, 2010 was \$1,809k (\$25k
26		in land and \$1,784 in building).
27		
28	d)	Hydro Ottawa Limited ("Hydro Ottawa") has not sold the property as of the current
29		date. Hydro Ottawa had the property appraised in 2010 and the estimated sale
30		value was \$1,750k to \$1,800k.
31		



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #5 Filed: 2011-09-08 Page 1 of 3

2					
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?				
4					
5	En	ergy Probe Question #9 - Ref: Exhibit B1, Tab 2, Sch. 4			
6	a)	What will the land that will be acquired in 2012 for the new Operations Centre be			
7		used for in 2012? When will the new Operations Centre be in service?			
8	b)	When is the new administrative building forecast to be in service?			
9	c)	Is the land referred to on page 1 separate land or one contiguous property that will			
10		be used for both the operations center and the administrative building?			
11	d)	Has Hydro Ottawa included any incremental revenues for the facilities that will be			
12		leased to the Holding Company and/or Energy Ottawa in the 2012 test year? If yes,			
13		please quantify and show where it has been included in the forecast. If no, please			
14		explain why not.			
15	e)	Please update Table 6 to reflect the net book value of as December 31, 2011.			
16	f)	Does Hydro Ottawa plan on selling each of the three properties shown in Table 6? If			
17		yes, please provide an estimated sale date for each property. Please provide a			
18		version of Table 6 using the estimated net book value when each property is			
19		expected to be sold.			
20	g)	Please expand Table 7 to include Options 2 and 3.			
21	h)	Please provide a version of Table 8 for Options 1, 2 and 3.			
22	i)	Are there any costs other than the \$4.0 million (page 20) associated with land			
23		acquisitions included in the 2012 revenue requirement?			
24	j)	Please show how Hydro Ottawa has estimated the revenue requirement impact of			
25		the capital additions for land to be approximately \$200,000.			
26					
27	Re	sponse			
28					
29	a)	Please refer to Exhibit K2-1-2 (Board Staff Question #8) for a discussion on what the			
30		land will be used for in 2012. The East Operations Centre is forecast to be in service			
31		by the end of 2013.			



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #5 Filed: 2011-09-08 Page 2 of 3

1	b)	The new administrative building is forecast to be in service by the end of 2015.
2		
3	c)	The land referred to on page 1 may be separate land or one contiguous property that
4		will be used for both the operations center and the administrative building; it depends
5		on the sites that are available. The East Operations Centre has more stringent
6		location criteria than the administrative building.
7		
8	d)	No, Hydro Ottawa Limited has not included any incremental revenues for the new
9		facilities that will be leased to Hydro Ottawa Holding Company and/or Energy Ottawa
10		in the 2012 test year as the new facilities will not be available in 2012.
11		
12	e)	Table 6 in Exhibit B1-2-4 indicates the estimated Loss or Gain on the sale of the
13		properties utilizing the Net Book Value ("NBV") as at December 31, 2009. The table
14		is updated to reflect the NBV as at December 31, 2010.

- 15
- 16

 Table 1 – Estimated Loss or Gain on Sale of Properties (NBV Dec 2010)

Property	Loss / (Gain)
Albion Road	(\$1.8M)
Merivale Road	\$7.0M
Bank Street	\$2.6M
NET LOSS	\$7.8M

17

- 18 f) Yes, Hydro Ottawa plans on selling each of the three properties shown in Table 6.
- 19 The estimated sale date is 2016. Table 6 has been updated using the estimated
- 20 NBV as at December 31, 2015. The estimated sale value is based on the 2010
- 21 appraisal and has not been adjusted.
- 22
- 23

Table 2 – Estimated Loss or Gain on Sale of Properties (NBV Dec 2015)

Property	Loss / (Gain)
Albion Road	(\$2.9M)
Merivale Road	\$3.9M
Bank Street	\$1.0M
NET LOSS	\$2.0M

24



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #5 Filed: 2011-09-08 Page 3 of 3

1	g)	The NPV calculations were not prepared for Options 2 and 3. As noted in Exhibit
2		B1-2-4, Options 2 and 3 were not given the same consideration as Options 1 and 4.
3		Options 2 and 3 would be very expensive due to the cost of demolition and
4		temporary relocation of many staff plus of cost of building new buildings yet all the
5		issues with the existing location would remain.
6		
7	h)	Table 8 is the budgeted cost of constructing new facilities, Option 1 does not involve
8		constructing new buildings, and as per g) Options 2 and 3 were dismissed for the
9		reasons noted above.
10		
11	i)	No, there are no other costs other than the \$4.0M associated with land acquisitions
12		included in the 2012 revenue requirement.
13		
14	j)	Hydro Ottawa has estimated the revenue requirement impact of the capital additions
15		for land as follows:
16		
17		\$4M/2 * Average Weighted Cost of Capital + \$4M/2 * 40% * ROE *Tax Rate/(1-
18		Tax Rate) = \$4M/2 *0.0695 +\$4M/2 *0.40*0.0958*0.2625/(1-0.2625) = \$166k
19		which was rounded to \$200k.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #6 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.1 - Is the proposed rate base for the test year appropriate?
4		
5	<u>En</u>	ergy Probe Question #10 – Ref: Exhibit B1, Tab 2, Sch. 5, Table 1
6	a)	Are the depreciation rates used by Hydro Ottawa consistent with the lifecycle of each
7		of the unity types shown in Table 1? If not, why not?
8 9	b)	At line 8 of page 4 there is a reference to 2012 and 2013. Should this be for 2011 and 2012?
10	c)	How has and will Hydro Ottawa account for the net sale value of the vehicles being
11		replaced? Where has this revenue been reflected in the evidence?
12	d)	Please confirm that the net book value of the vehicles being replaced has been
13		removed from the calculation of rate base.
14		
15	Re	sponse
16 17	a)	Depreciation rates used in the Rate Application are consistent with those listed in this
18	α)	exhibit
19		
20	b)	The dates as shown are correct. The Bucket Truck expenditures are allocated over
20	0)	the 2 years. These vehicles have long lead times and the expenditures are spread
22		over 2012 and 2013
23		
24	C)	The proceeds for the vehicle are applied to the NBV of the vehicle and the residual
25	- /	recorded as a Gain/Loss on sale of fixed Asset.
26		
27	d)	Revenue has been reflected in Exhibit C2, Tab 1, Sch. 6 Also see Exhibit K3-5-5
28	,	(EP # 33).
29		
30	e)	Net Book Value of these vehicles has been removed from the rate base.
31	,	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #7 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	Energy Probe Question #11 – Ref: Exhibit B1, Tab 2, Sch. 6
6	a) Will the forecast expenditure of \$6.9 million in the 2011 bridge year be included in
7	rate base at the end of 2011 or in CIP. Please explain.
8	b) What is the current status of the project? In particular, has there been any change in
9	cost or in the projected completion date of the fourth quarter of 2012?
10	
11	Response
12	
13	For both parts a and b, please see Exhibit K2-2-11 (CCC Question 11).
14	

15



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #8 Filed: 2011-09-08 Page 1 of 2

2		
3	lss	ue 2.1 - Is the proposed rate base for the test year appropriate?
4		
5	<u>En</u>	ergy Probe Question #12 – Ref: Exhibit B1, Tab 2, Sch. 7
6	a)	Please provide the net book value of the existing hybrid vehicles included in the test
7		year.
8	b)	Please provide the estimated premium paid for the hybrid vehicles that will be
9		included in the test year.
10	c)	Is Hydro Ottawa eligible to receive any incentives (federal government, provincial
11		government, OPA, etc.) to help pay for the capital expenditures shown in Table 1?
12	d)	Please provide a revised Table 6 for the 2011 bridge year that reflects the most
13		current year-to-date information along with the current forecast for the remainder of
14		the year.
15	e)	Please explain the reduction in the contributions and grants in both 2011 and 2012
16		relative to the levels recorded in the historical years.
17		
18	Re	sponse
19		
20	a)	The net book value as at the end of 2010 of the existing hybrid vehicles in Hydro
21		Ottawa's fleet is \$417,212. Given that hybrid vehicles for the test year have not yet
22		been purchased, it is not feasible to provide a net book value.
23		
24	b)	The estimated premium for hybrid vehicles for the test year is \$190K.
25		
26	c)	Hydro Ottawa Limited ("Hydro Ottawa") does not know at this time if existing
27		incentive programs for facilities capital expenditures will be available in the test year
28		or in future years.
29		
30	d)	There is no Table 6; however, the budget is on forecast for the 2011 bridge year.
31		



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #8 Filed: 2011-09-08 Page 2 of 2

- 1 e) Hydro Ottawa does not expect to receive any contributions/grants in the 2011 bridge
- 2 year; we do not know at this time if existing programs will be available in the test
- 3 year.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #9 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.1 - Is the proposed rate base for the test year appropriate?
4		
5	<u>En</u>	ergy Probe Question #13 – Ref: Exhibit B3, Tab 1, Sch. 1
6	a)	Do the accumulated amortization schedules reflect the use of the half year rule for
7		amortization for assets added in the current year for each of 2006 through 2011? If
8		not, please indicate which years reflect the use of the half year rule.
9	b)	Please confirm that the 2012 figures reflect the use of the half year rule.
10		
11	Re	sponse
12		
13	a)	The half Year rule is used for all pooled assets. Discrete assets depreciation
14		commences from the time they are capitalized.
15		
16	b)	The 2012 figures use the half year rule for budgetary purposes for all additions with
17		the exception of major capital projects, such as New Stations and CIS Upgrade,
18		which have a targeted capitalization date.
19		
20		
21		



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #10 Filed: 2011-09-08 Page 1 of 2

1 2. RATE BASE

2

Issue 2.1 - Is the proposed rate base for the test year appropriate?

3 4

5 SEC Question #5 - Ref: Ex.B1/2/6/p.3

6 Please provide details on the procurement process that led to IBM Canada receiving the7 application-managed service contract for the CIS.

8

9 **Response**

10

11 a) In August, 2003, Hydro Ottawa Limited ("Hydro Ottawa") finalized a contract for the 12 acquisition of a new PeopleSoft Customer Information System ("CIS"), with an 13 implementation date of September 7, 2004. In January, 2004, Hydro Ottawa's CIS 14 Steering Committee initiated a competitive process to acquire managed services for 15 the new CIS. Due to short timeframes, the competition focused on known industry 16 service providers, which resulted in invitations for proposals being issued to five (5) 17 vendors. One (1) vendor respectfully declined to participate. After receiving initial 18 proposals, detailed proposals were sought from three of the submissions. Each 19 proposal was assessed according to a grading matrix which weighed previous 20 experience, transition plan details, service level covenants and pricing. Two 21 organizations were shortlisted and subjected to further assessment by the CIS 22 Steering Committee. On April 5, 2004, IBM was chosen as the successful provider. 23 On May 28, 2004, a Managed Services Agreement was signed with IBM for the 24 period April 1, 2004 to December 31, 2010. In September, 2004, Hydro Ottawa went 25 live with a new PeopleSoft Customer Information System ("CIS"). 26 27 On December 29, 2009 Hydro Ottawa exercised its option to extend the term of this 28 Agreement until December 31, 2012. Hydro Ottawa's decision to extend the IBM 29 managed services contract was based on IBM's historic performance and proven

- 30 ability to adapt and expand their services to Hydro Ottawa's constantly evolving
- 31 needs. Further, Hydro Ottawa was in the process of implementing Time-of-Use



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #10 Filed: 2011-09-08 Page 2 of 2

- 1 billing, which relied upon a strong and experienced customer and technical support
- 2 structure, which IBM was well-positioned to provide.
- 3



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #12 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	SEC Question #7 - Ref: Ex.B5/1/1/p.7
6	Please provide an update of the Janet King station capacity project.
7	
8	Response
9	
10	The Janet King New Capacity project was energized at the end of June 2011. The
11	project is now complete.
12	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #14 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE 2 3 Issue 2.1 - Is the proposed rate base for the test year appropriate? 4 5 SEC Question #9 - Ref: Ex.B5/1/1/p.14 6 Please explain in greater detail the Applicant's "re-evaluation" of the useful life of a pole. 7 8 Response 9 10 "Based on results from the inspection program and in addition to a re-evaluation of the 11 useful life of a pole, pole replacements are being re-prioritized. The 2010 Asset 12 Management Plan has redeveloped the priorities going forward for this program." 13 14 Hydro Ottawa Limited ("Hydro Ottawa") has not changed the number of years in the 15 wood pole useful life definition. Based on the volume of poles projected to exceed their 16 useful life over the next 25 years, Hydro Ottawa will be significantly challenged to 17 replace all poles past the defined useful life. Utilizing annual pole testing condition based 18 data, "highest risk poles" can be more effectively identified and prioritized. Pole testing 19 data will also be used to update Hydro Ottawa's distribution pole failure/degradation 20 models. This "re-evaluation" will allow for refining future replacement timing and 21 prioritization to better reflect system and financial requirements. 22



1

2 3

4 5

6

7 8

9 10

11

Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #15 Filed: 2011-09-08 Page 1 of 2

2. RATE BASE Issue 2.1 - Is the proposed rate base for the test year appropriate? SEC Question #10 - Ref: Ex.B5/1/1/p.18 For table 4, please provide 2011 planned budget and 2011 year-to-date actuals. Response Please see next page. Table has been updated to remove 2006 – 2010 Smart Meter costs, and update 2011 year to date actuals and 2011 current forecast.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #15 Filed: 2011-09-08 Page 2 of 2

Capital Program	Budget Program	2006 \$000	2007 \$000	2008 \$000	2009 \$000	2010 \$000	2011 YTD ¹ \$000	2011 Budget \$000
Commercial	New Commercial Development	\$7,504	\$7,832	\$7,078	\$7,791	\$8,241	\$3,850	\$6,841
Damage to Plant	Damage to Plant	1,120	742	822	941	837	448	867
Infill & Upgrade	Infill Service	4,288	3,275	2,768	2,852	2,908	1,437	3,121
Metering	Smart Meters	0	0	0	0	0	0	0
Metering	Wholesale Meter Upgrade	1,258	1,098	686	(34)	7	0	0
Plant Relocation	Plant Relocation & Upgrade	5,237	4,782	4,686	5,697	10,064	3,510	5,552
Residential	Residential Subdivision	7,439	8,335	8,916	8,334	6,874	2,479	6,636
System Expansion	System Expansion Demand	1,445	3,214	1,650	1,881	2,002	1,815	3,403
Miscellaneous		(1,224)	31	132	204	(46)	710	1,860
	TOTAL	\$27,067	\$29,309	\$26,738	\$27,666	\$30,887	\$14,249	\$28,280

¹ Year to date as of June 30, 2011

1



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #16 Filed: 2011-09-08 Page 1 of 2

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	SEC Question #11 - Ref: Ex.B5/1/1/p.22
6	For table 5, please provide 2011 planned budget and 2011 year-to-date actuals.
7	
8	Response
9	
10	Please see Table below.
11	
12	

Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #16 Filed: 2011-09-08 Page 2 of 2

Table 5 – Contributed Capital, Demand

Section	Capital Program	2006 \$000	2007 \$000	2008 \$000	2009 \$000	2010 \$000	2011 YTD ¹ \$000	2011 Budget \$000
5.1	Damage to Plant	(\$484)	(\$381)	(\$740)	(\$550)	(\$823)	(\$263)	(\$447)
5.2	Infill Service	(1,539)	(1,586)	(1,012)	(1,218)	(1,417)	(846)	(1,411)
5.3	New Commercial Development	(6,592)	(10,445)	(7,168)	(8,469)	(7,763)	(3,292)	(6,840)
5.4	Plant Relocation & Upgrade	(3,243)	(2,710)	(4,543)	(4,162)	(5,009)	(1,522)	(2,765)
5.5	Residential Subdivision	(6,536)	(8,881)	(7,250)	(6,317)	(5,577)	(1,811)	(5,087)
5.6	System Expansion Demand	(670)	(718)	(270)	(273)	(355)	(79)	(1,082)
5.7	Miscellaneous	(965)	(599)	(254)	78	0	(14)	(63)
	TOTAL	(\$20,029)	(\$25,320)	(\$21,237)	(\$20,911)	(\$20,944)	(\$7,827)	(\$17,695)

3

¹ Year to date as of June 30, 2011


Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #17 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2 3

Issue 2.1 - Is the proposed rate base for the test year appropriate?

4

5 SEC Question #12 - Ref: Ex.B5/1/1/p.22-23

For each year between 2006 and 2010, what percentage of damage to plant is collectedfrom the responsible party?

8

9 **Response**

10

11 Damage to Plant is defined as a program category for replacement of harmed or injured

12 assets, resulting in the loss of functional use of the asset, that are caused by a third

13 party to be no longer functional or to have an aesthetic condition beyond normal wear

14 and tear. We target 100% recovery of cost from that third party; however, where tracing

15 information is not available, Hydro Ottawa Limited ("Hydro Ottawa") absorbs the cost or

16 may attempt at recovery from its insurer.

17

18 The table below outlines the percentage of the totals for each year covered by the 19 responsible party. The significant variances between 2007/2008 and 2009/2010 are due 20 to a timing difference between recording costs related to damaged assets and when the 21 corresponding contribution to those costs is recorded. Hydro Ottawa will only record a 22 contribution when the responsible third party has been identified and an invoice has 23 been generated, while costs are recorded as they occur.

24

Capital Program	Budget Program	2006	2007	2008	2009	2010
		%	%	%	%	%
Damage to Plant	Damage to Plant	43%	51%	90%	58%	98%

25



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #18 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.1 - Is the proposed rate base for the test year appropriate?

4

5 SEC Question #13- Ref: Ex.B5/2/1/p.4-6

- 6 With respect to cable replacement projects approved in the 2008 EDR Application,
- 7 please provide the planned and actual budgets for each.
- 8

9 **Response**

10

Budget Program	Project	2008 Approved \$000	2008 Actual \$000
Cable Replacement	City Park	\$500	\$270
Cable Replacement	Beacon Hill (Ogilvie Road) – Deferred	312	0
Cable Replacement	Hawthorne 48M3-417	780	619
Cable Replacement	Campeau Drive – Deferred	387	0
Cable Replacement	Barrhaven Cable Replacement Phase 1	881	751
	TOTAL	\$2,860	\$1,640

11

12 The City Park project was completed in 2008, with lower than estimated civil costs for

13 construction.

14

15 The Beacon Hill Ogilvie Road project was deferred until 2009 when it was completed.

16 The Campeau Drive project is being timed with the City of Ottawa's planned road

17 widening project. Currently in 2011 the city is planning on doing sidewalk work which will

18 allow Hydro Ottawa Limited to install our duct structures. The remainder of the work will

19 be done in following years.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #19 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.1 - Is the proposed rate base for the test year appropriate?

4

5 SEC Question #14 - Ref: Ex.B5/2/1/p.8-9

- 6 With respect to line extension projects approved in the 2008 EDR Application, please
- 7 provide the planned and actual budgets for each.
- 8

9 **Response**

10

Budget Program	Project	2008 Approved \$000	2008 Actual \$000
Line Extensions	Limebank F3 Feeder	\$512	\$494
Line Extensions	Supply to Rockcliffe Airbase Redevelopment – Deferred	500	0
Line Extensions	Greenbank Road Rebuild	652	543
Line Extensions	New Overhead 27.6kV Along Abbott Rd. – Deferred	585	0
	TOTAL	\$2,249	\$1,037

11

12 The Supply to Rockcliffe Airbase was delayed due to property owners being required to

13 resolve native land claims on the property. The property owner has since come back to

14 Hydro Ottawa with plans of the project moving ahead. The timing of the project has yet

- 15 to be determined.
- 16

17 The Overhead project along Abbott Rd was delayed due to concerns from residents and

18 now scheduled to take place in 2012.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #20 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.1 - Is the proposed rate base for the test year appropriate?

4

5 <u>SEC Question #15 - Ref: Ex.B5/2/1/p.9-10</u>

- 6 With respect to station switchgear and replay replacement projects approved in the 2008
- 7 EDR Application, please provide the planned and actual budgets for each.
- 8

9 **Response**

10

Budget Program	Project	2008 Approved \$000	2008 Actual \$000
Station Switchgear Replacement	Marchwood	\$823	\$1,973
Station Switchgear Replacement	Beechwood	2,700	2,695
Station Switchgear Replacement	Eastview – Deferred	785	0
Station Switchgear Replacement	Kilborn –Cancelled	240	0
	TOTAL	\$4,548	\$4,668

11

12 The multi year Eastview Switchgear Replacement project was deferred to begin in 2009.

13 The first phase of the project has now been energized with the project scheduled to be

14 completed in 2012.

15

16 The Kilborn Switchgear Replacement project was cancelled as a result of the Kilborn

17 Voltage conversion, which eliminates the need for the substation.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #21 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	SEC Question #16 - Ref: Ex.B5/2/1/p.11
6	Please provide an update on the in-service date of the Ottawa South East 13kv Area
7	project.
8	
9	Response
10	
11	The Ellwood TS project was energized December 17, 2010.

12



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #23 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	VECC Question #8 - Ref: B6, Tab 1, Schedule 1, Attachment W
6	What metrics does Hydro Ottawa use to measure the efficiency or effectiveness of its
7	plant investments. For example, are reliability metrics, capital employed per customer or
8	sales used? If not, please explain
9	
10	Response
11	
12	Hydro Ottawa Limited ("Hydro Ottawa") uses reliability metrics SAIFI, SAIDI, and FEMI_{10}
13	to monitor performance and to provide input to direct investments for poor performing
14	areas of the system. These reliability metrics are broken down and monitored by
15	primary cause for interruption to provide more granularities to study. Hydro Ottawa
16	analyzes and tracks the performance of its worst performing feeders on an annual basis
17	and produces action plans for improvements.
18	
19	Hydro Ottawa keeps records of Capital and O&M (operation and maintenance) per peak
20	MW (megawatt), per GWh (gigawatt-hour) delivered, per customer, and per km of line.
21	
22	Financial strength and organizational effectiveness is monitored and tracked through
23	capital sustainment program performance measures SPI (Schedule Performance Index)
24	and CPI (Cost Performance Index). Currently these two tracking measures are only
25	being tracked, to allow Hydro Ottawa to identify any issues in scheduling and budgeting
26	for individual projects, with the intent of using the information to improve on processes in
27	the future.
28	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #24 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	VECC Question #9 - Ref: Exhibit B1, Tab1, Schedule 1, page 4
6	Section 3.0 describes amounts removed from rate base. Please provide the amount of
7	the rate base reduction for the two items mentioned (separately for land and solar
8	panels).
9	
10	Response
11	
12	The following amounts (net book values) were removed from rate base at the end of
13	2009:
14	Land at 90 Maple Grove: \$25k
15	Building at 90 Maple Grove: \$1.784M
16	Solar panels installed at Merivale Rd. and Bank St.: \$264k



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #25 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	VECC Question #10 - Ref: Exhibit B1, Tab 2, Schedule 4, pages 1-22 - Facilities
6	Strategy
7	The purpose of this interrogatory is to clarify the total costs of the Facilities Strategy.
8	Table 6, page 11, lists a net loss on property that may be sold as part of Hydro Ottawa's
9	facilities strategy. Table 8 lists total budgeted costs, and Table 9 lists other costs,
10	including \$1 million in moving costs. Please confirm that Table 8 is inclusive of all costs
11	(including moving costs, costs of project management including staff, gains or loss on
12	property). If Table 8 does not provide all the costs please provide a table that does.
13	
14	Response
15	
16	Table 8 is inclusive of all construction costs and other costs noted in Table 9 such as
17	moving costs, project management, furniture, etc. Table 8 represents the total initial
18	cash outlay.
19	
20	The net realizable value on the sale of existing properties and estimated accounting gain
21	or loss on the sale is not presented on Table 8. Please see Tables 1-3, and Table 6 in
22	Exhibit B1, Tab 2, Schedule 4 for those estimated values based on net book value as at
23	December 31, 2009.
24	
25	
26	
27	
28	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #26 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	sue 2.1 - Is the proposed rate base for the test year appropriate?
4		
5	VE	CC Question #11 - Ref: Exhibit B1, Tab 2, Schedule 3, page 2 – IM&IT
6	a)	Please file the IM&IT plan
7	b)	If separate from the plan, please provide the costing analysis of the entire IM&IT plan
8		(or confirm the total cost of the plan is listed at Exhibit B1, Tab 2, Schedule 7, page
9		7, Table 3).
10		
11	Re	sponse
12		
13	a)	Please see Attachment 1
14		
15	b)	The cost listed at Exhibit B1, Tab 2, Schedule 7, page 7, Table 3, refers only to the
16		Environmental Sustainability Strategy plan for performance improvements in
17		information management and technology at Hydro Ottawa Limited, specifically aimed
18		at contributing to the overall reduction in the company's carbon footprint.
19		



IM/IT Plans & Priorities

2011 & 2012

23 March 2011 (Final)

Office of the CIO



Prioritization / Review Considerations

Grouping "A": Corporate Priority

Grouping "B": Key Business / Operational

Grouping "OT": Operational Technology

Grouping "R&P": Research & Planning



Business Initiatives For 2011 and 2012



Approved IM/IT Initiatives 2011-2012

A: Corporate Priority

- Meter-To-Cash
 - CC&B Project

CIS

- Regulatory
- Monthly Billing

AMI

٠

- ToU Run Phase
- Transition to IT
- Disaster Recovery
- Regulatory
- Information Management/Technology
 IT Security
 - IT Infrastructure
 - Contracts Document Management
 - JDEdwards Human Resource Capital Management Financials Phase 2
- Customer Service Strategy
 - Call Recording
 - IVR Platform Upgrade
 - Outage Communications
 - Contact Center Platform Upgrade

B: Key Business / Operational Initiatives

- AMI /MT Replacement
- MyHydroLink Enhancements
- Customer IVR Self Service
- Contact Center Applications
- Telecommunications/Radio Replacement
- PQ-View Connector
- PI 2010 Upgrades
- 4 Command
- GIS/OMS Licensing & Systems Upgrades
- GIS Customizations (Intergraph)
- CYME to GIS Interface

OT: Operating Technologies

- GE MDS PulseNet
- PQ Data Collection

R&P: Research & Planning

- PQView 4 Upgrade
- Network Fibre Ring Secure SCADA LAN
- Mobile Vehicle Installations for OMS
- Intranet Renewal
- One Portal OMS Application

Black font colour = 2011 and 2012 Initiatives **Green** font colour = 2011 Initiative **Brown** font colour = 2012 Initiative



"A" Initiatives 2011 and 2012



Project: CC&B Transition Project

Description: Implemented in 2004 to support HO's Meter-to-Cash operations, CIS is licensed from Oracle and runs under a managed services agreement with IBM. Oracle Premium support expired at the end of 2009. Project is to replace CIS with Oracle's Customer Care & Billing (CC&B) system.

Drivers:

- 1. Risk mitigation of a mission-critical system underlying HO's revenue stream
- 2. Regulatory changes to CIS more costly to implement

Expected Outcome:

- 1. Reliable & fully supported CC&B
- 2. Reduced costs for future enhancements & changes
- 3. Greater leverage with Oracle for the evolution of CC&B

Start Date: Q4 2010

Completion Date: December 31, 2012

Lead: COO, Distribution & Customer Service; co-sponsored with CIO.

Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)			
CIS Application Support Team is engaged in supporting TOU deployment, consequently are not fully available for the CIS Replacement project.	2011	2012	2011		2012	
	\$7,000	\$7,700	OM&A	CapX \$7.000	OM&A	CapX \$7.700

Deferral Implications:

- CIS Application Support staff available for CIS Project
- Requirement for freeze on CIS changes impacts on regulatory compliance
- Greater clarity of end-to-end Metering & Billing business processes and managed services requirements.

CIO Recommendation:

- Freeze all non-essential changes to CIS.

Project: CIS Regulatory Requirements

Description: Includes allocation for anticipated development efforts in CIS to accommodate changing regulatory requirements and business improvements which are likely to occur based on historical benchmarks for the pace and complexity of changes. Though specific requirement details could not be identified for budget deliberation timelines, anticipated key areas of change include MDM/R, OEB Standardization of Customer Service, FIT, MicroFIT, Suite metering, EBT standards and Measurement Canada. Although development in the current CIS for discretionary enhancement desires &/or some regulatory requirement resolutions will be strategically curtailed in light of a new CIS project and limited opportunities for ROI, some changes will still be necessary. (ToU implementation, Ontario Disability Act & Braille Billing considerations, Low Income Directive, Landlord Data Requirements)

Drivers: OEB Regulatory requirements

Expected Outcome:

1. Development in the current CIS to incorporate approved essential regulatory &/or business requirements.

Start Date: Q1, 2011

Completion Date:

Lead: COO, CIO

Est. Costs	Funding Requirements (\$000)				
2011	2012	20	11	2012	
\$1,520	\$770	OM&A	CapX \$1,520	OM&A	CapX \$770

Deferral Implications:

1. Non-compliance within OEB regulatory requirement

CIO Recommendation:

Proceed on a case by case basis.

Project: Transition to monthly billing for all customers



Description: Transition all Residential and Small Commercial customers from Bi-monthly to Monthly billing for electricity. Significant system, business process and change management implications to complete the transition considering the fundamental nature of this change to the system and our customers.

Drivers:

- 1) Alignment with billing frequency of most other recurring household expenses (e.g. gas, phone, cable)
- 2) Provide a more timely cause and effect communication to customers about electricity usage pattern and their bill
- 3) Ease transition and change management considerations for new CIS where monthly billing was a requirement

Expected Outcome:

Expedient transition to monthly electricity billing for all Residential and Small Commercial customers in a manner that effectively manages business and customer relationship management risks

Start Date: Q2, 2011

Completion Date: Q4, 2011

Lead: COO, CIO

Impacts:	Est. Costs	Funding Requirements (\$000)				
•Downstream business process impacts affected by	2011	2012	2011		2012	
billing frequency (e.g. customer call, MR exceptions, Billing exceptions, Collections activities, payments) and Change management estimates to be added	\$400 + *		OM&A TBD *	СарХ	OM&A TBD *	CapX \$325*

Deferral Implications:

- 1. Next opportunity to address this change will be during transition to the new CIS (anticipated Dec. 31/12)
- 2. Customer experience of transition to TOU may not be as well received if communicated via a bi-monthly bill



Project: Completion of TOU roll-out

Description:

Complete roll-out of Time-of-Use (TOU) billing (a.k.a. TOU Run phase) for qualifying customers in accordance with Regulatory requirements.

Drivers: To	o achieve Regulatory compliance
Expected (Outcome:
D 1 - 1 1 1 -	and the self the second state of the NADNA /Decode the self the second state of the state of

Registration of qualifying customers with MDM/R and transition of their billing to TOU

Start Date:	Completion Date:
Q2 2011	Q1 2012

Lead: COO, CIO

Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)			
business processes and customer experience.	2011	2012	20	11	20	12
*NOTE: Though the Meter-to-Cash system changes should already be in place , further development could be needed to address volume or unexpected events.	TBD *	TBD *	OM&A	СарХ	OM&A	СарХ

Deferral Implications:

1. Potential opportunity to incorporate desired transition to Monthly Billing to ease customer TOU experience

Project: Transition of IT-type Services to the CIO Division

Description: Transition of the IT-type functions and services currently embedded in the Meter-to-Cash processes in Meter Data Services to the CIO Division, as a component of an Executive strategy to transition IT-type services from operational areas to a single IT group.

Drivers:

- 1. Executive commitment to "One IT Shop" strategic direction (August 2010)
- 2. Risk mitigation for mission-critical Meter-to-Cash processes.

Expected Outcome:

- 1. Standardized processes for the management and operation of mission-critical IT infrastructure and services to ensure their reliability and availability.
- 2. Potential rationalization of processes and resources resulting in productivity improvements.

Start Date: Q1 2011	Completio	Completion Date: Q4 2011 (Meter-to-Cash processes)					
Lead: CIO (Manager CIS Support)							
Impacts: Potential requirement for additional resources in CIS Support to assume responsibility for functional and technical support of additional systems and users. MDS resources required to provide support through transition and ramp up in CIS Support.	Est. Costs (\$000)		Funding Requirements (\$000)				
	2011	2012	2011		2012		
	TBD		OM&A TBD	СарХ	OM&A	СарХ	
Deferral Implications:							
CIO Recommendation:							



Project: TOU Infrastructure Disaster Recovery Capability

Description: Provide Disaster Recover capabilities for mission-critical Metering Infrastructure. Note: CIO has reviewed IESO's MDM/R Disaster Recovery Plan and is satisfied that it is robust.

Drivers:

1. Risk reduction. Provide redundancy to ensure the continuity of HO's Billing process.

Expected Outcome:

- 1. Redundant AMI data centre with ability to process TOU meter data.
- 2. Simplified and supportable Meter-to-Cash process using standard IT tools.

Start Date: Q4 2010 Completion Date: Q2 2011 (Disaster recovery); Q4 2011

Lead: COO, Distribution & Customer Service; co-sponsorship with CIO

Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)			
 CIS Application Support Team required to support TOU through roll-out, therefore are not fully available to CIS Project. 	2011	2012	2011		2012	
	\$ 250	\$ 350	OM&A \$250	CapX \$160	OM&A \$350	СарХ

Deferral Implications:

1. Risk of failure in AMI which supports HO's mission-critical Meter-to-Cash business process.

- 1. Purchasing disaster recovery capability from IBM (warm site) is highest priority.
- 2. Work in partnership with Oracle, Ener-Source, and potentially other Utilities to develop supportable solution

Project: AMI (per MDM/R) Regulatory Requirements

Description: To meet ongoing regulatory requirement and address required changes (on a case by case basis) as they affect or impact MAS, AMI/MT, Lodestar. Details pertinent to each change TBD.

Drivers:

- 1. OEB Regulatory Requirements
- 2. Critical path system needs to be maintained until otherwise replaced

Expected Outcome:

1. Retention of expanded volume of AMI/MT information in a manner that allows access to historical reference data without jeopardizing immediate operational requirements. This is, as yet, unclear relative to retention, who will maintain/own, length of retention, long term strategy.

Start Date: Q2, 2011 Completion Date: Q4)12			
Lead: COO, CIO						
 Impacts: MV90 upgrade system event notification CGI Mobile Workforce Mgmt (whereas Intergraph has a larger footprint within HO and also provides this capability). 	Est. Cost	Funding Requirements (\$000)				
	2011	2012	2011		2012	
	\$230 \$540 \$930	\$220 \$270 \$220	OM&A	CapX <i>\$230</i> <i>\$540</i> <i>\$930</i>	OM&A	CapX \$220 \$270 \$220

Deferral Implications:

CIO Recommendation: Address on a case by case basis

Priority: IT Security

Description: Implementation of the IT Security program to strengthen security and IT defences to HO's information and IT infrastructure.

Outcome: A coordinated IT Security Program ensuring the confidentiality, integrity and availability of HO's information. HO's information, technology infrastructure and assets are better protected against data loss, unauthorized access, malicious activity, intrusion or compromise. Critical network services are available.

Timeframe: Q1 2011 – ongoing	Lead: Director, IM&IT Planning & Programs						
	Est. Cost	ts (\$000)	Funding Requirements				
Activities	2011	2012	2011		2012		
		OM&A	СарХ	OM&A	СарХ		
Finalize and staff IT Security organization, continue execution of IT Security Roadmap initiatives, revise IT security policy and critical processes, formalize the Vulnerability Management program , review the IT security program elements and provide guidance and recommendations to evolve practice as required.	\$400	\$400	\$300	\$100	\$400		
Deferral Implications:							

Deferral Implications:

- Inability to address priority "gaps" and immediate security risks

Priority: IT Infrastructure

Description: Development of a framework for a converged IT/OT infrastructure and a strategy for a protected, reliable and available IT infrastructure. Through capacity management processes, to ensure the robustness of the corporate IT infrastructure to support ongoing IT operations as well as the new business IT initiatives and the continuing growth of organizational capability. (Assumes that funding for required infrastructure enhancements for new business initiatives are embedded in the project budget.)

Outcome:

- 1. Plan for technology infrastructure which will support IT Security initiatives, and HO's business and operations.
- 2. Robust and expansible IT infrastructure.

	Lead: CIO							
Timeframe: Q1 2011 - Ongoing	Est. Costs (\$000)		Funding Requirements (\$000)					
Activities	2011	2012	2011		2012			
			OM&A	СарХ	OM&A	СарХ		
 Define IT/OT convergence, roles & responsibilities, and strategy for infrastructure maintenance 	\$ 75	\$ 75	\$75		\$75			

Deferral Implications:

- Continued system performance degradation and misalignment of IT initiatives

Project: Contracts Document Management



Description: Development & implementation of a new business process, with related IM tools, for identifying, workflow processing, and storing contract-type documents in a central electronic document repository. Retrospective identification, review, and potential digitization of existing contract documents to be included in the repository. Includes investigation and rollout of toolsets, governing conditions, processes for management of data (Sharepoint).

Drivers:

- 1. Audit of Procurement-to-Pay process highlighted the lack of corporate process for routing of contracts, sometimes bypassing Procurement, and/or Legal.
- 2. IFRS requirement for Finance review of current & future leases for enhanced Accounting treatment.

Expected Outcome:

- 1. Corporate process for contract preparation, review prior to execution, and centralized retention.
- 2. Compliance with IFRS requirements for the Accounting treatment of contracts.

Lead: CIO; co-sponsorship with Director of Finance

Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)			
Experience with this project will be leveraged in IM initiatives across H.O.	2011	2012	2011		2012	
	\$300 \$250	\$100 \$500	OM&A	CapX \$250	OM&A \$100	CapX \$540

Deferral Implications:

1. Delay in actioning Audit recommendation.

2. Risk of not capturing contract documents for Accounting review and treatment as required for IFRS compliance.

CIO Recommendation:

Proceed

Project: JDE Human Capital Management



Description: Automate processes for recruitment & staffing management, position & budgetary management control, as well as performance & compensation management. The original project scope has been reduced for 2011 to focus on "quick win" areas most in need of streamlined and effective processes, leveraging "out of the box" functionality with limited customization.

Drivers:

- 1. Productivity impacts and inefficiencies of manual and non-integrated HR processes.
- 2. Audit recommendations for more formalized, documented processes.
- 3. Leverage HO's investment in JDE software in 2003 which has not been implemented.

Expected Outcome:

- 1. Value of JDE software investment realized.
- 2. Audit recommendations for formalized HR processes satisfied.
- 3. Productivity improvements .
- 4. Information easily searchable and supportive of data analysis and reporting.

Start Date: 01 2011	Completion Date: 04 2011
Start Date. QI 2011	Completion Date. Q4 2011

Lead: Director of Human Resources

Impacts:	Est. Costs (\$0			Funding Requirements (\$000)			
	2011	2012	2011		2012		
	\$540	\$540	OM&A	CapX \$540	OM&A	CapX \$540	

Deferral Implications:

- Audit recommendations not satisfied in a timely manner
- Continued inefficiencies in tracking and reporting processes

Project: JDE Financials Phase 2 (Enterprise System Upgrade)

Description: (1) Close out Phase 1 (2) Implement enhancements in JDE functionality deferred from JDE Upgrade (like-for-like); (3) Develop strategy for Budgeting / Forecasting functionality implementation (JDE vs. Clarity).

Drivers:

- 1. Audit recommendations for strengthening the Procurement-to-Pay process.
- 2. Leveraging JDE software functionality owned by HO but not yet implemented.

Expected Outcome:

- 1. Procurement Section resources re-focussed on higher level risk analysis & savings opportunities rather than transaction processing.
- 2. Efficiency improvements from automating manual financial analysis and budget forecasting processes.
- 3. More timely, reliable, and available financial data.

Start Date: Q1 2011	Completic	Completion Date: Q3 2011					
Lead: Director of Finance							
Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)				
	2011	2012	20)11	20)12	
	\$800	\$ 500	OM&A	CapX \$800	OM&A	CapX \$500	

Deferral Implications:

- 1. Audit recommendations not addressed.
- 2. Opportunity to realize efficiency gains and improved information quality deferred.

CIO Recommendation:

-Proceed

-The project management to be sourced from Finance

Project: Call Recording



Description: In 2010 the OEB issued a requirement for LDC's to document customer agreement to accountability for customer accounts and to maintain these documents for a period of no less than 2 years. The requirement must be met by April 1, 2011. Given the volume of transactions an automated Call Recording solution was decided upon. IM IT support was required for the selection process which included competitive bids and will also be required to support implementation of the call recording solution by April 1 as mandated by the OEB. The solution enables call recording at the IBM call center and in Ottawa

Drivers:

1. OEB Regulatory requirement for LDC's to document Customer agreement to accountability for the customer's account

Expected Outcome:

- 1. Meet OEB mandated obligations
- 2. Supports Hydro Ottawa's Customer Service Strategic Plan (CSSP) by improving our "Accuracy and Completeness" as it relates to documenting customer agreement to be accountable
- 3. It also supports Hydro Ottawa's Customer Service Guiding Principles

Start Date: Q1, 2011

Completion Date: Q2 2011 (March 26/11 go live)

Lead: Director, Customer Service (Manager, Customer Experience)

Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)			
 Meet OEB Regulatory requirements Call recording of credit card information has IM 	2011	2012	2011		2012	
implications	\$61		OM&A	CapX \$61K	OM&A	СарХ
*\$102K CapX spent in 2010 to acquire system						
Deferral Implications: 1. Non compliance with OEB regulatory requirement						
CIO Recommendation: =>						

Project: IVR Platform Upgrade



Description: HO's current IVR platform used for Outage Communications is close to End-of-Life. IS&T advised in 2010 that any new Customer Service applications be developed on a new IVR platform consistent with IS&T technology strategy. Accordingly, IS&T conducted a competitive bid process in 2010 to select and purchase an appropriate new IVR platform (\$80K). The new Avaya IVR platform will enable implementation of customer "self-serve" inbound applications and outbound communications to address requirements of HO's Customer Service Strategic CSSP.

Drivers: 1. Existing IVR Platform is End-of-Life							
Expected Outcome:1. HO able to improve customer accessibility 24 x 7 thr2. Service efficiencies through automated transactions	ough self serve	e applications					
Start Date: Q2, 2011	Completion Date: Q2/Q3 2011						
Lead: Director, Customer Service							
Impacts:	Est. Costs (\$000) Funding Rec			ing Requii	uirements (\$000)		
1. Enables Customer Self-Serve applications	2011	2012	20	11	20	12	
	\$180		OM&A	CapX \$180	OM&A	СарХ	
Deferral Implications:							

Deferral Implications:

- 1. Defers cost reduction opportunities through automation.
- 2. Increased risk of Outage Communications system failure.



Description: Hydro Ottawa's Customer Service Strategic Plan (CSSP) calls for Hydro Ottawa to establish itself as a recognized leader in Customer Service within the utility industry and by its customers. To accomplish this, a cross-functional Steering Committee was established. The committee has developed a priority listing for new Outage enhancements.

Outage Enhancements: Improved Alert Messaging and Staff Training area some of the area the team will focus

Drivers: 1. Customer Service Strategic Plan 2. Guiding Principles							
Expected Outcome: Supports Hydro Ottawa's Customer Strategic Plan							
Start Date: Q1, 2011 Completion Date: Q41- 2011							
Lead: Manager Customer Experience							
Impacts: Messaging errors, no formal application documentation which impact BCP Unclear how linked to Outage Communication System	Total Costs (\$000) Funding Requirements				rements (\$	000)	
	2011	2012	20	11	20	12	
	\$20	\$80	OM&A	CapX \$20	OM&A	CapX \$80	
Deferral Implications:1. Delays in the rollout of the Customer Service Strategic2. Incorrect Alert Messaging	Plan						
CIO Recommendation:							



Description: Hydro Ottawa will upgrade current Contact Center application to facilitate future (2012) functionality in its Ottawa Contact Center. Once HO completes the user requirements relating to the IBM Call Center we will be in a better position to be more specific about which functionalities HO intends to assess for its Ottawa Contact Center (including considerations under the Ontario Disability Act).

Drivers:

1. Leverage Contact Center technology to improve efficiency in Ottawa Contact Center

Expected Outcome:

- 1. Ontario Accessibility Act 2005
- 2. Upgraded operational application
- 3. Enables future workflow improvements/applications

Start Date: Q3, 2011

Completion Date: Q4 2012

Lead: Director Customer Service (Lead: Manager, Customer Experience) Director, IS&T

Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)			
1. Impact of automating workflow for CSR routing in CIS (unable to complete request pass on)	2011	2012	20	11	20	12
 Improves synergies and workflow between Ottawa and IBM enhancing the customer experience Potential impact to Accessibility Act requirements There will be moderate (M) impact to IS&T and low (L) impact to CIS for upgrade activity only, 	\$30		OM&A	CapX \$30	OM&A	СарХ
Deferral Implications: 1. Defers HO and Customer benefits from updated tech	nologies					
CIO Recommendation:						



"B" Initiatives 2011 and 2012



Description: Hydro Ottawa's Customer Service Strategic Plan (CSSP) calls for Hydro Ottawa to establish itself as a recognized leader in Customer Service within the utility industry and by its customers. To accomplish this the CSSP calls for implementation of customer self-serve applications.

<u>Web Self Serve</u>: Account balance inquiry (current bill, account balance); Usage exception alert /exception; **Credit Card Pay Now option; Enhanced MIMO forms; MIMO storage as per the OEB code requirements effective April 1, 2011; Maintain/Fixes to My Hydro Link (e-billing notification, e-billing privacy issues, Data Inconsistencies, Registration), FAQ's and feedback), usage Alerts to customers

Drivers:

- 1. Customer Service Strategic Plan
- 2. Guiding Principles

Expected Outcome:

- 1. Meet OEB mandated obligations to provide data
- 2. Supports Hydro Ottawa's Customer Strategic Plan

Start Date: Q1, 2011

Completion Date: Q1-Q4 2011

Lead: Director, Customer Service; Manager, Customer Experience

Impacts: **Credit Card payment will have CIS impacts as well as IM (data storage) implications	Est. Costs (\$000)		Funding Requirements (\$000)			
	2011	2012	2011		2012	
	\$145	\$161	OM& \$105A	CapX \$40	OM&A \$101	CapX \$60

Deferral Implications:

1. Delays in the rollout of the Customer Service Strategic Plan

Project: Customer IVR Self-Serve



Description: Hydro Ottawa's Customer Service Strategic Plan (CSSP) calls for Hydro Ottawa to establish itself as a recognized leader in Customer Service within the utility industry and by its customers. To accomplish this the CSSP calls for implementation of customer self-serve applications and expanded outbound communication capabilities. Applications to be rolled out include:

IVR Self Serve: Same as above; Information requests

<u>Friendly Reminder</u>: Outbound phone messages (Friendly Reminder; includes Pay Now capability/option); Planned Outage Notification; Expanded Outage Status; Power Restoration notification; Outage Status messages; Customer Surveys; Maintenance Activity Updates

Drivers:

- 1. Customer Service Strategic Plan.
- 2. Accessibility For Ontarians With Disabilities Act... Must provide same degree of access to anyone with disability
- 3. Customer expectations are evolving. HO's competitors include phone companies, gas companies & others

Expected Outcome:

- 1. Expand "inbound" self serve capability.
- 2. Increase "outbound " communications.

Start Date: Q2 2011

Completion Date: Q4 2011

Lead: Director, Customer Service

Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)			
 Enables Customer Self-Service applications Enables automated inbound/outbound 	2011	2012	2011		2012	
Enables Customer Self-Service applications Enables automated inbound/outbound communications	\$260	\$200	OM&A	CapX \$260	OM&A	CapX \$200

Deferral Implications:

- 1. Defer cost reductions made possible through automation e.g. Friendly Reminder
- 2. Defer implementation of Customer Service Strategic Plan



Description: Hydro Ottawa will have the opportunity in 2012 to assess the need for upgraded functionality/applications within its Ottawa Call Center. These applications include Reporting, Auto Attendant, Automation of Workflows, Unified Communications, Skilled-Based media type routing for faxes, MIMO, mail, CRS routing; Call Monitoring, Skilled Based Routing for SMS messaging; social media inquiries as well as agents working from home. There are also 2 applications which support CRM capability and enhancements.

Drivers:

- 1. Customer Service Strategy Plan
- 2. Ontario Disability Act

Expected Outcome:

1. Improved Work Flow performance; reduced costs

Start Date: Q3, 2011

Completion Date: Q4 2012

Lead: Director Customer Service (Lead: Manager, Customer Experience) Director, IS&T

Impacts: Improve Accuracy, completeness, service quality.	Est. Costs (\$000)		Funding Requirements (\$000)			
	2011	2012	20	11	20	12
		\$400	OM&A	СарХ	OM&A	CapX \$400
Deferral Implications:						

Inability to report real-time Noncompliance to Ont Disability Act

Description: Replacement of HO's analogue radio system with a digital solution.

Drivers:

- 1. Life-cycle replacement program.
- 2. Province of Ontario legislated requirement for hands-free communications devices in vehicles. HO exempted until April 2013.

Expected Outcome:

- 1. Compliance with legislated requirement for hands-free communications devices in vehicles.
- 2. More reliable mobile communications.

Start Date: Q2 2011 (RFP); Q3 2011 (Vendor selection);	Completion Date: Q4 2012
Q3-4 2011 (Backbone installation)	

Lead: Director, IT Operations

Impacts:	Est. Costs (\$000)		Funding Requirements (\$000)			
IT Operations and Procurement staff for RFP preparation, evaluation of proposals.	2011	2012	20	11	20	12
IT Operations staff for equipment installation and changeover.	\$195	\$20	OM&A	CapX \$195	OM&A	CapX \$20

Deferral Implications:

- 1. No operational impacts if deferred up to 1 year; otherwise 2013 deadline may be at risk.
- 2. Reliability of existing system is a potential Health & Safety concern.

CIO Recommendation:

1. Proceed with the project to mitigate risk to Health & Safety.

Note: Estimated \$400 from existing IT Life Cycle CapX

Project: Electrotek PQView-OSISoft PI Connector



Description: Software interface needed to allow PQView to query PI historical database. PQView application will automatically cross-reference events retrieved from power quality meters to events that are stored in the PI database (SCADA) and link the events together. This provides context to power quality events captured in PQView and enables quicker diagnosis of causes or disturbances. Interface allows PQView to store data back to PI database as required. Connector also allows PQView advanced analysis tools to be used to query and analyze data stored in PI database.

Drivers: Advanced analytical tools, and application integration. Rather than disparate databases where correlation has to be done manually, this will automatically correlate related information into one source. This will reduce manual tasks required to maintain PQView database and will enhance analysing events from the planning and engineering standpoint. Going forward, this will facilitate automated analytical tools, automated report generation, automated event notification and improved situational awareness.

Expected Outcomes:

- 1. Automated event correlation between PQ events and SCADA events
- 2. Reduction of manual labour required to correlate power quality events with distribution system events.
- 3. PQView reporting to highlight events and provide good tools for engineering and operations investigations

Start Date: 02.2011	Com	pletion Date:	02.20)11
	COIII	piction bate.	Q2 20	777

Lead: Manager System Operations

Impacts:		Est. Costs (\$000)		Funding Requirements (\$000)			
1.	Extra \$500 annually on existing \$17K annual maintenance agreement (OSISoft)	2011	2012	20	11	20	12
2. 3.	No FTE impact, third party support No h/w impact, existing equipment	\$12	\$.5	OM&A	CapX \$12	OM&A	CapX \$.5

Deferral Implications:

1. Correlating events will continue to be a manual task, consuming effort and time from engineering and operations staff. In many cases, investigation is not performed.
Description: Upgrade existing PI infrastructure to new 2010 platform. 2010 includes features, Asset Framework, advanced calculation engine, analytics, and notifications required to take full advantage of the automated analytical, reporting, and notification tools available from OSISoft.

Drivers: Advanced analytical tools, application integration. Along with PQView, PI is one of the foundational software applications where future tools will be developed. Included with PI is a MOSS 2007 server, where web based tools and user interfaces will be developed, leveraging existing databases, data and software applications to develop advanced analytical tools to improve system visibility, awareness and decision making.

Expected Outcomes:

- 1. Installation of software infrastructure to support future applications.
- 2. Development of ad-hoc analytical tools, automated data analysis, and web based user interfaces.

Start Date: Q1, 2012	Completion Date: Q2 2012						
Lead: Manager System Operations	Q1, 2012 Completion Date: Q2 2012 nager System Operations Est. Costs (\$000) Funding Requirements (\$000) e to SRP for 2013 and beyond of \$2.8k impact, third party support 2011 2012 2011 2012 'impact, existing server 2011 \$32K OM&A CapX OM&A CapX 'plications: other projects to develop analytical tools in 2012, 2013, 2014 vinandation: vinandation: vinandation:						
Impacts:	Est. Cost	s (\$000)	Funding Requirements (\$000)				
 Increase to SRP for 2013 and beyond of \$2.8k No FTE impact, third party support 	Completion Date: Q2 2012 Funding Requirements (\$ 2011 2012 2011 201 \$32K OM&A CapX OM&A 2012, 2013, 2014 2013, 2014 2013 2013	12					
3. No h/w impact, existing server	2012 Completion Date: Q2 2012 System Operations RP for 2013 and beyond of \$2.8k Est. Costs (\$000) Funding Requirements (\$000) 2011 2012 2011 2012 ict, existing server \$32K OM&A CapX OM&A CapX ions: projects to develop analytical tools in 2012, 2013, 2014 Suite Server Suite Server Suite Server Suite Server						
Start Date: Q1, 2012 Completion Date: Q2 2012 Lead: Manager System Operations Impacts: Impacts: Est. Costs (\$000) 1. Increase to SRP for 2013 and beyond of \$2.8k 2011 2012 2. No FTE impact, third party support 2011 2012 3. No h/w impact, existing server \$32K OM&A CapX Deferral Implications: 1. Impacts other projects to develop analytical tools in 2012, 2013, 2014 CIORecommendation:							
CIO Recommendation:							



Project: 4 Command

Description: Emergency Planning expert decision-event software to improve upon response and management capabilities for distribution system outages and significant events.

Drivers:

Expected Outcome: Expected Outcome: Ability to prompt and direct specific processes for all emergency situations (per consistent processes)...targeted for Hydro storm restoration program.

Start Date: Q4 2010

Completion Date: Completion Date: Q4 2011

Lead: Operations

Impacts: \$32,500 2010 CapX * Professional Services for config and install Need install on MS windows server; IT support for ongoing patches and updates.	Est. Costs	Funding Requirements (\$000)				
	2011	2012	20	11	20	12
	\$32.5	\$32.5	OM&A	CAPX OM&A \$32.5		CAPX \$32.5
Deferral Implications: 1.						
CIO Recommendation:						

Project: GIS/OMS IT Licensing and System Upgrades Initiatives

Description: Required enhancements and additional licensing relating to GIS/OMS applications to support on-going product capabilities with added functionality (per Business Case). The operating enhancement initiatives will include: I/Dispatcher s/w for control room; I/NetDispatcher s/w web version; OMS upgrade V8.3.1; GIS upgrade to V10; Service Layout Application s enhancements for field staff; two-way communications for SCADA to OMS via interface; as well as leverage the Ticket Tracker application within OMS to track and manage outages via the associated OMS web application.

Drivers: Per Business Case, extended functionality on existing tool suite for greater response, support and analytical capability

Expected Outcome: Extended life and capability of existing tool set. Software enhancements are required for critical operational applications. Part of a four-year plan to refresh and upgrade toolset/expand functionality.

Start Date: Q1, 2011 Completion Date: 2012 Lead: Operations Est. Costs (\$000) Funding Requirements (\$000) 2011 2011 2012 2012 \$659 \$702 OM&A CAPX OM&A CAPX \$550 \$152 \$520 \$139

Deferral Implications:

1. Impacts:

* Reduced functionality and loss of productivity in control room as well as field services

CIO Recommendation:



Project: GIS Customization (Intergraph)

Description:

On-going professional services with Intergraph Inc to support GIS functionality; long term IT-Engineering and Operating strategy needed in terms of investment and customization requirements, functionality.

Drivers:								
Expected Outcome:Continued operational capabilities								
Start Date: Q1, 2011	Completio	on Date: Q4 2	2012					
Lead: Operations								
Start Date: Q1, 2011 Lead: Operations Impacts:	Est. Costs	s (\$000)	Fund	ing Requir	ements (\$000)			
	2011	2012	20	11	20	12		
Expected Outcome: • Continued operational capabilitiesContinued operational capabilitiesStart Date: Q1, 2011Continued operationsLead: OperationsContinued operationsImpacts: Q1End Q1Deferral Implications:Continued operationsCIO Recommendation:Continued operational capabilities	\$90	\$90	OM&A	CapX \$90	<u>OM&A</u>	CapX \$90		
Deferral Implications:								
CIO Recommendation:	Completion Date: Q4 2012 Funding Requirements (\$000) Est. Costs (\$000) Funding Requirements (\$000) 2011 2012 2012 \$90 \$90 OM&A CapX OM&A CapX \$90 \$90 \$90 OM&A CapX \$90 <td< td=""></td<>							



Project: CYME to GIS Interface

Description: CYME software loads additional data from various sources and serves as an analytical tool to support modeling and greater accuracy of the distribution system. This phase will provide additional functionality which includes Enhanced Data Validation, Load Allocation using PI Historian, Automatic Calculation of Network Equivalents, Error Log Database and a WEB Reporting tool.

Drivers: This project is dependent on Meter Data being available; and provides in-depth analysis based on its ability to farm available data sources. This is a next-phase portion of original Project: CYME Engineering Analysis Software

Expected Outcome: Vendor issues present forward planning and alternate tool review. In support of longer term visioning, a more robust engineering analysis software is needed; requirements can be built based on IT-Engineering strategy. Short term results can be appreciated by leveraging CYME.

Start Date: Q2, 2012	Completio	on Date: Q4 2	2012			
Lead: Operations						
Impacts:	Est. Costs	s (\$000)	Fund	ing Requir	rements (\$	6000)
* The foundation to SMART GRID requires analytical system to support operations, control room and	2011	2012	20	11	20	12
decision capabilities. Longer term solution is needed with temporary capabilities in place.		\$100	OM&A	САРХ	OM&A	CAPX \$100
Deferral Implications:1. Incomplete Distribution Systems analysis2. Additional staff required to perform manual analysis						
CIO Recommendation:						



"OT" Initiatives 2011 and 2012



Description: Monitoring software for the SCADA-MDS radio networks. Radio networks currently have diagnostic capability to provide real-time and historical trending of radio system performance. PulseNet is the software that must reside at the head end of the system to collect and interpret this data.

Drivers: Advanced analytical tools, application integration. PulseNet will allow SCADA team to monitor radio diagnostics to assist in troubleshooting. Diagnostic capability has been added to radio infrastructure and is currently stranded until software is installed. Trending of radio signal strength and performance will allow SCADA team to see developing problems and develop solutions before signal degradation impacts the reliability of the SCADA equipment.

Expected Outcomes:

- 1. PulseNet operational on a corporate LAN server.
- 2. SCADA team will have access to software to review data and receive alerts from application.

Start Date: Q3, 2011	Completion Date: Q4 2011						
Lead: Manager System Operations							
Impacts:	Est. Cost	s (\$000)	Fund	ing Requir	rements (\$	6000)	
 FTE impact. Will require a corporate network connection at all radio master sites (Bank St. 	2011	2012	20	11	2012		
 Crosswinds, Moulton, Uplands, Merivale, Longfields, Bridlewood, Kanata) H/W impact. Will require server/PC to host application. 	\$22	\$0.5	OM&A	CapX \$22	OM&A	CapX \$0.5	

Deferral Implications:

1. Most of the communication equipment has been replaced over the last three years. Now is the opportunity to collect baseline data when the system is running at optimal performance. Deferral will cause valuable base data to be lost. Also the radio equipment was purchased with the additional cost of the diagnostics being enabled in the firmware. This software installation is required to complete that aspect of the project.

CIO Recommendation:

Project: Schweitzer Engineering Labs PQ Data Collection Application

Description: Similar to the existing ION Enterprise application, install SEL application to communicate with substation relays to collect power quality, waveshape, and fault event data and bring back to central database. Data will be used in conjunction with power quality data currently stored in the PQView application. Project will leverage existing equipment and communication infrastructure. Data will be used by engineering and operations staff to diagnose source of distribution disturbance data. Data used to improve restoration time, system planning and outage communication.

Drivers: Advanced analytical tools, application integration. SEL will be used to monitor and report on power quality incidents. Application will be used in customer complaint investigations and data is used to validate Hydro Ottawa's position. Indices and waveform capture will be used by Assets for fault analysis and verification of protection settings. Leveraging existing assets and technology to improve data quality, decision making and efficiency.

Expected Outcomes:

- 1. High quality data
- 2. Access to existing data currently not used
- 3. Improved visibility and understanding of distribution system events

Start Date: Q1, 2012

Completion Date: Q3 2012

Lead: Manager System Operations

Impacts: 1. FTF impact. Will require corporate	Est. Costs	Funding Requirements (\$000)				
 FTE impact. Will require corporate communications to substations where 	2011	2012	20	2011		12
infrastructure exits.2. H/w impact. Will require server/PC to host application.		\$75	ОМ&А СарХ		OM&A	CapX \$75
Deferral Implications:					irements (\$000) 2012 OM&A CapX \$75	

1. Impacts other projects to develop analytical tools in 2012, 2013, 2014

CIO Recommendation:



"R&P" Initiatives 2011 and 2012

Project: Electrotek PQView 4 Upgrade

Description: Electrotek is planning an overhaul of the PQView application. Currently serving utilities including Tennessee Valley Authority, National Institute of Standards and Technology (NIST), Hydro One Networks , and many more worldwide, PQView 3 is developed on an ACCESS 2010 platform. PQView 4 will be based on Microsoft's modern development platforms: .NET Framework, Silverlight, and SQL Server, using the latest Visual Studio development tools. PQView 4 will employ a Service Oriented Architecture (SOA) and will leverage "smart client" and "Rich Internet Application" (RIA) technologies. It will include built-in support for modern versions of Microsoft Windows, including support for 64-bit processing architectures. PQView is an application that has been developed for utilities, by utilities. No other commercially available application exists which performs the functionality and analysis developed in PQView. Utilities and grid operators worldwide have committed to this application.

Drivers: Advanced analytical tools, application integration. PQView is currently used to monitor and report on power quality incidents. Application is used in customer complaint investigations and data is used to validate Hydro Ottawa's position. Indices and waveform capture is used by Assets for fault analysis and verification of protection settings.

Expected Outcome:

- 1. Development of PQView 4 to an operational application by 2014.
- 2. Enhanced features as described in PQView 4 Collaborative Development Project Phase I document.

Start Date: Q1, 2011	Completion Date: Q4 2014
Lead: Manager System Operations	

Impacts:		Est. Costs (\$000)		Funding Requirements (\$000)			
1. 2.	Continuation of existing maintenance agreements. No FTE impact, third party support.	2011	2012	20	11	20	12
3.	No h/w impact, existing system maintained for next 3 years.	\$30	\$30	OM&A	CapX \$30k	OM&A	СарХ \$30К

Deferral Implications:

- 1. Purchasing PQView 4 when complete will have a substantially higher cost than participation in development. Cost yet to be determined.
- 2. Will not be able to participate in development of application if no commitment made to fund development.

CIO Recommendation:

Project: Network Fibre Ring (5 Stations)

Description: Hydro Ottawa currently leases a dark fiber ring from Atria Networks. The contract is in force until the end of 2024. Currently the fiber loop is used solely for SCADA serial communications. The ring consists of 45 nodes in two loops meeting Albion. One ring extends north and has 40 nodes. The other ring extends south and have 5 nodes to it. Project will convert 5 node ring on existing dark fiber loop from current serial H&L technology to an Ethernet, self-healing , network ring.

Drivers: HOL Communication Infrastructure. Leverage existing assets and technology to develop Hydro Ottawa Ltd's communications infrastructure. This project will develop Hydro Ottawa Ltd's plan for future network architecture, extending network communications to substations and explore options to extend to distribution system devices and customer facilities. This communication infrastructure is a key enabler for Smart Grid activities.

Expected Outcomes:

- 1. Secure LAN (corporate and SCADA) extensions into substations
- 2. Reduce copper communication infrastructure costs. Reduce number of required Telco lines
- 3. Access to existing intelligent distribution equipment to improve data quality, visibility and control
- 4. Enable Smart Grid applications and activities

Start Date: Q2, 2012	Completion Date: Q3, 2012					
Lead: Operations						
Lead: Operations Impacts: 1. Major design work required 2. Multi-disciplinary team required 3. FTE impact 4. H/w impact	Est. Costs (\$000) Funding Requirement				rements (\$	000)
	2011	2012	2011		2012	
		\$70	OM&A	СарХ	OM&A	CapX \$70

Deferral Implications:

- 1. Stranded intelligent assets in substations.
- 2. Limited visibility into distribution systems.
- 3. Difficulty in expanding Smart Grid technologies.
- 4. Continued OM&A cost associated with Telco circuits and future communication circuits purchased for application deployments.

CIO Recommendation:

Project: Mobile Vehicle Installations for OMS

Description: Extending mobile units to include and support vehicles the Construction Fleet; expands the fleet of field capabilities in terms of work dispatch, response improvement, enhanced communications.

Drivers: Building on the existing mobile communication capabilities over next four years, will introduce a number of mobile units each year; expanding to include the Construction Fleet as part of the foundation in supporting longer term strategy for field communications and mobile capabilities. See also Secure Communications per Business Plan (long term strategy)

Expected Outcome: Start Date: Q1, 2011 **Completion Date:** Lead: Operations Est. Costs (\$000) Funding Requirements (\$000) Impacts: 2011 2012 2011 2012 \$32 OM&A CAPX OM&A CAPX \$32 **Deferral Implications:** 1. **CIO** Recommendation:

Project: Intranet Renewal

Description: Implementation of a program for the revamp and ongoing maintenance of internally hosted Web sites using new technologies and tools, and with a consistent Look & Feel. Sites include those with static information as well as the ESS and ICC portals, and Facilities.

Drivers:

- 1. HO's ISO certification dependent on employees having access to specific current information. [ISO 14001 Environmental Management; 18001 Occupational Health & Safety Assessment series]
- 2. Life cycle replacement of outdated Web technology (Cold Fusion) implemented in 2002.
- 3. Hosted Information no longer meeting business requirements.

Expected Outcome:

- 1. Employee access to timely, relevant and useful information, with easy access.
- 2. Renewed technology for ongoing development and maintenance of Intranet site(s).
- 3. Consistent Look & Feel.

Start Date: Q3 2010 Completion Date: Ongoing Program

Lead: Chief Communications & Marketing Officer: TBD

Impacts:	Est. Costs	Funding Requirements (\$000)				
	2011	2012	20	11	20	12
	\$150	\$ 150	OM&A \$150	СарХ	OM&A \$150	СарХ
Deferral Implications:						

CIO Recommendation:

1. Defer until staffing complete



Project: One Portal OMS Applications for Customers

Expected Outcome:

Description: An enhancement to the OMS outage portal, this internal management dashboard provide access to OMS system, reports and maps for quick map-views supporting outages, analysis and validation.

Drivers: Greater efficiency of troubleshooting and access on immediate data; One Portal OMS application enhancement provides the same "view" as the software supporting customer website.

Start Date: Q1, 2011	Completio	Completion Date:						
Lead: Operations								
Impacts: ٤	Fund	ing Requir	ements (\$	000) 12 CAPX				
*	2011	2012	20	11	2012			
	Completion Date: Funding Requirements (\$000) Est. Costs (\$000) Funding Requirements (\$000) 2011 2012 2011 2012 \$50 \$50 OM&A CAPX \$50 \$50 V V \$50 S0 S0							
Deferral Implications: 1.	Completion Date: Est. Costs (\$000) Funding Requirements (\$000) 2011 2012 2011 2012 \$50 \$50 OM&A CAPX OM&A CAPX \$50 \$50 OM&A \$50 OM&A \$50							
CIO Recommendation:								

Corp Obj	Initiative	Business Line / Business Prime (+ Director)	OM&A 2011	CAPX 2011	OM&A 2012	CAPX 2012	Ŀ
FS2, CV2	CC&B Transition	COO/CIO (SDI)		\$7000		\$7,700	\swarrow
FS2, CV1	CIS Regulatory	COO/CIO (SDI)		\$1,520		\$770	
CV1, CV2	Transition to Monthly Billing	CEO / CIO (SDI)				\$325	
CV2B	Complete ToU Rollout	COO/CIO (SDI)		TBD		TBD	
OE1D	Transition of IT Services to CIO	CIO		TBD		TBD	
FS2, OE1	ToU Infrastructure Disaster Recovery Capability	COO / CIO	\$250	\$160	\$350		
FS2, OE1	AMI Regulatory			\$1,700			
OE1B	IT Security	CIO / IM-IT Plan-Programs	\$300	\$100	\$400		
OE1A	IT Infrastructure	CIO / IS&T	\$75		\$75		
OE1C	Contracts Document Management	Finance / CIO-IM		\$250	\$100	\$540	
OE1C	JDE Human Capital Management	HR		\$540		\$540	
OE1C	JDE Financials Phase 2	Finance		\$800		\$500	
CV2A	Call Recording	COO/ Customer Service		\$61			
CV2A	IVR Platform Upgrade	COO/ Customer Service		\$180			
CV2A	Customer IVR Self-Serve Functionality	COO/ Customer Service		\$260		\$200	
CV2A	Outage Management Communications	COO/ Customer Service		\$20		\$80	
OE2	Telecomm Radio Systems	CIO / IS&T	-	\$195	-	\$20	
OE1D	PQView Connector	COO / SMRT GRID – Asset Mgmt		\$12		\$.5	
OE1D	P1 2010 Upgrade	COO / SMRT GRID – Asset Mgmt				\$32	
OE1D	4Command	COO / SMRT GRID – Asset Mgmt		\$32.5		\$32.5	
OE1D	GIS/OMS IT Licensing & Systems Upgrades	COO / Distribution Operations	\$520	\$139	\$550	\$152	
OE1D	GIS Customizations (Intergraph)	COO / Distribution Operations		\$90		\$90	
OE1D	CYME to GIS Interface	COO / SMRT GRID – Asset Mgmt				\$100	
OE1D	GE MDS PulseNet	COO / SMRT GRID – Asset Mgmt		\$22		\$.5	
OE1D	PQ Data Collection	COO / SMRT GRID – Asset Mgmt				\$75	
OE1D	PQView 4 Upgrade	COO / SMRT GRID – Asset Mgmt		\$30		\$30	
OE1D	Network Fibre Ring	COO / SMRT GRID – Asset Mgmt				\$70	
OE1D	Mobile Vehicle Installations for OMS	COO / Distribution Operations		\$32			
OE1D, OE3	Intranet Renewal	Marketing/Communications	\$150		\$150		
CV2A	Contact Center Platform Upgrade	COO / Customer Service		\$30			
CV2A	Contact Center Applications	COO / Customer Service				\$400	
CV2A	My Hydro Link	COO / Customer Service	\$105	\$40	\$101	\$60	
CV2A	One Portal OMS Applications for Customers	COO / Distribution Operations		\$50		\$50	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #27 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	VECC Question #12 - Ref: Exhibit B1, Tab 2, Schedule 5, Figure 4 & 5, page 4 – Fleet
6	Purchases
7	Please explain why actual fleet vehicles purchases in 2009 and 2010 were below both
8	historical and proposed levels.
9	
10	Response
11	
12	The reduced acquisition plan for both 2009 and 2010 compared to historical was
13	predicted and in accordance with the multi-year replacement plan. The acquisitions for
14	2009 were accordance with the approved budget, while actual purchases in 2010 were
15	below plan due to delay in delivery of large vehicles.
16	
- -	

17



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #28 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.1 - Is the proposed rate base for the test year appropriate?
4		
5	<u>VE</u>	CC Question #13 - Ref: Exhibit B1, Tab 2, Schedule 6, page 1
6	a)	The evidence states that Hydro Ottawa included costs related to CIS transition in its
7		2008 rate case. It also states that it did not proceed with this project since that time.
8		Please calculate the 2008 revenue requirement impact of the project (e.g. OM&A,
9		working capital costs etc.).
10	b)	When was the decision to delay this project made?
11	c)	What specific circumstances changed between January 2008 (the time of the EB-
12		2007-0713 Settlement Conference) and the date of the decision (b) to delay the
13		project.
14		
15	Re	sponse
16		
17	a)	Hydro Ottawa Limited ("Hydro Ottawa") included only capital costs related to the CIS
18		transition in its 2008 rate case. As these costs were in Construction Work in
19		Progress, there was no impact on the 2008 revenue requirement.
20		
21	b)	The decision to defer was made in 2008.
22		
23	c)	Hydro Ottawa's key resources were fully assigned to the implementation of
24		MDMR/TOU project within the current PeopleSoft CIS v8.8 solution. With the delays
25		the IESO experienced with the implementation of the provincial MDMR for large
26		utilities, the Hydro Ottawa MDMR/TOU implementation team was required to
27		continue to focus major efforts of implementing the MDMR/TOU solution for Hydro
28		Ottawa. With Hydro Ottawa's key resources full assigned to the MDMR/TOU project,
29		a major project like CIS upgrade was deferred. In addition, in May 2008 Oracle
30		disclosed that Sustainment Support for the CIS would be extended past June 2009.
31		This significantly diminished the risk of continuing with the current system.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #29 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.1 - Is the proposed rate base for the test year appropriate?
4	
5	VECC Question #14 - Ref: Exhibit B5, Tab 2, Schedule 1, pages 1-18
6	a) Please provide the actual or forecast costs for all Long Term Load Transfers for the
7	period 2008 to 2012.
8	b) Please provide any economic evaluation for these projects (i.e. comparing cost to
9	connect, revenue compared to potential sale of asset to physically connected utility).
10	
11	Response
12	

13 a)

Budget Program	2008	2009	2010	2011	2012
	Actual	Actual	Actual	Budget	Budget
	\$000	\$000	\$000	\$000	\$000
Long Term Load Transfers	\$53	\$403	\$644	\$1,141	\$1,968

14

b) Hydro Ottawa Limited ("Hydro Ottawa") consideration for reclaiming Long Term Load 15 16 Transfer customers vs. transferring to Hydro One Networks Inc. is primarily focused 17 on the long term economic benefit of retaining large land development areas. Also 18 considered are the benefit in expanding or reinforcing the Hydro Ottawa system to 19 meet forecasted growth needs or improve reliability, and the impact on customers 20 who, if transferred, would pay higher regulated charges. Hydro Ottawa filed their 21 update plan to the Ontario Energy Board on November 30, 2010. Hydro Ottawa's 22 strategy and discussion of risks in undertaking this regulatory mandated program are 23 outlined in that submission, along with a discussion on customers at risk of being 24 transferred. The submission is attached.



Hydro Ottawa Long Term Load Transfer Elimination Plan Update

November 30, 2010

<u>Overview</u>

Hydro Ottawa Limited ("HOL") has been diligently reclaiming its Long Term Load Transfer ("LTLT") customers since filing its plan with the Ontario Energy Board (the "OEB" or "Board") on December 31, 2007. Initially, HOL had 249 LTLT customers. Although 41 customers were transferred to HOL's distribution system, an additional 44 customers were connected to existing LTLT arrangements, bringing the total LTLT customers to 252, as of September 30, 2010.

On June 10, 2009, the OEB amended the Distribution System Code ("DSC") to extend the deadline for the elimination of LTLT customers to June 30, 2014, rather than January 31, 2009. In this amendment, the OEB directed Local Distribution Companies ("LDCs") to file both an updated LTLT elimination plan and subsequent annual status reports, commencing November 30, 2010. The specific code references are:

- 6.5.4.1 A geographic distributor shall file with the Board, by November 30, 2010, an updated implementation plan for eliminating its existing load transfer arrangements. The updated implementation plan shall:
 - a. summarize the geographic distributor's existing load transfer arrangements;
 - b. set out the geographic distributor's proposed method for eliminating each load transfer arrangement; and
 - c. set out the geographic distributor's proposed timeline for eliminating each load transfer arrangement.
- 6.5.4.2 A geographic distributor shall file an annual status report with the Board by November 30 of each year, starting in 2011 and ending in 2013, that summarizes the geographic distributors progress in relation to its updated implementation plan. The annual status report shall also include a summary of the geographic distributor's load transfer arrangements that have been eliminated within the year, the method of elimination, and the date they were eliminated.

As a result of this extension, Hydro Ottawa took the opportunity to re-evaluate its LTLT elimination strategy, relative to changes in development activity, business strategy and financial priorities.

<u>Risks</u>

There still remain risks in completing some of these projects by June 30, 2014 and the most probable and high impact challenges are as follows:

1. <u>Reliance on Hydro One Networks Inc. ("HONI") or Bell:</u>

The balance of projects are heavily dependent on the timely involvement of these third parties in developing joint-use pole attachment solutions, confirming costs and timely scheduling of associated pole line work so that HOL may expand its system. HOL's LTLT project priorities do not necessarily align with these third parties. This risk significantly impacts our LTLT budget and HOL work force planning. HOL's Distribution Design team has and will continue to engage these parties in working towards a collective solution, in a timely manner.

2. <u>Competing Work Priorities:</u>

In 2010, HOL's Design and Construction staff focused on completing customer projects and municipal projects funded through the Federal stimulus program. This created design delays for LTLT projects throughout the year with the result that only one project, involving 7 customers, was completed.

3. Funding:

In order to reclaim all of HOL's customers, which is the preferred option, approximately \$7.1 M in funding is required. When delays, such as those described under Item 2 occur, the provisioned funds are reallocated during the budget year. As a result of such delays, new funding must be sourced if the project does not proceed in the year planned, which adds risk of further slippage.

4. <u>Rate Impact Issues for Customers Transferred to HONI:</u>

In 2008, the OEB determined that customers who move from a municipal distributor to HONI will be charged 50% of the HONI distribution charge in the first year, to mitigate the impact of higher rates on the affected customers. Despite these measures, there have been negative customer and political responses, which led HONI to announce that they would stop accepting LTLT customers from LDCs with lower rates until the issue of rate mitigation was satisfactorily resolved. This is not an immediate concern to HOL; however, it may become one, should HOL decide to transfer some customers to HONI and the rate impact issue remains.

Long Term Load Transfer Elimination Plan

HOL's preferred strategy is to retain all of HOL's customers, currently served through LTLT arrangements. In order to accomplish this, HOL must either expand its distribution system and/or amend its service territory. It is important to note that, as stated in the previous plan, Hydro Ottawa is in continued negotiations with HONI to acquire the majority of remaining LTLT customers through a service territory amendment. Should this occur, many of the proposed expenditures to eliminate remaining LTLT customers could prove premature and wasteful. For this reason, the financial viability of retaining a customer or group of customers will dominate distribution system investments in the forthcoming years.

With reference to Figure 1, it is expected that over 50% of HOL's LTLT customers will be reclaimed by the end of Q1, 2011. This is significant progress compared to 14% at Q3, 2010. As illustrated in Table 1, as of Q3, 2010, there were a total of 36 projects associated with the HOL's LTLT plan, of which 6 are completed, 19 are in either the design or construction stage and 11 projects are awaiting design, the latter of which represents 30% of LTLT customers.



Figure 1: Forecasted HOL LTLT Customer Reclamation

Table 1: LTLT Project Status as of September 30, 2010

As of Sep. 30, 2010	Pro	jects		Custo	mers
No. of Completed Projects	6	16.7%	No. of Reclaimed Customers	41	14.0%
No. of Projects in Progress	19	52.8%		204	69.6%
In Design	7	19.4%	In Design	54	18.4%
In Scheduling or Construction	12	33.3%	In Scheduling or Construct	150	51.2%
No. Needing Design	11	30.6%		48	16.4%
Total No. of Projects	36	100.0%		293	100.0%

Customers at Risk of Transfer to HONI

As outlined in Table 2, there are 13 customers that may be considered for transfer to HONI, due to the forecasted costs. As such, these elimination projects will be delayed to the extent possible, in anticipation that more favourable conditions may evolve to make the retention of these customers economical. Similar opportunities have already arisen, as reflected in the revised Q3, 2010 plan.

Project / Addresses	No. of C	ustomers / Cost per Custor	ner /Comment
Montee Lafontaine (8.2.4), Casselman	2	Presently \$75k/customer (\$35k- \$150 spread)	The potential development of 300 residential units is either deferred or cancelled. Growth in a nearby town may re-stimulate this development. Present solution is to build an overhead feeder crossing the river, or a 1.45km feeder on land.
Route 500 (8.2.5), Casselman	2	Presently \$135k/customer (\$68k- \$270k spread)	New development not foreseen; however, growth in a nearby town may re-stimulate this development. Present solution is building of a 1.5km overhead single-phase feeder. Other driver needed to warrant reclamation.
Thomas A Dolan Parkway (Cluster 2) & Dunrobin Road (8.5.7); Kanata PART THREE	1	Presently, the third of three parts costs \$225k/customer (\$202k-\$281k).	Considering all three parts, the average cost/customer is \$62.7k (\$54.2k-\$85.5k) spread). Present solution is to rebuild 1.1km of Bell's overhead pole line. Other driver needed to warrant reclamation.
Rothbourne Road (Cluster 2) (8.4.8), Goulbourn	3	Presently \$66.3k/customer (\$33k- \$133k spread).	6800 is a new lot; 6776 is a new lot; there is new gravel road as of 2008 west of HWY 7 connecting Hazeldean to Rothbourne Rd that can provide pole access
Brophy Rd. (8.6.3), Nepean	5	Presently \$68k/customer (\$34k- \$136k spread).	Farm land; large development to warrant reclaiming may be happen beyond 2014. Present solution is to build a 1.5km line joint use with HONI. Other driver needed to warrant reclamation.
Total	13		

Table 2: LTLT Customers at Risk of Transfer to HONI

Presented in Table 3 is a list of all the LTLT projects and notes on their status as of September 30, 2010. Despite deviations in the timelines, the reclamation project groupings remain the same, with the exception of Group D which may be considered for transfer to HONI at a future date.

Conclusion

The OEB's deadline extension has had a positive impact towards making the customer reclamation effort more economical, as it dovetails with other infrastructure and development projects. Despite deviations from the 2007 LTLT elimination plan, HOL continues to be diligent in reclaiming LTLT customers in the most economic manner possible, as evidenced by the progress made and forecasted. Although the percentage of customers reclaimed may change as LTLT customers are added or removed, as part of normal business activity, the number of completed projects is forecast to increase to 54% by Q4, 2011. Completion of these projects would increase the total number of reclaimed customers to approximately 70%.

While the identified risks and uncertainties may influence progress, HOL is focused on pursuing and influencing all viable opportunities to eliminate remaining LTLT arrangements, including the possibility of expanding its service territory to the City of Ottawa boundaries. That said, HOL is concerned that the prescribed timelines may have the unintended effect of creating, in some cases, short term solutions that are not in the longer term interest of the distributors or customers concerned.

Table 3: Proposed HOL LTLT Elimination Timelines

		Reclaim	Next likely		Next likely		No.		Remaining	Suggesting for	At Risk of being Suggested for
Projects (Sections reference 2007 report submission)	Status	Quarter	recovery Year	Year	recovery Qtr	Date Reclaimed	Reclaimed	Method of Reclaim	to Reclaim	Transfer	Transfer
Gagne Crescent, (8.2.1) Casselman	DONE					2008-12-28	9	System Expansion			
Old Carp Road (8.5.4), Kanata ⁺	2011	Q3	2011	2011	Q3				9		
Sixth Line Road (8.5.5), Kanata	DONE					2008-12-28	15	System Expansion			
Eagleson Rd (8.6.4), Nepean	DONE					2009-09-10	8	System Expansion - JU			
Ashton Station Rd (8.4.2) (Cluster 2), Goulbourn	2010	Q4	2011	2011	Q1				4		
Rideau Valley Drive (8.6.6), Nepean	2010	Q4	2011	2011	Q1				14		
Sub-Total Group A:			· · · · · ·							- -	
Group B – HOL can pursue with HONI co-operation, some load growth imminent	2010		2014	2011	01				60		
Lockmaster Crescent (8.6.5), Nepean	2010	Q4	2011	2011	Q1				60		
St. Isidore Street (8.2.2), Casselman HONI PART	2010	Q4	2011		Q1				0		
St. Isidore Street (8.2.2), Casselman HOL PART	2011	Q1	2011	2011	Q1				15		
Montee Lafontaine (8.2.4), Casselman	2014		2014	2014					2		2
Mer Bleue (Cluster 2) & Navan Rd (8.3.3), Gloucester	2012		2012	2012					11		
Mitch Owens Rd. (Cluster 1) (8.3.4), Gloucester	DONE					2009-06-10	1	System Expansion - JU			
Mitch Owens Rd (Cluster 2) (8.3.5), Gloucester	2011	Q4	2011	2011	Q4				10		
Mitch Owens Rd (Cluster 3) (8.3.6), Gloucester	2011	Q4	2011	2011	Q4				5		
Mitch Owens Rd (Cluster 4) (8.3.7), Gloucester	DONE					2009-05-25	1	System Expansion - JU			
Mitch Owens Rd (Cluster 6) (8.3.9), Gloucester	2011	Q1	2011	2011	Q1				5		
Ashton Station & Purdy (8.4.3) (Cluster 3), Goulbourn	2013		2013	2013					4		
Thomas A Dolan Parkway (Cluster 1) & Neely Road (8.5.6); Kanata	2012		2012	2012					23		
Sub-Total Group B:	· · · · · ·		1			1				1	
Group C – Needs drive from Demand, Sustainment, or Enhancement projects & possibly HON	co-operatio	on				1				1	
Principale Street (8.2.3), Casselman	2013		2012	2012					1		
Route 500 (8.2.5), Casselman	2014		2014	2014					2		2
Route 700 & Principale Road (8.2.6), Casselman	2013		2012	2012					14		
Boundary & Russell Rd (8.3.1), Gloucester	2011	Q1	2011	2011	Q2				10		
Mer Bleue (Cluster 1) (8.3.2), Gloucester	2013		2013	2013					4		
Mitch Owens Rd (Cluster 5) (8.3.8), Gloucester	2010	Q4	2011	2011	Q1				2		
Ashton Station Rd & Purdy Rd (8.4.1) (Cluster 1), Goulbourn	2010	Q1	2011	2011	Q1				1		
Dobson Lane (8.4.4), Goulbourn	2014		2013	2013					2		
McCordick Road (8.4.5), Goulbourn	2014		2012	2012					6		
McArton Road (8.4.6), Goulbourn	2011	Q4	2011	2011	Q4				11		
Rothbourne Road (Cluster 1) (8.4.7), Goulbourn	2010	Q4	2010	2010	Q4				2		
Huntmar Road (Cluster 1) (8.5.1), Kanata	2012		2012	2012					10		
Huntmar Road (Cluster 2) (8.5.2), Kanata	2013		2013	2013					2		
Huntmar Road (Cluster 3) (8.5.3), Kanata	2013		2013	2013					1		
Thomas A Dolan Parkway (Cluster 2) & Dunrobin Road (8.5.7): Kanata PART ONE	2010	Q4	2010		Q4				7		
	-	•	-		- •					<u> </u>	L

2010 LTLT Elimination Plan

Thomas A Dolan Parkway (Cluster 2) & Dunrobin Road (8.5.7); Kanata PART TWO	2012		2013						1		
Thomas A Dolan Parkway (Cluster 2) & Dunrobin Road (8.5.7); Kanata PART THREE	2014		2014	2014					1		1
Bankfield Rd & Prince of Wales Dr. (8.6.1), Nepean HONI-PART ONE	2010	Q4	2010		Q4				0		
Bankfield Rd & Prince of Wales Dr. (8.6.1), Nepean HOL-PART TWO	2010	Q4	2011	2011	Q1				5		
Barnsdale Rd & Cedarview Rd (8.6.2), Nepean - PART ONE	DONE					2009-01-21	1	System Expansion			
Barnsdale Rd & Cedarview Rd (8.6.2), Nepean - PART TWO	DONE					2010-01-18	6	System Expansion			
Rothbourne Road (Cluster 2) (8.4.8), Goulbourn	2014		2013	2013					3		3
Brophy Rd. (8.6.3), Nepean	2014		2014	2014					5		5
Sub-Total Group C:											
Group D – Un-economic now or in the foreseeable future											
Sub-Total Group D:											
GRAND TOTAL							41		252	0	13



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #30 Filed: 2011-09-08 Page 1 of 2

2		
3	lss	ue 2.1 - Is the proposed rate base for the test year appropriate?
4		
5	VE	CC Question #15 - Ref: Exhibit B5, Tab 4, Schedule 1 – Capital Contributions
6	a)	Historically (i.e. actuals 2008 – 2010) capital contributions have maintained a steady
7		rate of approximately 25% of gross capital expenditures. Hydro Ottawa's forecasts
8		for 2011 and 2012 have capital contributions falling to approximately 17% of gross
9		total capital expenditures. Please explain the reason for the expected change in
10		contributions.
11	b)	Please provide an updated actual and forecast for the 2011 capital contributions.
12		
13	Re	sponse
14		
15	a)	Hydro Ottawa Limited ("Hydro Ottawa") collects capital contributions on Distribution
16		Expenditures for Demand based projects only. The disproportionate increase in
17		2011 and 2012 budgeted Sustainment versus Demand capital expenditures causes
18		the relative proportion of capital contributions of gross total capital expenditures to
19		decrease.
20		
21		A further decrease is projected in 2012 due to a change in September 2009 to
22		Appendix B of the Distribution System Code that requires upstream costs to no
23		longer form part of the economic evaluation formula for load customers after the next
24		rebasing. An analysis was performed to estimate the decrease in contributions due
25		to the change, and the contributed capital was adjusted accordingly, in Residential
26		Subdivisions and Infill and Upgrade. The percentage of Residential Subdivision
27		expenditures budgeted for recovery dropped from 77 percent in 2011 to 55 percent
28		in 2012, and the percentage of Infill Service expenditures budgeted for recovery
29		dropped from 45 percent in 2011 to 40 percent in 2012.
30		
31		



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #30 Filed: 2011-09-08 Page 2 of 2

1 b)

2

Budget Program	2011	2011 YTD¹
	Budget	\$000
	\$000	
New Commercial Development	(\$6,840)	(\$3,292)
Damage to Plant	(447)	(263)
Infill Service	(1,411)	(846)
Plant Relocation & Upgrade	(2,765)	(1,522)
Residential Subdivision	(5,087)	(1,811)
Embedded Generation Projects	(63)	(14)
System Expansion Demand	(1,082)	(79)
TOTAL	. (\$17,695)	(7,827)

3 4

¹ Year to date as of June 30, 2011



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #31 Filed: 2011-09-08 Page 1 of 2

1 2. RATE BASE

2 3 Issue 2.1 - Is the proposed rate base for the test year appropriate? 4 5 VECC Question #16 - Ref: Exhibit H4, Tab 1, Schedule 1, pages 1-5 6 Please identify the capital projects that were completed during the 2008 to 2011 period 7 that were specifically identified as part of Hydro Ottawa's proposal to reduce losses by 8 5%. 9 10 Response 11 12 System Optimization 13 As identified in the Plan to Reduce Losses by 5% ("the Plan"), this initiative aims at 14 identifying opportunities to improve the delivery efficiency of the overall distribution 15 system. System optimization can practicably only be studied utilizing a Distribution 16 System Analysis software package. Such software allows utilities to create models of 17 the circuits, station transformers, distribution transformers, distribution switches, and 18 customer loads for each of its distinct distribution networks. Most system analysis 19 programs also offer optimizing modules that can identify the optimal system 20 configuration to achieve the lowest system losses, or other objectives such as optimal 21 voltage levels. 22 23 Leveraging the information stored in Hydro Ottawa's Geographic Information System 24 ("GIS"), the system analysis software vendor was retained to develop a tool to extract all 25 of the information required to build the network models directly from the GIS database. 26 This eliminates the need to maintain two separate systems and ensures that the network 27 model is kept up to date with GIS revisions. The initial development of this tool was 28 completed in late 2010. Additional upgrades to be completed in 2011 are required to 29 enable the full functionality of the analysis software's system optimization module. 30 Initial studies and analysis regarding system optimization utilizing these tools are 31 expected to take place in 2012.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #31 Filed: 2011-09-08 Page 2 of 2

1 Voltage Conversion

- 2 Voltage conversion of the Kilborn supply area was initiated in 2010. Through projects
- 3 completed in 2010 and 2011 some portions of this region have been converted from
- 4 4.16kV to 13.2 kV. Final completion of this voltage conversion is scheduled for 2012.
- 5

6 Transformer Replacement and Removal

- 7 While identified as part of the Plan it speaks to the way that Hydro Ottawa approaches
- 8 all work on the distribution system, rather than a discrete project. Projects completed
- 9 under the Planned Pole Replacement Program and Distribution Transformer
- 10 Replacement Program, from 2008 to 2010 are examples where this approach is
- 11 deployed.
- 12

13 **Conservation & Demand Management**

- 14 Also, within the period specified, Hydro Ottawa completed its Ontario Energy Board
- 15 approved third tranche CDM programs. Note Hydro Ottawa was granted an extension
- 16 for the completion of third tranche CDM activities from September 30, 2007 to
- 17 September 30, 2008.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #33 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.1 - Is the proposed rate base for the test year appropriate?
4		
5	<u>En</u>	viroCentre Question #1 & 2 - Ref: Exh B1-2-4, p1
6	Hy	dro Ottawa has included \$4M in the capital budget for 2012 for the acquisition of
7	lan	d for a new East Operations Centre and a new Administration Building.
8	a)	Please advise if these costs include LEED certification and, if so, at what level.
9	b)	If not, please estimate the projected annual savings in operating costs and annual
10		reductions in greenhouse gas emissions compared to the existing administration
11		building on a per square foot or metre basis.
12		
13	Re	sponse
14		
15	a)	The 2012 planned purchase is for land only, however the East Operations Centre is
16		planned to be LEED Silver and the Administrative building to be LEED Gold.
17		
18	b)	N/A



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.1 Interrogatory #34 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.1- Is the proposed rate base for the test year appropriate?
4	
5	EnviroCentre Question #2 - Ref: Exh B1-2-5, p4
6	Board staff estimates that Hydro Ottawa plans to purchase 18 vehicles in 2011 and 31
7	vehicles in 2012.
8	
9	Please estimate the projected annual savings in operating costs and annual reductions
10	in greenhouse gas emissions from the use of the hybrid vehicles Hydro Ottawa plans to
11	purchase.
12	
13	Response
14	
15	In 2011 and 2012 Hydro Ottawa Limited ("Hydro Ottawa") plans to purchase 7 and 8
16	hybrid vehicles/devices respectively. These purchases are based on current available
17	technologies which meet Hydro Ottawa's fleet requirements.
18	
19	Hydro Ottawa has only recently commenced purchasing environmentally friendly
20	vehicles/devices in a more strategic and focused manner in line with the fleet
21	replacement schedule. As a result, Hydro Ottawa is now in the process of accumulating
22	data so as to assess differences in operating costs and greenhouse gas emissions
23	between non-hybrid and hybrid vehicles/devices under similar working conditions.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.2 - Is the working capital allowance for the test year appropriate?
4	
5	Board Staff Question 9 - Ref: Exh B4-2-1, p20
6	The current WCA, as approved in the last cost of service proceeding, is 12.5%. Hydro
7	Ottawa has filed a lead-lag study to support a proposed WCA of 14.2%. The evidence
8	states that no impact of TOU rates has been considered. Please explain what
9	consideration the lead-lag study gives to smart meters and remote reading capability.
10	
11	Response
12	
13	Please note the 12.5% WCA approved in Hydro Ottawa Limited's ("Hydro Ottawa") 2008
14	cost of service proceeding was not based on Hydro Ottawa specific data but rather on
15	the results of a lead-lag study conducted by Toronto Hydro-Electric System Limited for
16	its 2008 test year.
17	
18	The lead-lag study did not make any considerations for smart meters and remote
19	reading capability. Hydro Ottawa's bills are produced once the spot market price is
20	available (10 business days after the service period end date), even for those that are on
21	the fixed regulated price plan. The system needs to calculate the difference between
22	what would have been billed at the spot market price and what was billed at the fixed
23	rate for the purposes of filing claims with the Independent Electricity System Operation
24	("IESO") each month. The method in which meter reading data is gathered has not
25	changed Hydro Ottawa's billing process.
26	
27	No capital additions have been included in the 2012 rate application to support a change
28	to the billing system or to maintain appropriate data to submit claims to the IESO related
29	to billing customers prior to receiving the spot market price.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.2 - Is the working capital allowance for the test year appropriate?
4	
5	Board Staff Question #10 - Ref: Exh B4-2-1, p20
6	The evidence states that Hydro Ottawa will be changing to monthly billing for all
7	customer classes in 2013. No adjustment has been made to the WCA in this regard as
8	the impact of changing to monthly billing will not be seen until 2013. What is the
9	expected impact on WCA when monthly billing is fully implemented?
10	
11	Response
12	
13	When monthly billing is fully implemented, Hydro Ottawa Limited's residential and
14	general service customers' service lag will change from 30.24 days to 15.21 days. Using
15	Hydro Ottawa's current lead-lag study as a base, this would result in a WCA of 9.6%, a
16	decrease of 4.6%.
17	
18	Hydro Ottawa plans to revisit its WCA once monthly billing has been fully implemented.
19	
20	Please refer to Exhibit K2-2-19 (VECC # 17) for additional information on Hydro Ottawa's
21	monthly billing plans.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

2						
3	Issue 2.2 - Is the working capital allowance for the test year appropriate?					
4						
5	<u>Boa</u>	3oard Staff Question #11 - Ref: Exh B4-2-1, p4; Ref: Horizon Utilities Corporation EB-				
6	<u>2010-0131 (BS #11)</u>					
7	Hyo	Hydro Ottawa's study uses a service lag of 30.24 days based on a weighting of the				
8	ave	average number of customers. The recent Horizon Utilities proceeding determined that it				
9	was more appropriate to determine service lag on the basis of distribution revenues.					
10	a)	Please provide any concerns Hydro Ottawa has with the determination of service lag				
11		on the basis of distribution revenue.				
12	b)	Please determine the impact on WCA when service lag is determined on the basis of				
13		distribution revenue.				
14						
15	Re	sponse				
16						
17	a)	It is not Hydro Ottawa Limited's belief that the recent Horizon Utility proceeding				
18		determined that the service lag was more appropriately based on distribution				
19		revenue.				
20						
21	b)	When using distribution revenue as the basis for weighting the service lag for				
22		residential and general service customers it changes from 30.24 days in 2009 and				
23		2010 to 25.7 days in 2009 and 25.66 days in 2010. This would result in a 0.5%				
24		decrease to the WCA, from 14.2% to 13.7%.				



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2				
3	Issue 2.2 - Is the working capital allowance for the test year appropriate?			
4				
5	<u>En</u>	Energy Probe Question #14 - Ref: Exhibit B4, Tab 1, Sch. 1, Attachment T		
6	a)	Please explain how the 61% factor used to calculate the non RPP kWh share shown		
7		in Attachment T was calculated. In particular, is it based on a specific historical		
8		year?		
9	b)	Please update Attachment T to reflect current 2011 transmission and wholesale		
10		market rates.		
11				
12	Response			
13				
14	a)	Hydro Ottawa Limited assumes this question is referring to Exhibit B <u>3</u> -1-1-		
15		Attachment T. The percentage factor of 61%, used to calculate the non RPP kWh		
16		share, is based on actual data from 2010.		
17				
18	b)	Attachment T from Exhibit B3-1-1 does include 2011 transmission rates which have		
19		been increased for 2012 as shown below:		
20				
		January 1, 2011 Rates used in Attachment T		

	January 1, 2011	Rates used in Attachment T
Network	3.22	3.54
Line Connection	0.79	0.84
Transformation Connection	1.77	1.88

21

- 22 Attachment T uses a Wholesale Market Charge ("WMC") of \$0.0054. To date in
- 23 2011, the WMC has been an average of \$0.0054, therefore Hydro Ottawa Limited
- 24 sees no need to update the Cost of Power.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #5 Filed: 2011-09-08 Page 1 of 7

2					
3	Issue 2.2 - Is the working capital allowance for the test year appropriate?				
4	۲'n	army Droba Quantian #15 . Daf: Exhibit D4 Tab 2 Sabadula 1			
5	<u> </u>	ergy Probe Question #15 - Ref. Exhibit B4, Tab 2, Schedule 1			
6	a)	Please provide a revised Table 3 and Table 4 that uses sales dollars as the			
7		weighting factor to calculate the service lag in the same way billing lag is calculated			
8		in Tables 5 and 6.			
9	b)	Please show the calculations used to determine the Days Sales Outstanding in			
10		Tables 7 and 8. In particular, please show the calculation of 26.38 days in Table 7 in			
11		the month of January and the assumptions used.			
12	c)	Please provide a version of Tables 7 and 8 that calculates the collection lag in both			
13		years separately for the customers that are billed monthly and for the customers that			
14		are billed bi-monthly.			
15	d)	Please show the calculation of the number of days for each the forms of payment			
16		processing noted on page 8 for 2009 and 2010, along with the weighting assigned to			
17		each form in each of 2009 and 2010 that was used to calculate the weighted average			
18		of 1.15 days in 2009 and 1.13 days in 2010.			
19	e)	Please provide the data, assumptions and calculations used to calculate the each of			
20		the lags shown in Table 10.			
21					
22	Re	sponse			
23					
24	a)	Please find Table 3 and 4 of Exhibit B4-2-1 with sales dollars as the weighting factor.			
25		Please note that weighting by sales dollars has not been the generally accepted			
26		method for service lag.			
27					
28					
29					
30					
31					


Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #5 Filed: 2011-09-08 Page 2 of 7

Customer Type	Average # of Customers	Frequency of Meter Read	Mid Point of Service Period	Customer Weight	Service Lag
Residential	252,919,083	Bi-monthly	30.42	34.54%	10.51
General Service < 50 kW	77,002,452	Bi-monthly	30.42	10.52%	3.2
GS 50 – 1,499 kW	272,554,577	Monthly	15.21	37.22%	5.66
GS 1,500 – 4,999 kW	72,377,217	Monthly	15.21	9.89%	1.5
Large Users	53,233,888	Monthly	15.21	7.27%	1.11
Street Lighting	3,613,935	Monthly	15.21	0.49%	0.08
Unmetered Scattered Load	495,355	Monthly	15.21	0.07%	0.01
TOTAL	732,196,506			100.00%	22.07

Table 3 - 2009 Service Lag – Residential and General Service Customers

 $\frac{1}{2}$

1

3

Table 4 - 2010 Service Lag – Residential and General Service Customers

Customer Type	Average # of Customers	Frequency of Meter Read	Mid Point of Service Period	Customer Weight	Service Lag
Residential	267,560,504	Bi-monthly	30.42	34.71%	10.56
General Service < 50 kW	82,536,260	Bi-monthly	30.42	10.71%	3.26
GS 50 – 1,499 kW	283,209,918	Monthly	15.21	36.74%	5.59
GS 1,500 – 4,999 kW	73,990,275	Monthly	15.21	9.60%	1.46
Large Users	59,628,830	Monthly	15.21	7.74%	1.18
Street Lighting	3,935,758	Monthly	15.21	0.51%	0.08
Unmetered Scattered Load	(28,092)	Monthly	15.21	0.00%	0
TOTAL	770,833,454			100.00%	22.13

4

5 b) The Days Sales Outstanding ("DSO") in Tables 7 and 8, of Exhibit B4-2-1, is based

6 on data from Hydro Ottawa Limited's ("Hydro Ottawa") customer information system

7 ("CIS"). It gathers all receivables not yet paid and determines how long the

8 receivables have been outstanding. For example, if the customer invoice is billed

9 January 30, 2009 and the report is run January 31 the receivable would go into the

10 1-17 days DSO bucket. No additional calculations on the bucket data was preformed

11 other than to summarise it in Tables 7 and 8.

12

13 The total column adds each bucket to get the total DSO for that month. Using

14 January 2009 as the example, dollars are in thousands:

15

16

44,143 + 4,980 + 5,024 + 1,502 + 830 + 984 = 57,465¹

¹ Totals is out due to rounding

²⁰¹² Electricity Distribution Rates - Interrogatory Responses



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #5 Filed: 2011-09-08 Page 3 of 7

1		Total Sales for each month is taken from a CIS report, no further calculations are
2		required.
3		
4		The final DSO is calculated by the following formula:
5		
6		Total DSO Buckets
7		(Days in the month) x (Sales for that Month)
8		
9		Using January 2009 as the example, dollars in thousands;
10		
11		57,465 / 67,524 x 31 = 26.38 ¹ days
12		
13	c)	Provided below are DSO Tables 7 and 8 separated by monthly and bi-monthly
14		customers.
15		

16

Table 7 - 2009 Collection Lag – Monthly Billed Customers (\$000)²

Month	1-17 Days	18-30 Days	31-60 Days	61-90 Days	91-120 Days	Over 121 Days	Total	# of Days in Month	Sales ³	Days Sales Outstanding
Jan	\$26,473	\$1,235	\$1,517	\$53	\$18	\$87	\$29,383	31	\$37,177	24.50
Feb	24,405	898	603	20	12	79	26,018	28	36,582	19.91
Mar	10,601	3,920	547	333	11	83	15,495	31	36,799	13.05
Apr	21,003	604	345	32	5	76	22,066	30	27,095	24.43
May	19,780	1,016	671	158	13	78	21,715	31	25,704	26.19
Jun	10,964	3,162	541	143	105	63	14,979	30	33,368	13.47
Jul	20,029	597	497	97	62	106	21,387	31	26,708	24.82
Aug	19,071	634	411	110	55	159	20,440	31	30,059	21.08
Sep	25,989	1,032	295	95	18	91	27,520	30	36,277	22.76
Oct	20,842	639	404	65	34	34	22,018	31	27,958	24.41
Nov	24,089	882	337	53	41	59	25,462	30	32,102	23.79
Dec	21,804	691	439	46	15	44	23,039	31	30,482	23.43
TOTAL	\$245,053	\$15,311	\$6,606	\$1,205	\$388	\$958	\$269,522	365	\$380,311	21.82

17

 $^{^2}$ Totals can be out due to rounding 3 This is from a report of all sales from the CIS in the year and does not include any accruals.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #5 Filed: 2011-09-08 Page 4 of 7

Month	1-17 Days	18-30 Days	31-60 Days	61-90 Days	91-120 Days	Over 121 Days	Total	# of Days in Month	Sales ¹	Days Sales Outstanding
Jan	\$32,106	\$1,315	\$548	\$76	\$25	\$41	\$34,112	31	\$37,492	28.21
Feb	28,116	1,617	455	41	23	42	30,293	28	35,536	23.87
Mar	24,374	905	304	130	16	16	25,745	31	36,809	21.68
Apr	22,008	400	375	100	102	19	23,005	30	28,229	24.45
May	22,638	1,136	1,083	88	18	18	24,982	31	33,905	22.84
Jun	21,311	389	305	59	35	23	22,122	30	34,359	19.31
Jul	22,123	592	334	83	13	41	23,186	31	31,170	23.06
Aug	29,020	679	228	87	32	18	30,063	31	42,850	21.75
Sep	21,310	521	238	47	16	31	22,163	30	31,698	20.98
Oct	21,302	827	265	43	19	38	22,495	31	26,739	26.08
Nov	24,870	562	407	40	10	37	25,927	30	35,440	21.95
Dec	27,355	879	1,083	42	16	18	29,393	31	37,762	24.13
TOTAL	\$296,534	\$9,824	\$5,626	\$836	\$325	\$341	\$313,486	365	\$411,988	23.19

Table 8 - 2010 Collection Lag – Monthly Billed Customers (\$000)⁴

2

1

3

Table 7 - 2009 Collection Lag – Bi-monthly Billed Customers (\$000)⁴

Month	1-17 Days	18-30 Days	31-60 Days	61-90 Days	91-120 Days	Over 121 Days	Total	# of Days in Month	Sales⁵	Days Sales Outstanding
Jan	\$17,670	\$3,745	\$3,507	\$1,449	\$813	\$898	\$28,082	31	\$30,347	28.69
Feb	20,232	2,730	4,877	957	646	1,033	30,475	28	27,351	31.20
Mar	16,391	5,872	3,476	1,651	459	1,006	28,855	31	37,122	24.10
Apr	17,877	1,617	4,173	1,241	722	890	26,521	30	24,135	32.97
May	15,139	4,248	3,635	1,892	664	955	26,534	31	27,279	30.15
Jun	13,260	2,979	3,947	1,446	984	952	23,568	30	23,455	30.14
Jul	13,393	2,702	3,289	1,689	841	1,148	23,062	31	24,678	28.97
Aug	15,565	2,539	3,367	1,439	918	1,186	25,013	31	24,249	31.98
Sep	16,751	4,344	2,948	1,349	634	1,184	27,211	30	30,747	26.55
Oct	21,195	1,747	3,757	1,276	572	1,090	29,637	31	26,387	34.82
Nov	13,722	3,422	3,722	1,410	515	967	23,759	30	23,848	29.89
Dec	14,218	2,464	3,363	1,514	596	874	23,029	31	25,034	28.52
TOTAL	\$195,411	\$38,410	\$44,062	\$17,312	\$8,365	\$12,184	\$315,744	365	\$324,633	29.83

4

5

⁴ Totals can be out due to rounding

⁵ This is from a report of all sales from the CIS in the year and does not include any accruals.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #5 Filed: 2011-09-08 Page 5 of 7

Month	1-17 Days	18-30 Days	31-60 Days	61-90 Days	91-120 Days	Over 121 Days	Total	# of Days in Month	Sales ¹	Days Sales Outstanding
Jan	\$16,690	\$4,414	\$3,461	\$1,374	\$542	\$835	\$27,314	31	\$28,241	29.98
Feb	18,992	3,448	4,272	894	503	814	28,923	28	26,055	31.08
Mar	17,167	5,093	3,544	1,285	352	723	28,165	31	36,521	23.91
Apr	17,360	1,537	4,312	1,265	453	637	25,565	30	24,855	30.86
May	13,014	4,217	3,729	1,578	504	641	23,683	31	26,558	27.64
Jun	16,259	2,127	3,179	1,335	586	668	24,154	30	24,996	28.99
Jul	16,611	3,025	3,071	1,275	512	764	25,258	31	27,217	28.77
Aug	21,022	2,667	3,225	1,083	536	710	29,243	31	33,293	27.23
Sep	19,127	3,907	3,541	1,042	378	713	28,707	30	35,417	24.32
Oct	20,638	3,080	4,041	1,461	377	683	30,280	31	29,715	31.59
Nov	13,458	3,456	3,535	1,241	412	591	22,692	30	27,805	24.48
Dec	19,517	2,434	3,229	1,295	457	557	27,489	31	32,109	26.54
TOTAL	\$209,856	\$39,405	\$43,138	\$15,127	\$5,612	\$8,336	\$321,473	365	\$352,782	27.95

Table 8 - 2010 Collection Lag – Bi-monthly Billed Customers (\$000)⁶

2

1

d) A CIS report gathers the data required for the payment processing information. It
 gathers data by payment type; it counts each time a payment process is used and

gathers data by payment type, it counts each time a payment process is used and

- 5 grabs the dollar value associated with it. The report summarizes the data by month.
- 6

10

The additional calculations done by Hydro Ottawa are to summarise the data by type
per year. Additionally, the weighting calculation and weighted lag are done by the
following formulas:

11	Weighting Calculation =	Payment Type Dollar Amount
12		Total Payment Type Amounts
13		
14	Weighted Lag =	Number of Days to Clear Customer Account
15		x Weighting Calculation
16		
17		

⁶ Totals can be out due to rounding



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #5 Filed: 2011-09-08 Page 6 of 7

1 Please find more detailed Charts below.

2009 Payment Processing and Bank Float

Payment Type	Number of Days to Clear Customer Account	Amount	Weight	Weighted Lag
Auto Pay Bank Debit	0.00	\$200,515,976.97	23.48%	0.00
Bank Teller	4.50	20,249,697.37	2.37%	0.11
Cash	0.00	204,206.53	0.02%	0.00
Pre-Authorized Checking	0.00	24,919,805.45	2.92%	0.00
Remittance Processor Machine	1.00	329,249,211.45	38.55%	0.39
Telepay & Internet	2.00	278,988,109.29	32.66%	0.65
Total	1.25	\$854,127,007.04	100.00%	1.15

2010 Payment Processing and Bank Float

Payment Type	Number of Days to Clear Customer Account	Amount	Weight	Weighted Lag
Auto Pay Bank Debit	0.00	\$235,684,578.11	24.89%	0.00
Bank Teller	4.50	21,276,842.39	2.25%	0.10
Cash	0.00	215,856.66	0.02%	0.00
Credit Card Payment	1.00	173.95	0.00%	0.00
Pre-Authorized Checking	0.00	27,697,463.00	2.93%	0.00
Remittance Processor Machine	1.00	348,947,090.57	36.85%	0.37
Telepay & Internet	2.00	313,043,183.31	33.06%	0.66
Total	1.21	\$946,865,187.99	100.00%	1.13

2

e) Hydro Ottawa made no assumptions in the calculation of service, billing and
collecting lags related to other revenue as invoice level data was used to calculate all
lags. The only exception is other sources of revenue. Hydro Ottawa assumed no
service lag and a ten day billing lag. The collection lag was based on invoice and
payment data.

8

9 Hydro Ottawa used the same general formulas calculating the lags for other revenue
10 as in other sections of the led lag study. Please refer to the formulas provided above
11 in b) and d).



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #5 Filed: 2011-09-08 Page 7 of 7

- Hydro Ottawa has not provided the data related to Table 10, revenue from other
 sources. The data is customer specific information which Hydro Ottawa feels is not
 appropriate to produce as it would go against customer privacy rights. Hydro Ottawa
 has provided more details related to these calculations in the table's that follow.
- 5 6

Table 10 - Revenue Lag from Other Sources

Pole and Duct Revenue	Days		
	2009	2010	
Service Lag	117.94	113.78	
Billing Lag	(123.76)	(111.00)	
Collections Lag	26.09	32.18	
Payment Processing and Bank Float Lag	1.15	1.13	
TOTAL	21.41	36.09	

7

Rent Revenue	Days		
	2009	2010	
Service Lag	129.33	122.15	
Billing Lag	(129.05)	(117.57)	
Collections Lag	26.11	30.61	
Payment Processing and Bank Float Lag	1.15	1.13	
TOTAL	27.54	36.33	

8

Water Heater Revenue	Days			
	2009	2010		
Service Lag	15.21	15.47		
Billing Lag	4.50	5.68		
Collections Lag	5.58	10.97		
Payment Processing and Bank Float Lag	1.15	1.13		
TOTAL	26.44	33.24		

Revenues from Other Sources	Days			
	2009	2010		
Service Lag	-	-		
Billing Lag	10.00	10.00		
Collections Lag	113.62	94.51		
Payment Processing and Bank Float Lag	1.15	1.13		
TOTAL	124.77	105.64		



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #6 Filed: 2011-09-08 Page 1 of 2

2		
3	lss	ue 2.2 - Is the working capital allowance for the test year appropriate?
4		
5	<u>Ene</u>	ergy Probe Question #16 - Ref: Exhibit B4, Tab 2, Sch. 1
6	a)	Has Hydro Ottawa completed or nearly completed the deployment of smart meters?
7	b)	Has Hydro Ottawa implemented time-of-use pricing or will it implement it before the
8		end of 2012?
9	C)	What are the operational impacts arising from the deployment of smart meters and
10		the implementation of time-of-use pricing on the cash working capital requirements?
11 12	d)	Does Hydro Ottawa have any plans to move to monthly billing for Residential or GS
12	2)	What is the forecasted increase in casts associated with moving the Residential and
13	e)	GS < 50 kW to monthly billing?
15	f)	What is the impact on the working capital allowance of a reduction in the service lag
16	,	of one day? What is the corresponding impact on the revenue requirement of this
17		reduction in the service lag of one day?
18		
19	Re	sponse
20		
21	a)	Yes, Hydro Ottawa Limited ("Hydro Ottawa") has substantially completed the
22		deployment of smart meters.
23		
24	b)	Hydro Ottawa will have switched the majority of price-regulated customers to time-of-
25		use pricing by the end of 2011.
26		
27	c)	Please refer to Exhibit K2-2-1 (Board Staff #9).
28		
29 30	d)	Please refer to Exhibit K2-2-19 (VECC #17).
31	e)	Please refer to Exhibit K2-2-19 (VECC #17).



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #6 Filed: 2011-09-08 Page 2 of 2

- 1 f) Hydro Ottawa does not see the benefit of arbitrarily reducing the service lag by one
- 2 day as this does not represent a logical change to Hydro Ottawa's business
- 3 processes. In order to reduce Hydro Ottawa's service lag by 1 day, customers would
- 4 essentially be billed more frequently by an average of 1 to 2 days.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #7 Filed: 2011-09-08 Page 1 of 4

2		
3	lss	ue 2.2 - Is the working capital allowance for the test year appropriate?
4		
5	<u>En</u>	ergy Probe Question #17 - Ref: Exhibit B4, Tab 2, Sch. 1
6	a)	Please show the calculation of each of the service leads and payment leads shown
7		in Table 12 based on the explanation provided on page 11.
8	b)	Please show the calculation of the average lead expense for property taxes for 2009
9		and 2010, including the dates and amounts paid.
10		
11	Re	sponse
12		
13	a)	Hydro Ottawa used general lead calculations in its lead lag study. In Table 12 the
14		expense categories are broken into individual expense item, described on page 11,
15		as follow:
16		
17		Payroll and withholdings: Net Payroll, Income Tax Withheld, Canadian Pension Plan
18		("CPP"), Employment Insurance ("EI"), Ontario Municipal Employees Retirement
19		System ("OMERS") and Employer Health Tax ("EHT")
20		
21		Benefits: Basic Insurance, Group Health Insurance, Dental Insurance, Long Term
22		Disability and the Employee Assistance Program
23		
24		WSIB: WSIB
25		
26		Payroll and withholdings excluding OMERS and EHT Service Lead Calculation:
27		10 (number of pay days in a pay period) = 5 days
28		2
29		
30		Net Payroll Payment Lead Calculation:
31		6 days



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #7 Filed: 2011-09-08 Page 2 of 4

1		Income Tax Withheld, CPP and EI Payment Lead Calculation:
2		6 (net payroll payment lead) + 3 (remittance requirement) + 2 (weekend)
3		= 11 days
4		
5		Payroll and withholdings, OMERS, EHT and WSIB Service Lead Calculation:
6		365 (number of days in a year) = 14.04 days
7		26 (payment period in a year)
8		
9		Payroll and withholdings OMERS and WSIB Payment Lead Calculation:
10		365 (number of days in a year) = 30.42 days
11		12 (months in a year)
12		
13		Please note, the OMERS and WSIB payment leads are true leads where as the
14		payroll and withholdings is a payment lag.
15		
16		EHT Payment Lead Calculation:
17		30 (number of days in a month) = 15 days
18		2
19		
20		The service leads and payment leads were then weighted based on expense dollars
21		to total category dollars. As an example the service lead for Payroll and withholding
22		expense item Net Payroll formula would be:
23		
24		Net Payroll \$
25		(Payroll and withholdings \$) x (Net Payroll's service lag days)
26		
27		A similar formula was used for all other expenses for their service and payment
28		leads. Lastly, the weighted service and payment leads are added together to get the
29		overall Service and Payment lead for each category.
30		
31	b)	Please see below for the property taxes schedules and lead calculations.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #7 Filed: 2011-09-08 Page 3 of 4

Service Lead Formula:

2

1

January 1 (Service Start Date) + December 31 (Service End Date + 1)

- 3
- 4

Payment Lead Formula: Service End Date - Payment Date

5

2009 Property Tax Schedule 6

Vendor	Payment Date	Amount Before GST(\$)	Service Lead Time	Pmt Lead Time	Weight Factor	Expense Time Lead
OEFC	16-Apr-09	\$6,661	182.5	(259.0)	0.38%	(0.29)
OEFC	22-Oct-09	2,657	182.5	(70.0)	0.15%	0.17
Village of Casselman	19-Mar-09	1,074	182.5	(287.0)	0.06%	(0.06)
Village of Casselman	10-Sep-09	1,808	182.5	(112.0)	0.10%	0.07
Village of Casselman	19-Nov-09	11	182.5	(42.0)	0.00%	0.00
City of Ottawa	11-Jun-09	4,081	182.5	(203.0)	0.23%	(0.05)
City of Ottawa	11-Jun-09	2,200	182.5	(203.0)	0.12%	(0.03)
City of Ottawa	13-Mar-09	4,033	182.5	(293.0)	0.23%	(0.25)
City of Ottawa	11-Jun-09	6,336	182.5	(203.0)	0.36%	(0.07)
City of Ottawa	13-Mar-09	1,785	182.5	(293.0)	0.10%	(0.11)
City of Ottawa	13-Mar-09	5,513	182.5	(293.0)	0.31%	(0.34)
City of Ottawa	18-Jun-09	890,933	182.5	(196.0)	50.20%	(6.78)
City of Ottawa	18-Jun-09	(20,568)	182.5	(196.0)	-1.16%	0.16
City of Ottawa	13-Mar-09	865,613	182.5	(293.0)	48.77%	(53.89)
Hydro One Networks	23-Dec-09	155	182.5	(8.0)	0.01%	0.02
National Capital Commission	16-Apr-09	2,549	182.5	(133.0)	0.14%	0.07
Total 2009		\$1,774,841				(61.39)

7



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #7 Filed: 2011-09-08 Page 4 of 4

Vendor	Payment Date	Amount Before GST(\$)	Service Lead Time	Pmt Lead Time	Weight Factor	Expense Time Lead
OEFC	13-Apr-10	4,659	182.5	(262.0)	0.29%	(0.23)
OEFC	16-Oct-10	599	182.5	(76.0)	0.04%	0.04
Village of Casselman	11-Mar-10	1,434	182.5	(295.0)	0.09%	(0.10)
Village of Casselman	17-Aug-10	1,037	182.5	(136.0)	0.06%	0.03
Village of Casselman	7-Oct-10	1,037	182.5	(85.0)	0.06%	0.06
City of Ottawa	26-Feb-10	11,943	182.5	(308.0)	0.75%	(0.94)
City of Ottawa	2-Jun-10	13,363	182.5	(212.0)	0.84%	(0.25)
City of Ottawa	10-Sep-10	39	182.5	(112.0)	0.00%	0.00
City of Ottawa	17-Apr-10	(47,294)	182.5	(258.0)	-2.96%	2.23
City of Ottawa	29-Jul-10	(11,159)	182.5	(155.0)	-0.70%	(0.19)
City of Ottawa	6-Aug-10	(939)	182.5	(147.0)	-0.06%	(0.02)
City of Ottawa	8-Oct-10	(33,771)	182.5	(84.0)	-2.11%	(2.08)
City of Ottawa	2-Mar-10	878,177	182.5	(304.0)	54.96%	(66.78)
City of Ottawa	8-Jun-10	917,458	182.5	(206.0)	57.42%	(13.49)
City of Ottawa	8-Jun-10	(146,000)	137.5	(206.0)	-9.14%	6.26
Hydro One Networks Inc.	31-Dec-10	4,514	182.5	-	0.28%	0.52
Hydro One Networks Inc.	18-Jan-11	155	182.5	18.0	0.01%	0.02
National Capital Commission	27-Aug-10	2,519	182.5	(126.0)	0.16%	0.09
OEFC		\$1,597,771				(74.83)

2010 Property Tax Schedule

2



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #8 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.2- Is the working capital allowance for the test year appropriate?
4	
5	CCC Question #8 - Ref: Ex. B1/T2/S3
6	Please set out a detailed budget for Information Management and Technology
7	Management Strategy for the years 2008-2012. Please include Board approved
8	amounts. Please include all business cases.
9	
10	Response
11	
12	Hydro Ottawa Holding Inc. formally established the Chief Information Officer ("CIO")
13	function in December 2009. The first CIO initiative was the development and
14	implementation of the IM&IT Plan. First presented in August 2010, and being rolled out
15	through 2011 and 2012, the IM&IT Plan is focused on a number of key corporate
16	initiatives. Prior to the current IM&IT plan, there were numerous IT related costs and
17	projects in place, but no comprehensive plan.
18	
19	Please reference Exhibit K2-1-26 (VECC # 11) Attachment 1 for the detailed IM&IT Plan
20	for 2011 and 2012.
21	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #9 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.2- Is the working capital allowance for the test year appropriate?
4	
5	CCC Question #9 - Ref: Ex. B1/T2/S3
6	For each of the budget areas listed for 2011 and 2012 please provide a detailed budget.
7	
8	Response
9	
10	Please reference Exhibit K2-1-26 (VECC # 11) Attachment 1 for the detailed IM&IT Plan
11	for 2011 and 2012.
12	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #10 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

- 2
- Issue 2.2- Is the working capital allowance for the test year appropriate?
- 3 4

5 CCC Question #10 - Ref: Ex. B1/T2/S5

6 Please set out a detailed budget for Fleet Strategy for the years 2008-2012. Please

- 7 include Board approved amounts.
- 8

9 **Response**

10

	2008 Actual	2009 Actual	2010 Actual	2011 Budget	2012 Budget
	4 700 007			4 05 4 000	0.014.000
Approved Budget	1,760,997			1,854,223	2,311,200
Automobiles	6,300	-	231	80,000	-
Light Trucks	260,556	81,600	25,600	95,000	450,000
Heavy Trucks	1,286,743	1,168,172	1,380,568	1,350,000	1,030,000
Equip & Trailers	104,927	79,897	15,496	126,031	121,200
Apprenticeship	-	-	-	-	500,000
Sub-Total	1,658,526	1,329,669	1,421,895	1,651,031	2,101,200
O/H Burdens	140,805	131,648	135,080	203,192	210,000
Total	1,799,331	1,461,317	1,556,975	1,854,223	2,311,200

11

12



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #11 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.2- Is the working capital allowance for the test year appropriate?

4

5 CCC Question #11 - Ref: Ex. B1/T2/S6

- 6 Please provide a detailed budget for the CIS Transition Project for the years 2008-2012.
- 7 Please include Board approved amounts. Hydro Ottawa has a \$6.9 million budget for
- 8 the project for 2011. What is the amount incurred to date in 2011? Is the budget
- 9 expected to be \$6.9 million?
- 10

11 Response

12

13 The detailed budget for the CIS Transition Project for the years 2008-2012 are shown

14 below in Table 1.

- 15
- 16

Table 1 – CIS Transition Project Costs for the years 2008-2012

17_	7 \$000's									
	2008 2009 2010 2011 2012 2011 2									
		Actual	Actual	Actual	Budget	Budget	Forecast	June		
Γ	Labour	Nil	Nil	\$ 38	\$ 672	\$ 820	\$ 411	\$ 56		
Γ	Materials	Nil	Nil	Nil	\$1,331	Nil	\$1,538	\$1,338		
Γ	Outside Services	Nil	Nil	\$ 23	\$4,295	\$5,950	\$ 987	\$ 187		
Γ	Burdens Including	Nil	Nil	\$ 6	\$ 622	\$1,016	\$ 287	\$ 135		
	AFUDC									
Γ	Total	Nil	Nil	\$ 67	\$6,920	\$7,786	\$3,223	\$1,716		

18

19 The budget for 2011 is now forecasted to be \$3.2 Million, and the CIS Transition Project

20 will not be "used or useful" in Q4 2012 as originally planned. After reviewing information

21 provided to Hydro Ottawa from vendors during the Draft RFP process, the

22 implementation timeline will be 18-24 months, putting the "used or useful" rollout date

23 into Q3/Q4 of 2013. To date, Hydro Ottawa has secured the CC&B software to be

24 utilized, and the implementation vendor is expected to be selected through the RFP

process in Q3 of 2011. The 2012 Budget is unchanged, and \$8.2 million will be added to

the 2013 Budget. The total budget for the upgrade is \$19.2 million.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #12 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.2 - Is the working capital allowance for the test year appropriate?

4

5 CCC Question #12 - Ref: Ex. B1/T2/S7

- 6 Please explain how "greening the fleet" benefits Hydro Ottawa's distribution customers.
- 7 Has Hydro Ottawa performed a cost-benefit analysis for this initiative? If so, please
- 8 provide the analysis. If not, why not?
- 9

10 Response

11

12 Customers expect their utility to operate in a manner which is environmentally 13 responsible. Greening the fleet is consistent with this expectation. A greener fleet 14 results in a decrease in the greenhouse gas and pollutants emitted into the air thereby 15 reducing Hydro Ottawa Limited's ("Hydro Ottawa") carbon footprint and its environmental 16 impact on the community. The reduction of Hydro Ottawa's carbon footprint is an 17 outcome consistent with that of the conservation and demand management-related 18 energy efficiency programs which Hydro Ottawa is mandated to carry out with its 19 customers. In 2009, when developing the Environmental Sustainability Strategy and 20 deciding to focus on the greening of the fleet, Hydro Ottawa compared the incremental 21 costs of greening the fleet with the corresponding benefit of a decrease in greenhouse 22 gas emissions. The incremental costs are identified in exhibit B1, Tab 2, Schedule 7 at 23 page 6 of 9 for the years 2011 to 2014. The benefit analysis is comprised of the 24 associated greenhouse gas emissions improvement per km of fleet usage. In 25 consultation with an external consultant, Hydro Ottawa determined a 2009 baseline of 1 26 tonne of emissions per 1,304 km of fleet usage. Greening of the fleet is targeted to 27 reduce emissions by an average of 2% per year over the next 5 years. 28



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #13 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.2- Is the working capital allowance for the test year appropriate?

4

5 CCC Question #13 - Ref: Ex. B1/T2/S7

6 Please provide a detailed budget for the 5 year Environmental Sustainability Strategy.

7

8 Response

9

10 The budget is summarized as follows:

11

Capital Expenditures							
	2010 Budget \$000	2011 Budget \$000	2012 Budget \$000	2013 Budget \$000	2014 Budget \$000		
Facilities Initiatives	\$160	\$300	\$215	\$324	\$324		
Fleet Initiatives	\$337	\$238	\$190	\$184	\$475		
IM&T Initiatives	\$0	\$0	\$135	\$108	\$108		
Total	\$497	\$538	\$540	\$616	\$907		

12

13 Details for each of the initiatives are listed within the referenced exhibit.

14



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #16 Filed: 2011-09-08 Page 1 of 3

2	
3	Issue 2.2 - Is the working capital allowance for the test year appropriate?
4	
5	CCC Question #16 - Ref: Ex. B5/T5/S1
6	Capital Expenditures for 2012 represent a more than 40% increase over 2010 levels.
7	What has Hydro Ottawa done to minimize its overall capital expenditure levels. Given
8	the significant increase are there projects included in the 2012 budget that could be
9	eliminated or deferred. If so, please identify those projects. If not, why not?
10	
11	Response
12	
13	The increases in capital expenditures are necessary to ensure that Hydro Ottawa's
14	distribution and business systems are maintained in an efficient and sustainable manner.
15	Primary contributors to increases expenditures in 2012 over 2010 are; CIS Transition
16	Project (IT Assets), Asset Replacement & Line extensions (Poles, Wires), and
17	implementation of the Facilities Strategy (Land and Buildings).
18	
19	CIS Transition Project
20	The Customer Information System ("CIS") is a critical business system for Hydro Ottawa.
21	Refer to Exhibit B1-2-6 for additional information on the CIS Transition Project.
22	
23	A change to the risk profile has occurred pertaining to available support for the existing
24	CIS software which has lead to this planned expenditure. Oracle, the product vendor, no
25	longer offers Premier Support (this level of service allows for enhancements, changes
26	and other upgrades in the core product), for this particular product version and will only
27	assist in maintaining the current version (through Sustaining Support).
28	
29	This comprehensive system provides the full meter-to-cash application capabilities
30	required to meet the core business mandate of distributing electricity to and ensuring



Hvdro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #16 Filed: 2011-09-08 Page 2 of 3

- 1 proper billing of more than 300,000 customers in the service area. As such this
- 2 investment cannot be deferred or eliminated.
- 3

4 Asset Replacement & Line extensions

5 Yearly Cable Replacement expenditures have fluctuated due to the large, discrete 6 nature of the projects; however, expenditures have typically ranged between \$2M and 7 \$3M. Decreased expenditures in 2010 were due to the mix of individual projects. Past 8 replacement levels have been maintained at historical levels, which is below the target 9 replacement levels identified in the 2011 Asset Management Plan. At this time, Hydro 10 Ottawa has deferred increasing expenditures in this program while further data is 11 collected (testing program was deployed in 2011) and the potential for cable injection 12 rejuvenation is evaluated.

13

14 Increased levels of Planned Pole replacement are required to sustain the asset class.

- 15 Current projections presented in the 2011 Asset Management Plan, indicate that a
- 16 failure to proactively increase investment in replacement of these assets will result in
- 17 negatively impacted reliability and higher future costs due to asset failures. Deferral or
- 18 elimination of these expenditures would jeopardize the long term reliability and
- 19 sustainability of Hydro Ottawa electrical infrastructure.
- 20

21 As the city of Ottawa grows, localized area loading increases, creating the need for new 22 supply to maintain sufficient circuit capacity with an acceptable level of reliability and 23 power quality. There are several areas in the city of Ottawa which have and/or continue 24 to undergo the transformation from rural to suburban and urban land use. System line 25 extensions are currently directed to address the present and future implications of this 26 regional load growth. Deferral or elimination of these expenditures would jeopardize 27 Hydro Ottawa's ability to supply new and existing load within equipment capacity and 28 with acceptable reliability.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #16 Filed: 2011-09-08 Page 3 of 3

1 Facilities Strategy

- 2 Comprehensive documentation can be found in Exh B1-2-4. Expenditures in 2012 relate
- 3 to the acquisition of land for a new East Operations Centre (\$1.5M) and Administrative
- 4 building (\$2.5M). The current and future organizational needs cannot be appropriately
- 5 met by the existing Albion and Merivale facilities.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #17 Filed: 2011-09-08 Page 1 of 2

1 2. RATE BASE

2

3 Issue 2.2 - Is the working capital allowance for the test year appropriate?

4

5 CCC Question #17 - Ref: Ex. B5/T5/S1

- 6 Total capital expenditures (net of contributions) for 2011 are forecast to be \$84.888
- 7 million. What is the most current projection for 2011 based on actual results to date? In
- 8 addition, please provide a schedule setting out all major projects planned for 2011 and
- 9 2012 with the most updated in-service dates.
- 10

11 Response

- 12
- 13 Total capital expenditures (net of contributions) for 2011 based on the most current
- 14 projection are \$78,255K.
- 15
- 16 For the 2012 major project listing please refer to Exhibit B5 Tab4 Schedule 3. For 2011
- 17 please see below:
- 18

Budget/Capital Program	Project	Start Date	In Service Date
Stations New Capacity	Terry Fox	2009	2013
Stations New Capacity	Beacon Hill	2009	2011
Pole Replacement	Program	2011	2011
Pole Replacement	Plot Area 54B2C	2011	2011
Pole Replacement	Plot Area 65A3D	2011	2011
Pole Replacement	Plot Area 65A4C	2011	2011
Pole Replacement	Kilborn Voltage Conversion	2010	As constructed
Cable Replacement	Program	2011	2011
Plant Failure Capital	Program	2011	2011
Dist TX replacement	Program	2011	2011
Line Extensions	Program	2011	2011
Line Extensions	New Cyrville Feeder	2011	2011
Line Extensions	Ellwood Egress	2011	2011
Line Extensions	Cambrian Road 28 kV tie	2011	2011
Line Extensions	Billberry M2 Tie	2011	2011
System Voltage	Kilborn	2009	As constructed
Conversion			



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #17 Filed: 2011-09-08 Page 2 of 2

Station Transformer	Barrhaven T1 and T2	2011	2012
Stations Now Capacity	lanat King	2010	2011
Stations New Capacity	Janet King	2010	2011
Stations New Capacity	Fallowfield TS T2 New	2010	2012
Station Transformer	Clyde	2011	2012
Replacement			
Stations Enhancements	Program	2011	2011
Stations Automation	Program	2011	2011
Distribution Automation	Program	2011	2011
SCADA Upgrades	Program	2011	2011
Fleet Replacement	Program	2011	2011
Environmental		2011	2011
Sustainability Strategy			
IS&T	Program	2011	2011
CIS Enhancements	CIS Upgrade	2010	2013

1

2



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #18 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.2- Is the working capital allowance for the test year appropriate?
4	
5	CCC Question #18 - Ref: Ex. B6/T1/S1
6	Hydro Ottawa has provided its 2010 and 2011 asset management plans. Please
7	explain, in detail, how each of these plans was developed. Did Hydro Ottawa obtain an
8	independent assessment of its assets from a third-party? If not why not? If so, please
9	provide the results of that assessment(s).
10	
11	Response
12	
13	Hydro Ottawa Limited's ("Hydro Ottawa") Asset Management Plan details how we plan
14	to manage, maintain and reinforce our electricity distribution system over the next
15	decade. The plan reviews the past 5 year's performance and looks ahead for 10 years.
16	
17	The first comprehensive plan was produced in 2010, the second in 2011. Both plans
18	were developed internally by Hydro Ottawa Asset Planning. These internally produced
19	plans are built on the foundation 2005 Asset Management Plan, and 2006 "baseline
20	models" of Hydro Ottawa's six essential asset classes (poles, line transformers, cables,
21	station transformers, station switchgear, and distribution switchgear). Both of these
22	earlier "foundation" undertakings regarding asset condition, life expectancy and risk,
23	were developed with the extensive assistance of external industry experts.
24	
25	The annual update to the asset management plan does not reflect abrupt changes to the
26	Asset Management Strategy, from the 2005 Asset Management Plan. The plan is
27	updated and refined as new demographic data becomes available, as field experience is
28	fed back into the process, as technological changes and obsolescence occurs, as asset
29	replacement costs change, and as investment strategies and other corporate priorities
30	change.
31	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #19 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.2 - Is the working capital allowance for the test year appropriate?
4		
5	<u>VE</u>	CC Question #17 - Ref: Exhibit B4, Tab2, Schedule 1, page 20
6	a)	Please provide the estimate of the decrease in working capital requirements
7		(Reference Table 25) due to the change to monthly billing.
8	b)	If a plan for the introduction of monthly billing has been produced please provide it. If
9		not please provide the reason for not introducing monthly billing for the 2012 rate
10		year.
11		
12	Re	sponse
13		
14	a)	Please refer to Exhibit K2-2-2 (Board Staff #10).
15		
16	b)	No formal monthly billing plan has been produced. However, benefits were
17		discussed and a high level financial analysis was considered. The high level
18		analysis determined a cost neutral result. While the financial analysis on its own
19		does not clearly demonstrate a case for implementing monthly billing, there are other
20		considerations. Shorter billing and payment cycles will reduce the economic impact
21		on customers that do not choose equal billing. Smaller invoices combined with more
22		timely feedback would provide a more positive customer resolution and relationship
23		process.
24		
25		In determining the timing of the implementation of monthly billing Hydro Ottawa
26		Limited ("Hydro Ottawa") looked at key resource availability and other plans for the
27		customer information system ("CIS"). Considering these factors, it made sense for
28		Hydro Ottawa to incorporate the introduction of monthly billing in its new CIS. As a
29		result, monthly billing will not be introduced in the 2012 rate year.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #20 Filed: 2011-09-08 Page 1 of 2

lss	ue 2.2 - Is the working capital allowance for the test year appropriate?
<u>VE</u>	CC Question 18 - Ref: Exhibit B4, Tab2, Schedule 1, Attachment U
a)	Hydro Ottawa retained Navigant Consulting to perform an independent review of the
	lead-lag study. That study concluded that the methodology employed by Hydro
	Ottawa is "[g]enerally consistent in terms of methods used with other studies." In
	what areas is the Hydro Ottawa methodology inconsistent with methodologies
	employed by other Ontario electric distribution utilities?
b)	What were the equivalent percentage of controllable expenses from the Horizon
	Utilities, Hydro One, and Toronto Hydro lead-lag studies
c)	Did Navigant undertake a variance analysis to determine the reasons for variation
	between results of the various lead-lag studies? If yes, please provide this analysis.
	If not please provide the reasons Ottawa Hydro did not require a detailed analysis of
	the methodological differences in the lead-lag studies.
Re	sponse
a)	Hydro Ottawa Limited ("Hydro Ottawa") is different from other local distribution
	companies in its election to use the Days of Sales Outstanding ("DSO") to calculate
	the average collections lag time. The benefit of using the DSO approach is that it is
	easily quantifiable. However, by weighting all receivables equally, a DSO approach
	tends to under-state the time taken for customers to pay for services provided.
b)	Hydro Ottawa is not in a position to compare its 'equivalent percentage of
	controllable expenses' with those of Horizon Utilities, Hydro One or Toronto Hydro.
c)	Hydro Ottawa assumes VECC is referring to Horizon Utilities, Hydro One, and
	Toronto Hydro in reference to 'the various lead-lag studies.' A formal variance
	analysis was not undertaken, however Hydro Ottawa's results were compared with
	VE a) b) c) Re a) b) c) c)



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.2 Interrogatory #20 Filed: 2011-09-08 Page 2 of 2

- 1 Horizon Utilities, Hydro One, and Toronto Hydro to determine reasonableness where
- 2 comparable and feasible; for example, where all distributors have the same rules for
- 3 payments.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #1 Filed: 2011-09-08 Page 1 of 3

1 2.	RATE	BASE
-------------	------	------

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	Board Staff Question #12 - Ref: Exh B5-1-1, Exh B5-3-1 and Exh B5-4-1; Ref: Hydro
6	Ottawa EB-2010-0133 Exh B4-5-1
7	
8	In several parts of the application there is reference to the challenges of dealing
9	with an aging infrastructure. The table below summarizes total capital
10	expenditures, a subset of distribution capital, and a breakout of land and buildings,
11	general plant and IT. The data indicates that in the period 2008-2010, capital
12	expenditure in the subset of distribution capital has been flat. The data also indicate that
13	in the bridge and test years, the increases in capital expenditures for land, buildings and
14	IT are considerably larger than for the subset of distribution capital.
15	a) Please confirm that the data entries in the table below are correct.
16	b) Please confirm that capital expenditures on non-distribution plant have and are
17	planned to increase substantially more than the subset of distribution plant.
18	.c) Staff notes that the 2010 actual capital expenditures for the subset of
19	distribution plant, \$72,921k, are lower than that forecast in Hydro Ottawa's 2011
20	cost of service application, \$76,720k. Staff also notes that the 2010 actual capital
21	expenditures for non-distribution plant, \$11,506k, are higher than that forecast in
22	Hydro Ottawa's 2011 cost of service application, \$10,216k. Please explain the
23	factors that contributed to these differences.
24	d) Staff notes that in proceeding EB-2010-0113, Hydro Ottawa forecast \$16,746k
25	for 2010 contributed capital, however the actual was \$4,198k higher. How does
26	the year to date level of contributed capital compare with the forecast of
27	\$17,695k?
28	
29	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #1 Filed: 2011-09-08 Page 2 of 3

1 Response

2

				EB-2010-0133			
\$000	2008 Actual	2009 Actual	2010 Actual	2011 Bridge	2012 Forecast	2010 Bridge	2011 Forecast
TS Primary Above 50 kV	8,836	11,588	12,017	9,504	3,024	14,944	12,182
DS	7,403	10,060	9,626	11,487	15,628	8,061	3,386
Poles and Wires	24,414	25,405	29,859	35,293	38,965	27,721	34,643
Transformers	7,479	8,431	6,323	8,480	9,051	7,950	8,963
Services and Meters	10,067	4,202	9,709	10,426	11,310	13,042	11,894
Equipment	3,015	2,243	2,479	3,895	3,643	3,686	4,052
Other Distribution Assets	1,041	979	618	2,062	1,896	1,316	2,161
SubTotal	62,255	62,908	70,631	81,147	83,517	76,720	77,281
Contributed Capital	-21,237	-20,911	-20,944	-17,695	-19,223	-16746	-16570
SubTotal	41,018	41,997	49,687	63,452	64,294	59,974	60,711
%Change (year over year)		2.4%	18.3%	27.7%	1.3%		
%Change (Test Year vs Last Rebasing Year)							
Land & Buildings	2,340	5,726	3,958	3,987	11,622	1,572	9,334
General Plant	1,673	1,366	347	1,678	759	1,642	1,155
IT Assets	3,561	3,460	5,601	9,139	13,901	7,002	7,520
SubTotal	7,574	10,552	9,906	14,804	26,282	10,216	18,009
%Change (year over year)		39.3%	-6.1%	49.4%	77.5%		
%Change (Test Year vs Last Rebasing Year)					247.0%		
Total	48,592	52,549	59,593	78,255	90,576	70,190	78,720
%Change (year over year)		8.1%	13.4%	31.3%	15.7%		
%Change (Test Year vs Last Rebasing Year)					86.4%		

3

a) 2011 Bridge figures and affected calculations have been updated to reflect the
current forecast. Also, 2008 to 2010 figures relating to Services and Meters and IT
Assets and relating calculations have been updated to remove all Smart Meter costs.
All other data entries in the table have been confirmed to be correct. EB-2010-0133
expenditures contain \$2,720k in budgeted expenditures for 2010 smart meter costs.

9

10 b) It is confirmed that the non distribution plant expenditures are increasing more than

11 the distribution plant expenditures, in 2012 due to the customer information system

12 ("CIS") transition project and in as a result of the large facility strategy.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #1 Filed: 2011-09-08 Page 3 of 3

- 1 c) In the table above the actual expenditures in distribution plant for 2010 are \$3,369k 2 less that what was forecasted in the 2011 cost of service application, taking into 3 account the answer to part "a" above. As a result of lower expenditures associated 4 with PCB transformer replacements, in the area of \$1,000k. Lower expenditures in 5 the smart meter program as a result of the program nearing completion and lower 6 expenditures in the Equipment category than previously forecasted. The non 7 distribution expenditures for 2010 were \$1,290k more than forecasted in the 2011 8 cost of service as a result of increased expenditures in Land and Buildings which 9 includes \$1,500k for the Terry Fox substation land. 10 11 d) The current contributed capital for 2011 is approaching \$8,000k as of July, and is on
- 12 track for the forecasted \$17,695k
- 13



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4		
5	Bo	ard Staff Question #13 - Ref: Exh B5-3-1, Exh B6-1-1, Attachment W
6	Th	e 2011 Asset Management Plan states that a replacement rate of 400-600 poles per
7	yea	ar is recommended to maintain the current failure rate. At p7 of Exh B5-3-1, the
8	evi	dence states that 295 poles are planned to be replaced in 2011 due to end of life. An
9	ado	ditional 108 poles will be replaced as part of the Kilborn conversion project.
10	a)	Have the poles that will be replaced as part of the Kilborn conversion project reached
11		end of life?
12	b)	Did Hydro Ottawa replace 400-600 poles due to end of life in 2010?
13		
14	Re	sponse
15		
16	a)	Poles and associated equipment scheduled for replacement under the Kilborn
17		conversion project are typically greater than 40 years of age, fully depreciated, and
18		have been identified to be at or near end-of-life. Complete distribution area asset
19		replacement creates work synergies and allows for the retirement of the Kilborn 4kV
20		substation.
21		
22	b)	Hydro Ottawa Limited pole replacements in 2010 under the Planned Pole
23		Replacement program were 142, an additional 25 poles were replaced under the
24		Plant Failure Poles program.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.3 – Is the capital expenditure forecast for the test year appropriate
4		
5	Bo	ard Staff Question #14 - Ref: Exh B1-2-5, p4
6	Hy	dro Ottawa has summarized its fleet replacement program and lifecycle status.
7	Ba	sed on the graph at Figure 2, Board staff estimates that Hydro Ottawa plans to
8	pur	chase 18 vehicles in 2011 and 31 vehicles in 2012.
9	a)	Hydro Ottawa compares its fleet to an industry standard lifecycle. Please provide the
10		source reference for the industry standard.
11	b)	Please confirm Board staff's estimates in the preamble. What percentage of Hydro
12		Ottawa's fleet is being replaced in the test year?
13	c)	Please estimate the incremental purchase cost in 2012 for hybrid vehicles.
14		
15	Re	sponse
16		
17	a)	The source reference for the industry standard is the 'Utility Fleet Management and
18		Benchmark Survey" by Chatham Consulting Inc., where 26 utility companies from US
19		and Canada provided the statistical and operational information.
20		
21	b)	The Ontario Energy Board staff's estimate in the preamble is correct, in that
22		31vehicles are scheduled for purchase in the 2012 test year. Of that, 25 are
23		replacements for existing stock, or 9.7% (25 of 257 total) Vehicles & Equipment.
24		(See Table 2, Exhibit B5-5-2)
25		
26	c)	Incremental cost for hybrid technology in the fleet is \$85,000 for 6 new Vehicles &
27		\$90,000 for 2 Bucket Truck conversion kits (See Table 2, Exhibit B1-2-7).
28		



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.3 – Is the capital expenditure forecast for the test year appropriate
4		
5	Bo	ard Staff Question #15 - Ref: Exh B1-2-5 and Exh D1-5-1
6	Th	e evidence at p4 of Exh B1-2-5 notes that Hydro Ottawa is "adding" vehicles in 2012
7	and	2013 to "address" its apprenticeship program and its partnership with Algonquin
8	Со	llege. Board staff notes that at p8 of the Workforce Planning Strategy exhibit, it states
9	tha	t Hydro Ottawa is placing on hold the hiring of Powerline Maintainer apprentices in
10	20 ⁻	2 to align with Algonquin College's program.
11	a)	The description provided on p4 of Exh B1-2-5 infers that the purchase of these
12		vehicles is required primarily for training purposes and not for the purpose of
13		maintaining distribution assets. Please confirm.
14	b)	How many of the vehicles related to these programs are forecast for purchase in
15		2012?
16		
17	Re	sponse
18		
19	a)	The units are required for training purposes at the training center but also for the
20		group of mid and senior apprentices that have progressed from the training center
21		and to address a shortage of vehicles which resulted from them having joined the
22		journeyman workgroups.
23 24	b)	Six units are being acquired for delivery in 2012, including one Digger Derrick, three
25		pick-up trucks and two buckets trucks (with final delivery of bucket trucks expected in
26		early 2013). Reference Exhibit B5-5-2.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #5 Filed: 2011-09-08 Page 1 of 2

2								
3	lss	ue 2.3 – Is the capital expenditure forecast for the test year appropriate						
4								
5	Bo	Board Staff Question #16 - Ref: Exh B1-2-6						
6	Th	The existing CIS system is PeopleSoft, a system selected through a competitive and						
7	cor	comprehensive procurement process and implemented in 2004. Hydro Ottawa reports						
8	tha	that due to changes to available support from Oracle for the existing CIS system, a CIS						
9	tra	transition is required. The 2011 capital budget is \$6.9M and the 2012 capital budget is						
10	\$7.8M to complete the CIS transition project.							
11								
12	The evidence states that, "Hydro Ottawa has chosen to use Oracle products for major							
13	applications and therefore has chosen to upgrade from Oracle's PeopleSoft CIS version							
14	8.8	8.8 to Oracle's current product, CC&B version 2.3.1."						
15	a)	Was Oracle CC&B version 2.3.1 selected without a competitive procurement						
16		process?						
17	b)	If the answer to a) is yes, please summarize the rationale and the approvals						
18		received to proceed with this capital expenditure without a competitive						
19		procurement process.						
20								
21	Response							
22								
23	a)	Yes.						
24								
25	b)	The decision to select the CC&B product was principally driven by the fact that it was						
26		a system upgrade and not a new acquisition, which would result in savings to Hydro						
27		Ottawa Limited ("Hydro Ottawa") on the software acquisition costs versus the						
28		significantly more expensive option of purchasing an entirely new product.						
29								
30		Oracle acquired PeopleSoft in 2004 and, along with it, the customer information						
31		system ("CIS") software which they then rebranded Customer Care and Billing.						



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #5 Filed: 2011-09-08 Page 2 of 2

- 1 Although Oracle extended support for CIS version 8.8 for a period of time, they have 2 declared that they will no longer support this version after 2009 and customers were 3 required to move to the current product CC&B to continue to receive full system 4 support. Hydro Ottawa leveraged its existing investment in the current PeopleSoft 5 CIS version 8.8 and was able to negotiate a discount on the product license to 6 upgrade to Oracle's CC&B version 2.3.1. 7 8 This direction was approved by the Project Steering Committee which included the 9 Chief Executive Officer, Chief Financial Officer, Chief Operating Officer of 10 Distribution and the Chief Information Officer. It was also approved by the Executive 11 Management Team as part of the 2011-2012 Information Management and 12 Information Technology Plan. The approval for the purchase was made in 13 accordance with Hydro Ottawa sole source purchase rationale guidelines, and given 14 the dollar value involved, it required the approval of the President and Chief Executive Officer. The Board of Directors was also advised of the decision. 15 16 17 Hydro Ottawa intends to follow a competitive process and request proposals for 18 system integration services, hosting services and managed services related to this
- 19 upgrade.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #6 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.3 – Is the capital expenditure forecast for the test year appropriate

- 4
- 5 Energy Probe Question #18 Ref: Exhibit B5, Tab 1, Sch. 1, Table 5
- 6 Please expand Table 5 to include 2011 and 2012.
- 7

8 Response

9

Capital Program	2006 \$000	2007 \$000	2008 \$000	2009 \$000	2010 \$000	2011 \$000	2012 \$000
Damage to Plant	(\$484)	(\$381)	(\$740)	(\$550)	(\$823)	(\$447)	(\$439)
Infill Service	(1,539)	(1,586)	(1,012)	(1,218)	(1,417)	(1,411)	(1,360)
New Commercial Development	(6,592)	(10,445)	(7,168)	(8,469)	(7,763)	(6,840)	(7,896)
Plant Relocation & Upgrade	(3,243)	(2,710)	(4,543)	(4,162)	(5,009)	(2,765)	(4,694)
Residential Subdivision	(6,536)	(8,881)	(7,250)	(6,317)	(5,577)	(5,087)	(3,601)
System Expansion Demand	(670)	(718)	(270)	(273)	(355)	(1,082)	(1,184)
Miscellaneous	(965)	(599)	(254)	78	0	(63)	(49)
TOTAL	(\$20,029)	(\$25,320)	(\$21,237)	(\$20,911)	(\$20,944)	(\$17,695)	(\$19,223)


Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #7 Filed: 2011-09-08 Page 1 of 2

2					
3	Issue 2.3 – Is the capital expenditure forecast for the test year appropriate				
4					
5	Energy Probe Question #19 - Ref: Exhibit B5, Tab 3, Sch. 1, Tables 7-8 & Exhibit B5,				
6	Tal	o 4, Sch. 1, Tables 6-7			
7	Th	e evidence indicates that capital contributions were budgeted based on historic			
8	per	centages of contributions in each budget program.			
9	a)	Please expand Table 8 in Exhibit B5, Tab 3, Schedule 1 to show historical data for			
10		2006 through 2010.			
11	b)	Please provide an explanation for the change in the percentages by program shown			
12		in Table 8 of Exhibit B5, Tab 3, Schedule 1 to those shown in Table 7 of Exhibit B5,			
13		Tab 4, Schedule 1.			
14					
15	Re	sponse			
16					
17	a)	See table below.			
18					
19	b)	A change in September 2009 to Appendix B of the Distribution System Code			
20		requires that upstream costs no longer form part of the economic evaluation formula			
21		for load customers after the next rebasing. An analysis was performed to estimate			
22		the decrease in contributions due to the change, and the contributed capital was			
23		adjusted accordingly, in Residential Subdivisions and Infill and Upgrade. The			
24		percentage of Residential Subdivision expenditures budgeted for recovery dropped			
25		from 77 percent in 2011 to 55 percent in 2012, and the percentage of Infill Service			
26		expenditures budgeted for recovery dropped from 45 percent in 2011 to 40 percent			
27		in 2012.			
28					
29		Historically Plant Relocation and Upgrade costs are budgeted at 50% recovery. The			
30		increase in the recovery rate in 2012 to 64% is due to approximately \$2M of known			
31		budget costs that are 100% recoverable.			



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #7 Filed: 2011-09-08 Page 2 of 2

Budget Program	2006 Contribution (%)	2007 Contribution (%)	2008 Contribution (%)	2009 Contribution (%)	2010 Contribution (%)	2011 Contribution (%)	2012 Contribution (%)
New Commercial Development	88	133	101	109	94	100	100
Damage to Plant	43	51	90	58	98	52	50
Infill Service	36	48	37	43	49	45	40
Plant Relocation & Upgrade	62	57	97	73	50	50	64
Residential Subdivision	88	107	81	76	81	77	55
Embedded Generation Projects	127	94	347	(944)	0	100	100
System Expansion Demand	46	22	16	15	18	32	30

2



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #8 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 – Is the capital expenditure forecast for the test year appropriate
4	
5	Energy Probe Question #20 - Ref: Exhibit B5, Tab 3, Sch. 2, Table 2
6	Will all of the vehicles shown to be purchased in 2011 be placed into service in 2011?
7	
8	Response
9	
10	No. Due to production and delivery times, the large aerial devices are not anticipated to
11	be placed into service until 2012.
12	
13	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #9 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.3 – Is the capital expenditure forecast for the test year appropriate
4	
5	Energy Probe Question #21 - Ref: Exhibit B5, Tab 4, Sch. 3, Table 1
6	Are the capital expenditures of any of the projects shown in Table 1 with an in service
7	date of 2013 or later included in rate base in 2012? If yes, please explain.
8	
9	Response
10	
11	No. The expenditures for these projects are carried in Construction in Process ("CIP")
12	until capitalized. CIP is shown in Exhibit B2-1-1 Table 7– 2012 Budget Gross and Net
13	Fixed Assets.
14	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #10 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	sue 2.3 – Is the capital expenditure forecast for the test year appropriate
4		
5	<u>En</u>	ergy Probe Question #22 - Ref: Exhibit B4, Tab 5, Sch. 2, Table 2
6	a)	Please explain the need for 6 additional vehicles in 2012, when no such additions
7		were made in 2010 or 2011.
8	b)	Please provide the capital cost for each of the 6 additional vehicles forecast for 2012.
9		
10	Re	sponse
11		
12	a)	The Algonquin Program does not start until 2012 and for the apprenticeship program
13		in years 2010 and 2011 the company was able to operate by extending the life of
14		vehicles scheduled for replacement. This strategy is not sustainable, and will not be
15		adequate to satisfy the need.
16		
17	b)	Six additional vehicles include:
18		- One Digger Derrick at \$275,000,
19		- Three pick-up trucks at \$40,000 each.
20		- Two Bucket Trucks at \$250,000 each; (with final delivery of both not anticipated
21		until early 2013).
22		



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #11 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #17 - Ref: Ex.B1/2/5/p.4
6	Please explain and provide details about why the Applicant requires 7 additional vehicles
7	to address its internal apprenticeship and partnership with Algonquin College initiatives.
8	
9	Response
10	
11	Please see Exhibit K2-3-4 (Board Staff question 15)
12	
13	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #18 - Ref: Ex.B1/2/6/p.1
6	Please provide all information on the CIS transition project and capital expenditures for
7	the project that was filed in the Applicant's 2008 EDR Application.
8	
9	Response
10	
11	Please see attachments 1 and 2.
12	
13	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 1 Filed: 2011-09-08 Page 1 of 6

1 2 3 4 5 6 7	Hydro Otta EB-2007-0 Filed: 200 Tab C Question 7 Page 1 of	awa Limited 1713 7-11-30 16 6
8	Questi	on
9		
10	<u>Distribu</u>	tion Asset Management Strategy
11		
12	16.	B1/T2/S6, CIS Version Update Project
13		
14	On pag	e 5 of B1/T2/S6, HOL stated that it began a due diligence review of available
15	options	to consider when choosing its CIS solution both in the short-medium term and in
16	the long	g term.
17		
18	a.	Please describe all the available options that HOL considered.
19		
20	b.	Please provide in detail the pros and cons of each option, including a detailed
21		analysis of the incremental benefits, incremental costs and risks of each option.
22		
23	С.	Is HOL aware of any other LDCs that also use the PS CIS system from the
24		same vendor? If yes, do they choose to have their PS CIS systems fully
25		upgraded or do they have other options?
26		
27	d.	Table 1 on page 7 of B1/T2/S6: HOL's budget for CIS upgrade is \$7.4M. \$2.7M
28		will be included in CWIP for 2008, with the remaining \$4.7M deferred until 2009.
29		Full version upgrade is targeted in 2009.
30		
31		(i) How is the \$1.2M burden derived;
32		
33		(ii) Please explain the contingency expense of \$300K;
34		



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 1 Filed: 2011-09-08 Page 2 of 6

1		(iii)	Please disclose all annual ongoing costs beyond 2009.
2	Posne	onco	
5	respu		
4	a.	As pai	t of reasonable due diligence effort, HOL considered the following
Э		avalla	ble CIS upgrade options:
6		1.	Continue to operate on PS CIS version 8.8 beyond full support dates
7		2.	Upgrade to PS CIS version 8.9, 8.95 or 9.0
8		3.	Upgrade to CC&B
9		4.	New implementation of an alternative CIS product
10			
11	b.	The p	ros and cons of each option were investigated with these conclusions:
12		1.	Continue to operate on PS CIS version 8.8 beyond full support dates:
13			• Pros – This was the least costly alternative of the available options
14			but would also cause the highest degree of risk for the business.
15			Though the immediate outlay of project costs is avoided, additional
16			expenses would be anticipated for development/support to sustain
17			the product and compensation to our managed services provider for
18			the risk imposed. Quantifying these costs is difficult as is dependant
19			on the volume and degree of actual challenges encountered.
20			
21			• Cons – Operating a mission critical system such as CIS without full
22			support is not considered to be a reasonable risk for HOL to incur
23			given the customer relationship management, regulatory compliance
24			and cash flow implications. Disruptions to CIS operations would
25			quickly create a crisis for our business and customers as well as
26			cause downstream challenges for Retailers, MDM/R, etc. Ensuring
27			sufficient resources with the appropriate skill sets are available to
28			support PS CIS (any version) will become increasingly challenging
29			moving forward since the product is being phased out.
30			
31		2.	Upgrade to PS CIS version 8.9, 8.95 or 9.0:

2. Upgrade to PS CIS version 8.9, 8.95 or 9.0:



8

Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 1 Filed: 2011-09-08 Page 3 of 6

- Pros Migrating to a more current PS CIS product is a typical
 progression path. As a general rule, this approach minimizes the degree
 of change management, provides the easiest conversion path while still
 providing the business with some enhanced functionality. Details of each
 version upgrade option were fully explored with involvement by
 Oracle/SPL but extenuating circumstances created an exception to this
 general rule.
- 9 **Cons** – Ensuring sufficient resources with the appropriate skill sets are 10 available to support PS CIS (any version) will become increasingly 11 challenging since the product is being phased out in favour of CC&B as 12 the flagship CIS solution for Oracle/SPL. In addition, the PS CIS product 13 relies heavily on customized code for all EBT functionality that would not 14 automatically forward-fit to other versions. Potential upgrade to v8.9 was 15 quickly discounted as an option as the anticipated 10-month effort for the 16 upgrade project provided little benefit when compared to a 12-month 17 extension of support beyond what existed with just staying on v8.8. 18 Oracle/SPL completed a full complexity assessment for upgrade to v8.95 19 as well as CC&B to provide detailed context of the relative viability of 20 these options. Details of the option comparisons are detailed below: 21



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 1 Filed: 2011-09-08 Page 4 of 6

1

Evaluation Criteria	PS ERM v8.95	CC&B (v 2.2)	
End of full support services	Dec., 2009	Apr., 2013 * * based on 5 years from product general release date expected to be Apr./08	
Estimated project duration	10 months	12 months	
Internal resource allocations	Combination of Functional a every Stakeholder group	and Technical resources from required for either option	
Functionality improvements	Little new functionality but some potential gains for Security, Adj., Case mgt.	All v8.95 functionality + productization of Market Transaction Mgt. for EBT requirements	
Product future	v8.95 is last PS CIS release Dwindling PS CIS clients Changes require developers	Flagship CIS product Rising CC&B clients Some dev work via config.	
Oracle strategic direction	Not compatible with Fusion	Fusion compatible	
Potential cost avoidance	n/a	Regulatory compliance clause available	
	\$ 4.2 million	\$ 7.4 million	
DRAFT budget estimate*	* Budget estimates must be taken in the context of being preliminary until project scope confirmed, RFP issued and awarded, and resultant detailed calculations confirmed.		

- 2 3
- **NOTE:** During the Oracle OpenWorld conference from Nov. 11 15/07, revised support dates for PS CIS versions were announced as follows:
- 5 6

7

- Version 8.8 = June/09
- Version 8.9 = Dec./09
- These extensions were provided in lieu of releasing a v9.0 (no longer an option).



1 2 Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 1 Filed: 2011-09-08 Page 5 of 6

3. Upgrade to CC&B:

3 **Pros** – As detailed in the comparison chart above, this option is the most • 4 viable upgrade option when considering risk, benefit, effort and strategic 5 alignment. Although the cost of the upgrade is not insignificant, it pales 6 in comparison to implementation of an alternative CIS solution and 7 provides greater longevity than the PS CIS v8.95 option. New 8 functionality in CC&B, called Market Transaction Management, will 9 productize a method for meeting EBT requirements rather than the 10 customized code solution in PS CIS. Demonstrations of CC&B showed 11 other functionality features in CC&B are quite similar to PS CIS v8.8 as 12 are data structures, etc., which suggests that change management 13 considerations will not be extensive. Investigations to date highlighted the 14 Regulatory Compliance clause for CC&B, whereby Oracle/SPL 15 guarantees that CC&B will keep compliant with regulatory requirements, 16 thereby offering future cost avoidance opportunities. In keeping with 17 Oracle's product lifecycle strategy of premier support for 5 years from 18 general availability release date as well as support dates of related 19 component systems, it should be anticipated that there will be an on-20 going need for at least technical upgrades on this frequency. 21 **Cons** – Given the degree of change within the industry of prolonged 22 transitions of Smart Meters and MDM/R, embarking on a CIS upgrade 23 may pose challenges from an organizational capacity point of view. 24

NOTE: Based on announcements during the Nov./07 Oracle OpenWorld
 conference for PS CIS extended support, the timing of a CIS upgrade project to
 CC&B may be deferred from 2008/09 until 2009/10.

- 28 29
- 4. New implementation of an alternative CIS product:



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 1 Filed: 2011-09-08 Page 6 of 6

1		•	Pros –. Other products are available and additional functionality may be
2			available in alternative products but the benefit would need to be weighed
3			against the change management risk and cost.
4			
5		•	Cons – Based on our analysis of industry standards, the cost of an
6			upgrade is typically 30% of new implementation costs (approx. \$22
7			million). The Oracle/SPL solution has proven itself to be a stable, reliable
8			and adaptable product to meet our business needs and no other out-of-
9			the-box product is currently operating that can match or surpass this track
10			record.
11			
12	C.	In Onta	rio, EnWin is currently operating on v8.8 of PS CIS and evaluating their
13		CIS up	grade options. The Enersource/Toronto Hydro project has chosen the
14		CC&B	product for their CIS solution. In the broader context of other PS CIS
15		clients,	some have already successfully made the transition to CC&B, some
16		others I	nave either CC&B upgrade projects planned or underway, and others are
17		evaluat	ing options.
18			
19	d.	NOTE:	Based on announcements during Oracle OpenWorld of extended PS CIS
20		support	t, the timing of a CIS upgrade project to CC&B may be deferred from
21		08/09 to	o 09/10.
22			
23		(i)	Estimated burden rate of 20% was used for preliminary budget
24			purposes.
25		(ii)	Approx. 5% contingency was allocated for preliminary budget purposes
26			to cover unexpected challenges encountered during the project after
27			scope defined.
28		(iii)	Annual on-going costs beyond implementation should remain
29		·	comparable to recent experience of 2005, 2006 and 2007, in the \$.8M to
30			\$1.5 M range .
31			



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 2 Filed: 2011-09-08 Page 1 of 7

12345678 9	Hydro O EB-2007 Exhibit E Tab 2 Schedul Filed: 20 Page 1 c	ttawa Limited -0713 31 e 6 07-09-18 of 7	
10		CIS VERSION UPDATE PROJECT	
11			
12	1.0	INTRODUCTION	
13			
14	The C	ustomer Information System ("CIS") is a critical business system for Hydro Ottawa.	
15	The cu	urrent CIS is PeopleSoft [®] Enterprise Revenue Management ("ERM") (also known	
16	as Pe	opleSoft [®] CIS or PS CIS) version 8.8. This comprehensive system provides the	
17	full meter-to-cash application capabilities required to meet the core business mandate of		
18	distrib	uting electricity to over 280,000 customers in the service area.	
19			
20	As sho	own in Figure 1, the CIS is the central repository for tracking all of the vital	
21	inform	ation pertaining to customers, such as:	
22			
23	•	recognizing a new premise address,	
24	•	generating field activity requests to install a meter and related equipment,	
25	•	requesting a security deposit,	
26	•	meter reading data in the field,	
27	•	billing for services supplied,	
28	•	exchanging information with Retailers operating in the deregulated Ontario	
29		electricity market,	
30	•	capturing notes referencing interactions with customers,	
31	•	receiving payments for the bills issued, and	
32	•	initiating appropriate collection and/or severance escalations.	



- 7
- 8 CIS is a highly integrated system as evidenced by interfaces with both internal systems
- 9 and external systems, as shown in Figure 2.
- 10
- 11



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 2 Filed: 2011-09-08 Page 3 of 7

Figure 2



Interfaces with PS CIS

2

- 3
- 4 Various functional areas at Hydro Ottawa rely on CIS to achieve their operational
- 5 mandates in an expedient, cost-effective manner. Stakeholder requests to maximize
- 6 business efficiency and/or effectiveness, in addition to on-going new regulatory
- 7 requirements, result in an active development environment for CIS modifications.
- 8
- 9
- 10 2.0 BACKGROUND
- 11
- 12 2.1 Implementation at Hydro Ottawa
- 13
- 14 In 2003, Hydro Ottawa sought to implement a new CIS due to significant challenges with
- 15 the existing CIS application. At that time, PeopleSoft was offering the PeopleSoft ERM



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 2 Filed: 2011-09-08 Page 4 of 7

1 solution (also know as PeopleSoft Customer Information System or PS CIS), under the 2 terms of a Joint Development and Marketing Agreement with SPL WorldGroup Inc. 3 ("SPL"). Based on the results of a competitive and comprehensive procurement 4 process by a dedicated cross-functional team, Hydro Ottawa chose PS CIS version 8.8 5 as its new CIS. This new business system was implemented on September 7, 2004. 6 7 2.2 Operational results since implementation 8 9 Since its implementation, PS CIS has proven to be a stable, reliable CIS product that is 10 adaptable to changing regulatory and/or business requirements. This application has 11 allowed Hydro Ottawa to successfully generate approximately 8,000 accurate and timely 12 bills each night through batch operations, maintain very high availability and maintain 13 system responsiveness results during the day for on-line operations. Despite 14 challenging timelines and expectations for regulatory requirements (e.g. changes to 15 Electronic Business Transactions ("EBT"); the CIS has successfully provided a high level 16 of performance and remained compliant throughout. 17 18 19 3.0 UPGRADE STRATEGY CONSIDERATIONS 20 21 Oracle Corporation ("Oracle") acquired PeopleSoft in late 2004. On November 3, 2006, 22 it was announced that Oracle had also purchased SPL WorldGroup ("SPL"). As a result 23 of both of these acquisitions, product strategies for PS CIS underwent a change. 24 25 Oracle's approach to product lifecycle is to provide the customer with the following for 26 five years from the general availability date: 27 28 rights to new releases of the licensed products, • 29 access to technical support, • 30 updates and fixes, 31 tax, legal and regulatory updates, and



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 2 Filed: 2011-09-08 Page 5 of 7

1	 access to knowledge database, upgrade scripts and certification with new third
2	party and Oracle products.
3	
4	However, since the release schedule remains undefined for the SPL product, full support
5	of PS CIS versions was extended by one year. For PS CIS version 8.8 that meant the
6	following full support dates:
7	
8	Patches/Fixes: March 12, 2008
9	Upgrade Script Support: March 12, 2009
10	Phone Support for known fixes: Lifetime (Tier 1)
11	 Phone Support for known fixes: March 12, 2010 (Tier 2 and 3)
12	
13	Oracle's long-term product strategy is towards a fully integrated product called Fusion.
14	Though PS CIS will continue to be offered as a CIS solution in the short to medium term,
15	the alternative product, Customer Care and Billing ("CC&B"), is the flagship product for
16	the future since it is Fusion compliant.
17	
18	
19	4.0 PLANNED CIS UPGRADE PROJECT
20	
21	4.1 Options
22	
23	Once aware of the imminent critical support dates detailed above, Hydro Ottawa began a
24	due diligence review of available options to consider. Operating a critical system without
25	full support is not considered to be a reasonable risk for the business, given the
26	customer relationship management, regulatory compliance and cash flow implications.
27	However, with an upgrade project expected to take $10-12$ months, this situation is likely
28	an unavoidable short-term risk, which will be managed accordingly.
29	Since the application has proven to be a reliable, stable product and industry standard
30	anticipates the cost of an upgrade to be 30% of implementation cost, a full request for
31	proposal review of all currently available CIS products is not deemed necessary.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 2 Filed: 2011-09-08 Page 6 of 7

1 Enhanced functionality is expected to be available in an imminent CC&B release that will 2 embed EBT requirements into the base product. This will broaden support service 3 capabilities and allow some future cost avoidance in comparison to the customized code 4 alternative currently in place with PS CIS. 5 6 Final timing of a CIS upgrade project will give consideration to the organizational 7 capacity to undertake this project and the risk to other initiatives such as Smart Meters 8 and Time-of-Use Rates. Allocation of available capital funds and the downstream affect 9 on associated contracts, such as the managed services arrangement with IBM Canada, 10 will also impact scheduling decisions. 11 12 4.2 Project Budget 13 14 Based on the preliminary Oracle/SPL proposal and PS CIS implementation expenses 15 incurred as references, the following budget has been set for an upgrade. The final 16 scope of the project still must be finalized and an RFP will be issued to award the 17 contract. 18 19 Table 1 details the forecasted budget. Hydro Ottawa has included \$2.7M in 20 Construction Work in Progress ("CIP") for 2008, with the remainder of the funds deferred 21 until 2009. 22



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #12 Attachment 2 Filed: 2011-09-08 Page 7 of 7

Table 1 – Budget for CIS Upgrade

Budget Item Description	Budget Estimate
Project services	\$2,450,000
Software licenses	860,000
First year maintenance	300,000
Service fees	10,000
Internal labour costs	2,000,000
Legal	100,000
External communication	70,000
Administrative costs	150,000
Sub-total	5,940,000
Burdens	1,188,000
Contingency	300,000
TOTAL	\$7,428,000

2

1

3

4 5.0 CONCLUSION

- 6 Hydro Ottawa intends to pursue a full version upgrade of its CIS with target
- 7 implementation in 2009. In the meantime, risk mitigation efforts will be undertaken to
- 8 protect the business interests for any periods where full support for CIS is unavailable.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #13 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?

4

5 <u>SEC Question #19 - Ref: Ex.B1/2/6/p.17</u>

6 Please provide details on the discussions the Applicant has had with other LDCs with

7 respect to "looking for ways to work together on our respective CIS implementation in an

8 effort to find cost savings for all LDC's involved".

9

10 Response

11

12 There have been discussions with several large LDCs who have implemented or are

13 considering implementing Oracle's Customer Care and Billing (CC&B) solution. These

14 discussions have been focused on sharing lessons learned from their respective project

15 implementations, understanding product offerings and support options available from

16 Oracle. In the discussions with the LDCs, other collaborative support models were

17 explored that would allow LDCs using CC&B to collectively manage system changes as

18 a result of a updates in the regulatory requirements, as issued by the Ontario Energy

19 Board, to be implemented by all LDCs.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #14 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #20 - Ref: Ex. B1/2/6
6	Please provide the specific amount of the Fleet Initiatives Capital Expenditures budget
7	for each year between 2011 and 2014 that is being spent on 'piloting electric vehicles'.
8	
9	Response
10	
11	Hydro Ottawa Limited has budgeted an additional \$20,000 for the purchase of one
12	electric vehicle in 2011, which represents the estimated difference in cost between an
13	electric vehicle versus a gas vehicle. This is the only 'pilot electric vehicle' that is
14	represented in the Fleet Initiatives Capital Expenditures budget for 2011 to 2014.
15	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #15 Filed: 2011-09-08 Page 1 of 1

2				
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?			
4				
5	<u>SE</u>	<u>C Question #21 - Ref: Ex.B1/2/7/p.8</u>		
6	Wi	h respect to the new 'environmental standards and associated point system'		
7	pro	curement policy:		
8	a.	Please provide the expected cost impact		
9	b.	Please provide the business case for the implementation of this policy		
10	c.	Was any study undertaken or referenced internally on the possible cost impact of		
11		undertaking this policy? If so, please provide it.		
12				
13	Re	sponse		
14				
15	a)	Hydro Ottawa Limited's ("Hydro Ottawa") procurement policy statement with new		
16		environmental standards and associated point system is not expected to have a cost		
17		impact. These environmental standards and point system will be used to		
18		differentiate purchasing decisions using an environmental criterion when products,		
19		goods and services are of equal quality and value.		
20				
21	b)	Given a) above, a business case was not deemed to be required.		
22				
23	c)	Given a) above, a study was not deemed to be required.		
24				



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #16 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #22 - Ref: Ex.B4/2/1/p.20
6	Please confirm that there are no cost consequences for ratepayers for 2012 due to the
7	change in 2013 to monthly billing.
8	
9	Response
10	
11	Hydro Ottawa Limited ("Hydro Ottawa") has taken the decision to delay the customer
12	information system ("CIS") upgrade to 2013.
13	
14	In addition, Hydro Ottawa has decided to incorporate the introduction of monthly billing
15	as part of the CIS upgrade, therefore there is no longer a cost consequence for

16 ratepayers in 2012 related to monthly billing.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #17 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?

5 SEC Question #23 - Ref: Ex.B5/2/1/p.7

6 Please provide greater detail of the variance from the approved amount of the7 distribution enhancements expenditures.

8

9 **Response**

10

11 Distribution Enhancement expenditures in 2008 were \$1,600k higher than the approved 12 budget. The majority of this increase is attributable to an increased number of projects 13 in the Distribution Enhancement program, and two general project accounts; one for 14 unbudgeted low value stock (CANBAN) and one for "Construction Crew Enhancements". 15 The low value stock budget (CANBAN) includes day to day materials such as hardware, 16 fuses, etc required by the crews working on capital projects. All of this low value 17 material used was charged to this single account. The total CANBAN capital expenditure 18 in 2008 was \$559k. In 2008, there existed a project category "Construction Crew 19 Enhancements". The project was used for distribution enhancements made by 20 construction crews while working on other planned projects. In 2008, these in-the-field 21 enhancements expenditures exceeding \$750k. This general program no longer exists. 22 Now the process is for all proposed capital enhancements to be submitted to Asset 23 Planning, where they are evaluated against other possible enhancements and prioritized 24 as per our 2011 AMP.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #18 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?

4

5 SEC Question #24 - Ref: B5/2/1/p.10-12

6 With respect to station new capacity projects approved in the 2008 EDR Application,

7 please provide the planned and actual budgets.

8

9 **Response**

10

Budget Program	Project	2008 Approved \$000	2008 Actual \$000
Stations New Capacity	Cyrville Station	\$1,452	\$2,554
Stations New Capacity	Ottawa South East 13kV Area	5,908	4,751
Stations New Capacity	South Nepean and South Gloucester 27.6 kV Area – Deferred	1,279	0
	TOTAL	\$8,639	\$7,304

11

12 The South Nepean project was intended to be a multi year Station Capacity project to

13 increase capacity supply south Nepean/south Gloucester service area. The project was

14 deferred with the identified purchase of the Fallowfield substation from Hydro One. A

15 Station Capacity project to double the capacity of the Fallowfield station began in 2010,

16 and is now well into construction with energization to take place in 2012.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #19 Filed: 2011-09-08 Page 1 of 2

1 2. RATE BASE

2

Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?

3 4

5 SEC Question 25 - Ref: Ex.B5/2/1/p.12

6 With respect to the facility programs-stations projects in the 2008 EDR Application,

7 please provide the planned and actual budgets.

8

9 **Response**

10

Budget Program	Project	2008 Approved \$000	2008 Actual \$000
Facility Programs - Stations	Stations Building Rehabilitation	\$861	\$298
Facility Programs - Stations	Albion Substation Upgrade	1,654	2,047
Facility Programs - Stations	Uplands Station Upgrade - Cancelled	989	0
	TOTAL	\$3,504	\$2,345

11

12 The Uplands station upgrade was deferred in 2008 as a result of the proposed purchase

13 of the Fallowfield Station from Hydro One Networks. Increasing the capacity at the

14 Fallowfield Station would allow Hydro Ottawa Limited ("Hydro Ottawa") to feed the

15 growing demand in the South portion of the service territory west of the Rideau River

16 without having to push capacity across the Rideau River from the Uplands Station, a

- 17 fairly long distance which would result in unwanted line losses. Following the final
- 18 purchase of the Fallowfield Station, Hydro Ottawa has begun work on adding capacity to
- 19 the station. The new capacity project at the Fallowfield station began in 2010 and is
- 20 scheduled to be completed in 2012. The project is currently on track. The Facility
- 21 Programs Stations budget dollars for this project now fall under the Stations New



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #19 Filed: 2011-09-08 Page 2 of 2

- 1 Capacity Program. The Uplands expansion project is now being evaluated for future
- 2 growth East of the Rideau River.
- 3
- 4 The increased expenditures on the Albion Substation Upgrade were offset by reductions
- 5 in the Stations Building Rehabilitation program.
- 6



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #20 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #26 - Ref: Ex.B5/2/1/p.18
6	Please greater details about the variance in the Plant Relocation and Upgrade
7	expenditures planned and actual budget.
8	
9	Response
10	
11	Based on historical data from 2006 and 2007 the average yearly cost per plant
12	relocation project was approximately \$80K. Despite their being slightly fewer projects in
13	2008, the average cost per project rose to \$90K. With a total of 52 active plant
14	relocation projects in 2008, the increase in average cost per project of \$10K creates a

15 budget variance of \$500K.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #21 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #27 - Ref: Ex.B5/3/1/p.12
6	Please provide an update on the Beacon Hill project.
7	
8	Response
9	
10	The Beacon Hill project is proceeding currently in the construction phase, with civil
11	construction nearing completion. The project is scheduled for completion in late 2011.
12	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #22 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #28 - Ref: Ex.B5/3/1/p.13
6	Please provide an update on the Fallowfield project. What is the cost of this specific
7	project?
8	
9	Response
10	
11	The Fallowfield project is currently in the construction phase with expected energization
12	to be early 2012. The total cost for this project is estimated at \$5,300k
13	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #23 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #29 - Ref: Ex.B5/4/1/p.10
6	Please provide an update on the Barrhaven T1 and T2 replacement project. When in
7	2012 is the project expected to come into service?
8	
9	Response
10	
11	The Barrhaven T1 and T2 replacement project is on schedule, with design complete and
12	major equipment ordered. The new transformers are scheduled to be in service Q4 of
13	2012.
14	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #24 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #30 - Ref: Ex.B5/4/1/p.19
6	Please provide details and supporting materials to substantiate the Applicant's
7	conclusion that 2012 commercial development expenditures will be higher than 2011.
8	
9	Response
10	
11	To date Hydro Ottawa Limited ("Hydro Ottawa") has received 39.8MVA worth of
12	circulations vs. a 2010 total of 50.5MVA of commercial projects. Based on the
13	circulations in 2011 vs. 2010, the forecast is for more commercial projects in 2012 than
14	in 2011. Note - commercial projects are typically 100% contributed.
15	
16	(Reference Exhibit B5 Tab 4 Schedule 1 on page 19).
17	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #25 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #31 - Ref: Ex.B5/3/1/p.22
6	Please provide the rational for the Applicant's forecast of an increase in system
7	expansion demand expenditures.
8	
9	Response
10	
11	System Expansion Demand is expected to increase marginally based on the circulations
12	for programs such as residential development and commercial development, as the City
13	of Ottawa continues to expand at the outskirts.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #26 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
SEC Question #32 - Ref: Ex.B5/4/2/p.2
Please provide details and/or documents substantiating the \$4M budget for the cost of
acquiring land for the Administrative Building and East Operations Centre.
Response
The \$4M budget is the estimated cost of land acquisitions for the Administrative Building
and East Operations Centre. The Administrative Building land is estimated to be three
acres at a cost of approximately \$800k/acre and the East Operation Centre land is

14 estimated to be five acres at a cost of approximately \$300k/acre.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #27 Filed: 2011-09-08 Page 1 of 3

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #33 - Ref: Ex.B5/5/1/p.6
6	Please provide greater details about the Distribution Automation capital project
7	expenditures.
8	
9	Response
10	
11	Please refer to the 2011 AMP, as found in Exhibit B6 Tab 1 Schedule 1, page 141, 142,
12	143 and 144.
13	
14	The below information has been taken out of the Exhibit noted above.
15	
16	Distribution Automation
17	Nepean 28kV Distribution Switch Automation
18	The South Nepean 28kV system is supplied by three 28kV stations, each with single
19	source supplies. Installation of automated switches will reduce outage duration. With
20	rapid growth in this area, load transfers are often required to maintain system loading
21	within equipment ratings. With the addition of remotely operable switches load transfers
22	can be executed faster in response to system loading.
23	
24	Four locations have been proposed for the installation of remotely operated switches in
25	2012, with reclosing or sectionalizing switches. The switch locations are existing normal
26	open points between Fallowfield DS, Longfields DS and Limebank MS, or are strategic
27	locations to allow for sectionalizing of the feeders in south Nepean. The proposed
28	locations for automated devices are shown in Figure 58.


Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #27 Filed: 2011-09-08 Page 2 of 3



1 Figure 1 - Existing and Proposed Locations for Remotely operated Switches

2

3

4 East 28kV system

Hydro Ottawa Limited's ("Hydro Ottawa") East end 28kV system is modern, containing
several remotely operable switching points. Future automation projects in this area will
focus on sustainment of existing automated switches and additions as identified to
improve functionality.

9

10 West 28kV system

- 11 Planned addition of remotely operable devices on the west 28kV system is planned for
- 12 2013 and beyond. Locations currently identified include installation of remotely operable
- 13 tie switches between feeders to reduce outage duration and increase speed at which
- 14 circuits can be sectionalized in the Stittsville area.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #27 Filed: 2011-09-08 Page 3 of 3

1 44kV Sub- transmission Automation

- 2 Hydro Ottawa's 44kV sub transmission system supplies some large customers directly
- 3 but is primarily the supply network for a number of 8kV and a handful of 28kV
- 4 substations. While interconnections exist, the 44kV system operate largely in isolation,

5 with the East supplied from Hawthorne TS, South by Nepean TS and West By South

- 6 March TS.
- 7

8 East End 44kV

9 This project includes the plan to modernize and deploy automatic restoration on the

- 10 44kV loop in the east end which is created by the 48M3, 48M4, and 48M5. These sub
- 11 transmission circuits supply power to roughly 3% of Hydro Ottawa's Customer base. This
- 12 project includes the installation of station and distribution circuit breakers as well as
- 13 some minor system reconfiguration, and station reconfiguration.
- 14

15 This scheme will enable restoration of most customers without operator intervention and

- 16 will eliminate the need to dispatch crews. This scheme will improve supply reliability by
- 17 eliminating sustained customer interruptions at the existing 44/8kv stations for most sub
- 18 transmission interruptions on the 44kV system.
- 19

20 West 44kV

- 21 The 44kV system in the west of the city is radial with predominately manually operated
- switches, many of which are non-load break. In 2011 and beyond, deployment of
- remotely operable devices on this part of the system is planned to improve operabilityand reliability.
- 25

26 2011 projects include the replacement of two existing manual non-load break switches 27 on the A9M3 with remotely operable switches. This will allow for sectionalizing and 28 partial restoration without dispatching crews. In 2012 and 2013, three additional devices 29 are planned to be installed on the A9M3 and A9M1 to further improve operability of the

- 30 system.
- 31



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #28 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #34 - Ref: Ex.C2/1/1/p.3
6	Why did the Applicant discontinue the collection of security depositions from residential
7	customers?
8	
9	Response
10	
11	Hydro Ottawa Limited ("Hydro Ottawa") reviewed its residential security deposit policy in
12	light of recent amendments to the Distribution System Code regarding the collection
13	and application of security deposits for residential and low-income consumers. As a
14	result, Hydro Ottawa determined that the associated costs of administering residential
15	security deposits outweighed the anticipated benefits.
16	
17	As a result of this decision, existing residential security deposits were credited to

18 customers' accounts, along with applicable interest, in early 2011.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #29 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #35 - Ref: Ex.D1/1/6/p.1
6	For table 1, please provide 2011 year-to-date actuals.
7	
8	Response
9	
10	Please refer to Exhibit K3-5-4 (EP # 32) for Other Revenue, 2011 year-to-date actuals.
11	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.3 Interrogatory #30 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.3 - Is the capital expenditure forecast for the test year appropriate?
4	
5	SEC Question #36 - Ref: Ex.D1/1/6/p.2
6	For table 2, please provide 2011 year-to-date actuals.
7	
8	Response
9	
10	As advised by SEC staff on August 31, there is no need to respond to this interrogatory.
11	
12	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.4 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.4 - Is the capitalization policy and allocation procedure appropriate?
4	
5	VECC Question #19 - Ref: Exhibit B1, Tab 3, Schedule 1, Attachment Q
6	Did Hydro Ottawa compare its capitalization and cost allocation policy with that of other
7	utilities (e.g. Toronto Hydro or Hydro One). If so, what were the material differences? If
8	not, please explain why this analysis was not undertaken.
9	
10	Response
11	
12	Hydro Ottawa Limited's ("Hydro Ottawa") current capitalization policy was developed in
13	2007 with the assistance of KPMG. There was internal review of other utility reports
14	including NB Power, Hydro One, Enbridge Gas, BCTC, and Fortis Alberta. The policy
15	has been benchmarked and was in line with other similar Ontario distributors of
16	electricity. KPMG also reviewed the policy and found it reasonable and in accordance
17	with industry standards and practice related to overhead capitalization.
18	
19	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.4 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

2					
3	Issue 2.4 - Is the capitalization policy and allocation procedure appropriate?				
4					
5	VE	CC Question #20 - Ref: Exhibit B1, Tab 3, Schedule 1; Exhibit D1, Tab 1, Schedule 1,			
6	pa	<u>ge 5</u>			
7	a)	The evidence states that Hydro Ottawa "changed its accounting estimates in 2007			
8		for allocating overhead costs to capital programs" (Ex. D). It also states that "[t]he			
9		procedures became effective January 1, 2008." Please clarify in what year the			
10		revised capitalization policy became effective.			
11	b)	The Settlement conference in Hydro Ottawa's last cost of service rate case (EB-			
12		2007-0713) was in January 2008. Did Hydro Ottawa notify the parties to that			
13		proceeding and revise its proposal for the new capitalization policy at that time? If			
14		not please explain why the 2008 rate proposal was not revised to reflect the new			
15		capitalization policy.			
16					
17	Re	sponse			
18					
19	a)	The capitalization policy was developed in 2007 and became effective January 1,			
20		2008.			
21					
22	b)	The new capitalization policy was incorporated in the 2008 Rate Application and			
23		approved rates.			



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

2		
3	lss	ue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4		
5	Bo	ard Staff Question #17 - Ref: Filing Requirements EB-2009-0397, Part IV; Ref: Exh
6	<u>B1</u>	-2-2, Attachment P, p15
7	The	e GEA Plan Filing Requirements outline the need for consultations.
8	a)	Please confirm that there are no distributors (other than Hydro One) in or adjacent to
9		Hydro Ottawa's service area that would be impacted by present plans to connect
10		renewables.
11	b)	Please update the Board on the status of consultations with Hydro One and file any
12		letter of comment or other documentation reflecting Hydro One's comments.
13	c)	Please file the OPA Letter of Comment.
14		
15	Re	sponse
16		
17	a)	Confirmed.
18		
19	b)	A letter of comment was received from Hydro One, the letter is attached as
20		Attachment 1.
21		
22	c)	A letter of comment was received from the OPA, the letter is attached as Attachment
23		2.
24		
25		

Hydro One Networks Inc. Customer Business Relations 31 Woodfield Drive, Nepean, Ontario K2G 3Y4



File: 450 Hydro Ottawa

July 26, 2011

Hydro Ottawa P.O. Box 8700 3025 Albion Road Ottawa, Ontario K1G 3S4

Attention: Mr. Franz Kropp

Dear Franz:

RE: Hydro Ottawa Green Energy Plan

In accordance with Section IV of EB-2009-0397 Filing Requirements: Distribution Plans – Filing Under Conditions of Licence, Hydro One, as a potentially impacted distributor and transmitter, has reviewed Hydro Ottawa's Green Energy Act Plan (GEA Plan). The resulting comments do not constitute or reflect an exhaustive assessment of the upstream impacts, and Hydro One reserves the right to identify or alter any of these comments as may be required.

<u>Transmission System</u> Section 3.4, page 9-10

- It would be helpful for our evaluation if we could get the total MW of generation applications for each station.
- Lisgar TS is not short circuit constrained due to Lisgar TS LV breakers. It is thermally constrained. Lisgar TS has two buses JY and QZ. The JY bus, which has 14.2 MW of existing generation, is limited due to reverse power flow constraints. The QZ bus has 11.3MW of capacity. Therefore, even after the Hawthorne breakers are replaced, the JY bus will remain constrained.

Section 4.4.1, page 14

• Please remove reference to Lisgar on Page 14.

Appendix A, page 24

• The 28MW of Hydraulic generation proposed to connect to the 13.8kV system will have to be carefully considered. The five 5.6MW generator connections (three at Slater, one at Hinchey and one at Lisgar) will be firmed up after the CIA is completed. For example, the three generators planned for Slater will not be able to connect to one bus.

Appendix B and C, page 25-26

• We suggest a note be added that the total generation that can be incorporated at any given station is not the sum of the individual feeder capacities.

Distribution System

Our review concluded Hydro Ottawa's GEA Plan does not have any impact on Hydro One Distribution.

If you have any questions, I will be pleased to assist.

Yours sincerely,

M. Athie

Michael Ritchie Account Executive Hydro One Networks Inc. 31 Woodfield Drive, Nepean, Ontario K2G 3Y4 Phone (613) 274-6327 Fax (613) 224-1726

OPA Letter of Comment: Hydro Ottawa Limited Green Energy Act Basic Plan 2011

Jun





June 23, 2011

Introduction

On March 25, 2010, The Ontario Energy Board ("the OEB") issued its Filing Requirements for Distribution System Plans. As a condition of Licence, Ontario Distributors are required to file a Green Energy Act Plan as part of their cost of service application.

The Filing Requirements distinguish between Basic and Detailed Green Energy Act Plans ("Plan" or "GEA Plan") and outline the specific information and level of detail which must be provided for each type of Plan. Recognizing the importance of coordinated planning in achieving the goals of the *Green Energy and Green Economy Act, 2009* (the "GEA"), distributors must consult with embedded and host distributors, upstream transmitters and the OPA in preparing their Plans. For both Basic and Detailed Plans, distributors are required to submit as part of the Plan, a letter of comment from the OPA.

The OPA will review distributors' Basic Plans to ensure consistency with regard to FIT and microFIT applications received, as well as with integrated Plans for the region or the system as a whole.

Hydro Ottawa Limited Basic Green Energy Act Plan

On May 25, 2011, the OPA received a Basic GEA Plan from Hydro Ottawa Limited ("HOL"). The OPA has reviewed HOL's Plan and has provided its comments below.

OPA FIT/microFIT Applications Received

HOL's Plan identifies 78 capacity allocation exempt FIT contracts and 14 capacity allocation required FIT applications, for a total capacity of 99.7 MW as shown in Section 3.3 with details outlined in Appendix A.

The OPA finds that the information provided in HOL's Plan is generally consistent with the FIT applications received by the OPA up to June 4, 2010. However, some existing FIT contract holders have completed contract capacity amendments with the OPA, resulting in slightly different total nameplate capacity compared to the capacity number outlined in Section 3.3 of HOL's Plan, which is reflected in Table 1 below.

On May 26, 2011, the OPA began offering contracts to 839 capacity allocation exempt FIT projects, representing more than 140 MW of capacity. Contracts will be offered over the coming weeks. These contract offers are the third phase of capacity allocation exempt projects and are for applications submitted between June 5 and December 7, 2010. Sixty-five of these projects are proposed to connect to HOL's system, representing around 7.2 MW of capacity. The OPA also notes that in HOL's territory to date, there are approximately 600 microFIT projects representing approximately 5 MW of capacity, of which 86 have executed contracts.

Table 1 summarizes the breakdown of the OPA's most recent information on FIT and microFIT contracts and applications in HOL's territory:

Table 1

Category		Total Count	Total Contract Capacity/Nameplate Capacity	
	Active Phase 1 & 2 CAE Contracts	78	12,184 kW	
FIT^1	Phase 3 CAE Projects	65	7,204 kW	
	CAR Applications awaiting ECT	14	87,500 kW	
microFIT ²	Total Applications Received	618	5,003 kW	

¹ The FIT numbers represent applications received by the OPA as of December 8, 2010.

² The microFIT numbers represent total applications received by the OPA as of June 7, 2011, including executed contracts and conditional offers.

Upstream Transmission Constraints

HOL's Plan correctly identifies transmission limitations at both Lisgar TS and Hawthorne TS. Network short circuit limitations at Hawthorne TS have a widespread impact that has limited the connection of non-CAE FIT generation in the entire Ottawa area. The issue at Lisgar TS is localized and only affects FIT applications applying to connect to that station. It is the OPA's understanding that the problem at Lisgar TS is a thermal rather than short circuit limitation.

HOL's Plan also assumes that, except for the capacity allocation exempt contracts, no additional distributed generation shall be connected in HOL's service area until the limitation at Hawthorne TS is resolved, which is expected to occur in 2014. The OPA agrees with this assumption for the large FIT generation projects, but notes that additional microFIT projects to those already connected may also proceed.

HOL's Plan also references resolving the constraint at Lisgar TS. The OPA is not aware of any plans to resolve the limitations at Lisgar TS.

Economic Connection Test Results

There has been no Economic Connection Test performed to date.

Opportunities for Integrated Solutions

The OPA is currently leading a joint regional study for the Ottawa area with the LDCs, Hydro One and the IESO. The study will identify needs and solutions for this area. At this time, no transmission expansions have yet been identified for the area.

Conclusion

The OPA finds that HOL's GEA Plan as filed is generally consistent with the OPA's information regarding renewable energy generation connections over the period of the Plan. However, HOL may also wish to consider the FIT Phase 3 capacity allocation exempt contract offers and activities surrounding the microFIT Program.

The OPA appreciates the opportunity to comment on HOL's Basic GEA Plan.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

1	2.	RATE BASE		
2				
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?			
4				
5	<u>Bo</u>	ard Staff Question #18 - Ref: Filing Requirements EB-2009-0397, Part V; Ref: Exh		
6	<u>B1</u>	-2-2, Attachment P, p15		
7	Hy	dro Ottawa has provided the factors it will use to prioritize expenditures.		
8	a)	Please summarize how the prioritization factors are applied e.g. are projects that		
9		satisfy all factors considered higher priority than those that satisfy only one criterion?		
10		Or does satisfying one criterion make a project a "priority project"? Please provide a		
11		more complete description of the prioritization methodology.		
12	b)	Please indicate how the prioritization is applied to the projects identified for		
13		implementation in the coming 5 years.		
14	c)	Please indicate the practical consequences of a project being determined as a low		
15		priority.		
16				
17	Re	sponse		
18				
19	a)	Projects that align with all of the factors receive a higher priority than a project that		
20		only aligns with one factor. Typically, as the FIT project gets approved, the related		
21		project will move forward.		
22				
23	b)	The projects identified for 2011 and 2012 are shown in Appendix A of Attachment P.		
24		Each of the projects will be prioritized based on FIT application dates and projects		
25		that are moving forward with implementation.		
26				
27	c)	Theoretically, projects deemed to be low priority could see a practical consequence		
28		of delaying FIT connections to the distribution system. However, this consequence		
29		is mitigated through the FIT connection process which sets the timelines for various		
30		stages of connection.		
31				



1

2 3

4

5 6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22 23

24 25

26

27

28

29

Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #3 Filed: 2011-09-08 Page 1 of 2

2. RATE BASE Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate? Board Staff Question #19 - Ref: Exh B1-2-2, Attachment P, p13; Ref: Report of the Board EB-2009-0349, p15-16 Hydro Ottawa has determined that the Direct Benefit for System Expansion is 18%, and is 14% for Renewable Enabling Improvements ("REI"). The Board Report indicates that, "the Board is of the view that the percentages that are ultimately approved for Hydro One Distribution in relation to Expansion and REI investments should provide a reasonable estimate for other distributors until more distributors complete detailed benefit assessment and a rolling weighted average can be used, particularly given the limited amount of eligible investments expected in Basic GEA plans." a) Hydro Ottawa states that it does not meet the threshold for filing a Detailed GEA Plan and has filed a Basic GEA Plan. Please explain how Hydro Ottawa's determination of benefits is consistent with the Board Report, and the percentages indicated in the Board Report at footnote #9. b) If Hydro Ottawa wishes to proceed with its own determination of direct benefit, please provide a more detailed explanation of the derivation of these numbers, with reference to the guiding criteria for a Detailed GEA Plan as called for in section 3.2.2.4 of the Board Report. Response a) The calculation of the direct benefits for customers of the anticipated demand capital investments shown in Exhibit B1-2-2 Attachment P was intended to be 'illustrative'. There is no request within this application that these percentages be used in determining the amount to be recovered from provincial ratepayers.

- 30 b) At this time Hydro Ottawa Limited ("Hydro Ottawa") does not wish to proceed with its
- 31 own detailed determination of direct benefits. The determination of what



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #3 Filed: 2011-09-08 Page 2 of 2

- 1 percentages to use for calculating the contribution from the provincial pool will occur
- 2 at the time Hydro Ottawa makes such an application.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #4 Filed: 2011-09-08 Page 1 of 2

1	2. RATE BASE		
2			
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?		
4			
5	<u>Re</u>	f: Exh B1-2-2, Attachment P, Appendix A (BS #20)	
6	Wi	th respect to project costs:	
7	a)	Please confirm that Hydro Ottawa is seeking approval for project costs for the 2012	
8		test year, with the expectation of a prudence review of actual costs at the time of	
9		disposal of the deferral accounts in the future.	
10	b)	Most projects on p22-23 have been tagged with a \$50,000 per project for "HOL cost"	
11		in the second last column of the table. Please indicate how this amount was arrived	
12		at, and what it represents.	
13	c)	The information on p24 does not indicate an "Expected Online Date". Please provide	
14		this information.	
15	d)	On p24, the first five rows appear to represent one project in which a hydroelectric	
16		generator is connected to 3 transformer stations. Is this the case? If this is not the	
17		case, please clarify the configuration.	
18	e)	In calculating the "HOL Cost" for the hydroelectric station project, it appears that the	
19		REI amount of \$275,000 has been allocated only to the first Slater TS project. Please	
20		indicate why this is the case.	
21	f)	Please indicate the voltage level for each of the projects.	
22			
23	Re	sponse	
24			
25	a)	Hydro Ottawa Limited ("Hydro Ottawa") is seeking approval for project costs for the	
26		2012 test year, with the expectation of a prudence review of actual costs at the time	
27		of disposal of the deferral accounts in the future.	
28			
29	b)	The \$50,000 expenditure shown in the second last column is based on a level C	
30		estimate of SCADA, RTU construction and connection, as well as relay protection	
31		replacements at the corresponding substation. The costs will be recovered through	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #4 Filed: 2011-09-08 Page 2 of 2

1		Renewable Enabling Improvements, and may not be required for smaller projects,
2		but will be an up-front cost carried by Hydro Ottawa and not passed onto embedded
3		generation facilities.
4		
5	c)	All projects on p24 are currently sitting in the Ontario Power Authority's Economic
6		Connection Test (ECT). It is currently unknown when the ECT will be conducted,
7		and therefore an expected online date is unknown. If projects of this magnitude are
8		successful through the ECT process, it is expected they would come online 2-3 years
9		from ECT completion.
10		
11	d)	The first five rows of the table located on p24 represents one project with a total of
12		28,000kW connected to three different substations.
13		
14	e)	The \$275K is the total Renewable Enabling Improvement (REI) for all five generators
15		combined. The expenditure has been shown on line 1 of the table on p24 rather
16		than dividing between the first 5 lines of the table on p24 as it is one project.
17		
18	f)	Please see the table below for the voltages at each of the large generators.
19		

Transformer Station	Distribution Station	Voltage (kV)
Slater TS		13.2
Hinchey TH		13.2
Slater TS		13.2
Slater TS		13.2
Lisgar TL		13.2
	Limebank MTS	27.6
Hawthorne TS	Leitrim MS	27.6
Hawthorne TS	Leitrim MS	27.6
	Limebank MTS	27.6
South March TS		44
	Fallowfield DS	27.6
South March TS		44
South March TS		44

20



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #5 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2	
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4	
5	Board Staff Question #21 - Ref: Exh B1-2-2, Attachment P; Ref: Hydro Ottawa EB-2010-
6	<u>0133, Exh B1-2-3</u>
7	In the current application, no Smart Grid related expenditures have been assigned to
8	2011 or 2012. All Smart Grid related activities are in the future. In the GEA Plan Hydro
9	Ottawa filed in 2010, capital expenditures were assigned to, among others, a Public
10	Charging Stations for Electric Vehicles project for year 2011.
11	
12	Please provide a summary of activities and projects related to Smart Grid that have
13	already been initiated. Please confirm whether or not the costs associated with these
14	activities are included in rate base and revenue requirement for 2012.
15	
16	Response
17	
18	There are currently no projects that have been initiated related to Smart Grid, thus there
19	are no related expenditures.

20



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #6 Filed: 2011-09-08 Page 1 of 2

2		
3	lss	ue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4		
5	<u>Bo</u>	ard Staff Question #22 - Ref: Exh B1-2-2, Attachment P, p12
6	٥N	A labour costs include 3 positions for 2011 and 4 positions for 2012, for staff that
7	wil	be dedicated to GEA Plan related work.
8	a)	Please clarify the basis for a \$300,000 OM&A cost for 2011. How many FTE's are
9		associated with this expense?
10	b)	Please provide a breakdown of the FTE's by employee group (management, union,
11		etc.) associated with the staff dedicated to GEA Plan related work.
12	c)	Please confirm that 2 existing staff have been re-assigned and are currently working
13		on GEA Plan matters. Please indicate their prior assignment within Hydro Ottawa in
14		2010, and how these prior assignments are being addressed.
15	d)	Please describe the functions that the 2 current staff are performing with regards to
16		GEA Plan implementation.
17		
18	Re	sponse
19		
20	a)	Three FTE's are associated with the 2011 OM&A cost for 2011.
21		
22	b)	1 FTE – Non Union – New position 2010 – New employee
23		1 FTE – Management Group – New position 2010 – New employee
24		1FTE – Union – New position 2011 – New employee
25		
26	c)	Each of the FTE's are new employees.
27		
28	d)	1 FTE is currently administering the FIT program, as well as managing the individual
29		project implementations as they relate to the Green Energy Act Plan, this position
30		was created in 2010. The second FTE is currently the Supervisor Renewable
31		Energy, a position created in 2010 to mange the customer facing requirements and



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #6 Filed: 2011-09-08 Page 2 of 2

1	processes related to the implementation of the MicroFIT program as it relates to the
2	GEA Plan.
3	
4	The Third FTE is a new position in 2011, Green Energy Settlement Analyst,

5 managing the individual issues around fit and microfit energy settlement.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #7 Filed: 2011-09-08 Page 1 of 3

1 2. RATE BASE

2		
3	lss	ue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4		
5	En	ergy Probe Question #23 - Ref: Exhibit B1, Tab 2, Sch. 2
6	a)	Has Hydro Ottawa received letters of comment from the OPA or Hydro One as of the
7		current date? If yes, please file these letters. If no, please file these letters when
8		they are received.
9	b)	The evidence indicates that Hydro Ottawa is only requesting approval of the 2012
10		expenditures in this proceeding and that it plans to review its plans for 2013 through
11		2016 prior to further applications. Please specify what applications Hydro Ottawa is
12		referring to.
13	c)	Please provide the forecast capital expenditures and OM&A expenses for the 2012
14		test year.
15	d)	Are the capital expenditures included in the 2012 rate base?
16	e)	Are the OM&A expenses included in the 2012 revenue requirement?
17		
18	Re	sponse
19		
20	a)	Hydro Ottawa Limited ("Hydro Ottawa") has received letters from both Hydro One
21		and OPA (please refer to Exhibit K2-5-1 Attachment 1 and 2).
22		
23	b)	Hydro Ottawa is referring to future cost of service applications or possible IRM

24 applications with a capital adjustment module if warranted.

Budget Program	2012
GEA – Stations Enhancements (CAPEX)	\$1,610
GEA – Distribution Automation (CAPEX)	\$719
GEA – Stations Automation (CAPEX)	\$259
TOTAL CAPEX	\$2,588
Renewable Energy Improvements (OM&A)	\$319
TOTAL GEA	\$2,907



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #7 Filed: 2011-09-08 Page 2 of 3

1 c) Yes, the capital expenditures for 2012 are included in the rate base. The 2012 2 projects are included in the Budget Programs as described in Exhibit B5, Tab 4 3 schedule 1. Projects include the following; 4 5 Primary Fuse to Remote Breaker Protections at Blackburn and Startop 6 This project involves changing out the existing primary fuse protections, to new 7 remotely operable high voltage breakers. In addition to the improved protection of 8 the station transformer, these projects will contribute to the East End 44kV project. 9 10 **East End 44kV** - This project includes the plan to modernize and deploy automatic 11 restoration on the 44kV loop in the east end which is created by the 48M3, 48M4, 12 and 48M5. These sub transmission circuits supply power to roughly 3% of Hydro 13 Ottawa's Customer base. This project includes the installation of station and 14 distribution circuit breakers as well as some minor system reconfiguration, and 15 station reconfiguration. 16 17 This scheme will enable restoration of most customers without operator intervention 18 and will eliminate the need to dispatch crews. This scheme will improve supply 19 reliability by eliminating sustained customer interruptions at the existing 44/8kv 20 stations for most sub transmission interruptions on the 44kV system. 21 22 **West 44kV** - The 44kV system in the west of the city is radial with predominately 23 manually operated switches, many of which are non-load break. In 2012 and beyond, 24 deployment of remotely operable devices on this part of the system is planned to 25 improve operability and reliability. 26 27 In 2012 and 2013, three devices are planned to be installed on the A9M3 and A9M1 28 to further improve operability of the system 29



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #7 Filed: 2011-09-08 Page 3 of 3

- 1 d) In 2011 costs for the Green Energy Act ("GEA") were captured in a deferral account.
- 2 As of 2012, these costs are forecast as part of Community Relations expenses and
- 3 are budgeted at \$320k.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #8 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4	
5	CCC Question #19 - Ref: Ex. B1/T2/S2/p. 1
6	Please explain why Hydro Ottawa is only seeking approval of it 2012 Green Energy Plan
7	expenditures.
8	
9	Response
10	
11	Please see Exhibit B1 Tab 2 Schedule 2. (Copy of relevant portion below)
12	
13	"Hydro Ottawa's Green Energy Act Basic Plan includes capital and operating
14	expenditures for the period 2012 through 2016; however, in this rate application Hydro
15	Ottawa is only seeking approval for 2012 expenditures. With the evolving market and
16	knowledge base in green energy and smart grid, Hydro Ottawa plans to review its plans
17	for 2013 through 2016 prior to further applications."
18	
19	For projects past 2012, Hydro Ottawa Limited plans to make use of future cost of service
20	applications or possible IRM applications with a capital adjustment module if warranted
21	



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #9 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2

3 Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?

- 4
- 5 CCC Question #20 Ref: Ex. B1/T2/S2/Attachment P
- 6 Please provide one schedule setting out Hydro Ottawa's Green Energy Plan budget
- 7 (OM&A and Capital) for the years 2012-2016. Please specify the exact amounts for
- 8 2012 that Hydro Ottawa is seeking approval for.
- 9

10 **Response**

11

Budget Program	2012
GEA – Stations Enhancements (CAPEX)	\$1,610
GEA – Distribution Automation (CAPEX)	\$719
GEA – Stations Automation (CAPEX)	\$259
TOTAL CAPEX	\$2,588
Renewable Energy Improvements (OM&A)	\$319
TOTAL GEA	\$2,907

12

- 13 Each of the CAPEX budgets are included in the total CAPEX programs listed above, and
- 14 described in Exhibit B5, Tab 4 schedule 1.

15

- 16 Please see Exhibit K2-5-7 (Energy Probe Question 23)
- 17

.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #10 Filed: 2011-09-08 Page 1 of 2

1 2. RATE BASE

2	
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4	
5	CCC Question #21 - Ref: Ex. B1/T2/S2/Attachment P
6	Has Hydro Ottawa's Green Energy Plan changed since it was last filed as a part of the
7	2011 Application? If so, what specifically has changed?
8	
9	Response
10	
11	The majority of Hydro Ottawa Limited's ("Hydro Ottawa") Green Energy Act Plan (GEAP)
12	filed with the 2012 Application has remained consistent with that filed as part of the 2011
13	Application.
14	
15	One of the major differences is in the number of connection applications that have been
16	seen to date. The table below outlines the numbers reported in the 2011 and 2012

- 17 Applications.
- 18

Category	2011 Application Total Nameplate Capacity	2012 Application Total Nameplate Capacity
Capacity Allocation Exempt – With OPA Contract	5,650 kW	12,201 kW
Capacity Allocation Exempt – Without OPA Contract	996 kW	5,132 kW
Projects > 500 kW	58,000 kW	87,500 kW

19

- 20 For the 2012 Application, the short circuit limitations at both Hawthorne TS and Lisgar
- 21 TS had been identified and as a result the larger FIT Projects have not passed the
- 22 Transmission Availability Test (TAT) evaluation and have been placed into the Economic
- 23 Connection Test (ECT) process. For the 2011 Application the larger FIT Projects were
- 24 awaiting the TAT evaluation.
- 25
- 26 The number of new staff positions has changed from four additional roles in Asset
- 27 Planning and Conservation Demand Management, in the 2011 Application to two new



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #10 Filed: 2011-09-08 Page 2 of 2

- 1 roles, a Green Energy Settlement Analyst and a Green Energy Engineer, in the 2012
- 2 Application.
- 3
- 4 In the 2011 Application, no 2011 costs were being claimed for recovery from the
- 5 Provincial Rate Base. In the 2012 Application, HOL adopted the methodology used by
- 6 Hydro One Distribution to calculate the Direct Benefits, as per section 3.2.2.3 of EB-
- 7 2009-0349, moving forward.
- 8
- 9 Projects identified in the 2011 Application did not go ahead, they included the following;
- 10 System expansion 44kV Goulbourn
- 11 Protective Relay Upgrades
- 12 Communication Infrastructure
- 13 Electric thermal storage
- 14 Thermal Storage Ice Systems
- 15 Public Charging Stations for Electric Vehicles
- 16



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #11 Filed: 2011-09-08 Page 1 of 2

1 2. RATE BASE

2

3 Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?

4

5 VECC Question #21 - Ref: Exhibit B1-2-2, Attachment P

- 6 a) What is the total OM&A costs related to the Green Energy Plan in 2010, 2011 and
- 7 2012. Please break down the costs by labour and other OM&A.
- 8 b) Is Appendix A of Attachment P a complete list of the Green Energy Plan related
- 9 projects for 2011 and 2012? If not please provide that list.
- 10 c) Of the projects listed in Appendix A, or the complete list of projects (see question b)
- 11 please identify those projects which would be included in Ottawa's spending plans
- 12 irrespective of the need to connect generation.
- 13

14 **Response**

- 15
- 16 a)

Budget Program	Cost Type	2010 Actual \$000	2011 Budget \$000	2012 Budget \$000
Renewable Energy Improvements	Labour and Benefits	\$111	\$210	\$256
Renewable Energy Improvements	Other OM&A	87	62	63
TOTAL		\$198	\$272	\$319

17

18 b) Projects included in the CAPEX budget for 2012 are the following;

19 Primary Fuse to Remote Breaker Protections at Blackburn and Startop

- 20 This project involves changing out the existing primary fuse protections, to new
- 21 remotely operable high voltage breakers. In addition to the improved protection of
- 22 the station transformer, these projects will contribute to the East End 44kV project.
- 23
- 24 East End 44kV This project includes the plan to modernize and deploy automatic
- restoration on the 44kV loop in the east end which is created by the 48M3, 48M4,



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #11 Filed: 2011-09-08 Page 2 of 2

1		and 48M5. This project includes the installation of station and distribution circuit
2		breakers as well as some minor system reconfiguration, and station reconfiguration.
3		
4		This scheme will enable restoration of most customers without operator intervention
5		and will eliminate the need to dispatch crews. This scheme will improve supply
6		reliability by eliminating sustained customer interruptions at the existing $44/8kv$
7		stations for most sub transmission interruptions on the 44kV system.
8		
9		West 44kV - The 44kV system in the west of the city is radial with predominately
10		manually operated switches, many of which are non-load break. In 2012 and beyond,
11		deployment of remotely operable devices on this part of the system is planned to
12		improve operability and reliability.
13		
14		In 2012 and 2013, three devices are planned to be installed on the A9M3 and A9M1
15		to further improve operability of the system
16		
17	c)	Projects in Appendix A represent those related to connecting generation. Projects
18		listed in answer "b" are those which are included in the CAPEX program.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #12 Filed: 2011-09-08 Page 1 of 2

2	
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4	
5	VECC Question #22 - Ref: Exhibit B6, Tab, Schedule 1 & 2 Asset Management
6	Plan/Green Energy Act Plan
7	a) Do either the Green Energy Plan or the 2011 Asset Management Plan contain
8	programs specifically aimed at reducing line loss?
9	b) If not, why not?
10	
11	Response
12	
13	Much of the work aimed to reduce system losses is integrated into other work, and as
14	such is not explicitly in the Asset Management Plan. A summary of initiatives aimed to
15	reduce line loss can be found in Exh H4-3-1. A brief summary of those initiatives as they
16	are relevant to the 2011 Asset Management Plan are listed below:
17	
18	Conservation Voltage Reduction – Hydro Ottawa Limited ("Hydro Ottawa") has a pilot
19	conservation voltage reduction system installed at the Centerpointe TS. However, the
20	system introduced complexities in the operation of the distribution system and was
21	determined to be uneconomical for large scale deployment. At this time Hydro Ottawa
22	plans to investigate and pilot alternative means of reducing distribution voltage, while
23	maintaining flexibility in system operations. Pilot projects are currently planned to be
24	deployed in 2015, and beyond.
25	
26	Voltage Conversion – Hydro Ottawa has and continues to deploy system voltage
27	conversions where it is a sound investment. The Kilborn Voltage which is scheduled to
28	be completed in 2012 is an example of such a project Voltage conversions reduce
29	system losses, by way of increased distribution voltage from either 4 kV to 13.2 kV or 8 $$
30	kV to 27.6 kV. The increase in the distribution voltage level decreases the current level
31	and correspondingly reduces associated line loss (I 2 R). Through voltage conversion, the



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #12 Filed: 2011-09-08 Page 2 of 2

1	line losses in these areas can be reduced by up to 90%. Similarly, both the no-load and
2	load losses associated with distribution transformers can be reduced substantially. Plus,
3	the new distribution transformers installed are considerably more efficient (lower loss by
4	design) than the units that were installed 30+ years ago. And there are further system
5	loss savings with the removal of 13.2 /4 kV station power transformers from the system.
6	
7	Transformer Removal – as pole and distribution transformer replacements are
8	undertaken, Hydro Ottawa ensures that excess transformation is removed. This
9	increases the utilization of transformation capacity on the remaining transformer(s)
10	reducing the ratio of power delivered to losses.
11	
12	Transformer Replacement – as transformers are replaced this typically results in
13	reduction in losses as today's transformers are considerably more efficient than the units
14	that were installed 30+ years ago.
15	

16



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #13 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
EnviroCentre Question #4 - Ref: Filing Requirements EB-2009-0397, Part IV
and Exh B1-2-2, Attachment P, p15
The GEA Plan Filing Requirements outline the need for consultations.
Please advise who has been consulted regarding Hydro Ottawa's Green Energy Act
Plan.
Response
Hydro One Holding Inc. ("Hydro One") and the Ontario Power Authority ("OPA") have
been consulted regarding Hydro Ottawa Limited's Green Energy Act Plan. Please refer
to Exhibit K2-5-1 (Board Staff #17) Attachment 1 and Attachment 2 for the letters from

17 Hydro One and the OPA.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #14 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4	
5	(EnviroCentre Question 5) Ref: Filing Requirements EB-2009-0397, Part IV
6	and Exh B1-2-2, Attachment P, p15
7	The Basic GEA Plan submitted by Hydro Ottawa shows no increase in Distributed
8	Generation capacity for the three years (2012-2014) covered by this application.
9	
10	Had the system limitations been dealt with earlier, please confirm that the lost
11	opportunity for increased distributed generation capacity by the end of 2014 would be
12	about 15 MW if the 2011-2012 trend continued, or about 35 MW if the long-term
13	projection were met gradually during the years covered by this application.
14	
15	Response
16	
17	Based on the information provided, the basis for the 15MW and 35MW numbers is
18	unclear. Exhibit B1-2-2 Attachment P (Green Energy Act Basic Plan), page 10,
19	describes limitations to connection of potential embedded generation. However, there
20	may be multiple factors involved in determining the ability to connect embedded
21	generation.



Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #15 Filed: 2011-09-08 Page 1 of 1

2	
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?
4	
5	EnviroCentre Question #6 - Ref: Filing Requirements EB-2009-0397, Part IV
6	and Exh B1-2-2, Attachment P, p15
7	The Basic GEA Plan submitted by Hydro Ottawa shows no increase in Distributed
8	Generation capacity for the three years (2012-2014) covered by this application.
9	
10	Please estimate by how much capacity Hydro Ottawa could exceed its CDM targets if it
11	filed a successful application for an aggressive CDM plan that would complement the
12	OPA programs it is obliged to deliver.
13	
14	Response
15	
16	Hydro Ottawa Limited ("Hydro Ottawa") is not prepared to speculate on the extent it
17	could exceed its Conservation and Demand Management ("CDM") targets if it filed a
18	successful application for an aggressive CDM plan that would complement the Ontario
19	Power Authority ("OPA") programs it is obliged to deliver. As stated in our CDM
20	Strategy, filed with the Ontario Energy Board, see Exhibit K1-1-7 (CCC #5) Attachment
21	1, Hydro Ottawa believes it can achieve its targets with the current OPA programs. Any
22	possible savings beyond the targets would depend on what new programs could be
23	developed, the target market(s) chosen, the value of the measures and the success in
24	the market place. Hydro Ottawa already believes that its current targets are 'aggressive'
25	and extensive effort will be required to deliver the current plan.


Hydro Ottawa Limited EB-2011-0054 Exhibit K2 Issue 2.5 Interrogatory #16 Filed: 2011-09-08 Page 1 of 1

1 2. RATE BASE

2								
3	Issue 2.5 - Is Hydro Ottawa's Green Energy Act Plan appropriate?							
4								
5	EnviroCentre Question #7 - Ref: Filing Requirements EB-2009-0397, Part IV							
6	and Exh B1-2-2, Attachment P, p15							
7	The Basic GEA Plan submitted by Hydro Ottawa shows no increase in Distributed							
8	Generation capacity for the three years (2012-2014) covered by this application.							
9								
10	Please advise if Hydro Ottawa has considered including a Chief Conservation Officer as							
11	part of its senior management team.							
12								
13	Response							
14								
15	As part of its senior management team, Hydro Ottawa Holding Company has a Chief							
16	Energy Management Officer, whose mandate is similar to a Chief Conservation Officer.							
17	The Chief Energy Management Officer is accountable for the delivery of environmentally							
18	responsible conservation and demand management programs for residential,							
19	commercial and industrial customers. Accountabilities also include the delivery of a full							
20	range of expert energy management services for the commercial sector.							



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

1	3. I	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	ue 3.1 - Is the load forecast methodology including weather normalization
4	apj	propriate?
5		
6	Boa	ard Staff Question #23 - Ref: Exh C1-1-1
7	On	p2-3 of the exhibit, Hydro Ottawa provides a description of the modeling process and
8	we	ather normalization.
9	a)	Please explain why Hydro Ottawa used a weather data period from 1952 to 2010
10		instead of using the same period as system load data, which is 1997 to 2010.
11	b)	In Table 1, Hydro Ottawa provides a comparison of the forecast, actual and weather
12		normalized system MWhs. Please describe how the load was weather normalized.
13		
14	Re	sponse
15		
16	a)	While the weather data from 1952 to 2010 has been collected and was available to
17		use in the respective models, the individual models only utilize the weather data
18		relevant to the available system data.
19		
20	b)	The weather normalized data is the actual purchases corrected with a weather
21		adjustment factor. This adjustment factor is calculated as the difference between the
22		model output when calculated using the weather normal, and the actual weather
23		data. As Table 1 provides a summary of previously forecasted data, the weather
24		normalization in each year reflects the appropriate coefficients for that year's model.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.1 - Is the load forecast methodology including weather normalization
4	appropriate?
5	
6	Board Staff Question #24 - Ref: Exh C1-1-1
7	On p5 of the exhibit, it states, "Note that all the model specifications are included in
8	Attachment W." However, Attachment W is the 2011 Distribution System Asset
9	Management Plan. Please provide the correct reference for the model specifications.
10	
11	Response
12	
13	Exhibit C1-1-1 page 5 should have read "Note that all the model specifications are
14	included in Attachment \underline{X} ", not Attachment W. Hydro Ottawa Limited apologizes for the
15	confusion. Attachment X was included in the original evidence as an attachment to C1-
16	1-1.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

1	3.	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	ue 3.1 - Is the load forecast methodology including weather normalization
4	ар	propriate?
5		
6	<u>Bo</u>	ard Staff Question #25 - Ref: Exh C1-1-1
7	On	p7, Table 6 indicates that the CDM adjusted Load Forecast for 2011 and 2012 are
8	7,8	97 GWh and 7,865 GWh respectively.
9		
10	On	p11, Table 8 provides the Forecast Sales by Class for 2011 and 2012, which are
11	7,6	18 GWh and 7,587 GWh respectively.
12	a)	Please explain the difference between the forecast mentioned above for 2011 and
13		2012.
14	b)	Please explain the difference in the historic annual actual load (2005 – 2010)
15		between Table 3 and 8.
16		
17	Re	sponse
18		
19	a)	The 7,897 GWh and 7,865 GWh forecasts shown in Exhibit C1-1-1 Table 6 represent
20		system energy or purchases. The 7,618 GWh and 7,587 GWh forecasts shown in
21		Table 8 represent sales, i.e at the customers' meters. Therefore Table 8 does not
22		include distribution losses. In addition, Table 8 includes the adjustment for suite
23		metering, as explained in Section 5.0 of the Exhibit.
24		
25	b)	As explained in part a) Table 3 shows annual actual purchases and Table 8 shows

26 annual actual sales. The difference represents distribution losses.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.1 - Is the load forecast methodology including weather normalization
4	appropriate?
5	
6	Board Staff Question #26 - Ref: Exh C1-1-1
7	On p9, it states, "The class sales forecast process consisted of three sequential steps.
8	First, sales forecast models for each class were created that capture the relationship
9	between class sales and a number of explanatory variables. Second, the billed-month
10	forecast was converted to a calendar-month basis by simulating the models with
11	calendar-month weather variables. In the final step, the calendar-month class sales
12	forecasts were calibrated to the system energy forecast to produce the final class level
13	sales forecast."
14	
15	Please provide detailed explanation/description of these three steps, specifically how the
16	billed-month forecast was converted to a calendar-month and how the calendar-month
17	class sales forecasts were calibrated to the system energy forecast.
18	
19	Response
20	
21	The billed-month sales forecast model is first generated using explanatory variables
22	(Gross Domestic Product, Real Personal Income, Heating Degree Days etc.) which have
23	been time lagged by either 1 or 2 months as appropriate, to correspond with the billed
24	month energy. Subsequently the forecast model is run with the corresponding un-lagged
25	explanatory variables, converting the forecast from a billed-month to a calendar-month.
26	In the final step, the total sales factors are calibrated to ensure that the resulting forecast
27	is consistent with the system energy forecast, adjusted by the system loss factor.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Filed: 2011-09-08 Page 1 of 2

1	3. LOAD FORECAST AND OPERATING REVENUE							
2								
3	Issue 3.1 - Is the load forecast methodology including weather normalization							
4	appropriate?							
5								
6	Board Staff Question #28 - Ref: Exh C1-1-1							
7	On p10, it states:							
8	Customer class sales models are structured similarly to one another and contain							
9	variables that combine weather and economics to drive the forecast. In addition,							
10	the models employ binary variables to mark off anomalous observations, capture							
11	any non-weather-related seasonality, and to account for systematic, unexplained							
12	shifts in the data.							
13								
14	The forecast models sales reasonably well, given the noise in the data, with an							
15	adjusted R ² ranging between 0.718 and 0.961 for all classes except Unmetered							
16	Scattered Load. Table 8 provides the actual and forecasted Sales in MWh by							
17	Class including the CDM adjustment.							
18								
19	Please provide the details (including the value of the input variables) to illustrate how the							
20	forecasted Sales for 2011 and 2012 are derived from each customer class sales model.							
21								
22	Response							
23								
24	Please refer to the tables provided in Attachment 1 to Exhibit K3-1-11 (VECC #27a) for a							
25	definition of each explanatory variable used in the models. Attachment 1 to this							
26	interrogatory includes Sales variable tables for Demand metered customers and input							
27	variables.							
28								
29	All the class sales models are driven by one or more variables which are the							
30	combination (product) of weather and economic variables.							
31								



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Filed: 2011-09-08 Page 2 of 2

Residential Sales forecast is driven by two variables which represent the combination of Real Personal Income and Cooling Degree Days (calculated on a 18°C break point) and Heating Degree Days (calculated on a 18°C break point). This explanatory variable is lagged by both one and two months to account for billed-month vs. calendar month effects on sales in this model, resulting in a total of four primary driven variables for this forecast.

7

GS <50kW, GS >50 <1000kW non-interval and GS >1500 <5000kW forecasts are
driven by two variables which combine Gross Domestic Product and Cooling Degree
Days (calculated on a 17°C break point) and Heating Degree Days (calculated on a
18°C break point). These variables are lagged by one month to coincide with the correct
billed-month data.

13

14 GS >50 <1000kw interval forecasts are driven by two variables which combine Gross 15 Domestic Product and Cooling Degree Days (calculated on a 17°C break point) and 16 Heating Degree Days (calculated on a 18°C break point); both variables are lagged by 17 one month to coincide with the billed month data. In addition this forecast is driven by 18 two additional variables, which take into account calendar year variations (number of 19 days per month) and Gross Domestic Product, both lagged by one and two months. 20 GS >1500 <5000kw forecasts are driven by two variables which combine Gross 21 Domestic Product and Cooling Degree Days (calculated on a 17°C break point) and 22 Heating Degree Days (calculated on a 18°C break point). In addition this forecast is 23 driven by a variable which takes into account calendar year variations (number of days 24 per month) and Gross Domestic Product. All variables are lagged by one month to 25 coordinate with the Billed-Month data. 26 27 Large Use forecasts are driven by a variable which combines Gross Domestic Product 28 and Cooling Degree Days (calculated on a 17°C break point); this data has an 29 associated one month lag. In addition this forecast is driven by a variable which takes

30 into account calendar year variations (number of days per month) and Gross Domestic

31 Product.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 1 of 28

Year	Month	Res_MWh	RPI_LagHDD18	RPI_Lag2HDD18	RPI_LagCDD18	RPI_Lag2CDD1	Spr08	07-Dec	06-Dec	09-Jun	03-Mar	04-Mar	03-Aug	03-Sep
2003	1	229,838.99	26,928,257.61	19,798,532.05	0	0	0	0	0	0	0	0	0	0
2003	2	192,465.02	35,834,233.01	26,794,101.28	0	0	0	0	0	0	0	0	0	0
2003	3	283,305.83	30,831,473.42	35,925,394.82	0	0	0	0	0	0	1	0	0	0
2003	4	157,382.11	24,948,849.61	30,909,998.82	0	0	0	0	0	0	0	0	0	0
2003	5	189,973.86	15,855,688.06	25,012,466.02	0	0	0	0	0	0	0	0	0	0
2003	6	177,047.24	5,903,035.70	15,825,336.16	66,416.00	0	0	0	0	0	0	0	0	0
2003	7	151,657.27	1,348,457.10	5,891,780.38	2,132,203.82	66,289.37	0	0	0	0	0	0	0	0
2003	8	145,763.29	127,333.48	1,345,896.12	3,114,676.71	2,128,154.36	0	0	0	0	0	0	1	0
2003	9	215,543.37	469,106.06	127,852.55	3,861,899.19	3,127,373.73	0	0	0	0	0	0	0	1
2003	10	225,862.48	2,293,213.01	471,007.74	737,188.46	3,877,554.66	0	0	0	0	0	0	0	0
2003	11	145,157.02	12,900,208.04	2,302,457.79	0	740,160.33	0	0	0	0	0	0	0	0
2003	12	171,575.89	17,979,079.97	12,940,982.65	0	0	0	0	0	0	0	0	0	0
2004	1	219,887.40	27,087,828.92	18,035,558.08	0	0	0	0	0	0	0	0	0	0
2004	2	219,231.43	39,527,287.16	27,172,399.01	0	0	0	0	0	0	0	0	0	0
2004	3	292,204.91	28,275,068.37	39,595,765.07	0	0	0	0	0	0	0	1	0	0
2004	4	187,841.22	21,345,434.77	28,323,623.84	0	0	0	0	0	0	0	0	0	0
2004	5	183,710.95	14,279,034.82	21,381,770.84	44,394.10	0	0	0	0	0	0	0	0	0
2004	6	174,085.41	5,833,718.77	14,340,051.70	118,782.85	44,583.81	0	0	0	0	0	0	0	0
2004	7	141,338.13	1,947,884.94	5,858,525.41	1,112,707.65	119,287.95	0	0	0	0	0	0	0	0
2004	8	174,504.81	31,003.27	1,956,127.58	3,071,595.90	1,117,416.17	0	0	0	0	0	0	0	0
2004	9	151,509.99	970,181.45	31,002.95	1,715,388.59	3,071,564.94	0	0	0	0	0	0	0	0
2004	10	180,631.60	2,630,679.74	970,171.71	460,170.12	1,715,371.35	0	0	0	0	0	0	0	0
2004	11	174,536.94	11,509,981.06	2,630,653.40	0	460,165.51	0	0	0	0	0	0	0	0
2004	12	167,901.08	19,083,117.96	11,535,863.89	0	0	0	0	0	0	0	0	0	0
2005	1	201,481.16	31,868,382.14	19,125,790.19	0	0	0	0	0	0	0	0	0	0
2005	2	228,958.74	36,018,869.96	31,939,245.66	0	0	0	0	0	0	0	0	0	0
2005	3	239,431.48	27,304,240.52	36,073,975.43	0	0	0	0	0	0	0	0	0	0
2005	4	205,330.27	25,914,841.32	27,345,740.22	0	0	0	0	0	0	0	0	0	0
2005	5	178,238.55	12,564,961.13	25,953,972.55	0	0	0	0	0	0	0	0	0	0
2005	6	165,664.43	7,978,570.09	12,590,435.60	78,953.40	0	0	0	0	0	0	0	0	0
2005	7	163,890.25	593,340.91	7,994,609.53	4,583,064.10	79,112.12	0	0	0	0	0	0	0	0
2005	8	237,120.58	14,532.80	594,523.70	5,112,573.50	4,592,200.12	0	0	0	0	0	0	0	0
2005	9	205,412.49	311,743.14	14,607.77	4,396,939.47	5,138,947.91	0	0	0	0	0	0	0	0
2005	10	179,285.49	2,201,405.74	313,342.43	1,156,430.44	4,419,496.38	0	0	0	0	0	0	0	0
2005	11	180,746.64	10,838,801.92	2,212,636.97	242,997.65	1,162,330.36	0	0	0	0	0	0	0	0
2005	12	152,139.15	19,605,044.55	10,912,383.54	0	244,647.29	0	0	0	0	0	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 2 of 28

2006	1	217,714.05	30,545,713.38	19,736,777.80	0	0	0	0	0	0	0	0	0	0
2006	2	207,088.73	29,621,476.41	30,748,878.83	0	0	0	0	0	0	0	0	0	0
2006	3	238,403.59	29,552,197.46	29,614,978.75	0	0	0	0	0	0	0	0	0	0
2006	4	168,719.40	24,689,047.09	29,545,754.60	0	0	0	0	0	0	0	0	0	0
2006	5	193,028.32	12,872,778.28	24,683,697.27	0	0	0	0	0	0	0	0	0	0
2006	6	167,675.13	5,410,926.80	12,907,595.38	720,279.59	0	0	0	0	0	0	0	0	0
2006	7	163,251.06	1,109,559.56	5,425,564.01	2,221,182.13	722,228.03	0	0	0	0	0	0	0	0
2006	8	217,663.65	9,481.08	1,112,561.52	5,435,588.74	2,227,191.63	0	0	0	0	0	0	0	0
2006	9	188,080.81	791,793.68	9,508.44	2,829,538.69	5,451,274.76	0	0	0	0	0	0	0	0
2006	10	180,721.53	5,044,464.83	794,076.26	131,594.73	2,837,695.68	0	0	0	0	0	0	0	0
2006	11	158,472.90	13,950,611.51	5,058,991.95	0	131,973.70	0	0	0	0	0	0	0	0
2006	12	139,866.54	17,594,777.60	14,018,930.02	0	0	0	0	1	0	0	0	0	0
2007	1	219,564.64	25,444,380.61	17,679,911.64	0	0	0	0	0	0	0	0	0	0
2007	2	200,072.94	33,511,226.89	25,566,033.37	0	0	0	0	0	0	0	0	0	0
2007	3	248,626.49	34,359,838.09	33,501,305.09	0	0	0	0	0	0	0	0	0	0
2007	4	179,926.36	27,045,556.07	34,349,762.13	0	0	0	0	0	0	0	0	0	0
2007	5	203,128.76	15,111,444.17	27,037,700.35	0	0	0	0	0	0	0	0	0	0
2007	6	148,290.64	6,119,847.32	15,195,313.81	792,785.11	0	0	0	0	0	0	0	0	0
2007	7	178,437.56	1,460,850.62	6,153,679.52	3,045,384.33	797,167.84	0	0	0	0	0	0	0	0
2007	8	188,666.64	617,161.72	1,468,895.06	2,844,248.20	3,062,154.31	0	0	0	0	0	0	0	0
2007	9	173,462.22	890,503.63	619,825.08	3,281,077.54	2,856,522.56	0	0	0	0	0	0	0	0
2007	10	193,128.43	3,330,616.66	894,333.92	1,259,622.70	3,295,190.33	0	0	0	0	0	0	0	0
2007	11	165,756.62	9,709,036.99	3,344,895.48	61,354.25	1,265,022.88	0	0	0	0	0	0	0	0
2007	12	133,920.21	22,942,335.97	9,817,954.86	0	62,042.53	0	1	0	0	0	0	0	0
2008	1	202,756.76	34,552,571.82	23,196,699.29	0	0	0	0	0	0	0	0	0	0
2008	2	214,357.45	33,694,019.10	34,931,230.16	0	0	0	0	0	0	0	0	0	0
2008	3	214,740.93	33,878,148.30	33,540,834.86	0	0	1	0	0	0	0	0	0	0
2008	4	203,003.19	31,346,128.70	33,725,503.44	0	0	1	0	0	0	0	0	0	0
2008	5	165,954.81	13,252,742.16	31,206,147.58	0	0	1	0	0	0	0	0	0	0
2008	6	145,446.06	8,092,317.06	13,192,140.64	0	0	1	0	0	0	0	0	0	0
2008	7	162,260.10	1,291,261.22	8,055,525.80	2,393,235.29	0	0	0	0	0	0	0	0	0
2008	8	189,276.60	11,685.67	1,285,424.20	3,482,878.78	2,382,416.90	0	0	0	0	0	0	0	0
2008	9	184,128.29	631,965.45	11,706.45	1,626,465.06	3,489,071.18	0	0	0	0	0	0	0	0
2008	10	173,018.06	4,318,262.84	633,098.45	1,024,501.72	1,629,381.02	0	0	0	0	0	0	0	0
2008	11	184,087.93	13,982,350.91	4,326,069.76	0	1,026,353.90	0	0	0	0	0	0	0	0
2008	12	187,048.47	22,017,123.68	13,979,545.66	0	0	0	0	0	0	0	0	0	0
2009	1	210,605.25	34,584,752.71	22,012,699.47	0	0	0	0	0	0	0	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 3 of 28

2009	2	213,959.88	42,873,020.50	34,577,792.13	0	0	0	0	0	0	0	0	0	0
2009	3	239,482.32	31,066,694.46	43,262,627.37	0	0	0	0	0	0	0	0	0	0
2009	4	203,020.83	26,643,876.50	31,345,154.72	0	0	0	0	0	0	0	0	0	0
2009	5	162,122.27	15,033,557.01	26,879,462.50	117,963.46	0	0	0	0	0	0	0	0	0
2009	6	142,601.66	7,723,929.32	14,879,204.07	162,073.08	116,752.30	0	0	0	1	0	0	0	0
2009	7	162,008.34	2,269,488.35	7,643,834.61	1,828,178.44	160,392.43	0	0	0	0	0	0	0	0
2009	8	177,766.18	678,865.54	2,245,717.15	1,664,197.68	1,809,029.64	0	0	0	0	0	0	0	0
2009	9	184,951.93	1,039,144.67	681,217.06	3,566,447.14	1,669,962.30	0	0	0	0	0	0	0	0
2009	10	181,868.54	4,528,027.74	1,042,722.66	244,221.46	3,578,727.14	0	0	0	0	0	0	0	0
2009	11	188,338.74	15,767,817.38	4,543,525.88	0	245,057.36	0	0	0	0	0	0	0	0
2009	12	189,841.91	18,563,550.35	15,838,583.01	0	0	0	0	0	0	0	0	0	0
2010	1	201,641.19	33,380,235.04	18,646,169.58	0	0	0	0	0	0	0	0	0	0
2010	2	204,157.29	35,158,821.25	33,527,567.44	0	0	0	0	0	0	0	0	0	0
2010	3	227,381.16	29,266,202.56	35,174,259.91	0	0	0	0	0	0	0	0	0	0
2010	4	190,777.53	20,839,104.01	29,278,961.72	0	0	0	0	0	0	0	0	0	0
2010	5	147,744.80	11,531,463.16	20,848,124.41	96,621.39	0	0	0	0	0	0	0	0	0
2010	6	146,546.15	4,812,424.18	11,542,433.33	1,660,807.39	96,713.31	0	0	0	0	0	0	0	0
2010	7	177,119.83	1,715,280.82	4,816,969.30	1,467,641.02	1,662,375.95	0	0	0	0	0	0	0	0
2010	8	218,613.85	190,974.11	1,716,889.17	6,620,999.15	1,469,017.17	0	0	0	0	0	0	0	0
2010	9	204,406.34	484,642.81	191,113.51	3,445,680.69	6,625,832.00	0	0	0	0	0	0	0	0
2010	10	185,543.92	4,896,397.63	484,994.80	962,091.27	3,448,183.24	0	0	0	0	0	0	0	0
2010	11	186,223.31	13,971,696.26	4,899,936.10	0	962,786.54	0	0	0	0	0	0	0	0
2010	12	182,095.11	21,960,492.03	13,964,803.85	0	0	0	0	0	0	0	0	0	0
2011	1		32,912,669.62	21,949,675.99	0	0	0	0	0	0	0	0	0	0
2011	2		38,540,875.92	32,896,485.31	0	0	0	0	0	0	0	0	0	0
2011	3		34,116,145.33	38,568,353.52	0	0	0	0	0	0	0	0	0	0
2011	4		28,073,109.74	34,140,359.16	0	0	0	0	0	0	0	0	0	0
2011	5		15,776,322.69	28,092,945.32	57,849.98	0	0	0	0	0	0	0	0	0
2011	6		7,350,273.99	15,794,152.92	319,891.89	57,915.36	0	0	0	0	0	0	0	0
2011	7		1,751,193.22	7,358,544.72	2,564,732.54	320,251.84	0	0	0	0	0	0	0	0
2011	8		330,587.18	1,753,155.08	3,912,628.56	2,567,605.81	0	0	0	0	0	0	0	0
2011	9		688,366.84	331,015.45	3,680,673.87	3,917,697.28	0	0	0	0	0	0	0	0
2011	10		3,938,662.42	689,254.56	937,949.97	3,685,420.47	0	0	0	0	0	0	0	0
2011	11		13,922,060.11	3,943,718.75	53,717.97	939,154.08	0	0	0	0	0	0	0	0
2011	12		21,522,402.12	13,944,579.60	0	53,804.87	0	0	0	0	0	0	0	0
2012	1		33,668,919.40	21,557,041.61	0	0	0	0	0	0	0	0	0	0
2012	2		39,091,796.40	33,722,838.39	0	0	0	0	0	0	0	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 4 of 28

2012	3	34,623,157.10	39,141,531.09	0	0	0	0	0	0	0	0	0	0
2012	4	28,506,149.08	34,666,988.33	0	0	0	0	0	0	0	0	0	0
2012	5	16,028,533.68	28,542,058.18	58,774.81	0	0	0	0	0	0	0	0	0
2012	6	7,470,402.24	16,052,282.60	325,120.00	58,861.90	0	0	0	0	0	0	0	0
2012	7	1,780,434.54	7,481,417.26	2,607,558.30	325,599.38	0	0	0	0	0	0	0	0
2012	8	336,223.83	1,783,047.09	3,979,340.47	2,611,384.53	0	0	0	0	0	0	0	0
2012	9	700,080.13	336,648.03	3,743,304.45	3,984,361.07	0	0	0	0	0	0	0	0
2012	10	4,005,545.17	700,958.84	953,877.37	3,748,002.90	0	0	0	0	0	0	0	0
2012	11	14,157,975.96	4,010,546.91	54,628.25	955,068.48	0	0	0	0	0	0	0	0
2012	12	21,885,222.09	14,179,654.29	0	54,711.90	0	0	0	0	0	0	0	0

Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 5 of 28

GS >50 <1000 kW Non Interval Sales										
Variable	Coefficient	StdErr	T-Stat	P-Value	Definition					
CONST	130389.758	3334.789	39.1	0.00%	Constant term					
MEconT.GDP_LagHDD18	0.001	0	10.396	0.00%	Variable lagged by 1 month that takes into account GDP and the HDD18					
MEconT.GDP_LagCDD17	0.004	0.001	5.442	0.00%	Variable lagged by 1 month that takes into account GDP and the CDD17					
BinT.Jan05	61838.036	11357.969	5.444	0.00%	binary flag to adjust for anomalous observation					
BinT.Dec05	-52074.126	11239.361	-4.633	0.00%	binary flag to adjust for anomalous observation					
BinT.Apr06	-43278.354	11259.337	-3.844	0.02%	binary flag to adjust for anomalous observation					
BinT.Dec07	-29780.141	11194.502	-2.66	0.95%	binary flag to adjust for anomalous observation					
BinT.Dec06	-35418.022	11243.571	-3.15	0.23%	binary flag to adjust for anomalous observation					
BinT.Apr03	-71281.9	11260.914	-6.33	0.00%	binary flag to adjust for anomalous observation					
BinT.Aug03	-49146.159	11335.742	-4.336	0.00%	binary flag to adjust for anomalous observation					
BinT.Mar03	76972.578	11337.496	6.789	0.00%	binary flag to adjust for anomalous observation					
BinT.Aft07	-17142.649	2454.569	-6.984	0.00%	binary flag to adjust for changes in trending starting 2007					
BinT.Dec04	-32943.976	11239.607	-2.931	0.44%	binary flag to adjust for anomalous observation					
BinT.Jun03	33424.971	11367.279	2.94	0.43%	binary flag to adjust for anomalous observation					
BinT.Oct03	36495.412	11321.967	3.223	0.18%	binary flag to adjust for anomalous observation					
BinT.Nov03	-18484.429	11275.481	-1.639	10.51%	binary flag to adjust for anomalous observation					
BinT.Mar04	49422.548	11298.342	4.374	0.00%	binary flag to adjust for anomalous observation					



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 6 of 28

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	79
R-Squared	0.85
Adjusted R-Squared	0.819
AIC	18.78
BIC	19.234
F-Statistic	27.878
Prob (F-Statistic)	0
Log-Likelihood	-1,020.64
Model Sum of Squares	54,467,404,449.13
Sum of Squared Errors	9,646,761,589.96
Mean Squared Error	122,110,906.20
Std. Error of Regression	11,050.38
Mean Abs. Dev. (MAD)	7,432.37
Mean Abs. % Err. (MAPE)	5.14%
Durbin-Watson Statistic	2.373
Durbin-H Statistic	#NA
Ljung-Box Statistic	38.2
Prob (Ljung-Box)	0.0331
Skewness	0.299
Kurtosis	3.078
Jarque-Bera	1.459
Prob (Jarque-Bera)	0.4822



Year	Month	GS1000NI_MWh	GDP_LagHDD18	GDP_LagCDD17	05-Jan	05-Dec	06-Apr	07-Dec	06-Dec	03-Apr	03-Aug	03-Mar Aft07		04-Dec	03-Jun	03-Oct	03-Nov	04-Mar
2003		1 160,712.95	28,978,388.99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003		2 179,677.73	38,792,947.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	1	3 250,162.09	33,311,435.93	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2003	4	4 93,673.18	26,902,497.21	. 0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2003	!	5 152,829.06	17,063,524.48	8 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003		6 172,727.14	6,367,762.16	166,945.71	0	0	0	0	0	0	0	0	0	0	1	0	0	0
2003	-	7 159,595.58	1,458,051.82	2,965,635.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003		8 101,192.20	138,006.48	4,516,160.45	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2003	9	9 156,595.80	508,287.72	5,236,008.64	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	10	0 175,549.08	2,484,095.32	1,249,971.82	0	0	0	0	0	0	0	0	0	0	0	1	0	0
2003	1:	1 129,855.04	13,970,417.57	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
2003	12	2 161,718.46	19,452,120.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004		1 175,327.74	29,279,712.06	6 O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004		2 182,757.46	42,686,345.36	6 O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004		3 219,123.93	30,596,590.12	. 0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2004		4 160,451.96	23,144,737.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004		5 158,392.40	15,514,023.26	90,024.69	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	. (6 153,706.67	6,330,411.25	329,925.42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004		7 134,626.59	2,111,133.35	1,759,190.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	. 8	8 157,018.23	33,560.68	4,598,691.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004		9 129,194.69	1,050,206.30	2,695,008.24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	10	0 131,574.20	2,847,658.81	943,362.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	1	1 134,745.87	12,459,278.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	12	2 123,993.32	20,662,183.98	8 0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2005		1 236,572.95	34,514,236.97	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2005		2 184,455.33	39,019,566.69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005		3 176,747.34	29,601,021.29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005		4 160,457.16	28,115,866.92	. 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005		5 151,004.69	13,642,453.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005		6 131,577.07	8,674,271.39	150,931.54	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005		7 134,373.06	645,938.85	6,030,556.87	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	8 183,219.66	15,842.30	6,896,799.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	9	9 153,952.74	339,216.41	5,978,915.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	10	0 137,586.25	2,391,105.74	1,839,089.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	1:	1 164,672.73	11,751,848.05	438,021.44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	12	2 105,570.48	21,212,692.22	. 0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2006		1 186,251.00	32,983,874.72	. 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006		2 163,807.39	31,922,837.49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006		3 191,106.94	31,899,045.39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006		4 121,406.49	26,692,174.25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2006		5 153,072.70	13,939,340.68	8 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	. (6 135,267.58	5,844,767.13	1,091,020.73	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006		7 141,181.72	1,195,560.56	3,384,581.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006		8 157,463.05	10,190.70	7,210,752.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006		9 138,900.38	849,828.03	3,993,820.65	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	0 135,894.62	5,406,390.07	288,018.72	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	1 130,476.80	14,929,978.41	. 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	2 119,097.64	18,777,405.94	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2007		1 170,755.13	27,080,270.50	0 (0	0	0	0	0	0	0	0	1	0	0	0	0	0

2007	2	148,794.40	35,569,986.46	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	3	185,417.89	36,587,775.11	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	4	135,572.45	28,891,323.61	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	5	153,331.47	16,194,191.66	15,111.10	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	6	113,694.11	6,548,416.22	1,221,154.74	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	7	152,765.61	1,560,796.58	4,202,364.33	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	8	145,383.99	658,395.22	4,130,455.03	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	9	123,404,97	947.273.23	4,522,904,20	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	10	147,100.65	3.532.818.81	1.809.450.48	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	11	127.777.22	10.269.167.48	200.441.43	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2007	12	114 292 20	23 991 557 15	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
2008	1	158 949 47	35 728 863 12	0	0	0	0	0	0 0	0	0	0 0	1	ů 0	0	0	0	0
2000	2	157 896 77	34 455 986 60	ů 0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2000	3	157,050.77	34 813 116 97	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2000	4	150 102 08	32 366 874 42	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2000		124 225 64	12 7/0 972 29	27 449 95	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2008	5	124,233.04	9 4 29 900 12	37,448.83	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2008	0	120,003.11	1 250 101 02	2 262 202 11	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2008	,	130,200.13	1,330,191.03	5,505,205.11	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2008	0	122,202.02	12,200.24	3,009,000.10	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2008	10	132,327.12	4 491 542 00	2,782,594.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2008	10	132,217.90	4,481,543.09	1,410,955.08	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2008	11	141,733.58	14,428,106.07	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2008	12	146,004.28	22,042,801.30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	1	158,001.57	35,447,989.92	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	2	152,055.76	43,/94,/25.88	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	3	168,417.88	31,481,636.64	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	4	148,091.32	26,787,806.78	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	5	117,102.29	14,997,909.07	207,920.47	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	6	113,770.96	7,817,806.57	209,725.77	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	7	128,891.20	2,330,718.46	2,617,129.95	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	8	136,233.66	707,455.96	2,806,413.28	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	9	125,795.20	1,083,100.89	4,805,949.79	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	10	126,694.52	4,720,439.82	550,034.19	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	11	138,912.39	16,441,015.77	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2009	12	136,912.52	19,310,684.21	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	1	151,730.48	34,643,340.34	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	2	141,502.90	36,405,953.09	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	3	154,791.49	30,311,397.65	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	4	130,920.41	21,588,441.29	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	5	109,845.89	11,948,970.02	146,686.93	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	6	119,094.06	4,993,148.60	2,359,085.75	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	7	131,282.82	1,782,014.13	2,268,691.29	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	8	143,706.10	198,662.77	8,204,166.91	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	9	130,575.88	504,766.64	4,775,025.91	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	10	127,829.83	5,105,900.90	1,279,956.03	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	11	133,764.35	14,587,188.80	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2010	12	134,882.40	22,990,012.73	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	1		34,548,760.45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	2		40,565,861.47	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	3		35,953,923.14	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 8 of 28



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 9 of 28

2011	4	29,622,640.15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	5	16,668,082.03	100,274.94	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	6	7,772,177.12	519,102.01	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	7	1,853,245.84	3,581,376.01	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	8	350,142.86	5,440,422.66	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	9	729,559.03	5,077,557.61	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	10	4,177,066.72	1,437,358.41	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	11	14,774,378.27	104,351.11	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2011	12	22,840,343.63	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	1	35,731,364.59	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	2	41,487,466.18	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	3	36,772,378.63	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	4	30,298,306.41	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	5	17,049,015.14	102,566.63	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	6	7,950,783.31	531,031.08	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	7	1,896,066.68	3,664,126.80	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	8	358,277.04	5,566,809.33	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	9	746,656.38	5,196,551.09	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	10	4,275,806.44	1,471,335.45	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	11	15,126,615.63	106,838.96	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2012	12	23,402,850.53	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 10 of 28

	GS >50 <1000 kW Interval Sales													
Variable	Coefficient	StdErr	T-Stat	P-Value	Definition									
MEconT.GDP_LagDays	0.024	0.008	3.086	0.30%	Variable lagged by 1 month that takes into account GDP and the number of days in a month									
MEconT.GDP_Lag2Days	0.024	0.008	3.126	0.26%	Variable lagged by 2 months that takes into account GDP and the number of days in a month									
MEconT.GDP_LagHDD18	0	0	5.36	0.00%	Variable lagged by 1 month that takes into account GDP and the HDD18									
MEconT.GDP_LagCDD17	0.002	0	6.482	0.00%	Variable lagged by 1 month that takes into account GDP and the CDD17									
BinT.Yr05	-3858.11	1446.103	-2.668	0.96%	binary flag to adjust for anomalous observation									
BinT.AftJun08	10871.635	1101.782	9.867	0.00%	binary flag to adjust for changes in trending starting June 2008									

Regression Statistics	
Iterations	1
Adjusted Observations	72
Deg. of Freedom for Error	66
R-Squared	0.805
Adjusted R-Squared	0.791
AIC	16.738
BIC	16.928
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-698.75
Model Sum of Squares	4,687,053,715.69
Sum of Squared Errors	1,133,384,881.89
Mean Squared Error	17,172,498.21
Std. Error of Regression	4,143.97
Mean Abs. Dev. (MAD)	2,909.15
Mean Abs. % Err. (MAPE)	3.72%
Durbin-Watson Statistic	1.753
Durbin-H Statistic	#NA
Ljung-Box Statistic	39.44
Prob (Ljung-Box)	0.0246
Skewness	-0.738
Kurtosis	4.212
Jarque-Bera	10.939
Prob (Jarque-Bera)	0.0042



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 11 of 28

Year	Month	GS1000I_MWh	GDP_LagDays	GDP_Lag2Days	GDP_LagHDD18	GDP_LagCDD17	Yr05	AftJun08
2005	1	66,187.73	1,313,765.22	1,271,385.70	34,514,236.97	0	1	0
2005	2	74,208.22	1,317,032.52	1,317,032.52	39,019,566.69	0	1	0
2005	3	61,155.52	1,192,287.51	1,320,032.60	29,601,021.29	0	1	0
2005	4	68,614.06	1,323,032.67	1,194,997.25	28,115,866.92	0	1	0
2005	5	60,826.99	1,283,257.50	1,326,032.75	13,642,453.07	0	1	0
2005	6	60,724.49	1,330,486.52	1,287,567.60	8,674,271.39	150,931.54	1	0
2005	7	68,655.47	1,291,877.70	1,334,940.29	645,938.85	6,030,556.87	1	0
2005	8	71,107.85	1,339,394.06	1,296,187.80	15,842.30	6,896,799.25	1	0
2005	9	68,271.71	1,343,860.54	1,343,860.54	339,216.41	5,978,915.02	1	0
2005	10	66,182.32	1,304,832.60	1,348,327.02	2,391,105.74	1,839,089.06	1	0
2005	11	64,641.77	1,352,793.50	1,309,155.00	11,751,848.05	438,021.44	1	0
2005	12	67,335.30	1,315,323.20	1,359,167.31	21,212,692.22	0	1	0
2006	1	72,923.88	1,365,541.11	1,321,491.40	32,983,874.72	0	0	0
2006	2	73,375.30	1,371,914.92	1,371,914.92	31,922,837.49	0	0	0
2006	3	67,323.85	1,240,855.93	1,373,804.78	31,899,045.39	0	0	0
2006	4	71,613.95	1,375,694.65	1,242,562.91	26,692,174.25	0	0	0
2006	5	64,163.58	1,333,146.30	1,377,584.51	13,939,340.68	0	0	0
2006	6	68,363.07	1,377,897.51	1,333,449.20	5,844,767.13	1,091,020.73	0	0
2006	7	71,804.89	1,333,752.10	1,378,210.50	1,195,560.56	3,384,581.20	0	0
2006	8	77,605.84	1,378,523.50	1,334,055.00	10,190.70	7,210,752.56	0	0
2006	9	73,928.21	1,380,506.67	1,380,506.67	849,828.03	3,993,820.65	0	0
2006	10	66,523.58	1,337,893.40	1,382,489.85	5,406,390.07	288,018.72	0	0
2006	11	67,304.26	1,384,473.02	1,339,812.60	14,929,978.41	0	0	0
2006	12	68,943.41	1,342,615.20	1,387,369.04	18,777,405.94	0	0	0
2007	1	71,113.68	1,390,265.06	1,345,417.80	27,080,270.50	0	0	0
2007	2	79,369.64	1,393,161.08	1,393,161.08	35,569,986.46	0	0	0
2007	3	73,489.17	1,262,003.59	1,397,218.26	36,587,775.11	0	0	0
2007	4	75,974.23	1,401,275.43	1,265,668.13	28,891,323.61	0	0	0
2007	5	68,457.05	1,359,999.30	1,405,332.61	16,194,191.66	15,111.10	0	0
2007	6	70,722.45	1,410,994.14	1,365,478.20	6,548,416.22	1,221,154.74	0	0
2007	7	76,311.53	1,370,957.10	1,416,655.67	1,560,796.58	4,202,364.33	0	0
2007	8	76,560.84	1,422,317.20	1,376,436.00	658,395.22	4,130,455.03	0	0
2007	9	78,012.71	1,424,355.86	1,424,355.86	947,273.23	4,522,904.20	0	0
2007	10	71,842.26	1,380,381.80	1,426,394.53	3,532,818.81	1,809,450.48	0	0
2007	11	71,484.97	1,428,433.19	1,382,354.70	10,269,167.48	200,441.43	0	0
2007	12	72,422.09	1,382,057.43	1,428,126.01	23,991,557.15	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 12 of 28

2008	1	80,196.04	1,427,818.82	1,381,760.15	35,728,863.12	0	0	0
2008	2	75,267.68	1,427,511.64	1,427,511.64	34,455,986.60	0	0	1
2008	3	80,945.01	1,335,821.36	1,427,946.98	34,813,116.97	0	0	1
2008	4	76,055.57	1,428,382.31	1,336,228.62	32,366,874.42	0	0	1
2008	5	72,043.20	1,382,726.76	1,428,817.65	13,749,873.28	37,448.85	0	1
2008	6	69,136.03	1,427,862.04	1,381,801.97	8,428,800.13	0	0	1
2008	7	89,684.49	1,380,877.19	1,426,906.43	1,350,191.03	3,363,203.11	0	1
2008	8	87,086.16	1,425,950.82	1,379,952.41	12,266.24	5,069,600.16	0	1
2008	9	80,499.19	1,420,407.32	1,420,407.32	659,611.19	2,782,394.66	0	1
2008	10	81,442.59	1,369,223.04	1,414,863.81	4,481,543.09	1,416,955.68	0	1
2008	11	77,340.14	1,409,320.31	1,363,858.36	14,428,106.07	0	0	1
2008	12	82,514.88	1,359,013.36	1,404,313.81	22,642,861.36	0	0	1
2009	1	92,402.54	1,399,307.31	1,354,168.36	35,447,989.92	0	0	1
2009	2	83,866.03	1,394,300.80	1,394,300.80	43,794,725.88	0	0	1
2009	3	89,071.10	1,260,683.73	1,395,756.99	31,481,636.64	0	0	1
2009	4	82,624.37	1,397,213.18	1,261,999.00	26,787,806.78	0	0	1
2009	5	79,084.92	1,353,551.00	1,398,669.37	14,997,909.07	207,920.47	0	1
2009	6	78,526.20	1,404,464.21	1,359,158.92	7,817,806.57	209,725.77	0	1
2009	7	87,278.31	1,364,766.83	1,410,259.06	2,330,718.46	2,617,129.95	0	1
2009	8	86,206.74	1,416,053.90	1,370,374.74	707,455.96	2,806,413.28	0	1
2009	9	86,942.71	1,421,211.75	1,421,211.75	1,083,100.89	4,805,949.79	0	1
2009	10	85,430.93	1,380,357.68	1,426,369.60	4,720,439.82	550,034.19	0	1
2009	11	82,578.18	1,431,527.45	1,385,349.14	16,441,015.77	0	0	1
2009	12	85,843.95	1,388,300.70	1,434,577.39	19,310,684.21	0	0	1
2010	1	93,348.75	1,437,627.32	1,391,252.25	34,643,340.34	0	0	1
2010	2	86,660.64	1,440,677.26	1,440,677.26	36,405,953.09	0	0	1
2010	3	92,272.39	1,302,132.53	1,441,646.73	30,311,397.65	0	0	1
2010	4	84,588.10	1,442,616.21	1,303,008.19	21,588,441.29	0	0	1
2010	5	79,900.90	1,397,018.40	1,443,585.68	11,948,970.02	146,686.93	0	1
2010	6	84,557.28	1,446,838.51	1,400,166.30	4,993,148.60	2,359,085.75	0	1
2010	7	90,324.44	1,403,314.20	1,450,091.34	1,782,014.13	2,268,691.29	0	1
2010	8	98,706.53	1,453,344.17	1,406,462.10	198,662.77	8,204,166.91	0	1
2010	9	94,115.96	1,456,170.54	1,456,170.54	504,766.64	4,775,025.91	0	1
2010	10	87,355.84	1,411,932.50	1,458,996.92	5,105,900.90	1,279,956.03	0	1
2010	11	83,429.22	1,461,823.29	1,414,667.70	14,587,188.80	0	0	1
2010	12	90,457.71	1,417,799.50	1,465,059.48	22,990,012.73	0	0	1
2011	1		1,468,295.68	1,420,931.30	34,548,760.45	0	0	1



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 13 of 28

2	1,471,531.87	1,471,531.87	40,565,861.47	0	0	1
3	1,331,750.09	1,474,437.60	35,953,923.14	0	0	1
4	1,477,343.34	1,334,374.63	29,622,640.15	0	0	1
5	1,432,499.10	1,480,249.07	16,668,082.03	100,274.94	0	1
6	1,483,148.60	1,435,305.10	7,772,177.12	519,102.01	0	1
7	1,438,111.10	1,486,048.14	1,853,245.84	3,581,376.01	0	1
8	1,488,947.67	1,440,917.10	350,142.86	5,440,422.66	0	1
9	1,491,842.35	1,491,842.35	729,559.03	5,077,557.61	0	1
10	1,446,519.70	1,494,737.02	4,177,066.72	1,437,358.41	0	1
11	1,497,631.70	1,449,321.00	14,774,378.27	104,351.11	0	1
12	1,451,686.00	1,500,075.53	22,840,343.63	0	0	1
1	1,502,519.37	1,454,051.00	35,731,364.59	0	0	1
2	1,504,963.20	1,504,963.20	41,487,466.18	0	0	1
3	1,410,711.28	1,508,001.72	36,772,378.63	0	0	1
4	1,511,040.23	1,413,553.77	30,298,306.41	0	0	1
5	1,465,237.50	1,514,078.75	17,049,015.14	102,566.63	0	1
6	1,517,231.66	1,468,288.70	7,950,783.31	531,031.08	0	1
7	1,471,339.90	1,520,384.56	1,896,066.68	3,664,126.80	0	1
8	1,523,537.47	1,474,391.10	358,277.04	5,566,809.33	0	1
9	1,526,803.94	1,526,803.94	746,656.38	5,196,551.09	0	1
10	1,480,713.30	1,530,070.41	4,275,806.44	1,471,335.45	0	1
11	1,533,336.88	1,483,874.40	15,126,615.63	106,838.96	0	1
12	1,487,437.80	1,537,019.06	23,402,850.53	0	0	1
	2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12	21,471,531.8731,331,750.0941,477,343.3451,432,499.1061,483,148.6071,438,111.1081,488,947.6791,491,842.35101,446,519.70111,497,631.70121,451,686.0011,502,519.3721,504,963.2031,410,711.2841,511,040.2351,465,237.5061,517,231.6671,471,339.9081,523,537.4791,526,803.94101,480,713.30111,533,336.88121,487,437.80	21,471,531.871,471,531.8731,331,750.091,474,437.6041,477,343.341,334,374.6351,432,499.101,480,249.0761,483,148.601,435,305.1071,438,111.101,486,048.1481,488,947.671,440,917.1091,491,842.351,491,842.35101,446,519.701,494,737.02111,497,631.701,449,321.00121,451,686.001,500,075.5311,502,519.371,454,051.0021,504,963.201,504,963.2031,410,711.281,508,001.7241,511,040.231,413,553.7751,465,237.501,514,078.7561,517,231.661,468,288.7071,471,339.901,520,384.5681,523,537.471,474,391.1091,526,803.941,526,803.94101,480,713.301,530,070.41111,533,336.881,483,874.40121,487,437.801,537,019.06	21,471,531.871,471,531.8740,565,861.4731,331,750.091,474,437.6035,953,923.1441,477,343.341,334,374.6329,622,640.1551,432,499.101,480,249.0716,668,082.0361,483,148.601,435,305.107,772,177.1271,438,111.101,486,048.141,853,245.8481,491,842.351,491,842.35729,559.03101,446,519.701,494,737.024,177,066.72111,497,631.701,449,321.0014,774,378.27121,451,686.001,500,075.5322,840,343.6311,502,519.371,454,051.0035,731,364.5921,504,963.201,504,963.2041,487,466.1831,410,711.281,508,001.7236,772,378.6341,517,231.661,468,288.707,950,783.3171,471,339.901,520,384.561,896,066.6881,523,537.471,474,391.10358,277.0491,526,803.941,526,803.94746,656.38101,480,713.301,530,070.414,275,806.44111,533,366.881,483,874.4015,126,615.63121,487,437.801,537,019.0623,402,850.53	21,471,531.871,471,531.8740,565,861.47031,331,750.091,474,437.6035,953,923.14041,477,343.341,334,374.6329,622,640.15051,432,499.101,480,249.0716,668,082.03100,274.9461,483,148.601,435,305.107,772,177.12519,102.0171,438,111.101,486,048.141,853,245.843,581,376.0181,488,947.671,440,917.10350,142.865,440,422.6691,491,842.351,491,842.35729,559.035,077,557.61101,446,519.701,494,737.024,177,066.721,437,358.41111,497,631.701,449,321.0014,774,378.27104,351.11121,451,686.001,500,075.5322,840,343.63011,502,519.371,454,051.0035,731,364.59021,504,963.201,504,963.2041,487,466.18031,410,711.281,508,001.7236,772,378.63041,511,040.231,413,553.7730,298,306.41051,465,237.501,514,078.7517,049,015.14102,566.6361,517,231.661,468,288.707,950,783.31531,031.0871,471,339.901,520,384.561,896,066.683,664,126.8081,523,537.471,474,391.10358,277.045,566,809.3391,526,803.941,526,803.94746,656.385,196,551.09101,480,713.301,530,070.414,275,806	21,471,531.871,471,531.8740,565,861.470031,331,750.091,474,437.6035,953,923.140041,477,343.341,334,374.6329,622,640.150051,432,499.101,480,249.0716,668,082.03100,274.94061,483,148.601,435,305.107,772,177.12519,102.01071,438,111.101,486,048.141,853,245.843,581,376.01081,488,947.671,440,917.10350,142.865,440,422.66091,491,842.351,491,842.35729,559.035,077,557.610101,446,519.701,494,737.024,177,066.721,437,358.410111,497,631.701,449,321.0014,774,378.27104,351.110121,451,686.001,500,075.5322,840,343.6300131,502,519.371,454,051.0035,731,364.5900141,502,519.371,454,051.0035,731,364.5900141,504,963.201,504,963.2041,487,466.1800141,511,040.231,413,553.7730,298,306.4100151,465,237.501,514,078.7517,049,015.14102,566.630161,517,231.661,468,288.707,950,783.31531,031.080161,523,537.471,474,391.10358,277.045,566,809.330101,480,713.301,526,803.94746,656.385,196,5



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 14 of 28

	GS >50 < 1500 kW Sales													
Variable	Coefficient	StdErr	T-Stat	P-Value	Definition									
CONST	28662.87	470.334	60.942	0.00%	Constant term									
					Variable lagged by 1 month that takes into account GDP									
MEconT.GDP_LagHDD18	0	0	4.048	0.01%	and the HDD18									
					Variable lagged by 1 month that takes into account GDP									
MEconT.GDP_LagCDD17	0.001	0	7.67	0.00%	and the CDD17									
BinT.Dec03	7775.774	1480.415	5.252	0.00%	binary flag to adjust for anomalous observation									
BinT.Yr03	-5302.551	528.64	-10.031	0.00%	binary flag to adjust for anomalous observation									
BinT.Yr04	-1609.311	499.322	-3.223	0.18%	binary flag to adjust for anomalous observation									
BinT.Spr08	4320.341	755.115	5.721	0.00%	binary flag to adjust for anomalous observation									
BinT.Spr09	4428.923	1039.189	4.262	0.01%	binary flag to adjust for anomalous observation									
BinT.May09	-11646.421	1737.19	-6.704	0.00%	binary flag to adjust for anomalous observation									
BinT.Jun09	-5439.966	1754.594	-3.1	0.27%	binary flag to adjust for anomalous observation									
BinT.Jul08	-3337.196	1438.838	-2.319	2.29%	binary flag to adjust for anomalous observation									
					binary flag to adjust for changes in trending starting									
BinT.AftSep07	-1125.046	376.181	-2.991	0.37%	september 2007									
BinT.Mar03	-5341.117	1495.547	-3.571	0.06%	binary flag to adjust for anomalous observation									
BinT.SepToDec07	4224.768	750.493	5.629	0.00%	binary flag to adjust for anomalous observation									
BinT.JanFeb08	3283.985	1054.197	3.115	0.25%	binary flag to adjust for anomalous observation									



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 15 of 28

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	81
R-Squared	0.815
Adjusted R-Squared	0.783
AIC	14.642
BIC	15.043
F-Statistic	25.553
Prob (F-Statistic)	0
Log-Likelihood	-824.05
Model Sum of Squares	709,185,065.19
Sum of Squared Errors	160,572,199.48
Mean Squared Error	1,982,372.83
Std. Error of Regression	1,407.97
Mean Abs. Dev. (MAD)	1,007.21
Mean Abs. % Err. (MAPE)	3.42%
Durbin-Watson Statistic	1.813
Durbin-H Statistic	#NA
Ljung-Box Statistic	26.87
Prob (Ljung-Box)	0.3104
Skewness	-0.113
Kurtosis	2.689
Jarque-Bera	0.594
Prob (Jarque-Bera)	0.7432



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 16 of 28

Year	Month	GS1500_MWh	GDP_LagHDD18	GDP_LagCDD17	03-Dec '	Yr03	Yr04 5	Spr08	Spr09	09-May	09-Jun	08-Jul Af	tSep07	03-Mar Se	pToDec07 .	JanFeb08
2003	1	25,506.30	28,978,388.99	0	00-Jan	01-Jan	00-Jan	00-Jan	00-Jan	00-Jan	00-Jan	00-Jan	0	00-Jan	00-Jan	00-Jan
2003	2	24,948.86	38,792,947.44	0	0	1	0	0	0	0	0	0	0	0	0	0
2003	3	20,160.41	33,311,435.93	0	0	1	0	0	0	0	0	0	0	1	0	0
2003	4	24,194.49	26,902,497.21	0	0	1	0	0	0	0	0	0	0	0	0	0
2003	5	22,435.84	17,063,524.48	0	0	1	0	0	0	0	0	0	0	0	0	0
2003	6	24,188.24	6,367,762.16	166945.7082	0	1	0	0	0	0	0	0	0	0	0	0
2003	7	26,919.76	1,458,051.82	2,965,635.14	0	1	0	0	0	0	0	0	0	0	0	0
2003	8	24,588.04	138,006.48	4,516,160.45	0	1	0	0	0	0	0	0	0	0	0	0
2003	9	28,481.87	508,287.72	5,236,008.64	0	1	0	0	0	0	0	0	0	0	0	0
2003	10	26,383.76	2,484,095.32	1,249,971.82	0	1	0	0	0	0	0	0	0	0	0	0
2003	11	25,823.71	13,970,417.57	0.00	0	1	0	0	0	0	0	0	0	0	0	0
2003	12	32,386.45	19,452,120.25	0	1	1	0	0	0	0	0	0	0	0	0	0
2004	1	29,880.81	29,279,712.06	0	0	0	1	0	0	0	0	0	0	0	0	0
2004	2	31,251.70	42,686,345.36	0	0	0	1	0	0	0	0	0	0	0	0	0
2004	3	27,421.58	30,596,590.12	0	0	0	1	0	0	0	0	0	0	0	0	0
2004	4	29,370.86	23,144,737.39	0	0	0	1	0	0	0	0	0	0	0	0	0
2004	5	26,415.75	15,514,023.26	90024.693	0	0	1	0	0	0	0	0	0	0	0	0
2004	6	27,064.31	6,330,411.25	329,925.42	0	0	1	0	0	0	0	0	0	0	0	0
2004	7	28,045.13	2,111,133.35	1,759,190.20	0	0	1	0	0	0	0	0	0	0	0	0
2004	8	30,759.48	33,560.68	4,598,691.94	0	0	1	0	0	0	0	0	0	0	0	0
2004	9	29,976.61	1,050,206.30	2,695,008.24	0	0	1	0	0	0	0	0	0	0	0	0
2004	10	27,577.57	2,847,658.81	943,362.75	0	0	1	0	0	0	0	0	0	0	0	0
2004	11	28,711.34	12,459,278.39	0.00	0	0	1	0	0	0	0	0	0	0	0	0
2004	12	28,336.78	20,662,183.98	0	0	0	1	0	0	0	0	0	0	0	0	0
2005	1	30,002.46	34,514,236.97	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	2	31,201.92	39,019,566.69	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	3	28,052.64	29,601,021.29	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	4	30,667.17	28,115,866.92	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	5	27,347.97	13,642,453.07	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	6	28,201.72	8,674,271.39	150931.5353	0	0	0	0	0	0	0	0	0	0	0	0
2005	7	32,527.20	645,938.85	6,030,556.88	0	0	0	0	0	0	0	0	0	0	0	0
2005	8	35,328.23	15,842.30	6,896,799.25	0	0	0	0	0	0	0	0	0	0	0	0
2005	9	33,662.16	339,216.41	5,978,915.02	0	0	0	0	0	0	0	0	0	0	0	0
2005	10	30,650.69	2,391,105.74	1,839,089.06	0	0	0	0	0	0	0	0	0	0	0	0
2005	11	29,705.26	11,751,848.05	438,021.44	0	0	0	0	0	0	0	0	0	0	0	0
2005	12	30,368.65	21,212,692.22	0.00	0	0	0	0	0	0	0	0	0	0	0	0
2006	1	32,548.55	32,983,874.72	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	2	33,019.53	31,922,837.49	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	3	30,577.72	31,899,045.39	0	0	0	0	0	0	0	0	0	0	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 17 of 28

2006	4	32,836.49	26,692,174.25	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	5	28,648.65	13,939,340.68	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	6	29,981.86	5,844,767.13	1091020.727	0	0	0	0	0	0	0	0	0	0	0	0
2006	7	31,816.16	1,195,560.56	3,384,581.20	0	0	0	0	0	0	0	0	0	0	0	0
2006	8	33,685.44	10,190.70	7,210,752.56	0	0	0	0	0	0	0	0	0	0	0	0
2006	9	31,791.32	849,828.03	3,993,820.65	0	0	0	0	0	0	0	0	0	0	0	0
2006	10	29,262.13	5,406,390.07	288,018.72	0	0	0	0	0	0	0	0	0	0	0	0
2006	11	29,646.85	14,929,978.41	0.00	0	0	0	0	0	0	0	0	0	0	0	0
2006	12	29,477.40	18,777,405.94	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	1	30,617.66	27,080,270.50	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	2	32,687.37	35,569,986.46	0	0	0	0	0	0	0	0	0	1	0	0	0
2007	3	30,801.69	36,587,775.11	0	0	0	0	0	0	0	0	0	1	0	0	0
2007	4	31,414.92	28,891,323.61	0	0	0	0	0	0	0	0	0	1	0	0	0
2007	5	29,823.46	16,194,191.66	15111.10333	0	0	0	0	0	0	0	0	1	0	0	0
2007	6	30,876.41	6,548,416.22	1,221,154.74	0	0	0	0	0	0	0	0	1	0	0	0
2007	7	31,629.53	1,560,796.58	4,202,364.33	0	0	0	0	0	0	0	0	1	0	0	0
2007	8	32,870.54	658,395.22	4,130,455.03	0	0	0	0	0	0	0	0	1	0	0	0
2007	9	35,572.47	947,273.23	4,522,904.20	0	0	0	0	0	0	0	0	1	0	1	0
2007	10	34,416.46	3,532,818.81	1,809,450.48	0	0	0	0	0	0	0	0	1	0	1	0
2007	11	32,513.32	10,269,167.48	200,441.43	0	0	0	0	0	0	0	0	1	0	1	0
2007	12	32,160.72	23,991,557.15	0.00	0	0	0	0	0	0	0	0	1	0	1	0
2008	1	33,994.02	35,728,863.12	0	0	0	0	0	0	0	0	0	1	0	0	1
2008	2	32,160.98	34,455,986.60	0	0	0	0	0	0	0	0	0	1	0	0	1
2008	3	35,926.15	34,813,116.97	0	0	0	0	1	0	0	0	0	1	0	0	0
2008	4	33,497.59	32,366,874.42	0	0	0	0	1	0	0	0	0	1	0	0	0
2008	5	32,766.43	13,749,873.28	37448.84967	0	0	0	1	0	0	0	0	1	0	0	0
2008	6	31,015.70	8,428,800.13	0.00	0	0	0	1	0	0	0	0	1	0	0	0
2008	7	26,924.52	1,350,191.03	3363203.115	0	0	0	0	0	0	0	1	1	0	0	0
2008	8	32,688.66	12,266.24	5,069,600.16	0	0	0	0	0	0	0	0	1	0	0	0
2008	9	29,832.07	659,611.19	2,782,394.66	0	0	0	0	0	0	0	0	1	0	0	0
2008	10	30,174.91	4,481,543.09	1,416,955.68	0	0	0	0	0	0	0	0	1	0	0	0
2008	11	27,334.98	14,428,106.07	0.00	0	0	0	0	0	0	0	0	1	0	0	0
2008	12	28,520.00	22,642,861.36	0	0	0	0	0	0	0	0	0	1	0	0	0
2009	1	30,619.52	35,447,989.92	0	0	0	0	0	0	0	0	0	1	0	0	0
2009	2	28,999.15	43,794,725.88	0	0	0	0	0	0	0	0	0	1	0	0	0
2009	3	31,106.28	31,481,636.64	0	0	0	0	0	1	0	0	0	1	0	0	0
2009	4	36,572.69	26,787,806.78	0	0	0	0	0	1	0	0	0	1	0	0	0
2009	5	21,447.40	14,997,909.07	207920.4733	0	0	0	0	1	1	0	0	1	0	0	0
2009	6	27,193.75	7,817,806.57	209,725.77	0	0	0	0	1	0	1	0	1	0	0	0
2009	7	30,954.40	2,330,718.46	2,617,129.95	0	0	0	0	0	0	0	0	1	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 18 of 28

8	30,974.38	707,455.96	2,806,413.28	0	0	0	0	0	0	0	0	1	0	0	0
9	30,839.95	1,083,100.89	4,805,949.79	0	0	0	0	0	0	0	0	1	0	0	0
10	29,960.10	4,720,439.82	550,034.19	0	0	0	0	0	0	0	0	1	0	0	0
11	27,598.42	16,441,015.77	0.00	0	0	0	0	0	0	0	0	1	0	0	0
12	29,784.57	19,310,684.21	0	0	0	0	0	0	0	0	0	1	0	0	0
1	30,036.27	34,643,340.34	0	0	0	0	0	0	0	0	0	1	0	0	0
2	27,043.73	36,405,953.09	0	0	0	0	0	0	0	0	0	1	0	0	0
3	29,250.92	30,311,397.65	0	0	0	0	0	0	0	0	0	1	0	0	0
4	27,375.79	21,588,441.29	0	0	0	0	0	0	0	0	0	1	0	0	0
5	27,111.01	11,948,970.02	146686.932	0	0	0	0	0	0	0	0	1	0	0	0
6	27,907.11	4,993,148.60	2,359,085.75	0	0	0	0	0	0	0	0	1	0	0	0
7	29,703.45	1,782,014.13	2,268,691.29	0	0	0	0	0	0	0	0	1	0	0	0
8	31,676.63	198,662.77	8,204,166.91	0	0	0	0	0	0	0	0	1	0	0	0
9	29,354.58	504,766.64	4,775,025.91	0	0	0	0	0	0	0	0	1	0	0	0
10	28,367.29	5,105,900.90	1,279,956.03	0	0	0	0	0	0	0	0	1	0	0	0
11	25,696.30	14,587,188.80	0.00	0	0	0	0	0	0	0	0	1	0	0	0
12	28,119.13	22,990,012.73	0	0	0	0	0	0	0	0	0	1	0	0	0
1		34,548,760.45	0	0	0	0	0	0	0	0	0	1	0	0	0
2		40,565,861.47	0	0	0	0	0	0	0	0	0	1	0	0	0
3		35,953,923.14	0	0	0	0	0	0	0	0	0	1	0	0	0
4		29,622,640.15	0	0	0	0	0	0	0	0	0	1	0	0	0
5		16,668,082.03	100274.937	0	0	0	0	0	0	0	0	1	0	0	0
6		7,772,177.12	519,102.01	0	0	0	0	0	0	0	0	1	0	0	0
7		1,853,245.84	3,581,376.01	0	0	0	0	0	0	0	0	1	0	0	0
8		350,142.86	5,440,422.66	0	0	0	0	0	0	0	0	1	0	0	0
9		729,559.03	5,077,557.61	0	0	0	0	0	0	0	0	1	0	0	0
10		4,177,066.72	1,437,358.41	0	0	0	0	0	0	0	0	1	0	0	0
11		14,774,378.27	104,351.11	0	0	0	0	0	0	0	0	1	0	0	0
12		22,840,343.63	0.00	0	0	0	0	0	0	0	0	1	0	0	0
1		35,731,364.59	0	0	0	0	0	0	0	0	0	1	0	0	0
2		41,487,466.18	0	0	0	0	0	0	0	0	0	1	0	0	0
3		36,772,378.63	0	0	0	0	0	0	0	0	0	1	0	0	0
4		30,298,306.41	0	0	0	0	0	0	0	0	0	1	0	0	0
5		17,049,015.14	102566.625	0	0	0	0	0	0	0	0	1	0	0	0
6		7,950,783.31	531,031.08	0	0	0	0	0	0	0	0	1	0	0	0
7		1,896,066.68	3,664,126.80	0	0	0	0	0	0	0	0	1	0	0	0
8		358,277.04	5,566,809.33	0	0	0	0	0	0	0	0	1	0	0	0
9		746,656.38	5,196,551.09	0	0	0	0	0	0	0	0	1	0	0	0
10		4,275,806.44	1,471,335.45	0	0	0	0	0	0	0	0	1	0	0	0
11		15,126,615.63	106,838.96	0	0	0	0	0	0	0	0	1	0	0	0
	9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 12 12 12 12 12 12 12 12 12 12 12	30,839.95 9 30,839.95 10 29,960.10 11 27,598.42 12 29,784.57 1 30,036.27 2 27,043.73 3 29,250.92 4 27,375.79 5 27,111.01 6 27,907.11 7 29,703.45 8 31,676.63 9 29,354.58 10 28,367.29 11 25,696.30 12 28,119.13 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 1 2 3 4 5 6 7 8 9 10 11 12 3 4 5	3 30,839.95 1,083,100.89 9 30,839.95 1,083,100.89 10 29,960.10 4,720,439.82 11 27,598.42 16,441,015.77 12 29,784.57 19,310,684.21 1 30,036.27 34,643,340.34 2 27,043.73 36,405,953.09 3 29,250.92 30,311,397.65 4 27,375.79 21,588,441.29 5 27,111.01 11,948,970.02 6 27,907.11 4,993,148.60 7 29,703.45 1,782,014.13 8 31,676.63 198,662.77 9 29,354.58 504,766.64 10 28,367.29 5,105,900.90 11 25,696.30 14,587,188.80 12 28,119.13 22,990,012.73 1 34,548,760.45 2 2 40,565,861.47 3 3 35,953,923.14 4 4 29,622,640.15 5 16,668,082.03 6	a $30,839.95$ $1,083,100.89$ $4,805,949.79$ 10 $29,960.10$ $4,720,439.82$ $550,034.19$ 11 $27,598.42$ $16,441,015.77$ 0.00 12 $29,784.57$ $19,310,684.21$ 0 1 $30,036.27$ $34,643,340.34$ 0 2 $27,043.73$ $36,405,953.09$ 0 3 $29,250.92$ $30,311,397.65$ 0 4 $27,375.79$ $21,588,441.29$ 0 5 $27,111.01$ $11,948,970.02$ 146686.932 6 $27,907.11$ $4,993,148.60$ $2,359,085.75$ 7 $29,703.45$ $1,782,014.13$ $2,268,691.29$ 8 $31,676.63$ $198,662.77$ $8,204,166.91$ 9 $29,354.58$ $504,766.64$ $4,775,025.91$ 10 $28,367.29$ $5,105,900.90$ $1,279,956.03$ 11 $25,696.30$ $14,587,188.80$ 0.00 12 $28,119.13$ $22,990,012.73$ 0 1 $34,548,760.45$ 0 2 $40,565,861.47$ 0 3 $35,953,923.14$ 0 4 $29,622,640.15$ 0 5 $16,668,082.03$ 100274.937 6 $7,772,177.12$ $519,102.01$ 7 $1,853,245.84$ $3,581,376.01$ 8 $350,142.86$ $5,440,422.66$ 9 $729,559.03$ $5,077,557.61$ 10 $4,177,066.72$ $1,437,358.41$ 11 $14,77,0437.457.91$ 0 3 $36,772,378.63$ 0 3 $36,772,378.63$	a $30, 974.3a$ $707, 43.3b$ $2, 800, 413.2a$ 09 $30, 839.95$ $1, 083, 100.89$ $4, 805, 949.79$ 010 $29, 960.10$ $4, 720, 439.82$ $550, 034.19$ 011 $27, 598.42$ $16, 441, 015.77$ 0.00 012 $29, 784.57$ $19, 310, 684.21$ 002 $27, 043.73$ $36, 405, 953.09$ 003 $29, 250.92$ $30, 311, 397.65$ 004 $27, 375.79$ $21, 588, 441.29$ 005 $27, 111.01$ $11, 948, 970.02$ 146686.932 06 $27, 907.11$ $4, 993, 148.60$ $2, 359, 085.75$ 07 $29, 703.45$ $1, 782, 014.13$ $2, 268, 691.29$ 08 $31, 676.63$ $198, 662.77$ $8, 204, 166.91$ 09 $29, 354.58$ $504, 766.64$ $4, 775, 025.91$ 010 $28, 367.29$ $5, 105, 900.90$ $1, 279, 956.03$ 011 $25, 696.30$ $14, 587, 188.80$ 0.00012 $28, 119.13$ $22, 90, 012.73$ 002 $40, 565, 861.47$ 003 $35, 953, 923.14$ 004 $29, 622, 640.15$ 005 $16, 668, 082.03$ 100274.937 06 $7, 772, 177.12$ $519, 102.01$ 07 $1, 853, 245.84$ $3, 581, 376.01$ 010 $4, 177, 066.72$ $1, 437, 358.41$ 011 $14, 774, 378$	30, 94, 30 10, 433, 100, 89 4, 805, 949, 79 0 9 30, 839, 95 1, 083, 100, 89 4, 805, 949, 79 0 11 27, 598, 42 16, 441, 015, 77 0, 00 0 12 29, 784, 57 19, 310, 684, 21 0 0 0 12 29, 784, 57 19, 310, 684, 21 0 0 0 2 27, 043, 73 36, 405, 953, 09 0 0 0 3 29, 250, 92 30, 311, 397, 65 0 0 0 4 27, 375, 79 21, 588, 441, 29 0 0 0 5 27, 111, 01 11, 948, 970, 02 146686, 932 0 0 7 29, 703, 45 1, 782, 014, 13 2, 268, 691, 29 0 0 8 31, 676, 63 198, 662, 77 8, 204, 166, 91 0 0 9 29, 354, 58 504, 766, 64 4, 775, 025, 91 0 0 10 28, 367, 29 5, 105, 900, 90 1, 279, 956, 03 0 0 11 25, 696, 30 14, 587, 188, 80 0.00 <	a $30, 37, 30$ $70, 43, 33, 30$ $20, 00, 41, 32, 30$ 0 0 9 $30, 339, 95$ $1008, 30, 308, 949, 79$ 0 0 0 10 $29, 960, 10$ $4, 720, 439, 82$ $550, 034, 19$ 0 0 0 11 $27, 598, 42$ $16, 441, 015, 77$ 0.00 0 0 0 12 $29, 784, 57$ $19, 310, 684, 21$ 0 0 0 0 13 $30, 036, 27$ $34, 643, 340, 34$ 0 0 0 0 2 $27, 043, 73$ $36, 405, 953, 09$ 0 0 0 0 3 $29, 250, 92$ $30, 311, 397, 65$ 0 0 0 0 5 $27, 111, 01$ $11, 948, 970, 02$ $146686, 932$ 0 0 0 7 $29, 703, 45$ $1, 782, 014, 13$ $2, 268, 691, 29$ 0 0 0 9 $29, 354, 58$ $504, 766, 64$ $4, 775, 025, 91$ 0 0 0 10 $28, 367, 29$ $5, 105, 900, 90$ $1, 279, 956, 03$ 0 <td< td=""><td>a $30,34,35$ $10,330,30$ $2,300,443,28$ 0 0 0 0 0 9 $30,339,95$ $1,083,100,88$ $4,805,949,79$ 0 0 0 0 10 $29,960,10$ $4,720,439,82$ $550,034,19$ 0 0 0 0 11 $27,598,457$ $19,310,684,21$ 0 0 0 0 0 12 $29,784,57$ $19,310,684,21$ 0 0 0 0 0 2 $27,043,73$ $36,405,953,09$ 0 0 0 0 0 0 4 $27,375,79$ $21,588,441,29$ 0 0 0 0 0 5 $27,111.01$ $1,993,148,60$ $2,359,085,75$ 0 <t< td=""><td>a 50,374.38 $70,793.50$ $2,600,413.28$ 0 <</td><td>$\begin{array}{c ccccccccccccccccccccccccccccccccccc$</td><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td>3 30.374.38 107,43.39 1,680,549.79 0</td><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td></t<></td></td<>	a $30,34,35$ $10,330,30$ $2,300,443,28$ 0 0 0 0 0 9 $30,339,95$ $1,083,100,88$ $4,805,949,79$ 0 0 0 0 10 $29,960,10$ $4,720,439,82$ $550,034,19$ 0 0 0 0 11 $27,598,457$ $19,310,684,21$ 0 0 0 0 0 12 $29,784,57$ $19,310,684,21$ 0 0 0 0 0 2 $27,043,73$ $36,405,953,09$ 0 0 0 0 0 0 4 $27,375,79$ $21,588,441,29$ 0 0 0 0 0 5 $27,111.01$ $1,993,148,60$ $2,359,085,75$ 0 0 <t< td=""><td>a 50,374.38 $70,793.50$ $2,600,413.28$ 0 <</td><td>$\begin{array}{c ccccccccccccccccccccccccccccccccccc$</td><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td>3 30.374.38 107,43.39 1,680,549.79 0</td><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td></t<>	a 50,374.38 $70,793.50$ $2,600,413.28$ 0 <	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3 30.374.38 107,43.39 1,680,549.79 0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 19 of 28

2012	12	23,402,850.53	0.00	0	0	0	0	0	0	0	0	1	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 20 of 28

			GS > 1500 <	5000 kW Sa	ales
Variable	Coefficient	StdErr	T-Stat	P-Value	Definition
CONST	46996.33	7670.054	6.127	0.00%	Constant term
					Variable lagged by 1 month that takes into account GDP and
MEconT.GDP_LagDays	0.013	0.006	2.331	2.24%	the number of days in a month
					Variable lagged by 1 month that takes into account GDP and
MEconT.GDP_LagCDD17	0.001	0	7.102	0.00%	the HDD18
					Variable lagged by 1 month that takes into account GDP and
MEconT.GDP_LagHDD18	0	0	2.775	0.69%	the CDD17
BinT.Nov04	7903.757	2654.512	2.977	0.39%	binary flag to adjust for anomalous observation
BinT.Mar08	3959.346	2699.122	1.467	14.65%	binary flag to adjust for anomalous observation
BinT.Feb05	6657.134	2688.996	2.476	1.55%	binary flag to adjust for anomalous observation
					binary flag to adjust for changes in trending starting June
BinT.AftJun08	1270.059	710.383	1.788	7.78%	2008



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 21 of 28

Regression Statistics	
Iterations	1
Adjusted Observations	84
Deg. of Freedom for Error	76
R-Squared	0.556
Adjusted R-Squared	0.515
AIC	15.819
BIC	16.05
F-Statistic	13.596
Prob (F-Statistic)	0
Log-Likelihood	-775.57
Model Sum of Squares	644,437,506.81
Sum of Squared Errors	514,614,631.24
Mean Squared Error	6,771,245.15
Std. Error of Regression	2,602.16
Mean Abs. Dev. (MAD)	1,957.94
Mean Abs. % Err. (MAPE)	2.85%
Durbin-Watson Statistic	2.297
Durbin-H Statistic	#NA
Ljung-Box Statistic	59.06
Prob (Ljung-Box)	0.0001
Skewness	-0.233
Kurtosis	3.058
Jarque-Bera	0.774
Prob (Jarque-Bera)	0.6791



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 22 of 28

Year	Month	GS5000_MWh	GDP_LagDays	GDP_LagCDD17	GDP_LagHDD18	04-Nov	08-Mar	05-Feb Af	ftJun08
2004	1	63,782.48	1,278,267.43	0	29,279,712.06	0	0	0	0
2004	2	71,430.46	1,281,075.93	0	42,686,345.36	0	0	0	0
2004	3	63,891.32	1,202,929.86	0	30,596,590.12	0	0	0	0
2004	4	66,125.49	1,290,705.15	0	23,144,737.39	0	0	0	0
2004	5	61,082.09	1,253,728.80	90,024.69	15,514,023.26	0	0	0	0
2004	6	63,876.94	1,299,441.57	329,925.42	6,330,411.25	0	0	0	0
2004	7	65,216.70	1,261,319.40	1,759,190.20	2,111,133.35	0	0	0	0
2004	8	68,973.76	1,307,285.19	4,598,691.93	33,560.68	0	0	0	0
2004	9	67,084.99	1,307,267.00	2,695,008.24	1,050,206.30	0	0	0	0
2004	10	59,804.55	1,265,079.50	943,362.75	2,847,658.81	0	0	0	0
2004	11	73,409.84	1,307,230.63	0	12,459,278.39	1	0	0	0
2004	12	63,593.47	1,268,223.80	0	20,662,183.98	0	0	0	0
2005	1	69,685.45	1,313,765.22	0	34,514,236.97	0	0	0	0
2005	2	74,543.99	1,317,032.52	0	39,019,566.69	0	0	1	0
2005	3	63,149.39	1,192,287.51	0	29,601,021.29	0	0	0	0
2005	4	65,461.95	1,323,032.67	0	28,115,866.92	0	0	0	0
2005	5	64,650.59	1,283,257.50	0	13,642,453.07	0	0	0	0
2005	6	64,982.17	1,330,486.52	150,931.54	8,674,271.39	0	0	0	0
2005	7	71,997.15	1,291,877.70	6,030,556.87	645,938.85	0	0	0	0
2005	8	72,755.68	1,339,394.06	6,896,799.25	15,842.30	0	0	0	0
2005	9	71,903.04	1,343,860.54	5,978,915.02	339,216.41	0	0	0	0
2005	10	68,100.01	1,304,832.60	1,839,089.06	2,391,105.74	0	0	0	0
2005	11	65,700.19	1,352,793.50	438,021.44	11,751,848.05	0	0	0	0
2005	12	65,913.20	1,315,323.20	0	21,212,692.22	0	0	0	0
2006	1	68,880.82	1,365,541.11	0	32,983,874.72	0	0	0	0
2006	2	70,397.25	1,371,914.92	0	31,922,837.49	0	0	0	0
2006	3	66,297.54	1,240,855.93	0	31,899,045.39	0	0	0	0
2006	4	69,981.99	1,375,694.65	0	26,692,174.25	0	0	0	0
2006	5	64,356.95	1,333,146.30	0	13,939,340.68	0	0	0	0
2006	6	69,065.76	1,377,897.51	1,091,020.73	5,844,767.13	0	0	0	0
2006	7	70,132.63	1,333,752.10	3,384,581.20	1,195,560.56	0	0	0	0
2006	8	75,482.38	1,378,523.50	7,210,752.56	10,190.70	0	0	0	0
2006	9	72,005.23	1,380,506.67	3,993,820.65	849,828.03	0	0	0	0
2006	10	65,020.49	1,337,893.40	288,018.72	5,406,390.07	0	0	0	0
2006	11	66,147.17	1,384,473.02	0	14,929,978.41	0	0	0	0
2006	12	67,177.45	1,342,615.20	0	18,777,405.94	0	0	0	0

2007	1	66,952.12	1,390,265.06	0	27,080,270.50	0	0	0	0
2007	2	69,822.30	1,393,161.08	0	35,569,986.46	0	0	0	0
2007	3	68,385.13	1,262,003.59	0	36,587,775.11	0	0	0	0
2007	4	70,795.74	1,401,275.43	0	28,891,323.61	0	0	0	0
2007	5	66,265.28	1,359,999.30	15,111.10	16,194,191.66	0	0	0	0
2007	6	71,542.63	1,410,994.14	1,221,154.74	6,548,416.22	0	0	0	0
2007	7	73,391.33	1,370,957.10	4,202,364.33	1,560,796.58	0	0	0	0
2007	8	75,528.77	1,422,317.20	4,130,455.03	658,395.22	0	0	0	0
2007	9	75,288.86	1,424,355.86	4,522,904.20	947,273.23	0	0	0	0
2007	10	68,953.39	1,380,381.80	1,809,450.48	3,532,818.81	0	0	0	0
2007	11	69,094.69	1,428,433.19	200,441.43	10,269,167.48	0	0	0	0
2007	12	67,599.92	1,382,057.43	0	23,991,557.15	0	0	0	0
2008	1	69,596.03	1,427,818.82	0	35,728,863.12	0	0	0	0
2008	2	67,414.42	1,427,511.64	0	34,455,986.60	0	0	0	1
2008	3	73,010.80	1,335,821.36	0	34,813,116.97	0	1	0	1
2008	4	68,292.63	1,428,382.31	0	32,366,874.42	0	0	0	1
2008	5	71,000.91	1,382,726.76	37,448.85	13,749,873.28	0	0	0	1
2008	6	65,554.43	1,427,862.04	0	8,428,800.13	0	0	0	1
2008	7	75,510.98	1,380,877.19	3,363,203.11	1,350,191.03	0	0	0	1
2008	8	76,322.38	1,425,950.82	5,069,600.16	12,266.24	0	0	0	1
2008	9	70,511.04	1,420,407.32	2,782,394.66	659,611.19	0	0	0	1
2008	10	71,728.93	1,369,223.04	1,416,955.68	4,481,543.09	0	0	0	1
2008	11	65,208.75	1,409,320.31	0	14,428,106.07	0	0	0	1
2008	12	71,196.19	1,359,013.36	0	22,642,861.36	0	0	0	1
2009	1	72,542.03	1,399,307.31	0	35,447,989.92	0	0	0	1
2009	2	68,437.37	1,394,300.80	0	43,794,725.88	0	0	0	1
2009	3	73,001.79	1,260,683.73	0	31,481,636.64	0	0	0	1
2009	4	69,231.71	1,397,213.18	0	26,787,806.78	0	0	0	1
2009	5	70,314.62	1,353,551.00	207,920.47	14,997,909.07	0	0	0	1
2009	6	64,967.66	1,404,464.21	209,725.77	7,817,806.57	0	0	0	1
2009	7	74,835.88	1,364,766.83	2,617,129.95	2,330,718.46	0	0	0	1
2009	8	74,138.99	1,416,053.90	2,806,413.28	707,455.96	0	0	0	1
2009	9	73,167.53	1,421,211.75	4,805,949.79	1,083,100.89	0	0	0	1
2009	10	73,120.30	1,380,357.68	550,034.19	4,720,439.82	0	0	0	1
2009	11	65,300.94	1,431,527.45	0	16,441,015.77	0	0	0	1
2009	12	71,056.58	1,388,300.70	0	19,310,684.21	0	0	0	1
2010	1	70,541.99	1,437,627.32	0	34,643,340.34	0	0	0	1

Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 23 of 28





Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 24 of 28

2010	2	63,798.50	1,440,677.26	0	36,405,953.09	0	0	0	1
2010	3	70,696.45	1,302,132.53	0	30,311,397.65	0	0	0	1
2010	4	66,659.47	1,442,616.21	0	21,588,441.29	0	0	0	1
2010	5	68,137.68	1,397,018.40	146,686.93	11,948,970.02	0	0	0	1
2010	6	67,427.51	1,446,838.51	2,359,085.75	4,993,148.60	0	0	0	1
2010	7	72,264.51	1,403,314.20	2,268,691.29	1,782,014.13	0	0	0	1
2010	8	77,339.77	1,453,344.17	8,204,166.91	198,662.77	0	0	0	1
2010	9	67,859.28	1,456,170.54	4,775,025.91	504,766.64	0	0	0	1
2010	10	69,826.54	1,411,932.50	1,279,956.03	5,105,900.90	0	0	0	1
2010	11	66,858.53	1,461,823.29	0	14,587,188.80	0	0	0	1
2010	12	68,035.70	1,417,799.50	0	22,990,012.73	0	0	0	1
2011	1		1,468,295.68	0	34,548,760.45	0	0	0	1
2011	2		1,471,531.87	0	40,565,861.47	0	0	0	1
2011	3		1,331,750.09	0	35,953,923.14	0	0	0	1
2011	4		1,477,343.34	0	29,622,640.15	0	0	0	1
2011	5		1,432,499.10	100,274.94	16,668,082.03	0	0	0	1
2011	6		1,483,148.60	519,102.01	7,772,177.12	0	0	0	1
2011	7		1,438,111.10	3,581,376.01	1,853,245.84	0	0	0	1
2011	8		1,488,947.67	5,440,422.66	350,142.86	0	0	0	1
2011	9		1,491,842.35	5,077,557.61	729,559.03	0	0	0	1
2011	10		1,446,519.70	1,437,358.41	4,177,066.72	0	0	0	1
2011	11		1,497,631.70	104,351.11	14,774,378.27	0	0	0	1
2011	12		1,451,686.00	0	22,840,343.63	0	0	0	1
2012	1		1,502,519.37	0	35,731,364.59	0	0	0	1
2012	2		1,504,963.20	0	41,487,466.18	0	0	0	1
2012	3		1,410,711.28	0	36,772,378.63	0	0	0	1
2012	4		1,511,040.23	0	30,298,306.41	0	0	0	1
2012	5		1,465,237.50	102,566.63	17,049,015.14	0	0	0	1
2012	6		1,517,231.66	531,031.08	7,950,783.31	0	0	0	1
2012	7		1,471,339.90	3,664,126.80	1,896,066.68	0	0	0	1
2012	8		1,523,537.47	5,566,809.33	358,277.04	0	0	0	1
2012	9		1,526,803.94	5,196,551.09	746,656.38	0	0	0	1
2012	10		1,480,713.30	1,471,335.45	4,275,806.44	0	0	0	1
2012	11		1,533,336.88	106,838.96	15,126,615.63	0	0	0	1
2012	12		1,487,437.80	0	23,402,850.53	0	0	0	1



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 25 of 28

	Large Use Sales										
Variable	Coefficient	StdErr	T-Stat	P-Value	Definition						
CONST	24352.494	8828.765	2.758	0.75%	Constant term						
BinT.Mar	-1491.231	1060.835	-1.406	16.45%	Monthly binary variable to capture non weather-related seasonality						
					Variable lagged by 1 month that takes into account GDP and the number of						
MEconT.GDP_Days	0.021	0.006	3.294	0.16%	days in a month						
MEconT.GDP_LagCDD17	0.001	0	9.736	0.00%	Variable lagged by 1 month that takes into account GDP and the CDD17						
BinT.Yr05	-2234.447	929.64	-2.404	1.91%	binary flag to adjust for anomalous observation						
BinT.Nov09	-7448.685	2436.284	-3.057	0.32%	binary flag to adjust for anomalous observation						

Regression Statistics	
Iterations	1
Adjusted Observations	72
Deg. of Freedom for Error	66
R-Squared	0.719
Adjusted R-Squared	0.698
AIC	15.652
BIC	15.841
F-Statistic	33.845
Prob (F-Statistic)	0
Log-Likelihood	-659.62
Model Sum of Squares	980,065,030.17
Sum of Squared Errors	382,240,577.38
Mean Squared Error	5,791,523.90
Std. Error of Regression	2,406.56
Mean Abs. Dev. (MAD)	1,794.36
Mean Abs. % Err. (MAPE)	3.35%
Durbin-Watson Statistic	2.362
Durbin-H Statistic	#NA
Ljung-Box Statistic	25.89
Prob (Ljung-Box)	0.3586
Skewness	-0.133
Kurtosis	2.844
Jarque-Bera	0.286
Prob (Jarque-Bera)	0.8666



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 26 of 28

Year	Month	GSLrg_MWh	Mar	GDP_Days	GDP_LagCDD17	Yr05	09-Nov
2005	1	49,824.04	0	1,313,765.22	0	1	0
2005	2	51,532.06	0	1,189,577.76	0	1	0
2005	3	46,320.39	1	1,320,032.60	0	1	0
2005	4	50,809.16	0	1,280,354.20	0	1	0
2005	5	48,565.25	0	1,326,032.75	0	1	0
2005	6	50,679.05	0	1,287,567.60	150,931.54	1	0
2005	7	53,683.49	0	1,334,940.29	6,030,556.87	1	0
2005	8	62,312.75	0	1,339,394.06	6,896,799.25	1	0
2005	9	56,882.43	0	1,300,510.20	5,978,915.02	1	0
2005	10	53,182.71	0	1,348,327.02	1,839,089.06	1	0
2005	11.00	51,316.91	0	1,309,155.00	438,021.44	1	0
2005	12.00	49,124.40	0	1,359,167.31	0	1	0
2006	1.00	49,556.85	0	1,365,541.11	0	0	0
2006	2.00	50,687.77	0	1,239,148.96	0	0	0
2006	3.00	45,876.21	1	1,373,804.78	0	0	0
2006	400.00%	51,579.93	0	1,331,317.40	0	0	0
2006	5	49,173.03	0	1,377,584.51	0	0	0
2006	6	57,060.26	0	1,333,449.20	1,091,020.73	0	0
2006	7	59,322.68	0	1,378,210.50	3,384,581.20	0	0
2006	8	64,092.26	0	1,378,523.50	7,210,752.56	0	0
2006	9	60,876.68	0	1,335,974.20	3,993,820.65	0	0
2006	10	56,288.77	0	1,382,489.85	288,018.72	0	0
2006	11	55,378.34	0	1,339,812.60	0	0	0
2006	12	53,537.49	0	1,387,369.04	0	0	0
2007	1	53,424.16	0	1,390,265.06	0	0	0
2007	2	53,152.63	0	1,258,339.04	0	0	0
2007	3	49,830.03	1	1,397,218.26	0	0	0
2007	4	54,574.96	0	1,356,073.00	0	0	0
2007	5	52,141.13	0	1,405,332.61	15,111.10	0	0
2007	6	56,074.14	0	1,365,478.20	1,221,154.74	0	0
2007	7	59,426.48	0	1,416,655.67	4,202,364.33	0	0
2007	8	60,341.61	0	1,422,317.20	4,130,455.03	0	0
2007	9	59,956.85	0	1,378,408.90	4,522,904.20	0	0
2007	10	56,583.77	0	1,426,394.53	1,809,450.48	0	0
2007	11	56,537.77	0	1,382,354.70	200,441.43	0	0
2007	12	53,730.61	0	1,428,126.01	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 27 of 28

2008	1	54,586.77	0	1,427,818.82	0	0	0
2008	2	51,173.63	0	1,335,414.11	0	0	0
2008	3	54,642.74	1	1,427,946.98	0	0	0
2008	4	52,308.01	0	1,382,305.46	0	0	0
2008	5	58,708.76	0	1,428,817.65	37,448.85	0	0
2008	6	52,135.68	0	1,381,801.97	0	0	0
2008	7	59,219.09	0	1,426,906.43	3,363,203.11	0	0
2008	8	61,841.94	0	1,425,950.82	5,069,600.16	0	0
2008	9	58,177.68	0	1,374,587.73	2,782,394.66	0	0
2008	10	59,000.78	0	1,414,863.81	1,416,955.68	0	0
2008	11	49,521.63	0	1,363,858.36	0	0	0
2008	12	54,561.08	0	1,404,313.81	0	0	0
2009	1	51,636.92	0	1,399,307.31	0	0	0
2009	2	49,421.38	0	1,259,368.47	0	0	0
2009	3	57,563.87	1	1,395,756.99	0	0	0
2009	4	51,135.45	0	1,352,141.79	0	0	0
2009	5	51,385.16	0	1,398,669.37	207,920.47	0	0
2009	6	48,790.32	0	1,359,158.92	209,725.77	0	0
2009	7	56,756.06	0	1,410,259.06	2,617,129.95	0	0
2009	8	57,366.06	0	1,416,053.90	2,806,413.28	0	0
2009	9	56,764.16	0	1,375,366.21	4,805,949.79	0	0
2009	10	55,275.98	0	1,426,369.60	550,034.19	0	0
2009	11	46,078.65	0	1,385,349.14	0	0	1
2009	12	51,808.71	0	1,434,577.39	0	0	0
2010	1	54,650.63	0	1,437,627.32	0	0	0
2010	2	50,896.10	0	1,301,256.88	0	0	0
2010	3	56,682.09	1	1,441,646.73	0	0	0
2010	4	54,367.36	0	1,396,080.20	0	0	0
2010	5	59,027.80	0	1,443,585.68	146,686.93	0	0
2010	6	56,719.50	0	1,400,166.30	2,359,085.75	0	0
2010	7	60,909.23	0	1,450,091.34	2,268,691.29	0	0
2010	8	65,300.62	0	1,453,344.17	8,204,166.91	0	0
2010	9	60,753.88	0	1,409,197.30	4,775,025.91	0	0
2010	10	58,601.34	0	1,458,996.92	1,279,956.03	0	0
2010	11	50,718.75	0	1,414,667.70	0	0	0
2010	12	57,039.29	0	1,465,059.48	0	0	0
2011	1		0	1,468,295.68	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #6 Attachment 1 Filed: 2011-09-07 Page 28 of 28

2011	2	0	1,329,125.56	0	0	0
2011	3	1	1,474,437.60	0	0	0
2011	4	0	1,429,687.10	0	0	0
2011	5	0	1,480,249.07	100,274.94	0	0
2011	6	0	1,435,305.10	519,102.01	0	0
2011	7	0	1,486,048.14	3,581,376.01	0	0
2011	8	0	1,488,947.67	5,440,422.66	0	0
2011	9	0	1,443,718.40	5,077,557.61	0	0
2011	10	0	1,494,737.02	1,437,358.41	0	0
2011	11	0	1,449,321.00	104,351.11	0	0
2011	12	0	1,500,075.53	0	0	0
2012	1	0	1,502,519.37	0	0	0
2012	2	0	1,407,868.80	0	0	0
2012	3	1	1,508,001.72	0	0	0
2012	4	0	1,462,297.00	0	0	0
2012	5	0	1,514,078.75	102,566.63	0	0
2012	6	0	1,468,288.70	531,031.08	0	0
2012	7	0	1,520,384.56	3,664,126.80	0	0
2012	8	0	1,523,537.47	5,566,809.33	0	0
2012	9	0	1,477,552.20	5,196,551.09	0	0
2012	10	0	1,530,070.41	1,471,335.45	0	0
2012	11	0	1,483,874.40	106,838.96	0	0
2012	12	0	1,537,019.06	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Filed: 2011-09-08 Page 1 of 1

1	3. I	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	ue 3.1 - Is the load forecast methodology including weather normalization
4	ap	propriate?
5		
6	<u>En</u>	ergy Probe Question #24 - Ref: Exhibit C1, Tab 1, Schedule 1, Attachment X
7	A number of the equations shown in Attachment X include explanatory variables with P-	
8	Va	lues in excess of 5.0%. Please re-estimate all equations that have at least one
9	variable with a P-Value of more than 5.0% by excluding all such variables and provide	
10	the following for each such equation:	
11	a)	the regression results in the same format as that shown in Attachment X; and
12	b)	a table that shows the 2011 and 2012 forecasts as currently found in the evidence
13		and the corresponding forecasts for 2011 and 2012 that result from the revised
14		equations requested in part (a).
15		
16	Response	
17		
18	a)	Please see Attachment 1 to this Exhibit for the regression results based on excluding
19		variables with a P-Value of more than 5.0%, in the same format as that shown in
20		Attachment X.
21		
22	b)	The 'Results' tab of Attachment 1 provide the 2011 and 2012 results as shown in the
23		evidence and with the revised equations from part (a). Note that for Tables 8, 10, 11
24		and 13 the 'Old' do not match the numbers in Exhibit C1-1-1 because they do not
25		include the adjustments for conservation and demand management nor suite
26		metering.
Table 3 - Actual and Forecasted System Energy (MWh)

	Foreca	st MWh
Year	Old	New
2011	7,957,251	7,945,567
2012	8,029,840	8,008,836

Table 4 - Actual and Forecasted System Peak

	Forecast S	ystem Peak
Year	Old	New
2011	1,435	1,433
2012	1,448	1,445

Note that the "Old" values do not match those in C1-1-1 since these values do not include CDM

Table 8 - Actual/Forecast Sales (MWh) by Class

	Re	es	GS	50	GS10	00NI	GS1	0001	GS1	500	GS	5000	GS	LRG	St	_gt	US	3L
Year	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
2011	2,286,381	2,286,351	772,865	764,669	1,669,594	1,669,990	1,035,043	1,034,936	350,314	350,276	837,804	836,045	669,287	668,027	41,127	40,841	17,533	17,530
2012	2,297,816	2,294,617	777,019	767,535	1,679,702	1,677,915	1,059,519	1,057,946	351,317	350,794	845,619	845,194	679,874	677,053	41,611	41,174	17,553	17,526

Table 10 - Average Customer/Connection Numbers

	Re	s	GS	50	GS10	000NI	GS1	0001	GS1	500	GS	5000	GS	LRG	StL	_gt	ບຮ	3L
Year	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
2011	276,018	276,018	23,545	23,531	2,653	2,640	590	618	54	54	67	68	12	12	54,716	54,709	3,093	3,093
2012	280,151	280,151	23,636	23,618	2,667	2,649	594	668	54	54	67	69	12	12	55,546	55,531	3,093	3,093

Table 11 - Year End Customer/Connection Numbers

	Re	es	GS	50	GS10	000NI	GS1	0001	GS1	500	GS	5000	GS	LRG	Stl	_gt	ປະ	۶L
Year	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
2011	277,921	277,921	23,587	23,571	2,653	2,645	591	640	54	54	67	68	12	12	55,051	55,040	3,093	3,093
2012	282,030	282,030	23,678	23,657	2,676	2,652	596	692	54	54	67	69	12	12	55,546	55,982	3,093	3,093

Table 13 - Actual/Forecast Class Demand Forecast in kW

	GS10	000NI	GS1	1000	GS1	500	GS5	000	GSL	RG	St	Lgt
Year	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New
2011	4,331,700	4,334,787	2,410,540	2,427,927	801,528	801,784	1,769,045	1,765,714	1,211,973	1,210,698	121,975	121,975
2012	4,348,817	4,351,722	2,485,880	2,510,627	807,858	808,144	1,772,864	1,774,380	1,224,354	1,222,336	125,258	125,258



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 2 of 58

Attachment X

Existing				
Variable	Coefficient	StdErr		P-Value
CONST	-204118.198	30717.18	-6.645	0.00%
BinT.Days	21075.509	878.912	23.979	0.00%
BinT.WkEndDays	-1778.594	762.368	-2.333	2.13%
Economics.GDP	3.851	0.426	9.044	0.00%
MWthrT.HDD8	275.265	4.225	65.147	0.00%
MWthrT.CDD18	922.188	25.017	36.863	0.00%
BinT.Yr01	12374.747	2361.674	5.24	0.00%
BinT.Yr02	6318.657	2223.677	2.842	0.53%
BinT.Aug03	-49381.939	6970.787	-7.084	0.00%
BinT.Mar	-11625.694	2364.957	-4.916	0.00%
BinT.Apr	-15204.213	2394.74	-6.349	0.00%
BinT.May	-21778.482	2599.256	-8.379	0.00%
BinT.Oct	-13855.271	2616.901	-5.295	0.00%
BinT.After06	-4762.041	2443.637	-1.949	5.37%
BinT.Jan08	31953.077	6891.547	4.637	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	132
Deg. of Freedom for Error	117
R-Squared	0.987
Adjusted R-Squared	0.985
AIC	17.724
BIC	18.052
F-Statistic	621.647
Prob (F-Statistic)	0
Log-Likelihood	-1,342.11
Model Sum of Squares	389,919,808,431.75
Sum of Squared Errors	5,241,904,177.45
Mean Squared Error	44,802,599.81
Std. Error of Regression	6,693.47
Mean Abs. Dev. (MAD)	5,037.41
Mean Abs. % Err. (MAPE)	0.78%
Durbin-Watson Statistic	1.812
Durbin-H Statistic	#NA
Ljung-Box Statistic	27.12
Prob (Ljung-Box)	0.2988
Skewness	-0.031
Kurtosis	2.933
Jarque-Bera	0.046
Prob (Jarque-Bera)	0.9774

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	-177399.981	27811.56	-6.379	0.00%
BinT.Days	21117.495	889.003	23.754	0.00%
BinT.WkEndDays	-1818.674	771.072	-2.359	2.00%
Economics.GDP	3.151	0.231	13.615	0.00%
MWthrT.HDD8	275.561	4.272	64.5	0.00%
MWthrT.CDD18	925.8	25.242	36.677	0.00%
BinT.Yr01	11611.535	2356.421	4.928	0.00%
BinT.Yr02	6315.028	2249.882	2.807	0.59%
BinT.Aug03	-48966.628	7049.64	-6.946	0.00%
BinT.Mar	-11814.837	2390.811	-4.942	0.00%
BinT.Apr	-15246.379	2422.863	-6.293	0.00%
BinT.May	-21808.422	2629.842	-8.293	0.00%
BinT.Oct	-13545.608	2642.856	-5.125	0.00%
BinT.Jan08	31594.162	6970.273	4.533	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	132
Deg. of Freedom for Error	118
R-Squared	0.986
Adjusted R-Squared	0.985
AIC	17.741
BIC	18.047
F-Statistic	653.676
Prob (F-Statistic)	0
Log-Likelihood	-1,344.22
Model Sum of Squares	389,749,664,586.25
Sum of Squared Errors	5,412,048,022.95
Mean Squared Error	45,864,813.75
Std. Error of Regression	6,772.36
Mean Abs. Dev. (MAD)	5,111.33
Mean Abs. % Err. (MAPE)	0.79%
Durbin-Watson Statistic	1.738
Durbin-H Statistic	#NA
Ljung-Box Statistic	22.99
Prob (Ljung-Box)	0.5203
Skewness	-0.044
Kurtosis	2.95
Jarque-Bera	0.057
Prob (Jarque-Bera)	0.972



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 3 of 58

Attachment X Existing

Variable	Coefficient	StdErr		P-Value
PkWthrT.PKHDD10_Filled	6.669	0.83	8.034	0.00%
PkWthrT.PKCDD18_Filled	63.076	3.376	18.686	0.00%
MoFcstT.Ma_Energy	0.001	0	8.222	0.00%
MoFcstT.Sys_GWh	0.001	0	3.585	0.05%
BinT.Sep03	-69.755	43.086	-1.619	10.87%
BinT.Mar	-47.171	16.326	-2.889	0.48%
BinT.Apr	-78.213	17.274	-4.528	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	104
Deg. of Freedom for Error	97
R-Squared	0.918
Adjusted R-Squared	0.913
AIC	7.541
BIC	7.719
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-532.71
Model Sum of Squares	1,910,362.39
Sum of Squared Errors	171,258.13
Mean Squared Error	1,765.55
Std. Error of Regression	42.02
Mean Abs. Dev. (MAD)	32.97
Mean Abs. % Err. (MAPE)	2.74%
Durbin-Watson Statistic	1.688
Durbin-H Statistic	#NA
Ljung-Box Statistic	30.39
Prob (Ljung-Box)	0.1722
Skewness	0.162
Kurtosis	3.167
Jarque-Bera	0.575
Prob (Jarque-Bera)	0.7502

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
PkWthrT.PKHDD10_Filled	6.505	0.831	7.831	0.00%
PkWthrT.PKCDD18_Filled	62.265	3.366	18.5	0.00%
MoFcstT.Ma_Energy	0.001	0	7.997	0.00%
MoFcstT.Sys_GWh	0.001	0	3.891	0.02%
BinT.Mar	-46.543	16.456	-2.828	0.57%
BinT.Apr	-76.023	17.363	-4.378	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	104
Deg. of Freedom for Error	98
R-Squared	0.916
Adjusted R-Squared	0.911
AIC	7.549
BIC	7.701
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-534.1
Model Sum of Squares	1,905,734.78
Sum of Squared Errors	175,885.74
Mean Squared Error	1,794.75
Std. Error of Regression	42.36
Mean Abs. Dev. (MAD)	33.7
Mean Abs. % Err. (MAPE)	2.80%
Durbin-Watson Statistic	1.738
Durbin-H Statistic	#NA
Ljung-Box Statistic	30.32
Prob (Ljung-Box)	0.1744
Skewness	0.16
Kurtosis	3.104
Jarque-Bera	0.492
Prob (Jarque-Bera)	0.7819



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 4 of 58

Attachement X Page 3

Fristing

_	_	_	-

Existing				
Variable	Coefficient	StdErr		P-Value
CONST	569590.095	649758	0.877	38.30%
Economics.Pop	3.485	17.305	0.201	84.08%
AR(1)	0.999	0.002	429.642	0.00%

Regression Statistics	
Iterations	33
Adjusted Observations	95
Deg. of Freedom for Error	92
R-Squared	1
Adjusted R-Squared	1
AIC	10.799
BIC	10.88
F-Statistic	98651.704
Prob (F-Statistic)	0
Log-Likelihood	-644.77
Model Sum of Squares	9,370,520,709.91
Sum of Squared Errors	4,369,351.31
Mean Squared Error	47,492.95
Std. Error of Regression	217.93
Mean Abs. Dev. (MAD)	142.61
Mean Abs. % Err. (MAPE)	0.06%
Durbin-Watson Statistic	2.629
Durbin-H Statistic	#NA
Ljung-Box Statistic	42.35
Prob (Ljung-Box)	0.0118
Skewness	1.665
Kurtosis	9.689
Jarque-Bera	221.039
Prob (Jarque-Bera)	0

New

Cannot remove Economics.Pop since at least 1 variable is required



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 5 of 58

Attachment X Page 4

Existina

Existing				
Variable	Coefficient	StdErr		P-Value
CONST	140709.231	2969.171	47.39	0.00%
MEconT.RPI_LagHDD18	0.002	0	10.569	0.00%
MEconT.RPI_Lag2HDD18	0	0	2.564	1.22%
MEconT.RPI_LagCDD18	0.007	0.001	5.289	0.00%
MEconT.RPI_Lag2CDD18	0.008	0.001	5.824	0.00%
BinT.Spr08	-12794.42	3869.719	-3.306	0.14%
BinT.Dec07	-66212.5	11967.75	-5.533	0.00%
BinT.Dec06	-32621.493	11610.09	-2.81	0.62%
BinT.Jun09	-28131.21	11972.73	-2.35	2.12%
BinT.Mar03	41202.019	11789.88	3.495	0.08%
BinT.Mar04	80164.921	11762.06	6.816	0.00%
BinT.Aug03	-37327.512	14966.73	-2.494	1.46%
BinT.Sep03	39676.679	14868.32	2.669	0.92%
MA(1)	-0.659	0.086	-7.695	0.00%

Regression Statistics	
Iterations	22
Adjusted Observations	96
Deg. of Freedom for Error	82
R-Squared	0.798
Adjusted R-Squared	0.766
AIC	19.303
BIC	19.677
F-Statistic	24.983
Prob (F-Statistic)	0
Log-Likelihood	-1,048.75
Model Sum of Squares	68,618,261,992.10
Sum of Squared Errors	17,324,990,440.74
Mean Squared Error	211,280,371.23
Std. Error of Regression	14,535.49
Mean Abs. Dev. (MAD)	10,226.08
Mean Abs. % Err. (MAPE)	5.49%
Durbin-Watson Statistic	1.936
Durbin-H Statistic	#NA
Ljung-Box Statistic	54.45
Prob (Ljung-Box)	0.0004
Skewness	-0.033
Kurtosis	3.249
Jarque-Bera	0.264
Prob (Jarque-Bera)	0.8762



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 6 of 58

Attachment X Fristing

Existing				
Variable	Coefficient	StdErr		P-Value
CONST	17824.365	321.765	55.396	0.00%
BinT.Fall03	622.317	36.613	16.997	0.00%
BinT.Aft04	-355.971	26.162	-13.606	0.00%
BinT.Aft05	-44.446	26.528	-1.675	9.73%
Res_Custs.Predicted	0.022	0.001	16.807	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	95
Deg. of Freedom for Error	90
R-Squared	0.887
Adjusted R-Squared	0.882
AIC	8.444
BIC	8.578
F-Statistic	177.144
Prob (F-Statistic)	0
Log-Likelihood	-530.88
Model Sum of Squares	3,127,888.48
Sum of Squared Errors	397,289.88
Mean Squared Error	4,414.33
Std. Error of Regression	66.44
Mean Abs. Dev. (MAD)	51.12
Mean Abs. % Err. (MAPE)	0.22%
Durbin-Watson Statistic	1.203
Durbin-H Statistic	#NA
Ljung-Box Statistic	173.21
Prob (Ljung-Box)	0
Skewness	0.573
Kurtosis	3.981
Jarque-Bera	9.004
Prob (Jarque-Bera)	0.0111

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	18153.125	257.529	70.49	0.00%
BinT.Fall03	620.13	36.951	16.783	0.00%
BinT.Aft04	-369.815	25.069	-14.752	0.00%
Res_Custs.Predicted	0.021	0.001	19.734	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	95
Deg. of Freedom for Error	91
R-Squared	0.884
Adjusted R-Squared	0.88
AIC	8.453
BIC	8.561
F-Statistic	230.675
Prob (F-Statistic)	0
Log-Likelihood	-532.34
Model Sum of Squares	3,115,496.75
Sum of Squared Errors	409,681.61
Mean Squared Error	4,502.00
Std. Error of Regression	67.1
Mean Abs. Dev. (MAD)	52.01
Mean Abs. % Err. (MAPE)	0.22%
Durbin-Watson Statistic	1.189
Durbin-H Statistic	#NA
Ljung-Box Statistic	192.61
Prob (Ljung-Box)	0
Skewness	0.57
Kurtosis	4.4
Jarque-Bera	12.914
Prob (Jarque-Bera)	0.0016

Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 7 of 58

Attachment X

	•			
existing				
Variable	Coefficient	StdErr		P-Value
CONST	59857.044	1597.717	37.464	0.00%
MEconT.GDP_Lag2HDD18	0.001	0	9.862	0.00%
MEconT.GDP_Lag2CDD17	0.002	0	5.875	0.00%
BinT.Dec06	-12882.997	5182.329	-2.486	1.51%
BinT.Spr08	-8208.235	2103.846	-3.902	0.02%
BinT.Jun07	-8402.352	5125.715	-1.639	10.53%
BinT.Dec07	-21283.591	5153.999	-4.13	0.01%
BinT.Apr07	-13900.937	5386.959	-2.58	1.18%
BinT.Spr09	-6972.964	2089.641	-3.337	0.13%
BinT.AftFeb04	-6867.234	1234.711	-5.562	0.00%
BinT.Apr03	-35007.029	5782.979	-6.053	0.00%
BinT.Spr10	-8247.442	2052.33	-4.019	0.01%
BinT.Feb10	-8741.619	5262.408	-1.661	10.08%
BinT.Feb09	-8925.043	5311.587	-1.68	9.70%
BinT.Fall10	-5397.429	3218.338	-1.677	9.76%
BinT.Jul04	-17595.928	5221.493	-3.37	0.12%
BinT.Mar04	16596.797	5436.473	3.053	0.31%
BinT.Nov04	13407.144	5209.188	2.574	1.20%
AR(1)	-0.722	0.081	-8.893	0.00%

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	60791.342	1612.944	37.69	0.00%
MEconT.GDP_Lag2HDD18	0.001	0	9.209	0.00%
MEconT.GDP_Lag2CDD17	0.002	0	5.415	0.00%
BinT.Dec06	-12549.184	5390.827	-2.328	2.24%
BinT.Spr08	-7207.101	2163.296	-3.332	0.13%
BinT.Dec07	-20837.773	5363.145	-3.885	0.02%
BinT.Apr07	-11730.52	5553.812	-2.112	3.78%
BinT.Spr09	-6589.69	2160.534	-3.05	0.31%
BinT.AftFeb04	-7352.042	1279.001	-5.748	0.00%
BinT.Apr03	-33851.329	5998.974	-5.643	0.00%
BinT.Spr10	-8019.005	2120.106	-3.782	0.03%
BinT.Jul04	-17501.95	5432.196	-3.222	0.18%
BinT.Mar04	19047.49	5593.966	3.405	0.10%
BinT.Nov04	13494.215	5421.63	2.489	1.49%
AR(1)	-0.711	0.08	-8.857	0.00%

Regression Statistics	
Iterations	9
Adjusted Observations	95
Deg. of Freedom for Error	76
R-Squared	0.772
Adjusted R-Squared	0.718
AIC	17.635
BIC	18.146
F-Statistic	14.319
Prob (F-Statistic)	0
Log-Likelihood	-953.48
Model Sum of Squares	9,847,463,518.09
Sum of Squared Errors	2,903,613,757.54
Mean Squared Error	38,205,444.18
Std. Error of Regression	6,181.06
Mean Abs. Dev. (MAD)	4,395.42
Mean Abs. % Err. (MAPE)	7.26%
Durbin-Watson Statistic	2.206
Durbin-H Statistic	#NA
Ljung-Box Statistic	44.98
Prob (Ljung-Box)	0.0059
Skewness	-0.219
Kurtosis	3.181
Jarque-Bera	0.887
Prob (Jarque-Bera)	0.6419

Regression Statistics	
Iterations	9
Adjusted Observations	95
Deg. of Freedom for Error	80
R-Squared	0.742
Adjusted R-Squared	0.697
AIC	17.676
BIC	18.079
F-Statistic	16.444
Prob (F-Statistic)	0
Log-Likelihood	-959.39
Model Sum of Squares	9,462,805,798.38
Sum of Squared Errors	3,288,271,477.25
Mean Squared Error	41,103,393.47
Std. Error of Regression	6,411.19
Mean Abs. Dev. (MAD)	4,697.19
Mean Abs. % Err. (MAPE)	7.76%
Durbin-Watson Statistic	2.196
Durbin-H Statistic	#NA
Ljung-Box Statistic	46.84
Prob (Ljung-Box)	0.0035
Skewness	-0.224
Kurtosis	2.836
Jarque-Bera	0.901
Prob (Jarque-Bera)	0.6374



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 8 of 58

Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
CONST	1623.362	1244.913	1.304	19.53%
Economics.Emp	1.496	1.895	0.789	43.18%
BinT.AftSep03	27.35	62.546	0.437	66.29%
BinT.Spring06	103.712	50.021	2.073	4.07%
BinT.AftJun06	2.417	61.699	0.039	96.88%
BinT.Yr05	72.091	50.211	1.436	15.42%
BinT.Aug03	178.666	43.848	4.075	0.01%
AR(1)	0.945	0.021	45.398	0.00%

Regression Statistics	
Iterations	16
Adjusted Observations	107
Deg. of Freedom for Error	99
R-Squared	0.943
Adjusted R-Squared	0.939
AIC	8.266
BIC	8.465
F-Statistic	235.424
Prob (F-Statistic)	0
Log-Likelihood	-586.04
Model Sum of Squares	5,962,982.01
Sum of Squared Errors	358,220.64
Mean Squared Error	3,618.39
Std. Error of Regression	60.15
Mean Abs. Dev. (MAD)	27.79
Mean Abs. % Err. (MAPE)	0.97%
Durbin-Watson Statistic	1.461
Durbin-H Statistic	#NA
Ljung-Box Statistic	25.1
Prob (Ljung-Box)	0.4003
Skewness	-4.032
Kurtosis	21.748
Jarque-Bera	1856.985
Prob (Jarque-Bera)	0

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	2656.789	101.419	26.196	0.00%
BinT.Spring06	73.147	43.224	1.692	9.36%
BinT.Aug03	181.076	43.63	4.15	0.01%
AR(1)	0.937	0.023	40.563	0.00%

Regression Statistics	
Iterations	8
Adjusted Observations	107
Deg. of Freedom for Error	103
R-Squared	0.942
Adjusted R-Squared	0.94
AIC	8.217
BIC	8.317
F-Statistic	555.827
Prob (F-Statistic)	0
Log-Likelihood	-587.44
Model Sum of Squares	5,953,458.64
Sum of Squared Errors	367,744.01
Mean Squared Error	3,570.33
Std. Error of Regression	59.75
Mean Abs. Dev. (MAD)	28.55
Mean Abs. % Err. (MAPE)	0.99%
Durbin-Watson Statistic	1.431
Durbin-H Statistic	#NA
Ljung-Box Statistic	24.89
Prob (Ljung-Box)	0.412
Skewness	-3.997
Kurtosis	21.46
Jarque-Bera	1804.058
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 9 of 58

Attachment X Page 8

Existing

Variable	Coefficient	StdErr		P-Value
CONST	70086.093	13487.52	5.196	0.00%
Sales.GS1000NI_MWh	2.04	0.091	22.484	0.00%
BinT.Jan	-9848.278	8097.516	-1.216	22.73%
BinT.Feb	-38887.394	7827.742	-4.968	0.00%
BinT.Jun	39566.126	7736.522	5.114	0.00%
BinT.Oct	17027.959	7667.069	2.221	2.90%
BinT.Nov	15145.328	8128.306	1.863	6.59%
BinT.Apr03	-58259.347	20863.31	-2.792	0.65%
BinT.Nov03	137874.308	21540.99	6.401	0.00%
BinT.Dec03	-118073.367	20381.55	-5.793	0.00%
BinT.Apr04	109652.149	20373.55	5.382	0.00%
BinT.May04	-124237.376	20361.9	-6.101	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	84
R-Squared	0.899
Adjusted R-Squared	0.886
AIC	19.937
BIC	20.257
F-Statistic	67.802
Prob (F-Statistic)	0
Log-Likelihood	-1,081.19
Model Sum of Squares	302,377,816,034.31
Sum of Squared Errors	34,055,886,993.04
Mean Squared Error	405,427,226.11
Std. Error of Regression	20,135.22
Mean Abs. Dev. (MAD)	14,941.19
Mean Abs. % Err. (MAPE)	4.11%
Durbin-Watson Statistic	2.369
Durbin-H Statistic	#NA
Ljung-Box Statistic	15.62
Prob (Ljung-Box)	0.9012
Skewness	-0.155
Kurtosis	2.555
Jarque-Bera	1.18
Prob (Jarque-Bera)	0.5544

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	78673.538	13115.41	5.999	0.00%
Sales.GS1000NI_MWh	1.985	0.087	22.858	0.00%
BinT.Feb	-38431.991	7799.314	-4.928	0.00%
BinT.Jun	38289.957	7801.484	4.908	0.00%
BinT.Oct	16127.91	7719.68	2.089	3.96%
BinT.Apr03	-61677.571	21221.11	-2.906	0.46%
BinT.Nov03	151598.056	20746.73	7.307	0.00%
BinT.Dec03	-117736.609	20718.18	-5.683	0.00%
BinT.Apr04	109919.017	20712.26	5.307	0.00%
BinT.May04	-124084.162	20703.88	-5.993	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	86
R-Squared	0.892
Adjusted R-Squared	0.881
AIC	19.958
BIC	20.225
F-Statistic	79.114
Prob (F-Statistic)	0
Log-Likelihood	-1,084.20
Model Sum of Squares	300,177,570,190.72
Sum of Squared Errors	36,256,132,836.63
Mean Squared Error	421,582,939.96
Std. Error of Regression	20,532.48
Mean Abs. Dev. (MAD)	15,530.09
Mean Abs. % Err. (MAPE)	4.28%
Durbin-Watson Statistic	2.392
Durbin-H Statistic	#NA
Ljung-Box Statistic	16.32
Prob (Ljung-Box)	0.8762
Skewness	-0.072
Kurtosis	2.545
Jarque-Bera	0.91
Prob (Jarque-Bera)	0.6346



Not in Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
CONST	130389.758	3334.789	39.1	0.00%
MEconT.GDP_LagHDD18	0.001	0	10.396	0.00%
MEconT.GDP_LagCDD17	0.004	0.001	5.442	0.00%
BinT.Jan05	61838.036	11357.97	5.444	0.00%
BinT.Dec05	-52074.126	11239.36	-4.633	0.00%
BinT.Apr06	-43278.354	11259.34	-3.844	0.02%
BinT.Dec07	-29780.141	11194.5	-2.66	0.95%
BinT.Dec06	-35418.022	11243.57	-3.15	0.23%
BinT.Apr03	-71281.9	11260.91	-6.33	0.00%
BinT.Aug03	-49146.159	11335.74	-4.336	0.00%
BinT.Mar03	76972.578	11337.5	6.789	0.00%
BinT.Aft07	-17142.649	2454.569	-6.984	0.00%
BinT.Dec04	-32943.976	11239.61	-2.931	0.44%
BinT.Jun03	33424.971	11367.28	2.94	0.43%
BinT.Oct03	36495.412	11321.97	3.223	0.18%
BinT.Nov03	-18484.429	11275.48	-1.639	10.51%
BinT.Mar04	49422.548	11298.34	4.374	0.00%

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	129432.704	3317.737	39.012	0.00%
MEconT.GDP_LagHDD18	0.001	0	10.451	0.00%
MEconT.GDP_LagCDD17	0.005	0.001	5.606	0.00%
BinT.Jan05	62235.802	11474.51	5.424	0.00%
BinT.Dec05	-51460.815	11350.99	-4.534	0.00%
BinT.Apr06	-42753.836	11372.87	-3.759	0.03%
BinT.Dec07	-29718.959	11311.89	-2.627	1.03%
BinT.Dec06	-34765.248	11354.41	-3.062	0.30%
BinT.Apr03	-70760.789	11374.53	-6.221	0.00%
BinT.Aug03	-48866.227	11453.37	-4.267	0.01%
BinT.Mar03	77389.835	11453.56	6.757	0.00%
BinT.Aft07	-16635.55	2460.547	-6.761	0.00%
BinT.Dec04	-32321.744	11351.05	-2.847	0.56%
BinT.Jun03	34253.89	11475.17	2.985	0.38%
BinT.Oct03	37225.419	11431.9	3.256	0.17%
BinT.Mar04	49883.797	11413.34	4.371	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	79
R-Squared	0.85
Adjusted R-Squared	0.819
AIC	18.78
BIC	19.234
F-Statistic	27.878
Prob (F-Statistic)	0
Log-Likelihood	-1,020.64
Model Sum of Squares	54,467,404,449.13
Sum of Squared Errors	9,646,761,589.96
Mean Squared Error	122,110,906.20
Std. Error of Regression	11,050.38
Mean Abs. Dev. (MAD)	7,432.37
Mean Abs. % Err. (MAPE)	5.14%
Durbin-Watson Statistic	2.373
Durbin-H Statistic	#NA
Ljung-Box Statistic	38.2
Prob (Ljung-Box)	0.0331
Skewness	0.299
Kurtosis	3.078
Jarque-Bera	1.459
Prob (Jarque-Bera)	0.4822

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	80
R-Squared	0.844
Adjusted R-Squared	0.815
AIC	18.792
BIC	19.22
F-Statistic	28.947
Prob (F-Statistic)	0
Log-Likelihood	-1,022.25
Model Sum of Squares	54,139,236,342.82
Sum of Squared Errors	9,974,929,696.28
Mean Squared Error	124,686,621.20
Std. Error of Regression	11,166.32
Mean Abs. Dev. (MAD)	7,630.62
Mean Abs. % Err. (MAPE)	5.28%
Durbin-Watson Statistic	2.397
Durbin-H Statistic	#NA
Ljung-Box Statistic	37.31
Prob (Ljung-Box)	0.0408
Skewness	0.277
Kurtosis	2.98
Jarque-Bera	1.229
Prob (Jarque-Bera)	0.5409



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 11 of 58

Attachment X

Existing				
Variable	Coefficient	StdErr		P-Value
Economics.Emp	0.833	0.083	9.988	0.00%
BinT.AftMay05	6.288	5.251	1.198	23.42%
BinT.Aft05	0.132	5.286	0.025	98.02%
AR(1)	0.986	0.007	140.188	0.00%

Regression Statistics	
Iterations	24
Adjusted Observations	95
Deg. of Freedom for Error	91
R-Squared	0.997
Adjusted R-Squared	0.997
AIC	3.343
BIC	3.45
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-289.58
Model Sum of Squares	769,716.05
Sum of Squared Errors	2,470.90
Mean Squared Error	27.15
Std. Error of Regression	5.21
Mean Abs. Dev. (MAD)	3.72
Mean Abs. % Err. (MAPE)	0.87%
Durbin-Watson Statistic	1.337
Durbin-H Statistic	#NA
Ljung-Box Statistic	27.49
Prob (Ljung-Box)	0.2823
Skewness	1.147
Kurtosis	5.569
Jarque-Bera	46.96
Prob (Jarque-Bera)	0

INCW				
Variable	Coefficient	StdErr	T-Stat	P-Value
Economics.Emp	-0.054	0.133	-0.409	68.35%
AR(1)	1.006	0.001	828.524	0.00%

Regression Statistics	
Iterations	11
Adjusted Observations	95
Deg. of Freedom for Error	93
R-Squared	0.998
Adjusted R-Squared	0.998
AIC	2.852
BIC	2.906
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-268.28
Model Sum of Squares	770,608.93
Sum of Squared Errors	1,578.02
Mean Squared Error	16.97
Std. Error of Regression	4.12
Mean Abs. Dev. (MAD)	3.06
Mean Abs. % Err. (MAPE)	0.70%
Durbin-Watson Statistic	1.953
Durbin-H Statistic	#NA
Ljung-Box Statistic	26.91
Prob (Ljung-Box)	0.3086
Skewness	1.161
Kurtosis	5.015
Jarque-Bera	37.393
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 12 of 58

Attachment X Page 10

Existing

Variable	Coefficient	StdErr		P-Value
CONST	-17515.366	8983.579	-1.95	5.59%
BinT.TrendVar	2790.823	1339.039	2.084	4.14%
Sales.GS1000I_MWh	1.751	0.273	6.417	0.00%
BinT.Jan	-5808.858	3398.319	-1.709	9.26%
BinT.Feb	-3351.146	3352.577	-1	32.15%
BinT.Apr	-2119.153	3343.219	-0.634	52.86%
BinT.May	12678.796	3917.877	3.236	0.20%
BinT.Jun	20014.935	3795.194	5.274	0.00%
BinT.Jul	10902.113	3344.15	3.26	0.18%
BinT.Sep	11005.297	3319.754	3.315	0.16%
BinT.Oct	9806.688	3478.581	2.819	0.65%
BinT.Nov	1610.843	3726.33	0.432	66.71%

Regression Statistics	
Iterations	1
Adjusted Observations	72
Deg. of Freedom for Error	60
R-Squared	0.911
Adjusted R-Squared	0.894
AIC	17.869
BIC	18.249
F-Statistic	55.713
Prob (F-Statistic)	0
Log-Likelihood	-733.45
Model Sum of Squares	30,352,777,675.99
Sum of Squared Errors	2,971,690,682.00
Mean Squared Error	49,528,178.03
Std. Error of Regression	7,037.63
Mean Abs. Dev. (MAD)	4,763.59
Mean Abs. % Err. (MAPE)	2.72%
Durbin-Watson Statistic	2.134
Durbin-H Statistic	#NA
Ljung-Box Statistic	29.22
Prob (Ljung-Box)	0.212
Skewness	0.555
Kurtosis	4.507
Jarque-Bera	10.503
Prob (Jarque-Bera)	0.0052

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	-21552.281	8707.742	-2.475	1.60%
BinT.TrendVar	3798.115	1127.351	3.369	0.13%
Sales.GS1000I_MWh	1.553	0.228	6.798	0.00%
BinT.May	12658.753	3474.219	3.644	0.05%
BinT.Jun	20159.886	3383.808	5.958	0.00%
BinT.Jul	12677.972	3104.512	4.084	0.01%
BinT.Sep	12537.842	3078.356	4.073	0.01%
BinT.Oct	10497.465	3162.662	3.319	0.15%

Regression Statistics	
Iterations	1
Adjusted Observations	72
Deg. of Freedom for Error	64
R-Squared	0.905
Adjusted R-Squared	0.895
AIC	17.821
BIC	18.073
F-Statistic	87.166
Prob (F-Statistic)	0
Log-Likelihood	-735.7
Model Sum of Squares	30,160,898,475.98
Sum of Squared Errors	3,163,569,882.01
Mean Squared Error	49,430,779.41
Std. Error of Regression	7,030.70
Mean Abs. Dev. (MAD)	5,165.87
Mean Abs. % Err. (MAPE)	2.96%
Durbin-Watson Statistic	2.079
Durbin-H Statistic	#NA
Ljung-Box Statistic	33.84
Prob (Ljung-Box)	0.0875
Skewness	0.81
Kurtosis	4.136
Jarque-Bera	11.746
Prob (Jarque-Bera)	0.0028



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 13 of 58

Not in Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
MEconT.GDP_LagDays	0.024	0.008	3.086	0.30%
MEconT.GDP_Lag2Days	0.024	0.008	3.126	0.26%
MEconT.GDP_LagHDD18	0	0	5.36	0.00%
MEconT.GDP_LagCDD17	0.002	0	6.482	0.00%
BinT.Yr05	-3858.11	1446.103	-2.668	0.96%
BinT.AftJun08	10871.635	1101.782	9.867	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	72
Deg. of Freedom for Error	66
R-Squared	0.805
Adjusted R-Squared	0.791
AIC	16.738
BIC	16.928
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-698.75
Model Sum of Squares	4,687,053,715.69
Sum of Squared Errors	1,133,384,881.89
Mean Squared Error	17,172,498.21
Std. Error of Regression	4,143.97
Mean Abs. Dev. (MAD)	2,909.15
Mean Abs. % Err. (MAPE)	3.72%
Durbin-Watson Statistic	1.753
Durbin-H Statistic	#NA
Ljung-Box Statistic	39.44
Prob (Ljung-Box)	0.0246
Skewness	-0.738
Kurtosis	4.212
Jarque-Bera	10.939
Prob (Jarque-Bera)	0.0042



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 14 of 58

Attachment X

Existing

Existing				
Variable	Coefficient	StdErr		P-Value
Simple	0.848	0.117	7.225	0

Regression Statistics	
Iterations	11
Adjusted Observations	72
Deg. of Freedom for Error	71
R-Squared	0.837
Adjusted R-Squared	0.837
AIC	1.29
BIC	1.321
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-147.59
Model Sum of Squares	1,302
Sum of Squared Errors	254
Mean Squared Error	3.58
Std. Error of Regression	1.89
Mean Abs. Dev. (MAD)	0.74
Mean Abs. % Err. (MAPE)	1.26%
Durbin-Watson Statistic	2.02
Durbin-H Statistic	0
Ljung-Box Statistic	10.09
Prob (Ljung-Box)	0.9942
Skewness	-4.376
Kurtosis	31.45
Jarque-Bera	2658
Prob (Jarque-Bera)	0

New No P-Values above 5%



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 15 of 58

Not in Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
CONST	28662.87	470.334	60.942	0.00%
MEconT.GDP_LagHDD18	0	0	4.048	0.01%
MEconT.GDP_LagCDD17	0.001	0	7.67	0.00%
BinT.Dec03	7775.774	1480.415	5.252	0.00%
BinT.Yr03	-5302.551	528.64	-10.031	0.00%
BinT.Yr04	-1609.311	499.322	-3.223	0.18%
BinT.Spr08	4320.341	755.115	5.721	0.00%
BinT.Spr09	4428.923	1039.189	4.262	0.01%
BinT.May09	-11646.421	1737.19	-6.704	0.00%
BinT.Jun09	-5439.966	1754.594	-3.1	0.27%
BinT.Jul08	-3337.196	1438.838	-2.319	2.29%
BinT.AftSep07	-1125.046	376.181	-2.991	0.37%
BinT.Mar03	-5341.117	1495.547	-3.571	0.06%
BinT.SepToDec07	4224.768	750.493	5.629	0.00%
BinT.JanFeb08	3283.985	1054.197	3.115	0.25%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	81
R-Squared	0.815
Adjusted R-Squared	0.783
AIC	14.642
BIC	15.043
F-Statistic	25.553
Prob (F-Statistic)	0
Log-Likelihood	-824.05
Model Sum of Squares	709,185,065.19
Sum of Squared Errors	160,572,199.48
Mean Squared Error	1,982,372.83
Std. Error of Regression	1,407.97
Mean Abs. Dev. (MAD)	1,007.21
Mean Abs. % Err. (MAPE)	3.42%
Durbin-Watson Statistic	1.813
Durbin-H Statistic	#NA
Ljung-Box Statistic	26.87
Prob (Ljung-Box)	0.3104
Skewness	-0.113
Kurtosis	2.689
Jarque-Bera	0.594
Prob (Jarque-Bera)	0.7432



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 16 of 58

Attachment X	Page 12	*Mislabel	as GS>100)0<5000 k\
Existing				
Variable	Coefficient	StdErr		P-Value
CONST	4591.007	3486.169	1.317	19.15%
BinT.TrendVar	434.339	130.628	3.325	0.13%
Sales.GS1500_MWh	1.764	0.106	16.601	0.00%
BinT.Jan	-2403.496	1101.848	-2.181	3.20%
BinT.Feb	-2523.166	1101.148	-2.291	2.45%
BinT.Apr	-4264.82	1100.407	-3.876	0.02%
BinT.May	4188.89	1157.306	3.62	0.05%
BinT.Jun	4336.126	1173.25	3.696	0.04%
BinT.Jul	1510.884	1100.699	1.373	17.36%
BinT.Oct	1525.025	1102.826	1.383	17.04%
BinT.Nov	2556.361	1122.664	2.277	2.54%
BinT.Jun03	-8434.542	3026.078	-2.787	0.66%
BinT.Sep03	6576.043	2850.745	2.307	2.36%

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	5605.451	3461.797	1.619	10.91%
BinT.TrendVar	437.833	131.435	3.331	0.13%
Sales.GS1500_MWh	1.746	0.106	16.401	0.00%
BinT.Jan	-2914.973	1070.458	-2.723	0.78%
BinT.Feb	-3039.298	1069.008	-2.843	0.56%
BinT.Apr	-4770.887	1069.785	-4.46	0.00%
BinT.May	3613.495	1118.217	3.231	0.18%
BinT.Jun	3793.601	1140.152	3.327	0.13%
BinT.Nov	2004.666	1085.82	1.846	6.83%
BinT.Jun03	-8507.344	3046.009	-2.793	0.65%
BinT.Sep03	6039.063	2853.508	2.116	3.72%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	83
R-Squared	0.829
Adjusted R-Squared	0.805
AIC	15.978
BIC	16.325
F-Statistic	33.583
Prob (F-Statistic)	0
Log-Likelihood	-890.17
Model Sum of Squares	3,091,288,944.91
Sum of Squared Errors	636,667,037.51
Mean Squared Error	7,670,687.20
Std. Error of Regression	2,769.60
Mean Abs. Dev. (MAD)	1,836.81
Mean Abs. % Err. (MAPE)	2.88%
Durbin-Watson Statistic	2.402
Durbin-H Statistic	#NA
Ljung-Box Statistic	36.31
Prob (Ljung-Box)	0.0512
Skewness	-0.078
Kurtosis	9.04
Jarque-Bera	146.02
Prob (Jarque-Bera)	0

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	85
R-Squared	0.823
Adjusted R-Squared	0.802
AIC	15.974
BIC	16.268
F-Statistic	39.457
Prob (F-Statistic)	0
Log-Likelihood	-891.96
Model Sum of Squares	3,067,207,679.36
Sum of Squared Errors	660,748,303.05
Mean Squared Error	7,773,509.45
Std. Error of Regression	2,788.10
Mean Abs. Dev. (MAD)	1,891.86
Mean Abs. % Err. (MAPE)	2.97%
Durbin-Watson Statistic	2.365
Durbin-H Statistic	#NA
Ljung-Box Statistic	36.19
Prob (Ljung-Box)	0.0526
Skewness	-0.062
Kurtosis	8.25
Jarque-Bera	110.314
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 17 of 58

Attachment X

MEconT.NManEmp

Durbin-H Statistic

Prob (Ljung-Box)

Skewness Kurtosis

Jarque-Bera

Ljung-Box Statistic

Prob (Jarque-Bera)

Page 13

Existing	-	
Variable	Coefficient	StdErr
CONST	40.973	7.28

0.035

0.012

BIN I .Bet06	-1.534	1.733
BinT.NManEmpAftJun06	0.005	0.003
Regression Statistics		
Iterations	1	
Adjusted Observations	96	
Deg. of Freedom for Error	92	
R-Squared	0.764	
Adjusted R-Squared	0.756	
AIC	1.158	
BIC	1.265	
F-Statistic	99.102	
Prob (F-Statistic)	0	
Log-Likelihood	-187.79	
Model Sum of Squares	908.5	
Sum of Squared Errors	281.13	
Mean Squared Error	3.06	
Std. Error of Regression	1.75	
Mean Abs. Dev. (MAD)	1.33	
Mean Abs. % Err. (MAPE)	2.15%	
Durbin-Watson Statistic	0.496	

#NA

195.66

3.343

0.0842

4.95

0 -0.529

P-Value

0.00%

0.48%

37.86%

9.39%

5.628

2.891

-0.885

1.693

INCW				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	1.156	4.715	0.245	80.69%
MEconT.NManEmp	0.103	0.008	13.25	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	94
R-Squared	0.651
Adjusted R-Squared	0.648
AIC	1.505
BIC	1.559
F-Statistic	175.575
Prob (F-Statistic)	0
Log-Likelihood	-206.47
Model Sum of Squares	774.81
Sum of Squared Errors	414.82
Mean Squared Error	4.41
Std. Error of Regression	2.1
Mean Abs. Dev. (MAD)	1.62
Mean Abs. % Err. (MAPE)	2.59%
Durbin-Watson Statistic	0.331
Durbin-H Statistic	#NA
Ljung-Box Statistic	213.64
Prob (Ljung-Box)	0
Skewness	-0.229
Kurtosis	2.725
Jarque-Bera	1.14
Prob (Jarque-Bera)	0.5656



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 18 of 58

Not in Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
CONST	46996.33	7670.054	6.127	0.00%
MEconT.GDP_LagDays	0.013	0.006	2.331	2.24%
MEconT.GDP_LagCDD17	0.001	0	7.102	0.00%
MEconT.GDP_LagHDD18	0	0	2.775	0.69%
BinT.Nov04	7903.757	2654.512	2.977	0.39%
BinT.Mar08	3959.346	2699.122	1.467	14.65%
BinT.Feb05	6657.134	2688.996	2.476	1.55%
BinT.AftJun08	1270.059	710.383	1.788	7.78%

Regression Statistics	
Iterations	1
Adjusted Observations	84
Deg. of Freedom for Error	76
R-Squared	0.556
Adjusted R-Squared	0.515
AIC	15.819
BIC	16.05
F-Statistic	13.596
Prob (F-Statistic)	0
Log-Likelihood	-775.57
Model Sum of Squares	644,437,506.81
Sum of Squared Errors	514,614,631.24
Mean Squared Error	6,771,245.15
Std. Error of Regression	2,602.16
Mean Abs. Dev. (MAD)	1,957.94
Mean Abs. % Err. (MAPE)	2.85%
Durbin-Watson Statistic	2.297
Durbin-H Statistic	#NA
Ljung-Box Statistic	59.06
Prob (Ljung-Box)	0.0001
Skewness	-0.233
Kurtosis	3.058
Jarque-Bera	0.774
Prob (Jarque-Bera)	0.6791

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	39908.683	6678.364	5.976	0.00%
MEconT.GDP_LagDays	0.019	0.005	3.891	0.02%
MEconT.GDP_LagCDD17	0.001	0	6.875	0.00%
MEconT.GDP_LagHDD18	0	0	2.997	0.37%
BinT.Nov04	7626.756	2725.337	2.798	0.65%
BinT.Feb05	6106.167	2755.735	2.216	2.96%

Regression Statistics	
Iterations	1
Adjusted Observations	84
Deg. of Freedom for Error	78
R-Squared	0.518
Adjusted R-Squared	0.487
AIC	15.853
BIC	16.026
F-Statistic	16.78
Prob (F-Statistic)	0
Log-Likelihood	-779
Model Sum of Squares	600,643,600.04
Sum of Squared Errors	558,408,538.01
Mean Squared Error	7,159,083.82
Std. Error of Regression	2,675.65
Mean Abs. Dev. (MAD)	2,028.12
Mean Abs. % Err. (MAPE)	2.95%
Durbin-Watson Statistic	2.376
Durbin-H Statistic	#NA
Ljung-Box Statistic	75.47
Prob (Ljung-Box)	0
Skewness	0.125
Kurtosis	3.108
Jarque-Bera	0.258
Prob (Jarque-Bera)	0.8788



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 19 of 58

Attachment X	Page 14	"*Mislabel	as GS>15	00<5000 S	ales
Existing					Ne
Variable	Coefficient	StdErr		P-Value	
CONST	21502.434	10637.38	2.021	4.65%	CC
BinT.TrendVar	-801.695	259.241	-3.092	0.27%	Bir
Sales.GS5000_MWh	1.905	0.172	11.083	0.00%	Sa
BinT.Feb	-306.927	2160.786	-0.142	88.74%	Bir
BinT.Mar	1471.285	2149.138	0.685	49.55%	Bir
BinT.May	9700.627	2154.005	4.504	0.00%	Bir
BinT.Jun	17038.784	2268.864	7.51	0.00%	Bir
BinT.Jul	14411.074	2275.1	6.334	0.00%	Bir
BinT.Aug	13180.695	2428.587	5.427	0.00%	Bir
BinT.Sep	13874.893	2266.406	6.122	0.00%	Bir
BinT.Oct	11776.31	2162.796	5.445	0.00%	Bir
BinT.Nov	12175.571	2150.129	5.663	0.00%	
BinT.Jun03	-31644.375	5709.152	-5.543	0.00%	

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	83
R-Squared	0.849
Adjusted R-Squared	0.827
AIC	17.261
BIC	17.609
F-Statistic	38.863
Prob (F-Statistic)	0
Log-Likelihood	-951.76
Model Sum of Squares	12,904,720,852.32
Sum of Squared Errors	2,296,749,935.43
Mean Squared Error	27,671,685.97
Std. Error of Regression	5,260.39
Mean Abs. Dev. (MAD)	3,820.28
Mean Abs. % Err. (MAPE)	2.59%
Durbin-Watson Statistic	2.222
Durbin-H Statistic	#NA
Ljung-Box Statistic	30.64
Prob (Ljung-Box)	0.1646
Skewness	0.279
Kurtosis	3.253
Jarque-Bera	1.501
Prob (Jarque-Bera)	0.4722

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	22331.449	10490.18	2.129	3.62%
BinT.TrendVar	-797.439	256.349	-3.111	0.25%
Sales.GS5000_MWh	1.895	0.169	11.2	0.00%
BinT.May	9456.395	2029.645	4.659	0.00%
BinT.Jun	16795.891	2150.643	7.81	0.00%
BinT.Jul	14219.919	2140.826	6.642	0.00%
BinT.Aug	13011.709	2293.393	5.674	0.00%
BinT.Sep	13682.355	2132.803	6.415	0.00%
BinT.Oct	11556.317	2033.569	5.683	0.00%
BinT.Nov	11941.489	2024.608	5.898	0.00%
BinT.Jun03	-31667.17	5660.88	-5.594	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	85
R-Squared	0.848
Adjusted R-Squared	0.83
AIC	17.226
BIC	17.52
F-Statistic	47.374
Prob (F-Statistic)	0
Log-Likelihood	-952.09
Model Sum of Squares	12,888,913,540.98
Sum of Squared Errors	2,312,557,246.77
Mean Squared Error	27,206,555.84
Std. Error of Regression	5,215.99
Mean Abs. Dev. (MAD)	3,850.18
Mean Abs. % Err. (MAPE)	2.61%
Durbin-Watson Statistic	2.23
Durbin-H Statistic	#NA
Ljung-Box Statistic	29.42
Prob (Ljung-Box)	0.2048
Skewness	0.305
Kurtosis	3.237
Jarque-Bera	1.719
Prob (Jarque-Bera)	0.4235



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 20 of 58

Attachment X

Page 15

Existing

Variable	Coefficient	StdErr		P-Value
CONST	2.576	1.244	2.071	4.11%
MEconT.NManEmp	0.015	0.002	6.793	0.00%
BinT.AftFeb04	-1.109	0.114	-9.707	0.00%
BinT.AftJun06	0.487	0.124	3.917	0.02%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	92
R-Squared	0.734
Adjusted R-Squared	0.725
AIC	-2.19
BIC	-2.08
F-Statistic	84.592
Prob (F-Statistic)	0
Log-Likelihood	-27.33
Model Sum of Squares	27.4
Sum of Squared Errors	9.93
Mean Squared Error	0.11
Std. Error of Regression	0.33
Mean Abs. Dev. (MAD)	0.24
Mean Abs. % Err. (MAPE)	2.17%
Durbin-Watson Statistic	0.253
Durbin-H Statistic	#NA
Ljung-Box Statistic	238.92
Prob (Ljung-Box)	0
Skewness	-0.668
Kurtosis	4.538
Jarque-Bera	16.599
Prob (Jarque-Bera)	0.0002



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 21 of 58

Not in Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
CONST	24352.494	8828.765	2.758	0.75%
BinT.Mar	-1491.231	1060.835	-1.406	16.45%
MEconT.GDP_Days	0.021	0.006	3.294	0.16%
MEconT.GDP_LagCDD17	0.001	0	9.736	0.00%
BinT.Yr05	-2234.447	929.64	-2.404	1.91%
BinT.Nov09	-7448.685	2436.284	-3.057	0.32%

Regression Statistics	
Iterations	1
Adjusted Observations	72
Deg. of Freedom for Error	66
R-Squared	0.719
Adjusted R-Squared	0.698
AIC	15.652
BIC	15.841
F-Statistic	33.845
Prob (F-Statistic)	0
Log-Likelihood	-659.62
Model Sum of Squares	980,065,030.17
Sum of Squared Errors	382,240,577.38
Mean Squared Error	5,791,523.90
Std. Error of Regression	2,406.56
Mean Abs. Dev. (MAD)	1,794.36
Mean Abs. % Err. (MAPE)	3.35%
Durbin-Watson Statistic	2.362
Durbin-H Statistic	#NA
Ljung-Box Statistic	25.89
Prob (Ljung-Box)	0.3586
Skewness	-0.133
Kurtosis	2.844
Jarque-Bera	0.286
Prob (Jarque-Bera)	0.8666

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	26191.846	8794.631	2.978	0.40%
MEconT.GDP_Days	0.02	0.006	3.085	0.30%
MEconT.GDP_LagCDD17	0.001	0	10.246	0.00%
BinT.Yr05	-2371.469	931.226	-2.547	1.32%
BinT.Nov09	-7270.109	2450.627	-2.967	0.42%

Regression Statistics	
Iterations	1
Adjusted Observations	72
Deg. of Freedom for Error	67
R-Squared	0.711
Adjusted R-Squared	0.694
AIC	15.653
BIC	15.811
F-Statistic	41.212
Prob (F-Statistic)	0
Log-Likelihood	-660.68
Model Sum of Squares	968,620,790.54
Sum of Squared Errors	393,684,817.01
Mean Squared Error	5,875,892.79
Std. Error of Regression	2,424.02
Mean Abs. Dev. (MAD)	1,802.93
Mean Abs. % Err. (MAPE)	3.37%
Durbin-Watson Statistic	2.387
Durbin-H Statistic	#NA
Ljung-Box Statistic	27.62
Prob (Ljung-Box)	0.2764
Skewness	-0.402
Kurtosis	3.235
Jarque-Bera	2.107
Prob (Jarque-Bera)	0.3488



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 22 of 58

Attachment X Page 16

Existina

EXISTING				
Variable	Coefficient	StdErr		P-Value
CONST	27008.044	8233.844	3.28	0.15%
Sales.GSLrg_MWh	1.224	0.157	7.78	0.00%
BinT.Feb	-2145.685	1726.751	-1.243	21.75%
BinT.Apr	-2257.911	1727.479	-1.307	19.48%
BinT.May	1135.935	1727.228	0.658	51.26%
BinT.Jun	10805.688	1827.816	5.912	0.00%
BinT.Jul	11004.805	1927.95	5.708	0.00%
BinT.Aug	13228.401	2270.573	5.826	0.00%
BinT.Sep	10667.518	1963.09	5.434	0.00%
BinT.Oct	7600.126	1831.268	4.15	0.01%
BinT.Nov	4074.732	1726.525	2.36	2.06%
BinT.Jun03	-15963.044	4520.61	-3.531	0.07%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	84
R-Squared	0.855
Adjusted R-Squared	0.835
AIC	16.815
BIC	17.136
F-Statistic	44.855
Prob (F-Statistic)	0
Log-Likelihood	-931.35
Model Sum of Squares	8,818,483,659.05
Sum of Squared Errors	1,501,313,807.90
Mean Squared Error	17,872,783.43
Std. Error of Regression	4,227.62
Mean Abs. Dev. (MAD)	3,035.56
Mean Abs. % Err. (MAPE)	3.02%
Durbin-Watson Statistic	2.136
Durbin-H Statistic	#NA
Ljung-Box Statistic	32.56
Prob (Ljung-Box)	0.1137
Skewness	0.659
Kurtosis	3.795
Jarque-Bera	9.471
Prob (Jarque-Bera)	0.0088

New				
Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	26196.656	8257.439	3.172	0.21%
Sales.GSLrg_MWh	1.229	0.158	7.782	0.00%
BinT.Jun	11344.029	1732.281	6.549	0.00%
BinT.Jul	11521.945	1832.774	6.287	0.00%
BinT.Aug	13725.502	2188.755	6.271	0.00%
BinT.Sep	11182.179	1869.39	5.982	0.00%
BinT.Oct	8125.299	1732.061	4.691	0.00%
BinT.Nov	4621.301	1625.958	2.842	0.56%
BinT.Jun03	-15966.276	4549.679	-3.509	0.07%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	87
R-Squared	0.847
Adjusted R-Squared	0.833
AIC	16.801
BIC	17.041
F-Statistic	60.381
Prob (F-Statistic)	0
Log-Likelihood	-933.65
Model Sum of Squares	8,744,799,683.38
Sum of Squared Errors	1,574,997,783.56
Mean Squared Error	18,103,422.80
Std. Error of Regression	4,254.81
Mean Abs. Dev. (MAD)	3,168.59
Mean Abs. % Err. (MAPE)	3.17%
Durbin-Watson Statistic	2.213
Durbin-H Statistic	#NA
Ljung-Box Statistic	39.7
Prob (Ljung-Box)	0.023
Skewness	0.641
Kurtosis	3.593
Jarque-Bera	7.978
Prob (Jarque-Bera)	0.0185



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 23 of 58

Attachment X Page 17

Existing

Existing				
Variable	Coefficient	StdErr		P-Value
CONST	-67364.879	9900.184	-6.804	0.00%
BinT.AftOct06	-63.098	304.03	-0.208	83.60%
Economics.Pop	97.832	8.41	11.632	0.00%
AR(1)	0.91	0.04	22.574	0.00%

Regression Statistics	
Iterations	12
Adjusted Observations	103
Deg. of Freedom for Error	99
R-Squared	0.994
Adjusted R-Squared	0.994
AIC	11.434
BIC	11.536
F-Statistic	5323.523
Prob (F-Statistic)	0
Log-Likelihood	-731
Model Sum of Squares	1,420,662,306.56
Sum of Squared Errors	8,806,547.18
Mean Squared Error	88,955.02
Std. Error of Regression	298.25
Mean Abs. Dev. (MAD)	158.37
Mean Abs. % Err. (MAPE)	0.33%
Durbin-Watson Statistic	1.424
Durbin-H Statistic	#NA
Ljung-Box Statistic	36.31
Prob (Ljung-Box)	0.0512
Skewness	3.674
Kurtosis	20.326
Jarque-Bera	1519.905
Prob (Jarque-Bera)	0

|--|

Variable	Coefficient	StdErr	T-Stat	P-Value
CONST	-66773.061	9345.195	-7.145	0.00%
Economics.Pop	97.297	7.884	12.342	0.00%
AR(1)	0.91	0.039	23.181	0.00%

Regression Statistics	
Iterations	9
Adjusted Observations	103
Deg. of Freedom for Error	100
R-Squared	0.994
Adjusted R-Squared	0.994
AIC	11.415
BIC	11.492
F-Statistic	8062.31
Prob (F-Statistic)	0
Log-Likelihood	-731.02
Model Sum of Squares	1,420,658,361.74
Sum of Squared Errors	8,810,492.00
Mean Squared Error	88,104.92
Std. Error of Regression	296.82
Mean Abs. Dev. (MAD)	158.58
Mean Abs. % Err. (MAPE)	0.33%
Durbin-Watson Statistic	1.421
Durbin-H Statistic	#NA
Ljung-Box Statistic	37.31
Prob (Ljung-Box)	0.0407
Skewness	3.661
Kurtosis	20.233
Jarque-Bera	1504.495
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 24 of 58

Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
CONST	4451.231	237.937	18.708	0.00%
BinT.TrendVar	276.249	15.441	17.891	0.00%
BinT.AftJul06	-240.196	65.964	-3.641	0.05%
BinT.Jul07	2228.961	67.233	33.153	0.00%
MA(1)	0.785	0.071	11.089	0.00%

Page 18

Regression Statistics	
Iterations	12
Adjusted Observations	84
Deg. of Freedom for Error	79
R-Squared	0.963
Adjusted R-Squared	0.961
AIC	9.419
BIC	9.563
F-Statistic	509.129
Prob (F-Statistic)	0
Log-Likelihood	-509.77
Model Sum of Squares	23,672,330.42
Sum of Squared Errors	918,291.13
Mean Squared Error	11,623.94
Std. Error of Regression	107.81
Mean Abs. Dev. (MAD)	80.04
Mean Abs. % Err. (MAPE)	0.87%
Durbin-Watson Statistic	1.379
Durbin-H Statistic	#NA
Ljung-Box Statistic	84.6
Prob (Ljung-Box)	0
Skewness	1.406
Kurtosis	7.142
Jarque-Bera	87.746
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 25 of 58

Not in Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
BinT.Jan	-58.727	881.491	-0.067	94.70%
BinT.Feb	-356.958	882.917	-0.404	68.71%
BinT.Mar	-769.056	883.681	-0.87	38.67%
BinT.Apr	-1086.727	884.446	-1.229	22.28%
BinT.May	-1648.732	885.211	-1.863	6.62%
BinT.Jun	-1885.491	883.81	-2.133	3.60%
BinT.Jul	-1972.834	868.318	-2.272	2.58%
BinT.Aug	-1823.107	869.052	-2.098	3.91%
BinT.Sep	-1488.753	888.123	-1.676	9.76%
BinT.Oct	-1208.706	869.63	-1.39	16.84%
BinT.Nov	-650.34	870.337	-0.747	45.71%
BinT.Dec	-404.272	871.734	-0.464	64.41%
Economics.Pop	3.666	0.751	4.885	0.00%
BinT.Jun08	-1446.63	221.874	-6.52	0.00%
BinT.JulAug08Plus	-685.215	118.536	-5.781	0.00%
BinT.OctToDec08Plus	610.897	101.995	5.989	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	80
R-Squared	0.947
Adjusted R-Squared	0.937
AIC	10.813
BIC	11.24
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-639.24
Model Sum of Squares	60,931,230.47
Sum of Squared Errors	3,416,244.21
Mean Squared Error	42,703.05
Std. Error of Regression	206.65
Mean Abs. Dev. (MAD)	134.56
Mean Abs. % Err. (MAPE)	4.80%
Durbin-Watson Statistic	1.297
Durbin-H Statistic	#NA
Ljung-Box Statistic	52.28
Prob (Ljung-Box)	0.0007
Skewness	0.867
Kurtosis	6.49
Jarque-Bera	60.75
Prob (Jarque-Bera)	0

|--|

Variable	Coefficient	StdErr	T-Stat	P-Value
BinT.Jun	-1016.144	198.077	-5.13	0.00%
BinT.Jul	-1119.325	209.632	-5.339	0.00%
BinT.Aug	-968.87	209.647	-4.621	0.00%
Economics.Pop	2.925	0.054	54.666	0.00%
BinT.Jun08	-1426.278	531.373	-2.684	0.87%
BinT.JulAug08Plus	-634.253	256.703	-2.471	1.54%
BinT.OctToDec08Plus	764.861	178.195	4.292	0.00%

Regression Statistics	
Iterations	1
Adjusted Observations	96
Deg. of Freedom for Error	89
R-Squared	0.658
Adjusted R-Squared	0.635
AIC	12.488
BIC	12.674
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-728.62
Model Sum of Squares	42,359,039.68
Sum of Squared Errors	21,988,435.00
Mean Squared Error	247,061.07
Std. Error of Regression	497.05
Mean Abs. Dev. (MAD)	381.38
Mean Abs. % Err. (MAPE)	12.20%
Durbin-Watson Statistic	1.033
Durbin-H Statistic	#NA
Ljung-Box Statistic	267.92
Prob (Ljung-Box)	0
Skewness	0.094
Kurtosis	2.612
Jarque-Bera	0.746
Prob (Jarque-Bera)	0.6887



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 26 of 58

Attachment X

Existina

	Variable	Coefficient	StdErr		P-Value
Simple		1.17	0.117	9.999	0

Page 19

Regression Statistics	
Iterations	11
Adjusted Observations	72
Deg. of Freedom for Error	72
P Squared	0 724
R-Squaleu	0.724
Adjusted R-Squared	0.724
AIC	9.209
BIC	9.241
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-432.69
Model Sum of Squares	1,831,800
Sum of Squared Errors	699,343
Mean Squared Error	9,849.90
Std. Error of Regression	99.25
Mean Abs. Dev. (MAD)	32.37
Mean Abs. % Err. (MAPE)	1.11%
Durbin-Watson Statistic	2.037
Durbin-H Statistic	0
Ljung-Box Statistic	25.28
Prob (Ljung-Box)	0.3906
Skewness	2.168
Kurtosis	22.195
Jarque-Bera	1161.8
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 27 of 58

Attachment X

Existina

	Variable	Coefficient	StdErr		P-Value
Simple		0.692	0.128	5.39	0

Page 20

Regression Statistics	
Iterations	20
Adjusted Observations	55
Deg. of Freedom for Error	54
R-Squared	-0.027
Adjusted R-Squared	-0.027
AIC	11.773
BIC	11.809
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-400.79
Model Sum of Squares	-181,107
Sum of Squared Errors	6,875,586
Mean Squared Error	127,325.67
Std. Error of Regression	356.83
Mean Abs. Dev. (MAD)	205.1
Mean Abs. % Err. (MAPE)	12.46%
Durbin-Watson Statistic	1.89
Durbin-H Statistic	0
Ljung-Box Statistic	22.48
Prob (Ljung-Box)	0.5505
Skewness	-0.801
Kurtosis	7.758
Jarque-Bera	57.8
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 28 of 58

Not in Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
Simple	1	0.097	10.344	0

Regression Statistics	
Iterations	5
Adjusted Observations	96
Deg. of Freedom for Error	95
R-Squared	0.954
Adjusted R-Squared	0.954
AIC	6.61
BIC	6.636
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-452.48
Model Sum of Squares	1,452,447
Sum of Squared Errors	69,788
Mean Squared Error	734.61
Std. Error of Regression	27.1
Mean Abs. Dev. (MAD)	3.2
Mean Abs. % Err. (MAPE)	1.23%
Durbin-Watson Statistic	1.#QO
Durbin-H Statistic	0
Ljung-Box Statistic	1.#R
Prob (Ljung-Box)	1
Skewness	9.453
Kurtosis	91.693
Jarque-Bera	32895.6
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 29 of 58

Not in Attachment X

Existing

Variable	Coefficient	StdErr		P-Value
Simple	1.328	0.091	14.518	0

Regression Statistics	
Iterations	21
Adjusted Observations	108
Deg. of Freedom for Error	107
R-Squared	0.994
Adjusted R-Squared	0.994
AIC	11.422
BIC	11.447
F-Statistic	#NA
Prob (F-Statistic)	#NA
Log-Likelihood	-769.06
Model Sum of Squares	1,524,938,936
Sum of Squared Errors	9,684,796
Mean Squared Error	90,512.12
Std. Error of Regression	300.85
Mean Abs. Dev. (MAD)	138.58
Mean Abs. % Err. (MAPE)	0.29%
Durbin-Watson Statistic	1.801
Durbin-H Statistic	0
Ljung-Box Statistic	33.07
Prob (Ljung-Box)	0.1027
Skewness	2.959
Kurtosis	13.757
Jarque-Bera	678.3
Prob (Jarque-Bera)	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 30 of 58

Year	Month	MoFcstT.Sys_Peak	MoFcstT.Sys_GWh
2002	1	1,230.16	701,585.68
2002	2	1,188.99	
2002	3	1,130.65	668,202.22
2002	4	1,024.53	598,906.56
2002	5	1,103.09	588,449.75
2002	6	1,213.66	605,342.73
2002	7	1,444.94	708,128.43
2002	8	1,385.24	692,355.71
2002	9	1,388.30	615,692.63
2002	10	1,072.77	607,600.61
2002	11	1,160.85	633,402.75
2002	12	1,279.13	706,344.23
2003	1	1,367.74	766,847.95
2003	2	1,308.26	682,141.53
2003	3	1,258.06	681,607.80
2003	4	1,100.31	602,789.40
2003	5	988.18	576,000.03
2003	6	1,420.44	621,981.29
2003	7	1,292.33	674,954.46
2003	8	1,334.55	633,068.01
2003	9	1,175.62	585,236.92
2003	10	1,067.68	599,563.40
2003	11	1,123.15	624,055.71
2003	12	1,245.52	709,345.29
2004	1	1,405.28	794,377.47
2004	2	1,237.68	676,596.85
2004	3	1,128.58	659,720.37
2004	4	1,063.07	584,423.58
2004	5	1,071.98	575,095.63
2004	6	1,227.28	593,369.12
2004	7	1,256.23	659,119.63
2004	8	1,196.86	627,488.42
2004	9	1,085.32	587,153.49



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 31 of 58

2004	10	971.39	581,420.41
2004	11	1,140.77	623,486.25
2004	12	1,404.77	739,777.82
2005	1	1,361.69	764,677.73
2005	2	1,217.92	648,333.68
2005	3	1,221.74	678,524.99
2005	4	996.07	578,997.95
2005	5	1,002.45	576,142.06
2005	6	1,464.86	681,022.95
2005	7	1,434.14	722,407.24
2005	8	1,375.70	696,317.92
2005	9	1,291.32	612,789.65
2005	10	1,111.89	611,583.48
2005	11	1,200.65	644,567.92
2005	12	1,258.80	720,249.80
2006	1	1,249.03	719,880.54
2006	2	1,185.78	651,568.46
2006	3	1,140.09	672,060.32
2006	4	974.54	574,207.86
2006	5	1,313.89	604,173.85
2006	6	1,226.86	635,368.51
2006	7	1,417.82	714,043.30
2006	8	1,495.30	671,322.74
2006	9	1,053.46	580,191.91
2006	10	1,035.00	608,546.92
2006	11	1,141.33	623,590.77
2006	12	1,229.12	683,646.64
2007	1	1,323.95	735,759.66
2007	2	1,290.54	684,699.49
2007	3	1,240.08	688,021.11
2007	4	1,005.53	597,751.63
2007	5	1,161.80	598,124.52
2007	6	1,388.54	655,051.73
2007	7	1,308.70	660,096.25



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 32 of 58

2007	8	1,425.10	675,441.69
2007	9	1,286.41	600,386.97
2007	10	1,002.48	600,105.74
2007	11	1,177.86	639,894.08
2007	12	1,264.41	729,522.51
2008	1	1,267.61	760,278.92
2008	2	1,184.34	679,060.53
2008	3	1,097.54	693,113.58
2008	4	1,008.08	596,058.97
2008	5	956.33	573,162.32
2008	6	1,355.42	639,963.79
2008	7	1,310.18	687,101.83
2008	8	1,214.88	641,439.92
2008	9	1,243.77	599,204.95
2008	10	1,025.50	605,514.17
2008	11	1,109.10	641,599.39
2008	12	1,263.02	750,915.99
2009	1	1,268.13	768,897.11
2009	2	1,195.61	669,135.37
2009	3	1,197.17	672,263.66
2009	4	1,005.19	592,341.29
2009	5	1,012.22	582,422.72
2009	6	1,348.85	605,738.09
2009	7	1,190.32	657,990.41
2009	8	1,363.58	684,460.87
2009	9	1,072.63	588,676.75
2009	10	1,005.38	610,639.88
2009	11	1,109.73	628,206.96
2009	12	1,262.88	723,950.12
2010	1	1,239.50	735,666.01
2010	2	1,177.94	648,703.26
2010	3	1,051.70	638,488.80
2010	4	954.28	581,204.64
2010	5	1,420.78	626,221.04



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 33 of 58

2010	6	1,195.02	627,682.41
2010	7	1,518.17	746,184.55
2010	8	1,418.67	683,230.96
2010	9	1,432.79	603,647.27
2010	10	972.84	599,326.04
2010	11	1,129.86	631,380.73
2010	12	1,224.54	718,025.44
2011	1	1,327.34	758,373.92
2011	2	1,265.81	677,306.57
2011	3	1,186.23	686,909.83
2011	4	1,043.94	600,875.49
2011	5	1,035.47	597,487.62
2011	6	1,309.58	644,748.95
2011	7	1,432.72	689,983.04
2011	8	1,386.55	689,082.44
2011	9	1,221.96	612,528.02
2011	10	1,100.51	613,966.47
2011	11	1,164.17	643,133.24
2011	12	1,284.74	731,171.18
2012	1	1,338.10	763,671.26
2012	2	1,287.17	701,822.20
2012	3	1,190.42	688,502.79
2012	4	1,047.75	604,300.61
2012	5	1,043.31	602,744.92
2012	6	1,314.00	646,394.65
2012	7	1,444.63	695,291.84
2012	8	1,397.22	692,598.32
2012	9	1,229.79	612,444.35
2012	10	1,111.87	621,195.28
2012	11	1,172.76	646,762.50
2012	12	1,291.39	733,107.63
2013	1	1,346.93	769,370.93
2013	2	1,279.35	684,711.57
2013	3	1,193.68	690,735.11



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 34 of 58

2013	4	1,053.33	610,214.40
2013	5	1,047.77	606,884.16
2013	6	1,317.52	648,752.92
2013	7	1,450.30	701,325.17
2013	8	1,400.75	695,032.01
2013	9	1,235.95	618,546.81
2013	10	1,116.75	625,510.49
2013	11	1,176.53	649,290.46
2013	12	1,297.60	739,275.75
2014	1	1,352.00	773,723.18
2014	2	1,286.30	689,066.63
2014	3	1,200.82	695,106.21
2014	4	1,060.35	614,601.56
2014	5	1,053.63	609,468.69
2014	6	1,325.79	654,985.97
2014	7	1,457.40	705,750.73
2014	8	1,406.84	697,650.06
2014	9	1,244.13	624,804.07
2014	10	1,123.90	629,950.94
2014	11	1,182.65	651,914.10
2014	12	1,305.80	745,529.77
2015	1	1,357.97	776,332.88
2015	2	1,293.30	693,488.04
2015	3	1,209.03	701,343.29
2015	4	1,067.52	619,016.96
2015	5	1,059.76	612,062.41
2015	6	1,334.00	661,214.01
2015	7	1,464.57	710,157.06
2015	8	1,414.16	702,053.36
2015	9	1,251.29	629,208.69
2015	10	1,129.86	632,538.21
2015	11	1,191.00	658,140.04
2015	12		
2016	1		



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 35 of 58

2016	2	
2016	3	
2016	4	
2016	5	
2016	6	
2016	7	
2016	8	
2016	9	
2016	10	
2016	11	
2016	12	



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 36 of 58

Year	Month	Sys_MoMWh.Filled	Sys_MoMWh.Predicted	MWH_WNSim.Simulated	Sys_MoPeak.Filled	Sys_MoPeak.Predicted
2002	1	701,585.68	697,791.88	742,226.57	1,230.16	
2002	2	641,747.45		657,442.81	1,188.99	
2002	3	668,202.22	669,321.90	663,457.27	1,130.65	
2002	4	598,906.56	596,148.72	582,927.49	1,024.53	
2002	5	588,449.75	583,993.33	579,588.17	1,103.09	1,084.13
2002	6	605,342.73	605,641.79	621,549.35	1,213.66	1,160.54
2002	7	708,128.43	711,731.28	674,214.01	1,444.94	1,523.19
2002	8	692,355.71	692,321.67	668,013.25	1,385.24	1,396.34
2002	9	615,692.63	615,716.16	591,618.05	1,388.30	1,314.76
2002	10	607,600.61	614,678.73	598,671.74	1,072.77	1,086.58
2002	11	633,402.75	638,317.82	622,541.71	1,160.85	1,144.33
2002	12	706,344.23	706,551.96	712,273.06	1,279.13	1,251.10
2003	1	766,847.95	768,822.05	740,151.52	1,367.74	1,335.92
2003	2	682,141.53	676,402.75	655,241.03	1,308.26	1,291.77
2003	3	681,607.80	672,675.98	660,984.38	1,258.06	1,249.21
2003	4	602,789.40	596,393.03	580,183.49	1,100.31	1,056.83
2003	5	576,000.03	568,662.40	574,754.38	988.18	1,018.65
2003	6	621,981.29	620,149.65	619,959.86	1,420.44	1,411.09
2003	7	674,954.46	667,530.48	670,412.80	1,292.33	1,349.28
2003	8	633,068.01	633,068.01	662,000.32	1,334.55	1,310.60
2003	9	585,236.92	588,037.49	589,275.44	1,175.62	1,241.96
2003	10	599,563.40	597,613.09	594,543.41	1,067.68	1,055.67
2003	11	624,055.71	616,888.53	616,627.67	1,123.15	1,105.49
2003	12	709,345.29	702,583.29	710,158.70	1,245.52	1,195.92
2004	1	794,377.47	790,018.44	740,877.16	1,405.28	1,372.16
2004	2	676,596.85	672,200.05	677,246.50	1,237.68	1,237.02
2004	3	659,720.37	649,591.00	667,744.96	1,128.58	1,151.56
2004	4	584,423.58	587,550.56	583,723.32	1,063.07	1,040.20
2004	5	575,095.63	573,632.62	576,892.13	1,071.98	1,055.12
2004	6	593,369.12	600,212.28	626,076.04	1,227.28	1,197.47
2004	7	659,119.63	666,350.17	673,232.72	1,256.23	1,236.24
2004	8	627,488.42	634,519.39	668,798.68	1,196.86	1,266.74
2004	9	587,153.49	585,388.68	593,766.86	1,085.32	1,061.46
2004	10	581,420.41	588,784.34	594,909.22	971.39	1,003.68
2004	11	623,486.25	626,465.72	623,779.92	1,140.77	1,098.95
2004	12	739,777.82	734,893.89	713,720.23	1,404.77	1,338.42
2005	1	764,677.73	760,253.89	742,666.66	1,361.69	1,328.27
2005	2	648,333.68	647,611.79	661,602.48	1,217.92	1,180.06
2005	3	678,524.99	681,164.01	671,215.33	1,221.74	1,172.78


Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 37 of 58

2005	4	578,997.95	571,780.74	585,190.58	996.07	968.81
2005	5	576,142.06	578,887.14	581,812.30	1,002.45	999.47
2005	6	681,022.95	684,078.31	629,231.61	1,464.86	1,437.54
2005	7	722,407.24	714,166.14	674,623.68	1,434.14	1,451.34
2005	8	696,317.92	701,013.17	673,881.06	1,375.70	1,405.47
2005	9	612,789.65	604,908.55	597,486.41	1,291.32	1,267.81
2005	10	611,583.48	599,048.71	599,084.62	1,111.89	1,132.59
2005	11	644,567.92	631,300.19	628,411.16	1,200.65	1,178.31
2005	12	720,249.80	719,939.67	716,848.56	1,258.80	1,266.66
2006	1	719,880.54	713,022.23	749,748.10	1,249.03	1,277.97
2006	2	651,568.46	659,981.74	667,181.01	1,185.78	1,232.19
2006	3	672,060.32	672,139.76	676,681.01	1,140.09	1,166.13
2006	4	574,207.86	579,001.68	588,724.73	974.54	999.63
2006	5	604,173.85	598,185.76	588,870.95	1,313.89	1,298.01
2006	6	635,368.51	631,470.80	634,050.70	1,226.86	1,231.75
2006	7	714,043.30	720,778.54	679,021.88	1,417.82	1,470.61
2006	8	671,322.74	665,948.73	677,858.37	1,495.30	1,489.13
2006	9	580,191.91	583,006.28	599,392.63	1,053.46	1,083.02
2006	10	608,546.92	605,897.72	604,375.77	1,035.00	1,072.08
2006	11	623,590.77	616,885.49	631,631.23	1,141.33	1,107.33
2006	12	683,646.64	681,043.83	717,896.45	1,229.12	1,208.69
2007	1	735,759.66	736,685.73	754,079.84	1,323.95	1,292.59
2007	2	684,699.49	687,483.75	669,340.57	1,290.54	1,262.48
2007	3	688,021.11	681,869.10	677,242.20	1,240.08	1,203.13
2007	4	597,751.63	595,862.09	593,143.56	1,005.53	1,045.16
2007	5	598,124.52	601,279.30	591,691.41	1,161.80	1,204.22
2007	6	655,051.73	649,094.29	635,596.13	1,388.54	1,396.73
2007	7	660,096.25	666,096.54	684,748.32	1,308.70	1,258.21
2007	8	675,441.69	677,590.52	682,309.78	1,425.10	1,376.37
2007	9	600,386.97	609,599.73	602,031.01	1,286.41	1,294.00
2007	10	600,105.74	601,564.90	610,657.14	1,002.48	1,066.40
2007	11	639,894.08	647,863.95	636,099.56	1,177.86	1,178.43
2007	12	729,522.51	732,553.23	722,039.20	1,264.41	1,254.90
2008	1	760,278.92	760,278.92	789,491.16	1,267.61	1,321.28
2008	2	679,060.53	693,906.92	693,949.63	1,184.34	1,248.01
2008	3	693,113.58	700,529.60	678,546.94	1,097.54	1,153.77
2008	4	596,058.97	593,279.50	597,717.52	1,008.08	1,016.58
2008	5	573,162.32	585,102.95	592,259.87	956.33	1,015.62
2008	6	639,963.79	635,224.53	637,310.67	1,355.42	1,386.10
2008	7	687,101.83	681,312.72	687,608.93	1,310.18	1,341.13



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 38 of 58

2008	8	641,439.92	638,297.32	679,041.77	1,214.88	1,141.57
2008	9	599,204.95	607,520.10	605,267.01	1,243.77	1,211.73
2008	10	605,514.17	607,404.08	609,485.10	1,025.50	1,052.77
2008	11	641,599.39	640,514.54	630,519.48	1,109.10	1,137.32
2008	12	750,915.99	736,410.98	723,256.15	1,263.02	1,283.23
2009	1	768,897.11	785,997.99	753,180.27	1,268.13	1,346.33
2009	2	669,135.37	656,582.89	669,456.42	1,195.61	1,241.27
2009	3	672,263.66	669,474.17	677,093.67	1,197.17	1,177.17
2009	4	592,341.29	591,550.16	594,549.33	1,005.19	1,002.42
2009	5	582,422.72	583,609.91	587,376.78	1,012.22	1,019.91
2009	6	605,738.09	622,540.81	636,751.07	1,348.85	1,213.39
2009	7	657,990.41	641,188.33	685,916.81	1,190.32	1,094.49
2009	8	684,460.87	678,057.40	678,035.80	1,363.58	1,392.06
2009	9	588,676.75	591,741.76	605,348.77	1,072.63	1,020.77
2009	10	610,639.88	612,762.15	608,835.93	1,005.38	1,090.11
2009	11	628,206.96	619,120.58	634,595.40	1,109.73	1,104.81
2009	12	723,950.12	728,937.73	726,332.30	1,262.88	1,272.24
2010	1	735,666.01	735,625.89	755,256.63	1,239.50	1,290.18
2010	2	648,703.26	648,229.49	674,170.36	1,177.94	1,183.12
2010	3	638,488.80	640,504.08	683,576.81	1,051.70	1,061.20
2010	4	581,204.64	582,017.88	599,164.32	954.28	977.44
2010	5	626,221.04	621,435.25	591,942.30	1,420.78	1,352.22
2010	6	627,682.41	618,816.64	641,058.21	1,195.02	1,176.08
2010	7	746,184.55	744,280.45	688,146.89	1,518.17	1,565.83
2010	8	683,230.96	679,330.62	683,644.85	1,418.67	1,394.24
2010	9	603,647.27	609,322.94	608,902.16	1,432.79	1,389.44
2010	10	599,326.04	606,540.72	610,333.66	972.84	1,055.46
2010	11	631,380.73	641,543.21	639,493.50	1,129.86	1,154.21
2010	12	718,025.44	727,186.20	729,430.65	1,224.54	1,201.40
2011	1	758,373.92	758,373.92	758,373.92	1,327.34	1,327.34
2011	2	677,306.57	677,306.57	677,306.57	1,265.81	1,265.81
2011	3	686,909.83	686,909.83	686,909.83	1,186.23	1,186.23
2011	4	600,875.49	600,875.49	600,875.49	1,043.94	1,043.94
2011	5	597,487.62	597,487.62	597,487.62	1,035.47	1,035.47
2011	6	644,748.95	644,748.95	644,748.95	1,309.58	1,309.58
2011	7	689,983.04	689,983.04	689,983.04	1,432.72	1,432.72
2011	8	689,082.44	689,082.44	689,082.44	1,386.55	1,386.55
2011	9	612,528.02	612,528.02	612,528.02	1,221.96	1,221.96
2011	10	613,966.47	613,966.47	613,966.47	1,100.51	1,100.51
2011	11	643,133.24	643,133.24	643,133.24	1,164.17	1,164.17



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 39 of 58

2011	12	731,171.18	731,171.18	731,171.18	1,284.74	1,284.74
2012	1	763,671.26	763,671.26	763,671.26	1,338.10	1,338.10
2012	2	701,822.20	701,822.20	701,822.20	1,287.17	1,287.17
2012	3	688,502.79	688,502.79	688,502.79	1,190.42	1,190.42
2012	4	604,300.61	604,300.61	604,300.61	1,047.75	1,047.75
2012	5	602,744.92	602,744.92	602,744.92	1,043.31	1,043.31
2012	6	646,394.65	646,394.65	646,394.65	1,314.00	1,314.00
2012	7	695,291.84	695,291.84	695,291.84	1,444.63	1,444.63
2012	8	692,598.32	692,598.32	692,598.32	1,397.22	1,397.22
2012	9	612,444.35	612,444.35	612,444.35	1,229.79	1,229.79
2012	10	621,195.28	621,195.28	621,195.28	1,111.87	1,111.87
2012	11	646,762.50	646,762.50	646,762.50	1,172.76	1,172.76
2012	12	733,107.63	733,107.63	733,107.63	1,291.39	1,291.39
2013	1	769,370.93	769,370.93	769,370.93	1,346.93	1,346.93
2013	2	684,711.57	684,711.57	684,711.57	1,279.35	1,279.35
2013	3	690,735.11	690,735.11	690,735.11	1,193.68	1,193.68
2013	4	610,214.40	610,214.40	610,214.40	1,053.33	1,053.33
2013	5	606,884.16	606,884.16	606,884.16	1,047.77	1,047.77
2013	6	648,752.92	648,752.92	648,752.92	1,317.52	1,317.52
2013	7	701,325.17	701,325.17	701,325.17	1,450.30	1,450.30
2013	8	695,032.01	695,032.01	695,032.01	1,400.75	1,400.75
2013	9	618,546.81	618,546.81	618,546.81	1,235.95	1,235.95
2013	10	625,510.49	625,510.49	625,510.49	1,116.75	1,116.75
2013	11	649,290.46	649,290.46	649,290.46	1,176.53	1,176.53
2013	12	739,275.75	739,275.75	739,275.75	1,297.60	1,297.60
2014	1	773,723.18	773,723.18	773,723.18	1,352.00	1,352.00
2014	2	689,066.63	689,066.63	689,066.63	1,286.30	1,286.30
2014	3	695,106.21	695,106.21	695,106.21	1,200.82	1,200.82
2014	4	614,601.56	614,601.56	614,601.56	1,060.35	1,060.35
2014	5	609,468.69	609,468.69	609,468.69	1,053.63	1,053.63
2014	6	654,985.97	654,985.97	654,985.97	1,325.79	1,325.79
2014	. 7	705,750.73	705,750.73	705,750.73	1,457.40	1,457.40
2014	8	697,650.06	697,650.06	697,650.06	1,406.84	1,406.84
2014	9	624,804.07	624,804.07	624,804.07	1,244.13	1,244.13
2014	10	629,950.94	629,950.94	629,950.94	1,123.90	1,123.90
2014	11	651,914.10	651,914.10	651,914.10	1,182.65	1,182.65
2014	12	745,529.77	745,529.77	745,529.77	1,305.80	1,305.80
2015	1	776,332.88	776,332.88	776,332.88	1,357.97	1,357.97
2015	2	693,488.04	693,488.04	693,488.04	1,293.30	1,293.30
2015	3	701,343.29	701,343.29	701,343.29	1,209.03	1,209.03



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 40 of 58

2015	4	619,016.96	619,016.96	619,016.96	1,067.52	1,067.52
2015	5	612,062.41	612,062.41	612,062.41	1,059.76	1,059.76
2015	6	661,214.01	661,214.01	661,214.01	1,334.00	1,334.00
2015	7	710,157.06	710,157.06	710,157.06	1,464.57	1,464.57
2015	8	702,053.36	702,053.36	702,053.36	1,414.16	1,414.16
2015	9	629,208.69	629,208.69	629,208.69	1,251.29	1,251.29
2015	10	632,538.21	632,538.21	632,538.21	1,129.86	1,129.86
2015	11	658,140.04	658,140.04	658,140.04	1,191.00	1,191.00
2015	12					
2016	1					
2016	2					
2016	3					
2016	4					
2016	5					
2016	6					
2016	7					
2016	8					
2016	9					
2016	10					
2016	11					
2016	12					



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 41 of 58

PK_WNSim.Simulated
1,011.85
1,263.34
1,428.38
1,371.44
1,207.85
1,079.79
1,141.56
1,255.01
1,329.59
1,267.02
1,178.59
1,039.03
1,018.65
1,291.99
1,421.56
1,346.32
1,194.65
1,078.56
1,137.71
1,255.83
1,341.09
1,255.64
1,154.80
1,015.30
1,005.88
1,259.46
1,397.84
1,333.14
1,188.59
1,060.18
1,130.11
1,268.31
1,314.27
1,227.65
1,157.21



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 42 of 58

1,005.03
 999.47
1,312.61
1,444.03
1,389.02
1,221.92
1,100.32
1,166.97
1,277.64
1,307.88
1,251.40
1,173.22
1,022.05
1,037.56
1,297.02
1,443.42
1,370.70
1,194.16
1,086.51
1,139.25
1,239.51
1,304.99
1,260.96
1,174.95
1,030.59
1,026.25
1,306.10
1,406.53
1,369.46
1,206.72
1,082.27
1,152.38
1,276.73
1,330.78
1,266.17
1,185.33
1,034.88
1,015.62
1,298.05
1.429.57
 1



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 43 of 58

1,354.39
1,208.48
1,089.00
 1,155.72
 1,289.15
1,334.53
1,258.96
 1,169.62
1,028.77
1,019.91
1,275.87
1,405.39
1,378.07
1,200.82
1,090.23
1,145.08
1,266.53
1,304.67
1,235.48
1,137.41
1,008.81
1,034.28
1,282.71
1,460.27
1,378.10
1,212.32
1,085.31
1,149.87
1,267.97
1,327.34
1,265.81
1,186.23
1,043.94
1,035.47
1,309.58
 1,432.72
1,386.55
 1,221.96
1,100.51
1,164.17



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 44 of 58

1,284.74
1,338.10
1,287.17
1,190.42
1,047.75
1,043.31
1,314.00
1,444.63
1,397.22
1,229.79
1,111.87
1,172.76
1,291.39
1,346.93
1,279.35
1,193.68
1,053.33
1,047.77
1,317.52
1,450.30
1,400.75
1,235.95
1,116.75
1,176.53
1,297.60
1,352.00
1,286.30
1,200.82
1,060.35
1,053.63
1,325.79
1,457.40
1,406.84
1,244.13
1,123.90
1,182.65
1,305.80
1,357.97
1,293.30
1,209.03



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 45 of 58

1,067.52
1,059.76
1,334.00
1,464.57
1,414.16
1,251.29
1,129.86
1,191.00

Year	Month	MFcstTRev.Res_MWh	MFcstTRev.GS50_MWh	MFcstTRev.GS1000NI_MWh	MFcstTRev.GS1000I_MWh	MFcstTRev.GS1500_MWh	MFcstTRev.GS5000_MWh	MFcstTRev.GSLrg_MWh	MFcstTRev.StLight_MWh
2002	1							-	
2002	2								
2002	3								
2002	4								
2002	5								
2002	6								
2002	7								
2002	8								
2002	9								
2002	10								
2002	11								
2002	12								
2003	1	229,838.99	74,054.48	160,712.95		25,506.30	63,224.55	54,817.00	3,870.08
2003	2	192,465.02	65,011.27	179,677.73		24,948.86	62,359.05	54,449.59	3,800.86
2003	3	283,305.83	100,034.48	250,162.09		20,160.41	56,612.92	49,787.81	3,211.61
2003	4	157,382.11	40,432.87	93,673.18		24,194.49	60,110.72	53,972.93	3,170.42
2003	5	189,973.86	62,181.12	152,829.06		22,435.84	65,293.09	51,636.68	2,607.10
2003	6	177,047.24	75,119.63	172,727.14		24,188.24	62,748.81	54,005.87	2,368.38
2003	7	151,657.27	74,800.33	159,595.58		26,919.76	71,245.27	57,573.64	2,160.31
2003	8	145,763.29	46,131.44	101,192.20		24,588.04	72,266.28	62,028.76	2,307.11
2003	9	215,543.37	73,181.30	156,595.80		28,481.87	76,230.07	54,611.49	2,560.90
2003	10	225,862.48	77,726.87	175,549.08		26,383.76	75,580.85	55,577.18	2,896.48
2003	11	145,157.02	62,759.52	129,855.04		25,823.71	69,309.61	53,772.97	3,465.28
2003	12	1/1,5/5.89	62,555.17	161,718.46		32,386.45	60,889.93	51,921.25	3,666.98
2004	1	219,887.40	79,390.34	175,327.74		29,880.81	63,782.48	51,889.26	3,913.75
2004	2	219,231.43	69,486.33	182,757.46		31,251.70	71,430.46	52,413.62	3,947.27
2004	3	292,204.91	97,672.33	219,123.93		27,421.58	63,891.32	47,884.38	3,448.98
2004	4	187,841.22	60,616.62	160,451.96		29,370.86	66,125.49	51,436.38	3,291.76
2004	5	183,710.93	70,349.63	158,392.40		20,415.75	61,082.09	49,233.14	2,706.88
2004	7	1/4,000.41	40 270 27	133,700.07		27,004.31	65 216 70	52,159.00	2,400.71
2004	0	141,330.13	40,279.27	154,020.39		20,043.13	69 072 76	59 202 15	2,244.33
2004	0	151 509 00	62 2/3 81	129 194 69		29 976 61	67 084 99	56,000,01	2,577.57
2004	10	180 631 60	60 934 26	131 574 20		23,370.01	59 804 55	53 074 88	2,059.55
2004	10	174 536 94	72 626 36	131,374.20		28,511.51	73 409 84	50,800,99	3 571 72
2004	12	167 901 08	52 629 45	123 993 32		28,336,78	63 593 47	48 659 40	3 768 59
2005	1	201 481 16	73 313 19	236 572 95	66 187 73	30,002,46	69 685 45	49 824 04	4 020 94
2005	2	228 958 74	68 474 03	184 455 33	74 208 22	31 201 92	74 543 99	51 532 06	3 949 02
2005	3	239,431,48	82,714.07	176,747,34	61.155.52	28.052.64	63,149,39	46.320.39	3.337.98
2005	4	205.330.27	64,784,22	160.457.16	68.614.06	30.667.17	65.461.95	50,809,16	3.295.16
2005	5	178,238.55	68,506.81	151.004.69	60.826.99	27.347.97	64.650.59	48,565.25	2,709.68
2005	6	165,664.43	56,284.42	131.577.07	60.724.49	28,201.72	64.982.17	50,679.05	2.461.56
2005	7	163,890.25	67,585.11	134,373.06	68,655.47	32,527.20	71,997.15	53,683.49	2,245.31
2005	8	237,120.58	66,800.54	183,219.66	71,107.85	35,328.23	72,755.68	62,312.75	2,378.81
2005	9	205,412.49	72,763.53	153,952.74	68,271.71	33,662.16	71,903.04	56,882.43	2,640.48
2005	10	179,285.49	56,133.83	137,586.25	66,182.32	30,650.69	68,100.01	53,182.71	2,986.49
2005	11	180,746.64	70,114.32	164,672.73	64,641.77	29,705.26	65,700.19	51,316.91	3,572.98
2005	12	152,139.15	39,971.78	105,570.48	67,335.30	30,368.65	65,913.20	49,124.40	3,769.91
2006	1	217,714.05	81,529.65	186,251.00	72,923.88	32,548.55	68,880.82	49,556.85	4,022.35
2006	2	207,088.73	61,860.49	163,807.39	73,375.30	33,019.53	70,397.25	50,687.77	3,950.41
2006	3	238,403.59	80,844.01	191,106.94	67,323.85	30,577.72	66,297.54	45,876.21	3,337.98
2006	4	168,719.40	53,356.44	121,406.49	71,613.95	32,836.49	69,981.99	51,579.93	3,295.02
2006	5	193,028.32	69,454.58	153,072.70	64,163.58	28,648.65	64,356.95	49,173.03	2,709.57
2006	6	167,675.13	54,434.55	135,267.58	68,363.07	29,981.86	69,065.76	57,060.26	2,461.46
2006	7	163,251.06	64,715.93	141,181.72	71,804.89	31,816.16	70,132.63	59,322.68	2,316.23
2006	8	217,663.65	61,047.92	157,463.05	77,605.84	33,685.44	75,482.38	64,092.26	2,453.95
2006	9	188,080.81	68,570.09	138,900.38	73,928.21	31,791.32	72,005.23	60,876.68	2,723.89
2006	10	180,721.53	55,681.56	135,894.62	66,523.58	29,262.13	65,020.49	56,288.77	3,080.82

2006	11	158,472.90	61,236.33	130,476.80	67,304.26	29,646.85	66,147.17	55,378.34	3,685.83
2006	12	139.866.54	38.270.00	119.097.64	68.943.41	29.477.40	67.177.45	53.537.49	3.893.20
2007	1	219.564.64	80.114.00	170,755,13	71.113.68	30.617.66	66.952.12	53,424,16	4,153,90
2007	2	200 072 94	47 417 86	148 794 40	79,369,64	32 687 37	69 822 30	53 152 63	4 076 40
2007	3	248 626 49	91 571 97	185 417 89	73 489 17	30 801 69	68 385 13	49 830 03	3 436 23
2007	4	179 926 36	44 070 29	135 572 45	75 974 23	31 414 92	70 795 74	54 574 96	3 392 92
2007	5	203 128 76	82 570 92	153 331 47	68 457 05	29 823 46	66 265 28	52 141 13	2 791 41
2007	6	148 290 64	39 075 27	113 694 11	70 722 45	30 876 41	71 542 63	56 074 14	2,531,66
2007	7	178 437 56	76 356 30	152 765 61	76,311,53	31 629 53	73 391 33	59 426 48	2,318,78
2007	8	188,666,64	58 670 25	145 383 99	76 560 84	32 870 54	75 528 77	60 341 61	2 459 99
2007	9	173 462 22	67,890,69	123 404 97	78,012,71	35 572 47	75 288 86	59 956 85	2,400.00
2007	10	193 128 43	57 457 56	147 100 65	71.842.26	34 416 46	68 953 39	56 583 77	3 103 03
2007	11	165,756,62	64 773 72	127 777 22	71 484 97	32 513 32	69 094 69	56 537 77	3 772 21
2007	12	133 920 21	36 357 77	114 292 20	72 422 09	32 160 72	67 599 92	53 730 61	3 989 60
2008	1	202 756 76	63 357 47	158 949 47	80 196 04	33 994 02	69 596 03	54 586 77	4 444 86
2008	2	214 357 45	74 848 66	157 896 77	75 267 68	32 160 98	67 414 42	51 173 63	3 962 /1
2008	3	214,337.43	58 401 77	157,030.77	80.945.01	35 926 15	73 010 80	54 642 74	3 725 82
2000	4	202.002.10	66 602 02	150,102,08	76 055 57	33,407,50	68 202 63	52 208 01	3,725.02
2008	5	165 054 91	59,409,52	124 225 64	70,033.37	32,766,42	71 000 01	59 709 76	2 5/1 90
2008	6	145 446 06	59,409.52	124,235.04	69 136 03	31 015 70	65 554 43	52 135 68	1 069 39
2008	7	162 260 10	54,954,52	120,005.11	90.694.40	26.024.52	75 510 09	50,210,00	1,009.39
2008	0	180.276.60	61 044 05	130,502,02	97.096.16	20,924.32	76,310.90	61 841 04	1,430.47
2008	0	194 129 20	60 307 45	139,505.02	07,000.10 90,400,10	20,922,07	70,522.30	59 177 69	2 020 29
2008	10	172 019 06	60 124 46	132,327.12	81 442 50	29,052.07	70,311.04	50,177.00	3,039.20
2008	10	173,010.00	60,081,00	141 722 59	77 240 14	27 224 09	71,720.93	40 521 62	3,799.32
2008	12	197.049.47	62 762 76	146,004,29	92 514 99	27,334.90	71 106 10	49,521.05 54 561 09	4,270.97
2008	12	210 605 25	62,762.76	140,004.20	02,014.00	20,520.00	71,190.19	54,501.00	4,554.00
2009	2	210,003.23	63,367.30	150,001.37	92,402.34	30,019.32	72,342.03	40 421 29	4,490.92
2009	2	213,959.88	53,232.97	152,055.76	83,800.03	28,999.15	08,437.37 72,004,70	49,421.38	3,793.71
2009	3	239,482.32	73,202.22	108,417.88	89,071.10	31,106.28	73,001.79	57,503.87	3,765.79
2009	4	203,020.83	65,387.84	148,091.32	82,024.37	30,572.09	69,231.71	51,135.45	3,036.89
2009	5	162,122.27	58,091.04	117,102.29	79,084.92	21,447.40	70,314.62	51,385.16	2,533.95
2009	0	142,001.00	53,014.92	113,770.96	78,526.20	27,193.75	64,967.66	48,790.32	2,220.85
2009	/	162,008.34	50,295.23	128,891.20	87,278.31	30,954.40	74,835.88	50,750.00	1,430.60
2009	8	177,700.18	67,018.40	130,233.00	80,200.74	30,974.38	74,138.99	57,300.00	1,550.89
2009	9	184,951.93	52,151.47	125,795.20	86,942.71	30,839.95	73,167.53	56,764.16	3,055.26
2009	10	181,808.54	60,114.53	120,094.52	85,430.93	29,960.10	73,120.30	55,275.98	3,838.00
2009	11	188,338.74	59,260.80	138,912.39	82,578.18	27,598.42	65,300.94	40,078.00	4,357.25
2009	12	189,841.91	59,285.94	136,912.52	85,843.95	29,784.57	71,056.58	51,808.71	4,763.66
2010	1	201,641.19	63,536.88	151,730.48	93,348.75	30,036.27	70,541.99	54,650.63	4,945.96
2010	2	204,157.29	61,720.97	141,502.90	86,660.64	27,043.73	63,798.50	50,896.10	4,052.73
2010	3	227,381.16	68,820.14	154,791.49	92,272.39	29,250.92	70,696.45	56,682.09	4,001.64
2010	4	190,777.53	61,735.86	130,920.41	84,588.10	27,375.79	66,659.47	54,367.36	3,246.34
2010	5	147,744.80	53,317.89	109,845.89	79,900.90	27,111.01	68,137.68	59,027.80	2,688.10
2010	6	146,546.15	53,432.56	119,094.06	84,557.28	27,907.11	67,427.51	56,719.50	2,396.71
2010	/	1/7,119.83	58,180.83	131,282.82	90,324.44	29,703.45	72,264.51	60,909.23	2,531.55
2010	8	218,613.85	64,071.99	143,706.10	98,706.53	31,676.63	77,339.77	65,300.62	2,821.06
2010	9	204,406.34	61,560.69	130,575.88	94,115.96	29,354.58	67,859.28	60,753.88	3,279.77
2010	10	185,543.92	59,080.08	127,829.83	87,355.84	28,367.29	69,826.54	58,601.34	4,093.81
2010	11	186,223.31	60,624.51	133,764.35	83,429.22	25,696.30	66,858.53	50,718.75	4,581.86
2010	12	182,095.11	60,321.89	134,882.40	90,457.71	28,119.13	68,035.70	57,039.29	4,895.56
2011	1	213,667.56	65,521.23	157,746.52	88,999.63	29,758.57	70,882.11	54,974.75	3,634.43
2011	2	227,798.22	70,745.40	165,575.02	91,926.95	30,145.34	71,502.73	52,246.61	3,636.84
2011	3	222,137.33	74,269.79	159,574.69	87,427.53	29,848.89	68,431.06	55,095.15	3,639.11
2011	4	208,817.29	71,591.05	151,337.43	85,802.41	29,441.92	70,595.17	54,217.91	3,641.38
2011	5	183,489.35	68,606.78	134,937.00	84,900.69	28,687.85	68,681.18	55,352.19	3,643.66
2011	6	164,448.95	62,036.88	125,259.23	83,488.28	28,444.44	69,389.45	55,068.92	2,629.72
2011	7	168,349.87	58,418.44	131,422.39	88,522.70	30,465.12	72,211.63	60,434.21	1,894.49
2011	8	190,584.92	61,078.13	137,883.32	92,187.49	31,826.19	75,597.38	63,144.35	2,047.15
2011	9	199,599.73	63,868.23	136,734.14	92,804.81	31,566.05	75,186.86	61,739.83	3,652.47

Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 47 of 58

Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #7 Attachment 1 Filed: 2011-09-08 Page 48 of 58

2011	10	184,257.49	63,336.08	124,739.09	85,009.30	28,933.36	69,629.27	57,544.52	4,419.53
2011	11	176,331.84	58,278.46	132,491.66	85,196.22	28,569.32	69,742.21	54,751.72	4,421.73
2011	12	187,735.86	61,139.58	142,513.39	87,300.22	29,005.97	69,479.49	55,597.73	4,424.12
2012	1	213,492.79	65,060.81	159,285.14	90,923.67	29,834.58	71,639.13	55,645.63	3,661.64
2012	2	229,206.59	71,605.23	166,774.06	93,768.42	30,204.58	72,220.50	53,790.21	3,664.03
2012	3	223,347.46	74,548.50	160,639.54	90,322.13	29,901.50	70,000.09	55,753.10	3,666.49
2012	4	209,867.89	72,144.13	152,216.50	88,675.42	29,485.36	71,295.10	54,857.16	3,668.94
2012	5	184,173.26	68,854.50	135,442.98	86,592.55	28,714.13	69,338.75	56,018.62	3,671.40
2012	6	164,836.94	62,304.84	125,545.61	85,157.03	28,465.27	70,066.92	55,732.52	2,657.80
2012	7	168,811.41	58,483.42	131,852.74	90,316.89	30,532.76	72,958.02	61,225.41	1,922.90
2012	8	191,435.32	61,291.21	138,466.10	94,076.54	31,925.81	76,426.46	64,002.79	2,075.90
2012	9	200,601.82	64,087.29	137,295.11	94,724.93	31,660.45	76,013.61	62,572.90	3,681.66
2012	10	184,996,99	63.588.06	125.021.38	86,761,80	28,966.35	70.331.82	58.285.66	4,449,16
2012	11	176,935,48	58.381.00	132,961,20	86,968,20	28,593,91	70,453,47	55,432,62	4,451,80
2012	12	188.528.62	61.338.36	143,245,23	89.182.49	29.042.13	70.207.75	56.321.93	4,454,59
2013	1	214,713,43	65,349,63	160,466,48	92,957,94	29,892.95	72,445,46	56,394,11	3,692,52
2013	2	230,683,14	72.085.69	168,187,90	95,939,78	30,274,43	73.066.86	53,536,51	3,695.32
2013	3	224 754 72	75 103 09	161 903 94	91 239 57	29 963 97	69 851 31	56 534 37	3 698 21
2013	4	211 069 30	72 645 20	153 267 53	89 554 94	29,537,28	72 131 95	55 621 45	3 701 11
2013	5	184 943 13	69 267 44	136.052.06	88 629 13	28 745 77	70 130 29	56 820 84	3 704 01
2010	6	165,266,69	62 546 14	125 890 89	87 169 01	28,490,39	70,883,75	56 532 61	2 690 86
2013	7	169 314 69	58 620 14	132 372 //	92 483 55	30 614 44	73,859,35	62 180 86	2,050.00
2013	7	103,314.03	61 507 41	132,372.44	96 361 30	32 046 30	77,429,22	65 041 06	2 109 87
2013	0	201 686 52	64 390 79	133,170.33	97,030,55	31 774 25	77,010,22	63,577,13	2,103.07
2013	9	201,000.32	62,960,05	137,971.33	97,039.33	31,774.23	71,010.22	5,377.13 50.176.14	3,710.00
2013	10	105,003.09	5,009.95 59,519,60	123,300.30	80,007.47	29,003.90	71,175.95	59,170.14	4,404.03
2013	11	177,399.07	56,518.60	133,523.33	89,090.44	20,023.37	71,303.33	50,240.11	4,407.12
2013	12	189,430.54	61,558.42	144,092.90	91,362.66	29,084.01	71,051.28	57,160.75	4,490.29
2014	1	216,149.16	65,680.52	161,791.28	95,239.23	29,958.40	73,349.70	57,233.47	3,728.60
2014	2	232,476.95	72,603.07	169,724.61	98,299.82	30,350.35	73,986.77	54,295.13	3,731.77
2014	3	226,442.50	75,704.92	163,268.26	93,472.41	30,031.37	70,683.20	57,377.36	3,735.01
2014	4	212,492.35	73,179.59	154,393.51	91,744.09	29,592.91	73,028.48	56,440.25	3,738.26
2014	5	185,844.05	69,708.41	136,699.98	90,795.59	28,779.43	70,972.32	57,674.21	3,741.51
2014	6	165,775.92	62,799.96	126,255.81	89,295.36	28,516.94	/1,/4/.00	57,378.19	2,728.69
2014	1	169,918.37	58,764.55	132,918.13	94,758.63	30,700.20	74,805.79	63,184.12	1,994.59
2014	8	193,457.31	61,732.40	139,906.36	98,745.11	32,172.02	78,475.45	66,124.34	2,148.37
2014	9	203,031.60	64,685.30	138,671.99	99,437.80	31,892.16	78,042.84	64,617.65	3,754.88
2014	10	186,824.90	64,159.73	125,709.58	91,034.25	29,046.77	72,044.58	60,092.47	4,523.14
2014	11	178,456.06	58,659.44	134,098.28	91,259.39	28,653.47	72,175.94	57,081.55	4,526.53
2014	12	190,530.21	61,782.68	144,957.32	93,585.89	29,126.71	71,911.46	58,016.14	4,529.99
2015	1	217,802.28	66,017.31	163,139.24	97,560.42	30,025.00	74,269.76	58,087.52	3,768.59
2015	2	234,427.79	73,128.26	171,284.72	100,695.82	30,427.43	74,920.69	55,065.31	3,772.04
2015	3	228,277.46	76,313.31	164,647.35	95,729.41	30,099.51	71,524.09	58,229.48	3,775.56
2015	4	214,039.04	73,717.39	155,526.74	93,947.34	29,648.90	73,930.77	57,264.32	3,779.08
2015	5	186,823.00	70,150.33	137,349.26	92,966.57	28,813.15	71,816.10	58,529.37	3,782.60
2015	6	166,320.40	63,053.48	126,620.30	91,419.30	28,543.46	72,609.27	58,222.80	2,770.03
2015	7	170,553.73	58,908.35	133,461.46	97,023.82	30,785.60	75,748.11	64,183.02	2,036.17
2015	8	194,606.31	61,955.68	140,636.24	101,110.97	32,296.79	79,513.80	67,199.46	2,190.20
2015	9	204,393.35	64,987.49	139,367.28	101,817.71	32,009.17	79,067.56	65,650.21	3,796.94
2015	10	187,835.60	64,447.25	126,055.89	93,184.19	29,087.24	72,906.45	61,001.67	4,565.42
2015	11	179,285.83	58,799.18	134,668.48	93,411.24	28,683.33	73,039.68	57,908.42	4,569.05
2015	12								
2016	1								
2016	2								
2016	3								
2016	4								
2016	5								
2016	6								
2016	7								
2016	8								
	-								

2016	9				
2016	10				
2016	11				
2016	12				

Year	Month	GS1000NI_KW.Filled	GS1000NI_KW.Predicted	GS1000I_KW.Filled	GS1000I_KW.Predicted	GS1500_KW.Filled	GS1500_KW.Predicted	GS5000_KW.Filled	GS5000_KW.Predicted	GSLrg_KW.Filled	GSLrg_KW.Predicted	StLight_KW.Filled	StLight_KW.Predicted
2005	1	569,897.75	5 548,242.26	137,152.17	138,526.83	61,369.95	61,667.46	139,772.20		85,508.17	87,422.42	8,647.18	8,641.75
2005	2	408,353.94	1	150,323.15	151,299.32	62,389.44	4 63,673.44	152,168.29	151,492.84	87,147.83	89,521.31	8,647.18	8,645.27
2005	3	429,338.42	429,495.64	134,599.13	131,344.72	60,338.59	61,251.76	135,741.36	129,834.38	84,939.86	83,117.00	8,650.22	8,665.52
2005	4	387,113.05	5 397,161.61	144,151.63	143,244.50	63,448.19	61,081.35	132,133.89	134,150.09	84,946.72	88,632.98	8,650.22	8,675.02
2005	5	385,095.51	378,399.60	140,564.66	144,126.28	62,143.54	4 63,708.15	140,647.29	142,002.55	88,136.25	85,875.57	8,650.22	8,690.58
2005	6	364,299.17	378,128.07	141,483.94	151,784.73	65,051.34	4 65,415.06	141,992.32	149,903.92	96,192.98	99,817.13	8,650.22	8,701.38
2005	7	344,209.44	4 345,387.83	157,147.92	156,936.31	69,973.20	69,208.60	159,810.49	160,554.41	100,378.96	103,687.02	8,650.22	8,715.92
2005	8	445,698.86	6 442,342.43	159,362.97	148,383.44	76,386.62	2 74,134.64	158,113.65	160,717.11	112,806.22	116,494.55	8,650.22	8,727.52
2005	9	379,993.48	384,251.12	152,349.29	156,833.21	71,202.91	I 71,262.79	153,382.29	159,705.61	101,882.10	107,278.23	8,650.22	8,741.43
2005	10	363,436.76	367,893.52	156,533.59	151,864.48	69,474.94	66,042.39	153,295.99	150,306.64	101,175.11	99,674.99	8,650.22	8,753.52
2005	11	439,131.55	405,529.00	154,289.98	139,291.02	68,366.57	66,433.17	149,021.63	146,077.85	100,580.40	93,878.22	8,650.22	8,767.04
2005	12	273,319.52	2 288,218.18	145,993.63	143,790.63	67,181.52	2 65,623.01	137,267.54	134,473.54	85,733.79	86,562.68	8,650.22	8,779.45
2006	1	435,986.40	448,359.26	5 147,046.44	152,786.32	66,161.91	66,549.82	136,908.69	140,030.53	84,812.90	87,094.09	8,650.22	8,792.73
2006	2	374,501.77	365,379.42	149,060.46	153,803.88	67,495.00	67,284.13	137,599.95	142,837.62	84,264.29	88,483.82	8,650.22	8,565.12
2006	3	460,617.76	457,997.71	146,769.92	144,722.38	66,558.03	66,097.43	140,377.87	135,002.49	84,359.79	82,571.17	8,650.22	8,766.92
2006	4	306,555.88	319,650.75	150,690.79	151,701.50	68,606.05	65,306.01	138,960.96	141,917.82	86,034.48	89,580.13	8,649.85	8,631.43
2006	5	401,293.90	382,504.35	147,414.16	153,106.19	65,728.1	66,416.47	140,149.72	140,648.69	89,903.06	86,622.44	8,649.85	8,760.59
2006	6	364,672.94	385,453.30	164,895.89	167,445.72	69,670.14	68,960.36	155,428.24	156,844.61	112,318.05	107,658.61	8,649.85	8,682.16
2006	/	300,274.47	358,902.18	163,445.00	165,625.53	09,041.23	3 68,405.23	153,805.08	156,223.83	111,957.35	110,010.08	8,923.45	8,766.78
2006	0	403,334.00	391,218.07	170,203.92	162,273.07	72,300.30	69 424 94	101,073.30	163,060.00	114,700.02	110,001.29	0,923.43	0,930.24
2000	10	272 200 02	364 535 96	159 792 14	156 102 59	66.005.61	64.056.22	150 195 75	142 672 70	106 226 00	102 /01 95	9 022 45	9 027 21
2000	11	353 508 33	337 654 23	148 846 03	147 224 03	64 783 20	66 769 03	140 195 59	146 127 41	99.071.05	98 869 07	8 923 45	8 873 36
2006	12	296 802 45	315 067 96	140,040.00	150 086 18	62 745 24	64 505 06	136 388 56	136 071 77	92 552 05	91 985 66	8 933 10	8 946 61
2000	1	412 107 57	417 601 84	148 196 56	153 773 15	64 088 11	63 617 04	136 733 79	135 578 34	90 457 17	91 846 39	8 933 10	8 919 67
2007	2	348.691.97	335,580.46	162,831,86	166,911,34	66,544,41	67.142.13	136,311,05	140,950,69	86,236,35	91,512,73	8,926,10	8,963,85
2007	3	429.376.40	446,705,65	162,108,87	158.095.36	68,419,92	66,926,24	148.071.08	138,160,90	90.570.80	87,429,79	8,904.83	8,946.67
2007	4	342.320.96	347.768.47	160.421.95	162.271.22	66.521.26	6 63.262.31	141.883.62	142.662.39	90.934.17	93,260,54	8,906.87	8,966,48
2007	5	388,861.34	383,017.97	159,285.20	163,572.15	67,525.43	68,905.08	145,100.38	143,467.40	94,985.61	90,269.76	8,911.14	8,975.54
2007	6	324,590.93	342,632.56	6 164,414.15	174,908.01	69,076.34	1 70,959.73	158,050.12	160,740.68	106,945.84	106,446.83	8,896.55	8,994.80
2007	7	406,482.71	381,894.81	186,441.00	176,422.55	72,456.23	68,517.27	166,864.51	161,601.41	113,572.05	110,744.23	11,121.27	11,220.19
2007	8	381,939.45	5 367,243.18	3 172,421.32	164,448.27	71,486.08	3 70,720.11	161,506.01	164,377.07	109,264.26	114,072.34	8,945.41	9,013.72
2007	9	313,137.57	323,617.49	181,575.28	179,557.41	76,543.32	2 75,473.14	163,293.70	164,526.64	111,388.29	111,056.20	8,987.76	9,060.79
2007	10	399,387.53	386,778.45	5 178,455.01	168,250.71	76,797.07	7 73,491.68	159,636.05	150,328.85	111,693.16	103,854.35	8,987.76	9,080.11
2007	11	367,825.25	332,295.89	165,688.59	157,514.88	73,598.94	1 72,210.65	150,808.91	150,915.33	105,682.88	100,293.82	9,132.57	9,087.95
2007	12	303,642.25	305,529.75	5 157,541.27	159,286.75	68,933.42	69,626.96	139,991.12	136,074.89	91,516.55	92,222.98	9,154.32	9,218.56
2008	1	367,092.71	394,169.03	167,943.86	171,676.35	72,083.87	69,948.73	140,329.65	139,790.95	93,402.09	93,275.06	9,282.30	9,156.07
2008	2	321,803.98	353,647.55	5 162,643.23	164,339.03	70,285.81	66,661.10	139,792.56	135,590.47	90,400.03	89,080.86	9,444.39	9,328.70
2008	3	431,061.50	391,209.24	163,163.82	173,472.55	72,786.63	3 76,309.45	141,217.45	146,128.80	91,539.41	93,343.84	9,329.96	9,343.45
2008	4	350,263.29	376,608.03	159,653.26	166,195.65	67,925.53	67,335.69	135,334.63	137,121.73	89,993.66	90,474.83	9,326.07	9,264.99
2008	5	357,256.35	325,266.27	181,006.33	172,939.63	75,288.88	74,480.23	151,171.66	151,643.68	98,756.32	98,340.32	9,398.18	9,346.59
2008	6	377,926.34	355,313.96	169,265.03	176,242.37	73,114.42	2 71,640.71	146,824.92	148,596.00	96,997.25	101,607.09	9,342.25	9,362.16
2008	/	333,857.14	343,234.31	202,936.55	200,989.14	60,594.94	2 60,741.93	161,434.77	164,820.57	109,618.74	110,489.38	9,352.55	9,329.01
2008	0	303,130.30	335,570.10	192,015.39	104,392.42	63,002.70	70,840.44	109,304.00	103,003.40	107,090,92	109,910.00	9,357.70	9,300.10
2000	10	240,003.40	341,320.03	190 471 00	196 059 22	65 266 70	66 525 34	145,132.40	154,075.55	00 791 54	106,009.90	0.296.41	0,409,11
2008	11	350 423 09	350,230.00	168 089 28	170,406,19	62 636 98	63 609 06	140,023.07	142 754 30	93,701.34	91 672 11	9,300.41	9,400.11
2008	12	384 486 02	368 474 40	183 041 05	178,759,17	65 488 87	63 709 47	146,364,16	142,092,15	94 649 16	93 243 49	9 384 31	9 450 52
2009	1	398.843.93	392,287.56	190,786.82	194,431,41	66.043.47	64.495.96	143.373.58	144.575.97	103.022.99	89.650.17	9.371.31	9,430,77
2009	2	333.806.42	342.053.85	179.554.60	181.490.54	63.741.90	61.579.56	141.318.90	136.731.47	83.135.51	86.927.62	9.380.71	9,459.10
2009	3	396,856,88	412,962,67	177.674.15	189.890.64	64,926,86	68.333.59	140,187,98	145.314.27	95,542.08	96,933,44	9.377.64	9,467,25
2009	4	346,499.86	372,616.92	179,852.96	180,195.25	61,907.02	73,141.50	138,925.83	138,103.78	89,613.48	89,033.94	9,377.20	9,481.45
2009	5	335,324.67	311,107.44	195,744.48	187,673.68	66,592.70	55,159.30	150,092.16	149,545.77	87,718.41	89,340.79	9,379.99	9,492.97
2009	6	381,466.94	342,785.09	201,188.62	194,623.62	64,146.47	65,406.85	148,966.10	146,686.66	96,069.63	97,496.18	9,375.76	9,509.14
2009	7	331,264.01	334,507.00	200,170.87	201,050.40	67,353.88	68,214.42	159,454.31	162,743.87	105,573.75	107,462.71	9,390.77	9,516.14
2009	8	364,120.79	349,080.88	188,290.41	187,024.77	66,224.90	68,285.79	164,061.78	160,148.64	117,078.07	110,415.86	9,384.77	9,545.45
2009	9	281,257.55	328,361.80	206,474.35	201,022.10	68,614.45	68,087.60	160,719.59	158,911.98	108,853.25	107,132.90	9,412.68	9,540.73
2009	10	358,763.95	346,274.76	8 187,467.43	196,950.41	62,515.84	66,588.20	143,535.88	156,630.00	94,632.39	102,247.29	9,491.76	9,589.39
2009	11	337,426.60	354,397.84	174,609.65	182,339.08	62,897.83	64,506.75	134,167.18	142,131.54	79,876.01	87,441.24	9,613.13	9,636.30
2009	12	322,190.92	350,428.34	185,188.46	187,727.40	65,555.64	66,354.78	140,489.80	141,030.15	89,314.00	89,861.27	9,850.62	9,717.80
2010	1	336,199.05	379,840.20	197,031.51	199,699.01	62,129.03	63,915.66	139,897.06	139,988.58	91,443.40	93,353.53	10,351.61	9,863.35
2010	2	299,539.14	321,107.71	193,889.13	189,628.74	60,684.53	58,603.97	138,019.47	127,143.68	95,415.09	88,739.82	10,020.22	10,165.57
2010	3	412,792.74	385,915.94	189,694.41	198,660.42	59,989.24	65,532.68	134,668.42	140,148.38	94,098.14	95,849.87	9,964.65	9,690.90
2010	4	314,755.17	338,534.73	190,469.21	187,043.08	57,680.83	57,525.00	134,179.70	132,432.12	91,952.61	93,005.45	10,020.54	10,043.11
2010	5	321,365.00	296,704.36	190,142.12	192,739.02	61,682.17	65,483.67	139,900.95	144,623.16	94,186.14	98,732.38	9,958.36	9,833.38
2010	6	300,458.91	303,350.82	231,544.93	207,788.11	64,600.36	07,089.95	103,019.38	150,550.48	114,005.32	107,239.88	10,075.55	9,972.30
2010	/	255 742 44	339,254.07	200,401.81	209,579.23	72 261 00	60.0408.57	102,084.00	107,073.84	120,025.28	112,300.30	10,009.59	9,978.23
2010	8	357 024 75	337 050 00	224,900.94	210,230.32	66 050 0	65 032 55	1/0,0/0.03	1/100,410.48	115 710 02	1120,100.10	10,019.30	9,944.79
2010	9 10	328 803 50	348 528 20	210,303.77	213,500.42	64 708 39	64 2/5 50	140,029.37	140,000.77	101 887 67	106,333,62	10,109.70	10,001.72
2010	10	380.087.00	344 179 60	183 643 77	187 458 87	63 525 93	61 624 21	147 108 16	144 285 64	91 495 83	93 143 18	10,117.37	10.041.20

2010	12	357,483.98	346,398.80	197,804.29	198,690.76	62,199.50	63,885.38	137,292.55	134,508.36	94,513.68	96,288.81	10,089.12	10,048.38
2011	1	391,781.32	391,781.32	196,742.86	196,742.86	63,868.73	63,868.73	139,835.65	139,835.65	93,751.82	93,751.82	10,067.28	10,067.28
2011	2	368,887.95	368,887.95	201,605.55	201,605.55	64,456.04	64,456.04	140,945.23	140,945.23	90,399.37	90,399.37	10,058.30	10,058.30
2011	3	395,410.02	395,410.02	194,934.37	194,934.37	67,014.34	67,014.34	135,058.17	135,058.17	93,899.78	93,899.78	10,081.32	10,081.32
2011	4	379,060.06	379,060.06	192,727.04	192,727.04	61,569.53	61,569.53	139,092.57	139,092.57	92,821.79	92,821.79	10,104.34	10,104.34
2011	5	346,507.17	346,507.17	204,301.91	204,301.91	68,674.07	68,674.07	144,855.62	144,855.62	94,215.63	94,215.63	10,127.36	10,127.36
2011	6	365,587.92	365,587.92	209,926.05	209,926.05	68,465.75	68,465.75	153,470.79	153,470.79	105,211.57	105,211.57	10,150.38	10,150.38
2011	7	339,531.11	339,531.11	210,579.20	210,579.20	68,235.99	68,235.99	156,176.21	156,176.21	111,982.58	111,982.58	10,173.40	10,173.40
2011	8	352,355.27	352,355.27	203,909.23	203,909.23	70,648.39	70,648.39	161,317.31	161,317.31	117,516.45	117,516.45	10,196.42	10,196.42
2011	9	350,074.29	350,074.29	217,722.30	217,722.30	70,230.77	70,230.77	161,143.60	161,143.60	113,247.20	113,247.20	10,219.44	10,219.44
2011	10	342.393.48	342.393.48	203.891.84	203.891.84	65.671.57	65.671.57	148,419,84	148.419.84	105.034.97	105.034.97	10.242.46	10.242.46
2011	11	341.653.48	341.653.48	194.001.18	194.001.18	67.077.25	67.077.25	148,952,58	148.952.58	98.099.06	98.099.06	10.265.48	10.265.48
2011	12	361,545,39	361.545.39	197,585,25	197.585.25	65.871.29	65.871.29	136,446,80	136,446,80	94,517,37	94,517,37	10,288,50	10.288.50
2012	1	394 835 28	394 835 28	203 529 04	203 529 04	64 439 25	64 439 25	140 472 72	140 472 72	94 576 23	94 576 23	10 311 53	10 311 53
2012	. 2	371 267 91	371 267 91	208 263 51	208 263 51	64 997 29	64 997 29	141 507 93	141 507 93	92 296 21	92 296 21	10,334,55	10 334 55
2012		307 523 61	307 523 61	203 227 86	203,200.01	67 544 01	67 544 01	137 233 04	137 233 04	94 708 30	94 708 30	10 357 57	10,001.00
2012	4	380 804 90	380 804 90	200,227,000	200,227,000	62 083 18	62 083 18	139 621 45	139 621 45	93 607 32	93 607 32	10 380 59	10,380,59
2012	5	347 511 49	347 511 49	210,300.33	210,300.33	69 157 78	69 157 78	145 304 23	145 304 23	95 034 57	95.034.57	10,000.00	10,000.00
2012	5	266 156 26	266 156 26	210,727.32	210,727.32	69 020 05	68 020 05	152 057 12	152 057 12	106 027 02	106.027.02	10,405.01	10,405.01
2012	7	240.295.30	240,295,20	210,313.70	210,313.70	69 701 90	69 701 90	155,337.12	155,557.12	142.054.95	112.054.93	10,420.05	10,420.03
2012	/	340,303.30	340,363.30	217,103.73	217,103.73	71 260 12	71 260 12	100,793.13	150,793.13	112,904.00	112,934.03	10,449.05	10,449.03
2012	0	251 107 74	353,512.01	210,041.00	210,041.08	71,200.13	71,200.13	162,090.94	162,090.94	110,071.00	110,571.55	10,472.07	10,472.07
2012	9	351,167.74	331,107.74	224,302.40	224,502.40	70,655.40	70,833.40	101,912.00	101,912.00	114,270.92	114,270.92	10,495.09	10,495.09
2012	10	342,953.79	342,953.79	210,411.63	210,411.63	67 550 04	67,550,04	140,953.69	140,953.09	105,945.70	105,945.70	10,518.71	10,518.71
2012	11	342,585.46	342,585.46	200,551.21	200,551.21	66,270,01	66,070,04	149,502.93	149,502.93	98,935.78	98,935.78	10,541.73	10,541.73
2012	12	362,998.01	362,998.01	204,306.56	204,306.56	00,372.24	00,372.24	137,029.37	137,029.37	95,407.29	95,407.29	10,564.75	10,564.75
2013	1	397,180.12	397,180.12	210,486.42	210,486.42	64,978.97	64,978.97	141,203.22	141,203.22	95,495.99	95,495.99	10,587.77	10,587.77
2013	2	374,074.21	374,074.21	215,433.78	215,433.78	65,557.05	65,557.05	142,314.28	142,314.28	91,984.46	91,984.46	10,610.79	10,610.79
2013	3	400,033.30	400,033.30	208,450.78	208,450.78	68,090.89	68,090.89	136,154.57	136,154.57	95,668.34	95,668.34	10,633.82	10,633.82
2013	4	382,891.06	382,891.06	206,151.02	206,151.02	62,611.65	62,611.65	140,409.78	140,409.78	94,546.52	94,546.52	10,656.84	10,656.84
2013	5	348,720.44	348,720.44	217,688.49	217,688.49	69,650.84	69,650.84	146,006.72	146,006.72	96,020.37	96,020.37	10,679.86	10,679.86
2013	6	366,841.71	366,841.71	223,238.53	223,238.53	69,421.64	69,421.64	154,707.50	154,707.50	107,010.22	107,010.22	10,702.88	10,702.88
2013	7	341,416.83	341,416.83	224,326.71	224,326.71	69,372.30	69,372.30	157,703.66	157,703.66	114,128.93	114,128.93	10,725.90	10,725.90
2013	8	354,911.06	354,911.06	217,987.47	217,987.47	71,908.29	71,908.29	163,193.65	163,193.65	119,847.21	119,847.21	10,748.92	10,748.92
2013	9	352,529.96	352,529.96	231,895.16	231,895.16	71,469.88	71,469.88	163,003.87	163,003.87	115,504.96	115,504.96	5 10,771.94	10,771.94
2013	10	343,627.01	343,627.01	217,479.89	217,479.89	66,674.01	66,674.01	149,755.82	149,755.82	107,039.96	5 107,039.96	5 10,794.96	10,794.96
2013	11	343,701.66	343,701.66	207,645.22	207,645.22	68,047.26	68,047.26	150,319.71	150,319.71	99,937.89	99,937.89	10,817.98	10,817.98
2013	12	364,680.54	364,680.54	211,490.52	211,490.52	66,883.18	66,883.18	137,830.35	137,830.35	96,438.07	96,438.07	10,841.00	10,841.00
2014	1	399,809.67	399,809.67	217,827.42	217,827.42	65,531.06	65,531.06	142,119.26	142,119.26	96,527.43	96,527.43	10,864.02	10,864.02
2014	2	377,124.38	377,124.38	222,897.09	222,897.09	66,127.42	66,127.42	143,260.00	143,260.00	92,916.68	92,916.68	10,887.04	10,887.04
2014	3	402,741.31	402,741.31	215,716.53	215,716.53	68,646.38	68,646.38	136,933.51	136,933.51	96,704.25	96,704.25	10,910.06	10,910.06
2014	4	385,125.99	385,125.99	213,348.93	213,348.93	63,146.59	63,146.59	141,311.20	141,311.20	95,552.69	95,552.69	10,933.08	10,933.08
2014	5	350,006.48	350,006.48	224,851.16	224,851.16	70,147.42	70,147.42	146,804.86	146,804.86	97,069.03	97,069.03	10,956.11	10,956.11
2014	6	367,566.01	367,566.01	230,338.91	230,338.91	69,905.81	69,905.81	155,545.87	155,545.87	108,049.29	108,049.29	10,979.13	10,979.13
2014	7	342,499.97	342,499.97	231,658.06	231,658.06	69,959.85	69,959.85	158,699.65	158,699.65	115,361.77	115,361.77	11,002.15	11,002.15
2014	8	356,370.77	356,370.77	225,487.70	225,487.70	72,565.58	72,565.58	164,378.76	164,378.76	121,178.39	121,178.39	11,025.17	11,025.17
2014	9	353,920.68	353,920.68	239,417.81	239,417.81	72,113.54	72,113.54	164,163.18	164,163.18	116,783.59	116,783.59	11,048.19	11,048.19
2014	10	344,319.78	344,319.78	224,643.06	224,643.06	67,183.04	67,183.04	150,604.37	150,604.37	108,165.98	108,165.98	11,071.21	11,071.21
2014	11	344,842.42	344,842.42	214,811.75	214,811.75	68,537.64	68,537.64	151,172.01	151,172.01	100,962.05	100,962.05	11,094.23	11,094.23
2014	12	366,396.29	366,396.29	218,741.35	218,741.35	67,395.56	67,395.56	138,662.90	138,662.90	97,489.20	97,489.20	11,117.25	11,117.25
2015	1	402,485.22	402,485.22	225,230.40	225,230.40	66,085.14	66,085.14	143,065.27	143,065.27	97,576.91	97,576.91	11,140.27	11,140.27
2015	2	380,221.03	380,221.03	230,416.24	230,416.24	66,699.80	66,699.80	144,232.28	144,232.28	93,863.11	93,863.11	11,163.29	11,163.29
2015	3	405,478.63	405,478.63	223,019.82	223,019.82	69,203.15	69,203.15	137,729.50	137,729.50	97,751.37	97,751.37	11,186.31	11,186.31
2015	4	387,375.32	387,375.32	220,568.73	220,568.73	63,682.16	63,682.16	142,223.56	142,223.56	96,565.34	96,565.34	11,209.33	11,209.33
2015	5	351,295.22	351,295.22	232,020.85	232,020.85	70,644.13	70,644.13	147,606.34	147,606.34	98,119.89	98,119.89	11,232.35	11,232.35
2015	6	368,289.50	368,289.50	237,435.54	237,435.54	70,389.93	70,389.93	156,382.38	156,382.38	109,087.19	109,087.19	11,255.37	11,255.37
2015	7	343,578.40	343,578.40	238,974.07	238,974.07	70,546.75	70,546.75	159,687.85	159,687.85	116,589.26	5 116,589.26	11,278.40	11,278.40
2015	8	357,819.47	357,819.47	232,960.03	232,960.03	73,221.21	73,221.21	165,548.92	165,548.92	122,499.54	122,499.54	11,301.42	11,301.42
2015	9	355,300.76	355,300.76	246,911.96	246,911.96	72,755.62	72,755.62	165,307.52	165,307.52	118,052.44	118,052.44	11,324.44	11,324.44
2015	10	345,007.16	345,007.16	231,780.08	231,780.08	67,691.52	67,691.52	151,440.13	151,440.13	109,283.25	109,283.25	11,347.46	11,347.46
2015	11	345.974.19	345.974.19	221,951,73	221.951.73	69.027.60	69.027.60	152.011.30	152.011.30	101.978.13	101.978.13	11.370.48	11.370.48
2015	12	,			,			. ,	. ,			11,393.50	11,393.50
2016	1	İ		i			İ				İ		,
2016	2	İ		i			İ				İ	1 1	
2016	3	i		i i			İ				İ	1 1	
2016	4							1			1	1 1	
2016	5							1		1	1	1 1	
2016	6		1				1	1			1	1	
2016	7												
2016	, В		i	1							1		
2016	0 0										1		
2016	10										1	<u> </u>	
2010	11										1		
2010										1	1		

	2016	12						
_								

Year	Month	Res_Custs.Filled	Res_Custs.Predicted	GS50_Custs.Filled	GS50_Custs.Predicted	GS1000NI_Custs.Filled
2005	1	248,696.00	248,167.56	23,209.00	22,951.46	2,666.00
2005	2	249,139.00		22,990.00	22,970.31	2,666.00
2005	3	249,582.00	249,516.11	22,991.00	22,979.54	2,671.00
2005	4	249,725.00	249,958.60	23,015.00	22,988.76	2,674.00
2005	6	250,042.00	250,101.44	23,015.00	22,991.73	2,063.00
2005	7	250,573.00	250,410.23	23,033,00	23,005,34	2,004.00
2005	. 8	251.072.00	251.066.55	23.013.00	23,011,83	2,711.00
2005	9	251,351.00	251,447.34	23,009.00	23,019.76	2,717.00
2005	10	251,708.00	251,726.02	23,002.00	23,025.57	2,720.00
2005	11	251,974.00	252,082.61	22,986.00	23,032.99	2,731.00
2005	12	252,268.00	252,350.05	22,983.00	23,038.56	2,768.00
2006	1	252,749.00	252,643.72	22,979.00	23,044.68	2,774.00
2006	2	253,046.00	253,124.17	22,988.00	23,054.68	2,779.00
2006	3	253,295.00	253,418.92	22,981.00	23,060.82	2,787.00
2006	4	253,495.00	253,007.03	22,962.00	23,000.00	2,802.00
2000	6	253,392.00	253,007.41	22,973.00	23,070.10	2,011.00
2000	7	254 248 00	254 292 53	23,063,00	23,072.11	2,072.00
2006	. 8	254.518.00	254.619.16	23.046.00	23.085.82	2,676.00
2006	9	254,866.00	254,888.46	23,039.00	23,091.43	2,693.00
2006	10	255,376.00	255,236.06	23,053.00	23,098.66	2,701.00
2006	11	255,843.00	255,745.48	23,055.00	23,109.27	2,712.00
2006	12	255,993.00	256,211.55	23,050.00	23,118.98	2,714.00
2007	1	256,635.00	256,361.38	23,066.00	23,122.10	2,734.00
2007	2	257,038.00	257,002.64	23,076.00	23,135.45	2,744.00
2007	3	257,196.00	257,404.79	23,082.00	23,143.83	2,758.00
2007	4	257,384.00	257,562.61	23,085.00	23,147.12	2,757.00
2007	6	257 743 00	257,750.40	23,003.00	23,151.03	2,701.00
2007	7	258,297.00	258,108,60	23,239.00	23,158,49	2,614.00
2007	8	258.535.00	258.661.96	23,242.00	23.170.01	2.619.00
2007	9	258,926.00	258,899.30	23,243.00	23,174.95	2,625.00
2007	10	259,404.00	259,289.85	23,256.00	23,183.09	2,660.00
2007	11	259,997.00	259,767.30	23,279.00	23,193.03	2,678.00
2007	12	260,359.00	260,387.22	23,292.00	23,205.94	2,685.00
2008	1	260,827.00	260,748.83	23,297.00	23,213.47	2,704.00
2008	2	261,199.00	261,216.33	23,291.00	23,223.20	2,705.00
2008	3	261,451.00	201,505.05	23,271.00	23,230.47	2,715.00
2008	5	262,172.00	262,229,29	23,272.00	23,233.71	2,720.00
2008	6	262.501.00	262.537.03	23.317.00	23.250.71	2.676.00
2008	7	262,992.00	262,865.65	23,322.00	23,257.55	2,681.00
2008	8	263,242.00	263,356.09	23,324.00	23,267.77	2,680.00
2008	9	263,324.00	263,605.90	23,332.00	23,272.97	2,681.00
2008	10	264,257.00	263,687.81	23,344.00	23,274.67	2,691.00
2008	11	264,641.00	264,619.74	23,323.00	23,294.08	2,699.00
2008	12	264,958.00	265,003.38	23,314.00	23,302.07	2,721.00
2009	2	205,551.00	205,320.02	23,300.00	23,306.07	2,676.00
2009	3	266 042 00	266 289 00	23,301.00	23,321.00	2,097.00
2003	4	266.389.00	266,402,88	23,272.00	23,320.04	2,709.00
2009	5	266,664.00	266,749.48	23,264.00	23,338.43	2,702.00
2009	6	266,920.00	267,024.26	23,332.00	23,344.16	2,640.00
2009	7	267,222.00	267,279.97	23,325.00	23,349.48	2,645.00
2009	8	267,461.00	267,581.62	23,319.00	23,355.76	2,649.00
2009	9	267,891.00	267,820.44	23,320.00	23,360.74	2,658.00
2009	10	268,412.00	268,249.95	23,339.00	23,369.68	2,669.00
2009	11	268,934.00	268,770.35	23,342.00	23,380.52	2,6/1.00
2009	12	209,208.00	209,290.14	23,338.00	23,391.34	2,082.00
2010	2	269,003.00	203,043.73	23,413.00	23,350.71	2,020.00
2010	3	270,358.00	270,323.51	23,410.00	23,412.86	2,634.00
2010	4	270,612.00	270,712.06	23,414.00	23,420.96	2,635.00
2010	5	270,967.00	270,965.77	23,423.00	23,426.24	2,641.00
2010	6	271,349.00	271,319.98	23,417.00	23,433.62	2,651.00
2010	7	271,720.00	271,701.55	23,413.00	23,441.56	2,658.00
2010	8	272,081.00	272,072.12	23,408.00	23,449.28	2,664.00
2010	9	272,425.00	272,432.40	23,423.00	23,456.78	2,668.00
2010	10	272,936.00	272,006,40	23,447.00	23,463.94	2,676.00
2010	11	273 759 00	213,280.42	23,465.00	23,4/4.5/	2,050.00
2010	12	274,107.24	273,724.00	23,340.00	23,403.09	2,032.00
2011	2	274,456.08	274,456.08	23,498,93	23,498.93	2,635.04
2011	3	274,804.36	274,804.36	23,506.18	23,506.18	2,636.41
2011	4	275,152.24	275,152.24	23,513.42	23,513.42	2,637.70
2011	5	275,499.72	275,499.72	23,520.66	23,520.66	2,638.91

2011	6	275,846.73	275,846.73	23,527.89	23,527.89	2,640.04
2011	7	276,193.33	276,193.33	23,535.10	23,535.10	2,641.10
2011	8	276,539.54	276,539.54	23,542.31	23,542.31	2,642.09
2011	9	276.885.35	276.885.35	23.549.52	23.549.52	2.643.02
2011	10	277 230 75	277 230 75	23 556 71	23 556 71	2 643 89
2011	11	277,575,77	277 575 77	22,562,90	22,562,90	2,610.00
2011	42	277,070,01	277,070.01	23,303.03	23,303.09	2,044.70
2011	12	277,920.61	277,920.61	23,571.08	23,571.08	2,645.47
2012	1	278,265.06	278,265.06	23,578.25	23,578.25	2,646.18
2012	2	278,609.11	278,609.11	23,585.41	23,585.41	2,646.85
2012	3	278,952.85	278,952.85	23,592.57	23,592.57	2,647.48
2012	4	279,296,20	279.296.20	23,599,72	23,599,72	2.648.07
2012	5	279,639,16	279 639 16	23,606,86	23,606,86	2 648 62
2012	5	279,039.10	279,035.10	23,000.00	23,000.80	2,040.02
2012	6	279,981.82	279,981.82	23,614.00	23,614.00	2,649.14
2012	1	280,324.09	280,324.09	23,621.13	23,621.13	2,649.62
2012	8	280,665.97	280,665.97	23,628.25	23,628.25	2,650.08
2012	9	281,007.58	281,007.58	23,635.36	23,635.36	2,650.50
2012	10	281,348.79	281,348.79	23,642.47	23,642.47	2,650.90
2012	11	281 689 62	281 689 62	23 649 57	23 649 57	2 651 27
2012	12	292 020 24	292.020.24	22 656 66	22 656 66	2 651 62
2012	12	202,030.24	202,030.24	23,030.00	20,000.00	2,031.02
2013	1	282,370.47	282,370.47	23,663.74	23,663.74	2,651.95
2013	2	282,710.31	282,710.31	23,670.82	23,670.82	2,652.25
2013	3	283,049.89	283,049.89	23,677.89	23,677.89	2,652.54
2013	4	283,389.08	283,389.08	23,684.96	23,684.96	2,652.81
2013	5	283,727,89	283,727,89	23.692.01	23.692.01	2,653,06
2013	6	284 066 42	284 066 42	23 699 06	23,699,06	2 653 30
2012	7	201,000.12	294 404 57	22,000.00	22,000.00	2,000.00
2013	1	204,404.37	204,404.37	23,700.11	23,700.11	2,053.52
2013	8	284,742.33	284,742.33	23,713.14	23,713.14	2,653.72
2013	y	285,079.81	285,079.81	23,720.17	23,720.17	2,653.92
2013	10	285,416.91	285,416.91	23,727.19	23,727.19	2,654.10
2013	11	285,753.62	285,753.62	23,734.20	23,734.20	2,654.27
2013	12	286.090.05	286.090.05	23.741.21	23,741,21	2.654.43
2014	1	286 426 09	286 426 09	23 748 20	23 748 20	2 654 58
2014	2	200, 120.00	200,120.00	22,755,10	22 755 10	2,001.00
2014	2	200,701.73	200,701.73	23,733.19	23,733.19	2,034.72
2014	3	287,097.12	287,097.12	23,762.18	23,762.18	2,654.85
2014	4	287,432.11	287,432.11	23,769.15	23,769.15	2,654.97
2014	5	287,766.72	287,766.72	23,776.12	23,776.12	2,655.09
2014	6	288,101.04	288,101.04	23,783.09	23,783.09	2,655.19
2014	7	288.434.97	288,434,97	23,790,04	23,790.04	2.655.29
2014	8	288,768,53	288.768.53	23,796,99	23,796,99	2,655,39
2014	ő	289 101 78	289 101 78	23 803 93	23 803 93	2 655 48
2014	10	200,101.70	200,101.10	20,000.00	23,003.33	2,033.40
2014	10	209,434.00	209,434.00	23,010.00	23,810.86	2,000.00
2014	11	289,767.15	289,767.15	23,817.78	23,817.78	2,655.64
2014	12	290,099.35	290,099.35	23,824.70	23,824.70	2,655.71
2015	1	290,431.16	290,431.16	23,831.61	23,831.61	2,655.78
2015	2	290,762.60	290,762.60	23,838.51	23,838.51	2,655.84
2015	3	291,093.73	291,093.73	23,845.41	23,845.41	2,655.90
2015	4	291 424 49	291 424 49	23,852,30	23 852 30	2 655 96
2015	-	201 754 97	201,124.45	23,850.10	23,850,19	2,000.00
2015	5	201,104.07	202.004.02	23,039.10	20,009.10	2,030.01
2015	6	292,004.93	292,084.93	23,000.05	23,666.05	2,056.06
2015	7	292,414.62	292,414.62	23,872.92	23,872.92	2,656.11
2015	8	292,743.94	292,743.94	23,879.77	23,879.77	2,656.15
2015	9	293,072.93	293,072.93	23,886.63	23,886.63	2,656.19
2015	10	293,401.56	293,401.56	23,893.47	23,893.47	2,656.23
2015	11	293,729.81	293,729.81	23,900.31	23,900.31	2,656.26
2015	12					2 656 30
2015	12					2,000.00
2016	1					
2016	2					
2016	3					
2016	4				1	
2016	5					
2016	6					
2016	7					
2010					1	
2016	8					
2016	9					
2016	10					
2016	11				1	
2016	12					

GS1000NI Custs.Predicted	GS1000I Custs.Filled	GS1000I Custs.Predicted	GS1500 Custs.Filled	GS1500 Custs.Predicted	GS5000 Custs.Filled	GS5000 Custs.Predicted	GSLrg CustsESM.Filled	GSLrg CustsESM.Predicted	StLight_Custs.Filled	StLight Custs.Predicted	MU_Custs.Filled	MU_Custs.Predicted
2,634.50	350		57	57.01	62	60.7	10	0 1	44,744.00	44,790.49	2,770.00	2,770.00
2,665.42	355	352.5	58	57	62	60.44	10	0 1	44,744.00	44,794.52	2,770.00	2,770.00
2,665.42	351	357.42	59	57.85	63	60.32	10	0 1	44,932.00	44,829.16	2,770.00	2,770.00
2,670.10	359	353.39	57	58.82	63	60.19	10	0 1	44,932.00	45,007.09	2,770.00	2,770.00
2,672.91	368	361.44	57	57.28	60	60.06	10	0 1	44,932.00	45,013.86	2,770.00	2,770.00
2,681.34	371	370.49	57	57.04	60	60.34	10	0 1	44,932.00	45,026.79	2,770.00	2,770.00
2,663.54	372	373.51	59	57.01	59	60.62	10	0 1	44,932.00	45,034.11	2,770.00	2,770.00
2.696.33	373	374.51	59	58.7	59	60.9	10	0 1	44.932.00	45.041.43	2.770.00	2,770.00
2,707.57	378	375.1	59	58.95	61	61.68	10	0 1	44,932.00	45,054.91	2,773.00	2,770.00
2,713.19	389	380.14	59	58.99	62	62.47	10	0 1	44,932.00	45,062.78	3,066.00	2,773.51
2,716.00	400	391.21	60	59	62	63.25	10	0 1	44.932.00	45.070.65	3.063.00	3,115.86
2,726,31	401	402.39	60	59.85	62	63.63	10	0 1	44.932.00	45.127.20	2.688.00	3.053.99
2,834.12	406	403.4	60	59.98	62	64.02	10	0 1	44,932.00	45,139.43	2,485.00	2,625.62
2,771,21	406	408.43	60	60	62	64.41	10	0 1	44,932.00	45,151,66	2,481,00	2,461.03
2,775.90	407	408.76	60	60	63	64.29	10	0 1	44,932.00	45,110,51	2,484.00	2,484,40
2,783.39	414	409.76	60	60	64	64.17	10	0 1	44.929.00	45.117.96	2.486.00	2,483,93
2,797,44	422	416.81	60	60	67	64.05	10	0 1	46.078.00	45,122,68	2,486,00	2,486.35
2,732,73	429	424.92	59	60	64	63.83	1.	1 1	46.078.00	46,165,43	2,488.00	2,485,94
2,671,04	438	431.96	60	59.15	64	63.62	1.	1 1	46,305.00	46.171.91	2,488.00	2,488,35
2,670,10	439	441.02	61	59.87	64	63.4	11	1 1	46,305.00	46.385.07	2,503,00	2,487,94
2,674,79	440	442.26	61	60.83	64	62.69	1	1 1	46.305.00	46,380,68	2,503.00	2,505,57
2 690 71	448	443.26	61	60.97	64	61 97	11	1 1	46 305 00	46 386 19	2 503 00	2 502 56
2,698,20	448	451.31	61	61	64	61.25	1	1 1	46.305.00	46.391.70	2,509.00	2,503.07
2 708 51	451	450.8	61	61	64	61.68	1	1 1	46 355 00	46 386 38	2,510,00	2,000.01
2 710 38	455	453.82	62	61	66	62.1	1	1 1	46 355 00	46 436 44	2 518 00	2,510.00
2 720 12	458	457.85	62	61.85	67	62.53	11	1 1	46 109 00	46 440 98	3 109 00	2,510.36
2 738 49	450	460.89	61	61.03	66	62.83	1.	1 1	46 256 00	46 210 72	3 109 00	3 209 51
2,751.60	465	463.91	62	61.00	66	63.16	1	1 1	46 256 00	46 348 13	3 110 00	3 091 87
2,751.00	405	467.93	61	61.87	66	63.47	1	1 1	46 264 00	46 351 70	3 115 00	3 113 09
2,750.00	400	469.95	61	61.07	67	62.02	1:	1 1	46,204.00	46,551.70	3,115.00	2 115 22
2,734.41	466	467.85	61	61.02	68	64.17	1.	1 1	46,024.00	46,682.04	3 116 00	3 116 11
2,010.03	400	468.85	64	61	65	64.52	1:	1 1	46,702.00	46,002.04	3 116 00	3 115 08
2,010.71	413	476.05	60	65.24	64	64.77	1:	1 1	46,733.00	40,010.20	3,110.00	3,115.30
2,021.39	472	470.03	67	65.88	66	65.03	11	1 1	40,733.00	46,777.30	3,114.00	3,113,66
2,621.01	414	477.06	67	66.93	67	65.00 65.00	1	1 1	40.021.00	47,222,24	2 927 00	3,113.00
2,035.00	473	477.00	07	66.07	67	65.49	1:	1 1	49,021.00	47,233.24	2,037.00	3,114.00
2,070.00	401	470.12	00	67.94	67	65.67	1:	1 1	50 702 00	45,034.30	2,055.00	2,705.77
2,003.22	400	404.10	70	67.04	67	65.07	1:	1 1	50,702.00	50,343.17	2,659.00	2,000.12
2,701.02	403	485.15	70	07.58	67	03.87	1:	1 1	50,707.00	50,742,52	2,059.00	2,007.79
2,701.95	4//	400.10	70	69.69	67	66 14	1	1 1	50,711.00	50,742.52	2,659.00	2,039.21
2,711.32	400	400.12	70	69.95	00	66.07	1	1	50,004.00	50,759.60	2,000.00	2,030.90
2,710.00	403	405.14	70	09.39	67	00.27	1	1	50,030.00	50,748.40	2,059.00	2,007.04
2,710.01	404	400.24	1	70	67	66.3			50,729.00	50,904.44	2,659.00	2,659.20
2,074.79	502	467.25	50	70.85	66	66.32			50,729.00	50,818.85	2,659.00	2,050.97
2,679.47	508	505.36	60	59.96	68	66.46	1	1 1	50,729.00	50,832.51	2,859.00	2,859.01
2,070.53	506	511.3	55	59.99	66	66.40			50,766.00	50,646.46	2,659.00	2,659.00
2,679.47	506	509.29	55	59.15	66	66.58	11	1 1	50,842.00	50,916.06	2,858.00	2,859.00
2,688.84	509	509.29	55	59.02	66	66.69	1	1 1	50,979.00	50,979.08	2,868.00	2,857.83
2,696.33	510	512.65	55	59	66	66.23	1	1 1	50,971.00	51,120.00	2,885.00	2,869.73
2,716.94	528	513.66	60	59	66	65.76	11	1 1	50,929.00	51,126.78	2,897.00	2,887.60
2,676.66	529	531.76	60	59.85	66	65.3	11	1	50,932.00	51,102.61	2,901.00	2,898.60
2,694.46	530	532.64	60	59.98	67	64.93	11	1 1	50,926.00	51,121.74	2,900.00	2,901.41
2,700.08	530	533.65	60	60	67	64.56	11	1	50,924.00	51,130.55	2,905.00	2,899.76
2,705.70	538	533.65	60	60	68	64.2	11	1	50,925.00	51,143.01	2,895.00	2,905.89
2,699.14	548	541.15	57	60	65	64.96	11	1	50,921.00	51,160.52	2,899.00	2,893.14
2,641.06	554	551.22	57	57.46	66	65.72	11	1 1	50,947.00	51,171.36	2,897.00	2,900.00
2,645.75	554	557.26	57	57.07	66	66.48	11	1 1	50,949.00	51,209.52	2,903.00	2,896.49
2,649.49	556	557.81	57	57.01	66	66.35	11	1 1	51,068.00	51,228.15	2,903.00	2,904.11
2,657.92	561	559.82	57	57	67	66.23	11	1 1	51,345.00	51,351.18	2,901.00	2,902.81
2,668.23	563	564.85	57	57	67	66.1	11	1 1	51,939.00	51,618.07	2,900.00	2,900.69
2,670.10	564	566.56	57	57	67	66.44	11	1 1	52,861.00	52,128.30	2,848.00	2,899.88
2,680.41	572	567.56	52	2 57	66	66.78	12	2 1	54,361.00	52,978.36	2,851.00	2,839.16
2,627.95	572	575.61	52	52.76	66	67.13	12	2 1	54,360.00	54,354.67	2,850.00	2,853.02
2,632.63	574	575.61	52	52.12	66	67.53	12	2 1:	54,236.00	54,351.75	2,873.00	2,849.49
2,635.44	575	577.62	53	52.02	65	67.94	12	2 1	54,297.00	54,248.36	2,879.00	2,877.01
2,636.38	575	578.63	53	52.85	65	68.35	12	2 1:	2 54,195.00	54,313.41	2,883.00	2,879.34
2,642.00	575	578.82	53	52.98	65	68.3	12	2 1:	54,440.00	54,219.38	2,883.00	2,883.62
2,651.37	576	578.82	53	53	66	68.24	12	2 1:	54,354.00	54,450.99	2,885.00	2,882.89
2,657.92	577	579.82	53	53	66	68.19	12	2 1:	54,354.00	54,381.24	2,885.00	2,885.36
2,663.54	583	580.78	53	53	66	68.18	12	2 1:	54,517.00	54,381.23	2,888.00	2,884.94
2,667.29	583	586.82	53	53	67	68.17	12	2 1:	54,554.00	54,537.42	2,910.00	2,888.52
2,674.79	586	586.82	54	53	67	68.15	12	2 1	54,535.00	54,578.89	3,013.00	2,913.66
2,656.05	592	589.83	54	53.85	68	68.14	12	2 1	54,353.00	54,562.56	3,084.00	3,029.93
2,633.57	595.87	595.87	53.98	53.98	68.13	68.13	12	2 1:	54,404.04	54,404.04	3,093.22	3,093.22
2,635.04	599.76	599.76	53.98	53.98	68.11	68.11	12	2 1:	54,457.68	54,457.68	3,093.22	3,093.22
2,636.41	603.73	603.73	53.98	53.98	68.01	68.01	12	2 1:	54,509.21	54,509.21	3,093.22	3,093.22
2,637.70	607.72	607.72	53.98	53.98	67.92	67.92	12	2 1:	54,562.90	54,562.90	3,093.22	3,093.22
2.638.91	611.74	611.74	53.98	53.98	67.82	67.82	13	2 1	54.618.56	54.618.56	3.093.22	3.093.22

2.640.04	615.75	615.75	53.98	53.98	67.82	67.82	12	12	54.673.74	54.673.74	3.093.22	3.093.22
2,641,10	619.78	619.78	53.98	53.98	67.82	67.82	12	12	54,730,54	54,730,54	3.093.22	3.093.22
2,642,09	623.83	623.83	53.98	53.98	67.82	67.82	12	12	54 788 83	54 788 83	3 093 22	3 093 22
2,643.02	627.88	627.88	53.08	53.08	67.89	67.89	12	10	54 848 24	54 848 24	3 003 22	3 003 22
2,043.02	621.00	621.00	50.00 52.00	50.00	67.05	67.05	12	12	54,040.24	54,009,99	2,002,22	2,002.22
2,043.05	636.06	031.90	53.90	53.90	69.00	69.00	12	12	54,900.00	54,500.00	3,053.22	3,093.22
2,044.70	640.47	630.00	53.90	53.90	60.02	00.02	12	12	55,970.04	54,970.04	3,093.22	3,093.22
2,045.47	640.17	040.17	53.96	53.96	00.12	66.12	12	12	55,039.64	55,039.64	3,093.22	3,093.22
2,646.18	644.3	644.3	53.98	53.98	68.22	68.22	12	12	55,109.57	55,109.57	3,093.22	3,093.22
2,646.85	648.47	648.47	53.98	53.98	68.32	68.32	12	2 12	55,180.35	55,180.35	3,093.22	3,093.22
2,647.48	652.66	652.66	53.98	53.98	68.42	68.42	12	2 12	55,254.26	55,254.26	3,093.22	3,093.22
2,648.07	656.88	656.88	53.98	53.98	68.51	68.51	12	2 12	55,328.88	55,328.88	3,093.22	3,093.22
2,648.62	661.12	661.12	53.98	53.98	68.61	68.61	12	2 12	55,404.13	55,404.13	3,093.22	3,093.22
2,649.14	665.4	665.4	53.98	53.98	68.68	68.68	12	2 12	55,482.71	55,482.71	3,093.22	3,093.22
2,649.62	669.71	669.71	53.98	53.98	68.76	68.76	12	2 12	55,561.83	55,561.83	3,093.22	3,093.22
2.650.08	674.04	674.04	53.98	53.98	68.83	68.83	12	12	55.641.43	55.641.43	3.093.22	3.093.22
2,650,50	678.4	678.4	53.98	53.98	68.9	68.9	12	12	55,724,70	55,724,70	3.093.22	3.093.22
2,650,90	682.79	682.79	53.98	53.98	68.97	68.97	12	12	55 808 38	55 808 38	3 093 22	3 093 22
2,651.27	687.21	687.21	53.08	53.08	69.03	69.03	12	10	55 802 /2	55 802 42	3 003 22	3 003 22
2,001.21	601.21	601.21	53.30	53.50	60.06	60.00	12	42	55,032.42	55,032.42	2,002,22	2,002,22
2,051.02	691.66	691.68	53.96	53.96	69.06	69.06	12	12	50,901.90	55,961.96	3,093.22	3,093.22
2,651.95	696.17	696.17	53.98	53.98	69.09	69.09	12	12	56,071.84	56,071.84	3,093.22	3,093.22
2,652.25	700.7	700.7	53.98	53.98	69.11	69.11	12	12	56,161.97	56,161.97	3,093.22	3,093.22
2,652.54	705.23	705.23	53.98	53.98	69.18	69.18	12	12	56,255.83	56,255.83	3,093.22	3,093.22
2,652.81	709.79	709.79	53.98	53.98	69.24	69.24	12	12	56,349.91	56,349.91	3,093.22	3,093.22
2,653.06	714.37	714.37	53.98	53.98	69.3	69.3	12	2 12	56,444.19	56,444.19	3,093.22	3,093.22
2,653.30	718.99	718.99	53.98	53.98	69.37	69.37	12	2 12	56,541.91	56,541.91	3,093.22	3,093.22
2,653.52	723.63	723.63	53.98	53.98	69.44	69.44	12	2 12	56,639.80	56,639.80	3,093.22	3,093.22
2.653.72	728.3	728.3	53.98	53.98	69.51	69.51	12	12	56,737,85	56.737.85	3.093.22	3.093.22
2,653,92	733	733	53.98	53.98	69.59	69.59	12	2 12	56,839,05	56,839,05	3.093.22	3.093.22
2 654 10	737 72	737 72	53.98	53.98	69.66	69.66	12	2 12	56 940 39	56 940 39	3 093 22	3 093 22
2,664.27	742.49	742.49	52.00	52.09	60.74	60.74	12	13	57 041 84	57 041 94	2,002,22	2 002 22
2,034.27	742.40	742.40	53.90	53.90	60.92	09.74	12	12	57,041.04	57,041.04	3,093.22	3,093.22
2,034.43	747.20	747.20	53.96	53.96	69.62	69.62	12	12	57,140.19	57,140.19	3,093.22	3,093.22
2,034.30	752.07	752.07	53.96	53.96	69.91	69.91	12	12	57,250.63	57,250.63	3,093.22	3,093.22
2,654.72	756.91	756.91	53.98	53.98	70	/0	12	2 12	57,355.17	57,355.17	3,093.22	3,093.22
2,654.85	761.78	761.78	53.98	53.98	70.08	70.08	12	2 12	57,462.41	57,462.41	3,093.22	3,093.22
2,654.97	766.68	766.68	53.98	53.98	70.16	70.16	12	12	57,569.72	57,569.72	3,093.22	3,093.22
2,655.09	771.61	771.61	53.98	53.98	70.25	70.25	12	2 12	57,677.11	57,677.11	3,093.22	3,093.22
2,655.19	776.57	776.57	53.98	53.98	70.33	70.33	12	2 12	57,787.08	57,787.08	3,093.22	3,093.22
2,655.29	781.56	781.56	53.98	53.98	70.42	70.42	12	12	57,897.11	57,897.11	3,093.22	3,093.22
2,655.39	786.59	786.59	53.98	53.98	70.51	70.51	12	12	58,007.19	58,007.19	3,093.22	3,093.22
2,655.48	791.64	791.64	53.98	53.98	70.6	70.6	12	2 12	58,119.59	58,119.59	3,093.22	3,093.22
2.655.56	796.73	796.73	53.98	53.98	70.69	70.69	12	12	58,232,02	58.232.02	3.093.22	3.093.22
2.655.64	801.84	801.84	53.98	53.98	70.77	70.77	12	12	58,344,50	58.344.50	3.093.22	3.093.22
2,655,71	806.99	806.99	53.98	53.98	70.87	70.87	12	2 12	58,459,19	58,459,19	3,093,22	3,093,22
2 655 78	812 17	812 17	53.98	53.98	70.96	70.96	12	2 12	58 573 90	58 573 90	3 093 22	3 093 22
2,000.70	817 20	012.17	50.50	00.50	70.90	71.50	12	12	58 600 66	58 600 66	3 003 22	3 003 22
2,000.04	017.30	017.30	53.90	53.90	71.05	71.05	12	12	58 805 20	50,000,000	3,033.22	3,093.22
2,033.90	022.03	022.03	53.90	53.98	71.15	71.15	12	12	50,000.39	50,003.35	3,093.22	3,093.22
2,055.90	827.9	827.9	53.98	53.98	71.25	71.25	12	12	50,922.17	50,922.17	3,093.22	3,093.22
2,656.01	833.21	833.21	53.98	53.98	/1.34	/1.34	12	12	59,038.96	59,038.96	3,093.22	3,093.22
2,656.06	838.55	838.55	53.98	53.98	/1.44	/1.44	12	12	59,157.59	59,157.59	3,093.22	3,093.22
2,656.11	843.92	843.92	53.98	53.98	71.54	71.54	12	12	59,276.24	59,276.24	3,093.22	3,093.22
2,656.15	849.33	849.33	53.98	53.98	71.64	71.64	12	12	59,394.91	59,394.91	3,093.22	3,093.22
2,656.19	854.77	854.77	53.98	53.98	71.74	71.74	12	12	59,515.24	59,515.24	3,093.22	3,093.22
2,656.23	860.24	860.24	53.98	53.98	71.85	71.85	12	12	59,635.59	59,635.59	3,093.22	3,093.22
2,656.26	865.75	865.75	53.98	53.98	71.95	71.95	12	12	59,755.95	59,755.95	3,093.22	3,093.22
2,656.30			53.98	53.98			12	2 12			3,093.22	3,093.22
									1			
								1	-	i		
		1						1	t	1		
									+			
		l										

r Month	SysFcst_Rpt.Sys_MWh MFcstTC	Cal.System_MWh	MFcstTCal.CalibFactor	MFcstTCal.ResCalib	MFcstTCal.GS50Calib	MFcstTCal.GS1000NICalib	MFcstTCal.GS1000ICalib	MFcstTCal.GS1500Calib	MFcstTCal.GS5000Calib	MFcstTCal.GSLrgCalib	MFcstTCal.StLightCalib	MFcstTCal.MUCalib	MFcstTCal.DCL
005 1	764,677.73	738,319.72	0.95	219,935.94 203,210.01	74,742.94	231,337.15	66,110.34	29 145 43	65,271.45	47,329.37	7 3,838.88 3 3,766.07	0	
005 3	678,524.99	655,136.61	1	202,500.73	69,432.19	165,809.28	66,528.21	30,443.92	67,425.90	49,660.83	3,335.56	0	
005 4	578,997.95	559,040.21	1	150,473.42	53,635.58	147,103.55	60,731.96	29,530.10	65,365.00	48,906.31	3,294.30	0	
005 6	681,022.95	657,548.47	1	199,551.73	64,440.51	157,335.79	70,253.38	33,386.13	72,536.22	57,585.43	3 2,459.29	0	 I
005 7	722,407.24	697,506.27	1.02	212,358.69	70,771.36	164,073.03	75,851.89	34,795.87	76,258.20	61,103.00	2,294.24	0	
005 8	696,317.92	672,316.23 591 667 14	1.01	212,861.51	58,600.24	158,277.13	73,250.53	33,660.37	74,152.06	59,113.96	5 2,400.44 2 776.80	0	()
005 10	611,583.48	590,502.54	1.01	168,244.55	56,340.19	148,337.91	65,131.40	30,100.93	67,865.89	51,460.76	3,020.90	0	
005 11	644,567.92	622,350.02	0.99	187,246.79	69,407.22	154,755.62	63,287.45	29,609.36	65,712.71	48,806.77	3,524.10	0	1
005 12	720,249.80	695,423.20	1.13	236,207.51	69,701.97	136,615.60	78,947.86	34,835.24	66,919,86	57,125.39	4,267.54	0	í
006 2	651,568.46	629,109.26	0.95	204,303.90	54,447.42	162,293.72	64,228.95	29,167.76	62,968.69	47,946.85	5 3,751.97	0	
006 3	672,060.32	648,894.78	0.97	197,833.99	70,782.75	159,236.99	70,453.48	29,473.80	66,330.73	51,544.23	3,238.81	0	r
006 5	604,173.85	583,348.32	0.95	166,075.20	66,507.51	134,798.29	65,917.79	28,382.94	64,565.94	51,986.13	3,437.68	2,541.90	
006 6	635,368.51	613,467.71	1	173,436.87	58,908.87	146,941.42	71,237.02	31,528.99	70,201.96	57,408.53	3 2,472.12	1,331.94	
006 7	714,043.30	689,430.63	0.97	210,497.29	69,435.40	157,854.88	78,750.75	33,420.83	73,931.02	61,841.10	2,255.80	1,443.58	
006 9	580,191.91	560,193.02	1.03	142,285.79	57,081.66	139,778.61	66,582.38	29,664.08	67,035.55	53,565.43	2,763.83	1,435.71	
006 10	608,546.92	587,570.65	0.97	169,188.02	57,793.14	143,630.62	67,378.48	28,586.47	65,078.20	51,431.13	2,973.21	1,511.39	
JU6 11	623,590.77	602,095.94 660.081.73	0.97	172,566.07	64,808.44 57,989.72	148,775.62	66,579.18	28,889.39	64,789.67 77 447 81	50,738.53	3,565.15	1,383.90	
107 1	735,759.66	710,398.44	1.01	230,284.55	79,864.30	161,273.45	76,900.69	31,391.11	70,497.83	54,216.47	4,213.85	1,489.87	
07 2	684,699.49	661,098.28	1.01	213,211.46	60,374.34	161,849.69	70,493.42	30,179.01	67,757.16	51,363.11	4,116.81	1,488.14	
07 3	597,751,63	577,147,46	0.99	205,007.42	37,319,66	148,674.70	73,519.22	29,076.15	70.126.62	55,010.08	3,399.59	1,810.04	í
007 5	598,124.52	577,507.50	0.96	167,192.87	67,903.52	121,938.40	68,474.10	27,804.66	66,132.81	53,353.94	2,684.62	1,770.10	
07 6	655,051.73	632,472.46	1.04	187,966.20	54,076.32	139,588.36	77,484.23	32,264.73	74,760.63	61,496.70	2,641.79	1,919.54	
107 7	675.441.69	652,159,60	1.05	201.192.06	52.371.51	131,108.34	81.006.62	30,533.89	71,790.05	63.262.76	2,298.31	1,828.86	
07 9	600,386.97	579,691.97	0.99	164,709.96	60,386.34	124,110.68	69,538.71	33,018.62	67,992.86	55,144.36	6 2,711.69	1,819.25	
07 10	600,105.74	579,420.43	0.99	171,622.91	53,820.33	125,463.12	70,175.34	32,173.07	67,259.28	53,761.25	3,064.39	1,821.48	1
07 12	729,522.51	704,376.28	1.23	192,282.97	56,834.93	158,787.39	95,185.52	41,739.04	86,068.31	66,404.78	3,047.00	1,862.48	
108 1	760,278.92	734,072.53	1.07	228,346.54	77,611.93	169,357.70	83,059.75	35,493.80	75,322.37	58,210.37	4,775.40	1,640.04	
08 2	679,060.53	655,653.70	0.94	210,876.43	68,216.28	148,294.18	78,689.48	31,013.04	64,160.81	49,129.01	3,717.20	1,334.94	
008 4	596,058.97	575,513.15	0.99	155,515.79	56,191.93	128,832.17	79,201.53	32,265.63	66,334.63	52,519.79	2,979.48	1,438.85	
108 5	573,162.32	553,405.73	0.99	144,404.93	48,229.96	122,825.46	80,505.40	32,152.87	67,190.65	53,786.93	3 2,522.48	1,551.85	
08 6	639,963.79	617,904.59	1.02	170,932.77	56,840.20	132,803.95	91 711 48	35,386.56	72,445.77	59,430.59	1,094.21	2,671.60	(
108 8	641,439.92	619,329.84	1.02	173,498.06	62,538.50	129,382.52	86,866.95	30,496.05	72,508.76	59,547.86	5 1,613.01	2,635.35	
9008	599,204.95	578,550.69	0.99	163,366.64	56,653.15	123,648.93	79,565.56	28,608.80	67,491.65	54,532.13	3 3,004.25	1,445.31	1
08 10	641,599,39	584,642.43	0.97	165,449.58	60,683.05	127,638.18	79,615.12	27,602.91 28,424,44	65,937.79	52,286.94	4 3,683.75	1,515.33	
108 12	750,915.99	725,032.34	1.05	224,568.91	73,821.57	167,118.94	91,782.07	31,331.39	73,292.76	56,434.71	4,784.09	1,648.93	
09 1	768,897.11	742,393.65	1.02	240,147.57	75,496.50	172,685.26	90,839.22	30,846.14	71,573.03	54,475.63	4,562.38	1,514.14	
109 2	672,263,66	649.091.10	0.97	205,568.73	63.444.43	140,482.71	i 81.003.97	32.272.17	65.897.80	51.303.86	3,607.64	1,508.24	
09 4	592,341.29	571,923.62	0.96	166,357.04	49,770.25	127,786.38	76,450.17	31,740.50	64,409.46	50,828.92	2,912.80	1,428.48	
09 5	582,422.72	562,346.93	1 1 01	160,794.26	49,598.34	124,397.98	80,297.19	21,073.63	67,651.51	54,136.84	2,544.71	1,601.59	
09 7	657,990.41	635,309.85	1.05	180,313.07	63,067.10	132,948.48	88,447.61	31,325.26	74,164.66	60,837.60	1,505.11	2,438.13	
09 8	684,460.87	660,867.89	1	200,560.90	64,300.94	136,402.89	89,022.96	31,482.48	73,669.92	61,018.72	2 1,556.85	2,601.46	
09 10	588,676.75	568,385.39	1.02	154,378.33	52,605.08	123,887.74	80,343.55	28,849.75	65,725.80	55,041.58	3,117.93	1,423.80	
09 11	628,206.96	606,553.01	0.99	177,375.43	64,583.71	136,348.59	81,111.56	28,459.36	67,145.16	45,570.91	4,309.24	1,401.99	
09 12 10 1	723,950.12	698,995.97	1.02	210,881.59	70,994.47	161,638.54	90,701.37	30,488.88	71,967.20	55,644.16	5 4,880.34	1,543.48	()
10 2	648,703.26	626,342.82	0.94	195,518.65	64,837.60	143,808.22	76,553.52	27,857.91	63,612.85	48,847.47	3,829.10	1,235.05	
10 3	638,488.80	616,480.45	0.95	190,103.16	60,031.53	134,184.47	81,274.83	27,552.67	65,891.11	51,869.68	3,811.84	1,516.75	
110 4	581,204.64	561,170.85	0.97	160,515.24	46,848.13	125,198.37	78,456.45	27,583.52	65,626.11	52,185.20	3,150.76	1,358.03	
10 6	627,682.41	606,046.54	1	183,375.90	52,981.24	125,899.82	83,111.08	29,554.08	69,970.35	57,115.48	2,407.06	1,373.83	
10 7	746,184.55	720,463.98	0.94	250,358.06	63,889.23	141,628.15	91,777.15	32,048.64	74,189.83	62,552.62	2 2,388.43	1,389.80	
10 9	603,647.27	582,839.89	0.99	162,593.36	54,577.78	125.300.63	82.053.00	28,887.76	68,837.84	55.679.41	3,282.12	1,407.57	
10 10	599,326.04	578,667.61	0.93	167,999.24	61,689.49	122,958.07	78,617.57	26,575.77	64,258.79	51,140.33	3,820.94	1,367.91	
10 11	631,380.73 718 025 44	609,617.39	0.94	183,841.72	63,618.71	134,161.56	79,392.76	27,287.46	64,699.08	50,717.58	4,309.45	1,347.75	
11 1	758,373.92	732,233.19	1.01	234,041.01	75,079.41	167,029.38	92,619.52	30,425.67	72,111.25	55,496.54	4 3,668.92	1,502.47	
111 2	677,306.57	653,960.20	0.95	208,354.60	67,594.20	151,015.16	79,423.03	28,259.82	64,744.65	49,472.70	3,443.75	1,409.32	
11 3	686,909.83	663,232.44 580 163 65	0.98	202,273.24	67,406.44 58 353 47	148,535.43	87,456.99	28,907.61	69,263.56	54,102.10	3,573.52	1,461.52	
11 5	597,487.62	576,892.56	0.98	159,032.72	57,159.09	122,473.63	82,623.71	27,815.55	67,803.16	54,714.92	2 3,563.32	1,455.52	
111 6	644,748.95	622,524.81	0.99	181,430.12	60,337.13	129,929.15	86,261.51	30,121.65	71,348.57	58,770.53	2,600.56	1,471.84	
11 7	689,983.04	665 330 15	1	199,531.73	63,545.99	137,173.04	92,726.68	31,665.15	75,165.44	62,769.72	1,885.40	1,481.20	
11 9	612,528.02	591,414.52	1	164,080.14	58,298.07	124,771.26	83,753.72	28,943.48	69,602.56	56,565.50	3,654.09	1,489.00	
11 10	613,966.47	592,803.39	0.97	167,954.69	59,023.52	127,945.26	83,269.78	27,594.98	67,312.68	53,747.84	4,269.10	1,437.68	
11	043,133.24	020,904.80	0.97	104,050.14	02,758.91	137,491.01	83,018.79	27,990.96	67,007.22	52,696.41	4,267.35	1,436.38	
	/31 1/1 18						U.7 1881 73		/1 ////	55 C00 M	1 404 07	1 /(*** 70)	· · · · · · · · · · · · · · · · · · ·

2012 1	763 671 26	737 347 94	1.01	233 939 13	75 251 24	168 423 86	94 609 80	30 515 04	72 920 27	56 225 66	3 699 81	1 503 85	259.27
2012 2	701 922 20	677 620 79	0.07	212 001 50	60,607,00	100,120.00	94.056.41	29.014.11	67 640 72	52,022,00	2 542 60	1 420 42	249.46
2012 2	699 502 70	664 770 49	0.97	213,901.39	67 102 40	149 507 10	04,500.41	20,914.11	60,674,64	5 52,022.20	2 501 17	1,433.42	240.10
2012 3	000,002.79	500 470 74	0.98	202,140.23	67,193.49	140,397.19	00,720.32	20,7 53.44	09,074.01	54,455.60	3,361.17	1,400.04	200.02
2012 4	6004,300.61	563,470.71	0.94	108,204.93	58,580.34	127,379.98	80,227.03	27,011.01	65,177.25	51,740.24	3,451.09	1,400.21	241.4
2012 5	6002,744.92	561,968.63	0.98	159,700.40	57,314.04	123,052.92	84,475.80	27,904.10	08,028.81	55,515.93	3,599.27	1,459.10	201.00
2012 0	0 040,394.00	624,113.78	0.98	181,225.73	60,281.02	129,710.72	87,304.12	30,039.03	71,720.85	0 09,233.21	2,015.40	1,404.00	202.0
2012 7	695,291.84	671,325.52	0.99	200,429.86	63,705.30	137,083.27	94,574.22	31,748.47	75,948.37	63,587.53	1,912.77	1,460.49	200.24
2012 8	692,598.32	668,724.84	1	198,711.53	63,519.20	137,188.22	94,508.00	31,639.07	75,906.22	63,433.29	2,075.08	1,487.75	256.49
2012 9	612,444.35	591,333.73	0.99	163,365.74	57,991.63	124,205.99	84,884.32	28,780.41	69,823.17	56,890.14	3,658.41	1,478.94	254.97
2012 10	621,195.28	599,783.03	0.97	169,252.06	59,480.70	128,968.16	85,369.91	27,741.97	68,296.55	54,663.62	4,316.94	1,444.11	248.97
2012 11	646,762.50	624,468.96	0.96	184,461.58	62,874.73	137,870.00	84,561.68	27,963.10	67,537.76	53,232.88	4,286.93	1,433.22	247.05
2012 12	733,107.63	707,837.82	1	219,168.30	71,644.55	159,568.25	93,486.18	29,741.14	72,013.74	56,046.45	4,432.80	1,481.06	255.34
2013 1	769,370.93	742,851.14	1.01	234,920.78	75,605.45	169,405.69	96,505.93	30,511.02	73,574.06	56,847.08	3,722.18	1,500.29	258.66
2013 2	684,711.57	661,109.95	0.94	209,231.65	68,228.15	152,136.38	82,268.23	28,170.31	65,618.75	50,340.94	3,474.74	1,399.50	241.28
2013 3	690,735.11	666,925.85	0.97	202,008.62	67,176.45	148,704.70	90,241.62	28,670.55	69,955.92	54,883.76	3,590.24	1,444.89	249.1
2013 4	610,214.40	589,180.65	0.94	169,139.60	58,895.02	128,144.94	82,220.48	27,082.91	66,016.06	52,550.16	3,487.34	1,402.38	241.77
2013 5	606,884.16	585,965.20	0.98	160,018.05	57,397.07	123,284.41	86,388.41	27,904.97	69,363.87	56,271.02	3,628.17	1,457.87	251.34
2013 6	648,752.92	626,390.77	0.98	181,068.04	60,185.00	129,559.74	89,193.14	29,967.13	72,239.09	59,835.64	2,634.56	1,457.20	251.23
2013 7	701,325.17	677,150.89	0.99	201,308.18	63,927.18	138,237.75	96,760.25	31,834.92	76,858.92	64,545.60	1,944.13	1,478.99	254.98
2013 8	695,032.01	671,074.64	0.99	198,543.88	63,409.77	137,022.07	96,216.89	31,559.18	76,428.19	64,064.79	2,096.23	1,478.71	254.93
2013 9	618,546.81	597,225.85	1	164,120.21	58,242.60	124,790.01	87,103.31	28,877.23	70,797.37	57,857.73	3,700.01	1,481.90	255.48
2013 10	625,510.49	603,949.50	0.97	169,580.36	59,598.58	129,305.68	87,308.07	27,726.56	69,008.19	55,387.74	4,343.91	1,441.83	248.58
2013 11	649,290.46	626,909.78	0.96	184,380.99	62,859.61	137,954.38	86,171.19	27,855.72	67,989.07	53,729.22	4,298.15	1,425.66	245.79
2013 12	739,275.75	713,793.33	0.99	220,196.80	72,006.99	160,547.20	95,586.10	29,743.51	72,759.57	56,761.49	4,458.92	1,477.94	254.8
2014 1	773,723.18	747,053.38	1	235,459.97	75,801.66	170,039.02	98,354.30	30,423.84	74,102.12	2 57,384.48	3,738.43	1,492.27	257.27
2014 2	689,066.63	665,314.89	0.94	209,915.07	68,449.78	152,795.73	83,927.08	28,119.58	66,130.28	50,848.34	3,494.86	1,393.86	240.31
2014 3	695,106.21	6/1,146.29	0.97	202,538.66	67,340.91	149,216.60	92,099.29	28,613.67	70,550.18	55,487.50	3,611.99	1,439.32	248.14
2014 4	614,601.56	593,416.58	0.94	169,597.61	59,034.78	128,539.95	84,083.53	27,069.60	66,695.91	53,237.27	3,516.51	1,400.05	241.3/
2014 5	609,468.69	588,460.64	0.98	159,838.99	57,311.55	123,154.77	88,150.64	27,821.08	69,931.23	56,899.39	3,650.50	1,452.14	250.35
2014 0	654,985.97	632,408.97	0.98	182,018.09	60,421.48	130,129.92	91,408.41	30,059.50	73,184.34	60,805.94	2,672.37	1,457.62	251.3
2014 7	705,750.73	681,423.89	0.99	201,798.78	63,973.09	138,413.25	98,761.55	31,832.25	//,585./3	65,358.02	1,974.16	1,473.10	253.97
2014 8	607,650.06	673,602.46	0.99	198,525.89	63,289.64	130,830.22	97,967.40	31,473.48	76,957.83	6 64,708.64	2,120.81	1,469.25	253.3
2014 9	624,804.07	603,267.42	0.07	104,943.43	56,480.74	125,360.35	89,385.31	28,909.33	/1,/89.5/	56,640.66	3,745.31	1,484.54	200.94
2014 10	629,950.94	608,236.88	0.97	170,021.56	59,706.45	129,624.20	89,277.03	27,704.84	69,723.21	50,118.52	4,3/3.//	1,439.19	248.12
2014 11	031,914.10	029,442.98	0.95	104,400.01	02,820.81	138,000.82	81,113.93	21,139.33	08,420.10	5 54,215.84	4,311.45	1,417.02	244.4
2014 12	745,529.77	719,831.78	0.99	221,442.80	72,343.85	161,472.02	97,676.54	29,733.18	73,460.35	57,462.92	4,480.79	1,474.15	254.15
2015 1	776,332.88	749,573.12	0.99	235,628.12	75,801.80	170,233.04	99,954.42	30,257.26	74,439.73	51,774.91	3,748.30	1,480.33	200.2
2015 2	093,468.04	669,583.90	0.93	210,088.00	08,004.80	153,441.73	85,587.54	28,065.20	00,037.00	51,353.29	3,517.77	1,366.01	239.3
2015 3	701,343.29	677,168.38	0.97	203,676.99	67,674.43	150,103.80	94,197.12	28,627.91	71,323.83	50,233.09	3,040.12	1,437.31	247.8
2015 4	612,062,41	597,679.79	0.94	1/0,102.57	59,170.15	128,925.77	85,945.42	27,054.05	70 402 17	53,922.10	3,548.71	1,397.01	240.95
2013 3	012,002.41	590,904.90	0.97	109,093.90	57,224.80	123,022.11	89,899.90	21,130.82	70,493.17	51,522.38	3,073.99	1,440.39	249.30
2015 0	710 157 06	685 679 34	0.98	202 342 95	64 014 44	130,085.85	93,012.45	30,148.00	74,121.10	66 156 27	2,713.34	1,407.00	201.34
2015 /	702 053 36	677 853 07	0.99	199.067.00	63 332 27	130,577.91	90 035 73	31,627.01	77 673 /0	65 505 39	2,007.23	1,407.19	202.90
2015 0	629,208,69	607 520 22	0.98	165 200 14	58 558 49	125 560 85	93,933.73	28 976 28	72 565 20	59 657 36	2,133.90	1,482,83	252.3
2015 10	632 538 21	610 734 97	0.96	160 071 05	50,530.43	120,560.53	90,964,13	20,370.20	70 220 76	56 679 31	4 394 11	1,402.05	246.07
2015 11	658 140 04	635 454 32	0.00	185 500 04	63 147 44	138 821 95	89.848.27	27,780,35	69 241 77	55 000 50	4 352 04	1,417,65	240.01
2015 11	000,140.04	033,434.32	0.35	103,333.34	03,147.44	130,021.33	03,040.27	21,100.33	03,241.17	33,000.30	4,552.04	1,417.05	244.4
2016 12	-												
2016 2													
2016 3										1			
2016 4	4									+ +			
2016 5					+					1 1			
2016 6										+ +			
2016 7	-									1 1			
2016 8	1									+ +			
2016 9										1			
2016 10										1			
2016 11										1 1			
2016 12		1	1				1			1			



1	3. I	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	ue 3.1 - Is the load forecast methodology including weather normalization
4	ap	propriate?
5		
6	VE	CC Question #24 - Ref: Exhibit C1, Tab 1, Schedule 1, pages 3-5 and Appendix X
7	a)	Please provide the Conference Board of Canada documents for both a) the historical
8		GDP values used to develop the regression model and b) the forecast GDP values
9		used to forecast power purchases for 2011 and 2012.
10	b)	Did Itron Inc. test any other economic variables (e.g. unemployment rates) or
11		demographic variables when developing its regression model for system energy?
12		• If yes, please provide the results (i.e., R-Squared, Adjusted R-Squared,
13		Variable Coefficients/t-Stats).
14		If not, why not?
15	C)	With respect to the model for purchases (Appendix X, page1), please provide a
16		qualitative explanation as to what each of the "BinT" variables are meant to reflect
17		and why they are key drivers for purchases.
18	d)	Please provide a table that sets out both the historical and the forecast values used
19		for each variable for the system energy forecast model.
20		
21	Re	sponse
22		
23	a)	Attachment 1 to this Exhibit provides the Conference Board of Canada documents
24		for the historic Gross Domestic Product ("GDP") and the forecast GDP values used
25 26		to forecast power purchases for 2011 and 2012.
26		
27	b)	Itron Inc. initially developed the models for Hydro Ottawa in 2007. The energy model
28		was estimated with data from January 1997 to October 2006. The figures below
29		snow the model variables, as well as the resulting coefficients and I-statistics and
30		the summary statistics from the 1997 forecast.
31		



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #8 Filed: 2011-09-08 Page 2 of 3

1		At the time of th	e model development, Itron Inc. had access to the following
2		economic variat	oles:
3		Consumer	Price Index
4		Real Perso	nal Income
5		Population	
6		Employmer	nt
7		Manufactur	ing Gross Domestic Product; and
8		Per-Capita	Income
9			
10		GDP is the mos	t relevant variable to explain underlying changes in system energy as
11		it describes tota	l economic activity. With the model's high Adjusted R-Square (0.982)
12		and low MAPE (0.91%), it is Itron's assessment that the inclusion of other variables
13		would not have	improved the model substantially, if at all.
14			
15	c)	The main driving	g variable in the System Energy forecast is GDP for the greater
16		Ottawa area. Ot	her variables are also required to capture any non weather-related
17		seasonality and	to mark off any anomalous observations. Anomalous observations
18		occur when wea	ther and economic indicators do not appropriately explain changes
19		in system energ	y, the use of these variables prevents the loss of forecast accuracy
20		due to these per	riods or events. In addition, variables have been included to account
21	_	for the number of	of days per month and the number of weekend days per month.
		Variable	Description
	Bin	T.WkEndDave	Number of days per month

BinT.Days	Number of days per month
BinT.WkEndDays	Number of weekend days (Saturday & Sunday) per month
BinT.Yr01	2001, binary flag to adjust for anomalous observation
BinT.Yr02	2002, binary flag to adjust for anomalous observation
BinT.Aug03	August 2003, binary flag to mark the August 2003 transmission outage
BinT.Mar	March, binary flag to adjust for non weather-related seasonality
BinT.Apr	April, binary flag to adjust for non weather-related seasonality
BinT.May	May, binary flag to adjust for non weather-related seasonality
BinT.Oct	October, binary flag to adjust for non weather-related seasonality
BinT.After06	2006 and beyond, binary flag to adjust for changes in the system energy
	growth
BinT.Jan08	January 2008, binary flag to adjust for anomalous observations

22



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #8 Filed: 2011-09-08 Page 3 of 3

- 1 d) Attachment 2 provides a table that sets out both the historical and the forecast
- 2 values used for each variable for the system energy forecast model.



Updated: December 22, 2010

	1999Q1	1999Q2	1999Q3	1999Q4	2000Q1	2000Q2	2000Q3	2000Q4	2001Q1	2001Q2	2001Q3	2001Q4	1999	2000	2001
ALL INDUSTRIES	34119	34856	35456	36200	36759	37119	37785	38087	38064	38479	38634	38962	35158	37437	38535
	2.8	2.2	1.7	2.1	1.5	1.0	1.8	0.8	-0.1	1.1	0.4	0.9	7.8	6.5	2.9
GOODS-PRODUCING	4979	5135	5339	5506	5623	5654	5754	5781	5719	5705	5654	5648	5240	5703	5682
INDUSTRIES	3.4	3.1	4.0	3.1	2.1	0.6	1.8	0.5	-1.1	-0.2	-0.9	-0.1	13.0	8.8	-0.4
MANUFACTURING	3135	3224	3367	3468	3568	3629	3705	3699	3555	3524	3417	3341	3298	3650	3459
	2.2	2.8	4.4	3.0	2.9	1.7	2.1	-0.2	-3.9	-0.9	-3.1	-2.2	12.9	10.7	-5.2
CONSTRUCTION	1297	1364	1416	1479	1482	1461	1485	1521	1607	1621	1676	1741	1389	1487	1661
	6.8	5.2	3.8	4.5	0.2	-1.4	1.7	2.4	5.7	0.9	3.4	3.9	17.1	7.1	11.7
PRIMARY AND UTILITIES	547	546	556	559	573	564	564	562	557	560	562	566	552	566	561
	2.9	-0.1	1.8	0.5	2.5	-1.5	0.0	-0.5	-0.9	0.6	0.4	0.6	4.0	2.5	-0.8
SERVICES-PRODUCING	29140	29721	30118	30694	31136	31465	32031	32306	32345	32773	32980	33314	29918	31734	32853
INDUSTRIES	2.6	2.0	1.3	1.9	1.4	1.1	1.8	0.9	0.1	1.3	0.6	1.0	7.0	6.1	3.5
TRANSPORTATION AND	1163	1193	1214	1217	1199	1216	1244	1251	1275	1282	1255	1236	1197	1227	1262
WAREHOUSING	1.0	2.6	1.7	0.3	-1.5	1.4	2.4	0.5	1.9	0.6	-2.1	-1.5	6.9	2.6	2.8
INFORMATION AND CULTURAL	1810	1829	1839	1836	1892	1908	1915	1921	1946	1959	1970	1989	1828	1909	1966
INDUSTRIES	9.7	1.0	0.6	-0.2	3.0	0.9	0.4	0.3	1.3	0.7	0.6	0.9	15.3	4.4	3.0
WHOLESALE AND RETAIL TRADE	2810	2822	2882	2958	3037	3101	3173	3172	3203	3234	3267	3298	2868	3121	3251
	3.5	0.4	2.1	2.6	2.7	2.1	2.3	-0.0	0.9	1.0	1.0	1.0	8.6	8.8	4.2
FINANCE, INSURANCE AND	5888	5970	6083	6198	6328	6293	6340	6394	6490	6543	6608	6696	6035	6339	6584
REAL ESTATE	1.4	1.4	1.9	1.9	2.1	-0.6	0.7	0.9	1.5	0.8	1.0	1.3	4.6	5.0	3.9
BUSINESS SERVICES	3420	3560	3659	3775	3898	4013	4138	4196	4123	4128	4090	4093	3604	4061	4109
	5.0	4.1	2.8	3.2	3.3	2.9	3.1	1.4	-1.7	0.1	-0.9	0.1	14.4	12.7	1.2
PERSONAL SERVICES	2206	2244	2239	2279	2289	2318	2374	2397	2431	2411	2434	2469	2242	2344	2436
	7.6	1.7	-0.2	1.8	0.4	1.3	2.4	1.0	1.4	-0.8	0.9	1.5	11.4	4.6	3.9
NON-COMMERCIAL SERVICES	4382	4446	4484	4518	4483	4508	4608	4584	4592	4584	4558	4570	4458	4546	4576
	0.1	1.5	0.9	0.8	-0.8	0.6	2.2	-0.5	0.2	-0.2	-0.6	0.3	2.0	2.0	0.7
PUBLIC ADMINISTRATION AND	7462	7658	7718	7911	8011	8108	8240	8389	8285	8631	8797	8963	7687	8187	8669
DEFENCE	1.1	2.6	0.8	2.5	1.3	1.2	1.6	1.8	-1.2	4.2	1.9	1.9	5.0	6.5	5.9



Updated: December 22, 2010

	2002Q1	2002Q2	2002Q3	2002Q4	2003Q1	2003Q2	2003Q3	2003Q4	2004Q1	2004Q2	2004Q3	2004Q4	2002	2003	2004
ALL INDUSTRIES	39152	39348	39795	40255	40385	40503	40512	40936	41258	41646	41923	42020	39638	40584	41712
	0.5	0.5	1.1	1.2	0.3	0.3	0.0	1.0	0.8	0.9	0.7	0.2	2.9	2.4	2.8
GOODS-PRODUCING	5706	5864	5875	5828	5854	5825	5802	5962	5831	5892	6014	6061	5818	5861	5950
INDUSTRIES	1.0	2.8	0.2	-0.8	0.4	-0.5	-0.4	2.8	-2.2	1.1	2.1	0.8	2.4	0.7	1.5
MANUFACTURING	3481	3503	3484	3400	3420	3403	3388	3493	3387	3434	3487	3516	3467	3426	3456
	4.2	0.6	-0.5	-2.4	0.6	-0.5	-0.4	3.1	-3.0	1.4	1.5	0.8	0.2	-1.2	0.9
CONSTRUCTION	1698	1774	1801	1841	1834	1844	1849	1886	1852	1864	1911	1907	1779	1853	1883
	-2.5	4.5	1.5	2.2	-0.4	0.5	0.3	2.0	-1.8	0.6	2.5	-0.2	7.1	4.2	1.6
PRIMARY AND UTILITIES	527	587	589	587	599	578	565	583	592	595	617	638	572	581	610
	-6.9	11.5	0.4	-0.4	2.1	-3.4	-2.3	3.2	1.5	0.5	3.6	3.5	2.0	1.6	5.0
SERVICES-PRODUCING	33446	33485	33920	34427	34531	34678	34710	34974	35427	35754	35908	35958	33819	34723	35762
INDUSTRIES	0.4	0.1	1.3	1.5	0.3	0.4	0.1	0.8	1.3	0.9	0.4	0.1	2.9	2.7	3.0
TRANSPORTATION AND	1254	1237	1234	1216	1224	1181	1173	1205	1169	1244	1243	1241	1235	1196	1224
WAREHOUSING	1.5	-1.4	-0.3	-1.5	0.7	-3.6	-0.7	2.8	-3.0	6.5	-0.1	-0.1	-2.1	-3.2	2.4
INFORMATION AND CULTURAL	1915	1900	1904	1915	1864	1840	1838	1845	1950	1990	2015	2028	1909	1847	1996
INDUSTRIES	-3.7	-0.8	0.2	0.6	-2.7	-1.3	-0.1	0.4	5.7	2.1	1.2	0.7	-2.9	-3.2	8.1
WHOLESALE AND RETAIL TRADE	3406	3445	3471	3548	3604	3660	3652	3697	3740	3768	3768	3817	3468	3653	3773
	3.3	1.2	0.7	2.2	1.6	1.5	-0.2	1.2	1.2	0.7	-0.0	1.3	6.7	5.3	3.3
FINANCE, INSURANCE AND	6695	6680	6680	6709	6724	6771	6813	6842	6911	6993	7031	7106	6691	6788	7010
REAL ESTATE	-0.0	-0.2	-0.0	0.4	0.2	0.7	0.6	0.4	1.0	1.2	0.5	1.1	1.6	1.4	3.3
BUSINESS SERVICES	4226	4194	4220	4352	4341	4374	4403	4398	4420	4485	4488	4479	4248	4379	4468
	3.2	-0.7	0.6	3.1	-0.2	0.8	0.7	-0.1	0.5	1.5	0.1	-0.2	3.4	3.1	2.0
PERSONAL SERVICES	2447	2500	2529	2555	2459	2427	2430	2468	2495	2516	2534	2507	2508	2446	2513
	-0.9	2.2	1.1	1.0	-3.7	-1.3	0.1	1.6	1.1	0.8	0.7	-1.0	2.9	-2.5	2.7
NON-COMMERCIAL SERVICES	4625	4593	4623	4674	4684	4686	4753	4771	4795	4849	4900	4876	4629	4723	4855
	1.2	-0.7	0.6	1.1	0.2	0.1	1.4	0.4	0.5	1.1	1.1	-0.5	1.1	2.0	2.8
PUBLIC ADMINISTRATION AND	8877	8933	9260	9458	9631	9739	9648	9748	9947	9909	9931	9903	9132	9691	9922
DEFENCE	-1.0	0.6	3.7	2.1	1.8	1.1	-0.9	1.0	2.0	-0.4	0.2	-0.3	5.3	6.1	2.4



Updated: December 22, 2010

	2005Q1	2005Q2	2005Q3	2005Q4	2006Q1	2006Q2	2006Q3	2006Q4	2007Q1	2007Q2	2007Q3	2007Q4	2005	2006	2007
ALL INDUSTRIES	42307	42568	43001	43436	43950	44140	44103	44420	44720	45204	45651	45946	42828	44153	45380
	0.7	0.6	1.0	1.0	1.2	0.4	-0.1	0.7	0.7	1.1	1.0	0.6	2.7	3.1	2.8
GOODS-PRODUCING	6115	6137	6184	6191	6305	6255	6228	6281	6388	6432	6471	6503	6157	6267	6448
INDUSTRIES	0.9	0.4	0.8	0.1	1.8	-0.8	-0.4	0.9	1.7	0.7	0.6	0.5	3.5	1.8	2.9
MANUFACTURING	3549	3562	3602	3642	3700	3662	3637	3662	3725	3738	3730	3712	3589	3665	3726
	0.9	0.4	1.1	1.1	1.6	-1.0	-0.7	0.7	1.7	0.3	-0.2	-0.5	3.8	2.1	1.7
CONSTRUCTION	1928	1924	1920	1913	1976	1956	1954	1977	2041	2063	2124	2161	1921	1966	2097
	1.1	-0.2	-0.2	-0.3	3.3	-1.0	-0.1	1.2	3.2	1.1	3.0	1.7	2.0	2.3	6.7
PRIMARY AND UTILITIES	639	650	663	636	629	637	637	642	622	631	617	629	647	636	625
	0.1	1.8	1.9	-4.0	-1.0	1.2	-0.1	0.8	-3.1	1.5	-2.3	2.1	6.0	-1.7	-1.8
SERVICES-PRODUCING	36192	36431	36817	37245	37644	37885	37875	38139	38332	38771	39181	39443	36671	37886	38932
INDUSTRIES	0.6	0.7	1.1	1.2	1.1	0.6	-0.0	0.7	0.5	1.1	1.1	0.7	2.5	3.3	2.8
TRANSPORTATION AND	1222	1245	1274	1270	1246	1262	1236	1244	1209	1230	1234	1221	1253	1247	1224
WAREHOUSING	-1.6	1.9	2.3	-0.3	-1.9	1.3	-2.0	0.6	-2.8	1.7	0.4	-1.0	2.3	-0.5	-1.9
INFORMATION AND CULTURAL	2027	2036	2063	2086	2128	2152	2179	2189	2185	2200	2203	2215	2053	2162	2201
INDUSTRIES	-0.1	0.4	1.3	1.1	2.0	1.1	1.3	0.4	-0.2	0.7	0.1	0.5	2.9	5.3	1.8
WHOLESALE AND RETAIL TRADE	3890	3879	3896	3954	4044	4064	4070	4080	4129	4184	4185	4261	3905	4064	4190
	1.9	-0.3	0.5	1.5	2.3	0.5	0.1	0.2	1.2	1.3	0.0	1.8	3.5	4.1	3.1
FINANCE, INSURANCE AND	7185	7247	7302	7378	7403	7489	7594	7655	7774	7821	7894	7946	7278	7535	7859
REAL ESTATE	1.1	0.9	0.7	1.0	0.3	1.2	1.4	0.8	1.6	0.6	0.9	0.6	3.8	3.5	4.3
BUSINESS SERVICES	4521	4479	4612	4705	4785	4804	4644	4699	4736	4809	4916	4886	4579	4733	4837
	0.9	-0.9	3.0	2.0	1.7	0.4	-3.3	1.2	0.8	1.5	2.2	-0.6	2.5	3.4	2.2
PERSONAL SERVICES	2495	2513	2545	2540	2516	2547	2495	2502	2530	2493	2498	2542	2523	2515	2516
	-0.5	0.7	1.3	-0.2	-0.9	1.2	-2.0	0.3	1.1	-1.5	0.2	1.8	0.4	-0.3	0.0
NON-COMMERCIAL SERVICES	4941	5020	4999	5083	5183	5117	5141	5218	5162	5306	5441	5548	5011	5165	5364
	1.3	1.6	-0.4	1.7	2.0	-1.3	0.5	1.5	-1.1	2.8	2.5	2.0	3.2	3.1	3.9
PUBLIC ADMINISTRATION AND	9911	10011	10126	10228	10339	10450	10516	10553	10606	10729	10809	10823	10069	10465	10742
DEFENCE	0.1	1.0	1.2	1.0	1.1	1.1	0.6	0.3	0.5	1.2	0.7	0.1	1.5	3.9	2.6



Updated: December 22, 2010

	2008Q1	2008Q2	2008Q3	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4	2010Q1	2010Q2	2010Q3	0	2008	2009	2010
ALL INDUSTRIES	46049	46091	45998	45462	44977	45118	45679	46178	46473	46567	46882	-	45900	45488	-
	0.2	0.1	-0.2	-1.2	-1.1	0.3	1.2	1.1	0.6	0.2	0.7	-	1.1	-0.9	-
GOODS-PRODUCING	6325	6324	6233	5973	5581	5453	5537	5728	5991	6066	6086	-	6214	5575	-
INDUSTRIES	-2.7	-0.0	-1.4	-4.2	-6.6	-2.3	1.6	3.4	4.6	1.3	0.3	-	-3.6	-10.3	-
MANUFACTURING	3560	3582	3559	3385	3078	2986	3059	3110	3278	3329	3297	-	3522	3058	-
	-4.1	0.6	-0.6	-4.9	-9.1	-3.0	2.5	1.7	5.4	1.5	-1.0	-	-5.5	-13.2	-
CONSTRUCTION	2137	2116	2071	1990	1961	1945	1978	2103	2200	2228	2293	-	2079	1997	-
	-1.1	-1.0	-2.1	-3.9	-1.5	-0.8	1.7	6.3	4.6	1.3	2.9	-	-0.9	-3.9	-
PRIMARY AND UTILITIES	627	626	603	597	541	521	500	514	512	509	496	-	613	519	-
	-0.3	-0.2	-3.6	-1.0	-9.4	-3.7	-4.1	2.9	-0.5	-0.6	-2.4	-	-1.8	-15.4	-
SERVICES-PRODUCING	39724	39767	39765	39489	39397	39666	40142	40451	40483	40501	40796	-	39686	39914	-
INDUSTRIES	0.7	0.1	-0.0	-0.7	-0.2	0.7	1.2	0.8	0.1	0.0	0.7	-	1.9	0.6	-
TRANSPORTATION AND	1192	1220	1206	1157	1097	1105	1133	1112	1136	1140	1145	-	1194	1112	-
WAREHOUSING	-2.4	2.4	-1.1	-4.1	-5.2	0.7	2.5	-1.8	2.2	0.3	0.5	-	-2.4	-6.9	-
INFORMATION AND CULTURAL	2187	2182	2174	2154	2128	2082	2043	2020	2010	1989	1982	-	2174	2068	-
INDUSTRIES	-1.3	-0.2	-0.4	-0.9	-1.2	-2.2	-1.9	-1.1	-0.5	-1.0	-0.3	-	-1.2	-4.9	-
WHOLESALE AND RETAIL TRADE	4272	4269	4186	4025	3859	3942	4069	4104	4139	4119	4096	-	4188	3994	-
	0.3	-0.1	-1.9	-3.8	-4.1	2.2	3.2	0.9	0.9	-0.5	-0.6	-	-0.0	-4.6	-
FINANCE, INSURANCE AND	8027	8013	8023	7989	8031	8194	8245	8360	8411	8456	8546	-	8013	8207	-
REAL ESTATE	1.0	-0.2	0.1	-0.4	0.5	2.0	0.6	1.4	0.6	0.5	1.1	-	2.0	2.4	-
BUSINESS SERVICES	4898	4899	4866	4779	4672	4670	4736	4710	4580	4569	4581	-	4860	4697	-
	0.2	0.0	-0.7	-1.8	-2.2	-0.0	1.4	-0.6	-2.7	-0.2	0.3	-	0.5	-3.4	-
PERSONAL SERVICES	2499	2506	2511	2528	2458	2459	2451	2400	2424	2403	2414	-	2511	2442	-
	-1.7	0.3	0.2	0.7	-2.8	0.0	-0.3	-2.1	1.0	-0.9	0.5	-	-0.2	-2.7	-
NON-COMMERCIAL SERVICES	5504	5529	5555	5528	5648	5659	5716	5809	5840	5873	5926	-	5529	5708	-
	-0.8	0.5	0.5	-0.5	2.2	0.2	1.0	1.6	0.5	0.6	0.9	-	3.1	3.2	-
PUBLIC ADMINISTRATION AND	11146	11150	11245	11328	11504	11554	11750	11935	11943	11952	12105	-	11217	11686	-
DEFENCE	3.0	0.0	0.9	0.7	1.5	0.4	1.7	1.6	0.1	0.1	1.3	-	4.4	4.2	-



Updated: December 21, 2010

ALL NDUSTRIES 1 <		2010Q1	2010Q2	2010Q3	2010Q4	2011Q1	2011Q2	2011Q3	2011Q4	2012Q1	2012Q2	2012Q3	2012Q4	2010	2011	2012
ALL NDUSTRIES 46973 46967 4086 4076 4086 4076 4086 4076 4089 42989 COODS-PRODUCING 46 613 603 601 601 613 601 614 613 616 606 616 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>																
NEL HODOLNILD No.7		46473	46567	46992	47156	47460	47750	49031	49311	19517	199/1	40146	10162	46770	47800	48000
COUSTRUCTION 500 606 6066 6066 6066 6064 6143 6135 617 6216 6220 6324 638 608 608 606 606 606 606 606 606 6135 6135 6135 6136 6216 6220 6324 638 608 608 608 606 6135 6135 6176 610 0.8	ALL INDUSTRIES	40473	40307	40002	0.6	47409	0.6	0.6	40311	40547	0.6	49140	49402	2.8	2.4	2.3
COODS-PRODUCING 6991 6066 6086 6094 6104 6135 607 6280 6332 6334 6438 8.7 16.5 3.3 MANUFACTURING 327 3280 3297 3233 3390 3397 3462 3460 3400 5.22 3554 3597 3412 3538 MANUFACTURING 2270 2280 2287 229 2215 2213 2217 2226 2262 2267 2283 2300 2247 2217 226 PRIMARY AND UTILITES 512 509 446 503 503 525 530 535 539 543 547 552 547 344 34 344 344 344 344 344 344 344 344 345 543 547 545 547 545 545 540 545 540 548 543 544 548 548 548 548 548 548 547																
INDUSTRIES 4.6 1.3 0.3 0.1 0.2 0.5 0.6 0.7 1.0 0.8 0.8 0.8 0.8 0.7 1.0 0.8 0.9	GOODS-PRODUCING	5991	6066	6086	6094	6104	6135	6172	6216	6280	6332	6384	6438	6059	6157	6359
MANUFACTURING 2278 3229 329 3323 3369 3469 3466 3490 352 3564 367 367 342 3538 CONSTRUCTION 2200 2228 2229 2215 2215 2215 2216 2226 2226 2226 2227 2280 2287	INDUSTRIES	4.6	1.3	0.3	0.1	0.2	0.5	0.6	0.7	1.0	0.8	0.8	0.8	8.7	1.6	3.3
Inclusion of the construction 5.4 1.5 -1.0 0.8 1.4 0.8 0.9 0.9 1.0 0.9 0	MANUFACTURING	3278	3329	3297	3323	3369	3397	3426	3456	3490	3522	3554	3587	3307	3412	3538
CONSTRUCTION2200222822932293229722152213221722262252226722832000224722172275PRIMARY AND UTLITIES512509644503520520520530530533543543547552560567543543SERVICES PRODICING404840500.7610641654165418564206442504276425094276243054071417334264INDUSTRIES1130114011451150115511601165116511731181118811951202114311631151INDUSTRIES114011451150115511601165116511651165116510770.6<		5.4	1.5	-1.0	0.8	1.4	0.8	0.9	0.9	1.0	0.9	0.9	0.9	8.1	3.2	3.7
CONSTRUCTION 2200 2228 2283 2287 2213 2213 2217 2226 2267 2283 2300 2247 2217 2275 PRIMARY AND UTILITIES 512 509 446 533 520 525 530 535 539 543 547 552 505 527 543 547 542 505 527 543 547 542 505 527 543 547 562 505 527 543 547 540 505 527 543 547 540 505 527 543 547 520 505 527 543 547 520 505 527 543 547 520 505 527 543 547 540 505 505 527 543 547 547 547 547 547 547 547 547 547 547 547 547 547 547 547 541 505																
4.6 1.3 2.9 -1.1 -2.3 -0.1 0.2 0.4 1.2 0.7 0.7 0.7 12.5 -1.3 2.6 PRIMARY AND UTILITIES 5.12 509 496 503 520 525 530 539 543 543 547 552 562 527 546 SERVICES-PRODUCING 40483 40501 4007 0.7 0.7 0.6 4165 4165 4165 4066 42267 42509 42762 43025 40711 41733 42641 INDUSTRIES 0.0 0.0 0.7 0.7 0.7 0.6	CONSTRUCTION	2200	2228	2293	2267	2215	2213	2217	2226	2252	2267	2283	2300	2247	2217	2275
PRIMARY AND UTILITIES51250949650350352052553053053353954354755250552754433SERVICES-PRODUCING404834060140796410624106741065106410654060.60.60.60.60.60.200.71412534261TRANSPORTATION AND1136114011451150115511601166107610.60.60.60.60.60.60.62.811631191INFORMATION AND CULTURAL201019891982201220302042205420662077208921012114199820482059INFORMATION AND CULTURAL201014991492413942184217427743074.070.60.60.60.62.81.82.92.32.5		4.6	1.3	2.9	-1.1	-2.3	-0.1	0.2	0.4	1.2	0.7	0.7	0.7	12.5	-1.3	2.6
-0.5-0.6-2.41.43.31.01.00.90.70.80.80.8-2.74.43.4SERVICES-PRODUCING INDUSTRIES404834050140796407624136541615418584209442267425094276243025407114173342641INDUSTRIES0.10.00.70.70.70.6<	PRIMARY AND UTILITIES	512	509	496	503	520	525	530	535	539	543	547	552	505	527	545
SERVICES-PRODUCING 4083 40501 40796 41365 41365 4165 41858 42094 42267 42509 42762 43025 40711 41733 42811 TRANSPORTATION AND 138 1140 1145 1150 1155 1160 105 0.5 0.6 0.7 0.6		-0.5	-0.6	-2.4	1.4	3.3	1.0	1.0	0.9	0.7	0.8	0.8	0.8	-2.7	4.4	3.4
SERVICES-PRODUCING 40483 40561 40766 41062 411855 41615 41656 42094 42267 42209 42762 43025 40711 41733 42641 INDUSTRIES 0.1 0.0 0.7 0.7 0.7 0.7 0.6 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>																
INDUSTRIES 0.1 0.0 0.7 0.7 0.7 0.7 0.6	SERVICES-PRODUCING	40483	40501	40796	41062	41365	41615	41858	42094	42267	42509	42762	43025	40711	41733	42641
TRANSPORTATION AND WAREHOUSING113611401145115011551160116611731181118811951202114311631191WAREHOUSING2.20.30.50.40.40.50.50.60.50.6 <td< td=""><td>INDUSTRIES</td><td>0.1</td><td>0.0</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.6</td><td>0.6</td><td>0.6</td><td>0.4</td><td>0.6</td><td>0.6</td><td>0.6</td><td>2.0</td><td>2.5</td><td>2.2</td></td<>	INDUSTRIES	0.1	0.0	0.7	0.7	0.7	0.6	0.6	0.6	0.4	0.6	0.6	0.6	2.0	2.5	2.2
WAREHOUSING2.20.30.50.40.40.50.50.60.60.60.60.62.81.82.4INFORMATION AND CULTURAL INDUSTRIES201019891982 -0.5201220302042 -0.520542066 0.62077 0.62089 0.621012114 0.61998 0.62048 0.52095 2.3WHOLESALE AND RETAIL TRADE INDUSTRIES4139 0.94119 -0.54096 -0.64132 0.64132 0.94189 0.74218 0.74247 0.74277 0.74307 0.74339 0.74371 0.64404 0.64122 0.24233 2.74355 2.3FINANCE, INSURANCE AND REAL ESTATE8411 0.68456 0.58561 0.58660 0.68751 0.88823 0.88952 0.89036 0.89109 0.89179 0.88509 0.88787 0.39072 0.3BUSINESS SERVICES4580 0.64581 0.94604 0.54691 0.94733 0.54775 0.74816 0.64892 0.94937 0.84983 0.84583 0.84754 0.44915 0.4PERSONAL SERVICES2424 0.02403 0.52414 0.92462 0.92479 0.72479 0.72496 0.72514 0.72567 0.72589 0.82420 0.82488 0.82558 2.4NON-COMMERCIAL SERVICES5840 0.55973 0.65989 0.96025 0.66062 0.66062 0.6 <td>TRANSPORTATION AND</td> <td>1136</td> <td>1140</td> <td>1145</td> <td>1150</td> <td>1155</td> <td>1160</td> <td>1166</td> <td>1173</td> <td>1181</td> <td>1188</td> <td>1195</td> <td>1202</td> <td>1143</td> <td>1163</td> <td>1191</td>	TRANSPORTATION AND	1136	1140	1145	1150	1155	1160	1166	1173	1181	1188	1195	1202	1143	1163	1191
INFORMATION AND CULTURAL INDUSTRIES201019891982201220302042205420662077208921012114199820482053WHOLESALE AND RETAIL TRADE4139411940964132418942184247427743074307433943714404412242334355FINANCE, INSURANCE AND REAL ESTATE8411845685468098110.70.70.70.70.89.089.0887579.02BUSINESS SERVICES458045694581406446914733477548164860499249374983458347544915PERSONAL SERVICES42402403241424392462247924962514252825470.80.80.80.90.92.82588NON-COMMERCIAL SERVICES58405873592659505980606606260886130616862086249589760446189NON-COMMERCIAL SERVICES58400.90.90.60.70.70.70.6 <td>WAREHOUSING</td> <td>2.2</td> <td>0.3</td> <td>0.5</td> <td>0.4</td> <td>0.4</td> <td>0.5</td> <td>0.5</td> <td>0.6</td> <td>0.7</td> <td>0.6</td> <td>0.6</td> <td>0.6</td> <td>2.8</td> <td>1.8</td> <td>2.4</td>	WAREHOUSING	2.2	0.3	0.5	0.4	0.4	0.5	0.5	0.6	0.7	0.6	0.6	0.6	2.8	1.8	2.4
INFORMATION AND COLTORAL 2010 1999 1992 2012 2030 2042 2054 2066 207 2089 2101 2114 1998 2048 2095 INDUSTRIES -0.5 -1.0 -0.3 1.5 0.9 0.6 0.6 0.6 0.5 0.6 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.7		0010	1000	1000	0010	0000	0040	0054	0000	0077	0000	0101	0111	1000	0040	0005
INDUSTINES 4.03 4.03 4.03 4.03 4.03 6.03		2010	1989	1982	2012	2030	2042	2054	2066	2077	2089	2101	2114	1998	2048	2095
WHOLESALE AND RETAIL TRADE 4139 4119 4096 4132 4189 4218 4277 4307 4307 4339 4371 4404 4122 4233 4355 FINANCE, INSURANCE AND 8411 8456 8546 8621 8680 8751 8823 8895 8962 9036 9109 9179 8509 8787 9072 REAL ESTATE 0.6 0.5 1.1 0.9 0.7 0.8 8962 9036 9109 9179 8509 8787 3.3 3.2 BUSINESS SERVICES 4580 4569 4561 4604 4691 4733 4775 4816 4892 4937 4983 4583 4754 4915 PERSONAL SERVICES 2424 2403 2414 2439 2462 2479 2496 2514 2528 2547 2567 2589 2420 2488 2558 NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 5897	INDUSTRIES	-0.5	-1.0	-0.5	1.5	0.9	0.0	0.0	0.0	0.5	0.0	0.0	0.0	-3.4	2.5	2.5
0.9 -0.5 -0.6 0.9 1.4 0.7 0.7 0.7 0.7 0.7 0.8 3.2 2.7 2.9 FINANCE, INSURANCE AND REAL ESTATE 8411 8456 8546 8546 8621 8680 8751 8823 8895 8962 9036 9109 9179 8509 8787 972 REAL ESTATE 0.6 0.5 1.1 0.9 0.7 0.8 8751 8823 8895 8962 9036 9109 9179 8509 8737 3.3 3.2 BUSINESS SERVICES 4580 4569 4561 4604 4691 4733 4775 4816 4890 4937 4983 4583 4754 4915 PERSONAL SERVICES 2424 2403 2414 2439 2462 2479 2496 2514 2528 2547 2567 2589 2420 2488 2558 NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 <th< td=""><td>WHOLESALE AND RETAIL TRADE</td><td>4139</td><td>4119</td><td>4096</td><td>4132</td><td>4189</td><td>4218</td><td>4247</td><td>4277</td><td>4307</td><td>4339</td><td>4371</td><td>4404</td><td>4122</td><td>4233</td><td>4355</td></th<>	WHOLESALE AND RETAIL TRADE	4139	4119	4096	4132	4189	4218	4247	4277	4307	4339	4371	4404	4122	4233	4355
FINANCE, INSURANCE AND 8411 8456 8566 8621 8680 8751 8823 8895 8962 9036 9109 9179 8509 8787 3.3 3.3 3.2 BUSINESS SERVICES 4580 4569 4581 4604 4691 4733 4775 4816 4850 4892 4937 4983 4583 4754 4915 PERSONAL SERVICES 4580 4503 2414 2439 2429 2429 2414 2439 2462 2479 2496 2514 2528 2547 2567 2589 2420 2488 2558 NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 5897 6044 6189 2.4 2.5<		0.9	-0.5	-0.6	0.9	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.8	3.2	2.7	2.9
PRANCE, INSURANCE AND 6411 6436 6321 6821 6860 6731 6823 6893 6962 9036 9109 9179 6309 6737 9072 REAL ESTATE 0.6 0.5 1.1 0.9 0.7 0.8 0.8 0.7 0.8 0.9 0.9 0.6 <t< td=""><td>EINANCE INSUBANCE AND</td><td>0/11</td><td>01EC</td><td>9546</td><td>0601</td><td>9690</td><td>0751</td><td>0000</td><td>000E</td><td>0060</td><td>0026</td><td>0100</td><td>0170</td><td>9500</td><td>0707</td><td>0072</td></t<>	EINANCE INSUBANCE AND	0/11	01EC	9546	0601	9690	0751	0000	000E	0060	0026	0100	0170	9500	0707	0072
HERE CONTE 0.0	REAL ESTATE	0411	0430	0040	0021	0000	0/51	0023	0095	0902	9030	0.8	9179	37	33	32
BUSINESS SERVICES 4580 4569 4581 4604 4691 4733 4775 4816 4850 4892 4937 4983 4583 4754 4915 -2.7 -0.2 0.3 0.5 1.9 0.9 0.9 0.9 0.7 0.9		0.0	0.0		0.0	0.11	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.2
-2.7 -0.2 0.3 0.5 1.9 0.9 0.9 0.7 0.9 0.9 0.9 -2.4 3.7 3.4 PERSONAL SERVICES 2424 2403 2414 2439 2462 2479 2496 2514 2528 2547 2567 2589 2420 2488 2558 NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 5897 6044 6189 NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 5897 6044 6189 0.5 0.6 0.9 0.6	BUSINESS SERVICES	4580	4569	4581	4604	4691	4733	4775	4816	4850	4892	4937	4983	4583	4754	4915
PERSONAL SERVICES 2424 2403 2414 2439 2462 2479 2496 2514 2528 2547 2567 2589 2420 2488 2558 NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 5897 6044 6189 0.5 0.6 0.9 0.4 0.6		-2.7	-0.2	0.3	0.5	1.9	0.9	0.9	0.9	0.7	0.9	0.9	0.9	-2.4	3.7	3.4
NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 5897 6044 6189 0.5 0.6 0.9 0.4 0.6 0.6 0.6 0.5 0.6 0.7 3.3 2.5 2.4	PERSONAL SERVICES	2/2/	2403	2/1/	2/30	2/62	2/70	2/06	2514	2528	2547	2567	2580	2420	2/88	2558
NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 5897 6044 6189 0.5 0.6 0.9 0.4 0.6 0.6 0.6 0.5 0.6 0.7 3.3 2.5 2.4		1.0	-0.9	0.5	1.0	1.0	0.7	0.7	0.7	0.6	0.7	0.8	0.8	-0.9	2.8	2.8
NON-COMMERCIAL SERVICES 5840 5873 5926 5950 5989 6025 6062 6098 6130 6168 6208 6249 5897 6044 6189 0.5 0.6 0.9 0.4 0.6 0.6 0.6 0.5 0.6 0.7 3.3 2.5 2.4																
0.5 0.6 0.9 0.4 0.6 0.6 0.6 0.6 0.5 0.6 0.6 0.7 3.3 2.5 2.4	NON-COMMERCIAL SERVICES	5840	5873	5926	5950	5989	6025	6062	6098	6130	6168	6208	6249	5897	6044	6189
		0.5	0.6	0.9	0.4	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.7	3.3	2.5	2.4
PUBLIC ADMINISTRATION AND 11943 11952 12105 12154 12170 12207 12235 12256 12232 12250 12275 12306 12038 12217 12266	PUBLIC ADMINISTRATION AND	11943	11952	12105	12154	12170	12207	12235	12256	12232	12250	12275	12306	12038	12217	12266
DEFENCE 0.1 0.1 1.3 0.4 0.1 0.3 0.2 0.2 0.2 0.2 0.2 0.2 0.2 3.0 1.5 0.4	DEFENCE	0.1	0.1	1.3	0.4	0.1	0.3	0.2	0.2	-0.2	0.2	0.2	0.2	3.0	1.5	0.4



Updated: December 21, 2010

	2013Q1	2013Q2	2013Q3	2013Q4	2014Q1	2014Q2	2014Q3	2014Q4	2015Q1	2015Q2	2015Q3	2015Q4	2013	2014	2015
ALL INDUSTRIES	49819	50155	50496	50842	51201	51552	51904	52252	52604	52953	53301	53650	50328	51727	53127
	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	2.7	2.8	2.7
GOODS-PRODUCING	6491	6547	6605	6665	6733	6794	6853	6911	6968	7023	7078	7132	6577	6823	7050
INDUSTRIES	0.8	0.9	0.9	0.9	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.8	3.4	3.7	3.3
MANUFACTURING	3620	3653	3685	3718	3750	3782	3813	3845	3876	3907	3938	3969	3669	3798	3923
	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	3.7	3.5	3.3
CONSTRUCTION	2314	2334	2355	2379	2411	2435	2459	2481	2502	2523	2542	2561	2346	2447	2532
	0.6	0.8	0.9	1.0	1.4	1.0	1.0	0.9	0.9	0.8	0.8	0.7	3.1	4.3	3.5
PRIMARY AND UTILITIES	556	560	564	568	572	576	581	585	589	593	597	602	562	578	595
	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	3.1	2.9	2.9
SERVICES-PRODUCING	43328	43608	43891	44177	44468	44759	45051	45341	45636	45929	46223	46519	43751	44905	46077
	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.6	2.6	2.6	2.6
TRANSPORTATION AND	1209	1216	1224	1231	1239	1247	1254	1261	1269	1276	1283	1290	1220	1250	1279
WAREHOUSING	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.5	0.5	2.4	2.5	2.3
INFORMATION AND CULTURAL	2127	2139	2152	2164	2176	2189	2201	2213	2225	2237	2249	2261	2145	2195	2243
INDUSTRIES	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	2.4	2.3	2.2
WHOLESALE AND RETAIL TRADE	4440	4473	4507	4541	4575	4608	4642	4675	4709	4742	4776	4809	4490	4625	4759
	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	3.1	3.0	2.9
FINANCE, INSURANCE AND	9257	9328	9399	9470	9535	9605	9675	9740	9810	9876	9942	10007	9364	9639	9909
REAL ESTATE	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	3.2	2.9	2.8
BUSINESS SERVICES	5035	5083	5131	5180	5228	5277	5326	5374	5423	5473	5522	5571	5107	5301	5497
	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	3.9	3.8	3.7
PERSONAL SERVICES	2616	2639	2661	2683	2705	2726	2748	2769	2791	2812	2832	2853	2650	2737	2822
	1.1	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	3.6	3.3	3.1
NON-COMMERCIAL SERVICES	6297	6340	6384	6427	6470	6512	6555	6598	6640	6683	6725	6767	6362	6534	6704
	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	2.8	2.7	2.6
PUBLIC ADMINISTRATION AND	12348	12389	12433	12482	12540	12595	12651	12709	12769	12831	12895	12960	12413	12624	12864
DEFENCE	0.3	0.3	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	1.2	1.7	1.9



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #8 Attachment 2 Filed: 2011-09-08 Page 1 of 6

Year	Month	MWh	Days	WkEndDays	GDP	HDD8	CDD18	Yr01	Yr02	03-Aug	Mar	Apr	May	Oct	After06	08-Jan
2000	1	730,799.76	31	10	36,678.82	562.63	0	0	0	0	0	0	0	0	0	0
2000	2	650,809.36	29	8	36,853.57	425.05	0	0	0	0	0	0	0	0	0	0
2000	3	616,963.93	31	8	36,975.34	199.71	0	0	0	0	1	0	0	0	0	0
2000	4	561,427.07	30	10	37,097.12	104.79	0	0	0	0	0	1	0	0	0	0
2000	5	555,164.16	31	8	37,218.89	1.02	2.7	0	0	0	0	0	1	0	0	0
2000	6	576,130.92	30	8	37,439.85	0	28.57	0	0	0	0	0	0	0	0	0
2000	7	619,520.94	31	10	37,660.81	0	55.05	0	0	0	0	0	0	0	0	0
2000	8	630,734.37	31	8	37,881.77	0	56.73	0	0	0	0	0	0	0	0	0
2000	9	569,720.83	30	9	37,977.50	5.68	14.5	0	0	0	0	0	0	0	0	0
2000	10	579,914.22	31	9	38,073.23	47.69	0	0	0	0	0	0	0	1	0	0
2000	11	612,256.25	30	8	38,168.96	187.21	0	0	0	0	0	0	0	0	0	0
2000	12	737,998.78	31	10	38,241.98	566.32	0	0	0	0	0	0	0	0	0	0
2001	1	728,314.88	31	8	38,314.99	525	0	1	0	0	0	0	0	0	0	0
2001	2	656,177.91	28	8	38,388.01	458.81	0	1	0	0	0	0	0	0	0	0
2001	3	666,018.21	31	9	38,445.35	339.25	0	1	0	0	1	0	0	0	0	0
2001	4	569,527.16	30	9	38,502.70	65.86	0	1	0	0	0	1	0	0	0	0
2001	5	587,831.95	31	8	38,560.04	0.94	13.83	1	0	0	0	0	1	0	0	0
2001	6	648,769.37	30	9	38,581.17	0	76.18	1	0	0	0	0	0	0	0	0
2001	7	660,577.53	31	9	38,602.29	0	74.99	1	0	0	0	0	0	0	0	0
2001	8	712,694.41	31	8	38,623.42	0	127.2	1	0	0	0	0	0	0	0	0
2001	9	594,650.51	30	10	38,723.20	0	23.65	1	0	0	0	0	0	0	0	0
2001	10	606,352.35	31	8	38,822.99	46.25	0	1	0	0	0	0	0	1	0	0
2001	11	621,396.62	30	8	38,922.77	123.12	0	1	0	0	0	0	0	0	0	0
2001	12	676,282.57	31	10	39,002.07	287.43	0	1	0	0	0	0	0	0	0	0
2002	1	701,585.68	31	8	39,081.37	383.36	0	0	1	0	0	0	0	0	0	0
2002	2	641,747.45	28	8	39,160.67	386.46	0	0	1	0	0	0	0	0	0	0
2002	3	668,202.22	31	10	39,269.81	333.96	0	0	1	0	1	0	0	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #8 Attachment 2 Filed: 2011-09-08 Page 2 of 6

2002	4	598,906.56	30	8	39,378.95	112.61	9.06	0	1	0	0	1	0	0	0	0
2002	5	588,449.75	31	8	39,488.09	19.39	7.59	0	1	0	0	0	1	0	0	0
2002	6	605,342.73	30	10	39,631.09	0	39.44	0	1	0	0	0	0	0	0	0
2002	7	708,128.43	31	8	39,774.09	0	126.8	0	1	0	0	0	0	0	0	0
2002	8	692,355.71	31	9	39,917.09	0	107.32	0	1	0	0	0	0	0	0	0
2002	9	615,692.63	30	9	40,061.00	0	46.89	0	1	0	0	0	0	0	0	0
2002	10	607,600.61	31	8	40,204.90	103.31	4.39	0	1	0	0	0	0	1	0	0
2002	11	633,402.75	30	9	40,348.81	236.27	0	0	1	0	0	0	0	0	0	0
2002	12	706,344.23	31	9	40,387.89	406.81	0	0	1	0	0	0	0	0	0	0
2003	1	766,847.95	31	8	40,426.97	648.65	0	0	0	0	0	0	0	0	0	0
2003	2	682,141.53	28	8	40,466.05	542.73	0	0	0	0	0	0	0	0	0	0
2003	3	681,607.80	31	10	40,489.15	355.11	0	0	0	0	1	0	0	0	0	0
2003	4	602,789.40	30	8	40,512.25	153.9	0	0	0	0	0	1	0	0	0	0
2003	5	576,000.03	31	9	40,535.35	0.85	1.77	0	0	0	0	0	1	0	0	0
2003	6	621,981.29	30	9	40,553.61	0	56.83	0	0	0	0	0	0	0	0	0
2003	7	674,954.46	31	8	40,571.88	0	83.17	0	0	0	0	0	0	0	0	0
2003	8	633,068.01	31	10	40,590.14	0	102.7	0	0	1	0	0	0	0	0	0
2003	9	585,236.92	30	8	40,744.51	0	19.53	0	0	0	0	0	0	0	0	0
2003	10	599,563.40	31	8	40,898.87	71.1	0	0	0	0	0	0	0	1	0	0
2003	11	624,055.71	30	10	41,053.24	179.97	0	0	0	0	0	0	0	0	0	0
2003	12	709,345.29	31	8	41,143.84	400.08	0	0	0	0	0	0	0	0	0	0
2004	1	794,377.47	31	9	41,234.43	722.94	0	0	0	0	0	0	0	0	0	0
2004	2	676,596.85	29	9	41,325.03	447.62	0	0	0	0	0	0	0	0	0	0
2004	3	659,720.37	31	8	41,480.34	246.8	0	0	0	0	1	0	0	0	0	0
2004	4	584,423.58	30	8	41,635.65	105.09	1.15	0	0	0	0	1	0	0	0	0
2004	5	575,095.63	31	10	41,790.96	6.73	3.08	0	0	0	0	0	1	0	0	0
2004	6	593,369.12	30	8	41,917.47	0	28.68	0	0	0	0	0	0	0	0	0
2004	7	659,119.63	31	9	42,043.98	0	78.85	0	0	0	0	0	0	0	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #8 Attachment 2 Filed: 2011-09-08 Page 3 of 6

2004	8	627,488.42	31	9	42,170.49	0	44.03	0	0	0	0	0	0	0	0	0
2004	9	587,153.49	30	8	42,169.90	0	11.81	0	0	0	0	0	0	0	0	0
2004	10	581,420.41	31	10	42,169.32	37.74	0	0	0	0	0	0	0	1	0	0
2004	11	623,486.25	30	8	42,168.73	188.77	0	0	0	0	0	0	0	0	0	0
2004	12	739,777.82	31	8	42,274.13	504.41	0	0	0	0	0	0	0	0	0	0
2005	1	764,677.73	31	10	42,379.52	608.43	0	0	0	0	0	0	0	0	0	0
2005	2	648,333.68	28	8	42,484.92	415.16	0	0	0	0	0	0	0	0	0	0
2005	3	678,524.99	31	8	42,581.70	348.78	0	0	0	0	1	0	0	0	0	0
2005	4	578,997.95	30	9	42,678.47	46.42	0	0	0	0	0	1	0	0	0	0
2005	5	576,142.06	31	9	42,775.25	11.56	2	0	0	0	0	0	1	0	0	0
2005	6	681,022.95	30	8	42,918.92	0	115.86	0	0	0	0	0	0	0	0	0
2005	7	722,407.24	31	10	43,062.59	0	128.99	0	0	0	0	0	0	0	0	0
2005	8	696,317.92	31	8	43,206.26	0	110.37	0	0	0	0	0	0	0	0	0
2005	9	612,789.65	30	8	43,350.34	0	28.88	0	0	0	0	0	0	0	0	0
2005	10	611,583.48	31	10	43,494.42	39.55	6.04	0	0	0	0	0	0	1	0	0
2005	11	644,567.92	30	8	43,638.50	189.5	0	0	0	0	0	0	0	0	0	0
2005	12	720,249.80	31	9	43,844.11	438.79	0	0	0	0	0	0	0	0	0	0
2006	1	719,880.54	31	9	44,049.71	411.33	0	0	0	0	0	0	0	0	1	0
2006	2	651,568.46	28	8	44,255.32	439.8	0	0	0	0	0	0	0	0	1	0
2006	3	672,060.32	31	8	44,316.28	296.2	0	0	0	0	1	0	0	0	1	0
2006	4	574,207.86	30	10	44,377.25	59.8	0	0	0	0	0	1	0	0	1	0
2006	5	604,173.85	31	8	44,438.21	3.89	17.5	0	0	0	0	0	1	0	1	0
2006	6	635,368.51	30	8	44,448.31	0	53.83	0	0	0	0	0	0	0	1	0
2006	7	714,043.30	31	10	44,458.40	0	131.38	0	0	0	0	0	0	0	1	0
2006	8	671,322.74	31	8	44,468.50	0	68.2	0	0	0	0	0	0	0	1	0
2006	9	580,191.91	30	9	44,532.47	0	3.16	0	0	0	0	0	0	0	1	0
2006	10	608,546.92	31	9	44,596.45	65.49	0	0	0	0	0	0	0	1	1	0
2006	11	623,590.77	30	8	44,660.42	125.51	0	0	0	0	0	0	0	0	1	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #8 Attachment 2 Filed: 2011-09-08 Page 4 of 6

2006	12	683,646.64	31	10	44,753.84	293.83	0	0	0	0	0	0	0	0	1	0
2007	1	735,759.66	31	8	44,847.26	481.49	0	0	0	0	0	0	0	0	1	0
2007	2	684,699.49	28	8	44,940.68	531.77	0	0	0	0	0	0	0	0	1	0
2007	3	688,021.11	31	9	45,071.56	329.47	0	0	0	0	1	0	0	0	1	0
2007	4	597,751.63	30	9	45,202.43	104.95	0	0	0	0	0	1	0	0	1	0
2007	5	598,124.52	31	8	45,333.31	1.07	18.64	0	0	0	0	0	1	0	1	0
2007	6	655,051.73	30	9	45,515.94	0	71.2	0	0	0	0	0	0	0	1	0
2007	7	660,096.25	31	9	45,698.57	0	66.13	0	0	0	0	0	0	0	1	0
2007	8	675,441.69	31	8	45,881.20	0	75.96	0	0	0	0	0	0	0	1	0
2007	9	600,386.97	30	10	45,946.96	0	29.04	0	0	0	0	0	0	0	1	0
2007	10	600,105.74	31	8	46,012.73	22.24	1.41	0	0	0	0	0	0	1	1	0
2007	11	639,894.08	30	8	46,078.49	221.71	0	0	0	0	0	0	0	0	1	0
2007	12	729,522.51	31	10	46,068.58	465.73	0	0	0	0	0	0	0	0	1	0
2008	1	760,278.92	31	8	46,058.67	438.6	0	0	0	0	0	0	0	0	1	1
2008	2	679,060.53	29	8	46,048.76	465.78	0	0	0	0	0	0	0	0	1	0
2008	3	693,113.58	31	10	46,062.81	392.45	0	0	0	0	1	0	0	0	1	0
2008	4	596,058.97	30	8	46,076.85	78.98	0	0	0	0	0	1	0	0	1	0
2008	5	573,162.32	31	9	46,090.89	2.92	0	0	0	0	0	0	1	0	1	0
2008	6	639,963.79	30	9	46,060.07	0	54.37	0	0	0	0	0	0	0	1	0
2008	7	687,101.83	31	8	46,029.24	0	79.48	0	0	0	0	0	0	0	1	0
2008	8	641,439.92	31	10	45,998.41	0	37.05	0	0	0	0	0	0	0	1	0
2008	9	599,204.95	30	8	45,819.59	0	23.3	0	0	0	0	0	0	0	1	0
2008	10	605,514.17	31	8	45,640.77	52.41	0	0	0	0	0	0	0	1	1	0
2008	11	641,599.39	30	10	45,461.95	215.29	0	0	0	0	0	0	0	0	1	0
2008	12	750,915.99	31	8	45,300.45	475.31	0	0	0	0	0	0	0	0	1	0
2009	1	768,897.11	31	9	45,138.95	663.7	0	0	0	0	0	0	0	0	1	0
2009	2	669,135.37	28	8	44,977.45	419.21	0	0	0	0	0	0	0	0	1	0
2009	3	672,263.66	31	9	45,024.42	285.03	0	0	0	0	1	0	0	0	1	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #8 Attachment 2 Filed: 2011-09-08 Page 5 of 6

2009	4	592,341.29	30	8	45,071.39	75.43	2.61	0	0	0	0	1	0	0	1	0
2009	5	582,422.72	31	10	45,118.37	3.06	3.62	0	0	0	0	0	1	0	1	0
2009	6	605,738.09	30	8	45,305.30	0	41.27	0	0	0	0	0	0	0	1	0
2009	7	657,990.41	31	8	45,492.23	0	37.97	0	0	0	0	0	0	0	1	0
2009	8	684,460.87	31	10	45,679.16	0	81.08	0	0	0	0	0	0	0	1	0
2009	9	588,676.75	30	8	45,845.54	2.12	5.53	0	0	0	0	0	0	0	1	0
2009	10	610,639.88	31	9	46,011.92	74.21	0	0	0	0	0	0	0	1	1	0
2009	11	628,206.96	30	9	46,178.30	122.86	0	0	0	0	0	0	0	0	1	0
2009	12	723,950.12	31	8	46,276.69	437.03	0	0	0	0	0	0	0	0	1	0
2010	1	735,666.01	31	10	46,375.07	473.37	0	0	0	0	0	0	0	0	1	0
2010	2	648,703.26	28	8	46,473.46	371.79	0	0	0	0	0	0	0	0	1	0
2010	3	638,488.80	31	8	46,504.73	156.37	0	0	0	0	1	0	0	0	1	0
2010	4	581,204.64	30	8	46,536.01	25.63	2.15	0	0	0	0	1	0	0	1	0
2010	5	626,221.04	31	10	46,567.28	11.88	36.92	0	0	0	0	0	1	0	1	0
2010	6	627,682.41	30	8	46,672.21	0	32.6	0	0	0	0	0	0	0	1	0
2010	7	746,184.55	31	9	46,777.14	0	146.91	0	0	0	0	0	0	0	1	0
2010	8	683,230.96	31	9	46,882.07	0	76.4	0	0	0	0	0	0	0	1	0
2010	9	603,647.27	30	8	46,973.24	0	21.32	0	0	0	0	0	0	0	1	0
2010	10	599,326.04	31	10	47,064.42	46.2	0	0	0	0	0	0	0	1	1	0
2010	11	631,380.73	30	8	47,155.59	186.46	0	0	0	0	0	0	0	0	1	0
2010	12	718,025.44	31	8	47,259.98	419.43	0	0	0	0	0	0	0	0	1	0
2011	1		31	10	47,364.38	544.61	0	0	0	0	0	0	0	0	1	0
2011	2		28	8	47,468.77	465.93	0	0	0	0	0	0	0	0	1	0
2011	3		31	8	47,562.50	312.68	0	0	0	0	1	0	0	0	1	0
2011	4		30	9	47,656.24	90.78	1.28	0	0	0	0	1	0	0	1	0
2011	5		31	9	47,749.97	5.14	7.07	0	0	0	0	0	1	0	1	0
2011	6		30	8	47,843.50	0	56.62	0	0	0	0	0	0	0	1	0
2011	7		31	10	47,937.04	0	86.28	0	0	0	0	0	0	0	1	0


Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #8 Attachment 2 Filed: 2011-09-08 Page 6 of 6

2011	8	31	8	48,030.57	0	81.06	0	0	0	0	0	0	0	1	0
2011	9	30	8	48,123.95	0.78	20.63	0	0	0	0	0	0	0	1	0
2011	10	31	10	48,217.32	56	1.18	0	0	0	0	0	0	1	1	0
2011	11	30	8	48,310.70	179.02	0	0	0	0	0	0	0	0	1	0
2011	12	31	9	48,389.53	427.57	0	0	0	0	0	0	0	0	1	0
2012	1	31	9	48,468.37	544.61	0	0	0	0	0	0	0	0	1	0
2012	2	29	8	48,547.20	465.93	0	0	0	0	0	0	0	0	1	0
2012	3	31	9	48,645.22	312.68	0	0	0	0	1	0	0	0	1	0
2012	4	30	9	48,743.23	90.78	1.28	0	0	0	0	1	0	0	1	0
2012	5	31	8	48,841.25	5.14	7.07	0	0	0	0	0	1	0	1	0
2012	6	30	9	48,942.96	0	56.62	0	0	0	0	0	0	0	1	0
2012	7	31	9	49,044.66	0	86.28	0	0	0	0	0	0	0	1	0
2012	8	31	8	49,146.37	0	81.06	0	0	0	0	0	0	0	1	0
2012	9	30	10	49,251.74	0.78	20.63	0	0	0	0	0	0	0	1	0
2012	10	31	8	49,357.11	56	1.18	0	0	0	0	0	0	1	1	0
2012	11	30	8	49,462.48	179.02	0	0	0	0	0	0	0	0	1	0
2012	12	31	10	49,581.26	427.57	0	0	0	0	0	0	0	0	1	0



1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.1 - Is the load forecast methodology including weather normalization
4	appropriate?
5	
6	VECC Question #25 - Ref: Exhibit C1, Tab 1, Schedule 1, pages 4-5 /OEB June 2011
7	Filing Guidelines, Chapter 2, page 25
8	a) Please provide schedules (charts) that set out the values for HDD and CDD for the
9	last 20 years and, based on trend analysis, estimate the HDD and CDD values for
10	2011 and 2012.
11	b) Please provide a table that sets out for 2009 and 2010 the following:
12	The actual purchases for each year
13	The actual HDD and CDD values for each year
14	The "weather normal" HDD and CDD values for each year (as defined by
15	Ottawa)
16	 The HDD and CDD coefficients per Ottawa's regression model
17	The weather normal adjustment for each year based on the product of a) the
18	HDD and CDD coefficients and b) the differences between the actual and
19	"weather normal" values for HDD and CDD respectively.
20	 The estimated "weather normal purchases" calculated by adjusting actual
21	purchases by the values calculated in the preceding bullet.
22	
23	Response
24	
25	a) The model does not forecast HDD nor CDD, rather it utilizes normal weather in the
26	forecast. Annual HDD8 and CDD18 values for the last 20 years are provided in the
27	table below.
28	
29	
30	
31	

Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #9 Filed: 2011-09-08 Page 2 of 3

Year	HDD8	CDD18
1990	1865.69	251.68
1991	2018.57	323.89
1992	2340.00	109.52
1993	2324.49	253.54
1994	2315.26	215.94
1995	2200.98	306.01
1996	2197.92	227.84
1997	2305.05	211.67
1998	1645.24	284.65
1999	1892.87	385.98
2000	2100.1	157.55
2001	1846.66	315.85
2002	1982.17	341.49
2003	2352.39	264.00
2004	2260.10	167.6
2005	2098.19	392.14
2006	1695.85	274.07
2007	2158.43	262.38
2008	2121.74	194.20
2009	2082.65	172.08
2010	1691.13	316.3

2 3



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #9 Filed: 2011-09-08 Page 3 of 3

1 b) The requested data is provided in the following table.

									A (Weather	B (Weather	
				Weather			Weather		Norm	Norm	
Voor	Month	Purchases		Norm	HDD8		Norm	CDD18		CDD18 -	Purchases
real	WOIIII					10	CDDIO				TATO
2009	1	768,897	663.7	544.61	275.27	0	0	922.19	-32,781.31	0.00	736,116
2009	2	669,135	419.21	465.93	275.27	0	0	922.19	12,860.38	0.00	681,996
2009	3	672,264	285.03	312.68	275.27	0	0	922.19	7,611.08	0.00	679,875
2009	4	592,341	75.43	90.78	275.27	2.61	1.28	922.19	4,225.32	-1,226.51	595,340
2009	5	582,423	3.06	5.14	275.27	3.62	7.07	922.19	572.55	3,181.55	586,177
2009	6	605,738	0	0	275.27	41.27	56.62	922.19	0.00	14,155.59	619,894
2009	7	657,990	0	0	275.27	37.97	86.28	922.19	0.00	44,550.90	702,541
2009	8	684,461	0	0	275.27	81.08	81.06	922.19	0.00	-18.44	684,442
2009	9	588,677	2.12	0.78	275.27	5.53	20.63	922.19	-368.86	13,925.04	602,233
2009	10	610,640	74.21	56	275.27	0	1.18	922.19	-5,012.58	1,088.18	606,715
2009	11	628,207	122.86	179.02	275.27	0	0	922.19	15,458.88	0.00	643,666
2009	12	723,950	437.03	427.57	275.27	0	0	922.19	-2,604.01	0.00	721,346
2010	1	735,666	473.37	544.61	275.27	0	0	922.19	19,609.88	0.00	755,276
2010	2	648,703	371.79	465.93	275.27	0	0	922.19	25,913.45	0.00	674,617
2010	3	638,489	156.37	312.68	275.27	0	0	922.19	43,026.67	0.00	681,515
2010	4	581,205	25.63	90.78	275.27	2.15	1.28	922.19	17,933.51	-802.30	598,336
2010	5	626,221	11.88	5.14	275.27	36.92	7.07	922.19	-1,855.29	-27,527.31	596,838
2010	6	627,682	0	0	275.27	32.6	56.62	922.19	0.00	22,150.96	649,833
2010	7	746,185	0	0	275.27	146.91	86.28	922.19	0.00	-55,912.26	690,272
2010	8	683,231	0	0	275.27	76.4	81.06	922.19	0.00	4,297.40	687,528
2010	9	603,647	0	0.78	275.27	21.32	20.63	922.19	214.71	-636.31	603,226
2010	10	599,326	46.2	56	275.27	0	1.18	922.19	2,697.60	1,088.18	603,112
2010	11	631,381	186.46	179.02	275.27	0	0	922.19	-2,047.97	0.00	629,333
2010	12	718,025	419.43	427.57	275.27	0	0	922.19	2,240.66	0.00	720,266

2



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #10 Filed: 2011-09-08 Page 1 of 2

1	3.	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	sue 3.1 - Is the load forecast methodology including weather normalization
4	ар	propriate?
5		
6	VE	CC Question #26 - Ref: Exhibit C1, Tab 1, Schedule 1, pages 5-6 and Appendix X,
7	pa	<u>ge 2</u>
8	a)	Was the forecast of System Peak used at all in developing the forecast of the 2011
9		and 2012 billing determinants by customer class? If yes, please explain precisely
10		where and how it was used.
11	b)	Please provide a definition for each of the explanatory variables used to predict
12		System Demand.
13		
14	Re	sponse
15		
16	a)	The forecast of system peak is not used in developing the forecast of the billing
17		determinants by customer class. Billing forecasts are estimated directly using the
18		billed month data.
19		
20	b)	The following table provides definitions for each of the variables:
21		



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #10 Filed: 2011-09-08 Page 2 of 2

1

Variable	Definition
PkWthrT.PKHDD_Filled	The HDD10 value for the day of system demand peak. For forecast years, the weather normal peak HDD10 is utilized.
PkWthrT.PKCDD18_Filled	The CDD18 value for the day of system demand peak. For forecast years, the weather normal peak CDD18 is utilized.
MoFcstT.Ma_Energy	The annual moving average of the system energy, used to isolate the system growth.
MoFcstT.Sys_GWh	Historic and forecasted system energy
BinT.Sep03	Binary variable to capture non weather-related anomalies in September 2003.
BinT.Mar	Monthly binary variable to capture non weather-related seasonality in March.
BinT.Apr	Monthly binary variable to capture non weather-related seasonality in April.

2



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #11 Filed: 2011-09-08 Page 1 of 3

1	3.	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	ue 3.1 - Is the load forecast methodology including weather normalization
4	ар	propriate?
5		
6	<u>VE</u>	CC Question #27 - Ref: Exhibit C1, Tab 1, Schedule 1, pages 9-10 and Appendix X,
7	pag	ges 3-20 / OEB Staff IR #26
8	a)	For each of the customer class models (i.e., customer count and sales) please
9		provide a definition for each explanatory variable used.
10	b)	In responding to OEB Staff IR #26, please provide a schedule that for 2011 and 2012
11		shows the predicted sales for each class using the forecast models, the sum of the
12		class model's results and adjustment (both total and by customer class) required to
13		match the system energy forecast. Please also explain how the adjustment was
14		allocated to customer classes.
15		
16	Re	sponse
17		
18	a)	Please see Attachment 1.
19		
20	b)	Please see the following tables for the predicted sales for each class using the
21		forecast models, the sum of the class model's results and the system energy
22		forecast. The adjustment is allocated evenly across all classes.



1

Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #11 Filed: 2011-09-08 Page 2 of 3

					Forecasted Sa	ales Calibrated	to System Fo	recast				
Year	Month	System Forecast	Loss Adjusted System Forecast	Calibration Factor	Residential	GS < 50 kW	GS > 50 < 1500 kW	GS > 1500 < 5000 kW	Large Use	Street Lights	UMSL	Dry Core
		MWh	MWh		MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh
2011	1	758,978	732,816	1.01	233,448	76,500	289,132	71,794	55,657	4,528	1,499	258
2011	2	678,052	654,680	0.95	208,117	68,546	258,279	65,312	48,803	3,974	1,408	243
2011	3	687,830	664,121	0.98	202,356	68,434	264,980	69,216	53,695	3,725	1,462	252
2011	4	601,857	581,112	0.94	168,016	58,633	233,139	64,943	51,460	3,277	1,403	242
2011	5	598,485	577,856	0.98	159,304	57,339	233,552	67,997	55,096	2,859	1,458	251
2011	6	645,606	623,353	0.99	181,414	60,762	246,177	71,766	58,854	2,654	1,472	254
2011	7	690,837	667,024	1.00	199,543	64,414	261,214	75,359	62,853	1,905	1,481	255
2011	8	689,941	666,159	1.00	198,392	64,217	261,330	75,502	62,895	2,073	1,493	257
2011	9	613,712	592,557	1.00	164,334	58,485	238,004	70,038	56,852	3,095	1,491	257
2011	10	614,998	593,799	0.97	168,162	59,335	239,294	67,332	54,136	3,852	1,439	248
2011	11	644,469	622,255	0.97	184,086	63,367	248,627	67,135	52,969	4,386	1,437	248
2011	12	732,487	707,238	1.00	219,209	72,835	281,223	71,409	56,016	4,799	1,490	257
	Total	7,957,251	7,682,969	12	2,286,381	772,865	3,054,951	837,804	669,287	41,127	17,533	3,023



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #11 Filed: 2011-09-08 Page 3 of 3

	Forecasted Sales Calibrated to System Forecast											
Year	Month	System Forecast	Loss Adjusted System Forecast	Calibration Factor	Residential	GS < 50 kW	GS > 50 < 1500 kW	GS > 1500 < 5000 kW	Large Use	Street Lights	UMSL	Dry Core
2012	2	703,281	679,039	0.97	213,926	70,915	269,028	67,875	51,511	4,097	1,440	248
2012	3	690,220	666,429	0.98	202,520	68,255	266,582	69,442	54,178	3,744	1,456	251
2012	4	606,043	585,153	0.94	168,537	59,020	235,162	65,377	52,103	3,309	1,403	242
2012	5	604,466	583,630	0.98	160,277	57,541	236,423	68,740	56,030	2,904	1,464	252
2012	6	648,062	625,723	0.99	181,461	60,847	247,511	72,063	59,443	2,679	1,467	253
2012	7	696,881	672,860	1.00	200,698	64,657	263,975	76,052	63,797	1,942	1,482	256
2012	8	694,237	670,307	1.00	199,000	64,412	263,380	75,991	63,671	2,105	1,490	257
2012	9	614,497	593,316	1.00	163,890	58,271	238,795	70,186	57,319	3,116	1,484	256
2012	10	622,944	601,472	0.97	169,686	59,901	242,885	68,214	55,178	3,910	1,448	250
2012	11	648,904	626,537	0.96	184,765	63,590	250,876	67,573	53,631	4,419	1,436	248
2012	12	735,297	709,952	1.00	219,392	72,959	282,942	71,607	56,502	4,812	1,483	256
	Total	8,029,840	7,753,056	12	2,297,816	777,019	3,090,538	845,619	679,874	41,611	17,553	3,026

. 8



Residential Customers							
Variable	Definition						
CONST	Constant term set by the regression model.						
Economics.Pop	Total population of Ottawa and Gatineau						
	The AR term is a coefficient on the error term (residual) from the prior period. Used to correct the pattern in the residuals that the						
AR(1)	other variables were not capturing.						

Residential Sales								
Variable	Definition							
CONST	Constant term set by the regression model.							
MEconT.RPI_LagHDD18	Variable lagged by 1 month that takes into account Real Personal Income and the HDD18							
MEconT.RPI_Lag2HDD18	Variable lagged by 2 months that takes into account Real Personal Income and the HDD18							
MEconT.RPI_LagCDD18	Variable lagged by 1 month that takes into account Real Personal Income and the CDD18							
MEconT.RPI_Lag2CDD18	Variable lagged by 2 months that takes into account Real Personal Income and the CDD18							
BinT.Spr08	binary flag to adjust for anomalous observation in March, April, May and June 2008							
BinT.Dec07	binary flag to adjust for anomalous observation							
BinT.Dec06	binary flag to adjust for anomalous observation							
BinT.Jun09	binary flag to adjust for anomalous observation							
BinT.Mar03	binary flag to adjust for anomalous observation							
BinT.Mar04	binary flag to adjust for anomalous observation							
BinT.Aug03	binary flag to adjust for anomalous observation							
BinT.Sep03	binary flag to adjust for anomalous observation							
	The MA term is a coefficient on the prior Y values. Used to correct the pattern in the residuals that the other variables were not							
MA(1)	capturing.							

GS < 50 kW Customers							
Variable	Definition						
CONST	Constant term set by the regression model.						
BinT.Fall03	binary flag to adjust for anomalous observation in September, October, November and December 2003						
BinT.Aft04	binary flag to adjust for changes in trending						
BinT.Aft05	binary flag to adjust for changes in trending						
Res_Custs.Predicted	Predicted number of residential customers						

GS < 50 kW Sales	
Variable	Definition



CONST	Constant term set by the regression model.
MEconT.GDP_Lag2HDD18	Variable that takes into account Gross Domestic Product and the HDD18
MEconT.GDP_Lag2CDD17	Variable that takes into account Gross Domestic Product and the CDD17
BinT.Dec06	binary flag to adjust for anomalous observation
BinT.Spr08	binary flag to adjust for anomalous observation in March, April, May and June 2008
BinT.Jun07	binary flag to adjust for anomalous observation
BinT.Dec07	binary flag to adjust for anomalous observation
BinT.Apr07	binary flag to adjust for anomalous observation
BinT.Spr09	binary flag to adjust for anomalous observation in March, April, May and June 2009
BinT.AftFeb04	binary flag to adjust for changes in trending starting in February 2004
BinT.Apr03	binary flag to adjust for anomalous observation
BinT.Spr10	binary flag to adjust for anomalous observation in March, April, May and June 2010
BinT.Feb10	binary flag to adjust for anomalous observation
BinT.Feb09	binary flag to adjust for anomalous observation
BinT.Fall10	binary flag to adjust for anomalous observation in September and October 2010
BinT.Jul04	binary flag to adjust for anomalous observation
BinT.Mar04	binary flag to adjust for anomalous observation
BinT.Nov04	binary flag to adjust for anomalous observation
	The AR term is a coefficient on the error term (residual) from the prior period. Used to correct the pattern in the residuals that the
AR(1)	other variables were not capturing.

GS > 50 < 1000 kW Non Interval Customers	
Variable	Definition
CONST	Constant term set by the regression model.
Economics.Emp	Total Employment in Ottawa and Gatineau
BinT.AftSep03	binary flag to adjust for changes in trending starting in September 2003
BinT.Spring06	binary flag to adjust for anomalous observation in January, February, March, April and May 2006
BinT.AftJun06	binary flag to adjust for changes in trending starting in June 2006
BinT.Yr05	binary flag to adjust for anomalous observation in 2005
BinT.Aug03	binary flag to adjust for anomalous observation
	The AR term is a coefficient on the error term (residual) from the prior period. Used to correct the pattern in the residuals that the
AR(1)	other variables were not capturing.

GS > 50 < 1000 kW Non Interval kW Sales		
Variable	Definition	
CONST	Constant term set by the regression model.	



Sales.GS1000NI_MWh	Historic Sales
BinT.Jan	Monthly binary variable to capture non weather-related seasonality
BinT.Feb	Monthly binary variable to capture non weather-related seasonality
BinT.Jun	Monthly binary variable to capture non weather-related seasonality
BinT.Oct	Monthly binary variable to capture non weather-related seasonality
BinT.Nov	Monthly binary variable to capture non weather-related seasonality
BinT.Apr03	binary flag to adjust for anomalous observation
BinT.Nov03	binary flag to adjust for anomalous observation
BinT.Dec03	binary flag to adjust for anomalous observation
BinT.Apr04	binary flag to adjust for anomalous observation
BinT.May04	binary flag to adjust for anomalous observation

GS > 50 < 1000 kW Interval Customers	
Variable	Definition
Economics.Emp	Total Employment in Ottawa and Gatineau
BinT.AftMay05	binary flag to adjust for changes in trending starting starting May 2005
BinT.Aft05	binary flag to adjust for changes in trending starting starting in 2005
	The AR term is a coefficient on the error term (residual) from the prior period. Used to correct the pattern in the residuals that the
AR(1)	other variables were not capturing.

GS > 50 < 1000 kW Interval kW Sales	
Variable	Definition
CONST	Constant term set by the regression model.
BinT.TrendVar	Variable that increases monthly, used to assist in regresion
Sales.GS1000I_MWh	Historic Sales
BinT.Jan	Monthly binary variable to capture non weather-related seasonality
BinT.Feb	Monthly binary variable to capture non weather-related seasonality
BinT.Apr	Monthly binary variable to capture non weather-related seasonality
BinT.May	Monthly binary variable to capture non weather-related seasonality
BinT.Jun	Monthly binary variable to capture non weather-related seasonality
BinT.Jul	Monthly binary variable to capture non weather-related seasonality
BinT.Sep	Monthly binary variable to capture non weather-related seasonality
BinT.Oct	Monthly binary variable to capture non weather-related seasonality
BinT.Nov	Monthly binary variable to capture non weather-related seasonality



GS > 1000 < 5000 kW Customers	
Variable	Definition
Simple	Exponential smoothing model variable used to forecast based on historic trending

GS > 1000 < 5000 kW Sales	
Variable	Definition
CONST	Constant term set by the regression model.
BinT.TrendVar	Variable that increases monthly, used to assist in regresion
Sales.GS1500_MWh	Historic Sales
BinT.Jan	Monthly binary variable to capture non weather-related seasonality
BinT.Feb	Monthly binary variable to capture non weather-related seasonality
BinT.Apr	Monthly binary variable to capture non weather-related seasonality
BinT.May	Monthly binary variable to capture non weather-related seasonality
BinT.Jun	Monthly binary variable to capture non weather-related seasonality
BinT.Jul	Monthly binary variable to capture non weather-related seasonality
BinT.Oct	Monthly binary variable to capture non weather-related seasonality
BinT.Nov	Monthly binary variable to capture non weather-related seasonality
BinT.Jun03	binary flag to adjust for anomalous observation
BinT.Sep03	binary flag to adjust for anomalous observation

GS > 1500 < 5000 Customers	
Variable	Definition
CONST	Constant term set by the regression model.
MEconT.NManEmp	Non Manufacturing Employement.
BinT.Bef06	Binary flag to adjust for changes in trending before/after 2006.
BinT.NManEmpAftJun06	Variable to allow for changes in trending relative to Non Manufacturing Employement following June 2006.

GS > 1500 < 5000 kW Sales	
Variable	Definition
CONST	Constant term set by the regression model.
BinT.TrendVar	Variable that increases monthly, used to assist in regresion
Sales.GS5000_MWh	Historic Sales
BinT.Feb	Monthly binary variable to capture non weather-related seasonality



BinT.Mar	Monthly binary variable to capture non weather-related seasonality
BinT.May	Monthly binary variable to capture non weather-related seasonality
BinT.Jun	Monthly binary variable to capture non weather-related seasonality
BinT.Jul	Monthly binary variable to capture non weather-related seasonality
BinT.Aug	Monthly binary variable to capture non weather-related seasonality
BinT.Sep	Monthly binary variable to capture non weather-related seasonality
BinT.Oct	Monthly binary variable to capture non weather-related seasonality
BinT.Nov	Monthly binary variable to capture non weather-related seasonality
BinT.Jun03	binary flag to adjust for anomalous observation

Large Use Customers				
Variable	Definition			
CONST	Constant term set by the regression model.			
MEconT.NManEmp	Non Manufacturing Employement			
BinT.AftFeb04	Binary flag to adjust for changes in trending starting February 2004			
BinT.AftJun06	Binary flag to adjust for changes in trending starting June 2006			

Large Use kW Sales						
Variable	Variable Definition					
CONST	Constant term set by the regression model.					
Sales.GSLrg_MWh	Historic Sales					
BinT.Feb	Monthly binary variable to capture non weather-related seasonality					
BinT.Apr	Monthly binary variable to capture non weather-related seasonality					
BinT.May	Monthly binary variable to capture non weather-related seasonality					
BinT.Jun	Monthly binary variable to capture non weather-related seasonality					
BinT.Jul	Monthly binary variable to capture non weather-related seasonality					
BinT.Aug	Monthly binary variable to capture non weather-related seasonality					
BinT.Sep	Monthly binary variable to capture non weather-related seasonality					
BinT.Oct	Monthly binary variable to capture non weather-related seasonality					
BinT.Nov	Monthly binary variable to capture non weather-related seasonality					
BinT.Jun03	binary flag to adjust for anomalous observation					



Streetlighting Connections				
Variable	Definition			
CONST	Constant term set by the regression model.			
BinT.AftOct06	binary flag to adjust for changes in trending starting October 2006			
Economics.Pop	Total population of Ottawa and Gatineau			
	The AR term is a coefficient on the error term (residual) from the prior period. Used to correct the pattern in the residuals that the			
AR(1)	other variables were not capturing.			

Streetlighting Sales				
Variable	Definition			
CONST	Constant term set by the regression model.			
BinT.TrendVar	Variable that increases monthly, used to assist in regresion			
BinT.AftJul06	binary flag to adjust for changes in trending starting July 2006			
BinT.Jul07	binary flag to adjust for anomalous observation			
	The MA term is a coefficient on the prior Y values. Used to correct the pattern in the residuals that the other variables were not			
MA(1)	capturing.			

Unmetered Scattered Load Connections				
Variable Definition				
Simple	Exponential smoothing model coefficient.			

Unmetered Scattered Load Sales				
Variable	Variable Definition			
Simple	Exponential smoothing model coefficient.			



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.1 Interrogatory #12 Filed: 2011-09-08 Page 1 of 1

1	3.	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	ue 3.1 - Is the load forecast methodology including weather normalization
4	ар	propriate?
5		
6	VE	CC Question #28 - Ref: Exhibit C1, Tab 1, Schedule 1, page 14
7	a)	Please explain more fully how the class demand forecasts were developed for those
8		classes that are demand billed.
9	b)	Please provide a schedule that for each demand billed class sets out the kW to kWh
10		ratio for each of the years 2005-2012.
11		
12	Re	sponse
13		
14	a)	The billing demand forecasts for all but Street lighting are calculated using the
15		historic and forecasted class sales forecast as the driving variable. The regression
16		models forecast the demand values based off of this driver and some addition
17		explanatory variables. The street lighting demand model is driven by a constantly
18		increasing variable, as well as explanatory variables.
19		
20	b)	Please see the response to Exhibit K3-3-4 (EP #30).



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Filed: 2011-09-08 Page 1 of 2

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.2 - Are the proposed customers/connections and load forecasts (both
4	kWh and kW) for the test year appropriate?
5	
6	Board Staff Question #29 - Ref: Exh C1-1-1
7	On p12, it states: "Customer models were created for each customer class and are
8	generally simple, containing employment and non-manufacturing employment as drivers
9	and binary variables that capture shifts in the data. These models have adjusted R2
10	ranging from 0.724 to 1.0 and low model MAPEs. Tables 10 and 11 below show the
11	actual and forecast yearly average and year end customer numbers."
12	
13	Please provide the details (including the value of the input variables) to illustrate how the
14	forecast customer numbers for 2011 and 2012 are derived from each customer models.
15	
16	Response
17	
18	Please see the tables provided in Attachment 1 for the value of input variables and
19	Attachment 1 to K3-1-11 (VECC# 27a) for the definition of each of the explanatory
20	variables.
21	
22	Residential customer model - utilizes regression using historic and forecasted population
23	as its driver.
24	
25	GS <50kW customer model - is driven by the residential forecast model.
26	
27	GS >50 <1000kW Non-Interval and Interval customer models – are driven by historic
28	and forecasted employment levels.
29	



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

- 1 GS 1500 kW customer model as this class was found to not have an appropriate
- 2 driving variable, it is forecasted utilizing an exponential smoothing model. This model
- 3 estimates the current level for each period and forecasts at this level.
- 4
- 5 GS5000 & Large Use customer models are driven by the historic and forecasted non-
- 6 manufacturing employment (calculated as the difference between total employment and
- 7 manufacturing employment).



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 1 of 21

Year	Mont	:h	Res_Custs	Рор
20	003	1	238,550.00	1,126.41
20	003	2	238,930.00	1,127.52
20	003	3	239,586.00	1,128.56
20	003	4	239,726.00	1,129.61
20	003	5	240,038.00	1,130.65
20	003	6	240,367.00	1,131.63
20	003	7	240,682.00	1,132.61
20	003	8	241,027.00	1,133.59
20	003	9	241,542.00	1,134.51
20	003	10	241,427.00	1,135.43
20	003	11	242,370.00	1,136.36
20	003	12	242,369.00	1,137.16
20	004	1	243,853.00	1,137.97
20	004	2	244,186.00	1,138.78
20	004	3	244,487.00	1,139.60
20	004	4	244,767.00	1,140.43
20	004	5	245,030.00	1,141.25
20	004	6	245,470.00	1,142.04
20	004	7	245,760.00	1,142.83
20	004	8	246,494.00	1,143.61
20	004	9	246,494.00	1,144.36
20	004	10	247,133.00	1,145.11
20	004	11	247,133.00	1,145.87
20	004	12	247,790.00	1,146.33
20	005	1	248,696.00	1,146.79
20	005	2	249,139.00	1,147.25
20	005	3	249,582.00	1,148.03
20	005	4	249,725.00	1,148.80
20	005	5	250,042.00	1,149.58
20	005	6	250,379.00	1,150.42
20	005	7	250,691.00	1,151.26
20	005	8	251,072.00	1,152.10
20	005	9	251,351.00	1,153.00
20	005	10	251,708.00	1,153.91
20	005	11	251,974.00	1,154.81
20)05	12	252,268.00	1,156.21
20	006	1	252,749.00	1,157.62
20	006	2	253,046.00	1,159.02
20	006	3	253,295.00	1,159.88
20	006	4	253,495.00	1,160.73
20	006	5	253,592.00	1,161.59



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 2 of 21

2006	6	253,921.00	1,162.33
2006	7	254,248.00	1,163.08
2006	8	254,518.00	1,163.82
2006	9	254,866.00	1,164.45
2006	10	255,376.00	1,165.08
2006	11	255,843.00	1,165.72
2006	12	255,993.00	1,166.24
2007	1	256,635.00	1,166.76
2007	2	257,038.00	1,167.28
2007	3	257,196.00	1,167.69
2007	4	257,384.00	1,168.10
2007	5	257,631.00	1,168.51
2007	6	257,743.00	1,168.81
2007	7	258,297.00	1,169.10
2007	8	258,535.00	1,169.40
2007	9	258,926.00	1,169.59
2007	10	259,404.00	1,169.78
2007	11	259,997.00	1,169.96
2007	12	260,359.00	1,178.07
2008	1	260,827.00	1,186.18
2008	2	261,199.00	1,194.29
2008	3	261,451.00	1,195.83
2008	4	261,864.00	1,197.37
2008	5	262,172.00	1,198.91
2008	6	262,501.00	1,200.48
2008	7	262,992.00	1,202.05
2008	8	263,242.00	1,203.61
2008	9	263,324.00	1,205.20
2008	10	264,257.00	1,206.80
2008	11	264,641.00	1,208.39
2008	12	264,958.00	1,210.00
2009	1	265,551.00	1,211.62
2009	2	265,928.00	1,213.23
2009	3	266,042.00	1,214.87
2009	4	266,389.00	1,216.51
2009	5	266,664.00	1,218.14
2009	6	266,920.00	1,219.81
2009	7	267,222.00	1,221.47
2009	8	267,461.00	1,223.13
2009	9	267,891.00	1,224.82
2009	10	268,412.00	1,226.50
2009	11	268,934.00	1,228.19



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 3 of 21

2009	12	269,288.00	1,229.41
2010	1	269,683.00	1,230.63
2010	2	269,969.00	1,231.85
2010	3	270,358.00	1,232.94
2010	4	270,612.00	1,234.04
2010	5	270,967.00	1,235.13
2010	6	271,349.00	1,236.11
2010	7	271,720.00	1,237.09
2010	8	272,081.00	1,238.07
2010	9	272,425.00	1,238.96
2010	10	272,936.00	1,239.86
2010	11	273,375.00	1,240.75
2010	12	273,758.00	1,241.57
2011	1		1,242.40
2011	2		1,243.22
2011	3		1,244.00
2011	4		1,244.77
2011	5		1,245.55
2011	6		1,246.31
2011	7		1,247.06
2011	8		1,247.81
2011	9		1,248.57
2011	10		1,249.32
2011	11		1,250.07
2011	12		1,250.88
2012	1		1,251.70
2012	2		1,252.52
2012	3		1,253.36
2012	4		1,254.20
2012	5		1,255.04
2012	6		1,255.90
2012	7		1,256.77
2012	8		1,257.64
2012	9		1,258.54
2012	10		1,259.44
2012	11		1,260.35
2012	12		1,261.30



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 4 of 21

Year		Month	GS50_Custs	Fall03	Aft04	Aft05	Predicted
	2003	1	23,118.00	0	0	0	
	2003	2	23,098.00	0	0	0	238,940.40
	2003	3	23,081.00	0	0	0	239,319.73
	2003	4	23,063.00	0	0	0	239,974.98
	2003	5	23,058.00	0	0	0	240,114.82
	2003	6	23,033.00	0	0	0	240,426.26
	2003	7	23,048.00	0	0	0	240,754.88
	2003	8	23,243.00	0	0	0	241,069.52
	2003	9	23,781.00	1	0	0	241,413.92
	2003	10	23,781.00	1	0	0	241,928.33
	2003	11	23,844.00	1	0	0	241,813.46
	2003	12	23,844.00	1	0	0	242,754.98
	2004	1	23,348.00	0	0	0	242,753.98
	2004	2	23,349.00	0	0	0	244,236.27
	2004	3	23,298.00	0	0	0	244,568.96
	2004	4	23,310.00	0	0	0	244,869.61
	2004	5	23,285.00	0	0	0	245,149.29
	2004	6	23,279.00	0	0	0	245,411.86
	2004	7	23,268.00	0	0	0	245,851.36
	2004	8	23,276.00	0	0	0	246,141.03
	2004	9	23,276.00	0	0	0	246,874.05
	2004	10	23,423.00	0	0	0	246,874.05
	2004	11	23,423.00	0	0	0	247,512.32
	2004	12	23,137.00	0	0	0	247,511.32
	2005	1	23,209.00	0	1	0	248,167.56
	2005	2	22,990.00	0	1	0	249,072.52
	2005	3	22,991.00	0	1	0	249,516.11
	2005	4	23,015.00	0	1	0	249,958.60
	2005	5	23,015.00	0	1	0	250,101.44
	2005	6	23,047.00	0	1	0	250,418.29
	2005	7	23,033.00	0	1	0	250,754.91
	2005	8	23,013.00	0	1	0	251,066.55
	2005	9	23,009.00	0	1	0	251,447.34
	2005	10	23,002.00	0	1	0	251,726.02
	2005	11	22,986.00	0	1	0	252,082.61
	2005	12	22,983.00	0	1	0	252,350.05
	2006	1	22,979.00	0	1	1	252,643.72
	2006	2	22,988.00	0	1	1	253,124.17
	2006	3	22,981.00	0	1	1	253,418.92
	2006	4	22,982.00	0	1	1	253,667.63
	2006	5	22,973.00	0	1	1	253,867.41



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 5 of 21

2006	6	23,108.00	0	1	1	253,963.91
2006	7	23,063.00	0	1	1	254,292.53
2006	8	23,046.00	0	1	1	254,619.16
2006	9	23,039.00	0	1	1	254,888.46
2006	10	23,053.00	0	1	1	255,236.06
2006	11	23,055.00	0	1	1	255,745.48
2006	12	23,050.00	0	1	1	256,211.55
2007	1	23,066.00	0	1	1	256,361.38
2007	2	23,076.00	0	1	1	257,002.64
2007	3	23,082.00	0	1	1	257,404.79
2007	4	23,085.00	0	1	1	257,562.61
2007	5	23,083.00	0	1	1	257,750.40
2007	6	23,246.00	0	1	1	257,996.72
2007	7	23,239.00	0	1	1	258,108.60
2007	8	23,242.00	0	1	1	258,661.96
2007	9	23,243.00	0	1	1	258,899.30
2007	10	23,256.00	0	1	1	259,289.85
2007	11	23,279.00	0	1	1	259,767.30
2007	12	23,292.00	0	1	1	260,387.22
2008	1	23,297.00	0	1	1	260,748.83
2008	2	23,291.00	0	1	1	261,216.33
2008	3	23,271.00	0	1	1	261,565.05
2008	4	23,272.00	0	1	1	261,816.76
2008	5	23,267.00	0	1	1	262,229.29
2008	6	23,317.00	0	1	1	262,537.03
2008	7	23,322.00	0	1	1	262,865.65
2008	8	23,324.00	0	1	1	263,356.09
2008	9	23,332.00	0	1	1	263,605.90
2008	10	23,344.00	0	1	1	263,687.81
2008	11	23,323.00	0	1	1	264,619.74
2008	12	23,314.00	0	1	1	265,003.38
2009	1	23,300.00	0	1	1	265,320.02
2009	2	23,301.00	0	1	1	265,912.35
2009	3	23,286.00	0	1	1	266,289.00
2009	4	23,272.00	0	1	1	266,402.88
2009	5	23,264.00	0	1	1	266,749.48
2009	6	23,332.00	0	1	1	267,024.26
2009	7	23,325.00	0	1	1	267,279.97
2009	8	23,319.00	0	1	1	267,581.62
2009	9	23,320.00	0	1	1	267,820.44
2009	10	23,339.00	0	1	1	268,249.95
2009	11	23,342.00	0	1	1	268,770.35



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 6 of 21

12	23,338.00	0	1	1	269,290.14
1	23,415.00	0	1	1	269,643.73
2	23,409.00	0	1	1	270,038.28
3	23,410.00	0	1	1	270,323.51
4	23,414.00	0	1	1	270,712.06
5	23,423.00	0	1	1	270,965.77
6	23,417.00	0	1	1	271,319.98
7	23,413.00	0	1	1	271,701.55
8	23,408.00	0	1	1	272,072.12
9	23,423.00	0	1	1	272,432.40
10	23,447.00	0	1	1	272,776.01
11	23,485.00	0	1	1	273,286.42
12	23,548.00	0	1	1	273,724.68
1		0	1	1	274,107.24
2		0	1	1	274,456.08
3		0	1	1	274,804.36
4		0	1	1	275,152.24
5		0	1	1	275,499.72
6		0	1	1	275,846.73
7		0	1	1	276,193.33
8		0	1	1	276,539.54
9		0	1	1	276,885.35
10		0	1	1	277,230.75
11		0	1	1	277,575.77
12		0	1	1	277,920.61
1		0	1	1	278,265.06
2		0	1	1	278,609.11
3		0	1	1	278,952.85
4		0	1	1	279,296.20
5		0	1	1	270 620 46
		0	T	Т	279,639.16
6		0	1	1 1	279,639.16 279,981.82
6 7		0 0	1 1 1	1 1 1	279,639.16 279,981.82 280,324.09
6 7 8		0 0 0	1 1 1 1	1 1 1 1	279,639.16 279,981.82 280,324.09 280,665.97
6 7 8 9		0 0 0 0	1 1 1 1	1 1 1 1	279,639.16 279,981.82 280,324.09 280,665.97 281,007.58
6 7 8 9 10		0 0 0 0 0	1 1 1 1 1	1 1 1 1 1	279,639.16 279,981.82 280,324.09 280,665.97 281,007.58 281,348.79
6 7 8 9 10		0 0 0 0 0 0	1 1 1 1 1 1 1	1 1 1 1 1 1	279,639.16 279,981.82 280,324.09 280,665.97 281,007.58 281,348.79 281,689.62
	3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 12 1 12 11 11	3 23,410.00 4 23,414.00 5 23,423.00 6 23,417.00 7 23,413.00 8 23,408.00 9 23,423.00 10 23,447.00 11 23,485.00 12 23,548.00 1 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 11 2 3 4 5 6 7 8 9 10 10 11 12 1 12 1 12 1 12 1 12 1 12 1 12 1 12 1 12 1 1 1 1 1 1 1 1 1 1 1 1 1	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 7 of 21

Year	Month	GS1000_NI	Emp	AftSep03	Spring06	AftJun06	Yr05	03-Aug
2002	1	3,464.00	572.88	0	0	0	0	0
2002	2	3,477.00	570	0	0	0	0	0
2002	3	3,489.00	569.76	0	0	0	0	0
2002	4	3,502.00	569.51	0	0	0	0	0
2002	5	3,206.00	569.27	0	0	0	0	0
2002	6	3,206.00	572.33	0	0	0	0	0
2002	7	3,206.00	575.4	0	0	0	0	0
2002	8	3,218.00	578.46	0	0	0	0	0
2002	9	3,218.00	580.9	0	0	0	0	0
2002	10	3,218.00	583.34	0	0	0	0	0
2002	11	3,226.00	585.78	0	0	0	0	0
2002	12	3,242.00	590.46	0	0	0	0	0
2003	1	3,266.00	595.15	0	0	0	0	0
2003	2	3,277.00	599.83	1	0	0	0	0
2003	3	3,284.00	603.52	1	0	0	0	0
2003	4	3,289.00	607.2	1	0	0	0	0
2003	5	3,285.00	610.88	1	0	0	0	0
2003	6	3,280.00	611.26	1	0	0	0	0
2003	7	3,283.00	611.64	1	0	0	0	0
2003	8	3,108.00	612.02	1	0	0	0	1
2003	9	2,572.00	609.17	1	0	0	0	0
2003	10	2,572.00	606.32	1	0	0	0	0
2003	11	2,535.00	603.47	1	0	0	0	0
2003	12	2,535.00	601.96	1	0	0	0	0
2004	1	2,522.00	600.45	1	0	0	0	0
2004	2	2,533.00	598.94	1	0	0	0	0
2004	3	2,573.00	601.28	1	0	0	0	0
2004	4	2,577.00	603.63	1	0	0	0	0
2004	5	2,579.00	605.98	1	0	0	0	0
2004	6	2,579.00	607.66	1	0	0	0	0
2004	7	2,598.00	609.33	1	0	0	0	0
2004	8	2,600.00	611.01	1	0	0	0	0
2004	9	2,600.00	614.18	1	0	0	0	0
2004	10	2,592.00	617.35	1	0	0	0	0
2004	11	2,592.00	620.51	1	0	0	0	0
2004	12	2,633.00	618.22	1	0	0	0	0
2005	1	2,666.00	615.92	1	0	0	1	0
2005	2	2,666.00	613.63	1	0	0	1	0
2005	3	2,671.00	613.33	1	0	0	1	0
2005	4	2,674.00	613.02	1	0	0	1	0
2005	5	2,683.00	612.72	1	0	0	1	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 8 of 21

2005	6	2,664.00	612.64	1	0	0	1	0
2005	7	2,699.00	612.55	1	0	0	1	0
2005	8	2,711.00	612.46	1	0	0	1	0
2005	9	2,717.00	620.01	1	0	0	1	0
2005	10	2,720.00	627.56	1	0	0	1	0
2005	11	2,731.00	635.11	1	0	0	1	0
2005	12	2,768.00	640.57	1	0	0	1	0
2006	1	2,774.00	646.03	1	1	0	0	0
2006	2	2,779.00	651.5	1	1	1	0	0
2006	3	2,787.00	650.99	1	1	1	0	0
2006	4	2,802.00	650.48	1	1	1	0	0
2006	5	2,811.00	649.97	1	1	1	0	0
2006	6	2,672.00	648.3	1	0	1	0	0
2006	7	2,671.00	646.64	1	0	1	0	0
2006	8	2,676.00	644.97	1	0	1	0	0
2006	9	2,693.00	638.97	1	0	1	0	0
2006	10	2,701.00	632.96	1	0	1	0	0
2006	11	2,712.00	626.96	1	0	1	0	0
2006	12	2,714.00	630.22	1	0	1	0	0
2007	1	2,734.00	633.48	1	0	1	0	0
2007	2	2,744.00	636.73	1	0	1	0	0
2007	3	2,758.00	639.66	1	0	1	0	0
2007	4	2,757.00	642.59	1	0	1	0	0
2007	5	2,761.00	645.52	1	0	1	0	0
2007	6	2,611.00	650.11	1	0	1	0	0
2007	7	2,614.00	654.69	1	0	1	0	0
2007	8	2,619.00	659.28	1	0	1	0	0
2007	9	2,625.00	661.04	1	0	1	0	0
2007	10	2,660.00	662.81	1	0	1	0	0
2007	11	2,678.00	664.58	1	0	1	0	0
2007	12	2,685.00	665.29	1	0	1	0	0
2008	1	2,704.00	665.99	1	0	1	0	0
2008	2	2,705.00	666.7	1	0	1	0	0
2008	3	2,715.00	667.72	1	0	1	0	0
2008	4	2,720.00	668.73	1	0	1	0	0
2008	5	2,723.00	669.75	1	0	1	0	0
2008	6	2,676.00	669.24	1	0	1	0	0
2008	7	2,681.00	668.73	1	0	1	0	0
2008	8	2,680.00	668.22	1	0	1	0	0
2008	9	2,681.00	669.46	1	0	1	0	0
2008	10	2,691.00	670.7	1	0	1	0	0
2008	11	2,699.00	671.95	1	0	1	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 9 of 21

2008	12	2,721.00	666.87	1	0	1	0	0
2009	1	2,678.00	661.79	1	0	1	0	0
2009	2	2,697.00	656.7	1	0	1	0	0
2009	3	2,703.00	653.95	1	0	1	0	0
2009	4	2,709.00	651.2	1	0	1	0	0
2009	5	2,702.00	648.44	1	0	1	0	0
2009	6	2,640.00	655.64	1	0	1	0	0
2009	7	2,645.00	662.84	1	0	1	0	0
2009	8	2,649.00	670.04	1	0	1	0	0
2009	9	2,658.00	667.2	1	0	1	0	0
2009	10	2,669.00	664.36	1	0	1	0	0
2009	11	2,671.00	661.52	1	0	1	0	0
2009	12	2,682.00	664.27	1	0	1	0	0
2010	1	2,626.00	667.02	1	0	1	0	0
2010	2	2,631.00	669.77	1	0	1	0	0
2010	3	2,634.00	672.65	1	0	1	0	0
2010	4	2,635.00	675.53	1	0	1	0	0
2010	5	2,641.00	678.41	1	0	1	0	0
2010	6	2,651.00	677.81	1	0	1	0	0
2010	7	2,658.00	677.21	1	0	1	0	0
2010	8	2,664.00	676.6	1	0	1	0	0
2010	9	2,668.00	676.93	1	0	1	0	0
2010	10	2,676.00	677.26	1	0	1	0	0
2010	11	2,656.00	677.6	1	0	1	0	0
2010	12	2,632.00	678.04	1	0	1	0	0
2011	1		678.48	1	0	1	0	0
2011	2		678.93	1	0	1	0	0
2011	3		678.31	1	0	1	0	0
2011	4		677.69	1	0	1	0	0
2011	5		677.08	1	0	1	0	0
2011	6		677.22	1	0	1	0	0
2011	7		677.37	1	0	1	0	0
2011	8		677.52	1	0	1	0	0
2011	9		678.19	1	0	1	0	0
2011	10		678.87	1	0	1	0	0
2011	11		679.55	1	0	1	0	0
2011	12		680.51	1	0	1	0	0
2012	1		681.47	1	0	1	0	0
2012	2		682.43	1	0	1	0	0
2012	3		683.33	1	0	1	0	0
2012	4		684.24	1	0	1	0	0
2012	5		685.14	1	0	1	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 10 of 21

6	685.89	1	0	1	0	0
7	686.64	1	0	1	0	0
8	687.39	1	0	1	0	0
9	688.07	1	0	1	0	0
10	688.75	1	0	1	0	0
11	689.42	1	0	1	0	0
12	689.71	1	0	1	0	0
	6 7 8 9 10 11 12	6685.897686.648687.399688.0710688.7511689.4212689.71	6685.8917686.6418687.3919688.07110688.75111689.42112689.711	6685.89107686.64108687.39109688.071010688.751011689.421012689.7110	6685.891017686.641018687.391019688.0710110688.7510111689.4210112689.71101	$\begin{array}{cccccccccccccccccccccccccccccccccccc$



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 11 of 21

Year		Month	GS1000_I	Emp	AftMay05	Aft05	XMissing	YMissing
	2003	1	310	595.15	0	0	0	0
	2003	2	313	599.83	0	0	0	0
	2003	3	313	603.52	0	0	0	0
	2003	4	310	607.2	0	0	0	0
	2003	5	312	610.88	0	0	0	0
	2003	6	316	611.26	0	0	0	0
	2003	7	318	611.64	0	0	0	0
	2003	8	320	612.02	0	0	0	0
	2003	9	323	609.17	0	0	0	0
	2003	10	323	606.32	0	0	0	0
	2003	11	325	603.47	0	0	0	0
	2003	12	325	601.96	0	0	0	0
	2004	1	334	600.45	0	0	0	0
	2004	2	330	598.94	0	0	0	0
	2004	3	331	601.28	0	0	0	0
	2004	4	332	603.63	0	0	0	0
	2004	5	333	605.98	0	0	0	0
	2004	6	334	607.66	0	0	0	0
	2004	7	338	609.33	0	0	0	0
	2004	8	337	611.01	0	0	0	0
	2004	9	337	614.18	0	0	0	0
	2004	10	339	617.35	0	0	0	0
	2004	11	339	620.51	0	0	0	0
	2004	12	339	618.22	0	0	0	0
	2005	1	350	615.92	0	0	0	0
	2005	2	355	613.63	1	0	0	0
	2005	3	351	613.33	1	0	0	0
	2005	4	359	613.02	1	0	0	0
	2005	5	368	612.72	1	0	0	0
	2005	6	371	612.64	1	0	0	0
	2005	7	372	612.55	1	0	0	0
	2005	8	373	612.46	1	0	0	0
	2005	9	378	620.01	1	0	0	0
	2005	10	389	627.56	1	0	0	0
	2005	11	400	635.11	1	0	0	0
	2005	12	401	640.57	1	0	0	0
	2006	1	406	646.03	1	1	0	0
	2006	2	406	651.5	1	1	0	0
	2006	3	407	650.99	1	1	0	0
	2006	4	414	650.48	1	1	0	0
	2006	5	422	649.97	1	1	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 12 of 21

2006	6	429	648.3	1	1	0	0
2006	7	438	646.64	1	1	0	0
2006	8	439	644.97	1	1	0	0
2006	9	440	638.97	1	1	0	0
2006	10	448	632.96	1	1	0	0
2006	11	448	626.96	1	1	0	0
2006	12	451	630.22	1	1	0	0
2007	1	455	633.48	1	1	0	0
2007	2	458	636.73	1	1	0	0
2007	3	461	639.66	1	1	0	0
2007	4	465	642.59	1	1	0	0
2007	5	466	645.52	1	1	0	0
2007	6	465	650.11	1	1	0	0
2007	7	466	654.69	1	1	0	0
2007	8	473	659.28	1	1	0	0
2007	9	472	661.04	1	1	0	0
2007	10	474	662.81	1	1	0	0
2007	11	475	664.58	1	1	0	0
2007	12	481	665.29	1	1	0	0
2008	1	480	665.99	1	1	0	0
2008	2	483	666.7	1	1	0	0
2008	3	477	667.72	1	1	0	0
2008	4	480	668.73	1	1	0	0
2008	5	483	669.75	1	1	0	0
2008	6	484	669.24	1	1	0	0
2008	7	502	668.73	1	1	0	0
2008	8	508	668.22	1	1	0	0
2008	9	506	669.46	1	1	0	0
2008	10	506	670.7	1	1	0	0
2008	11	509	671.95	1	1	0	0
2008	12	510	666.87	1	1	0	0
2009	1	528	661.79	1	1	0	0
2009	2	529	656.7	1	1	0	0
2009	3	530	653.95	1	1	0	0
2009	4	530	651.2	1	1	0	0
2009	5	538	648.44	1	1	0	0
2009	6	548	655.64	1	1	0	0
2009	7	554	662.84	1	1	0	0
2009	8	554	670.04	1	1	0	0
2009	9	556	667.2	1	1	0	0
2009	10	561	664.36	1	1	0	0
2009	11	563	661.52	1	1	0	0



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 13 of 21

2009	12	564	664.27	1	1	0	0
2010	1	572	667.02	1	1	0	0
2010	2	572	669.77	1	1	0	0
2010	3	574	672.65	1	1	0	0
2010	4	575	675.53	1	1	0	0
2010	5	575	678.41	1	1	0	0
2010	6	575	677.81	1	1	0	0
2010	7	576	677.21	1	1	0	0
2010	8	577	676.6	1	1	0	0
2010	9	583	676.93	1	1	0	0
2010	10	583	677.26	1	1	0	0
2010	11	586	677.6	1	1	0	0
2010	12	592	678.04	1	1	0	0
2011	1		678.48	1	1	0	1
2011	2		678.93	1	1	0	1
2011	3		678.31	1	1	0	1
2011	4		677.69	1	1	0	1
2011	5		677.08	1	1	0	1
2011	6		677.22	1	1	0	1
2011	7		677.37	1	1	0	1
2011	8		677.52	1	1	0	1
2011	9		678.19	1	1	0	1
2011	10		678.87	1	1	0	1
2011	11		679.55	1	1	0	1
2011	12		680.51	1	1	0	1
2012	1		681.47	1	1	0	1
2012	2		682.43	1	1	0	1
2012	3		683.33	1	1	0	1
2012	4		684.24	1	1	0	1
2012	5		685.14	1	1	0	1
2012	6		685.89	1	1	0	1
2012	7		686.64	1	1	0	1
2012	8		687.39	1	1	0	1
2012	9		688.07	1	1	0	1
2012	10		688.75	1	1	0	1
2012	11		689.42	1	1	0	1
2012	12		689.71	1	1	0	1



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 14 of 21

Year		Month		GS1500)
	2005		1		57
	2005		2		58
	2005		3		59
	2005		4		57
	2005		5		57
	2005		6		57
	2005		7		59
	2005		8		59
	2005		9		59
	2005		10		59
	2005		11		60
	2005		12		60
	2006		1		60
	2006		2		60
	2006		3		60
	2006		4		60
	2006		5		60
	2006		6		59
	2006		7		60
	2006		8		61
	2006		9		61
	2006		10		61
	2006		11		61
	2006		12		61
	2007		1		62
	2007		2		62
	2007		3		61
	2007		4		62
	2007		5		61
	2007		6		61
	2007		7		61
	2007		8		66
	2007		9		66
	2007		10		67
	2007		11		67
	2007		12		68
	2008		1		68
	2008		2		70
	2008		3		70
	2008		4		70
	2008		5		70



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 15 of 21

2008	6	71
2008	7	58
2008	8	60
2008	9	59
2008	10	59
2008	11	59
2008	12	59
2009	1	60
2009	2	60
2009	3	60
2009	4	60
2009	5	60
2009	6	57
2009	7	57
2009	8	57
2009	9	57
2009	10	57
2009	11	57
2009	12	57
2010	1	52
2010	2	52
2010	3	52
2010	4	53
2010	5	53
2010	6	53
2010	7	53
2010	8	53
2010	9	53
2010	10	53
2010	11	54
2010	12	54



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 16 of 21

Year	Month	GS5000	NManEmp	Bef06	NManEmpAftJun06
2003	1	55	553.39	1	0
2003	2	55	559.4	1	0
2003	3	55	565.11	1	0
2003	4	55	570.82	1	0
2003	5	56	576.53	1	0
2003	6	57	576.55	1	0
2003	7	57	576.57	1	0
2003	8	57	576.59	1	0
2003	9	59	575.86	1	0
2003	10	59	575.13	1	0
2003	11	61	574.41	1	0
2003	12	61	572.07	1	0
2004	1	58	569.73	1	0
2004	2	60	567.39	1	0
2004	3	60	567.68	1	0
2004	4	60	567.97	1	0
2004	5	60	568.25	1	0
2004	6	60	568.85	1	0
2004	7	60	569.44	1	0
2004	8	63	570.04	1	0
2004	9	63	573.87	1	0
2004	10	61	577.7	1	0
2004	11	61	581.54	1	0
2004	12	61	579.08	1	0
2005	1	62	576.63	1	0
2005	2	62	574.18	1	0
2005	3	63	572.94	1	0
2005	4	63	571.69	1	0
2005	5	60	570.45	1	0
2005	6	60	573.17	1	0
2005	7	59	575.89	1	0
2005	8	59	578.61	1	0
2005	9	61	586.17	1	0
2005	10	62	593.74	1	0
2005	11	62	601.31	1	0
2005	12	62	605.06	1	0
2006	1	62	608.82	0	0
2006	2	62	612.57	0	612.57
2006	3	63	611.4	0	611.4
2006	4	64	610.23	0	610.23
2006	5	67	609.05	0	609.05



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 17 of 21

2006	6	64	606.98	0	606.98
2006	7	64	604.91	0	604.91
2006	8	64	602.84	0	602.84
2006	9	64	595.89	0	595.89
2006	10	64	588.93	0	588.93
2006	11	64	581.97	0	581.97
2006	12	64	586.1	0	586.1
2007	1	66	590.23	0	590.23
2007	2	67	594.35	0	594.35
2007	3	66	597.39	0	597.39
2007	4	66	600.43	0	600.43
2007	5	66	603.46	0	603.46
2007	6	67	606.86	0	606.86
2007	7	68	610.25	0	610.25
2007	8	65	613.64	0	613.64
2007	9	64	616.1	0	616.1
2007	10	66	618.56	0	618.56
2007	11	67	621.02	0	621.02
2007	12	67	622.92	0	622.92
2008	1	67	624.82	0	624.82
2008	2	67	626.71	0	626.71
2008	3	67	628.02	0	628.02
2008	4	68	629.32	0	629.32
2008	5	67	630.63	0	630.63
2008	6	67	630.87	0	630.87
2008	7	66	631.11	0	631.11
2008	8	68	631.35	0	631.35
2008	9	66	632.46	0	632.46
2008	10	66	633.57	0	633.57
2008	11	66	634.68	0	634.68
2008	12	66	630.18	0	630.18
2009	1	66	625.68	0	625.68
2009	2	66	621.17	0	621.17
2009	3	67	617.62	0	617.62
2009	4	67	614.07	0	614.07
2009	5	68	610.51	0	610.51
2009	6	65	617.88	0	617.88
2009	7	66	625.24	0	625.24
2009	8	66	632.6	0	632.6
2009	9	66	631.38	0	631.38
2009	10	67	630.16	0	630.16
2009	11	67	628.93	0	628.93



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 18 of 21

2009	12	67	632.25	0	632.25
2010	1	66	635.56	0	635.56
2010	2	66	638.87	0	638.87
2010	3	66	642.83	0	642.83
2010	4	65	646.79	0	646.79
2010	5	65	650.75	0	650.75
2010	6	65	650.23	0	650.23
2010	7	66	649.7	0	649.7
2010	8	66	649.18	0	649.18
2010	9	66	649.06	0	649.06
2010	10	67	648.94	0	648.94
2010	11	67	648.83	0	648.83
2010	12	68	648.7	0	648.7
2011	1		648.56	0	648.56
2011	2		648.43	0	648.43
2011	3		647.49	0	647.49
2011	4		646.54	0	646.54
2011	5		645.59	0	645.59
2011	6		645.59	0	645.59
2011	7		645.59	0	645.59
2011	8		645.58	0	645.58
2011	9		646.23	0	646.23
2011	10		646.89	0	646.89
2011	11		647.54	0	647.54
2011	12		648.51	0	648.51
2012	1		649.48	0	649.48
2012	2		650.46	0	650.46
2012	3		651.38	0	651.38
2012	4		652.3	0	652.3
2012	5		653.23	0	653.23
2012	6		653.95	0	653.95
2012	7		654.68	0	654.68
2012	8		655.41	0	655.41
2012	9		656.06	0	656.06
2012	10		656.71	0	656.71
2012	11		657.36	0	657.36
2012	12		657.61	0	657.61


Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 19 of 21

Year	Month	GSLrg	NManEmp	AftFeb04	AftJun06
2003	1	11	553.39	0	0
2003	2	11	559.4	0	0
2003	3	11	565.11	0	0
2003	4	11	570.82	0	0
2003	5	11	576.53	0	0
2003	6	11	576.55	0	0
2003	7	11	576.57	0	0
2003	8	11	576.59	0	0
2003	9	11	575.86	0	0
2003	10	11	575.13	0	0
2003	11	11	574.41	0	0
2003	12	11	572.07	0	0
2004	1	11	569.73	0	0
2004	2	10	567.39	1	0
2004	3	10	567.68	1	0
2004	4	10	567.97	1	0
2004	5	10	568.25	1	0
2004	6	10	568.85	1	0
2004	7	10	569.44	1	0
2004	8	10	570.04	1	0
2004	9	10	573.87	1	0
2004	10	10	577.7	1	0
2004	11	10	581.54	1	0
2004	12	10	579.08	1	0
2005	1	10	576.63	1	0
2005	2	10	574.18	1	0
2005	3	10	572.94	1	0
2005	4	10	571.69	1	0
2005	5	10	570.45	1	0
2005	6	10	573.17	1	0
2005	7	10	575.89	1	0
2005	8	10	578.61	1	0
2005	9	10	586.17	1	0
2005	10	10	593.74	1	0
2005	11	10	601.31	1	0
2005	12	10	605.06	1	0
2006	1	10	608.82	1	0
2006	2	10	612.57	1	1
2006	3	10	611.4	1	1
2006	4	10	610.23	1	1
2006	5	10	609.05	1	1



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 20 of 21

2006	6	11	606.98	1	1
2006	7	11	604.91	1	1
2006	8	11	602.84	1	1
2006	9	11	595.89	1	1
2006	10	11	588.93	1	1
2006	11	11	581.97	1	1
2006	12	11	586.1	1	1
2007	1	11	590.23	1	1
2007	2	11	594.35	1	1
2007	3	11	597.39	1	1
2007	4	11	600.43	1	1
2007	5	11	603.46	1	1
2007	6	11	606.86	1	1
2007	7	11	610.25	1	1
2007	8	11	613.64	1	1
2007	9	11	616.1	1	1
2007	10	11	618.56	1	1
2007	11	11	621.02	1	1
2007	12	11	622.92	1	1
2008	1	11	624.82	1	1
2008	2	11	626.71	1	1
2008	3	11	628.02	1	1
2008	4	11	629.32	1	1
2008	5	11	630.63	1	1
2008	6	11	630.87	1	1
2008	7	11	631.11	1	1
2008	8	11	631.35	1	1
2008	9	11	632.46	1	1
2008	10	11	633.57	1	1
2008	11	11	634.68	1	1
2008	12	11	630.18	1	1
2009	1	11	625.68	1	1
2009	2	11	621.17	1	1
2009	3	11	617.62	1	1
2009	4	11	614.07	1	1
2009	5	11	610.51	1	1
2009	6	11	617.88	1	1
2009	7	11	625.24	1	1
2009	8	11	632.6	1	1
2009	9	11	631.38	1	1
2009	10	11	630.16	1	1
2009	11	11	628.93	1	1



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #1 Attachment 1 Filed: 2011-09-08 Page 21 of 21

2009	12	11	632.25	1	1
2010	1	12	635.56	1	1
2010	2	12	638.87	1	1
2010	3	12	642.83	1	1
2010	4	12	646.79	1	1
2010	5	12	650.75	1	1
2010	6	12	650.23	1	1
2010	7	12	649.7	1	1
2010	8	12	649.18	1	1
2010	9	12	649.06	1	1
2010	10	12	648.94	1	1
2010	11	12	648.83	1	1
2010	12	12	648.7	1	1
2011	1		648.56	1	1
2011	2		648.43	1	1
2011	3		647.49	1	1
2011	4		646.54	1	1
2011	5		645.59	1	1
2011	6		645.59	1	1
2011	7		645.59	1	1
2011	8		645.58	1	1
2011	9		646.23	1	1
2011	10		646.89	1	1
2011	11		647.54	1	1
2011	12		648.51	1	1
2012	1		649.48	1	1
2012	2		650.46	1	1
2012	3		651.38	1	1
2012	4		652.3	1	1
2012	5		653.23	1	1
2012	6		653.95	1	1
2012	7		654.68	1	1
2012	8		655.41	1	1
2012	9		656.06	1	1
2012	10		656.71	1	1
2012	11		657.36	1	1
2012	12		657.61	1	1



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

USL

2,885

3,084

3,207

3,093

3.093

StLgt

54,354

54,353

54,697

55,051

56,001

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.2 - Are the proposed customers/connections and load forecasts (both
4	kWh and kW) for the test year appropriate?
5	
6	Energy Probe Question #25 - Ref: Exhibit C1, Tab 1, Sch. 1, Table 11
7	Please provide the actual number of customers for the most recent month available in
8	2011 for each of the classes shown in Table 11. Please also provide the number of
9	customers for each rate class for the corresponding month in 2010.
10	
11	Response
12	
13	The following table provides the actual number of customers for the most recent month
14	available in 2011 for each of the classes shown in Table 11 of Exhibit C1-1-1. Also
15	provided is the number of customers for each rate class for the corresponding month in
16	2010.
17	
18	Table 1 – Year to July and Year End Customer/Connection Numbers

10				iy and real	Linu Gusit			inder 5
Year	Res	GS50	GS1000NI	GS1000I	GS1500	GS5000	GSLRG	TOTAL
2010	271,720	23,413	2,658	576	53	66	12	298,498
to July								
2010	273,758	23,548	2,632	592	54	68	12	300,664
2011	275,969	23,607	2,719	597	56	69	11	303,028
to July								
2011	280,231	23,587	2,653	585	54	67	12	307,189
2012	284,840	23,678	2,676	591	54	67	12	311,918

19



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.2 - Are the proposed customers/connections and load forecasts (both
4	kWh and kW) for the test year appropriate?
5	
6	Energy Probe Question #26 - Ref: Exhibit C1, Tab 1, Schedule 1
7	Please explain how the system peak forecast shown in Table 4 and the resulting
8	adjusted system peak forecast shown in Table 6 have been utilized to determine the
9	class demand forecast in kW shown in Table 14. If it has not been used to determine
10	the demand forecast shown in Table 14, please explain what the forecast shown in
11	Table 4 has been utilized for.
12	
13	Response
14 15	The forecast of system peak is not used in developing the forecast of the billing
16	determinants by customer class. Billing forecasts are estimated directly using the billed
17	month data.
18	
19	Table 4 is utilized to show actual and forecasted system peak for the years 2003 to
20	2012.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.2 - Are the proposed customers/connections and load forecasts (both
4	kWh and kW) for the test year appropriate?
5	
6	Energy Probe Question #27 - Ref: Exhibit C1, Tab 1, Sch. 2, Attachment Y
7	Please update the 2011 Forecast Distribution Revenue table shown on page 8 to include
8	weather normal data for all months where actual data is now available.
9	
10	Response
11	
12	Please see the attached update to the 2011 Forecast Distribution Revenue table using
13	actual customer and connection numbers and weather normal actual data up to July
14	2011. Also updated is the forecast for August to December based on the changes to
15	suite metering.



2011 Forecast Distribution Revenue updated with actual customer numbers and weather normal data to July

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average/Total
Customer/Connection Numbers													
RESIDENTIAL	274.177	274.641	1 274.864	275.092	275.315	5 275.69	7 275.969	276.540	276.885	277.731	278.076	278.421	276.117
GENERAL SERVICE < 50KW	23 574	23 571	23,580	23 581	23.58	23,61	5 23.607	23 556	23 564	23 572	23 579	23 587	23 581
GENERAL SERVICE 50-1000KW NONI	2 639	2 649	2650	2 657	2 666	20,01	2 2 700	2 644	2 646	2 648	2 651	2 653	2 659
GENERAL SERVICE 50-1000KW INT	592	594	5 597	594	594	1 59	6 597	590	589	589	589	589	593
GENERAL SERVICE 1000-1500KW	56	56	5 56	56	56	5 5	6 56	54	54	54	54	54	55
GENERAL SERVICE 1500-5000 KW	68	10	89 8	68	6	, , , , , , , , , , , , , , , , , , ,	00 00 00 8	67	67	67	67	67	68
LARGE LISERS	11	11	1 11	11	11	, i	1 11	12	12	12	12	12	11
STREET LIGHTING	54 497	54.487	7 54528	54 535	54 608	54.74	0 54.697	54 707	54 857	5/ 010	54 981	55.051	54 725
	2 091	3,000	3 2 1 2 9	2 1 / 9	2 19	1 3 2 2	2 2 2 2 0 7	2,002	3,003	3,003	2,002	3 003	2 1 2 9
SENTINEL LIGHTS	82	9,000	2 82	82	81	0,22	2 5,207	9,000	82	82	82	82	82
STANDRY 1500-5000 KW	1	. 02	1 2	2			2 02	2	2	2	2	2	2
			. 2	2	-	-	2 2	- <u>-</u>	2	2	2	2	2
kWh/kW Sales													
RESIDENTIAL	234 156 830	209 464 880	211 862 120	167 507 010	161 372 840	184 875 10	0 218 723 550	196 804 437	163 019 447	167 116 585	182 913 679	217 755 546	2 315 572 025
GENERAL SERVICE < 50KW	74,395,750	66.357.000	68,771,630	61,605,040	58,892,970	65,100,28	0 67.849.340	63,703,165	58.016.703	58,860,786	62,859,995	72,251,923	778.664.582
GENERAL SERVICE 50-1000KW NONI	350 893	300.639	395.603	295,889	390 282	351.06	7 296.006	347 118	344 894	338 512	352 361	357 375	4 120 641
GENERAL SERVICE 50-1000KW INT	197 986	196 577	7 191 495	193 882	202,308	214.50	4 199,536	191 976	194 258	197 726	190,166	192 448	2 362 864
GENERAL SERVICE 1000-1500KW	62,420	62,000	61 612	50 252	61 520	64.93	1 66 209	60.444	60.026	65 072	66 204	64,662	774 590
GENERAL SERVICE 1500-1500KW	144 666	138.005	3 142 679	141 388	150 100	150.87	3 168 742	160.029	159,828	147 511	147 310	135 047	1 796 268
	99,600	02 141	1 02/21	90,650	04.066	5 116.12	6 04 656	116 424	112 129	104 207	07.426	04 512	1 104 296
ETREET LICHTING	10.095	10.09	1 32,431	10.090	10,100	10,12	7 10.097	10,434	10 117	104,307	10,420	10,196	1,134,300
	1 507 400	1 204 720	1 506 940	1 275 090	1 500 460	1 440 92	0 1 266 000	1 490 710	1 470 270	1 407 024	1 425 167	1 479 229	17 292 027
SENTINEL LIQUES	1,507,490	1,294,720	1,590,640	1,375,060	1,509,460	1,440,62	0 1,300,990	1,400,719	1,479,370	1,427,934	1,425,167	1,470,330	17,302,927
STANDBY 1500-5000 KW	3,600	3,600	7,200	7,200	7,200	7,20	0 7,200	7,200	7,200	7,200	7,200	7,200	79,200
Rates - Fixed Monthly													
RESIDENTIAL	¢ 9.52	¢ 95') ¢ 952	¢ 9.52	¢ 95/	1 ¢ 95	/ ¢ 954	\$ 954	¢ 954	¢ 954	¢ 954	¢ 954	
CENERAL SERVICE -EOVW	\$ 0.02 ¢ 1470	φ 0.02 ¢ 14.70	2 0 0.02 0 C 1470	\$ 0.0Z	¢ 14.76	+	4 0.04 c c 147c	φ 0.04 ¢ 14.76	¢ 0.04	\$ 0.04 ¢ 14.76	\$ 0.04 ¢ 14.70	\$ 0.04 \$ 14.76	
GENERAL SERVICE SUKW	\$ 14.73	\$ 14.73	3 3 14.73	\$ 14.73	\$ 14.70	5 5 14.7	6 \$ 14.76 4 6 054.04	5 14.76 C 054.04	\$ 14.76	\$ 14.76	\$ 14.76	\$ 14.76	
GENERAL SERVICE 50-1000KW NONI	\$ 250.76	\$ 250.76	5 5 250.76	\$ 250.76	\$ 251.2	1 \$ 251.2	1 \$ 251.21	\$ 251.21	\$ 251.21	\$ 251.21	\$ 251.21	\$ 251.21	
GENERAL SERVICE 30-1000KW INT	\$ 200.70	a 200.70	5 5 250.76	\$ 200.70 © 050.70	φ 201.2 ¢ 054.0	I ⊅ 201.2	1 \$ 201.21	φ 201.21 ¢ 054.04	φ 201.21 ¢ 054.04	\$ 201.21 ¢ 054.04	\$ 201.21 ¢ 054.04	\$ 201.21	
GENERAL SERVICE 1000-1500KW	\$ 250.76	\$ 250.76	5 5 250.76	\$ 250.76	\$ 251.2	1 \$ 251.2	1 \$ 251.21	\$ 251.21	\$ 251.21	\$ 251.21	\$ 251.21	\$ 251.21	
GENERAL SERVICE 1500-5000 KW	\$ 4,032.07	\$ 4,032.07	7 \$ 4,032.07	\$ 4,032.07	\$ 4,039.33	3 \$ 4,039.3	3 \$ 4,039.33	\$ 4,039.33	\$ 4,039.33	\$ 4,039.33	\$ 4,039.33	\$ 4,039.33	
LARGE USERS	\$ 14,643.46	\$ 14,643.46	5 \$ 14,643.46	\$ 14,643.46	\$ 14,669.82	2 \$ 14,669.8	2 \$ 14,669.82	\$ 14,669.82	\$ 14,669.82	\$ 14,669.82	\$ 14,669.82	\$ 14,669.82	
STREET LIGHTING	\$ 0.49	\$ 0.49	9 \$ 0.49	\$ 0.49	\$ 0.49	9 \$ 0.4	9 \$ 0.49	\$ 0.49	\$ 0.49	\$ 0.49	\$ 0.49	\$ 0.49	
UNMETERED SCATTERED LOADS	\$ 4.03	\$ 4.03	3 \$ 4.03	\$ 4.03	\$ 4.04	1 \$ 4.0	4 \$ 4.04	\$ 4.04	\$ 4.04	\$ 4.04	\$ 4.04	\$ 4.04	
STANDBY 1500-5000 KW	\$ 107.83	\$ 107.83	3 \$ 107.83	\$ 107.83	\$ 108.02	2 \$ 108.0	2 \$ 108.02	\$ 108.02	\$ 108.02	\$ 108.02	\$ 108.02	\$ 108.02	
Rates - Volumetric Charge													
RESIDENTIAL	\$ 0.0207	\$ 0.0207	7 \$ 0.0207	\$ 0.0207	\$ 0.0207	7 \$ 0.020	7 \$ 0.0207	\$ 0.0207	\$ 0.0207	\$ 0.0207	\$ 0.0207	\$ 0.0207	
GENERAL SERVICE < 50KW	\$ 0.0185	\$ 0.0185	5 \$ 0.0185	\$ 0.0185	\$ 0.0185	5 \$ 0.018	5 \$ 0.0185	\$ 0.0185	\$ 0.0185	\$ 0.0185	\$ 0.0185	\$ 0.0185	
GENERAL SERVICE 50-1000KW NONI	\$ 3.0325	\$ 3.0325	5 \$ 3.0325	\$ 3.0325	\$ 3.0380	\$ 3.038	0 \$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	
GENERAL SERVICE 50-1000KW INT	\$ 3.0325	\$ 3.0325	5 \$ 3.0325	\$ 3.0325	\$ 3.0380	\$ 3.038	0 \$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	
GENERAL SERVICE 1000-1500KW	\$ 3.0325	\$ 3.0325	5 \$ 3.0325	\$ 3.0325	\$ 3.0380	\$ 3.038	0 \$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	\$ 3.0380	
GENERAL SERVICE 1500-5000 KW	\$ 2.8962	\$ 2.8962	2 \$ 2.8962	\$ 2.8962	\$ 2.9014	1 \$ 2.901	4 \$ 2.9014	\$ 2.9014	\$ 2.9014	\$ 2.9014	\$ 2.9014	\$ 2.9014	
LARGE USERS	\$ 2.7725	\$ 2.7725	5 \$ 2.7725	\$ 2.7725	\$ 2.7775	5 \$ 2.777	5 \$ 2.7775	\$ 2.7775	\$ 2.7775	\$ 2.7775	\$ 2.7775	\$ 2.7775	
STREET LIGHTING	\$ 3.4501	\$ 3.4501	1 \$ 3.4501	\$ 3.4501	\$ 3.4563	3 \$ 3.456	3 \$ 3.4563	\$ 3.4563	\$ 3.4563	\$ 3.4563	\$ 3.4563	\$ 3.4563	
UNMETERED SCATTERED LOADS	\$ 0.0200	\$ 0.0200	0.0200	\$ 0.0200	\$ 0.0002	2 \$ 0.000	2 \$ 0.0002	\$ 0.0002	\$ 0.0002	\$ 0.0002	\$ 0.0002	\$ 0.0002	
STANDBY 1500-5000 KW	\$ 1.3200	\$ 1.3200	0 \$ 1.3200	\$ 1.3200	\$ 1.3224	4 \$ 1.322	4 \$ 1.3224	\$ 1.3224	\$ 1.3224	\$ 1.3224	\$ 1.3224	\$ 1.3224	
Revenue													
RESIDENTIAL	\$ 7,183,034.42	\$ 6.675.864.34	4 \$ 6,727,387.16	\$ 5.811.178.95	\$ 5,691,607.89	9 \$ 6.181.366 9	5 \$ 6.884.352.75	\$ 6,435,499.53	\$ 5,739,103.44	\$ 5.831.133.91	\$ 6.161.080.23	\$ 6.885.251.82	\$ 76,206,861.38
GENERAL SERVICE < 50KW	\$ 1723 566 40	\$ 1 574 805 33	3 \$ 1,619,608,56	\$ 1 487 041 37	\$ 1 437 678 83	\$ 1 552 912 5	8 \$ 1,603,652,11	\$ 1 526 197 62	\$ 1 421 111 29	\$ 1 436 839 89	\$ 1,510,938,15	\$ 1,684,801,60	\$ 18 579 153 71
GENERAL SERVICE 50-1000KW NONI	\$ 1,725,838 15	\$ 1.575.699.94	4 \$ 1.864.181.52	\$ 1.563.552.71	\$ 1,855,403 18	\$ 1,745,310 9	7 \$ 1,579,794 12	\$ 1,718,741.96	\$ 1,712,548,65	\$ 1,693,703,92	\$ 1,736,308.02	\$ 1,752,163,96	\$ 20.523.247.10
GENERAL SERVICE 50-1000KW INT	\$ 748 843 50	\$ 745 320 44	1 \$ 730 413 40	\$ 736 898 61	\$ 763 831 81	\$ 801.384.0	8 \$ 756 162 24	\$ 731 322 00	\$ 738 222 96	\$ 748 583 44	\$ 725 697 61	\$ 732 711 62	\$ 8 959 391 78
GENERAL SERVICE 1000-1500KW	\$ 206 420 54	\$ 202 084 61	1 \$ 200,881,80	\$ 194.029.11	\$ 201 022 8	3 \$ 211 023 1	5 \$ 215 510 61	\$ 224 536 20	\$ 223 264 88	\$ 213 992 23	\$ 215 271 50	\$ 210,008,49	\$ 2,518,046,00
GENERAL SERVICE 1500-5000 KW	\$ 693 163 38	\$ 676 745 34	5 \$ 687,406.98	\$ 683 669 41	\$ 710 450 19	3 \$ 738,530,6	3 \$ 768.300.68	\$ 734 942 43	\$ 734 360 20	\$ 698 622 12	\$ 698.040.72	\$ 662,460,62	\$ 8 486 701 70
LARGE USERS	\$ 406 720 81	\$ 419 310 71	1 \$ 417 342 20	\$ 409 631 94	\$ 425 132 29	3 \$ 483,006,0	9 \$ 424 275 34	\$ 499 434 40	\$ 487 500 02	\$ 465 751 48	\$ 446 639 87	\$ 438 546 83	\$ 5324 192 94
STREET LIGHTING	\$ 61.407.06	\$ 61 496 13	R \$ 61.524.25	\$ 61 531 07	\$ 61 695 52	2 \$ 61 700 3	4 \$ 61 662 67	\$ 61 740 02	\$ 61.849.29	\$ 61 057 14	\$ 62.066.52	\$ 62 170 47	\$ 7/0 000 99
	\$ 42566.22	¢ 01,400.10	7 \$ 44.592 04	\$ 40.189.04	\$ 13 152 12	γ υι,/20.2 3 \$ 13.305.0	4 \$ 13,000.07	\$ 12.701.02	\$ 12 701 50	\$ 12,781.21	\$ 12 780 75	\$ 1270120	\$ 260 345 24
STANDRY 1500-5000 KW	¢ 42,000.20	¢ 30,303.37	φ 44,002.94 2 ¢ 0.710.66	¢ 40,100.04	¢ 10,100.10	γ 10,000.0 0 ¢ 0,707.0	− ψ 10,229.00 2 € 0,727.20	¢ 12,731.00	¢ 0.727.22	¢ 12,701.31	¢ 12,700.75	¢ 0.727.20	¢ 107.057.54
TOTAI	9 4,009.83 \$ 12 706 514 24	¢ 4,009.80	ο φ 9,/19.00 1 € 10.063 0/0.46	\$ 10 007 440 PC	9 9,131.32 © 11 160 742 02	- ψ 9,/3/.3 0 € 11 700 107 0	∠ ψ 3,/3/.3∠ 5 € 10.216.670.54	¢ 11 05/ 0/2 22	ψ 9,/0/.32 © 11 1/0 /00 60	φ 3,/3/.32 © 11 173 103 76	9 9,737.32 © 11 579 560 70	9 9,737.3Z	¢ 1/1 71/ 909 96
Smort Motor Euroding Addor	¢ 12,130,011.01	¢ 506.674.000.04	+ + 12,303,049.10	¢ 10,557,440.00 ¢ 507.450.40	¢ 11,103,712.02	- ψ 11,100,101.0 ε ε 400,007.0	0 ¢ 12,010,070.01	¢ 11,304,343.33	¢ 10,140,400.00 ¢ 101.001.00	¢ 11,173,102.70 ¢ 422,624.77	¢ 11,070,000.70	¢ 12,400,000.10	¢ 5 479 276 46
Total with Smart Meters	φ 000,076.06	φ ουσ,σ/1.20	υ φ ουτ,υσ7.68	φ 507,459.12	φ 429,203.10	γ 4∠9,697.9	υ φ 430,260.56	φ 430,910.38	φ 431,421.32	φ 432,034.77	g 433,139.01	φ 433,043.51	\$ 147,193,174.52



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.2 Interrogatory #6 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE	
2		
3	Issue 3.2 - Are the proposed customers/connections and	d load forecasts (both kWh
4	and kW) for the test year appropriate?	
5		
6	VECC Question #30 - Ref: Exhibit C1, Tab 1, Schedule 1, pa	ages 12-14
7	a) Please provide the actual customer count, by class, as o	f June 30, 2011.
8	b) Does Table 12 set out: a) the Number of Customers with	h Load Displacement
9	Generation or b) the Number of Customers with Load Dis	splacement Generation
10	Requiring Standby Service?	
11		
12	Response	
13		
14	a) Please see the response to interrogatory K3-2-2 (EP#25), which provides the actual
15	customer count, by class as of July 31, 2011.	
16		
17	b) Table 12 of Exhibit C1-1-1 shows the number of custome	ers with load displacement
18	requiring standby service.	



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.3 - Is the impact of CDM appropriately reflected in the load forecast?
4	
5	Board Staff Question #30 - Ref: Exh C1-1-1
6	On p7, it states, "On November 12, 2010, the Ontario Energy Board (the "Board") issued
7	a Decision and Order which specified the CDM targets which Hydro Ottawa must meet
8	as a condition of its licence. These targets are 85.260 MW for the 2014 Net Annual Peak
9	Demand savings and 374.730 GWh for the 2011-2014 Net Cumulative Energy savings."
10	
11	In Table 6 of the above reference, Hydro Ottawa proposed to reduce its 2012 load
12	forecast by 165 GWh to account for CDM adjustment.
13	
14	If the Board approved the proposed CDM adjustment for 2012, what would be the
15	cumulative total load reduction made in relation to this CDM adjustment for each of the
16	years 2012 to 2014? If the total is different as compared to Hydro Ottawa's CDM targets,
17	please explain why.
18	
19	Response
20	
21	If the Ontario Energy Board (the "Board") approved the proposed conservation and
22	demand management ("CDM") adjustment of 165 GWh for 2012, then the cumulative
23	total load reduction made in relation to this CDM adjustment for each of the years 2012
24	to 2014 would be as shown in Table 5 of Exhibit C1-1-1, as follows:
25	

Year	GWh
2012	165.0
2013	273.8
2014	375.1

26

27 Note that this is only different from the 374.730 GWh for the 2011-2014 Net Cumulative

28 Energy savings specified by the Board as a result of rounding.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #2 Filed: 2011-09-08 Page 1 of 3

1	3.	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	ue 3.3 - Is the impact of CDM appropriately reflected in the load forecast?
4		
5	<u>En</u>	ergy Probe Question #28 - Ref: Exhibit C1, Tab 1, Schedule 1
6	a)	Please confirm that the net cumulative energy savings shown in Table 5 imply that
7		there is no persistence in the savings. For example, the 60 GWh savings in 2011
8		are not repeated in the following years. Does Hydro Ottawa believe this is a
9		reasonable assumption?
10	b)	In the EB-2010-0132 Decision and Order for Hydro One Brampton Networks Inc.
11		dated April 4, 2011, the Board found that the appropriate CDM adjustment to be
12		included in the load forecast for 2011 was 19 GWh, which represented 10% of its
13		cumulative CDM target for the period 2011-2014. The Board stated that it was of the
14		view that CDM targets would be achieved on an incremental, staged basis. Based
15		on this, please provide a revised Table 5 and Table 6 that reflects net cumulative
16		energy savings based on 10% of the 2011-2014 cumulative target of 374.730 GWh,
17		20% for 2012, 30% for 2013 and 40% for 2014. Please confirm that the net
18		cumulative energy savings for 2014 is equal to 374.730 GWh and that the cumulative
19		savings for 2012 are 112.419 GWh.
20	c)	Why has Hydro Ottawa determined that the 85.260 MW target for the 2014 net
21		annual peak demand saving is a cumulative figure rather than the target for 2014?
22		Assuming the 85.260 MW figure is the target for 2014 and that it is achieved on an
23		incremental basis of 25% in each of 2011 through 2014, please confirm that the
24		cumulative net annual peak demand saving for 2012 would be 42.63 MW.
25	d)	What is the impact on the revenue requirement, including taking into account the
26		impact on the working capital allowance calculation, if the adjustment to the forecast
27		for CDM is a reduction in the system peak of 42.63 MW and the reduction in the net
28		cumulative energy savings is 112.419 GWh?
29		
30		



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #2 Filed: 2011-09-08 Page 2 of 3

1 Response

- 2
- a) In Table 5 of Exhibit C1-1-1 there is persistence in the net cumulative energy
- 4 savings. For example, the 60 GWh savings in 2011 are assumed to also be saved in
- 5 2012-2014. Hydro Ottawa Limited ("Hydro Ottawa") believes that this is a
- 6 reasonable assumption.
- 7
- 8 b) Please see the revised Tables 5 and 6 from Exhibit C1-1-1 below using the required
- 9 10% of the total targets for 2011, 20% for 2012, 30% for 2013 and 40% for 2014.
- 10 Note that in the applied for load forecast Hydro Ottawa did used a staged approach
- 11 in applying CDM targets to the load forecast, as follows: 16% for 2011, 28% for
- 12 2012, 29% for 2013 and 27% for 2014.
- 13

Table 5 – Estimated Achievement of CDM Targets

	Net Annual	Peak Demand	Net Cumulative Energy			
	Saving	gs (MW)	Savings (GWh)			
	Per Year	Cumulative	Per Year	Cumulative		
2011	8.57	8.57	37,510	37,510		
2012	17.14	25.72	75,020	112,530		
2013	25.72	51.43	112,530	225,060		
2014	34.29	85.72	150,040	375,100		

14

15

Table 6 – CDM Adjusted Load Forecast

	Forecasted System Peak (MW)				Forecasted System Energy (GWh)			
	Without	With	CDM	%	Without	With	CDM	%
	CDM	CDM	Reduction	Change	CDM	CDM	Reduction	Change
2011	1,435	1,426	9	-0.6%	7,957	7,919.5	37.5	-0.5%
2012	1,448	1,422	26	-1.8%	8,030	7,917.5	112.5	-1.4%

16

17 The net cumulative energy savings for 2014 is 375,100 GWh and for 2012 is 112,530

18 GWh. Note this is slightly different from the Ministry targets due to rounding.

19



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #2 Filed: 2011-09-08 Page 3 of 3

1 c) It is not clear what the difference is between the 85.260 MW target for the 2014 net 2 annual peak demand saving being a cumulative figure rather than the target for 3 2014. It is Hydro Ottawa's understanding that the 85.260 MW target for the 2014 net annual peak demand saving is an allocation of the provincial 1,330 MW of provincial 4 5 peak demand persisting at the end of the four year period. If MW savings from 2011 6 to 2013 persist in 2014 then the target of 85.260 MW has been met in 2014. 7 Assuming that the 85.260 MW figure is the target for 2014 and that it is achieved on 8 an incremental basis of 25% in each of 2011 through 2014, the cumulative net 9 annual peak demand saving for 2012 would be 42.63 MW. 10 The impact on the revenue requirement, if the adjustment to the forecast for CDM is d) 11 a reduction in the system peak of 42.63 MW and the reduction in the net cumulative 12 energy savings is 112.419 GWh would only be the effect on the working capital 13 allowance calculation due to the change in the cost of power. 14 The proposed scenario would result in a forecasted system peak of 1405.37 MW 15 (compared to the proposed 1,410MW) which would result in a lower cost of power, 16 due to transmission costs. In addition, the revised forecasted system energy of 17 7,917.6 GWh (compared to the proposed 7,865 GWh) would result in a higher cost of 18 power, due to commodity costs. As a result, Hydro Ottawa considers the impact on 19 revenue requirement to be minimal.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.3 - Is the impact of CDM appropriately reflected in the load forecast?
4	
5	Energy Probe Question #29 - Ref: Exhibit C1, Tab 1, Sch. 1, page 9 & Table 6
6	How were the CDM adjustments shown in Table 6 allocated to the various rate classes
7	in terms of the class sales and demand forecasts?
8	
9	Response
10	
11	The conservation and demand management adjustments shown in Table 6 of Exhibit
12	C1-1-1 are allocated equally across the various rate classes in terms of class sales and
13	demand forecasts. That is for energy, all 2012 class forecasts have been multiplied by
14	7865/8030 and for demand all 2012 class forecasts have been multiplied by 1410/1448.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.3 - Is the impact of CDM appropriately reflected in the load forecast?
4	
5	Energy Probe Question #30 - Ref: Exhibit C1, Tab 1, Sch. 1, Tables 9 & 14
6	Please provide a table that shows the ratio of kW/kWh for the historical and forecast
7	years for each of the classes shown in Table 14 using the weather normalized sales by
8	class shown in Table 9.
9	
10	Response
11	
12	The following Table provides the ratios of kW/MWh for the historical and forecast years
13	for each of the classes in Table 14 of Exhibit C1-1-1 using the weather normalized sales
14	by class shown in Table 9 of Exhibit C1-1-1.
15	

Year	GS1000NI	GS1000I	GS1500	GS5000	GSLRG	S/L	Total
2005	2.55	2.25	2.14	2.17	1.85	2.81	1.37
2006	2.52	2.20	2.18	2.15	1.80	2.78	1.36
2007	2.55	2.20	2.13	2.10	1.77	2.79	1.35
2008	2.50	2.19	2.15	2.06	1.78	2.96	1.35
2009	2.51	2.25	2.25	2.10	1.80	2.96	1.36
2010	2.49	2.17	2.14	2.02	1.71	2.65	1.32
2011	2.59	2.33	2.28	2.11	1.81	2.96	1.38
2012	2.57	2.34	2.28	2.08	1.78	2.98	1.37

16



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #5 Filed: 2011-09-08 Page 1 of 3

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.3 - Is the impact of CDM appropriately reflected in the load forecast?
4	
5	VECC Question #31 - Ref: Exhibit C1, Tab 1, Schedule 1, pages 6-7; OEB Staff IR #30
6	a) Please describe the current status of Ottawa's 2011 CDM program activity.
7	b) Please complete the following schedule setting out the annual and cumulative
8	energy savings anticipated from Ottawa Hydro's CDM programs (Note: xx
9	designates areas where there should be entries and Total Cumulative Savings as of

- 10 2014 should equate to Ottawa's 374.73 GWh target).
- 11

	Year					
Program Year	2011	2012	2013	2014		
2011 Programs	XX	XX	XX	XX		
2012 Programs		XX	XX	XX		
2013 Programs			XX	XX		
2014 Programs				XX		
Total Annual	XX	XX	XX	XX		
Savings						
Total Cumulative	XX	XX	XX	XX		
Savings						

- 12
- 13 c) Is the 374.03 target measured as "billed savings" or "purchased power savings"?
- 14 d) If "billed savings", does the adjustment that Ottawa has made to the 2012 purchased

15 power forecast need to be revised?

16

17 Response

- 18
- 19 a) Hydro Ottawa Limited ("Hydro Ottawa") is currently offering all available provincial
- 20 Conservation and Demand Management ("CDM") Programs in its service territory.
- 21 This is consistent with the CDM Strategy filed with the Ontario Energy Board which
- has been included as Attachment 1 to Exhibit K1-1-7 (CCC#5). The chart below also
- 23 identifies additional CDM Initiatives that will be available in Hydro Ottawa's territory in
- 24 the coming months. The Initiatives that show a "Pending" status have recently been
- 25 released by the Ontario Power Authority ("OPA"). Hydro Ottawa is working



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #5 Filed: 2011-09-08 Page 2 of 3

- 1 aggressively to launch these programs. Programs marked N/A ("Not Available") are
- 2 planned but have not been made available by the OPA at this time.

Residential Program	Status
Conservation Instant Coupon Booklet	Active
HVAC Incentives Initiative	Active
Bi-Annual Retailer Event	Active
Appliance Retirement	Active
Appliance Exchange	Active
Home Energy Assessment Tool	N/A
Midstream Electronics	N/A
Midstream Pool Equipment	N/A
Residential Demand Response Extension	Active
Residential Demand Response	Pending
Residential New Construction	Active
Home Assistance Program	Pending
Commercial and Institutional Program	
Energy Audit	Active
Efficiency: Equipment Replacement	Active
Direct Install Lighting & Water Heating	Active
The New Construction Initiative HPNC	Active
Direct Service Space Cooling & Refrigeration	N/A
Building Commissioning	Active
Small Commercial Demand Response	Pending

3

Industrial Program	
Process and System Upgrades	Active
Monitoring and Targeting	Pending
Energy Manager	Pending
Industrial Electricity Retrofit	Active
Demand Response 1	Active
Demand Response 3	Active



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #5 Filed: 2011-09-08 Page 3 of 3

1 b)

2

Conservatio	n and Demand	l Management	Energy	Savings GWh
0011001 14110	in and Bonnano	managomon		ouringo orrin

Program Year	2011	2012	2013	2014
2011 Programs	60.016	60.016	60.016	60.016
2012 Programs		105.028	105.028	105.028
2013 Programs			108.779	108.779
2014 Programs				101.277
Total Annual Savings	60.016	165.044	273.823	325.100
Total Cumulative Savings	60.016	165.044	273.823	325.100

3

4 The Total Cumulative Savings equals 325.100 GWh which for all intents and

5 purposes is equal to Ottawa Hydro's 374.73 GWh target.

6

7 b) Hydro Ottawa has assumed that the 374.03 GWh target is measures as a purchased

- 8 power savings.
- 9

10 c) N/A



1 3. LOAD FORECAST AND OPERATING REVENUE

2

3 Issue 3.3 - Is the impact of CDM appropriately reflected in the load forecast?

- 4
- 5 VECC Question #32 Ref: Exhibit C1, Tab 1, Schedule 1, pages 5-6
- 6 a) Please complete the following table summarizing Ottawa's CDM results to-date.

	Year						
Program	2005	2006	2007	2008	2009	2010	
Year							
2005	XX	XX	XX	XX	XX	XX	
Programs							
2006		XX	XX	XX	xx	XX	
Programs							
2007			XX	XX	xx	XX	
Programs							
2008				XX	xx	XX	
Programs							
2009					xx	XX	
Programs							
2010						XX	
Programs							
Annual	XX	XX	XX	XX	XX	XX	
Savings							

- 7
- 8 b) Is it reasonable to assume that the regression models reflects the historic trend in
- 9 CDM set out above?
- 10 If not, why not?
- If yes, is it reasonable to assume that captured in the energy forecasts for 2011
- 12 and 2012 based on the regression model are CDM savings that reflect a
- 13 continuation of this continued trend?
- 14

15 **Response**

- 16
- 17 a) The table below summarizes Hydro Ottawa Limited's conservation and demand
- 18 management ("CDM") Net MWh results to-date.
- 19



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.3 Interrogatory #6 Filed: 2011-09-08 Page 2 of 2

Program	2005	2006	2007	2008 ¹	2009	2010
rear						
2005 3 [.]	6,876	6,876	6,876			
Tranche ²						
2006 3 rd		54,048	54,048			
Tranche						
2006 OPA		20,864	20,864	20,864	20,864	3,624
Programs ³						
2007 3 rd			1,526			
Tranche						
2007 OPA			14,179	10,562	10,117	10,117
Programs						
2008 3 rd				77,923		
Tranche						
2008 OPA				13,933	13,131	13,130
Programs						
2009 OPA					24,887	19,189
Programs						
2010 OPA						21,212
Programs ⁴						
Annual	6,876	81,788	97,493	123,282	68,999	67,272
Savings						

1

2 b) Yes, it is reasonable to assume that the regression models would somewhat reflect

3 the historical trend in CDM set out above, and that the energy forecasts for 2011 and

4 2012 based on the regression model would include some CDM savings.

3 Results from 2006-2009 OPA Programs are from Spreadsheet provided by OPA with verified results: 2006-2009 Final OPA CDM Results Hydro Ottawa Limited

¹ For 3rd tranche programs savings have not been calculated for 2008 and beyond, as 2008 was a rebasing year. 2 2005, 2006 and 2007 Results from EB-2008-0188, Exhibit B-a-2 Tables 3 & 7

⁴ Estimate as per updated LRAM Exhibit.

²⁰¹² Electricity Distribution Rates - Interrogatory Responses



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #1 Filed: 2011-09-08 Page 1 of 2

1	3.	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	sue 3.5 - Is the test year forecast of other revenue appropriate?
4		
5	Bo	ard Staff Question #31 - Ref: Exh A1-9-1, Attachment G
6	a)	Please identify any rates and charges that are included in Hydro Ottawa's conditions
7		of service, but do not appear on the Board-approved tariff sheet, and provide an
8		explanation for the nature of the costs being recovered.
9	b)	If any rates and/or changes are identified in a) above, please provide a schedule
10		outlining the revenues recovered from these rates and/or charges from 2006 to 2010
11		and the revenue forecasted for the 2011 bridge and 2012 test years.
12	c)	If any rates and/or charges are identified in a) above, please explain whether in
13		Hydro Ottawa's view, these rates and/or charges should be included on the
14		applicant's tariff sheet.
15		
16	Re	sponse
17		
18	a)	Hydro Ottawa Limited's ("Hydro Ottawa") Condition of Service includes
19		descriptions/information on a variety of activities where the customer is expected to
20		provide a financial contribution, including: new commercial developments, new
21		residential developments, distribution plant relocations, system expansion, damage
22		to plant, work for others and infill secondary services. In Appendix G of the
23		Conditions of Service (provided as Attachment G to Exhibit A1-9-1) Hydro Ottawa
24		describes the methodology for the calculation of standard charges associated with
25		infill services. The methodology provides for "on-average" cost recovery for these
26		infill services. These infill service charges do not appear on the Ontario Energy
27		Board approved tariff sheet.
28		
29	b)	Table 1 shows the capital contributions/recoveries from the various charges, actual
30		and forecast from 2006 to 2012:
31		



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

Program	2006 \$000	2007 \$000	2008 \$000	2009 \$000	2010 \$000	2011 \$000	2012 \$000
Damage to Plant	(\$484)	(\$381)	(\$740)	(\$550)	(\$823)	(\$447)	(\$439)
Infill Service	(1,539)	(1,586)	(1,012)	(1,218)	(1,417)	(1,411)	(1,360)
New Commercial Development	(6,592)	(10,445)	(7,168)	(8,469)	(7,763)	(6,840)	(7,896)
Plant Relocation & Upgrade	(3,243)	(2,710)	(4,543)	(4,162)	(5,009)	(2,765)	(4,694)
Residential Subdivision	(6,536)	(8,881)	(7,250)	(6,317)	(5,577)	(5,087)	(3,601)
System Expansion Demand	(670)	(718)	(270)	(273)	(355)	(1,082)	(1,184)
Miscellaneous	(965)	(599)	(254)	78	0	(63)	(49)
Work For Others (Gross)	(3,144)	(2,112)	(1,982)	(1,857)	(2,392)	(1,790)	(2,250)
TOTAL	(\$23,173)	(\$27,432)	(\$23,219)	(\$22,768)	(\$23,336)	(\$19,485)	(\$21,473)

1 Table 1 – Recoveries from Appendix G Described Charges - 2006 to 2012

2

3 Except for Work for Others ("WFO"), the recoveries shown are considered

4 contributed capital. WFO is recoverable work related to work performed by Hydro

5 Ottawa crews to provide a service related to customer owned assets. WFO projects

6 are generally short in duration and usually begin and end within the same reporting

7 period.

8

9 c) In Hydro Ottawa's view, these Appendix G charges should not be included on the

10 Board approved tariff sheet.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #2 Filed: 2011-09-08 Page 1 of 2

1	3. LOAD FORECAST AND OPERA	TING REVENUE
2		
3	Issue 3.5 - Is the test year forecas	t of other revenue appropriate?
4		
5	Board Staff Question #32 - Ref: Exh	A1-7-4, Exh C2-2-1 and Exh D1-2-1
6	The level of staffing in the Holding C	Company was reviewed in 2011. The review has
7	determined that 17 staff in the Holdi	ng Company spend most or all of their time on Hydro
8	Ottawa business. These positions w	ill move to Hydro Ottawa in 2012. The evidence
9	states, "While increasing compensation	tion costs in Hydro Ottawa, the offsetting allocations
10	through the Service Level Agreement	nts ("SLAs") will have a neutral cost effect on Hydro
11	Ottawa."	
12		
13	Please provide a summary table wh	ich illustrates the neutral cost effect of moving the
14	17 staff. The table should include ne	et revenues from the Holding Company, Holding
15	Company services and costs, and c	ompensation.
16		
17	Response	
18		
19	The effect of moving the 17 staff from	m Hydro Ottawa Holding Company (the "Holding
20	Company") to Hydro Ottawa Limited	("Hydro Ottawa") is as follows:
21		
22		\$Millions
23	Compensation Increase	\$2.5
24	Other Operating Expense Increase	\$0.1
25	Holding Company Cost Allocation	(\$2.6) excludes \$0.2M non-utility operations
26	SLA to charge affiliates	<u>\$0.0</u> neutral impact (Holding & Energy Ottawa)
27		<u>\$0.0</u>
28		
29	The staff transfer will increase Hydro	o Ottawa's direct compensation and operating
30	expense by a total of \$2.6M which is	s offset by a decrease of \$2.6M cost allocation from
31	the Holding Company. As per the E	xhibit D1-2-1 Table 4, the Holding Company



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

- 1 allocation is reduced from 2011 \$5.9M to 2012 \$3.5M. There are \$0.2M of allocations
- 2 related to conservation included in the \$3.5M which are allocated directly to
- 3 Conservation and Demand Management (USoA 4380 Non-Utility Operations). This is
- 4 excluded from revenue requirement. Actual reduction is \$2.6M which is reduced from
- 5 \$5.9M to \$3.3M.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #3 Filed: 2011-09-08 Page 1 of 2

1	3.	LOAD FORECAST AND OPERATING REVENUE			
2					
3	Issue 3.5 - Is the test year forecast of other revenue appropriate?				
4					
5	<u>En</u>	ergy Probe Question #31 - Ref: Exhibit C2, Tab 1, Sch. 1			
6	a)	What is the impact on other revenues of the proposed changes in the dry core			
7		transformer loss charges detailed on pages 6-7?			
8	b)	How is the rental fee noted in Section 6.2 on page 9 calculated? Does it recover all			
9		the costs related to property taxes and return on capital? Please show how the			
10		rental fee covers theses costs.			
11	c)	What type of assets does Hydro Ottawa own, or has owned, that were never			
12		necessary in serving the public (Section 6.3)? Are these assets included in rate			
13		base and is the depreciation of these assets and maintenance costs associated with			
14		these assets included in the revenue requirement? If yes, please quantify.			
15	d)	Are the houses noted in Section 7.0 and the associated land included in rate base?			
16		Are any costs associated with these properties included in the revenue requirement?			
17		Please provide the net book value of these assets, any costs associated with these			
18		assets and the annual rental income generated from these assets.			
19					
20	Re	sponse			
21					
22	a)	The impact of the proposed changes in the dry core transformer loss charges			
23		detailed on pages 6-7 of Exhibit C2-1-1 are minimal. That is why in Table 2 of the			
24		same Exhibit, the forecasted revenue from dry core transformers remains at			
25		\$25,000.			
26					
27	b)	The rental fee paid by Hydro One for land owned by Hydro Ottawa Limited ("Hydro			
28		Ottawa") is based on 10% of the market value. This amount is intended to cover the			
29		return on capital on the asset. In addition, the associated Municipal taxes and water			
30		charges are charged directly to Hydro One.			
31					



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #3 Filed: 2011-09-08 Page 2 of 2

1 c) Hydro Ottawa owns the following assets that are not necessary in serving the public: 2 A number of houses that are located next to transformer stations, that were • 3 originally purchased for possible expansion, 4 The property at 90 Maple Grove • 5 Solar panels. • 6 All of these assets were removed from rate base at the end of 2009 and therefore 7 any associated costs, including depreciation, are not included in the 2012 revenue 8 requirement. 9 10 d) No, the houses and associated land noted in Section 7.0 of Exhibit C2-1-1 are not 11 included in rate base. No costs associated with these properties are included in the 12 revenue requirement. The net book value of these assets was \$206k at the end of 13 2010. In 2012, the budgeted revenue from these houses is \$81k and the expenses 14 (including property taxes) is budgeted to be 68k.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #5 Filed: 2011-09-08 Page 1 of 1

1	3.	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	ue 3.5 - Is the test year forecast of other revenue appropriate?
4		
5	<u>En</u>	ergy Probe Question #33 - Ref: Exhibit C2, Tab 1, Sch. 6 & Exhibit B5, Tab 5, Sch. 2,
6	Та	ble 2
7	a)	Please explain how the forecast of \$55,000 for disposal of assets has been
8		calculated, based on the $\ 25$ vehicles shown as being replaced in 2012 in Table 2 of
9		Exhibit B5, Tab 5, Sch. 2. Please indicate the gain/loss on each group of vehicles
10		shown.
11	b)	Please indicate what other assets are being disposed of, along with the forecasted
12		gain/loss on these assets.
13		
14	Re	sponse
15	,	
16	a)	The 25 vehicles all have a net book value of Zero. The gain on disposal is based

- 17 upon an estimate of expected proceeds:
- 18

Vehicle Type	QTY	Estimate	
Automobile	0		
Truck - Bucket	3	\$	22,500.00
Truck - Line / RBD	0		
Truck - P/U Comp	5	\$	5,000.00
Truck - P/U Conv	5	\$	7,500.00
Van - Cargo	0	\$	-
Van - Compact	7	\$	5,250.00
Van - Step/Cube	2	\$	5,000.00
Trailers - Misc	3	\$	10,000.00
Totals	20	\$	55,250.00

19

20 b) There are no other assets being disposed of that create a gain or loss.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #6 Filed: 2011-09-08 Page 1 of 2

1	3.	LOAD FORECAST AND OPERATING REVENUE
2		
3	lss	sue 3.5 - Is the test year forecast of other revenue appropriate?
4		
5	<u>En</u>	ergy Probe Question #34 - Ref: Exhibit C2, Tab 2, Sch. 1 & Exhibit D1, Tab 1, Sch. 1,
6	pa	<u>ge 2</u>
7	a)	Please explain the drop in revenue from the Holding Company from \$796,137 shown
8		in Table 5 for the bridge year to \$718,874 shown in Table 6 for the test year. Please
9		also explain the impact on this revenue of the movement of 17 positions back to
10		Hydro Ottawa from the HOHI as discussed on page 2 of Exhibit D1, Tab 1, Schedule
11		1.
12	b)	Please explain how the facility services related to property taxes at the two
13		generating stations are calculated. In particular is any addition to the costs charged
14		made with respect to the working capital allowance associated with the property tax?
15	c)	Table 6 is labelled 2012 Budget Net Revenues. Please provide a table that shows
16		for each revenue line shown in Table 6 the gross revenues, gross costs and
17		associated net revenues.
18	d)	Please confirm that the costs used in generating the net revenues shown in Table 6
19		are not included in the OM&A costs or property taxes included in the revenue
20		requirement for the 2012 test year.
21		
22	Re	sponse
23		
24	a)	The reduction of revenue is primarily explained by lower facilities, IT, and HR
25		services. The movement of 17 positions will reduce the office space occupancy by
26		Hydro Ottawa Holding Company (the "Holding Company") and the IT support and
27		HR/Payroll services due to lower headcount remaining in the Holding Company.
28		These revenue reductions are offset by lower cost allocations from the Holding
29		Company. The net effect is neutral. Please see the response to K3-5-2 (Board Staff
30		#32).
31		



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #6 Filed: 2011-09-08 Page 2 of 2

- b) The property tax at the two generating stations is based on the actual property tax
 paid to the City of Ottawa (the "City") in the prior year, adjusted for inflation. Working
 capital allowance is not included as the amount and impact is considered immaterial.
- 4

c) There is no cost allocation to departments other than the affiliates. At this time, due
to the relative size of Hydro Ottawa Limited ("Hydro Ottawa"), services provided to
affiliates generally do not incur additional costs, but rather are available through
economies of scale. For example, Hydro Ottawa payroll services require the same
number of payroll staff whether providing service to Holding Company and Energy
Ottawa or not. Therefore, the gross costs are relevant only to determination of
appropriate cost allocation.

12

d) As explained in c) the costs associated are not incremental costs, they are included
 in the revenue requirement, and partially offset by SLA revenue from affiliates. The
 net result of providing these services to the affiliates is productivity or a cost saving.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #7 Filed: 2011-09-08 Page 1 of 2

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.5 - Is the test year forecast of other revenue appropriate?
4	
5	CCC Question #22 - Ref: Ex. C2/T1/S1
6	For each of the categories of Other Revenue please explain how the forecast was
7	derived. Please explain how, if at all these forecasting methods have changed since
8	Hydro Ottawa's last cost of service proceeding.
9	
10	Response
11	
12	The 2012 rate application separates Other Revenue into five (5) main categories:
13	Specific Service Charges, Late Payment Charges, Standard Supply Service
14	Administration Charge, Other Distribution Revenue and Other Income and Deductions.
15	
16	The key factors which influence Other Revenue forecasting are a combination of
17	historical trends, anticipated customer growth and activity, business initiatives, economic
18	and industry trends and changes in service charges. Often, several factors must be
19	assessed for a specific revenue category; however, the relative weightings may differ.
•	

20 Following are the key factors that are considered in each category:

21

Other Revenue Category	Forecasting Method
Specific Service Charges	Historical trends, changes in service charge amounts, forecasted customer demand for services and changes in service offerings are factored into the forecast
Late Payment Charges	Historical trends, economic trends, customer payment behaviour and payment options are factored into the forecast
SSS Administration Charge	Historical trends and projections of retailer market share are factored into the forecast
Other Distribution Revenue	Historical trends, anticipated plant leases, anticipated service level agreements with Affiliates, third-party contracts, customer service requests and property disposals are factored into the forecast
Other Income and Deductions	Interest rate trends and projected cash balances are factored into the forecast

22



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #7 Filed: 2011-09-08 Page 2 of 2

- 1 This forecasting methodology has not changed since Hydro Ottawa Limited's last cost of
- 2 service rate proceeding in 2008.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #8 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.5 - Is the test year forecast of other revenue appropriate?
4	
5	VECC Question #34 - Ref: Exhibit H4, Tab 1, Schedule 1, page 1-5 Loss Adjustment
6	Factors
7	Please provide the revenue adjustment related to Hydro Ottawa's proposal to modify its
8	loss adjustment factors.
9	
10	Response
11	
12	There is no distribution revenue adjustment related to Hydro Ottawa Limited's proposal
13	to modify its loss adjustment factors as distribution revenue is based on unadjusted kWh.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #9 Filed: 2011-09-08 Page 1 of 1

1	3. LOAD FORECAST AND OPERATING REVENUE
2	
3	Issue 3.5 - Is the test year forecast of other revenue appropriate?
4	
5	VECC Question #35 - Ref: Exhibit C2, Tab 1, Schedule 1, pages 4 – 5
6	a) How many micro-fit customers does Hydro Ottawa have as of June 30, 2011?
7	b) How many micro-fit customers does Hydro Ottawa expect to have as of year-end
8	2011 and year-end 2012?
9	
10	Response
11	
12	a) Hydro Ottawa Limited ("Hydro Ottawa") has 89 microFIT customers as of June 30,
13	2011.
14	
15	b) Hydro Ottawa has forecasted that it will have 126 microFIT customers as of year-end
16	2011 and 161 microFIT customers as of year-end 2012.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #10 Filed: 2011-09-08 Page 1 of 2

1	3.	LOAD FORECAST AND OPERATING REVENUE				
2						
3	lss	ssue 3.5 - Is the test year forecast of other revenue appropriate?				
4						
5	<u>VE</u>	CC Question #36 - Ref: Exhibit C2, Tab 1, Schedule 5, pages 1 – 7				
6	a)	Table 1 shows a decrease in SSS Admin Charge revenue in 2011 versus 2010.				
7		However, the Application (page 3) suggests that revenues increase due to customer				
8		growth. Please reconcile.				
9	b)	The Application (page 6) suggests that 2011 duct revenues are consistent with 2010				
10		actual results. However, Exhibit C2, Tab 1, Schedule 1, Attachment Z shows a				
11		material increase from \$820 k to \$1,358 k. Please reconcile.				
12	c)	Where in Table 1 (and also in Exhibit C2, Tab 1, Schedule 1, Attachment Z) are the				
13		revenues from Hydro One Networks for property rental reflected?				
14						
15	Re	esponse				
16						
17	a)	Page 3 of the Application should have stated that the 2011 forecast is slightly lower				
18		than 2010. Year over year, the SSS Admin Charge revenue has modestly				
19		increased, as has customer growth, which the 2010 year end actual amounts reflect.				
20		The 2011 SSS Admin revenue was forecasted before the 2010 actual amount was				
21		known. For this reason, the 2011 budgeted amount is lower than 2010.				
22						
23	b)	Duct and Property Rental Services are included under Electric Plant Leased to				
24		Others, USoA 4315. Duct rental services are forecast to be consistent with 2010				
25		actual revenues; however, as noted in Exhibit C2-1-5, Section 6.2, Hydro One				
26		Networks shares facilities on Hydro Ottawa property for which a rental fee is paid.				
27		For 2011, the Hydro One Networks rental fee is \$581k and in 2012 it will be \$592k.				
28		Combined with Duct Rental Services, revenues are forecasted to total \$1,358k in				
29		2011 and \$1,413k in 2012. In prior years, Hydro One Networks property rental				
30		revenues were applied to non-utility revenue.				



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #10 Filed: 2011-09-08 Page 2 of 2

c) The 2011 rental revenues from Hydro One Networks are included in the Property
Rental revenues totalling \$1,358k. This amount includes Hydro One Networks rental
revenues of \$581k and third party duct rental services of \$777k. Within Exhibit C2-11, Attachment Z, Hydro One Networks revenue is included in USoA 4315, totalling
\$1,358k in 2011 and \$1,413k in 2012. The description within Attachment Z includes
property rental, along with duct rental.



Hydro Ottawa Limited EB-2011-0054 Exhibit K3 Issue 3.5 Interrogatory #11 Filed: 2011-09-08 Page 1 of 1

1	3.	LOAD FORECAST AND OPERATING REVENUE			
2					
3	Issue 3.5 - Is the test year forecast of other revenue appropriate?				
4					
5	VE	CC Question #37 - Ref: Exhibit C2, Tab 1, Schedule 1, Attachment Z			
6	a)	Are the forecast gains from Disposal of Property in 2012 the full amount of the			
7		anticipated gains?			
8	b)	If not, why not?			
9					
10	Response				
11					
12	a)	All anticipated gains and losses from the disposal of Fixed Assets are estimated for			
13		in the 2012 amounts.			
14					
15	b)	Not applicable.			
16					
17					
18					



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #1 Filed: 2011-09-08 Page 1 of 3

1	4. OPERATING COSTS					
2						
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?					
4						
5	Board Staff Question #33 - Ref: Exh D1-1-1 Ref: Hydro Ottawa EB-2010-0133, Exh D1-					
6	<u>1-2</u>					
7	The table below summarizes OM&A expense for the period 2008 to 2012. Hydro Ottawa					
8	states that there can be some inconsistency in the split between operations and					
9	maintenance expense, and that operations and maintenance expense should be					
10	considered in their totality.					
11	a)	Plea	se confirm that the data entries in the table below are correct.			
12	b)) The data indicate that in 2008, actual OM&A expense was lower than 2008 Board				
13		approved for every OM&A expense category.				
14		i.	The variance explanation at Exh D2-1-1 indicates that \$0.6M of the			
15			variance is related to unplanned staff vacancies. Would the vacancy			
16			allowance of 3% incorporated in the current workforce plan address the			
17			variance?			
18		ii.	The variance explanation indicates that another \$0.6M of the variance is			
19			related to the impact of smart meters. Has the historical experience been			
20			reflected in the current application?			
21	c)) Staff notes that the 2010 actual OM&A expenses of \$53,350,685, are lower than				
22		that forecast in Hydro Ottawa's 2011 cost of service application, \$59,644,369.				
23		Please explain the factors that contributed to these differences.				
24						
25						
26						
27						


Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #1 Filed: 2011-09-08 Page 2 of 3

	2008	2008	2009 Actual	2010	2011	2012	EB-2010-013	3
	Approved	Actual		Actual	Bridge	Forecast	2010	2011
							Bridge	Forecast
Operations	13,062,448	11,752,560	11,364,065	11,971,416	12,061,906	11,883,322	14,996,358	15,269,439
Maintenance	5,111,153	5,183,949	5,171,079	5,663,033	8,462,994	9,274,548	6,006,658	6,086,041
SubTotal	18,173,601	16,936,509	16,535,144	17,634,449	20,524,900	21,157,870	21,003,016	21,355,480
%Change (year			-2.4%	6.6%	16.4%	3.1%		
over year)								
%Change (Test						24.9%		
Year vs Last								
Rebasing Year -								
Actual)					-			
Billing and	11,716,819	10,365,089	10,233,636	9,142,479	11,925,750	12,085,194	10,579,743	10,840,730
Collecting								
Community	4,759,852	4,588,888	4,594,942	4,932,698	6,093,455	6,911,671	5,459,667	6,607,061
Relations								
Admin and	20,679,521	19,738,418	20,670,993	21,641,059	22,790,434	23,736,696	22,601,943	24,163,018
General								
SubTotal	37,156,192	34,692,395	35,499,571	35,716,236	40,809,639	42,733,561	38,641,353	41,610,809
%Change (year			2.3%	0.6%	14.3%	4.7%		
over year)								
%Change (Test						23.2%		
Year vs Last								
Rebasing Year -								
Actual)			•					1
Total	55,329,793	51,628,904	52,034,715	53,350,685	61,334,539	63,891,431	59,644,369	62,966,289
			0.8%	2.5%	15.0%	4.2%		

1 Response

2

3 a) Entries in the table are correct. Actual values by USofA account groupings in the

4 table agree to submitted values to the Ontario Energy Board (the "Board") by USofA

5 account and are consolidated into the groupings per the Board guidelines.

- 6
- 7 b)
- 8 i. Yes the updated vacancy allowance assumption would have addressed the
 9 variance. The vacancy assumption of 3% included in the 2012 OM&A is equal to
 10 \$2.5M.
- ii. Yes. The Smart meter program is winding down. Expenses related to the legacy
 meters have been removed and only expenses for Smart meters are included.
- 13
- 14 c) Time of Use ("TOU") and MDMR program costs planned but not incurred in 2010 are
- 15 required in 2011, and maintenance costs were lower than expected on new meters.
- 16 Total reduction in spending was \$1.2M for 2010. Delays in hiring and vacancies



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #1 Filed: 2011-09-08 Page 3 of 3

- 1 account for \$2.1M. Refer to D2 Tab 1 Schedule 3 for details. Favourable one time
- 2 savings in bad debts expense, consulting, communications, and training account for
- 3 the balance of the variance.
- 4



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	Board Staff Question #34 – Ref: Exh D1-1-1, p19 and Exh D1-1-2, p10
6	Hydro Ottawa will have a LEAP expense starting in 2011. The evidence also states that
7	the LEAP program is the only charitable donation that Hydro Ottawa has included for
8	both 2011 and 2012. In previous years Hydro Ottawa was a sponsor for the Winter
9	Warmth Program, coordinated by the United Way.
10	
11	Please identify the amount included for LEAP emergency financial assistance, and
12	identify the percentage of total forecasted distribution rates.
13	
14	Response
15	
16	Hydro Ottawa Limited ("Hydro Ottawa") has included the following amounts in 2011 and
17	2012 for the LEAP program. The October 20, 2010 letter issued by the Ontario Energy
18	Board (the "Board") related to LEAP Emergency Financial Assistance stated the
19	following "all electricity distributors should ensure the delivery of LEAP emergency
20	financial assistance in each of their service areas beginning in January 2011 and
21	contribute the greater of 0.12% of the distributor's Board-approved total distribution
22	revenue requirement". The letter goes on to say "for greater clarity, Board-approved
23	total distribution revenue means a distributor's forecasted service revenue requirement
24	as approved by the Board".
25	

Year	Amount for LEAP	Forecasted Distribution Revenue	% of Forecasted Distribution Revenue
2011	\$170,000	\$144,843,801	0.117%
2012	\$173,400	\$144,843,801	0.12%

26

27 Note that Hydro Ottawa's last Board approved forecasted service revenue requirement

28 was in 2008.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #3 Filed: 2011-09-08 Page 1 of 2

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	Board Staff Question #35 - Ref: Exh D1-1-2, p5-6
6	One of the OM&A cost drivers listed in Table 2 is the Customer Service Strategic Plan
7	and another is Smart Meters and TOU Roll Out. The descriptions of both drivers include
8	reference to staff training and communication with customers. Please clarify whether all
9	the activities for these programs are separate.
10	
11	Response
12	
13	The Customer Service Strategic Plan and Smart Meters/Time of Use ("TOU") roll out are
14	distinct programs with separate activities that are tracked and recorded in separate
15	accounts.
16	
17	The Customer Service Strategic Plan is fully described in Exhibit D1-4-4 and is focused
18	on improving all aspects of customer service. In addition to the capital investments in
19	software and technology to enable Self-Serve options, improve Outage Communications
20	and Contact Centre Management applications, there is a significant operational
21	component to the plan. This includes evaluation and redesign of business processes to
22	better align with customer needs and ensure compliance with changes to the Ontario
23	Energy Board (the "Board") Customer Service Standards. A significant aspect of the
24	plan is training for employees to understand and communicate the new standards,
25	improve customer interactions and foster a customer centric culture.
26	
27	The OM&A costs related to the Smart Meters/TOU Roll Out are outlined in Section 4 of
28	Exhibit I2-1-1. Staff training with respect to this program was focussed on the many
29	system changes brought about by the implementation of TOU rates and the impact on
30	customer accounts. Coordinating external communications was another important
31	aspect to the success of this program and an overall customer communications plan has



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #3 Filed: 2011-09-08 Page 2 of 2

- 1 been developed, including materials such as a welcome package to TOU rates. The
- 2 activity related to customer communications has increased as we moved closer to the
- 3 TOU roll-out and it will culminate in 2011 when all Hydro Ottawa Limited customers will
- 4 transition to TOU rates. Although these transition costs are "one-time" in nature and are
- 5 expected to cease after 2011, there are a number of on-going costs, such as
- 6 telephony/data communications to interrogate the readings from the smart meters, staff
- 7 costs to manage and analyze the data and information technology maintenance
- 8 contracts that will continue to be an annual recurring expense.
- 9



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #4 Filed: 2011-09-08 Page 1 of 2

1	4. (OPERATING COSTS
2		
3	lss	ue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4		
5	Bo	ard Staff Question #36 - Ref: Exh D1-1-2, p9
6	Th	e regulatory costs from 2008 to 2012 are summarized in Table 3.
7	a)	As Hydro Ottawa has requested rates effective January 1, 2012, please explain the
8		level of legal costs and intervenor costs forecast for the test year.
9	b)	Please complete and file Appendix 2-H Regulatory Cost Schedule from Chapter 2 of
10		the Filing Requirements issued on June 22, 2011 to provide information on one-time
11		regulatory costs.
12		
13	Re	sponse
14		
15	a)	Please see Exhibit K4-1-10 (EP #37).
16		
17	b)	Appendix 2-H Regulatory Cost Schedule from Chapter 2 of the Filing Requirements
18		issued on June 22, 2011 is provided on the next page.
19		Note that Hydro Ottawa Limited does not maintain records at the level of the cost
20		categories requested.



1

Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #4 Filed: 2011-09-08 Page 2 of 2

Dee		USoA	USoA Account	Ongoing or One- time	La	st Rebasing	L	ast Year of		Annual %		Test Veen
Reg	ulatory Cost Category	Account	Balance	COSt?		rear		Actuals	sridge fear	Change		Test fear
	(A)	(B)	(C)	(D)		(E)		(F)	(G)	(H) = [(G)- (F)]/(F)		(I)
1	OEB Annual Assessment	5655		On-Going	\$	761,852	\$	764,394	\$ 748,852	-2.03%	\$ 775,196	
2	OEB Hearing Assessments (applicant- originated)											
3	OEB Section 30 Costs (OEB-initiated)											
4	Expert Witness costs for regulatory matters											
5	Legal costs for regulatory matters	5655		On-Going	\$	129,774	\$	58,857	\$ 331,400	463.06%	\$ 208,829	
6	Consultants' costs for regulatory matters	5655		On-Going	\$	27,996	\$	21,968	\$ 40,000	82.08%	\$ 202,000	
7	Operating expenses associated with staff resources allocated to regulatory matters											
8	Operating expenses associated with other resources allocated to regulatory matters ¹											
9	Other regulatory agency fees or assessments	5655		On-Going	\$	90,934	\$	125,274	\$ 122,726	-2.03%	\$ 127,044	
10	Any other costs for regulatory matters (please define) travel/accomodation to Toronto	5655							\$ 5,100		\$ 5,208	
11	Intervenor costs	5655		On-Going	\$	105,489	\$	159,623	\$ 159,623	0.00%	\$ 161,880	
12	Sub-total - Ongoing Costs ³		\$		\$	1,116,045	\$	1,130,116	\$ 1,407,701	24.56%	\$ 1,480,157	
13	Sub-total - One-time Costs ⁴		\$		\$	-	\$	-	\$ -		\$ -	
14	Total		\$		\$	1,116,045	\$	1,130,116	\$ 1,407,701	24.56%	\$ 1,480,157	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #5 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	Board Staff Question #37 - Ref: Exh D-1-4-2, p4 and Exh D2-1-1, p4
6	Based on the recommendations in the 2005 Asset Management Plan, the Ottawa core is
7	trimmed on a two-year cycle and the Ottawa suburb is trimmed on a three year cycle.
8	Vegetation management was one of the contributing factors to 2008 actual OM&A
9	expense being lower than Board approved. The evidence states, "A savings of \$604k in
10	account 5025 is the result of a revised vegetation management program which
11	increased the trim cycle from 3 years to 2 years in Ottawa's downtown core. This
12	resulted in reduced numbers of unplanned tree removals and spot trimming." Has this
13	experience been reflected in the current application?
14	
15	Response
16	
17	The savings obtained in 2008 from implementing the more frequent trim cycle in the core
18	has been carried forward in the bridge and test year budgets.
19	
20	Yearly expenditures for the vegetation management program are impacted by;
21	 the volume of emergency work to respond to storm related damage,
22	 the particular areas being trimmed in the core and suburbs,
23	• the amount of off-cycle trimming, also known as spot trimming, required, and
24	 inflation related increases for internal and contracted costs.
25	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #6 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	Board Staff Question #38 - Ref: Exh D-1-4-2, p5
6	Hydro Ottawa's vegetation management is completed by contractors selected through a
7	tendering process. In 2010 the largest tree trimming contractor invoked an escape
8	clause in the contract. A new contractor has been retained on a time and materials
9	basis. Has Hydro Ottawa secured the services of a replacement contractor on a long
10	term basis? If so, what is the impact on the vegetation management budget?
11	
12	Response
13	
14	Hydro Ottawa Limited has secured the services of a replacement contractor for the
15	completion of the 6-year program ending in 2013. The budget for 2012 includes the
16	estimated contract costs. The final contract costs are immaterially different from those
17	included in the 2012 budget, thus not impacting the 2012 vegetation management
18	budget.
10	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #7 Filed: 2011-09-08 Page 1 of 1

1	4. (OPERATING COSTS
2		
3	lss	ue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4		
5	Bo	ard Staff Question #39 - Ref: Exh B5-2-1, p6, Exh B6-1-1, Attachment W
6	In 2	2008, actual expenditures for pole replacement were \$1.8M less than approved.
7	On	e of the contributing factors to the variance was, "Rather than replacing poles on an
8	unp	planned basis, outside staff provide pole condition information for consideration in the
9	pla	nned program"
10	The	e 2011 Asset Management Plan states that for wood pole condition, "Hydro Ottawa
11	init	iated a combined program of visual inspection and non-invasive measurement in
12	20	10."
13	a)	The Asset Management Plan does not refer to the services of outside staff for pole
14		inspection. Is the Hydro Ottawa pole inspection conducted by outside staff?
15	b)	How do the forecast costs of pole inspection compare with those prior to 2010?
16		
17	Re	sponse
18		
19	a)	"Outside staff" refers to Hydro Ottawa Limited ("Hydro Ottawa") trades staff - Hydro
20		Ottawa Power Line Maintainers (PLM) performed the pole inspections.
21		
22	b)	Hydro Ottawa's pole assessment program was not implemented prior to 2010. Total
23		expenditures in 2010 amounted to \$29k.
24		



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #8 Filed: 2011-09-08 Page 1 of 1

1	4. (OPERATING COSTS
2		
3	lss	sue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4		
5	<u>En</u>	ergy Probe Question #35 - Ref: Exhibit D6, Tab 1, Sch. 1, Attachment AD
6	a)	Please file Hydro Ottawa's policy with respect to meal and entertainment expenses.
7	b)	Are there any differences between the policy of Hydro Ottawa and the HoldCo and/or
8		the City of Ottawa with respect to allowable meal and entertainment expenses? If
9		so, please provide a description of the differences.
10		
11	Re	sponse
12		
13	a)	Attachment 1 is Hydro Ottawa Limited's ("Hydro Ottawa") Travel and Entertainment
14		Policy
15		
16	b)	Hydro Ottawa is currently in a process of reviewing and updating its policies
17		including meal and entertainment policies. Meal and entertainment policies are
18		identical for Hydro Ottawa and Hydro Ottawa Holding Company (the "Holding
19		Company"). Hydro Ottawa is aware that City of Ottawa policies for meal end
20		entertainment expenses are generally consistent at the policy level with Hydro
21		Ottawa's policies but there may be differences in the operational details of how the
22		policies work (i.e. number of approvals, pre-approval requirements, dollar limits, etc)
23		that Hydro Ottawa is not aware of.
24		

Policy Number: FIN2-005	Subject: Travel and Entertainment
Effective Date: July 20, 2004	Policy Owner: VP Finance

Applicability

This policy applies to all Hydro Ottawa Ltd employees.

Purpose

This policy is intended to outline the eligibility, authorization, approval and payment of travel and entertainment expenses and has been approved by the Vice-President Finance and Chief Operating Officer.

Guidelines

The Company's travel policy is intended to keep pace with corporate best practices while balancing concern for traveller safety and convenience. It is the Company's intent that travel and entertainment expenses be limited through careful management and appropriate judgment.

It is the Company's policy to reimburse an employee for all necessary and reasonable expenses incurred while travelling on Company business and to ensure that these transactions are visible to and controlled by Company Management.

Employees are expected to be conservative in their spending and managers are expected to be diligent in their review. An employee travelling on Company business is expected to exercise the same care in incurring expenses as a prudent individual travelling for personal reasons.

Employees are required to procure their travel and travel related services through the corporate Travel Service Supplier.

All travel expenditures must be pre-approved and authorized as per the Approval Levels section of this policy.

No travel and entertainment may be approved that exceeds the budgets allocated for these expenses.

All travel and entertainment expense reports must be properly supported and approved.

Temporary Delegation of Authority

Refer to the approval and authorization policy FIN2-001.

Management Traveling Together

(This section is applicable solely for the Executive Management Team)

1. No more than two (2) members of the Executive Management Team may travel in the same mode of transportation at the same time.

Internal Use Only

FIN2-005

Page 1 of 7



Policy Number: FIN2-005	Subject: Travel and Entertainment
Effective Date: July 20, 2004	Policy Owner: VP Finance

2. As a general rule, members of management participating in a particular function should arrange separate air and ground travel to avoid situations where more than two members of management in a direct reporting line travel together.

Air Transportation

An employee using air transportation on Company business is expected to exercise the same care in incurring expenses as a prudent individual travelling for personal reasons. Suggestions for obtaining low fares are as follows:

- 1. Inquire immediately as soon as you know that a trip is forthcoming.
- 2. Be flexible with your schedule when possible, particularly departure and arrival times. It is recommended, but not required, to take advantage of Saturday night stopovers when convenient to the traveler.
- 3. Do not limit yourself to certain airlines.
- 4. Be flexible to changing planes on route to the destination.

i) Authorization for air flight class

It is the Company's policy that all employees fly at economy class fares with the following exceptions:

- Upgrade to business class at no additional cost.
- Business class travel is permissible when air travel exceeds 9 hours flying time.

ii) Unused airline tickets

Please note that guaranteed or non-refundable tickets cannot be cancelled but can be put on hold and used within a year's timeframe. It is the traveller's responsibility to ensure that these types of tickets are monitored and used accordingly.

iii) Discounted airfare

From time-to-time, airlines offer various inducements to travellers. These inducements, which should be used wherever possible, include discounted airfare, bulk ticket purchases, cash in return for alternate flights, etc. If any monies or coupons are received directly by employees, they must be forwarded to Finance for processing.

iv) Frequent flyer program

It is the Company's policy to allow employees to credit Company business travel to their personal Frequent Flyer Program. This is an employee-initiated program hence the Company does not assume any regulatory responsibilities associated with this program or any of the income tax self-assessment requirements of this program.

FIN2-005



Policy Number: FIN2-005	Subject: Travel and Entertainment
Effective Date: July 20, 2004	Policy Owner: VP Finance

Any arrangement for business travel must be in line with the most cost effective principles intended by this policy, and must not be jeopardized or violated because of the benefits associated with a frequent flyer program.

<u>Ground Transportation</u>

It is the Company's policy to reimburse employees for the actual cost of ground transportation, provided the employee used the most economical means of transportation. The use of a personal automobile over rental vehicles, taxis or other transportation should only be used when it is more economical to the Company to do so.

No vehicle is to be driven without ensuring that all passengers are properly using seatbelts.

i) Car rental

A rented car should be used only when it makes economic sense and not as a matter of personal convenience. Automobile rentals should be used when public transportation or Company-provided vehicles are unavailable or inadequate. All rentals must take advantage of mid-size rates. When travelling in groups, sharing of cars must be practiced to minimize costs.

ii) Taxi and other transportation

The cost of taxis or carfare to and from places of business, hotel, airport or railroad stations, in connection with business activities are reimbursable. The most economical mode of transportation to and from airports should be selected from one of the following: if available and practical, public coach/minibus transportation, company car or personal car. Use of taxis is authorized only when more economical services are not available or in special cases, when valid business reasons warrant use of such transport.

iii) Use of personal car

Mileage or kilometer reimbursement will be made for authorized business use of personal automobiles. Reimbursement rates will be determined by finance, based upon industry practice.

This allowance does not apply to rental vehicles. Reimbursement for gasoline usage in rental vehicles will be for actual gas usage only (with receipts).

Parking, tolls and automobile storage at airports will be reimbursed when supported by receipts. Employees are required to utilize long-term parking where available.



Policy Number: FIN2-005	Subject: Travel and Entertainment
Effective Date: July 20, 2004	Policy Owner: VP Finance

The use of a personal automobile over rental vehicles, taxis or other transportation should only be used where it is more economical to the Company to do so after factoring in costs such as automobile storage, etc.

iv) Train

The cost of first class fare will be reimbursed provided it is economically justifiable and a receipt for the actual train ticket is submitted with the expense report.

<u>Meals for Business Travel</u>

It is the Company's policy to reimburse the actual cost of meals. In general, business meals should not be more lavish than those normally eaten at the employee's own expense. Employees are authorized to leave customary tips on meals.

Meal costs, while travelling on Company business, and meal costs related to entertainment expenses, must be shown separately on expense reports.

Accommodations

It is the Company's policy to reimburse the actual lodging expenses incurred for accommodations.

When meals or expenses other than the accommodation costs are charged to an employee's hotel room, these expenses must be shown separately on the expense report.

Room service is permitted where circumstances warrant, i.e., late night arrival, hotel restaurant closed, etc. This can be a costly service and should be used cautiously.

Hotel cancellations are the responsibility of the traveller. In the event of a "no show" charge on the employee's credit card, the company shall reimburse the employee provided that the "no show" charge resulted from no fault of the employee. Cancellation numbers should be obtained from the hotel to assist in the event of a dispute with the hotel.

Entertainment

i) Vendor, customer or applicant

In order for entertainment expenses to be reimbursable, the expenditures must be directly related to the transaction of the Company business. The following specific details should appear on the expense report:

- Type of entertainment: lunch, dinner, drinks, etc.
- Names and titles of guests.
- Company affiliation(s) of people attending.
- Cost, date, place.

FIN2-005

Internal Use Only

Policy Number: FIN2-005	Subject: Travel and Entertainment
Effective Date: July 20, 2004	Policy Owner: VP Finance

Business purpose and business relationship of individuals entertained.

For employees travelling together on a business trip, the senior person must report the expense and pay for any group bills.

ii) Employees

In general, entertaining of Hydro employees by Hydro employees while on business together is not allowable. However, where it is necessary to take another employee to lunch/dinner to accomplish the work at hand, such entertainment expenses must be reported by the senior employee present.

Travel and off-site entertainment expenses relating to groups of five or more people must be pre-approved by the President and Chief Executive Officer of Hydro Ottawa Limited.

Meals are reimbursable only under certain circumstances. Employees may be reimbursed for their own meals and those of other employees when business circumstances require off-premise discussions. Appropriate judgment is expected in this area. This includes both class of restaurant and relative expense of meals and beverages.

iii) Off-site meetings

Staff meetings should be held at the Company facilities. There may be situations where there are significant business reasons for arranging staff meetings off the Company premises. Such occurrences must have approval according to Section 5 of this policy.

Travel Advances

If a travel advance is required, the employee must complete and submit the Requisition for Payment form to Accounts Payable. Authorization is required as per the employee expense reimbursement policy FIN2-003.

Under no circumstances, will funds, in excess of the estimated cost of the trip, be advanced. It is the Company's policy to limit the amount of advances to cover "out-of-pocket" expenses only.

All advances are to be netted against future reimbursements. If an advance is outstanding, no further advances will be made to the employee.



Policy Number: FIN2-005	Subject: Travel and Entertainment
Effective Date: July 20, 2004	Policy Owner: VP Finance

Miscellaneous

i) Telephone, fax, or internet

Business - The Company will pay charges for local and long distance calls outside a Company office provided a listing or telephone bill substantiates the calls. Long distance calls, placed through hotel desks, should be avoided due to the significant surcharges, which are often added.

Personal - To a reasonable extent, the Company will pay charges for personal long distance calls of normal duration when the employee is away from home. Employees are expected to use good judgment concerning the length and frequency of such calls.

ii) Cleaning, pressing and laundry

Laundry, dry cleaning and pressing services, away from home, are allowed when supported by out-of-town receipts. Dry cleaning and laundry expenses will be reimbursable on trips of four (4) days or more.

iii) Tipping and gratuities

Tipping and gratuities are intended to cover meals, porter, cab service, etc. Reasonable judgment should be used regarding tipping. Generally, tipping should be in line with local customs, 10-15% of the pre-tax expenditure is the maximum considered reasonable and should be included in the cost of the associated expense.

Procedures

Travel and entertainment expenditures incurred by an employee to meet the needs and interests of the Company shall be reimbursed in accordance with the employee expense reimbursement policy FIN2-003.

Travel and entertainment expenditures incurred on a corporate credit card shall be submitted in accordance with the credit card policy FIN2-002.

Approval Levels

No employee is permitted to authorize travel and entertainment expenses that benefit themselves directly and they <u>cannot</u> approve their own travel and entertainment expense claim, regardless of their authority level. Approval must be obtained by the person with the next highest level of authority.

The President will approve the expenses of the Chief Operating Officer.



HydroOttawa

FIN2-005

Policy Number: FIN2-005	Subject: Travel and Entertainment
Effective Date: July 20, 2004	Policy Owner: VP Finance

Travel and entertainment expenditures must be approved in accordance with the signing authority matrix established in the employee expense reimbursement policy FIN2-003 or the credit card policy FIN2-002.

Electronic mail messages approving expenditures shall be deemed to constitute written approval.

Policy Compliance

There will be <u>no exceptions</u> to the requirements of this policy in the execution of day-to-day business. Employees must report incidents of non-compliance relating to this policy in a timely manner to the Policy Owner. Non-compliance issues of a serious nature will be immediately reported to the Chief Operating Officer. Determination of "non-compliance issues of a serious nature" will be the responsibility of the Policy Owner. Where applicable, non-compliance may result in expenditures not being reimbursed and possible disciplinary action.

Chief Operating Officer

Policy Owner

Vice President Finance





Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #9 Filed: 2011-09-08 Page 1 of 3

1 4. OPERATING COSTS

2

3 Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?

4

5 Energy Probe Question #36 - Ref: Exhibit D1, Tab 1, Sch. 1, Table 1

- 6 Please provide a table, in the same level of detail as shown in Table 1 that shows the
- 7 most recent year-to-date actual expenses for the 2011 bridge year and the
- 8 corresponding figures for the same period in 2010.
- 9

10 Response

	USofA	2010 YTD June \$	2011 YTD June \$
Operation		\$6,384,995	\$5,012,599
Load Dispatching	5010	1,809,720	1,619,285
Station Buildings and Fixtures	5012	212,473	197,628
Trans. Station Equip. – Labour	5014	59,015	29,939
Trans. Station Equip Expenses	5015	14,953	2,926
Distribution Station Equipment - Labour	5016	259,141	91,442
Distribution Station Equipment – Expenses	5017	42,399	1,525
Overhead Distribution Lines and Feeders – Labour	5020	552,388	254,494
Overhead Distribution Lines and Feeders – Expenses	5025	1,443,902	336,401
Overhead Distribution Transformers – Operation	5035	27,958	3,845
Underground Distribution Lines – Labour	5040	414,613	272,756
Underground Distribution Lines – Expenses	5045	693,572	746,518
Underground Distribution Trans – Operation	5055	173	7,190
Meter Expense	5065	1,088,666	538,769
Miscellaneous Distribution Expense	5085	(233,978)	909,879
Maintenance		\$2,736,508	\$5,262,404



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #9 Filed: 2011-09-08 Page 2 of 3

	USofA	2010 YTD June \$	2011 YTD June \$
Maintenance of Transformer Stations Equipment	5112	151,801	114,585
Maintenance of Distribution Stations Equipment	5114	486,441	569,648
Maintenance of Poles, Towers a Fixtures	5120	191,756	188,131
Maintenance of Overhead Conductors and Devices	5125	310,523	437,488
Maintenance of Overhead Services	5130	268,462	164,984
Overhead Distribution Lines – Right of Way	5135	0	2,115,589
Maintenance of Underground Conduit	5145	60,009	95,623
Maintenance of Underground Conductors and Devices	5150	720,549	630,037
Maintenance of Underground Services	5155	161,094	122,647
Maintenance of Line Transformers	5160	268,558	257,520
Maintenance of Meters	5175	117,315	566,152
Billing and Collecting		\$4,423,800	\$5,344,001
Meter Reading Expense	5310	173,480	651,524
Customer Billing	5315	3,409,416	3,581,726
Collecting	5320	918,225	801,960
Collections Charges	5330	42	17
Bad Debt Expenses	5335	(77,364)	308,773
Community Relations		\$2,508,233	\$2,484,385
Community Relations - Sundry	5410	2,402,288	2,423,606
Demonstration and Selling Expenses	5510	105,945	60,778
Administrative and General		\$11,041,436	\$12,615,242
Executive Salaries and Expenses	5605	1,053,859	1,147,389
Management Salaries and Expenses	5610	2,673,935	2,938,782
General Administrative Salaries and Expenses	5615	1,456,662	1,373,507
Office Supplies and Expenses	5620	1,323,343	1,441,958

2012 Electricity Distribution Rates - Interrogatory Responses



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #9 Filed: 2011-09-08 Page 3 of 3

	USofA	2010 YTD June \$	2011 YTD June \$
Administrative Expense Transferred –			
Credit	5625	(640,063)	115,882
Outside Services Employed	5630	454,399	526,517
Insurance Expenses	5635	309,610	316,646
Injuries and Damages	5640	227,036	378,500
Employee Pensions and Benefits	5645	321,254	369,237
Regulatory Expenses	5655	553,769	582,363
General Advertising Expenses	5660	0	0
Miscellaneous General Expenses	5665	1,175,804	945,620
Maintenance of General Plant	5675	2,126,542	2,391,934
Charitable Contributions	6205	5,286	86,907
SUB TOTAL		\$27,094,973	\$30,718,630
Taxes Other Than Income Taxes	6105	789,565	820,900
TOTAL		\$27,884,538	\$31,539,530



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #10 Filed: 2011-09-08 Page 1 of 3

1	4.	OPERATING COSTS
2		
3	lss	sue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4		
5	<u>En</u>	ergy Probe Question #37 - Ref: Exhibit D1, Tab 1, Sch. 2, page 8 & Table 3
6		
7	Th	e evidence states that because there are a number of issues that are specific to Hydro
8	Ot	tawa that this application is for the 2012 test year only and is not considered a base
9	yea	ar for a subsequent IRM process.
10	a)	Please provide a comprehensive list and description of the issues that are specific to
11		Hydro Ottawa.
12	b)	Does Hydro Ottawa plan on filing a cost of service application for 2013 rates?
13	c)	If there is an IRM process or adjustment to set 2013 rates (and/or subsequent
14		years), how does Hydro Ottawa propose that base rates be set?
15	d)	Please confirm that Hydro Ottawa has not amortized the costs associated with the
16		rates proceeding for 2012 rates over the 2012 through 2015 period (i.e. base year
17		and 3 years IRM). Please provide the amortized amount if the costs associated with
18		this cost of service proceeding were to be amortized over four years.
19	e)	What is the cost of the regulatory staff forecast to be for 2012?
20	f)	What is the estimated cost of the staffs from other departments who work on the
21		preparation of the rate case?
22		
23	Re	sponse
24		
25 26	a-f)
27	Hy	dro Ottawa Limited ("Hydro Ottawa") filed its application on June 17, 2011 and at the
28	tim	e of that application, Hydro Ottawa was aware of the outstanding decision on Toronto
29	Hy	dro's application (EB-2010-0142).
30		
31	Th	at decision, dated July 7, 2011, clearly outlined the Ontario Energy Board's (the
32	"Bo	pard") expectations regarding the filing of costs of service applications and the



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #10 Filed: 2011-09-08 Page 2 of 3

Incentive Regulation Mechanism ("IRM") process. Based upon that decision, Hydro
 Ottawa considers this application to be a rebasing application and under normal
 circumstances would move to the IRM regime in 2013 through 2015 and then have a
 cost of service hearing scheduled for 2016.

At the same time, Hydro Ottawa is aware that the decision does not preclude an
applicant from seeking a cost of service hearing earlier than the next scheduled cost of
service hearing and that Hydro Ottawa would have to prove to the Board that indeed a
cost of service hearing is warranted and that this would be a threshold issue to be dealt
with prior to proceeding with the cost of service hearing.

11

12 Hydro Ottawa has a number of issues that may not be unique in themselves but

13 combined may make Hydro Ottawa different from other electricity distributors in the

14 province. Those issues are the capital expenditures for a new CIS system and the

15 requirement for capital expenditure for new facilities. As well, Hydro Ottawa has a

16 growing requirement for additional capital expenditures to address aging infrastructure.

17 These investments need to occur in a timely manner to allow continuation of quality,

18 reliable and affordable service to Hydro Ottawa's customers and these investments need

19 to be incorporated into rate base in a timely manner to ensure that the shareholder is

20 provided the allowed rate of return on its investment.

21

22 In addition, Hydro Ottawa has a workforce planning strategy that needs to implemented

23 and funded to ensure the continuation of qualified, experienced personnel to continue to

- 24 provide quality, reliable and affordable service to its customers.
- 25

It is Hydro Ottawa's belief that all of the issues identified above combined makes Hydro
Ottawa significantly different than other electric utilities because of having to deal with all
these issues in the same general timeframe.

29

30 In conclusion, Hydro Ottawa's management and Board of Directors have not yet

31 determined whether it will file for a cost of service application in 2013 and would not



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #10 Filed: 2011-09-08 Page 3 of 3

- 1 make any decision on this important issue until the decision in this case has been
- 2 rendered. Hydro Ottawa does understand the threshold test it must meet for the Board
- 3 to consider such an application.
- 4

5 "Legal Costs for regulatory matters" represent Hydro Ottawa's estimate of costs for
outside legal counsel to represent Hydro Ottawa at hearings at the Board. The level of
cost for this item and intervenor costs represents Hydro Ottawa's estimate of its annual
costs for these items as Hydro Ottawa does expect hearings at the Board which affect
Hydro Ottawa, such as the current three prong process of the for the Renewed
Regulatory Framework for Electricity.

11

12 The 2012 regulatory costs are Hydro Ottawa's estimated costs for regulatory work in 13 2012 and it is expected that for each year of the IRM process, Hydro Ottawa will 14 experience total regulatory costs of a similar amount. The 2012 rate proceeding costs 15 are not included in the 2012 regulatory costs as they are being expensed to 2011 16 regulatory costs. Of the total of approximately \$1.3 million for 2012 regulatory costs, 17 over \$900,000 is associated with outside agencies and the Board. The Board's 18 business plans indicate that it projects annual cost increases for the period of 2011 -19 2014 of approximately 3.2 % and Hydro Ottawa expects that the other outside agencies 20 will have similar annual increases. 21 22 The cost for regulatory staff in 2012 is expected to be \$1M. Staff from other

- 23 departments contribute to the preparation of the rate case, however, Hydro Ottawa does
- 24 not have an internal tracking system for recording hours spent by these individuals on
- 25 this project versus other projects and therefore Hydro Ottawa is unable to estimate the
- 26 cost of the time spent by those individuals.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #11 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	Energy Probe Question #38 - Ref: Exhibit D1, Tab 1, Sch. 2, page 7
6	Has Hydro Ottawa completed the RFP process related to the vegetation management?
7	If yes, please provide the results and the impacts on the 2012 costs relative to that
8	forecast.
9	
10	Response
11	
12	Refer to Exhibit 4-1-6 (Board Staff Question #38). (Answer copied below)
13	
14	Hydro Ottawa Limited has secured the services of a replacement contractor for the
15	completion of the 6-year program ending in 2013. The budget for 2012 included
16	estimated contract costs. The final contract costs are immaterially different from those
17	included in the 2012 budget, thus not impacting the 2012 vegetation management
18	budget
19	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #12 Filed: 2011-09-08 Page 1 of 1

1	4. (OPERATING COSTS
2		
3	lss	ue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4		
5	En	ergy Probe Question #39 - Ref: Exhibit D1, Tab 5, Sch. 1
6	a)	How many of the eligible retirements shown in Table 1 has Hydro Ottawa forecast to
7		actually retire in 2011 and 2012?
8	b)	Has Hydro Ottawa reflected the reduction in salaries, wages and benefits of these
9		retirements in the forecast? If not, why not?
10		
11	Re	sponse
12		
13	a)	Hydro Ottawa Limited ("Hydro Ottawa") has forecasted that 75% of employees who
14		become eligible to retire in 2011 and 2012 will retire when they become eligible or
15		shortly thereafter.
16		
17	b)	A reduction in salaries, wages and benefits for employees retiring is not reflected in
18		the forecast as positions expected to become vacant due to retirements are
19		budgeted to be filled when the retirees leave the organization. As well, key and one
20		of a kind positions requiring knowledge transfer prior to the incumbent retiring may
21		result in employee overlap which will mean two employees being paid during the
22		overlap period. If a position remains vacant due to retirement for any period of time,
23		the cost savings for the period from retirement date to the actual hiring of the position
24		are addressed through the vacancy allowance provision.
25		



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #14 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	CCC Question #23 - Ref: Ex. D1/T1/S1
6	The evidence states that 15 apprentices have been planned for 2011. What is the total
7	cost of these additions? How many apprentices have been hired to date? Is Hydro
8	Ottawa still planning to add 15?
9	
10	Response
10 11	Response
10 11 12	Response Hydro Ottawa Limited is still planning to hire 15 apprentices in 2011 and has to date
10 11 12 13	Response Hydro Ottawa Limited is still planning to hire 15 apprentices in 2011 and has to date hired three. The recruitment and staffing process is currently underway to hire 12
10 11 12 13 14	Response Hydro Ottawa Limited is still planning to hire 15 apprentices in 2011 and has to date hired three. The recruitment and staffing process is currently underway to hire 12 apprentices to commence employment in the fall, including 8 Power Line Maintainer
10 11 12 13 14 15	Response Hydro Ottawa Limited is still planning to hire 15 apprentices in 2011 and has to date hired three. The recruitment and staffing process is currently underway to hire 12 apprentices to commence employment in the fall, including 8 Power Line Maintainer apprentices and 4 Meter Technician apprentices. The total cost associated for these
 10 11 12 13 14 15 16 	Response Hydro Ottawa Limited is still planning to hire 15 apprentices in 2011 and has to date hired three. The recruitment and staffing process is currently underway to hire 12 apprentices to commence employment in the fall, including 8 Power Line Maintainer apprentices and 4 Meter Technician apprentices. The total cost associated for these apprentices for the 2012 Test Year is \$1.1M, which includes training costs.
 10 11 12 13 14 15 16 17 	Response Hydro Ottawa Limited is still planning to hire 15 apprentices in 2011 and has to date hired three. The recruitment and staffing process is currently underway to hire 12 apprentices to commence employment in the fall, including 8 Power Line Maintainer apprentices and 4 Meter Technician apprentices. The total cost associated for these apprentices for the 2012 Test Year is \$1.1M, which includes training costs.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #16 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	CCC Question #25 - Ref: Ex. D1/T4/S4/p. 5
6	For each of the Customer Service Strategy Initiatives listed did Hydro Ottawa undertake
7	a quantitative cost-benefit analysis? If not, why not? If so, please provide.
8	
9	Response
10	
11	In 2009, Hydro Ottawa Limited ("Hydro Ottawa") contracted the services of an external
12	consulting firm through a competitive process to undertake a review of its customer
13	service practices. The external consulting firm, with significant background in this area
14	of practice, evaluated Hydro Ottawa's performance on 15 customer service dimensions
15	and recommended that a Customer Service Strategy be implemented to move Hydro
16	Ottawa forward in the area of Customer Service. Four of the dimensions (Complaint
17	Management, Service Standards, Accuracy and Completeness, and Service Quality)
18	were identified as high priority and, as a result, all of the activities and initiatives under
19	the Customer Service Strategic Plan were developed to address these four priorities.
20	
21	A business decision was made to proceed with the implementation of the Customer
22	Service Strategic Plan, which was supported by Senior Management and the Board of
23	Directors.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #17 Filed: 2011-09-08 Page 1 of 2

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	CCC Question #26 - Ref: Ex. D1/T4/S4/p. 5
6	Please provide a schedule setting out the total expenditures for the Customer Service
7	Strategic Plan for each year of the plan. Please differentiate between capital and
8	operating expenses.
9	
10	Response
11	
12	The total expenditures for the Customer Service Strategic Plan for the years 2011 and
13	2012 are set out in the table below:

14

15 **Table 1 – Customer Service Strategic Plan Expenditures**

	2011	2012
	Plan	Plan
Capital expenditures	\$612,887	\$864,000
Operating expenses	\$550,000	\$880,000
Total	\$1,162,887	\$1,744,000

16

17 Capital expenditures include implementation of call recording capabilities in 2011. Both

18 the Contact Centre and IVR platforms will be upgraded in 2011 to provide stable and

19 reliable environments upon which to expand self service options for customers and allow

20 Hydro Ottawa Limited ("Hydro Ottawa") to introduce new business applications in 2012

21 to manage and improve customer interactions.

22

23 In 2010 Hydro Ottawa won Chartwell's Best Practices Award for Outage

24 Communications. Continued investments in enhancing customer and stakeholder

25 communication including the introduction of virtual web based outage maps will ensure

26 that Hydro Ottawa continues to meet customer expectations on staying informed in the

27 event of power outages.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #17 Filed: 2011-09-08 Page 2 of 2

- Operating expenses include project management and support costs to examine Hydro
 Ottawa's customer service delivery model and to redesign many of the customer centric
- 3 processes throughout 2011 and 2012, in tandem with the upgrade of the CIS system
- 4 and the implementation of the new Customer Service Standards mandated by the
- 5 Board. This will be accompanied by documentation of the various processes and staff
- 6 training.
- 7
- 8 In addition, there are a number of annual recurring expenses in order to maintain the
- 9 new business applications implemented under the Customer Service Strategic Plan,
- 10 including regular updates to MyHydro Link and on-going customer research through
- 11 surveys. These Operating Costs total approximately \$250,000 per year and are included
- 12 in Table 1 above.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #18 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	CCC Question #27 - Ref: Ex. D1/T1/S2/p. 3
6	Please provide the updated numbers for 2011(OM&A Cost Driver Table), based on
7	actuals to date.
8	
9	Response
10	
11	The cost driver table is designed to show a full year, year over year change by major
12	cost driver, thus the table cannot be restated on $\frac{1}{2}$ year basis. Overall, 2011 OM&A is
13	materially on budget.
14	
15	Please see Exhibit K1-2-2 (EP #2) for OM&A results as compared to budget to June
16	2011.
17	
18	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #19 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	SEC Question #37 - Ref: Ex.D1/1/2/p.4
6	With respect to benefits, has the Applicant considered changing benefit providers?
7	
8	Response
9	
10	Our current benefit insurance provider has been in place since the harmonization of the
11	insured benefit plans following the amalgamation of the five founding utilities in 2001.
12	Through a competitive process, Canada Life (now Great West Life following an
13	acquisition in 2004), was selected as the successful bidder for Hydro Ottawa Limited's
14	("Hydro Ottawa") group insurance programs. Hydro Ottawa is considering the option of
15	tendering the benefit plan to the market in 2012-2013.
16	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #20 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	SEC Question #38 - Ref: Ex.D1/2/p.9
6	Please provide a breakdown and further details of the 2012 budget for 'legal costs for
7	regulatory matters'.
8	
9	Response
10	
11	Please see Exhibit K4-1-10 (EP #37).



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #21 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	SEC Question #39 - Ref: Ex.D1/4/3/p.4
6	Please provide an update with respect to the Applicant's stated intent to enter into an
7	agreement with the Local Alliance Consortium.
8	
9	Response
10	
11	Hydro Ottawa Limited is pursuing entering into an agreement with Locate Alliance
12	Consortium. Locate services continue to be provided by the existing vendor. This is not
13	expected to impact costs associated with Locates in 2012.
14	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #22 Filed: 2011-09-08 Page 1 of 4

1 4. OPERATING COSTS

2 3

Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?

4

5 SEC Question #40 - Ref: Ex.D2/1/5/p.1-3

- 6 For table 1, please provide 2011 year-to-date actuals.
- 7

8 Response

	USofA	2012	2011	Variance	Percent	2011
		Budget	Budget	\$	Change	YTD Actual
		\$	\$		%	\$
Operation		11,883,322	12,061,906	-178,584	-1.50%	5,012,599
Load Dispatching	5010	3,762,164	3,645,778	116,386	3.2	1,619,285
Station Buildings and Fixtures	5012	717,818	690,955	26,862	3.9	197,628
Trans. Station Equip Labour	5014	156,056	150,074	5,982	4	29,939
Trans. Station Equip Expenses	5015	33,351	40,559	-7,208	-17.8	2,926
Distribution Station Equipment - Labour	5016	527,212	507,013	20,199	4	91,442
Distribution Station Equipment - Expenses	5017	86,513	126,917	-40,404	-31.8	1,525
Overhead Distribution Lines and Feeders - Labour	5020	475,396	521,113	-45,717	-8.8	254,494
Overhead Distribution Lines and Feeders - Expenses	5025	96,563	85,174	11,388	13.4	336,401



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #22 Filed: 2011-09-08 Page 2 of 4

Overhead Distribution Transformers - Operation	5035	19,441	18,710	731	3.9	3,845
Underground Distribution Lines - Labour	5040	462,525	529,271	-66,746	-12.6	272,756
Underground Distribution Lines - Expenses	5045	1,489,863	1,482,223	7,640	0.5	746,518
Underground Distribution Trans - Operation	5055	843	12,996	-12,153	-93.5	7,190
Meter Expense	5065	1,116,453	2,216,836	-1,100,383	-49.6	538,769
Miscellaneous Distribution Expense	5085	2,939,124	2,034,287	904,837	44.5	909,879
Maintenance		9,274,548	8,462,994	811,554	9.60%	5,262,404
Maintenance of Transformer Stations Equipment	5112	165,994	151,862	14,131	9.3	114,585
Maintenance of Distribution Stations Equipment	5114	917,723	829,102	88,621	10.7	569,648
Maintenance of Poles, Towers & Fixtures	5120	231,310	219,079	12,231	5.6	188,131
Maintenance of Overhead Conductors and Devices	5125	806,411	784,917	21,494	2.7	437,488
Maintenance of Overhead Services	5130	534,097	568,430	-34,333	-6	164,984
Overhead Distribution Lines and Feeders - Right of Way	5135	2,724,551	2,780,512	-55,961	-2	2,115,589
Maintenance of Underground Conduit	5145	8,730	10,200	-1,470	-14.4	95,623
Maintenance of Underground Conductors and Devices	5150	1,450,987	1,370,161	80,826	5.9	630,037


Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #22 Filed: 2011-09-08 Page 3 of 4

Maintenance of Underground Services	5155	257,930	268,665	-10,735	-4	122,647
Maintenance of Line Transformers	5160	653,280	647,015	6,266	1	257,520
Maintenance of Meters	5175	1,523,535	833,052	690,484	82.9	566,152
Billing and Collecting		12,085,194	11,925,750	159,444	1.30%	5,344,001
Meter Reading Expense	5310	1,556,256	1,525,732	30,524	2	651,524
Customer Billing	5315	7,332,455	7,065,410	267,045	3.8	3,581,726
Collecting	5320	2,134,783	1,999,608	135,175	6.8	801,960
Collections Charges	5330	0	0	0	0	17.39
Bad Debt Expenses	5335	1,061,700	1,335,000	-273,300	-20.5	308,773
Community Relations		6,911,671	6,093,455	818,217	13.40%	2,484,385
Community Relations - Sundry	5410	6,727,367	5,892,595	834,772	14.2	2,423,606
Demonstration and Selling Expenses	5510	184,305	200,860	-16,555	-8.2	60,778
Administrative and General		23,736,696	22,790,434	946,262	4.20%	12,615,242
Executive Salaries and Expenses	5605	3,083,243	2,479,926	603,318	24.3	1,147,389
Management Salaries and Expenses	5610	8,951,189	6,246,764	2,704,425	43.3	2,938,782
General Administrative Salaries and Expenses	5615	941,222	786,779	154,443	19.6	1,373,507
Office Supplies and Expenses	5620	2,900,322	3,004,000	-103,678	-3.5	1,441,958
Administrative Expense Transferred - Credit	5625	-4,689,137	-1,285,084	-3,404,052	264.9	115,882
Outside Services Employed	5630	1,767,285	1,145,197	622,088	54.3	526,517
Insurance Expenses	5635	645,957	633,291	12,666	2	316,646



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #22 Filed: 2011-09-08 Page 4 of 4

Injuries and Damages	5640	790,941	775,432	15,509	2	378,500
Employee Pensions and Benefits	5645	728,000	700,000	28,000	4	369,237
Regulatory Expenses	5655	1,298,157	1,404,456	-106,299	-7.6	582,363
General Advertising Expenses	5660	0	0	0	0	0
Miscellaneous General Expenses	5665	2,441,281	2,201,500	239,781	10.9	945,620
Maintenance of General Plant	5675	4,704,837	4,528,173	176,663	3.9	2,391,934
Charitable Contributions	6205	173,400	170,000	3,400	2	86,907
SUB TOTAL		63,891,432	61,334,539	2,556,893	4.20%	30,718,630
Taxes Other Than Income Taxes	6105	1,806,109	1,770,695	35,414	2	820,900
TOTAL		65,697,541	63,105,234	2,592,307	4.10%	31,539,530

1

3 to remain so through year end.

4

² In summary, as at June 30, 2011 overall OM&A is materially on budget, and is expected



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #23 Filed: 2011-09-08 Page 1 of 3

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	SEC Question #41 - Ref: Ex.D4/1/1/p.1-7
6	For each of the non-affiliate services provided in tables 1-6, please provide a brief
7	description of the service and/or project and the cost.
8	
9	Response
10	
11	The dollar amounts have not been included for confidentiality purposes and to protect
12	the suppliers from their competitors. If it is determined that this information is required,
13	Hydro Ottawa will follow the Ontario Energy Board's (the "Board") Practice Direction on
14	Confidential Filings in order to provide the information. Suppliers have been included in
15	the list if the total purchases exceeded \$750k. For illustrative purposes, the following
16	provides expanded description of the service/product provided on Table 6 of Exhibit D4-
17	1-1.
18	

19

Table 6: 2010 Suppliers

Supplier	Service / Product	Procurement Method	\$
Asplundh Canada	Forestry – Line clearing/tree trimming to prevent power outages	RFSO	
Atria Networks LP	Communications – Fibre Optic High Speed Communications for Hydro Ottawa LAN	Sole Source	
B.G. High Voltage Systems	Construction – Turnkey project management for the construction of Ellwood D.S.	RFP	
BPR Energie Inc.	Electrical engineering consulting for the major projects in Hydro Ottawa's Asset Plan.	RFSO	
Bradley Kelly Construction Ltd.	Civil construction services for new underground plant installations	RFSO	
CG Power Systems	Station Transformers for Ellwood Station and Beaconhill Station	RFP	
Drain-All	Clean-up services for hazardous spills such as leaking transformer oil.	RFP	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #23 Filed: 2011-09-08 Page 2 of 3

Supplier	Service / Product	Procurement Method	\$
Dual Ade Inc	High Voltage Switchgear for new and refurbished stations.	RFP	
Elster Metering	Supply of designated Smart Meters for Hydro Ottawa's move to Smart Metering and Time of Use Rates. (CLD cooperative standard)	RFP	
General Switchgear and Control	High Voltage Switchgear for new and refurbished stations.	RFP	
Greely Construction Ltd.	Civil construction services for new underground plant installations	RFSO	
Guelph Utility Pole	Preserved wood poles for construction and maintenance in the Hydro Ottawa overhead distribution system.	Strategic Alliance	
HD Supply Utilities (Formerly Grafton)	Distribution transformers and overhead and underground cables and related hardware	Strategic Alliance	
Hydro One (SSA)	5 year financial true up to capital contribution by HOL from construction of 115kV lines to supply HO system.	Sole Source	
IBM Canada	CIS hosting and call-centre hosting.	Sole Source	
Intergraph	Geographical Information System (GIS) software development and licensing.	RFP	
J.W. Leslie Utilities	Civil construction services for new underground plant installations	RFSO	
Laurin & Company	Station construction services for new and refurbished stations	RFP	
Merowitz Potechin	Real Estate - Land acquisition for station construction	Sole Source	
Nedco	Lighting products and services for OPA program for small business lighting retrofits.	RFP	
Olameter Inc.	Meter Reading and Bill Collection services	RFP	
Oracle	Software fees and services for major corporate systems such as JD Edwards EnterpriseOne, Meter Data Services, and CIS	Sole Source	
Promark Telecon	Underground cable location services for Hydro and customers to avoid digging up underground cables and plant	RFP	
Prysmian Power Cables & Systems Can. Ltd	Medium and low voltage underground electrical cables	Strategic Alliance	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #23 Filed: 2011-09-08 Page 3 of 3

Supplier	Service / Product	Procurement Method	\$
S&C Electric	Medium voltage switchgear for Hydro Ottawa distribution system new underground construction.	RFQ	
Siemens Canada Ltd.	New stations transformers for Fallowfield and Janet King Stations.	RFP	
Syntax	Software Consultants for the upgrade of Hydro Ottawa's ERP system , JDE EnterpriseOne in light of the IFRS updates	RFP	
Tamarack Tree Care LTD	Forestry – Line clearing/tree trimming to prevent power outages	RFSO	
Wardrop Engineering	Electrical engineering consulting for the major projects in Hydro Ottawa's Asset Plan.	RFSO	

1

2

3



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #24 Filed: 2011-09-08 Page 1 of 3

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	VECC Question #38 - Ref: Exhibit D1, Tab 1, pages 5-8, Table 1 Summary
6	a) The following OM&A accounts show significant growth since the last Board approved
7	(2008) or significant actual under spending from the Board approved followed
8	significant growth in the bridge (2011) and test year (2012). Please provide a
9	detailed explanation as to the reason for the variation. Please address any
10	additional specific questions noted below. In the explanation please provide details
11	as to what, if any, steps are being taken to mitigate cost increases.
12	i) 5100 Load Dispatching.
13	ii) 5035 Overhead Distribution Transformers.
14	iii) 5085 Miscellaneous Distribution expenses.
15	iv) 5135 Overhead Distribution Line Right-of way. Please explain why no
16	spending was made in this area prior to 2011.
17	v) 5175 Maintenance of Meters. If related to introduction of smart meters, please
18	explain the reasons why these meters are more costly to maintain.
19	vi) 5310 Meter Reading Expense (see v.).
20	vii) 5410 Community Relations.
21	viii) 5630 Outside Services.
22	ix) 6205 Charitable Contributions.
23	
24	Response
25	
26	Please also refer to Exhibits D2-1-1 to D2-1-5. These exhibits summarize variations in
27	OMA spending in from 2008 to 2012 as per OEB guidelines.
28	
29	i. 5010 Load Dispatching: Additional staff was added in 2010 and wage
30	increases for existing staff contribute to increase in cost. Cost increases in this
31	account from 2010 to 2012 are 3% per year.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #24 Filed: 2011-09-08 Page 2 of 3

1 5035 Overhead Distribution Transformers – The original budget for account ii. 2 5035, Overhead Distribution Transformers – Operation, covered costs associated 3 with the cleanup of transformer oil spills and was subsequently transferred to 4 account 5085, Miscellaneous Distribution Expense. No major spills occurred in 5 2008 which significantly reduced cost for environmental cleanup. 6 7 iii. 5085 Miscellaneous Distribution Expense: Compensation expenses have 8 increased since 2008. The hiring of an additional apprentices, annual 9 compensation increases and step progression increases are the main cost 10 drivers. This account also includes labour and allocated burden recoveries. 11 12 5135 Overhead Distribution Line Right-of way: In 2011, Vegetation iv. 13 Management (tree trimming) outside service costs have been reallocated from 14 Accounts 5020 Overhead Distribution Lines and Feeders – Labour and 5025 15 Overhead Distribution Lines and Feeders – Expenses, to this US of A account. 16 It is believed this is the correct accounting going forward. Previous year actual 17 costs have not been retroactively adjusted in order to maintain comparatives in 18 the historical years. 19 20 **5175 Maintenance of Meters.** Over the past several years, significant work ν. 21 effort has been concentrated on the deployment of smart meters, resulting in a 22 high proportion of labour costs allocated to capital expenditures. The smart 23 meter deployment was substantially competed in 2010, with some commercial 24 installations completed in 2011. As the capital program draws to an end, smart 25 meters that were first deployed at the onset of the program are now five years old 26 and the technician crews are resuming their traditional meter maintenance 27 activities. The focus is now on verifying, maintaining and managing the meter 28 assets and communications infrastructure for the smart meters as the company 29 transitions to Time of Use ("TOU") Rates. With the deployment of smart meters 30 complete, Hydro Ottawa anticipates that the split between maintenance and 31 capital will revert back to pre-2006 trends where Metering work was 90%



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #24 Filed: 2011-09-08 Page 3 of 3

- maintenance and 10% new capital work. The transfer of \$1.2M of smart meter operational costs to Account 5310 reduces the year over year change in the maintenance category.
- 4

1

2

3

5 6

vi. 5310 Meter Reading Expense (see v.).

7 vii. 5410 Community Relations expenses are forecast to increase by \$1.2M in 2011 8 vs. 2010. The Customer Service Strategy Plan ("CSSP"), as noted in Exhibit D1-9 4-4, accelerates in 2011 and is forecast to add an additional \$400k in Community 10 Relations expenses. Other 2011 initiatives include an RFP for the Call Centre 11 (contract expires Dec 2012), redesign and documentation of customer facing 12 processes (such as the Ontario Accessibility Policy and Practices), configuration 13 & implementation of a new call recording box, new customer self-serve 14 applications and improvements to Outage Communications, all of which will add 15 \$250k for these initiatives. New for 2011 is a \$160k increase in the recurring 16 annual costs for on-going support of the Avaya telephone system platform 17 purchased in Dec 2010. Costs of \$150k are also included for modifications to 18 existing applications, and website hosting and maintaining My Hydro Link. 19

- viii. 5630 Outside Services expenses in previous years were contained in multiple
 OEB accounts within the grouping Administrative and General Expenses. In 2010
 and forward those costs are now consolidated in account 5630.
- 23

ix. 6205 Charitable Contributions: Sponsorship of the LEAP program for \$170k,
as mandated by the Board starting in 2011, is all that is included in this account.
In previous years Hydro Ottawa was a sponsor for the Winter Warmth Program,
coordinated by the United Way.

- 28
- 29



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #25 Filed: 2011-09-08 Page 1 of 2

1	4.	OPE	ERATING COSTS
2			
3	lss	sue	4.1 - Is the overall OM&A forecast for the test year appropriate?
4			
5	VE	CC	Question #39 - Ref: Exhibit D1, Tab 1, Schedule 1, pages 1-20
6			
7	Pre	eam	ble: The evidence shows that Ottawa Hydro has had actual customer number
8	gro	owth	n of approximately 1.5% and that its energy sales have virtually stayed the same
9	sin	ice 2	2008 (see Exhibit C1, Tab 1 , Schedule 1, pages 11-15). CPI inflation was
10	20	08:2	2.4%; 2009:0.3%; 2010:1.8%
11		a)	Please verify the CPI rates for 2008 through 2010 - or provide the inflation factor
12			Hydro Ottawa used when reviewing proposed budgets.
13		b)	Please explain what steps Hydro Ottawa management has taken to align OM&A
14			costs to customer growth/energy sales and inflation.
15		c)	Does Hydro Ottawa senior management provide a documented policy or
16			direction to the various departments preparing budgets? If yes, please provide
17			the communications provided for the preparation of budgets for 2009 through
18			2012.
19		d)	If no documented communication was made to departments, then please explain
20			how senior management provides direction and oversight in the budget process.
21			
22	Re	spc	onse
23			
24	a)	Ple	ease see Exhibit K1-2-1 (Board Staff Question 2) for explanation of 2012 inflation
25		pla	nning assumption. See attachments noted in part c of this question for factors
26		use	ed in prior year budgets.
27			
28	b)	Hy	dro Ottawa Limited ("Hydro Ottawa") incorporates general inflation and
29		pro	oductivity factors arising from the 3 rd Generation Incentive Regulation Mechanism
30		(30	GIRM) into the OM&A budget. Please see attachment 2 slide 5, "productivity
31		fac	ctors have been incorporated in each year of the financial plan".



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #25 Filed: 2011-09-08 Page 2 of 2

- 1 c) Please see attached example provided to Hydro Ottawa senior management for
- 2 preparation of the 2010 budget. For 2011 and 2012, the Hydro Ottawa budget
- 3 process has been guided by principles used in the preparation of the respective Rate
- 4 Applications
- 5
- 6 d) Please see Exhibit K1-2-4 (CCC #6).

Memo

To: Hydro Ottawa Limited Senior Management Team
From: A/Manager Corporate Financial Planning and Analysis
CC: Geoff Simpson
Date: 30/06/2009

Re: 2010 – 2014 Budget Plan

Budget Process:

The Enterprise Executive Team (EET) has approved a timeline for the preparation and approval of the Operating (Opex) and Capital (Capex) Budgets. Management Accountants will be meeting with Directors in the coming weeks to discuss budget timelines, roles, and deliverables. The following are some of the changes from previous years budget process.

- 2010–2012 Opex Budget and 2010–2014 Capex Budget will be entered into JDE. The outer years Opex will be, in effect, the 2010 budget with the high level "top down" assumptions regarding compensation and inflationary increases only. The outer years Capex will be in as much detail as is available. Outer year detail is requested in order to prepare for the eventuality of a 2011 Cost of Service submission.
- Budget will be prepared and approved by **quarters**, no monthly information required.
- Top Down Approach: the Opex budget will be in accordance with 2008–2012 Strategic Direction and Financial Outlook. Regular Opex will be flat lined to the aggregate 2009 budget amount, adjusted for an inflation factor not to exceed revenue increase. Finance will perform trending analysis on 2010 assumptions and will meet with the Directors in each Division.
- All significant new initiatives arising from Green Energy Act/Smart Grid require approval by the COO and President & CEO. The budget requests will be supported by business cases and process in a separate schedule.

Budget Process Timetable:

July 3: Planning team to distribute current headcount information to Directors.

July 10: Directors review and submission of 2010-2012 headcount variances.

July 24: Finance to provide labour rate, trending on productivity %, and number of chargeable hours. Labour allocation between Capex, Maintenance, and Work for Others (WFO) will be determined with the CAM and DAM Divisions.

July 31: Divisional submission of 2010 – 2014 Capex requests.

1st week of August: Meetings with Divisions to determine 2010-2012 Opex budget, including trending analysis, and review for productivity savings.

August 14: Regulatory submission of revenue budget and regulatory assets projections. Divisional submission of new initiative business cases.

August 31: HOL Senior Management team review of divisional budget submissions, and review/approval of new initiatives business cases.

September 16: EET review of draft budget submissions against business plans, and prioritization of Capital project needs.

October: EET final approval of company budget submissions.

December 10: Boards Approval of Business Plan and Budget.

Finance will provide all necessary budget templates. Please communicate the importance of this process to all your employees to ensure your Division is successful in providing your deliverables. Thanks to everyone's cooperation in advance.

For more information, please reference to the 2010 Budget Planning Presentation slides or contact the Corporate Financial Planning Team.

ext. 469
ext. 7475
ext. 7296
ext. 7604
ext. 7616

Hydro Ottawa Limited

2010 Budget Planning

Senior Management Team Presentation June 23, 2009 (Content updated for distribution June 30)



2010 – 2012 Budget Planning

- 1. Top Down Approach: 2010 Net Income target(s) set by EET in accordance with 2008-2012 Strategic Direction and Financial Outlook
 - Interprise wide assumptions for compensation increases and inflation
 - S Finance to perform gap analysis on 2010 assumptions
- 2. Bottom Up Approach: Divisional budget prepared in accordance with EET direction, with consideration for:
 - **GEA/Smart Grid initiatives**
 - Solution New initiatives supported by business cases approved by EET
 - Achievement of productivity targets
- 3. 2010 Budget prepared and approved by quarters
 - 2010 reporting and forecasting against quarterly budget
 - S Forecasts prepared twice per year; Q2 and Q3



2010 Enterprise Budget Principles

<u>General</u>

- 2010 Budget and 2011 2012 Operating plans to be approved, in accordance with business planning cycle. 2010 to 2014 CAPEX plans to be approved
- All spending must align to the Enterprise strategic plan and corporate objectives, and with Company business plans
- Hydro Ottawa Limited budget will be guided by the existing 2008 rate application and any other applicable OEB direction (i.e. 3GIRM). Cost of service rebase assumed for 2012
- Enterprise budget will be based on 2008 2012 Strategic Direction and Financial Outlook and will properly provide for growth and the replacement of ageing infrastructure, affordability and return on investment



2010 Enterprise Budget Principles (cont.)

Base Budget

- 2010 spending on regular OM&A will be flat lined to the aggregate 2009 budget amount, adjusted for an inflation factor not to exceed revenue increase.
- A productivity factor will be achieved in each company
- All significant new projects will be supported by a business case and approved prior to inclusion in the budget
- Spending in response to new initiatives arising from Green Energy Act/Smart Grid require approval by the COO and President & CEO before inclusion.

Growth Initiatives

- Strategic growth initiatives reflected at the Enterprise level
- No specific increase in net income expected from strategic growth in 2010



2010 Hydro Ottawa Limited Budget Directions

- All spending aligns to Enterprise objectives
- Ensure reliability of the distribution system, customer service and program delivery are funded to ensure achievement of priorities
- Distribution rates reflect 2008 rate application, and 3rd Generation Incentive Regulation Mechanism (3GIRM) – assumed inflation 2.1% less productivity factor 1.12% *in each year* effective May 1
- Productivity factors have been incorporated in each year of the financial plan to offset:
 - 1. Productivity rate reductions imposed by OEB (i.e. 3GIRM)
 - 2. Operating, Maintenance and Administration costs
- Net income not varied from previous plan presented to shareholder



Summary of Known Risks & Opportunities in 2010 Budget Assumptions

Preliminary for discussion only

millions	HOL	EO Cons.	HOHI *	Consolidated
2010 Net Income per Plan	22.9	2.7	15.7	25.8
Potential Risks in Current Assumptions				
3GIRM Distribution Revenue inflation at 1.8 % vs 2.1%	(1.0)			(1.0)
Income tax impact of CIS capital deferral	(1.5)			(1.5)
EO generation contract hedged price @ 4.55 cents, not 5		(0.3)		(0.3)
EO Commercial Services City contract		TBD		TBD
Union compensation increase	TBD			TBD
GEA / Smart Grid initiatives not yet defined	TBD			TBD
Income tax impact of change in regulatory assets	TBD			TBD
Potential Opportunities in Current Assumptions				
Non-compensation OM&A inflation revised to 1% from 2%	0.4	0.1	0.1	0.6
CDM Program management fees	0.5			0.5
New streetlight pole contract with City	0.4			0.4
Intercompany promissory notes	TBD		TBD	0.0
Productivity Factor adjustments	TBD	TBD	TBD	D TBD
Strategic Growth initiatives				TBD
2010 Net Income Preliminary Projection	21.7	2.5	15.8	24.5





2010 Budget Process Timetable

- June: EET approval of 2010 net income targets and guidelines
- July 31: Divisional submission of 2010 capital requests, and review of headcount reports
- August 14: Divisional submission of 2010 new OPEX requests
- August 31: HOL management team review of divisional submissions and business cases
- September 16: EET review of draft budget submissions against business plans, and prioritization of Capital project needs
- October XX: EET final approval of company budget submissions
- December 10: Boards Approval of 2010-2012 Business Plan and 2010 Budget and Financial Plan



Areas of Management Focus for July - August

- **1.** Regulatory staff Revenue Assumptions
- 2. Productivity achievement minimum target \$1.0M
 - All divisions consider targets(?)
 - Finance to model expenditures for review
- 3. Headcount Review
 - Finance to distribute and analyze payroll report(s)
- 4. New OPEX Initiative Business Cases
 - CDM, SmartGrid GEA, etc.
- 5. CAPEX submission







Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #26 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS		
2			
3	Issue 4.1 - Is the overall OM	I&A forecast for the test year	appropriate?
4			
5	EnviroCentre Question #8 - R	<u>ef: Exh D1-1-1, p19 and Exh [</u>	<u>01-1-2, p10</u>
6	Hydro Ottawa will have a LEA	AP expense starting in 2011. T	ne evidence also states that
7	the LEAP program is the only	charitable donation that Hydro	Ottawa has included for
8	both 2011 and 2012.		
9			
10	Please identify the total amou	int contributed to all other com	munity projects and
11	marketing events, including the	ne Brighter Tomorrow Fund, ar	d compare it to the amount
12	allocated for LEAP.		
13			
14	Response		
15			
16	The amounts allocated for LE	AP in the 2011 and 2012 plan	s as compared to all other
17	community projects are as fol	lows:	
18			
		2011 Plan	2012 Plan
	LEAP program	\$170,000	\$173,400
	All other contributions	\$319,758	\$56,616
19			
20	In the 2012 plan, other contril	outions represent only Hydro C	ottawa Limited's ("Hydro

21 Ottawa") corporate United Way contribution to match amounts pledged by Hydro Ottawa

22 employees during the annual workplace campaign. The full amount of the matching

23 contribution will be contributed to the Brighter Tomorrows Fund. Hydro Ottawa

24 evaluates sponsorship and community involvement initiatives on an on-going basis.

25

26 In 2012, only the LEAP program expenses have been included in the calculation of the

27 revenue requirement.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #27 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	EnviroCentre Question #9 - Ref: Exh D1-1-1, p19 and Exh D1-1-2, p10
6	Hydro Ottawa will have a LEAP expense starting in 2011. The evidence also states that
7	the LEAP program is the only charitable donation that Hydro Ottawa has included for
8	both 2011 and 2012.
9	
10	Of the amount allocated for LEAP, please identify the amount that is recuperated by
11	Hydro Ottawa in recovered arrears.
12	
13	Response
14	
15	The total amount allocated for the LEAP program is \$170,000 in 2011 and \$173,400 in
16	2012. Since the inception of the program on Dec 1, 2010 to June 30, 2011, Hydro
17	Ottawa Limited received \$87,445 in payments from the LEAP program and they have

18 been applied to pay customer account balances.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.1 Interrogatory #28 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.1 - Is the overall OM&A forecast for the test year appropriate?
4	
5	EnviroCentre Question #10 - Ref: Exh D1-1-1, p19 and Exh D1-1-2, p10
6	Hydro Ottawa will have a LEAP expense starting in 2011. The evidence also states that
7	the LEAP program is the only charitable donation that Hydro Ottawa has included for
8	both 2011 and 2012.
9	
10	Please identify the total amount of payments received in 2010 from the City of Ottawa to
11	cover the electricity bills of social assistance clients.
12	
13	Response
14	
15	Hydro Ottawa Limited ("Hydro Ottawa") does not keep a record of who pays an individual
16	customer's account, whether it is the customer, another family member or some other
17	third party. Aggregate totals are reported by the LEAP program and previously the
18	Winter Warmth program, which were both directly sponsored by Hydro Ottawa.
19	However, Hydro Ottawa does not have a record of the total amount of payments made
20	by the City of Ottawa to cover the electricity bills of social assistance clients.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

1	4. (OPERATING COSTS
2		
3	lss	ue 4.2 – Are the methodologies used to allocate shared services and other
4	cos	sts appropriate?
5		
6	En	ergy Probe Question #40 - Ref: Exhibit A1, Tab 7, Sch. 1, pages 1-2
7	a)	Are any of the costs, including supports costs, associated with the 11 member Board
8		of Directors that provides oversight to the Holding Company and to Energy Ottawa
9		included in the revenue requirement of Hydro Ottawa? If yes, please quantify and
10		explain what the costs are related to.
11	b)	Page 2 provides a number of roles of the Holding Company in relation to Hydro
12		Ottawa. Does the Board of Directors of Hydro Ottawa fulfill these roles on behalf of
13		the Holding Company or is there an additional role being carried out directly by the
14		Holding Company? If yes, please provide details.
15		
16	Re	sponse
17		
18	a)	The costs associated with Hydro Ottawa Holding Company ("Holding Company")
19		Board of Directors are not allocated to Hydro Ottawa Limited ("Hydro Ottawa") and
20		therefore are not included in the revenue requirement.
21		
22	b)	The Board of Directors for Hydro Ottawa oversees these roles on behalf of the
23		Holding Company for that portion of the business directly related to Hydro Ottawa. In
24		addition, the Holding Company and its Board of Directors is responsible for activities,
25		plans and future directions of all the entities within the Holding Company, including
26		Hydro Ottawa.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #2 Filed: 2011-09-08 Page 1 of 2

1	4. (OPERATING COSTS
2		
3	lss	ue 4.2 – Are the methodologies used to allocate shared services and other
4	CO	sts appropriate?
5		
6	<u>En</u>	ergy Probe Question #41 - Ref: Exhibit A1, Tab 7, Sch. 2, pages 1-2
7	a)	Does Hydro Ottawa share any employees with any of the affiliates shown in the
8		Group of Companies other than those shown on page 2?
9	b)	Does Hydro Ottawa share any buildings or building space with any of the affiliates
10		shown in the Group of Companies?
11	c)	Does Hydro Ottawa share any assets with any of the affiliates shown in the Group of
12		Companies?
13		
14	Re	sponse
15		
16	a)	Yes, other than those employees shown on Exhibit A1-7-2 page 2 Hydro Ottawa
17		Limited ("Hydro Ottawa") shares some office support (admin staff) and a Fitter
18		Mechanic with Energy Ottawa, for the provision of electrical, mechanical and civil
19		services at the Chaudière generating station. In accordance with Section 2.2.3 of the
20		Affiliate Relationship Code, this employee is not directly involved in collecting or
21		having access to confidential information. All work between companies is done on
22		the basis of Service Level Agreement. Further details are provided in Exhibit A1-7-
23		3(E), Attachment E, Schedule 18.
24		
25	b)	Hydro Ottawa Holding Company ("Holding Company"), Energy Ottawa, and Hydro
26		Ottawa share an administrative building. Both affiliates have SLAs for facility
27		services. Further details are provided in Exhibit A1-7-3, Attachment C, Schedule 1
28		and Attachment E, Schedule 13.
29		
30	C)	Hydro Ottawa provides financial services to affiliates, as outlined in Exhibit A1-7-3,
31		Attachment C, Schedule 4 and Attachment E, Schedule 16. Access to the JD



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

- 1 Edwards financial system by Energy Ottawa and the Holding Company has strict
- 2 controls in place, to ensure that no confidential information is shared.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #3 Filed: 2011-09-08 Page 1 of 4

1	4. (OPERATING COSTS
2		
3	lss	ue 4.2 – Are the methodologies used to allocate shared services and other
4	cos	sts appropriate?
5		
6	Ene	ergy Probe Question #42 - Ref: Exhibit A1, Tab 7, Sch. 3, Attachment C
7	a)	Is the cost/employee of \$3,412 shown in Schedule 2 of Attachment C specific to the
8		Holding Company or is it the average cost for all employees of both Hydro Ottawa
9		and the Holding Company?
10	b)	If the response to part (a) is no, please provide the average cost/employee for Hydro
11		Ottawa for the same period as the figure of \$3,412.
12	c)	Please provide the cost/employee shown in Schedule 2 of Attachment C used in the
13		SLA's for 2008, 2009 and 2010, along with the forecast used for the 2012 test year.
14	d)	Do the costs shown in Schedule 1 of Attachment C include an allowance for
15		depreciation expenses, cost of debt, return on equity and income taxes associated
16		with assets used to provide the services? Please provide the rates used and show
17		the calculations for the depreciation, cost of debt, return on equity and taxes included
18		in the costs, if applicable.
19	e)	Are the same performance measures shown in Schedule 3 of Attachment C
20		applicable to work done for Hydro Ottawa? If not, please provide the performance
21		measures that are applicable internally for Hydro Ottawa.
22	f)	Is the cost/employee of \$6,273 shown in Schedule 3 of Attachment C specific to the
23		Holding Company or is it the average cost for all employees of both Hydro Ottawa
24		and the Holding Company?
25	g)	If the response to part (e) is no, please provide the average cost/employee for Hydro
26		Ottawa for the same period as the figure of \$6,273.
27	h)	Please provide the cost/employee shown in Schedule 3 of Attachment C used in the
28		SLA's for 2008, 2009 and 2010, along with the forecast used for the 2012 test year.
29	i)	Please provide the estimated percentage of time/activity referred to in Schedule 4 of
30		Attachment C for 2008, 2009, 2010, 2011 and the forecast used for 2012. Please
31		also provide the total actual costs to which these percentages have been/will be



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #3 Filed: 2011-09-08 Page 2 of 4

1		applied, along with the total actual and estimated costs to which these percentages
2		are applied.
3	j)	Please provide the estimated percentage of time/activity referred to in Schedule 5 of
4		Attachment C for 2008, 2009, 2010, 2011 and the forecast used for 2012. Please
5		also provide the total actual costs to which these percentages have been/will be
6		applied, along with the total actual and estimated costs to which these percentages
7		are applied.
8	k)	Please explain how the percentage of time/activity has been estimated. For
9		example, are detailed time sheets kept by the employees that provide these
10		services?
11	I)	For each Schedule in Attachment C that includes a cost that is determined, in part,
12		by the number of employees, please provide the number of employees for each of
13		2008 through 2010 and the forecasts for 2011 and 2012. Please actually provide the
14		actual number of employees as of the current time for 2011.
15		
16	Re	sponse
17		
18	a)	Yes, the cost/employee of \$3,412 is specific to the Holding Company, which may be
19		different from the other affiliates as the service levels required may differ. Please
20		see response to Energy Probe question 44 d).
21		
22	b)	Not applicable.
23		
24	c)	The cost per employee is shown in Table 1 below
25		
26		Table 1 – Cost per employee
		2008 2009 2010 2011 2012Forecast \$2.081 \$3.221 \$3.322 \$3.412 \$4.047
27		$\psi z, 301$ $\psi 3, 221$ $\psi 3, 332$ $\psi 3, 412$ $\psi 4, 047$
28		
29	d)	No, the costs shown in Schedule 1 of Attachment C do not include such allowances.
30		



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #3 Filed: 2011-09-08 Page 3 of 4

e)	Yes, the perform	iance measi	ures shown in	Schedule 3 c	of Attachment	C are
	applicable to wo	rk done for H	Hydro Ottawa			
f)	Yes, the cost/em	ployee of \$6	6,273 is speci	fic to the Hold	ling Company	y, which may be
	different from the	e other affilia	ates as the se	rvice levels re	quired may c	liffer. Please
	see response to	Energy Prol	be question 4	4 d).		
				,		
a)	Not applicable.					
37						
h)	The cost per em	plovee is sh	own in Table	2 below.		
,						
			Table 2 – Co	ost per emplo	oyee	
	2008	20	09	2010	2011	2012Forecast
	\$8,216	\$6,71	5 \$6	,736	\$6,273	\$7,455
	Please note that	in 2009 a re	eview of the c	osts and the r	non Holding r	elated costs
	were removed fr	om the char	ge. (i.e. CIS,	GIS)		
i)	The estimated p	ercentage of	f time/activity	and actual/es	timated costs	s referred to in
	Schedule 4 of At	tachment C	is shown in T	able 3 below.		
	Table 3	– Percentag	ge of time an	d actual/esti	mated costs	for Finance
			S	ervices		
		2008	2009	2010	2011	2012 Forecast
	Charge to HOHI	Not applicable	\$45,000	\$45,000	\$27,741	\$136,950
	Actual costs	Not applicable	\$2,741,852	\$2,684,514	\$3,078,193	\$4,303,505
	Percentage Of time/Activity	Not applicable	1.6%	1.7%	0.9%	3.2%
	<u>,</u>				1	<u> </u>
	The increase in 2	2012 is due	to several fina	ance staff trar	sferring from	the Holding
	The increase in 2 Company to Hyd	2012 is due Iro Ottawa, t	to several fina	ance staff trar	sferring from	the Holding ts have
	e) f) g) h)	 e) Yes, the perform applicable to wo f) Yes, the cost/em different from the see response to g) Not applicable. h) The cost per em 2008 \$8,216 Please note that were removed fr i) The estimated performed from the schedule 4 of Attender and the sched	 e) Yes, the performance measures applicable to work done for H applicable to work done for H different from the other affiliats see response to Energy Prob g) Not applicable. h) The cost per employee is share a set of the set	 e) Yes, the performance measures shown in applicable to work done for Hydro Ottawa. f) Yes, the cost/employee of \$6,273 is specidifferent from the other affiliates as the sese response to Energy Probe question 4 g) Not applicable. h) The cost per employee is shown in Table Table 2 - Co 2008 2009 \$8,216 \$6,715 \$6 Please note that in 2009 a review of the cowere removed from the charge. (i.e. CIS, or were removed from the charge. (i.e. CIS, or were removed from the charge. (i.e. CIS, or bottom) in Table 3 - Percentage of time/activity Schedule 4 of Attachment C is shown in Table 3 - Percentage of time an Se 2008 2009 (Charge to HOHI Not \$45,000 applicable \$45,000 applicable \$1.6% 	 e) Yes, the performance measures shown in Schedule 3 c applicable to work done for Hydro Ottawa. f) Yes, the cost/employee of \$6,273 is specific to the Hold different from the other affiliates as the service levels resee response to Energy Probe question 44 d). g) Not applicable. h) The cost per employee is shown in Table 2 below. Table 2 – Cost per employee is shown in Table 2 below. Table 2 – Cost per employee is \$6,715 \$6,736 Please note that in 2009 a review of the costs and the r were removed from the charge. (i.e. CIS, GIS) i) The estimated percentage of time/activity and actual/ess Schedule 4 of Attachment C is shown in Table 3 below. Table 3 – Percentage of time and actual/estistic Services (charge to HOHI Not \$45,000 \$45,000 \$45,000 Actual costs Not \$2,741,852 \$2,684,514 applicable Percentage Not 1.6% 1.7% 	 e) Yes, the performance measures shown in Schedule 3 of Attachment applicable to work done for Hydro Ottawa. f) Yes, the cost/employee of \$6,273 is specific to the Holding Company different from the other affiliates as the service levels required may of see response to Energy Probe question 44 d). g) Not applicable. h) The cost per employee is shown in Table 2 below. Table 2 – Cost per employee 2008 2009 2010 2011 \$8,216 \$6,715 \$6,736 \$6,273 Please note that in 2009 a review of the costs and the non Holding review of the costs and the no

26



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #3 Filed: 2011-09-08 Page 4 of 4

- 1 j) The estimated percentage of time/activity and actual/estimated costs referred to in
 - Schedule 5 of Attachment C is shown in Table 4 below.
- 2 3
- 4
- 5

Table 4 – Percentage of time and actual/estimated costs for
Communications

	2008	2009	2010	2011	2012 Forecast
Charge to HOHI	Not	\$48,254	\$44,736	\$49,839	\$82,012
	applicable				
Actual costs	Not	\$1,291,245	\$1,370,613	\$1,577,580	\$1,714,118
	applicable				
Percentage	Not	3.7%	3.3%	3.2%	4.8%
Of time/Activity	applicable				

- 6
- 7

8 k) The percentage of time/activity has been estimated through management interviews

9 conducted with the departments that provide these services. Detailed time sheets10 are not kept by the employees.

11

12 I) The number of employees is shown in Table 5 below.

13 14

Table 5 – Number of employees

				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Schedule	2008	2009	2010	2011 Forecast	2012 Forecast	2011 Actual June
Human Resources	18	27	37	43	26	41
Information Technology	18	27	37	43	26	41

15

16 Note: Number of employees dropped in 2012 due to transfer as per Exhibit D3 –

17 Tab1 – Schedule 1- Page 3.

18

19

20



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	4. (OPERA	TING COSTS
2			
3	lss	ue 4.2 -	 Are the methodologies used to allocate shared services and other
4	CO	sts app	ropriate?
5			
6	<u>En</u>	ergy Pro	bbe Question #43 - Ref: Exhibit A1, Tab 7, Sch. 3, Attachment D
7	a)	For eac	ch of Schedules 6 through 12, please provide the following:
8		i)	the estimated percentage of time/activity referred to in each Schedule of
9			Attachment D for 2008, 2009, 2010, 2011 and the forecast used for 2012.
10			Please also provide the total actual costs to which these percentages have
11			been/will be applied, along with the total actual and estimated costs to which
12			these percentages are applied.
13		ii)	an explanation of how the percentage of time/activity used in each Schedule
14			of Attachment D has been estimated. For example, are detailed time sheets
15			kept by the employees that provide these services?
16	b)	Are th	ere any costs related to assets owned by the Holding Company (depreciation,
17		debt c	osts, return on equity, income taxes, etc.) recovered through the annual fees
18		shown	in Attachment D? If yes, please quantify and provide all assumptions used.
19			
20	Re	sponse	
21			
22	a)		
23		i)	Please refer to Exhibit D1- Tab2 – Schedule 1 - Attachment AA – Appendix
24			2-L of the submission.
25		ii)	Please refer to Exhibit D1- Tab2 – Schedule 1 – Table 5 of the submission.
26			Detailed timesheets are not kept by the employees providing the service.
27			
28	b)	No, the	ere are no costs related to assets owned by Hydro Ottawa Holding Company
29		recove	red through the annual fees.
30			
31			



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #5 Filed: 2011-09-08 Page 1 of 4

1	4.	OPERATING COSTS
2		
3	lss	ue 4.2 – Are the methodologies used to allocate shared services and other
4	со	sts appropriate?
5		
6	<u>En</u>	ergy Probe Question #44 - Ref: Exhibit A1, Tab 7, Sch. 3, Attachment E
7	a)	With respect to Schedule 13 in Attachment E, how does Hydro Ottawa account for
8		the property taxes with respect to the generating stations and the revenues received
9		from Energy Ottawa? In particular, do the property taxes get included in the working
10		capital allowance calculation of Hydro Ottawa for regulatory purposes?
11	b)	Please provide the actual and forecasted property taxes for 2008 through 2012
12		covered under Schedule 13.
13	c)	Do the costs shown in Schedule 13 of Attachment E include an allowance for
14		depreciation expenses, cost of debt, return on equity and income taxes associated
15		with assets used to provide the services? Please provide the rates used and show
16		the calculations for the depreciation, cost of debt, return on equity and taxes included
17		in the costs, if applicable.
18	d)	Please explain why the cost per employee of \$2,946 shown in Schedule 14 of
19		Attachment E is less than the figure shown in Schedule 2 of Attachment C.
20	e)	For each of Schedules 6 and 17, please provide the following:
21		i) the estimated percentage of time/activity referred to in each schedule for
22		2008, 2009, 2010, 2011 and the forecast used for 2012. Please also
23		provide the total actual costs to which these percentages have been/will be
24		applied, along with the total actual and estimated costs to which these
25		percentages are applied.
26		ii) an explanation of how the percentage of time/activity used in each schedule
27		has been estimated. For example, are detailed time sheets kept by the
28		employees that provide these services?
29	f)	Are the same performance measures shown in Schedule 17 of Attachment E
30		applicable to work done for Hydro Ottawa? If not, please provide the performance
31		measures that are applicable internally for Hydro Ottawa.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #5 Filed: 2011-09-08 Page 2 of 4

1	g)	How has the rate of	f \$66/hour in Sch	edule 18 of Attac	chment E been ca	alculated?		
2		Does it include all burdens? Does it include an allowance for any assets used by						
3		Fitter Mechanic that	t are owned by H	lydro Ottawa? If	not, please expla	ain how these		
4		costs are recovered.						
5	h)	For each Schedule	in Attachment E	that includes a c	ost that is determ	nined, in part,		
6		by the number of er	mployees, please	e provide the num	nber of employee	s for each of		
7		2008 through 2010 and the forecasts for 2011 and 2012. Please provide the actual						
8		number of employe	es as of the curre	ent time for 2011				
9								
10	Re	sponse						
11								
12	a)	Please see respons	se to Energy Prol	be question 34 b)).			
13								
14	b)	The actual and fore	casted property	taxes are shown	in Table 1 below.			
15								
16		-	Table 1 - Actual	and Forecaster	Property Taxes	5		
10						-		
10		2008	2009	2010	2011	2012 Forocast		
10		2008 \$17,354	2009 \$18,207	2010 \$19,283	2011 \$20,161	2012 Forecast \$20,565		
17		2008 \$17,354	2009 \$18,207	2010 \$19,283	2011 \$20,161	2012 Forecast \$20,565		
17 18		2008 \$17,354	2009 \$18,207	2010 \$19,283	2011 \$20,161	2012 Forecast \$20,565		
17 18 19	c)	2008 \$17,354 No, the costs show	2009 \$18,207	2010 \$19,283 of Attachment E	2011 \$20,161 do not include su	2012 Forecast \$20,565		
17 18 19 20	c)	2008 \$17,354 No, the costs shown allowances.	2009 \$18,207	2010 \$19,283 of Attachment E	2011 \$20,161 do not include su	2012 Forecast \$20,565		
17 18 19 20 21	c)	2008 \$17,354 No, the costs shown allowances.	2009 \$18,207	2010 \$19,283 of Attachment E	2011 \$20,161 do not include si	2012 Forecast \$20,565		
17 18 19 20 21 22	c) d)	2008 \$17,354 No, the costs shown allowances. The cost per emplo	2009 \$18,207 n in Schedule 13 yee is specific to	2010 \$19,283 of Attachment E Energy Ottawa,	2011 \$20,161 do not include su which may be dif	2012 Forecast \$20,565 uch		
17 18 19 20 21 22 23	c) d)	2008 \$17,354 No, the costs shown allowances. The cost per emplo other affiliates as th	2009 \$18,207 n in Schedule 13 yee is specific to the service levels in	2010 \$19,283 of Attachment E Energy Ottawa, required may diff	2011 \$20,161 do not include su which may be dif er. Please see r	2012 Forecast \$20,565 uch		
17 18 19 20 21 22 23 24	c) d)	2008 \$17,354 No, the costs shown allowances. The cost per emplo other affiliates as the Energy Probe ques	2009 \$18,207 n in Schedule 13 yee is specific to the service levels to tion 42 a)	2010 \$19,283 of Attachment E Energy Ottawa, required may diff	2011 \$20,161 do not include su which may be dif er. Please see r	2012 Forecast \$20,565 uch		
17 18 19 20 21 22 23 24 25	c) d)	2008 \$17,354 No, the costs shown allowances. The cost per emplo other affiliates as th Energy Probe ques	2009 \$18,207 n in Schedule 13 yee is specific to the service levels in tion 42 a)	2010 \$19,283 of Attachment E Energy Ottawa, required may diff	2011 \$20,161 do not include su which may be dif er. Please see r	2012 Forecast \$20,565 uch		
17 18 19 20 21 22 23 24 25 26	c) d) e)	2008\$17,354No, the costs shown allowances.The cost per emplo other affiliates as the Energy Probe queseSchedule 6 reference	2009 \$18,207 n in Schedule 13 yee is specific to the service levels in tion 42 a) ces a different ex	2010 \$19,283 of Attachment E Energy Ottawa, required may diff shibit. We assum	2011 \$20,161 do not include so which may be dif er. Please see r ne you meant to r	2012 Forecast \$20,565 uch ferent from the response to		
17 18 19 20 21 22 23 24 25 26 27	c) d) e)	2008\$17,354No, the costs shown allowances.The cost per emplo other affiliates as the Energy Probe queseSchedule 6 reference additional detail on	2009 \$18,207 n in Schedule 13 yee is specific to the service levels in tion 42 a) ces a different ex Schedules 16 ar	2010 \$19,283 of Attachment E Energy Ottawa, required may diff schibit. We assume ad 17.	2011 \$20,161 do not include so which may be dif er. Please see r he you meant to re	2012 Forecast \$20,565 uch ferent from the response to		
17 18 19 20 21 22 23 24 25 26 27 28	c) d) e)	2008 \$17,354 No, the costs shown allowances. The cost per emplo other affiliates as the Energy Probe question Schedule 6 reference additional detail on i) The estimated p	2009 \$18,207 n in Schedule 13 yee is specific to the service levels in tion 42 a) ces a different ex Schedules 16 an percentage of tim	2010 \$19,283 of Attachment E Energy Ottawa, required may diff thibit. We assume ad 17. he and actual/esti	2011 \$20,161 do not include so which may be dif er. Please see r he you meant to re mated costs for S	2012 Forecast \$20,565 uch ferent from the response to equest Schedule 16		



1	Table 2 – Percentage of time and actual/estimated costs for Finance						
		2008	2009	2010	2011	2012	
						Forecast	
	Charge to Energy Ottawa	\$50,000	\$52,814	\$50,542	\$55,738	\$111,894	
	Actual costs	\$3,201,314	\$2,741,852	\$2,684,514	\$3,078,193	\$4,303,505	
	% of time/activity	1.6%	1.9%	1.9%	1.8%	2.6%	
2							
3	The increase in 2012 is due to several finance staff transferring from Hydro						
4	Ottawa Holding Company ("Holding Company") to Hydro Ottawa Limited ("Hydro						
5	Ottawa"), therefore the amount of support and costs have increased. Please						
6	refer to Exhibit D3 – Tab1 – Schedule 1- Page 3.						
7							
8	Table 3 – Perce	entage of tim	ne and actua	l/estimated	costs for Me	etering and	

Table 3 – Percentage of time and actual/estimated costs for Metering and Meter Data Services

	2008	2009	2010	2011	2012		
					Forecast		
Charge to Energy	\$78,130	\$84,340	\$82,208	\$81,660	\$83,292		
Ottawa							
Actual costs	\$577,738	\$575,260	\$590,782	\$660,653	\$682,782		
% of time/Activity	13.5%	14.7%	13.9%	12.4%	12.2%		

10

9

11 ii) The percentage of time/activity has been estimated through management

12 interviews conducted with the departments that provide these services. Detailed 13 time sheets are not kept by the employees.

14

15 Yes, the performance measures shown in Schedule 17 of Attachment E are f) 16 applicable to work done for Hydro Ottawa.

17

18 g) The rate of \$66/hour in Schedule 18 of Attachment E is the same labour rate used

- 19 for all capital, maintenance and work for other projects. The hourly labour rate was
- 20 developed which recovers direct labour, benefits, non productive time costs,
- 21 corporate overheads, and operations overheads. It will be applied to all direct labour
- 22 hours charged to maintenance, capital, and work for others through timesheet 23 reporting.
- 24
- 25 h) The number of employees is shown in Table 4 below.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #5 Filed: 2011-09-08 Page 4 of 4

1

Table 4 – Number of employees

Schedule	2008	2009	2010	2011 Forecast	2012 Forecast	2011 Actual June
Human Resources	6	8	9	10	10	11
Information Technology	6	8	9	10	10	11
Generation Services	1	1	1	1	1	1

2


Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #6 Filed: 2011-09-08 Page 1 of 2

1	4. (OPERATING COSTS	
2			
3	Issue 4.2 – Are the methodologies used to allocate shared services and other		
4	co	sts appropriate?	
5			
6	<u>En</u>	ergy Probe Question #45 - Ref: Exhibit A1, Tab 7, Sch. 3, Attachment F	
7	a)	Please provide the cost of insurance coverage to Hydro Ottawa as detailed on page	
8		6 of 9 of Attachment F related to services provided to affiliates.	
9	b)	Does Hydro Ottawa recover the cost of this insurance coverage through the annual	
10		fees charged to its affiliates?	
11	c)	Please provide the cost of insurance to the affiliates as detailed on page 6 of 9 of	
12		Attachment F related to services provided to Hydro Ottawa.	
13	d)	Does Hydro Ottawa pay the cost of this insurance coverage through the annual fees	
14		paid to its affiliates?	
15			
16	Re	sponse	
17			
18	a)	Exhibit A1, Tab 7, Sch.3, Attachment F, clause 15 describes 3 types of insurance	
19		coverage to be maintained by each service provider. The first two noted pertain to	
20		Liability and are obtained through one Commercial General Liability (CGL) policy.	
21		The basis for the premiums for the CGL policy is the gross revenue of each entity	
22		less any intercompany revenue. The overall cost of the CGL policy is therefore	
23		allocated to each entity based on this calculation. As the premiums do not include	
24		intercompany revenues in their determination, the cost to Hydro Ottawa for the	
25		service is NIL.	
26			
27		The third insurance coverage is Automobile Liability (Auto) which bases its premiums	
28		by the type of vehicle. The total actual cost of Hydro Ottawa's Auto insurance in 2011	
29		was \$71,145 or an average of \$344 per unit.	
30			



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #6 Filed: 2011-09-08 Page 2 of 2

1 b) As noted in a) the CGL cost associated to these services is NIL and therefore no 2 recovery is required. The cost of the Auto insurance is included in fleet rates which 3 are charged to any project or service provided by Hydro Ottawa which require fleet 4 services. 5 6 c) The cost of CGL insurance to the affiliates is NIL as explained in a) above. Hydro 7 Ottawa Holding Inc. does not own any fleet so their Auto insurance costs are NIL. 8 Energy Ottawa owns one unit with a premium cost of \$348 for 2011. 9 10 d) Of the \$300 in insurance premiums, none are charged in the services provided to 11 Hydro Ottawa. 12



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #7 Filed: 2011-09-08 Page 1 of 1

4. OPERATING COSTS
Issue 4.2 – Are the methodologies used to allocate shared services and other
costs appropriate?
Energy Probe Question #46 - Ref: Exhibit A1, Tab 7, Sch. 4 & Exhibit D1, Tab 2, Sch. 1,
page 5
Please illustrate the neutral cost effect on Hydro Ottawa of transferring the positions (in
aggregate) to Hydro Ottawa in 2012. Please show the increase in compensation costs
to Hydro Ottawa (wages and benefits) and the changes in allocations through the
Service Level Agreements which is a reduction of \$2.4 million as shown in Exhibit D1,
Tab 2, Schedule 1.
Response
Please see the response to Exhibit K3-5-2 (Board Staff #32)



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #8 Filed: 2011-09-08 Page 1 of 1

1	4.	OPERATING COSTS
2		
3	lss	sue 4.2 – Are the methodologies used to allocate shared services and other
4	со	sts appropriate?
5		
6	<u>En</u>	ergy Probe Question #47 - Ref: Exhibit D1, Tab 2, Sch. 1, Tables 1 & 2
7	a)	How are the IFRS related costs allocated to Hydro Ottawa and each of the affiliates?
8	b)	Please explain the increase in administrative and corporate services expenses
9		between 2010 (\$4,763,289) and 2011 (\$5,900,000).
10		
11	Re	sponse
12		
13	a)	90% of IFRS related costs allocated to Hydro Ottawa Limited ("Hydro Ottawa"). 10%
14		costs remains at Hydro Ottawa Holding Company ("Holding Company") and non-
15		regulated subsidiaries.
16		
17	b)	The increase is explained by the full year compensation effect from the positions
18		filled during 2010 include the Chief Information Officer, Director of IT/IM Planning,
19		Supervisor of Treasury Services, Director of Human Resources and Executive
20		Assistant. Also there were further organizational changes implemented in 2011 to
21		align and integrate functions according to Hydro Ottawa's four key strategic areas of
22		focus. This resulted in the addition of a Chief Energy Management Officer position to
23		the Holding Company, to provide strategic leadership for the delivery of CDM
24		programs. Further, the 2011 resource plan provides for the addition of strategic
25		information technology services, which has led to the addition of a Manager of IT
26		Security, a Manager of Project Management and a Manager of Information
27		Management.
28		
29		



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #9 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS			
2				
3	lss	Issue 4.2 – Are the methodologies used to allocate shared services and other		
4	co	sts appropriate?		
5				
6	<u>En</u>	ergy Probe Question #48 - Ref: Exhibit D1	, Tab 2, Sch. 1	
7	a)	Please provide the total expenses for ser	vices from affiliates as shown in Table 3 for	
8		the most recent year-to-date period in 20	11 and the figure for the corresponding	
9		period in 2010.		
10	b)	b) Please provide the total expenses for Holding Company services and costs as show		
11	in Table 4 for the most recent year-to-date period in 2011 and the figure the			
12		corresponding period in 2010 in the same	e level of detail as in Table 4.	
13				
14	Response			
15				
16	a)	a) The total expenses for services from affiliates January to June for 2010 and 2011 are		
17		shown in Table 1 below.		
18				
19	Table 1 – Total Expenses for Services from Affiliates			
		2010 January to June Actual	2011 January to June Actual	
20		\$11,641,865	\$12,602,404	
21	b)	The total expenses for services received	from Hydro Ottawa Holding Company	
22	,	January to June for 2010 and 2011 are based on budget and only trued up at year		
23	end.			
24				
25				



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #10 Filed: 2011-09-08 Page 1 of 1

1	4.	OPERATING COSTS
2		
3	lss	sue 4.2 – Are the methodologies used to allocate shared services and other
4	со	sts appropriate?
5		
6	<u>En</u>	ergy Probe Question #49 - Ref: Exhibit D1, Tab 2, Sch. 1, Table 5
7	a)	For each allocation shown, please indicate what other methodologies were
8		investigated and indicate why the alternatives were rejected.
9	b)	How have the allocation percentages been determined? Do the relevant employees
10		keep time sheets?
11	c)	Please show how the transfer of 17 employees from HOHI to Hydro Ottawa in 2012
12		has been reflected in the decrease in the percentages allocated to Hydro Ottawa.
13		
14	Re	sponse
15		
16	a)	The methodologies used by Hydro Ottawa Limited ("Hydro Ottawa") are considered
17		suitable and sufficient for the nature of services provided by Hydro Ottawa Holding
18		Company (the "Holding Company"), with consideration for the total value of such
19		services. The cost driver is the level of time and activities for each service.
20		
21	b)	The allocation percentages are estimated based on the level of activities and time.
22		Management employees do not use time sheets.
23		
24	c)	The transfer of the 17 employees from the Holding Company to Hydro Ottawa has
25		been reflected and incorporated with the lower percentages allocated to Hydro
26		Ottawa. Please see response to Board Staff Question #32 (K3-5-2). The allocation
27		to Hydro Ottawa is reduced by \$2.6M. The net cost effect is neutral.
28		



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #11 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.2 – Are the methodologies used to allocate shared services and other
4	costs appropriate?
5	
6	Energy Probe Question #50 - Ref: Exhibit D1, Tab 2, Sch. 1, Attachment AA
7	Please confirm that the reduction shown on page 2 of Attachment AA of \$1,038,855 is
8	related only to the 3 positions hired in 2010 and forecast to be transferred to Hydro
9	Ottawa in 2012.
10	
11	Response
12 13	The reduction in allocations arises from the 8 positions transferred to Hydro Ottawa
14	Limited in 2012. Three of them were hired in 2010. The 2010 figure does not reflect full
15	year compensation for the three positions hired in 2010.
16	
17	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #12 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.2 - Are the methodologies used to allocate shared services and other
4	costs appropriate?
5	
6	CCC Question #32 - Ref: Ex. A1/T7/S2
7	For each of the senior leadership positions set out on p. 2, please provide explain how
8	the salaries are allocated between Hydro Ottawa, Hydro Ottawa Holding Inc. and Energy
9	Ottawa. What is the total forecast annual cost for all of these positions?
10	
11	Response
12	
13	Please see the allocation information in Exhibits K4-2-3 (Energy Probe # 42) and K4-2-5
14	(Energy Probe #44) for the Hydro Ottawa Limited allocations to Hydro Ottawa Holding
15	Inc. and Energy Ottawa



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #13 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.2 - Are the methodologies used to allocate shared services and other
4	costs appropriate?
5	
6	CCC Question #33 - Ref: Ex. A1/T7/S1
7	Please indicate to what extent Energy Ottawa is involved in Hydro Ottawa's CDM
8	initiatives.
9	
10	Response
11	
12	In the spring of 2011, Hydro Ottawa Limited ("Hydro Ottawa") released an RFP into the
13	market to contract with energy service providers to provide conservation services to
14	Hydro Ottawa customers. Five parties responded to the RFP and two service providers
15	were approved by Hydro Ottawa to proceed to contract. One of the service providers
16	approved by Hydro Ottawa was Energy Ottawa, who submitted the lowest bid.
17	
18	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #14 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.2 - Are the methodologies used to allocate shared services and other
4	costs appropriate?
5	
6	CCC Question #34 - Ref: Ex. A3/T1/S1
7	Please provide the forecast annual cost associated with the Hydro Ottawa Limited and
8	Hydro Ottawa Holding Inc. Boards of Directors. How are those costs allocated?
9	
10	Response
11	
12	The 2012 annual forecast for the Hydro Ottawa Limited ("Hydro Ottawa") Board of
13	Directors costs are \$172K, and are fully included as an expense to Hydro Ottawa. The
14	2012 forecasted annual costs associated with the Hydro Ottawa Holding Company
15	("Holding Company") Board of Directors is \$369K.
16	

17 The Holding Company Board of Directors costs are not allocated to Hydro Ottawa.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.2 Interrogatory #15 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.2 - Are the methodologies used to allocate shared services and other
4	costs appropriate?
5	
6	CCC Question #35 - Ref: Ex. A1/T7/S3
7	Have the Service Level Agreements for 2012 been executed? If not, when will they be
8	executed and when will they be filed with the Board?
9	
10	Response
11	
12	The Service Level Agreements for 2012 will be executed by December 2011. Annual
13	certification of compliance with the Affiliate Relationship Code ("ARC") will be filed with
14	the Board by April 30 th as part of the Performance Based Regulation (PBR) filing
15	activities.
16	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #1 Filed: 2011-09-08 Page 1 of 2

1 4. OPERATING COSTS

2 3

4

Issue 4.4 – Are the 2012 compensation costs and employee levels appropriate?

- 5 Board Staff Question #40 Ref: Exh D1-5-1, p7
- 6 The workforce planning model assumes that 75% of those eligible to retire will retire on
- 7 their eligibility date or shortly thereafter. Please provide historical eligible retirements
- 8 and actual retirements and explain any difference vs the assumed rate of 75%.
- 9

10 Response

11

12 The table below outlines the number of employees who were eligible to retire and those

- 13 that retired for the years 2006 to 2010.
- 14

Year	Eligible	Actual
2006	1	0
2007	2	1
2008	4	3
2009	17	12
2010	18	13

15

Forecasting of retirements is both a science and an art given that it looks to predictinghuman behaviour.

18

19 The science is the available data based on history. Hydro Ottawa Limited's ("Hydro

20 Ottawa") historical data demonstrates that we are experiencing and will continue to

21 experience an increase in those employees electing to retire on their eligibility date or

22 shortly thereafter. To date 69% of those eligible to retire do so on their eligibility date or

23 within a period averaging six months of that date, many utilizing earned and unused

24 vacation leave to transition into retirement. The average age of retirement at Hydro

25 Ottawa is decreasing as more employees are electing retirement when they become



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

- 1 eligible and long service employees are and will continue to attain their service
- 2 requirements for pension purposes either prior to or shortly after reaching the minimum
- 3 retirement age to retire with an unreduced pension.
- 4
- 5 The art is the conversations with employees soon to be eligible for retirement. The ever-
- 6 increasing number of one-on-one retirement planning sessions demonstrates that
- 7 employees are planning for retirement in advance of their eligibility so that they are well
- 8 prepared when their eligibility date occurs.
- 9
- 10 In addition, it is important to consider the many other attrition factors which continue to
- 11 deplete the availability of qualified employees year after year, including resignations,
- 12 deaths, terminations, internal promotions, long term disability and the increasing number
- 13 of medical accommodations into different positions given Hydro Ottawa's aging
- 14 workforce.
- 15



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #2 Filed: 2011-09-08 Page 1 of 2

2	
3	Issue 4.4 – Are the 2012 compensation costs and employee levels appropriate?
4	
5	Board Staff Question #41 - Ref: Exh D1-5-1 and Exh D3-1-1, Attachment AC
6	Hydro Ottawa has outlined the challenges it faces in workforce planning in Exh D15-1.
7	Please summarize the needs identified in the workforce planning strategy and compare
8	these data with the increase in staff numbers for 2011 and 2012 identified in Attachment
9	AC.
10	
11	Response
12	
13	The data provided in Attachment AC represents actual Full Time Equivalents (FTEs) for
14	the historical years, and budgeted FTEs for both 2011 and 2012, while the challenges
15	and requirements outlined in Exhibit D1-5-1 are presented as positions. The budgeted
16	FTE calculations for 2011 and 2012 in Attachment AC factor part year budgeting, full
17	year impact in subsequent year, vacancy allowance, and transfers from the Holding
18	Company.
19	
20	Below is a table summarizing the needs identified in the workforce planning strategy for

- 21 2011 and 2012:
- 22

	2011 Positions	2012 Positions
Positions identified in the context of impending retirements and for the purpose of knowledge transfer through staffing overlap of six months	15 Apprentices	 4.5 FTEs for knowledge transfer through staffing overlap of six months for following positions: Supervisor, Information Services and Technology Telephony & Network Support Coordinator, Stations Inspector Supervisors, Construction and Maintenance (3) Supervisor, Distribution Design



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

	2011 Positions	2012 Positions
		 Supervisor, Stations
Positions identified to respond to strategic priorities	 Manager, Training Manager, Safety and OHSE Management System Environment and Business Continuity Specialist 2 Management Accountants 	 Trades and Technical Training Officer Technical Analyst Systems Support Programmer Analyst
Positions identified to respond to Regulated and Business Environment	 Program Manager, Regulatory Affairs Regulatory Analyst Field Representative, Collections/Meter Reading Senior Customer Contact Agent Collection Agent (SME) Engineer, Energy Conservation CDM Channel Support CDM Program Support 	 Engineer System Designer Customer Education Officer



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

1 4. OPERATING COSTS

2	
3	Issue 4.4 – Are the 2012 compensation costs and employee levels appropriate?
4	
5	Board Staff Question #42 - Ref: Exh D3-1-1, Attachment AC Ref: Hydro Ottawa EB-
6	2010-0133 Exh D4-1-1, Attachment Y
7	Appendix 2-K filed in the current application lists a total of 551 FTE's for the 2010
8	historical year. Appendix 2-K filed in EB-2010-0133 listed a total of 569 FTE's for the
9	2010 Bridge Year. Please explain the reasons for the difference.
10	
11	Response
12	
13	Appendix 2-K filed in EB-2010-0133 with a total of 569 FTE's was based on budgeted
14	headcount for the year 2010 while Appendix 2-K filed in the current application reflects
15	the actual FTE count for the historical year (2010).
16	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	4.	OPERATING COSTS
2		
3	lss	sue 4.4 – Are the 2012 compensation costs and employee levels appropriate?
4		
5	Bo	ard Staff Question #43 - Ref: Exh D1-1-2, p4
6	Hy	dro Ottawa has started to forecast a vacancy allowance of 3% for employee turnover.
7	a)	Please provide historical data or source references to support the selection of 3%.
8	b)	Are projected retirements a part of the 3% vacancy allowance?
9		
10	Re	sponse
11		
12	a)	Historical year actual position vacancy experience and total compensation costs vs.
13		budget are the sources for the 2011 budget assumption. As an example, the 2010
14		Statement of Income calculated as the percentage difference between actual and

- 15 budgeted compensation costs as follows:

	Hydro Ottawa	Limited	
2010 Statement of Income - Summary			
	2010 Actuals	2010 Budgeted	Variance
Compensation	53,198	55,098	3%

2010 Actual will not tie to Attachment AC as vacancy allowance was created based
on the company as a whole less CDM and Attachment AC is less CDM, Students &
BOD.

b) Specific positions that are identified as possibly becoming vacant due to retirement
 are budgeted to be filled when the retiree leaves. However, the overall purpose of
 the vacancy allowance is to appropriately reflect the reality of position turnover and
 the staffing process, be that from retirements or resignations.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #5 Filed: 2011-09-08 Page 1 of 1

1 4. OPERATING COSTS

2 3

4

Issue 4.4 – Are the 2012 compensation costs and employee levels appropriate?

5 Board Staff Question #44 - Ref: Exh D1-1-2, p4

6 Hydro Ottawa has included only a partial year for new staff hiring, recognizing that new

positions are not necessarily filled on January 1. Please provide the details of the partial
 year determination.

9

10 Response

11

12 In recognition that new positions are not necessarily staffed as of January 1, for 2011,

13 Hydro Ottawa Limited adopted the principle of budgeting new positions at the half year,

- 14 and in the case of the new apprentice positions, for the beginning of the last quarter
- 15 when the hiring is planned to occur based on operational considerations. This principle
- 16 has been confirmed in practice as the earliest start dates of the incumbents in these new
- 17 positions was in May 2011 and the apprentice new positions are in the last stages of the
- 18 hiring process scheduled to commence employment at the beginning of the last quarter
- 19 as originally budgeted.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #6 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 – Are the 2012 compensation costs and employee levels appropriate?
4	
5	Board Staff Question #45 - Ref: Exh D3-1-1, p5
6	The evidence states that, "In 2010, a new three-year collective agreement was reached
7	with the IBEW. This agreement includes a 3% annual increase in unionized wages for
8	2010 to 2012. The agreement also includes enhancements to the benefit plan." Please
9	summarize the major benefit plan enhancements, and provide an estimate of the cost of
10	the benefit plan enhancements.
11	
12	Response
13	
14	The table below outlines the major enhancements made to the benefit plan as well as
15	related estimated cumulative costs as a result of the new three-year collective
16	agreement with IBEW. Note that the increases occur in various years of the agreement.
17	
18	Please note that these estimated cost increases are solely based on a percentage
19	increase associated with the major enhancements and do not reflect any other increases
20	as a result of market trends, plan experience, and utilization factors.

21

Benefit Type	Major Enhancement	2010 Enhancement Cost	2011 Estimate Enhancement Cost (Cumulative)	2012 Estimated Enhancement Cost (Cumulative)
Extended Health	Increase to calendar year maximum for chiropractor and massage therapy	\$9,084	\$20,219	\$20,219
Vision	Increase coverage maximum	\$18,713	\$18,713	\$40,984
Dental	Increase Major Restorative Maximum	\$3,350	\$3,350	\$8,276



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #7 Filed: 2011-09-08 Page 1 of 1

2 3 Issue 4.4 – Are the 2012 compensation costs and employee levels appropriate? 4 5 Board Staff Question #46 - Ref: Exh D3-1-1, p8 6 Table 7 summarizes average annual benefits by employee group for the period 2008 to 7 2012. Please explain why average annual benefits for the non-unionized group 8 increased by 50% in 2011 vs 2010, while the other groups increased 12 to 20% in the 9 same time period. 10 11 Response 12 13 Average Yearly Benefits for those in the Non Union group appear to increase at a higher 14 rate in 2011 compared to the other groups as all temporary and part time temporary 15 employees (who work less than 24 hours per week) are categorized as Non-Union in the 16 actuals. There is only one full time temporary worker in the 2011 budget which equals 17 one FTE, while the three FTEs in 2010 equate to 15 temporary and part time temporary 18 employees, which drive a much lower average for actuals than in other employee 19 groups. If the average had been calculated based on FTE and not headcount, then the 20 average would have been \$15,153 which would have been in line with the other 21 employee group increase rates of 12 to 20%. 22



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #8 Filed: 2011-09-08 Page 1 of 1

1	4. (OPERATING COSTS
2		
3	lss	sue 4.4 – Are the 2012 compensation costs and employee levels appropriate?
4		
5	<u>Bo</u>	ard Staff Question #47 - Ref: Exh D3-1-1, p9
6	Th	e evidence states that OMERS has introduced contribution increases for both the
7	em	ployee portion and the employer portion to eliminate a funding deficit. For 2011, the
8	ove	erall increase to Hydro Ottawa in pension costs is an estimated 31% and there will be
9	a f	urther 12% increase for 2012.
10	a)	Please identify the source document to support the increase.
11	b)	Has the amortized incremental amount been included in revenue requirement?
12		
13	Re	sponse
14		
15	a)	The increase in this table from 2010 actuals to 2011 budget is mainly due to the
16		increase in OMERS contribution rates. The source document to support the
17		increase can be found on the OMERS Sponsors Corporation Website.
18		The increase also reflects all new staff positions as well as salary increases.
19		
20	b)	The incremental amount is in the OM&A and therefore is included in the revenue
21		requirement.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #9 Filed: 2011-09-08 Page 1 of 2

1	4. (OPERATING COSTS
2		
3	lss	ue 4.4 – Are the 2012 compensation costs and employee levels appropriate?
4		
5	En	ergy Probe Question #51 - Ref: Exhibit D3, Tab 1, Sch. 1
6	a)	Do the figures in Table 1 include FTE's allocated to Hydro Ottawa from its affiliates
7		for the historical and forecast years? If not, please provide a version of Table 1 that
8		reflects the allocation of FTE's from the affiliates.
9	b)	Is the economic adjustment shown in Table 3 based on 3% increases for both
10		unionized and non-unionized employees? If not, please provide the economic
11		adjustment percentages.
12	c)	Does the economic adjustment column include the impact of the employees
13		transferred from Holdco?
14	d)	What is the total cost of the incentive pay included in the revenue requirement in
15		2012 based on the averages shown in Table 6?
16	e)	How is the level of incentive pay determined? Please provide the ratio of the actual
17		payout as compared to the maximum achievable in 2008 through 2010 and the ratios
18		used in 2011 and 2012.
19	f)	For each group of employees eligible for incentive pay, please provide the factors,
20		and their weightings, that determine the incentive payments.
21		
22	Re	sponse
23		
24	a)	The figures outlined in Table 1 do not include FTE's allocated to Hydro Ottawa
25		Limited ("Hydro Ottawa") from its affiliates for the historical and forecast years. The
26		associated costs are distributed through the Management Allocation from Hydro
27		Ottawa Holding Company ("Holding Company") to Hydro Ottawa. The allocation
28		can be based on FTE or other metrics.
29		
30	b)	Yes, the economic adjustment shown in Table 3 is based on 3% increases for both
31		unionized and non-unionized employees. 4% including pension & benefits.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #9 Filed: 2011-09-08 Page 2 of 2

- c) The column labelled Transfer from HoldCo represents the 2011 compensation totals
 transferred at 2011 rates. The economic adjustment column then escalates for
 2012, which included the positions transferred.
- 4

d) The total cost of incentive pay for 2012 is budgeted at \$665,000.

5 6

e) Incentive pay is determined based on a number of factors, including the employee's annual salary, position level, target incentive rate (based on the level of the position) and a total incentive score determined by the sum of weighted individual, divisional and corporate scores. The individual, divisional and corporate scores are weighted differently based on the level of the position. Actual scores are based on results achieved in relation to qualitative measures, such as goals and strategies and quantitative components such as measures and targets.

- 14 The following table illustrates the ratio of actual incentive pay-out versus the
- 15 maximum achievable, with the maximum achievable equating to 100%.
- 16

Years	Ratio of actual pay out to maximum achievable
2008	66%
2009	78%
2010	76%

- 18 The ratios for 2011 and 2012 are not available as they are dependent upon individual,
- 19 divisional and corporate performance for the given year.
- 20

17

- 21 f) For each group of employees eligible for incentive pay, please provide the factors,
- 22 and their weightings, that determine the incentive payments.
- 23

	Overall Incentive Target %	Weighting of Individual Factor (%)	Weighting of Divisional Factor (%)	Weighting of Corporate Factor (%)
Executive	30	-	40	60
Directors	20	30	40	30
Senior Managers	10	100	-	-



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #10 Filed: 2011-09-08 Page 1 of 2

1 4. OPERATING COSTS

2

Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?

3 4

5 CCC Question #28 - Ref: Ex/ D1/T5/S1/p. 3

- 6 For the years 2006-2010 please provide a schedule setting out the number of
- 7 employees eligible to retire in each year and the number of employees that actually
- 8 opted to retire. Please provide the basis for the assumption that 75% of those eligible to
- 9 retire will retire on their eligibility date or shortly thereafter.
- 10

11 Response

12

13 The table below outlines the number of employees who were eligible to retire and those

- 14 that retired for the years 2006 to 2010.
- 15

Year	Eligible	Actual
2006	1	0
2007	2	1
2008	4	3
2009	17	12
2010	18	13

16

Forecasting of retirements is both a science and an art given that it looks to predictinghuman behaviour.

19

20 The science is the available data based on history. Hydro Ottawa Limited's "Hydro

21 Ottawa") historical data demonstrates that we are experiencing and will continue to

22 experience an increase in those employees electing to retire on their eligibility date or

23 shortly thereafter. To date 66% of those eligible to retire do so on their eligibility date or

24 within a period averaging six months of that date, many utilizing earned and unused

25 vacation leave to transition into retirement. The average age of retirement at Hydro

26 Ottawa is decreasing as more employees are electing retirement when they become



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #10 Filed: 2011-09-08 Page 2 of 2

- 1 eligible and long service employees are and will continue to attain their service
- 2 requirements for pension purposes either prior to or shortly after reaching the minimum
- 3 retirement age to retire with an unreduced pension.
- 4

5 The art is the conversations with employees soon to be eligible for retirement and the 6 ever-increasing number of one-on-one retirement planning sessions demonstrates that

7 employees are planning for retirement in advance of their eligibility so that they are well

- 8 prepared when their eligibility date occurs.
- 9

In addition, in finalizing the assumption of 75%, it is important to consider the many other attrition factors which continue to deplete the availability of qualified employees year after year, including resignations, deaths, terminations, internal promotions, long term disability and the increasing number of medical accommodations into different positions given Hydro Ottawa's aging workforce.

- 15
- 16



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #11 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	CCC Question #29 - Ref: Ex. D1/T1/S2/p. 4
6	Please provide the impact on the 2012 revenue requirement if the management staff
7	compensation increase was limited to 2%.
8	
9	Response
10	
11	If the management staff compensation increase was limited to 2% in 2012 the revenue
12	requirement would be reduced by \$169,400. Given the union staff compensation
13	increase of 3%, the limit of 2% would cause compression issues between unionized staff
14	and certain front-line supervisors.
15	
16	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #12 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	CCC Question #30 - Ref: Ex. D1/T1/S2/p. 4
6	What has been Hydro Ottawa's historical vacancy rate for the years 2006-2010?
7	
8	Response
9	
10	Hydro Ottawa Limited commenced formally tracking vacancy rates in 2009. The 2010
11	Statement of Income was used as the source reference to establish the 3% vacancy rate
12	calculated as the percentage difference between actual and budgeted compensation
13	costs. Going forward this percentage will be used as the vacancy rate baseline.
14	
15	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #13 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	CCC Question #31 - Ref: Ex. D3/T1/S1/p. 1
6	Does Hydro Ottawa have a vacancy rate included in the numbers in Table 1 - Full and
7	Temporary Equivalents?
8	
9	Response
10	
11	Yes, a vacancy rate is included in the Budgeted numbers for the years 2011 and 2012.
12	The information provided for the years 2008, 2009 and 2010 are actual numbers and
13	therefore reflect vacancies.
14	
15	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #14 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #42 - Ref: Ex.D1/2/1/p.2
6	With respect to the 'review' leading to the transfer of 17 positions to the Applicant, please
7	provide all internal documents related to this outcome of the review.
8	
9	Response
10	
11	Attachment 1 is the final copy of the internal document utilized by senior management
12	for the review of the positions to be transferred to Hydro Ottawa Limited in 2012,
13	including the principles applied in the decision process. Please note there are 16
14	management positions (see Exhibit D3/1/1), and 1 non-union position. Names
15	associated with the positions have been removed to ensure compliance with the
16	Municipal Freedom of Information and Personal Privacy Act.

Principles

Positions providing enterprise "back office" executive leadership and administrative support are in HOHI

Positions primarily supporting LDC are in LDC

Positions remaining in HOHI

	President & Chief Executive Officer	BU 109340
	Executive Assistant	BU 109010
	Director Corporate Planning	BU 109340
	Executive Assistant	BU 109010
	Executive Assistant	BU 109010
	Chief Financial Officer	BU 109350
	Executive Assistant	BU 109350
	Manager Business Development Program	BU 109350
	Chief Human Resources Officer	BU 109560
	Chief Information Officer	BU 109720
Names removed to ensure	Chief Communications & Marketing Officer	BU 109660
compliance with Municipal Freedom	Corporate Board & Committee Coordinator	BU 101080
of Information and Personal Privacy	Director Business Development	BU 109350
Act	Chief Enterprise Risk Management & Audit	BU 101120
	Manager Internal Audit	BU 109500
	Internal Audit Assistant (part-time worker)	BU 101120
	Internal Audit Assistant (part-time worker)	BU 101120
	Treasurer	BU 109350
	General Counsel	BU 109700
	Director Finance	BU 109350
	Executive Assistant	BU 109350
	Budget Officer/Financial Analyst	BU 109350
	Chief Conservation Officer	BU 109730
	Executive Assistant	BU 109730
Positions moving from HOHI to HO	<u>L</u>	
	Manager Policy	BU 109500
	Supervisor Treasury Services	BU 109350
	Manager Supply Chain & Facilities	BU 109350
	Legal Counsel	BU 109700
	Corporate Controller	BU 109350
	Manager Corporate Financial	BU 109350
	Manager External Reporting	BU109350
Names removed to ensure	Budget Officer/Financial Reporting	BU 109350
of Information and Personal Privacy	Manager Financial Projects	BU 109350
Act	Director Regulatory	BU 109520
	Director Human Resources	BU 109560
	Manager Communications & Public Affairs	BU 109660
	Director IT & IM Planning & Programs	BU 109720
	Manager IT Security	BU 109720
	Manager Project Management (IT & IM)	BU 109720
	Manager Information Management	BU 109700
	Manager Marketing	BU 209690



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #15 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #43 - Ref: Ex.D1/4/1/p.1
6	Does the Applicant have a formal workforce strategy document? If so, please provide it.
7	
8	Response
9	
10	The workforce strategy for the purposes of this Rate Application is outlined at exhibit
11	D1/5/1. The strategy is based on maintaining staffing levels that support the core
12	business and takes into account staffing needs resulting from aging workforce and
13	infrastructure, major projects and undertakings, changing legislation and regulations,
14	and technological changes and advances.
15	
16	Hydro Ottawa has partnered with an external service provider on the development of a
17	formal workforce planning strategy with associated framework and tools. The initial
18	findings of this study are consistent with the workforce strategy outlined at exhibit D1/5/1
19	and provide additional recommendations regarding talent needs at Hydro Ottawa. This
20	report is nearing its final stages of completion and is therefore not available for
21	distribution.
22	
23	
24	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #16 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #44 - Ref: Ex.D1/5/1/p.1
6	Please provide the source of the statement that "[t]he average age of retirement has
7	declined to 56 from 57 years of age".
8	
9	Response
10	
11	The source of the statement "(t)he average age of retirement has declined to 56 from 57
12	years of age" is the actual cumulative average age of employees retiring as at the end of
13	December 2010 compared to as at the end of March 2011.
14	
15	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #17 Filed: 2011-09-08 Page 1 of 1

1 4. OPERATING COSTS

- 2 3
 - Issue 4.4 Are the 2012 compensation costs and employee levels appropriate?
- 4
- 5 SEC Question #45 Ref: Ex.D1/5/1/p.3
- 6 For each of the past 5 years, please provide percentage of eligible employees that did
- 7 retire per year.
- 8
- 9 Response
- 10
- 11 The table below outlines the percentage of eligible employees who retired over the last
- 12 five years.

Year	% retired
2007	25%
2008	80%
2009	65%
2010	52%
2011	70%



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #18 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #46 - Ref: Ex.D1/5/1/p.12
6	Please provide an update on the hiring of the 'Strategic Priority Positions'.
7	
8	Response
9	
10	The seven strategic priority positions identified for 2010 have been staffed. Three of the
11	five strategic priority positions identified for 2011 have been staffed; the staffing and
12	recruitment process is currently underway for the two remaining positions.
13	
14	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #19 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #47 - Ref:
6	Please provide the Applicant's most recent 'Workforce Plans'. (As an example, 2009
7	Workforce Plan for Stations provided in Appendix 1 to the response to SEC interrogatory
8	#9 in EB-2010-0133)
9	
10	Response
11	
12	The workforce strategy for the purposes of this Rate Application is outlined at exhibit
13	D1/5/1. The strategy is based on maintaining staffing levels that support the core
14	business and takes into account staffing needs resulting from aging workforce and
15	infrastructure, major projects and undertakings, changing legislation and regulations,
16	and technological changes and advances.
17	
18	Hydro Ottawa has partnered with an external service provider on the development of a
19	formal workforce planning strategy with associated framework and tools. The initial
20	findings of this study are consistent with the workforce strategy outlined at exhibit D1/5/1
21	and provide additional recommendations regarding talent needs at Hydro Ottawa. This
22	report is nearing its final stages of completion, and is therefore not available for
23	distribution.
24	
25	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #20 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #48 - Ref: Ex.D1/5/1/p.14
6	Are the CDM positions shown in table 6 funded by the OPA? If not, please explain why.
7	
8	Response
9	
10	Yes, all CDM positions shown in Table 6 are funded by the Ontario Power Authority
11	("OPA").
12	


Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #21 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #49 - Ref: Ex.D2/1/4/p.6
6	Please provide the rational for the increase of 2 positions for collections.
7	
8	Response
9	
10	The Ontario Energy Board regulation changes effective January 1st, 2011 which affect
11	the disconnect process, the deposit process and how Hydro Ottawa Limited deals with
12	the occupant accounts, have resulted in an increase in workload and the need for
13	additional resources including a Collections Subject Matter Expert and a Field
14	Representative, Collections/Meter Reading.
15	
16	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #22 Filed: 2011-09-08 Page 1 of 2

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #50 - Ref: Ex.D2/1/4/p.7
6	Please provide the rational for the addition of each of the 6 new Administration positions.
7	
8	Response
9	
10	Hydro Ottawa Limited ("Hydro Ottawa") has strengthened its capacity in the Finance and
11	Human Resources and Safety functions to ensure the organization's ability to deliver on
12	key strategies with respect to the sustainability of its workforce, emergency
13	preparedness, business continuity, environment and finance, as well as to fulfill the
14	increased legislative and program requirements in these areas including those related to
15	the International Financial Reporting Standards, changes to health and safety and
16	environmental legislation, and increased apprentice training. The Regulatory function
17	has also been enhanced in order for Hydro Ottawa to respond to the increasingly
18	complex regulatory environment and its associated work requirements.
19	
20	The resulting positions below flow from the above requirements and have the following
21	focuses:
22	
23	Program Manager, Regulatory
24	To meet the increasing regulatory issues facing Hydro Ottawa, this position is
25	responsible for dealing with regulatory policy and research issues that affect regulated
26	utilities and the electricity industry in Ontario.
27	
28	
29	I his position is responsible for the timely analysis and reconciliation of identified
30	accounts to meet the continuously changing Regulatory environment and to ensure Cost



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #22 Filed: 2011-09-08 Page 2 of 2

- 1 of Power is accurate for all documents being submitted to the Independent Electricity
- 2 System Operator (IESO).
- 3

4 Management Accountant

- 5 This position is accountable for the coordination and preparation of financial statements
- 6 as well as preparing budgets and forecasts for senior managers. The Management
- 7 Accountant provides financial analysis, support and advice to senior management.
- 8

9 Manager, Training (and Development)

- 10 This position is responsible for the planning, delivery and management of training and
- 11 development initiatives and programs aligned with the talent development framework
- 12 which enables and drives employee performance and meets legislative and regulatory
- 13 compliance. The manager drives the identification of trades, technical, competency and
- 14 skill-based training.
- 15

16 Manager, Safety and OHSE Management System

- 17 The position is responsible for the planning, delivery and management of OHSE
- 18 initiatives and programs aligned with the OHSE management framework.
- 19 Responsibilities include managing the promotion of employee well-being, prevention of
- 20 workplace incidents, injuries and illnesses for the Hydro Ottawa Group of Companies.
- 21

22 (Environment and – removed from title) Business Continuity Specialist

- 23 This position is responsible for the development and management of business continuity
- 24 and emergency preparedness programs at Hydro Ottawa.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #23 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	SEC Question #51 - Ref: Ex.D3/1/1/p.7
6	Please provide the rational for the 2007 new compensation plan.
7	
8	Response
9	
10	The compensation plan for the management group was last reviewed in 2007. The
11	review's objectives were to redesign the plan using a total compensation philosophy;
12	within the available compensation envelope; and to ensure that Hydro Ottawa Limited
13	has a competitive compensation package that rewards employees appropriately and
14	drives engagement and satisfaction in terms of commitment and contribution to the
15	organization.
16	
17	The review's objectives were achieved through the design and implementation of an
18	integrated performance management and compensation framework for all management
19	group employees. Salary scales were established based on appropriate industry and
20	public/para-public sector comparators and eligibility for incentive pay was reduced to
21	only employees who have the ability to influence or have a direct line of sight to the
22	organization's strategy. All other employees were transitioned to base/fixed salary only
23	with movement within the salary scale determined by performance.
24	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #24 Filed: 2011-09-08 Page 1 of 1

1	4. (OPERAT	
2			
3	lss	sue 4.4 -	Are the 2012 compensation costs and employee levels appropriate?
4			
5	VE	CC Que	<u>stion #40 - Ref: Exhibit D3, Tab 1, Schedule 1, page 3</u>
6	a)	The evi	dence indicates that 16 of the 32 Management FTE increase as between
7		2008 Bo	pard approved and forecast in 2012 are attributable to position transfers from
8		Hydro C	Ottawa Limited. What are the reasons for the remaining increase of 16 FTEs?
9	b)	What st	eps, if any, has Hydro Ottawa taken to align FTE growth with customer
10		growth	or energy sales growth (decline)?
11			
12	Re	sponse	
13			
14	a)	The exp	planation for the 31 (not 32) Management FTE increase between 2008 and
15		2012 is	as follows:
16			
17		i.	7 positions were added in 2010 to address business requirements
18		ii.	8 positions have been added to preserve and sustain trades due to
19			impending retirements, as well as to address business needs driven by
20			strategic priorities and the regulated external environment (3 attributed to
21			2011, 5 attributed to 2012)
22		iii.	16 positions were transferred to Hydro Ottawa Limited ("Hydro Ottawa") in
23			2012
24			
25	b)	In comp	pleting its workforce planning, the growth of Hydro Ottawa's customer base is
26		a factor	taken into consideration so as to ensure that Hydro Ottawa can continue to
27		provide	the required level of service to its customers. However, in times of aging
28		workfor	ce and infrastructure, major projects and undertakings, changing legislation
29		and reg	ulations, and technological changes and advances, the growth of the
30		custome	er base is not the only driver for FTE growth.
31			



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #25 Filed: 2011-09-08 Page 1 of 1

1 4. OPERATING C	OSTS
------------------	------

2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	VECC Question #41 - Ref: Exhibit D3, Tab 1, Schedule 1, page1 & 6, Tables 1 & 4
6	In respect to Table 4 for 2008-2012 please provide the number of employees in the rows
7	marked: "Executive/Sr. Mgmt" and "Management." For Table 1 please disaggregate the
8	row marked "Management" as between "Sr. Mgmt" and "Management"
9	
10	Response
11	
12	Executive/Sr. Mgmt means the same as Executive in both tables.
13	
14	As a result the number of FTEs used to calculate the Average Annual Base Wage for
15	Executive/Sr. Mgmt in Table 4 is six for the years 2008 to 2010 and five for the years
16	2011 and 2012.
17	
18	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #26 Filed: 2011-09-08 Page 1 of 2

1 4. OPE	RATING	COSTS
----------	--------	-------

2				
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?			
4				
5	VE	<u> CC Question #42 - Ref: Exhibit D3, Tab 1, Schedule 1, page1 & 6, Tables 1 & 4</u>		
6	a)	Please explain the employee incentive compensation program, including the		
7		quantitative metrics used to determine incentive payout.		
8	b)	Are service quality indicators, customer or energy sales, costs per customer or other		
9		quantitative metrics are used to determine incentive pay. If not please explain why		
10		not?		
11	c)	For 2008, 2009 and 2010 and for each group: Executive; Senior Management;		
12		Management; and Non-unionized, please provide the percentage of incentive paid as		
13		compared to the maximum available to that group (for example, if the Executive		
14		group were eligible for a maximum incentive pay of 15% of base salary, then this		
15		would be calculated as the sum of actual incentive payments divided by 15% of total		
16		executive salaries).		
17				
18	Re	sponse		
19				
20	a)	Please see Exhibit K4-4-9(e) (EP #51(e)).		
21				
22	b)	Yes, quantitative metrics are used to determine incentive pay, as are qualitative		
23		measures, dependant on the position.		
24				
25	c)	The following illustrates, for the last three years for each of the Executive,		
26		Management and Non-Union groups, the ratio of actual incentive pay-out versus the		
27		maximum achievable, with the maximum achievable equating to 100%. Please note		
28		that non-union employees have not been eligible for incentive pay from 2009		
29		onwards.		
30				
31				



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #26 Filed: 2011-09-08 Page 2 of 2

1	2008:	Executive:	72%
2		Management:	68%
3		Non-Union:	64%
4	2009 :	Executive:	80%
5		Management:	76%
6	2010 :	Executive:	85%
7		Management:	69%



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.4 Interrogatory #27 Filed: 2011-09-08 Page 1 of 1

1	4. OPERATING COSTS
2	
3	Issue 4.4 - Are the 2012 compensation costs and employee levels appropriate?
4	
5	VECC Question #43 - Ref: Exhibit D1, Tab 1, Schedule 1, page 5
6	If Hydro Ottawa's capitalization policy was changed in 2007 why would this have an
7	impact on the OM&A costs shown for 2008 onwards?
8	
9	Response
10	
11	The change in 2007 to Hydro Ottawa Limited's capitalization policy has no impact on the
12	OM&A costs shown for 2008 onwards. The information on page 5 of Exhibit D1-1-1
13	regarding the changes in the policy was simply included in order to provide context for
14	the level of OM&A costs in subsequent years and to highlight the point that there has
15	been no further changes.
16	



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.5 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

1	4. (OPERATING COSTS
2		
3	lss	ue 4.5 – Is the test year forecast of property taxes appropriate
4		
5	En	ergy Probe Question #52 - Ref: Exhibit D1, Tab 2, Sch. 1, Tables 1 & 2
6	a)	Please explain the significant increase in property taxes forecast from 2010 to 2011.
7	b)	Please explain the reduction in property taxes between 2009 and 2010.
8	c)	Does Hydro Ottawa have actual assessments for 2011 property taxes? If yes,
9		please provide the total.
10	d)	Does the 2012 forecast of property taxes include any taxes for the land that Hydro
11		Ottawa proposed to purchase for its new facilities? If yes, please indicate how much
12		these taxes are.
13	e)	Does Hydro Ottawa pay property taxes to anyone other than the City of Ottawa? If
14		yes, please provide the actual and forecast for 2008 through 2012.
15		
16	Re	sponse
17		
18	a)	Property taxes include an estimated inflationary increase for 2011 from 2010. As
19		well, in 2010, as a result of successful reassessments, \$100k was refunded for prior
20		year's taxes.
21		
22	b)	In 2010, as a result of successful reassessments, \$100k was refunded for prior
23		year's taxes.
24		
25	c)	Yes. 2011 final property tax was \$1,658k.
26		
27	d)	No budget amounts for taxes have been included for the purchase of new lands for
28		facilities in 2012.
29		
30	e)	No .
31		



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.6 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

1	4.	OPERATING COSTS
2		
3	lss	sue 4.6 – Is the test year forecast of PILs appropriate?
4		
5	Bo	ard Staff Question #49 - Ref: Exh D6-1-1, p4
6	Hy	dro Ottawa states that the Ministry of Finance has completed its reviews of Hydro
7	Ott	awa for the 2001 to 2006 tax years. Any tax adjustments for these years have been
8	ref	lected in the subsequent year's balances as appropriate.
9	a)	Please provide a list of tax adjustments including the nature of the adjustments, the
10		amounts of the adjustments and where these adjustments were included in the
11		subsequent year's tax balances.
12	b)	Please confirm whether Hydro Ottawa's 2007 to 2009 PILs are under review or
13		under consideration of review by the Ministry of Finance. If so, provide the federal
14		and Ontario Notices of Assessment, Notices of Re-assessments (if applicable),
15		Statements of Adjustments, and any other correspondence with the CRA and
16		Ministry of Finance regarding any tax items, or tax filing positions that may be in
17		dispute, for tax years 2007 to 2009.
18		
19	Re	sponse
20		
21	a)	The only adjustments that affected subsequent tax year's filings were changes in the
22		opening balances of UCC and CEC in 2009. The 2009 UCC opening balance
23		decreased by \$4,503,650 to \$549,905,612 from \$545,409,270. The 2009 opening
24		CEC balance decreased by \$249,683 to \$1,101,588 from \$1,351,271.
25		
26	b)	The Ontario Ministry of Finance is concurrently auditing the 2007 and 2008 tax
27		years. The field audit has been scheduled to begin in October. An information
28		request was received on June 28, 2011 for further details to be reviewed during the
29		scheduled field audit. The 2009 tax year is not currently being audited. At this time
30		there are no tax positions or items that are in dispute for these taxation years and
31		accordingly no assessments received in this regard.



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.6 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	4.	OPERATING COSTS
2		
3	lss	sue 4.6 - Is the test year forecast of PILS appropriate?
4		
5	<u>En</u>	ergy Probe Question #53 - Ref: Exhibit D1, Tab 5, Sch. 1, page 5
6	a)	Please show how many of the apprentices hired in each year shown in Table 3 are
7		eligible for provincial or federal apprenticeship tax credits.
8	b)	Please indicate how many of the apprentices hired in 2011 are eligible for provincial
9		or federal apprenticeship tax credits.
10		
11	Re	sponse
12		
13	a)	Only the Powerline Maintainer positions are eligible for provincial and federal tax
14		credits under the apprenticeship programs. There were ten hired in 2007 and eight in
15		2008.
16		
17	b)	The 11 Powerline Maintainers hired in 2011 would be eligible for the provincial and
18		federal apprenticeship tax credits.
19		



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.6 Interrogatory #5 Filed: 2011-09-08 Page 1 of 2

1	4.	OPERATING COSTS
2		
3	lss	ue 4.6 - Is the test year forecast of PILS appropriate?
4		
5	<u>En</u>	ergy Probe Question #54 - Ref: Exhibit D6, Tab 1, Sch. 1, Attachment AD
6	a)	Please explain the addition of \$50,000 to taxable income in the test year for "Interest
7		and penalties on taxes". How has Hydro Ottawa forecast this amount?
8	b)	Why are the deductions for future employee benefits (\$400,000) lower than the
9		addition to taxable income for future employee benefits (\$600,000)? How have
10		these figures been forecast for the 2012 test year?
11	c)	Please explain how the addition to taxable income of \$80,000 for non-deductible
12		meals and entertainment expenses has been calculated. In particular, what is the
13		total cost included in the revenue requirement for the 2012 test year for meals and
14		entertainment expenses?
15	d)	Please confirm that Hydro Ottawa has included a reduction of \$33,750 for the
16		Ontario small business deduction in the calculation of income taxes.
17		
18	Re	sponse
19	、	
20	a)	The addition of \$50,000 to taxable income in the test year for "Interest and penalties
21		on taxes" is an estimate based on the historical years 2008 to 2010 actual additions
22		which averaged \$60,000 per annum. These charges typically result from government
23		audits and assessments for corporate, excise and payroll taxes and are non
24 25		deductible for tax purposes. Based on the historical years average an estimate of
25		\$50,000 has been used for both the bridge and test years.
26	F)	The future employee here fit deduction of \$400,000 and addition of \$600,000 to
21	D)	The future employee benefit deduction of \$400,000 and addition of \$600,000 to
28 20		taxable income are estimates based on the historical years of 2008 to 2010 actual
29 20		additions and deductions. The additions averaged \$602,825 while the deductions
30 21		averaged \$387,296. For tax purposes, you are only allowed to deduct the amounts
31		that are paid out in the year and not the amount required to be accrued in accounting



Hydro Ottawa Limited EB-2011-0054 Exhibit K4 Issue 4.6 Interrogatory #5 Filed: 2011-09-08 Page 2 of 2

1 income. Based on the historical years averages, an estimated add back of \$600,000 2 and a deduction of \$400,000 have been used for both the bridge and test years. 3 4 c) The addition to taxable income of \$80,000 for non-deductible meals and 5 entertainment expenses is an estimate based on the historical years 2008 to 2010 6 actual additions which averaged \$82,721 per annum. The add back is 50% of all non 7 deductible meals and entertainment which includes all travel, training, meetings, etc. 8 Amounts incurred for meals and entertainment made available to all employees are 9 deductible and adjusted accordingly. Based on the historical years average an 10 estimate of \$80,000 has been used for both the bridge and test years. The total for 11 meals & entertainment expenses included in the 2012 test year is \$ 286,000. As 12 noted there are adjustments made to the full accounting cost of these expenses to 13 determine the non deductible portion for taxes. 14 15 d) Hydro Ottawa Limited has included a reduction of \$33,750 for the Ontario small 16 business deduction in the calculation of income taxes as shown in Tab Q of 17 Attachment AD of Exhibit D6-1-1. 18



1	5. CAPITAL STRUCTURE AND COST OF CAPITAL
2	
3	Issue 5.1 - Is the proposed capital structure, rate of return on equity and short
4	term debt rate appropriate?
5	
6	Energy Probe Question #56 - Ref: Exhibit E1, Tab 1, Sch. 1 & Exhibit A2, Tab 1, Sch. 2,
7	Attachment H
8	What is the impact on the revenue requirement of a 10 basis point change in the return
9	on equity?
10	
11	Response
12	
13	The impact on the Modified International Financial Reporting Standard revenue
14	requirement of a 10 basis point change in the return on equity would be as follows:

15

ROE %	Net Income (\$000)	Interest (\$000)	Amortization (\$000)	OM&A (\$000)	Revenue before PILS (\$000)	PILS (\$000)	Service Revenue Requirement (\$000)	Delta (\$000)
9.48	25,725	21,144	39,346	75,988	162,204	3,626	165,830	(367)
9.58	25,996	21,144	39,346	75,988	162,475	3,723	166,197	
9.68	26,268	21,144	39,346	75,988	162,746	3,819	166,565	368



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.1 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

5. CAPITAL STRUCTURE AND COST OF (CAPITAL					
Issue 5.1 - Is the proposed capital structu	re, rate of return on equity and short					
term debt rate appropriate?						
CCC Question #36 - Ref:						
Please provide Hydro Ottawa's actual ROE f	or each year 2008-2010. What is the current					
forecast ROE for 2011?						
Response						
The requested information is shown in Table	1:					
Year	ROE – Return on Equity Actual					
2008 9.6 %						
	5. CAPITAL STRUCTURE AND COST OF C Issue 5.1 - Is the proposed capital structur term debt rate appropriate? <u>CCC Question #36 - Ref:</u> Please provide Hydro Ottawa's actual ROE f forecast ROE for 2011? Response The requested information is shown in Table <u>Year</u> 2008					

Year	ROE – Return on Equity Actual
2008	9.6 %
2009	10.7 %
2010	9.3 %
2011 - Forecast	8.4 %

14



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.1 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

1	5. (CAPITAL STRUCTURE AND COST OF CAPITAL
2		
3	lss	ue 5.1 - Is the proposed capital structure, rate of return on equity and short
4	ter	m debt rate appropriate?
5		
6	VE	CC Question #44 - Ref: Exhibit A3-4-1, Attachment N, page 3
7	a)	Please provide a copy of the dividend policy of Hydro Ottawa.
8	b)	What impact on the amount of debt required being raised does this policy have?
9		
10	Re	sponse
11		
12	a)	Please see K5-1-3 Attachment 1 for a copy of Hydro Ottawa Holding Inc.'s dividend
13		policy.
14		
15	b)	As noted in Exhibit E1-1-1, Hydro Ottawa Limited targets a debt equity range of
16		60:40 for its actual debt to equity structure by maintaining an appropriate level of
17		debt or issuing dividends. The current and forecast debt is driven primarily by the
18		ongoing capital program requirements and capital structure alignment, not the
19		dividend policy.

Policy Number: FIN7-001	Subject: Inter-company Dividends
Effective Date: January 1, 2009	Policy Owner: Chief Financial Officer

Applicability

This policy applies to all wholly owned Subsidiaries (Subs) of Hydro Ottawa Holding Inc. (Holdco)

Purpose

The Hydro Ottawa Group of Companies has a business principle of consolidating all excess cash or bank indebtedness into Holdco. The movement of excess cash from the Subs into Holdco will be through the payment of regular dividend payments.

Guidelines

Authority

As per section 38 of the Ontario Business Corporations Act (OBCA), a corporation may pay a dividend subject to its articles and any unanimous shareholder agreement. Dividends on common shares of the wholly owned subsidiaries are declared by Resolution of the Board of Directors.

Compliance

Section 38 of the OBCA requires that a dividend not be paid if there is reasonable grounds for believing that after the dividend payment the corporation would be unable to pay its liabilities as they become due (the solvency test), or the realizable value of the corporation's assets would be less than the aggregate of its liabilities and its stated capital of all classes (the retained earnings test).

Process

This policy directs the subsidiaries to pay dividends semi-annually to Holdco provided the Subs are in compliance with the Ontario Business Corporations Act, relevant Ontario Energy Board guidelines, and payment of same does not breach any of the debt covenants of the credit facilities or the trust indenture held by Holdco.

The dividends will be paid in Q3 and Q1 after the Q2 and full year results are available. This does not preclude additional dividend payments on an exception basis as business conditions warrant.

The quantum of the dividends will be reviewed with the Audit Committee prior to submitting a Board resolution for issuance of the dividends.



Policy Number: FIN7-001	Subject: Inter-company Dividends
Effective Date: January 1, 2009	Policy Owner: Chief Financial Officer

Policy Compliance

All wholly owned subsidiaries will comply with this policy. Dividends are declared by Resolution of the Board of Directors and their decision, notwithstanding this policy, will be the final authority of the amount and payment date of all inter-company dividends.

Rosemarie T. Leclair President & Chief Executive Officer Alan Hoverd Chief Financial Officer - Policy Owner





Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.1 Interrogatory #4 Filed: 2011-09-08 Page 1 of 2

1	5. (CAPITAL STRUCTURE AND COST OF CAPITAL
2		
3	lss	ue 5.1 - Is the proposed capital structure, rate of return on equity and short
4	ter	m debt rate appropriate?
5		
6	VE	CC Question #45 - Ref: Exhibit E1, Tab 1, Schedule 1, page 4
7	a)	Please explain the statement made at page 4: "Hydro Ottawa benefits from this
8		financing arrangement with competitive pricing as it could not place external long
9		term debt in the smaller incremental tranches that it normally receives from the
10		Holding Company." Why can Hydro Ottawa not place external long term debt in
11		small increments?
12	b)	How does Ottawa Hydro determine that it gets a "competitive pricing?" In respect to
13		Table 1 (E1/T1/S1/pg.3). Please provide the comparable rates that were considered
14		in making that statement.
15	c)	Since Ottawa Hydro is by far the predominant entity of the Holding Company how
16		does any benefit arise?
17	d)	Please provide the 2012 costs related that arise out of the 10 basis points
18		"administration costs" paid to the Holding Company.
19		
20	Re	sponse
21		
22	a)	The Canadian bond market becomes more illiquid the smaller the debt issuance. Any
23		transaction under \$100 million will generally require a liquidity premium. The lower
24		the amount of issuance, the higher the liquidity premium. As well, the smallest
25		tranche that could be generally placed in the market is approximately \$50M. The
26		Holding Company provides smaller tranches to Hydro Ottawa Limited (Hydro
27		Ottawa") without this premium attached to it as it will issue external debt when
28		warranted.
29		
30	b)	Hydro Ottawa either receives a debt rate based on the actual external cost of
31		financing at the Holdco level or a deemed rate that is a proxy to a market rate for "A"



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.1 Interrogatory #4 Filed: 2011-09-08 Page 2 of 2

rated utilities. As noted in part a) above, a premium, which is usually required for
smaller issuances, has not been included in any of the ongoing smaller tranches
issued by Hydro Ottawa through the Holding Company. These smaller tranches
avoid having excess cash on the balance sheet and carrying costs for Hydro Ottawa
while maintaining the target capital structure.

6 7

c) Please refer to part b) above.

8 9 d) The administration fee covers expenses incurred by the Holding Company which are 10 not covered in the regular service level agreement. These include credit agency fees, 11 ongoing communications / meetings with the credit rating agencies, ongoing 12 meetings / communications with investment bankers, ongoing meetings / 13 communications with cash management & credit facility bankers, etc. Executive time 14 for presentation preparation, meetings, and travel are typical costs that are covered 15 by the financing administration fee. 16



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #1 Filed: 2011-09-08 Page 1 of 2

1	5.	CAPITAL STRUCTURE AND COST OF CAPITAL
2		
3	lss	sue 5.2 - Is the proposed long term debt rate appropriate?
4		
5	<u>Bo</u>	ard Staff Question #51 – Ref: Exh E1-1-1 and Exh A3-1-1, Attachment I
6	Hy	dro Ottawa states that it receives its financing through the Holding Company. At p2 of
7	Ex	h E1-1-1, it states:
8		All external debt is managed by the Holding Company on behalf of its affiliates to
9		achieve favourable market rates and to maintain a strong credit rating at the
10		parent company level. Hydro Ottawa states that it benefits from this financing
11		arrangement with competitive pricing as it could not place external long term debt
12		in the smaller incremental tranches that it normally receives from the Holding
13		Company. The cost of debt is passed onto Hydro Ottawa on the same terms as
14		the parent when external financing secured by the Holding Company is targeted
15		for Hydro Ottawa, or, in the absence of external financing, the deemed rates as
16		determined by the Board Report on CoC and IRM that are in effect at the time of
17		the financing transaction. Consistent with current and past practice, amortized
18		issuance costs and ten basis points for administration is included in the debt rate.
19		
20	Ple	ease clarify the transaction and administration costs related to long term debt
21	sui	mmarized in Table 1 of Exh E1-1-1.
22	a)	For each of the debt instruments documented in Table 1 of Exh E1-1-1, please
23		identify whether the documented cost of debt has been determined based on:
24		i. The terms of parent company financing plus amortized issuance costs
25		and 10 basis points (0.1%) for administration; or
26		ii. The Board issued deemed debt rates.
27	b)	The debt issued on July 1, 2005 at 5.14% is noted in the 2008 Financial Statements
28		of Hydro Ottawa Holdings at 4.93%. Is the difference of 0.21% composed of 0.1% for
29		administration costs and 0.11% for amortized issuance costs? Please provide a
30		detailed derivation of the costs.
31	c)	Please provide the same analysis requested in b) for the other promissory note



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

- issued on July 1, 2005, and the notes issued on December 20, 2006, December 21,
 2009, April 1, 2010 and June 1, 2010.
 d) Please explain any differences in the levels of transaction costs and administration
 costs for long term debt prior to and including June 1, 2010.
 Response
- 7
- 8 a) Table 1 summarizes the terms of each promissory note as requested in items a)
- 9 through d).
- 10
- 11

Date of	Principal	Actual or	Interest	Issuance	Admin.	Total
Issuance	(\$000's)	Deemed	Rate	Costs	Costs	Rate
July 1, 2005	200,000	Actual	4.93 %	0.11 %	0.10 %	5.140 %
July 1, 2005	32,185	Deemed	5.900 %	NIL	NIL	5.900 %
Dec. 20, 2006	50,000	Actual	4.968 %	0.25 %	0.10 %	5.318 %
Dec. 21, 2009	15,000	Deemed	5.75 %	NIL	0.10 %	5.85 %
April 30, 2010	15,000	Deemed	5.87 %	NIL	0.10 %	5.97 %
July 5, 2011	15,000	Deemed	5.45 %	0.10 %	0.10 %	5.65 %
Sept. 1, 2011	15,000	Deemed	5.55 %	0.10 %	0.10 %	5.75 %
Dec. 1, 2011	15,000	Deemed	5.55 %	0.10 %	0.10 %	5.75 %
July 1, 2012	15,000	Deemed	5.55 %	0.10 %	0.10 %	5.75 %

Table 1

12



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #2 Filed: 2011-09-08 Page 1 of 2

1	5.	CAP	ITAL STRUCTURE AND COST OF CAPITAL
2			
3	lss	sue 5	.2 - Is the proposed long term debt rate appropriate?
4			
5	<u>Bo</u>	ard S	Staff Question #52 – Ref: Exh E1-1-1, p2-3 Ref: Report of the Board on the Cost
6	of	Capit	al, EB-2009-0084
7	Pro	omiss	sory Notes issued on December 21, 2009 and later have all been executed
8	su	oseq	uent to the Report of the Board on the Cost of Capital for Ontario's Regulated
9	Ut	ilities	(the "Cost of Capital Report"), issued December 11, 2009. These promissory
10	no	tes a	re affiliated debt.
11	a)	For	each note issued on or after December 11, 2009, please indicate Hydro Ottawa's
12		view	vs of its treatment of affiliated debt in accordance with section 4.4.1 of the Cost of
13		Cap	ital Report.
14	b)	In s	ection 4.4.1 of the Cost of Capital Report, it states that: "For affiliate debt (i.e.,
15		deb	t held by an affiliated party as defined by the Ontario Business Corporations Act,
16		199	0) with a fixed rate, the deemed long-term debt rate <u>at the time of issuance</u> will
17		be ı	used as a ceiling on the rate allowed for that debt." For the note issued June 1,
18		201	1 and forecasted notes for 2011 and 2012, Hydro Ottawa has assumed a debt
19		rate	of 5.75%, which is above the current deemed debt rate of 5.32% documented in
20		the	Board's letter of March 3, 2011 for May 1, 2011 effective rates.
21		i.	Please provide Hydro Ottawa's rationale for proposing a rate for the affiliated
22			debt that is above the current deemed debt rate.
23		ii.	The methodology for the deemed long term debt rate includes 50 basis points
24			for flotation and transaction costs. If Hydro Ottawa is including an adjustment
25			for issuance and administration costs, please provide Hydro Ottawa's views as
26			to how its adjustments do not duplicate the 50 basis point allowance factored
27			into the deemed debt rate.
28			
29			
30			
31			



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

1 Response

2

3	a)	Section 4.4.1 of the Cost of Capital Report summarizes the evolution of long term
4		debt and the use of a deemed rate in the absence of actual 3 rd party debt issued in
5		the market. Hydro Ottawa Limited ("Hydro Ottawa") has consistently followed the
6		protocol of using actual debt rates when available, or in its absence, the deemed rate
7		at the time of issuance. This approach has been incorporated in all new debt issued
8		as described in the Interest Rate section of the Grid Promissory Note filed with
9		Exhibit E1-1-1 – Attachment AG. Section 4.4.1 also speaks to the changes in the
10		formulation of a deemed long term rate as further detailed in the Cost of Capital
11		Report Appendix C. Hydro Ottawa has followed this evolution and subscribed to the
12		proprietary information used in the Ontario Energy Board (the "Board") cost of capital
13		methodology to further enhance the estimated long term debt rate at time of
14		issuance. The methodology is used as the basis of determining the deemed long
15		term date rate at time of issuance and as a starting point of estimating future rates
16		and then adjusted for the forecast changes.
17		
18	b)	

- Please refer to Interrogatory response in Exhibit K5-2-3 (Energy Probe Question
 57(b)).
- 21 ii. The Cost of Capital Report states that the implicit 50 basis points for
- transactional costs is included in the initial equity risk premium base of 550 basis
 points. This equity risk premium base is only used in the calculation of ROE and
 not long term debt.



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #3 Filed: 2011-09-08 Page 1 of 4

1	5. (CAPITAL STRUCTURE AND COST OF CAPITAL
2		
3	lss	ue 5.2 - Is the proposed long term debt rate appropriate?
4		
5	<u>En</u>	ergy Probe Question #57 - Ref: Exhibit E1, Tab 1, Sch. 1, Table 1
6	a)	How has Hydro Ottawa forecast the 5.75% rate applicable to debt issuances in 2011
7		and 2012?
8	b)	Why has Hydro Ottawa not used the current Board deemed long term debt rate of
9		5.32% in the calculation of the weighted debt rate cost?
10	c)	Have any of the 2011 issuances shown in Table 1 taken place?
11	d)	Please update Table 1 to reflect any 2011 issuances, their principal and the
12		applicable interest rate.
13	e)	What is the term of each of the promissory notes shown in Table 1?
14	f)	Has Hydro Ottawa approached Infrastructure Ontario to obtain long term financing?
15		If not, why not? If yes, please provide full details.
16	g)	What is the current rate available from Infrastructure Ontario for a term of the same
17		length as currently contemplated for the 2011 and 2012 issuances?
18		
19	Re	sponse
20 21	a)	Hydro Ottawa Limited ("Hydro Ottawa") has forecast 5.75% for its long term debt
22		issuances in 2011 and 2012. It prepared the forecast in January / February of 2011
23		using the information available at that time. During this period, the Ontario Energy
24		Board (the "Board") deemed rate was calculated at 5.32% using January 2011 data
25		which was consistent to other indicative rates at that time. With issuance and
26		administration costs added, the all in rate at January would have been approximately
27		5.52%. The long term debt forecast at that time indicated increasing rates from 20 to
28		100 bps starting in 2011 Q2 and moving out to 2012 Q4. The first debt issuance
29		scheduled in 2011 was in Q2 so the forecast increase of 20bps at that time was
30		added to the rates calculated in January resulting in the 5.75% rate. Weakness in the
31		economic recovery has created significant volatility in the underlying bond rates so
32		the conservative, low end of the forecast increase of 20bps was maintained for all



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #3 Filed: 2011-09-08 Page 2 of 4

1		2011 and 2012 issuances as the 100bps increase into 2012 was viewed to be
2		aggressive considering the weakness in the world economy.
3		
4	b)	The Board issues updated long term rates twice a year to coincide with rate
5		decisions beginning in January and May. The 5.32% was calculated using January
6		2011 information and was published in March of 2011. As noted in part a) above, this
7		rate was used as the base at the time of the forecast and then adjusted to reflect
8		future forecast rates at the scheduled time of the debt issuances in 2011 and 2012. It
9		is Hydro Ottawa practice to use rates reflective of market conditions at the time of
10		issuance to best reflect what an actual "market rate" would be.
11		
12	c)	The first 2011 long term tranche was issued on July 5 th , 2011.
13		
14	d)	The following reflects an update to Table 1 for the July 5 th debt issuance:
15		
16		Table 1 – Weighted Average Cost of Long Term Debt

Table 1 – Weighted Average Cost of Long Term Debt

Description	Date of Issuance	Pri (\$0	ncipal 000's)	Interest Rate (%)	Weighted Debt Rate Cost
Promissory Note to Hydro Ottawa Holding Inc.	July 1, 2005	\$	200,000	5.140%	2.7621%
Promissory Note to Hydro Ottawa Holding Inc.	July 1, 2005		32,185	5.900%	0.5102%
Promissory Note to Hydro Ottawa Holding Inc.	December 20, 2006		50,000	5.318%	0.7144%
Promissory Note to Hydro Ottawa Holding Inc.	December 21, 2009		15,000	5.85%	0.2357%
Promissory Note to Hydro Ottawa Holding Inc.	April 30, 2010		15,000	5.97%	0.2406%
Promissory Note to Hydro Ottawa Holding Inc.	July 5, 2011		15,000	5.65%	0.2277%
Promissory Note to Hydro Ottawa Holding Inc.	September 1, 2011		15,000	5.75%	0.2317%
Promissory Note to Hydro Ottawa Holding Inc.	December 1, 2011		15,000	5.75%	0.2317%

			Hydro O E Int Filed	ttawa Limited B-2011-0054 Exhibit K5 Issue 5.2 errogatory #3 d: 2011-09-08 Page 3 of 4
Promissory Note to Hydro Ottawa Holding Inc.	July 1, 2012	15,000	5.75%	0.2317%
		\$ 372,185		5.386%

1

2 e) The following table indicates the term of each note:

Description	Issue Date	Principal (\$)	Term
\$200 million promissory note	July 1, 2005	200,000,000	Open
\$32.2 million promissory note	July 1, 2005	32,185,000	Open
\$50 million promissory note	Dec. 20, 2006	50,000,000	Open
\$15 million grid promissory note	Dec. 21, 2009	15,000,000	Feb 9th 2015
\$15 million grid promissory note	April 30, 2010	15,000,000	Feb 9th 2015
\$15 million grid promissory note	July 5, 2011	15,000,000	Feb 9th 2015
\$15 million grid promissory note	Sept. 1, 2011	15,000,000	Feb 9th 2015
\$15 million grid promissory note	Dec 1, 2011	15,000,000	Feb 9th 2015
\$15 million grid promissory note	July 1, 2012	15,000,000	Feb 9th 2015

- The grid promissory note maturity date has been set as the same date as the
 renewal of the first tranche of external bonds. This is to facilitate the "flow through" of
 actual external debt rates for long term debt.
- 7

8	f)	Hydro Ottawa has met with Infrastructure Ontario to understand their mandate and
9		services offered. Their mandate from the provincial government is public
10		infrastructure for the MUSH sector as stated in this introduction on their website:
11		"Infrastructure Ontario is an arm's length crown corporation dedicated to the renewal
12		of the province's hospitals, courthouses, roads, bridges, water systems and other
13		public assets. Using an Alternative Financing and Procurement ("AFP") model that
14		ensures appropriate public control and ownership, Infrastructure Ontario uses private
15		financing to strategically rebuild vital infrastructure, on time and on budget.
16		Infrastructure Ontario also provides Ontario municipalities, universities and other
17		public bodies with access to affordable loans to build and renew local public



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #3 Filed: 2011-09-08 Page 4 of 4

1	infrastructure." While Hydro Ottawa can legally access funding from Infrastructure
2	Ontario, through its Shareholder affiliation, the focus on public, project based
3	financing and amortizing loans are fundamental business principles that limits the
4	applicability of their funding program in meeting Hydro Ottawa's needs. The
5	company's trust indenture and credit facility covenants would not permit the security
6	requirements of Infrastructure Ontario as all loans are subject to an "intercept
7	mechanism" to redirect payments in the case of default. Loans may also require
8	restrictive covenants on assets and a general security agreement which would also
9	breach existing Hydro Ottawa debt covenants. Hydro Ottawa has not applied for a
10	loan with Infrastructure Ontario.

11

g) The following table is reflective of the rate posted by Infrastructure Ontario for 30year debt:

14

Indicative Lending Rates as of August 19, 2011**

Term	Construction	Serial	Amortizer
30 Year	-	4.15%	4.25%

16



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	5. CAPITAL STRUCTURE AND COST OF CAPITAL
2	
3	Issue 5.2 - Is the proposed long term debt rate appropriate?
4	
5	CCC Question #37 - Ref: Ex. E1/T1/S1/p. 3
6	What is the current status regarding Hydro Ottawa's plans to issue new long-term debt?
7	
8	Response
9	
10	Hydro Ottawa Limited plans to issue the long term debt as outlined in Exhibit E1-1-1
11	Table 1. The first tranche was issued on July 5, 2011 at a rate of 5.65%.
12	
13	



Hydro Ottawa Limited EB-2011-0054 Exhibit K5 Issue 5.2 Interrogatory #5 Filed: 2011-09-08 Page 1 of 1

1	5. CAPITAL STRUCTURE AND COST OF CAPITAL
2	
3	Issue 5.2 - Is the proposed long term debt rate appropriate?
4	
5	SEC Question #52 - Ref: Ex.E1/1/1/p.3
6	Please explain why the interest rates on the Applicant's 2010 and 2011 issuances of
7	promissory notes to Hydro Ottawa Holding Inc. are above the Board's deemed long-term
8	debt rate?
9	
10	Response
11	
12	Please refer to Interrogatory response K5-2-3 (Energy Probe Question 57(b))



Hydro Ottawa Limited EB-2011-0054 Exhibit K6 Issue 6.1 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

1 6. SMART METERS

2	
3	Issue 6.1 - Is the proposed elimination of the smart meter rate adder and the
4	inclusion of the smart meter costs in the 2012 revenue requirement appropriate?
5	
6	CCC Question #38 - Ref: Ex. I2/T1/S1/p. 3
7	The evidence indicates that the 2010 capital additions include \$3.5 million related to the
8	integration to the provincial MDM/R. Please provide a complete breakdown of these
9	costs. How do they compare to the costs incurred by other LDCs? What are the
10	ongoing annual costs of MDM/R integration? What are the costs included in the test
11	year?
12	
13	Response
14	
15	Please find below a table with the breakdown of the \$3.5M costs related to the
16	integration of the meter data management and repository ("MDM/R") in 2010.
17	

18

2010 MDM/R Capital Additions

	Hardware	Software	Total
Labour	\$0	\$317,995	\$317,995
Materials	668,262	492,968	1,161,230
Vehicles & Equipment	0	68	68
Outside Services	794	2,032,276	2,033,070
Total	\$669,056	\$2,843,306	\$3,512,363

19

20 Hydro Ottawa Limited ("Hydro Ottawa") is not in the position to compare their MDM/R

21 integration costs to those of other Local Distribution Companies ("LDC"). More

22 specifically it would be impossible for Hydro Ottawa to compare only their 2010 MDM/R

23 additions with those of other LDCs.

24

Hydro Ottawa has included \$486,000 in 2012 for ongoing maintenance and

26 enhancement cost for the MDM/R.



Hydro Ottawa Limited EB-2011-0054 Exhibit K6 Issue 6.1 Interrogatory #6 Filed: 2011-09-08 Page 1 of 2

1 6. SMART METERS

2					
3	lss	sue 6.1 - Is the proposed elimination of the smart meter rate adder and the			
4	inclusion of the smart meter costs in the 2012 revenue requirement appropriate?				
5					
6	VE	CC Question #46 - Ref: Exhibit I2, Tab 1, Schedule 1, page 1 Tables 1-3			
7	a)	Provide a table that shows by class, the AMCD Capital invested, the revenue			
8		requirement and SM funding adder revenue collected from 2006-2010.			
9	b)	For the residential class provide the unit installed cost for single phase (and three			
10		phase meters and the numbers and total costs for 2006-2010).			
11	c)	Provide similar installed costs for the other classes.			
12					
13	Response				
14					
15	a)	Hydro Ottawa Limited's ("Hydro Ottawa") Operations, Maintenance and			
16		Administration costs and some of its capital expenditures are common costs to all			
17		classes of customers; as a result Hydro Ottawa did not track the revenue			
18		requirement by class. Please find below a table showing the capital investment of			
19		the Advanced Metering Collection Device by class of customer.			
20					
21		Advanced Metering Collection Device Capital Additions ¹			

	2006	2007	2008	2009	2010
Residential	\$14,977,332	\$7,903,784	\$9,893,487	\$5,156,962	\$901,050
General Service < 50kW	413,500	2,475,694	2,760,553	1,176,993	660,598
Advanced Metering Regional Collector	65,606	428,528	358,645	173,790	237,453
Demand Customer	135,045	119,185	571,867	484,635	491,065
Total	\$15.591.484	\$10.927.191	\$13.584.551	\$6.992.380	\$2.290.166

22

23 Please find below a table showing revenue collected from the Smart Meter Funding

Adder by customer class.

¹ Totals could be out due to rounding

²⁰¹² Electricity Distribution Rates - Interrogatory Responses



Hydro Ottawa Limited EB-2011-0054 Exhibit K6 Issue 6.1 Interrogatory #6 Filed: 2011-09-08 Page 2 of 2

	2006	2007	2008	2009	2010
Residential	\$ 835,726	\$4,024,268	\$4,222,113	\$4,812,373	\$ 5,475,508
General Service <50KW	153,041	400,048	374,707	419,667	472,436
General Service 50-1500KW	21,513	55,830	53,014	59,022	66,103
General Service 1500-5000 KW	515	1,391	1,351	1,197	1,332
Large Users	72	190	177	198	242
Total	\$ 1,010,867	\$ 4,481,727	\$ 4,651,362	\$ 5,292,457	\$ 6,015,621

2

1

3 b) Hydro Ottawa did not track separately the cost for single phase meters versus three

4 phase meters.

5

6 c) As stated above Hydro Ottawa did not track costs separately for the type of meter

7 installed.



Hydro Ottawa Limited EB-2011-0054 Exhibit K6 Issue 6.2 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

6. SMART METERS
Issue 6.2 - Is the proposal not to dispose of the balances in variance accounts 1555 and 1556 appropriate?
Board Staff Question #54 - Ref: Exh I1-1-2, p3 Hydro Ottawa has not applied to dispose, or partially dispose of the balances in accounts 1555 and 1556. Hydro Ottawa notes that as part of its 2011 proceeding, a smart meter rate adder of \$1.42 was approved until April 30, 2012.
While Hydro Ottawa is not seeking to clear account balances, it is seeking a determination that the spending underpinning the balances is prudent.
The total balance in accounts 1555 and 1556 at December 31, 2010, excluding stranded meters, is a credit of \$1,099,974. Please provide an estimate of what the Smart Meter Disposition Rider per class would be if all capital and operating costs to December 31, 2010 are approved for disposition and recovery as part of this application.
Response
Based on the credit balance of \$1,099,974 at the end of December 31, 2010, a credit Smart Meter Disposition Rider of \$0.30 would be calculated for the following classes; Residential, General Service Less Than 50 kW, General Service 50 to 1,499 kW, General Service 1,500 to 4,999 kW and Large Use.
Please note that if the above rate rider were approved, customers would benefit twice for the balance at December 31, 2010 as the estimated balances to December 31, 2010 are included in the \$1.42 rate rider already approved in Hydro Ottawa's 2011 IRM

application.



Hydro Ottawa Limited EB-2011-0054 Exhibit K6 Issue 6.2 Interrogatory #4 Filed: 2011-09-08 Page 1 of 2

1	6. 3	SMART METERS				
2						
3	Issue 6.2 - Is the proposal not to dispose of the balances in variance accounts					
4	1555 and 1556 appropriate?					
5						
6	VE	CC Question #48 - Ref: Exhibit I2, Tab 1, Schedule 1, page4-7				
7	a)	Is the \$404,500 related to smart meter remote disconnection included in any aspect				
8		of the rate proposal of Hydro Ottawa?				
9	b)	In respect to Table 4 at page 7 (I2/T1/S1) does the 1,690,890 represent an				
10		incremental and ongoing cost of the smart meter program. If so what are the 2011				
11		and 2012 forecast costs.				
12	c)	In respect to page 5 (I2/T1/S1) the evidence states: "Hydro Ottawa has always				
13		indicated that the unit cost of installations would increase as the project continued				
14		after easier installations had been completed." Please explain this statement. In				
15		respect to 2009 and 2010 please how Ottawa Hydro differentiates as between the				
16		increase in per installation costs that are attributable to the change from third party				
17		installation to in-house installation, and the increase in cost inherent in the type of				
18		installation. For example, how does Ottawa Hydro know whether the costs per install				
19		have increased due to an increase in hourly labour costs or because each				
20		installation requires more hours of labour.				
21						
22	Re	sponse				
23						
24	a)	The remote disconnection capital of \$404,500, and related depreciation, is part of				
25		Hydro Ottawa Limited's ("Hydro Ottawa") 2011 closing net asset balance and				
26		therefore part of rate base for 2012.				
27						
28	b)	The \$1,690,890 represents the incremental expense for 2010. The incremental				
29		expense for 2011 and 2012 are \$2,724,412 and \$1,601,817 respectively. Please				
30		note that Smart Meters become part of normal business operations as of 2012 and				
31		therefore will not be include into account 1555 and 1556.				


Hydro Ottawa Limited EB-2011-0054 Exhibit K6 Issue 6.2 Interrogatory #4 Filed: 2011-09-08 Page 2 of 2

- c) Hydro Ottawa statement that "Hydro Ottawa has always indicated that the unit cost
 of installations would increase as the project continued after easier installations had
 been completed" refers to the fact that the more complicated and harder to access
 meters were planned for the end of the project. In this statement Hydro Ottawa is
 not referring to increased costs due to hourly labour costs.
- 6

7 Hydro Ottawa has not recorded information in a way to separate cost increases due 8 to general inflation versus work hours per meter. However, it is inherent that costs 9 are higher related to inside meters versus outdoor meters. As an example, with 10 outdoor meters the project starts at the beginning of a street and moves from house 11 to house. Indoor meters require arranging appointments. Outdoor meters require 12 less travel time per meter as multiple meters are changed with minimal additional 13 travel, reducing not only labour hourly costs but other costs such as gas and vehicle 14 and equipment costs.



Hydro Ottawa Limited EB-2011-0054 Exhibit K7 Issue 7.1 Interrogatory #2 Filed: 2011-09-08 Page 1 of 2

1	7.	COST ALLOCATION
2		
3	lss	ue 7.1 - Is Hydro Ottawa's cost allocation appropriate?
4		
5	Bo	ard Staff Question #58 - Ref: Exh G1-1-1. Attachment AI; Ref: Board Report – Review
6	of	Cost Allocation Policy EB-2010-0219
7	Int	the Board Report "Review of Electricity Distribution Cost Allocation Policy",
8	Ма	rch 31, 2011" at p26, it states:
9		The Board is of the view that default weighting factors should be utilized only in
10		exceptional circumstances
11		
12		Default values and the basis on which they were derived will be included in the
13		documentation; however, any distributor that proposes to use those default
14		values will be required to demonstrate that they are appropriate given their
15		specific circumstances.
16		
17	Th	e Board Report states at p. iv (Executive Summary):
18		the Board expects that, in most cases, a distributor that is required to file its
19		application before the issuance of the revised CA Model will be able to comply
20		with the policy by applying it to the current CA Model. If necessary, a distributor in
21		this situation may update its cost of service application with the revised CA Model
22		once it becomes available.
23	a)	Please confirm that Hydro Ottawa has used the default values for the weighting
24		factors for Services and Billing.
25	b)	Is it Hydro Ottawa's position that the default values are appropriate for its
26		circumstances, as described at p26, or does it intend to update its cost allocation
27		model, as described at p. iv?
28		
29		



Hydro Ottawa Limited EB-2011-0054 Exhibit K7 Issue 7.1 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

1 Response

- 2
- a) Hydro Ottawa Limited ("Hydro Ottawa") has used the default values for the weighting
 factors for services and billing.
- 5
- 6 b) Yes, it is Hydro Ottawa's position that, based on current knowledge and given the
- 7 tight time frame, the default values are appropriate for its circumstances. Hydro
- 8 Ottawa intends to do a more in depth review of the weighing factors for service and
- 9 billing before filing the next Cost Allocation model.



Hydro Ottawa Limited EB-2011-0054 Exhibit K7 Issue 7.1 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

1	7. COST ALLOCATION
2	
3	Issue 7.1 - Is Hydro Ottawa's cost allocation appropriate?
4	
5	Board Staff Question #59 - Ref: Exh G1-1-1, Attachment AJ and Exh J3-1-4
6	Hydro Ottawa is proposing revenue to cost ratio increases for the sentinel light class
7	from 34% 45% in the test year and to be within the Board's target range for this class in
8	2014. The total bill impact of this change in the test year will be an increase of more than
9	12%. Hydro Ottawa has not proposed any mitigation.
10	
11	Please explain why mitigation was not proposed.
12	
13	Response
14	
15	Mitigation was not proposed because the difference between a 12% and 10% increase
16	in a monthly sentinel light bill (after HST) is \$0.10 per month, which was not considered
17	material.



Hydro Ottawa Limited EB-2011-0054 Exhibit K8 Issue 8.3 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

1	8.	RATE DESIGN
2		
3	lss	ue 8.3 - Are the proposed LV rates appropriate?
4		
5	En	ergy Probe Question #60 - Ref: Exhibit H3, Tab 1, Sch. 1
6	Th	e evidence indicates that the 2010 LV charges, less the charges associated with the
7	Ric	hmond DS, were escalated based on the approved increase for 2011.
8	a)	Please show the approved increase for 2011 rates over 2010 rates.
9	b)	Please show the application of the increase in (a) to arrive at the 2011 figures.
10	c)	Please explain how the increase in 2012 over 2011 was determined.
11		
12	Re	sponse
13		
14	a)	Attached please find Hydro One's approved Subtransmission rates for May 1, 2010
15		(EB-2009-0096), issued April 29, 2010 and January 1, 2011 (EB-2009-0096) issued
16		December 21, 2010.
17		
18	b)	To arrive at the 2011 figure of \$378,000, the increase in actual charges for Jan-Mar
19		2011 from Jan-Mar 2010 of 15% was applied to the total for 2010 (minus charges for
20		Richmond DS).
21		For 2012, a similar $\frac{9}{100000000000000000000000000000000000$
22	C)	For 2012, a similar % increase as was used in part b) was applied to the 2011
23		torecast to produce the figure of \$440,000.

HYDRO ONE NETWORKS INC.		
RATES FOR RETAIL DISTRIBUTION SERVICE		
Effective Date: May 1, 2010		
Except for the microFIT Generator Class effective date of September	21, 2009	
This schedule supersedes and replaces all previously approved schedules Charges and Loss Factors	of Rates,	
Sub Transmission [ST]		
Monthly Rates and Charges - Electricity Component		
Rate Rider for Global Adjustment Sub-Account Disposition Rate Rider – Applicable only for Non – RPP Customers (#6D) (11)	\$ / kWh	0.0009
Monthly Rates and Charges - Delivery Component		
Service Charge (includes Smart Meter Funding Adder - \$2.32)	\$	274.12
Rate Rider for Deferral/Variance Account Disposition #4 Service Chrg (Forgone Dist'n Rev 2008)	\$	(65.78)
Rate Rider for Deferral/Variance Account Disposition #8 Service Chrg (Green Energy Rider/Adder)	\$ ¢	3.13
Neter Unarge (for Hydro Une ownersnip) (12) Rate Rider for Deferral/Variance Account Disposition #4 Meter Chra (Forgone Dist'n Rev 2008)	ው ፍ	440.17 (102.48)
Auto Ridor for Deferrar variance Account Disposition #4 Meter Cing (1 orgone Dist if Rev 2008)	ψ	(194.40

Rate Rider for Deferral/Variance Account Disposition #4 Meter Chrg (Forgone Dist'n Rev 2008)	\$	(192.48)
Rate Rider for Deferral/Variance Account Disposition #8 Meter Chrg (Green Energy Rider/Adder)	\$	5.02
Facility charge for connection to Common ST Lines (44 kV to 13.8 kV) (9)	\$/kW (1)	0.630
Rate Rider for Deferral/Variance Account Disposition #4 Common ST Line (Forgone Dist'n Rev	\$/kW (1)	(0.195)
2008)		
Rate Rider for Deferral/Variance Account Disposition #8 Common ST Line (Green Energy	\$/kW (1)	0.007
Rider/Adder)		
Facility charge for connection to Specific ST Lines (44 kV to 13.8 kV)	\$/km (2)	598.00
Rate Rider for Deferral/Variance Account Disposition #4 Specific ST Line (Forgone Dist'n Rev	\$/km (2)	(243.77)
2008)		
Rate Rider for Deferral/Variance Account Disposition #8 Specific ST Line (Green Energy	\$/km (2)	6.82
Rider/Adder)		
Facility charge for connection to Specific Primary Lines (12.5 kV to 4.16 kV)	\$/km (2)	463.45
Rate Rider for Deferral/Variance Account Disposition #4 Specific Primary Line (Forgone Dist'n	\$/km (2)	(188.93)
Rev 2008)		
Rate Rider for Deferral/Variance Account Disposition #8 Specific Primary Line (Green Energy	\$/km (2)	5.28
Rider/Adder)		
Facility charge for connection to high-voltage (> 13.8 kV secondary) delivery High Voltage	\$/kW (1)	1.508
Distribution Station		
Rate Rider for Deferral/Variance Account Disposition #4 HVDS-high (Forgone Dist'n Rev 2008)	\$/kW (1)	(0.500)
Rate Rider for Deferral/Variance Account Disposition #8 HVDS-high (Green Energy Rider/Adder)	\$/kW (1)	0.017
Facility charge for connection to low-voltage (< 13.8 kV secondary) delivery High Voltage	\$/kW (1)	3.344
Distribution Station		
Rate Rider for Deferral/Variance Account Disposition #4 HVDS-low (Forgone Dist'n Rev 2008)	\$/kW (1)	(0.930)
Rate Rider for Deferral/Variance Account Disposition #8 HVDS-low (Green Energy Rider/Adder)	\$/kW (1)	0.038
Facility charge for connection to low voltage (< 13.8 kV secondary) Low Voltage Distribution	\$/kW (3)	1.836
Station		
Rate Rider for Deferral/Variance Account Disposition #4 LVDS-low (Forgone Dist'n Rev 2008)	\$/kW (3)	(0.430)
Rate Rider for Deferral/Variance Account Disposition #8 LVDS-low (Green Energy Rider/Adder)	\$/kW (3)	0.021
Rate Rider for Deferral/Variance Account Disposition #3A (General) (10)	\$/kW (1)	(0.010)
Rate Rider for Deferral/Variance Account Disposition #3B (Wholesale Market Service Rate) (11)	\$/kW (1)	(0.510)
Rate Rider for Deferral/Variance Account Disposition #6A (General) (10)	\$/kW (1)	0.005
Rate Rider for Deferral/Variance Account Disposition #6B (11)	\$/kW (1)	(0.296)
Rate Rider for Deferral/Variance Account Disposition #6C (RTSR) (14)	\$/kW (1)	(0.230)

EB-2009-0096 Page 23 of 29

Retail Transmission Service Rates (6)(7)(8):		
Retail Transmission Rate - Network Service Rate (4)	\$/kW	2.65
Retail Transmission Rate - Line Connection Service Rate (5)	\$/kW	0.64
Retail Transmission Rate - Transformation Connection Service Rate (5)	\$/kW	1.50
Monthly Rates and Charges - Regulatory Component		
Monthly Rates and Charges - Regulatory Component		
Monthly Rates and Charges - Regulatory Component Wholesale Market Service Rate (7) (13)	\$/kWh	0.0052
Monthly Rates and Charges - Regulatory Component Wholesale Market Service Rate (7) (13) Rural or Remote Rate Protection Rate (7) (13)	\$/kWh \$/kWh	0.0052 0.0013

2 Notes:

Note (1): The basis of the charge is the customer's monthly maximum demand. For a
customer with multiple delivery points served from the same Transformer Station or
High Voltage Distribution Station, the aggregated demand will be the applicable
billing determinant. Demand is not aggregated between stations.

7

I

Note (2): The basis of the charge is kilometres of line, within the supplied LDC's
service area, supplying solely that LDC.

10

Note (3): These rates are based on the "non-coincident demand" at each delivery point of the customer supplied by the station. This is measured as the kW demand at the delivery point at the time in the month of maximum load on the delivery point. For a customer connected through two or more distribution stations, the total charge for the connection to the shared distribution stations is the sum of the relevant charges for each of the distribution stations.

17

18 Note (4): The monthly billing determinant for the RTSR Network Service rate is:

- for energy-only metered customers: the customer's metered energy consumption
 adjusted by the total loss factor as approved by the Board.

- for interval-metered customers: the peak demand from 7 AM to 7 PM (local time)
 on IESO business days in the billing period.

- for non-interval-metered demand billed customers: the non-coincident peak
 demand in the billing period.

25

Filed: December 17, 2010 EB-2009-0096 Exhibit 3.0 Page 22 of 39

Station

1	HYDRO ONE NETWORKS INC.		
2	RATES FOR RETAIL DISTRIBUTION SERVICE	2	
3	Effective Date: January 1, 2011		
4	Except for the microFIT Generator Class effective date of September	r 21, 2009	
5 6 7 8	This schedule supersedes and replaces all previously approved schedules Charges and Loss Factors	of Rates,	
9	Sub Transmission [ST]		
	Monthly Rates and Charges - Electricity Component		and all all and a second second second second second second second second second second second second second s
	Rate Rider #6D for Global Adjustment Sub-Account Disposition Rate Rider – Non – RPP Customers (expires December 31, 2011) (11) (14)	\$ / kWh	0.00091
	Monthly Rates and Charges - Delivery Component		
	Service Charge (includes Smart Meter Funding Adder - \$3.92) Service Charge Rate Rider #4 - Foregone Dist'n Rev 2008 (expires April 30, 2011) Service Charge Rate Rider #8 - Green Energy Costs (expires December 31, 2011)	\$ \$ \$	292.56 (65.78) 5.19
	Meter Charge (for Hydro One ownership) (12) Meter Charge Rate Rider #4 - Foregone Dist'n Revenue 2008 (expires April 30, 2011) Meter Charge Rate Rider #8 - Green Energy Costs (expires December 31, 2011)	\$ \$ \$	466.14 (192.48) 8.26
	Facility charge for connection to Common ST Lines (44 kV to 13.8 kV) (9) Volumetric Rate Rider #4 Common ST Line - Foregone Dist'n Rev 2008 (expires April 30, 2011) Volumetric Rate Rider #8 Common ST Line - Green Energy Costs (expires December 31, 2011)	\$/kW (1) \$/kW (1) \$/kW (1)	0.668 (0.195) 0.012
	Facility charge for connection to Specific ST Lines (44 kV to 13.8 kV) Volumetric Rate Rider #4 Specific ST Line - Foregone Dist'n Rev 2008 (expires April 30, 2011) Volumetric Rate Rider #8 Specific ST Line - Green Energy Costs (expires December 31, 2011)	\$/km (2) \$/km (2) \$/km (2)	633.28 (243.77) 11.23
	Facility charge for connection to Specific Primary Lines (12.5 kV to 4.16 kV) Volumetric Rate Rider #4 Specific Primary Line - Foregone Dist'n Rev 2008 (expires April 30, 2011)	\$/km (2) \$/km (2)	490.79 (188.93)
	Volumetric Rate Rider #8 Specific Primary Line - Green Energy Costs (expires December 31, 2011)	\$/km (2)	8.70
	Facility charge for connection to high-voltage (> 13.8 kV secondary) delivery High Voltage Dist'n Station	\$/kW (1)	1.597
	Volumetric Rate Rider #4 HVDS-high - Foregone Dist'n Rev 2008 (expires April 30, 2011) Volumetric Rate Rider #8 HVDS-high - Green Energy Costs (expires December 31, 2011)	\$/kW (1) \$/kW (1)	(0.500) 0.028
	Facility charge for connection to low-voltage (< 13.8 kV secondary) delivery High Voltage Dist'n	ФЛ. З У (1)	2 5 4 1

Volumetric Rate Rider #8 HVDS-low - Green Energy Costs (expires December 31, 2011) \$/kW (1) 0.063 Facility charge for connection to low voltage (<13.8 kV secondary) Low Voltage Dist'n Station \$/kW (3) 1.944 Volumetric Rate Rider #4 LVDS-low - Foregone Dist'n Rev 2008 (expires April 30, 2011) \$/kW (3) (0.430)Volumetric Rate Rider #8 LVDS-low - Green Energy Costs (expires December 31, 2011) \$/kW (3) 0.034

Volumetric Rate Rider #4 HVDS-low - Foregone Dist'n Rev 2008 (expires April 30, 2011)

\$/kW(1)

\$/kW(1)

3.541

(0.930)

Filed: December 17, 2010 EB-2009-0096 Exhibit 3.0 Page 23 of 39

Volumetric Rate Rider #3A (General) - Deferral/Variance Account Disposition 2008 (expires April 30, 2011) (10)	\$/kW (1)	(0.010)
Volumetric Rate Rider #3B (Wholesale Market Service Rate) Deferral/Variance Account	\$/kW (1)	(0.510)
Disposition 2008 (expires April 30, 2011) (11) Volumetrie Pote Rider #64 (Constral), Deferre (Veringen Account Disposition 2000	4	(*****)
(expires December 31, 2011) (10)	\$/kW (1)	0.005
Volumetric Rate Rider #6B (Wholesale Market Service Rate)- Deferral/Variance Account Disposition 2009 (expires December 31, 2011) (11)	\$/kW (1)	(0.296)
Volumetric Rate Rider #6C - Deferral/Variance Account Disposition 2009 (expires December 31, 2011) (RTSR) (14)	\$/kW (1)	(0.230)
Retail Transmission Service Rates (6)(7)(8):		
Retail Transmission Rate - Network Service Rate (4)	\$/kW	2.65
Retail Transmission Rate - Line Connection Service Rate (5)	\$/kW	0.64
Retail Transmission Rate - Transformation Connection Service Rate (5)	\$/kW	1.50
Monthly Rates and Charges - Regulatory Component		
Wholesale Market Service Rate (7) (13)	\$/kWh	0.0052
Rural or Remote Rate Protection Rate (7) (13)	\$/kWh	0.0013
Standard Supply Service - Administration Charge (if applicable)	\$	0.25

- 1
- 2 Notes:

3	Note (1):	The basis of the charge is the customer's monthly maximum demand. For a
4		customer with multiple delivery points served from the same Transformer
5		Station or High Voltage Distribution Station, the aggregated demand will be
6		the applicable billing determinant. Demand is not aggregated between
7		stations.
8		
9	Note (2):	The basis of the charge is kilometres of line, within the supplied LDC's
10		service area, supplying solely that LDC.
11		
12	Note (3):	These rates are based on the "non-coincident demand" at each delivery point

- 172 Note (3). These faces are based on the hon-contributint definition at each derivery point
 13 of the customer supplied by the station. This is measured as the kW demand at
 14 the delivery point at the time in the month of maximum load on the delivery
 15 point. For a customer connected through two or more distribution stations, the
 16 total charge for the connection to the shared distribution stations is the sum of
 17 the relevant charges for each of the distribution stations.
- 18



Hydro Ottawa Limited EB-2011-0054 Exhibit K8 Issue 8.3 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

1 8. RATE DESIGN

2	
3	Issue 8.3 - Are the proposed LV rates appropriate?
4	
5	VECC Question #54 - Ref: Exhibit H3, Tab 1, Schedule 1, pages 2-3
6	Please provide a schedule that sets of the derivation of the "escalator" used to increase
7	the 2010 LV costs (less Richmond DS) to the 2011 and 2012 values set out in Table 2.
8	
9	Response
10	
11	The escalator that was used to increase the 2010 Low Voltage costs (less Richmond
12	DS) to the 2011 and 2012 value of 15%-16% was based on the percentage change
13	between actual charges in January – March of 2010 to 2011 as follows:

14

	January	February	March	Average
2010	\$26,662	\$25,895	\$24,899	
2011	\$30,652	\$28,976	\$29,358	
% increase	15%	12%	18%	15%

15



Hydro Ottawa Limited EB-2011-0054 Exhibit K8 Issue 8.3 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

1	8. RATE DESIGN
2	
3	Issue 8.3 - Are the proposed LV rates appropriate?
4	
5	VECC Question #55 - Ref: Exhibit H3, Tab 1, Schedule 1, page 2 and Attachment AM,
6	page 2
7	The text in Attachment AM suggests that the annual savings from the purchase of the
8	Richmond DS and Fallowfield DS would be \$600,000 annually. However, Table 2
9	suggests savings in the order of \$300,000. Please reconcile.
10	
11	Response
12	
13	The report provided in Attachment AM was written in July of 2008 and the statement that
14	the Low Voltage ("LV") savings from the purchase of Richmond DS and Fallowfield DS
15	would be \$600k was based on 2007 financial information and rates. Hydro One's
16	Subtransmission rates dropped significantly in 2009, such that Hydro Ottawa Limited's
17	total charges for LV dropped from \$1.4M in 2008 to \$0.6M in 2009. This was before
18	Richmond and Fallowfield were purchased. The \$300k shown in Table 2 of Exhibit H3-

19 1-1 is based on the lower rates.



Hydro Ottawa Limited EB-2011-0054 Exhibit K8 Issue 8.4 Interrogatory #1 Filed: 2011-09-08 Page 1 of 1

1 8. RATE DESIGN

2	
3	Issue 8.4 - Are the proposed loss factors appropriate?
4	
5	Board Staff Question #62 - Ref: Exh A1-2-1 p3 and Exh H4-1-1 p3
6	In the first reference, Hydro Ottawa states that it is requesting Board approval for loss
7	factors based on a five year average. In the second reference, it states that Hydro
8	Ottawa is proposing the use of the three year average. Please clarify.
9	
10	Response
11	
12	Exhibit A1-2-1 page 3 should state that Hydro Ottawa Limited is requesting Ontario
13	Energy Board approval for loss factors based on a three year average as detailed in

14 Exhibit H4-1-1.



Hydro Ottawa Limited EB-2011-0054 Exhibit K8 Issue 8.4 Interrogatory #2 Filed: 2011-09-08 Page 1 of 1

1 8. RATE DESIGN

2	
3	Issue 8.4 - Are the proposed loss factors appropriate?
4	
5	Board Staff Question #63 - Ref: Exh H4-2-1, Attachment AN
6	The evidence states that dry-core type transformers have a much higher loss rating than
7	oil filled transformers. Are there any initiatives to replace the dry-core transformers?
8	
9	Response
10	
11	Hydro Ottawa Limited ("Hydro Ottawa") has no specific initiatives to replace dry-core
12	transformers, as they are owned by the customer. Dry-core transformers are chosen by
13	the customer after considering the life cost and any advantages they would have over oil
14	filled transformers; such as not requiring as stringent a fire rating.
15	
16	Hydro Ottawa does encourage its customers to install the most efficient and cost
17	effective transformers and one way of doing this was to introduce the charges for the

18 losses of the dry-core transformers.



Hydro Ottawa Limited EB-2011-0054 Exhibit K8 Issue 8.4 Interrogatory #3 Filed: 2011-09-08 Page 1 of 2

1 8. RATE DESIGN

2		
3	lss	ue 8.4 - Are the proposed loss factors appropriate?
4		
5	Bo	ard Staff Question #64 - Ref: Exh H1-2-1; Ref: Board Report – Review of Cost
6	Allo	ocation Policy EB-2010-0219
7	Hy	dro Ottawa has requested that the proposed standby rates be approved as final. In
8	the	Board Report "Review of Electricity Distribution Cost Allocation Policy", March 31,
9	20	11" at p15, it states:
10		The Board agrees with the prevailing view of the stakeholders that resolution of the
11		oad displacement generation issues requires additional research and consultation.
12		
13		The Board therefore does not consider it appropriate to develop a cost allocation
14		methodology for load displacement generation at this time. However, the Board
15		believes that these issues warrant attention in the short term, and will to that end
16	İ	initiate a separate consultation in the near future.
17		
18		In the meantime, the current interim standby rates will remain in place. The Board
19		[will] entertain applications by distributors to have those rates made final as part of
20	i	their next cost of service application.
21		
22	a)	In light of the Board's stated intention to conduct additional research and
23		consultation, please confirm that Hydro Ottawa is requesting that its proposed
24		Standby Rates be approved as final in 2012, notwithstanding the pending
25		consultation.
26	b)	If the response to a) is affirmative, please provide the rationale for such approval of
27		the rate to be charged to Hydro Ottawa's customers.
28	c)	Please clarify whether the proposed final rate is intended to be applied to the
29		customers for standby service during the period prior to 2012, and if not, what is
30		Hydro Ottawa's request regarding final rates over that period.



Hydro Ottawa Limited EB-2011-0054 Exhibit K8 Issue 8.4 Interrogatory #3 Filed: 2011-09-08 Page 2 of 2

1 Response

2

- a) In light of the Ontario Energy Board's stated intention to conduct additional research and consultation, Hydro Ottawa Limited ("Hydro Ottawa") is withdrawing the request that its proposed Standby Rates be approved as final in 2012. Hydro Ottawa's Draft Tariff of Rates and Charges has been updated accordingly. See Attachment 1 to Exhibit K1-4-3 (Board Staff #6a).
 b) Not required.
- 10
- 11 c) Not required.



Hydro Ottawa Limited EB-2011-0054 Exhibit K8 Issue 8.4 Interrogatory #5 Filed: 2011-09-08 Page 1 of 1

1 8. RATE DESIGN

2	
3	Issue 8.4 - Are the proposed loss factors appropriate?
4	
5	VECC Question #56 - Ref: Exhibit H4, Tab 1, Schedule 1, pages 3-5 /Exhibit H4, Tab 3,
6	Schedule 1 /Attachment AN, pages 12-17
7	Given Hydro Ottawa's progress to-date in implementing the Report's various
8	recommendations, why not use a two-year average (i.e., 2009 and 2010) as opposed to
9	a three-year average of historical losses?
10	
11	Response
12	
13	The Ontario Energy Board's Chapter 2 of the Filing Requirements for Transmission and
14	Distribution Applications, issued on June 22, 2011 request that a five year average of
15	historical losses (or three years at a minimum) be used in the calculation of the proposed
16	loss factors. Hydro Ottawa Limited has shown five years of history, but has used three
17	years for the proposed loss factors as there is some indication that losses are declining.
18	However, it would be premature to only use two years (2010 and 2011) as there still is
19	volatility in the annual loss factors as shown below:
20	

	2006	2007	2008	2009	2010
Total Loss Factor	1.0363	1.0444	1.0427	1.0308	1.0338

21



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #2 Filed: 2011-09-08 Page 1 of 2

1	9. DEFERRAL AND VARIANCE ACCOUNTS
2	
3	Issue 9.1 - Are the account balances, cost allocation methodology and disposition
4	period appropriate?
5	
6	Board Staff Question #67 - Ref: Exh I1-1-1, p1
7	Hydro Ottawa received approval for disposition of certain deferral and variance account
8	balances (accumulated to October 31, 2007) in its 2008 cost of service application (EB-
9	2007-0713). In the 2008 proceeding (EB-2007-0713), the Board accepted the settlement
10	agreement with respect to deferral and variance accounts. In section 4.1 (c) on p17 of
11	the settlement agreement, the parties agreed to the following:
12	
13	If any adjustments were required as part of Hydro Ottawa's year-end audit in 2007 or
14	as a result of subsequent decisions of the Board, these adjustments would be
15	recorded in the variance and deferral accounts for the appropriate month.
16	Accumulated amounts in these accounts, including any adjustments, would be part
17	of the next application to clear these accounts.
18	a) Please provide a list of adjustments required as part of Hydro Ottawa's yearend
19	audit in 2007 or as a result of subsequent decisions of the Board, the month that
20	the adjustments were recorded, the amounts of the adjustments, the reasons for
21	the adjustments and any reference to Board Decisions, if applicable.
22	b) Has Hydro Ottawa recorded any other adjustments in 2007, 2008, 2009 and
23	2010 in these DVAs other than the ones listed above? If yes, please provide a list
24	of adjustments, the month that the adjustments were recorded, the amounts of
25	the adjustments, the reasons for the adjustments and the supporting
26	documentations.
27	
28	
29	
30	



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

1 Response

2		
3	a)	No adjustments were required to the approved deferral and variance account
4		balances (accumulated to October 31, 2007) in Hydro Ottawa Limited's ("Hydro
5		Ottawa") 2008 cost of service application (EB-2007-0713) as part of Hydro Ottawa's
6		year-end audit in 2007.
7		
8	b)	No other adjustments were required to the approved deferral and variance account
9		balances (accumulated to October 31, 2007) in Hydro Ottawa's 2008 cost of service
10		application (EB-2007-0713) in 2007, 2008, 2009 or 2010.



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #4 Filed: 2011-09-08 Page 1 of 3

1	9. DEF	FERRAL AND VARIANCE ACCOUNTS
2		
3	Issue	9.1 - Are the account balances, cost allocation methodology and disposition
4	period	l appropriate?
5		
6	Board	Staff Question #69 - Ref: Exh I1-1-2, p2
7	The di	fference between revenue collected from retailers for retail settlement
8	activiti	es and the costs incurred to provide the services is recorded in the retail cost
9	varian	ce accounts 1518 and 1548.
10	a)	Please identify the drivers for the balances in account 1518 and account 1548.
11	b)	Staff notes that the balance at December 31, 2010 in account 1518 is \$(794,111)
12		and in account 1548 is \$1,331,985. Please explain whether or not Hydro Ottawa
13		has considered a change to the retail service charges.
14	c)	Please provide a schedule identifying all revenues and expenses, listed by
15		Uniform System of Account (USoA) number, that are incorporated into the
16		variances recorded in account 1518 and account 1548 for 2010, the
17		actual/forecast for 2011 and a forecast for 2012.
18	d)	Please confirm whether or not the Hydro Ottawa has followed Article 490, Retail
19		Services and Settlement Variances of the Accounting Procedures Handbook for
20		account 1518 and account 1548. In other words, please confirm that the higher
21		of, the relevant revenues (i.e. account 4082, Retail Services Revenue and/or
22		account 4084, STR Revenue) and the incremental expenses in the associated
23		expense accounts (i.e. account 5315, Customer Billing, and possibly 5305,
24		Supervision and 5340, Miscellaneous Customer Accounts Expenses) is reduced
25		(i.e. revenues debited or expenses credited) at the end of each period, with an
26		offsetting entry to the variance account. Please explain if Hydro Ottawa has not
27		followed Article 490.
28	e)	Please confirm that all costs incorporated into the variances reported in account
29		1518 and account 1548 are incremental costs of providing retail services.
30		



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #4 Filed: 2011-09-08 Page 2 of 3

1 Response

- 2 3 a) The drivers of the balances in account 1518 and 1548 are the costs of providing retail services and the revenue collected from retailers. 4 5 6 b) Hydro Ottawa Limited ("Hydro Ottawa") has not considered a change to the retail 7 service charges. Hydro Ottawa believes a generic proceeding would be the best 8 venue to consider changing retail service charges. 9 10 Additionally Article 490 of the Accounting Procedures Handbook states "Note that the 11 materiality guideline will not be applied for purposes of the RCVA since more 12 information is required at this time in order to develop rates in the future. The 13 balances in the variance accounts will therefore reflect, on a global basis, whether 14 the prescribed rates are sufficient to cover the estimated incremental expenses or 15 not. This information ... is used by the Board to adjust the prescribed rates for these 16 services and to determine the methodology for disposition of the variance accounts." 17
 - c) Please find a table below with all 2010 revenues and expenses, listed by Uniform
 System of Account number, that are incorporated into the variances recorded in
 - 20 account 1518 and account 1548.

	1518 - Retail	1548 - STR
Revenue		
4082 - Retail Services Revenues	(\$306,702)	\$0
4084 - STR Revenues	0	(14,249)
4235 - Miscellaneous Service Revenues	(200)	0
Total Revenue	(306,902)	(14,249)
Expenses		
5315 - Customer Billing	29,207	565,313
5410 - Community Relations - Sundry	20,294	0
5610 - Management Salaries and Expenses	240	0
5615 - General Administrative Salaries and	68,211	0
Expenses		
5620 - Office Supplies and Expenses	600	0
Total Expenses	118,552	565,313
RCVA Balance	(\$188,350)	\$551,064



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #4 Filed: 2011-09-08 Page 3 of 3

1		Hydro Ottawa did not forecast balances in account 1518 and 1548 for 2011 and
2		2012 as it is assumes revenues and costs will net to zero.
3		
4	d)	Hydro Ottawa has followed article 490 Retail Services and Settlement Variances of
5		the Accounting Procedures Handbook for account 1518 and account 1548 with one
6		exception, the variance is always recorded into revenue as a result it does not need
7		to be reversed monthly.
8		
9	e)	Hydro Ottawa confirms that all costs incorporated into the variances reported in
10		accounts 1518 and 1548 are incremental costs of providing retail services.



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #5 Filed: 2011-09-08 Page 1 of 2

1	9.	DEFERRAL AND VARIANCE ACCOUNTS
2		
3	lss	sue 9.1 - Are the account balances, cost allocation methodology and disposition
4	ре	riod appropriate?
5		
6	Bo	ard Staff Question #70 - Ref: Exh I1-1-1, Attachment AQ
7	In	Hydro Ottawa's 2008 cost of service rate application, only the commodity portion of
8	Ac	count 1588 (RSVA Power) was cleared. In the current application, Hydro Ottawa is
9	rec	uesting the clearance of \$11.2 million in Account 1588 sub-account Global
10	Ad	justment (including \$10.6 million principal as of December 31, 2010 and \$0.6 million
11	ca	rying charges up to December 31, 2011).
12	a)	Please confirm that the balance in the account reflects the period 2005 to 2010.
13	b)	Please confirm that Hydro Ottawa pro-rates IESO Charge Type 146 Global
14		Adjustment into the RPP portion and non-RPP portion. Does Hydro Ottawa record
15		the RPP portion of global adjustment in the USoA 4705 control account and then
16		incorporate it into 1588 RSVA Power? Does Hydro Ottawa record the non-RPP
17		portion of global adjustment in Account 4705 sub-account Global Adjustment and
18		then incorporate it into 1588 sub-account Global Adjustment? If not, please update
19		the account balances for 1588 RSVA and 1588 sub-account Global adjustment using
20		this accounting treatment.
21	c)	The following table summarizes transactions in account 1588 sub-account global
22		adjustment. The source of the data is Attachment AQ. Please explain the trends.

23

Transactions (additions), excluding interest and adjustments						
2005 2006 2007 2008 2009 201						
(4,838,912)	9,185,051	1,425,437	2,564,808	8,318,310	(6,031,437)	

24

25 **Response**

26

a) Hydro Ottawa Limited ("Hydro Ottawa") confirms that the balance in 1588 reflects the
 period 2005 to 2010.



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #5 Filed: 2011-09-08 Page 2 of 2

- b) Yes, Hydro Ottawa records the RPP portion of global adjustment in the USoA 4705
 control account and then incorporates it into 1588 RSVA Power.
- 3 4

Yes, Hydro Ottawa records the non-RPP portion of global adjustment in Account
4705 sub-account Global Adjustment and then incorporates it into 1588 sub-account
Global Adjustment.

6 7

8 The variation in the additions in this account as seen in the above table is a result of C) 9 the difference between what Hydro Ottawa is charged monthly for the Global 10 Adjustment and what the customer is charged for the Global Adjustment (formally the 11 Provincial Benefit). Hydro Ottawa has no control over either rate which is set by the 12 Independent Electricity System Operator ("IESO"). As an example, in December 13 2005 the IESO set the customer Global Adjustment rate (then called the Provincial 14 Benefit) at a credit of \$2.5/MWh. LDCs were charged a credit rate of \$19.83/MWh 15 for December 2005. The difference in the rate resulted in a variance of 16 approximately \$5.5M in account 1588 in the month of December 2005.



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #7 Filed: 2011-09-08 Page 1 of 1

1	9.	DEFERRAL AND VARIANCE ACCOUNTS						
2								
3	lss	ue 9.1 - Are the account balances, cost allocation methodology and disposition						
4	period appropriate?							
5								
6	Bo	ard Staff Question #72 - Ref: Exh I1-1-2, p2						
7	Hy	dro Ottawa requests disposition of \$1,056,833 for incremental IFRS transition costs						
8	(ind	cluding \$1,035,333 principal balance as of December 31, 2010 and \$21,500 carrying						
9	cha	arges up to December 31, 2011) recorded in Account 1508 other regulatory assets.						
10	a)	Please provide a breakdown of the cost categories and explanations for each cost						
11		recorded in the IFRS deferral account.						
12	b)	Please confirm if the costs recorded are incremental one-time IFRS administrative						
13		costs.						
14								
15	Re	sponse						
16								
17	a)	The table below breakdowns incremental International Financial Reporting						
18		Standards ("IFRS") costs. Please note that account 1508 is made up of IFRS costs						
19	as well as non-IFRS costs. \$1,056,833 represents all costs in account 1508.							
20		\$948,811 represents total IFRS costs, including \$942,530 principle balance and						
21		\$6,281 interest balance. This breakdown can be seen in Attachment AQ.						
22								
	Inc	remental IFRS Costs						

Incremental IFRS Costs		
Consulting costs	\$653,885	Ernst & Young
Compensation	285,448	Incremental costs of internal staff
Travel	3,197	Incremental travel costs
Total IFRS Costs	\$942,530	

- 23
- b) Hydro Ottawa Limited confirms that the IFRS costs in account 1508 are one-time

25 administrative incremental costs.



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #12 Filed: 2011-09-08 Page 1 of 1

1	9.	DEFERRAL AND VARIANCE ACCOUNTS
2		
3	lss	ue 9.1 - Are the account balances, cost allocation methodology and disposition
4	ре	riod appropriate?
5		
6	Bo	ard Staff Question #77 - Ref: Exh I1-1-1, p4
7	Du	ring the 2010 IRM application process, the Board directed electricity distributors to
8	rec	ord in deferral account 1592 (PILs and Tax Variances, Sub-account HST/OVAT Input
9	Та	x Credits ("ITCs")), beginning July 1, 2010, the incremental ITCs received on
10	dis	tribution revenue requirement items that were previously subject to PST and became
11	sul	pject to HST.
12	a)	Please confirm that Hydro Ottawa has followed the December 2010 FAQs
13		accounting guidance regarding Account 1592 sub-account HST/OVAT ITCs. If this is
14		not the case, please explain.
15	b)	Please confirm that entries have been made to record variances in the subaccount of
16		Account 1592 to cover the period from July 1, 2010 to December 31, 2011 since the
17		Test Year, which starts January 1, 2012 would include the HST impacts in rates
18		going forward. If this is not the case, please explain.
19		
20	Re	sponse
21		
22	a)	Hydro Ottawa Limited ("Hydro Ottawa") confirms that they have followed the
23		December 2010 FAQs accounting guidance regarding Account 1592 sub-account
24		HST/OVAT ITCs.
25		
26	b)	Hydro Ottawa has recorded the appropriate entries in account 1592 in the Reporting
27		and Record Keeping Requirements up to June 2011 (Actuals) and will continue to
28		record such entries until December 31, 2011. The appropriate entries are included in
29		the 2011 forecast of 1592. Please note the overall impact to 1592 nets to zero per
30		the December FQAs. No further entries will be completed past December 31, 2011
31		and no forecasted amounts are included in 1592 for 2012.



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #13 Filed: 2011-09-08 Page 1 of 1

1	9. DEFERRAL AND VARIANCE ACCOUNTS
2	
3	Issue 9.1 - Are the account balances, cost allocation methodology and disposition
4	period appropriate?
5	
6	Board Staff Question #78 - Ref: Exh I1-1-2, Attachment AR
7	Hydro Ottawa has provided a table in the attachment which summarizes the
8	determination of proposed rate riders. The upper table on p3 lists 2012 forecast kWh
9	non RPP for streetlighting, however allocator percentages in the lower table are zero.
10	The reverse is true for sentinel lighting. Please clarify.
11	
12	Response
13	
14	The allocator percentages in the lower table were inadvertently reversed for
15	streetlighting and sentinel lighting. This error was not brought forward into other

16 schedules.



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.1 Interrogatory #14 Filed: 2011-09-08 Page 1 of 1

1	9. DEFERRAL AND VARIANCE ACCOUNTS
2	
3	Issue 9.1 - Are the account balances, cost allocation methodology and disposition
4	period appropriate?
5	
6	SEC Question #55 - Ref: Ex.I1/1/2/p.2
7	Please provide a detailed breakdown of the Account 1508-Other Regulatory Assets-Sub-
8	Account-Incremental IFRS Transition Costs.
9	
10	Response
11	
12	Please refer to Exhibit K9-1-7 (Board Staff #72a).



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.3 Interrogatory #1 Filed: 2011-09-08 Page 1 of 2

1	9. DEFERRAL AND VARIANCE ACCOUNTS
2	
3	Issue 9.3 - Are the proposed new deferral and variance accounts appropriate?
4	
5	Energy Probe Question #62 - Ref: Exhibit I1, Tab 1, Sch. 3
6	Is Hydro Ottawa aware of other distributors applying for and the Board approving new
7	sub-accounts to Account 1595 to record the disposition and recoveries of the balances
8	approved for clearance? If yes, please provide references.
9	
10	Response
11	
12	Horizon Utilities Corporation, as part of proceeding number EB-2010-0131, applied for a
13	sub-account to1595. As part of the decision and order related to this proceeding, on
14	page 61, the Ontario Energy Board's (the "Board") finding was:
15	
16	The Board will approve and issue new industry-wide sub-accounts of
17	Account 1595 for deferral and variance accounts cleared through the
18	2011 rates process in the Accounting Procedures Handbook FAQs that
19	will be forthcoming later this year. This approach is consistent with the
20	Board's practice of approving three generic subaccounts of Account 1595
21	for the approved disposition of account balances in each rate year
22	promulgated through the APH-FAQs.
23	
24	The approach referred to in the above decision can be seen in question and answer four
25	of the Board's October 2009 Accounting Procedures Handbook Frequently Asked
26	Questions:
27	
28	Q.4 For deferral and variance account balances approved for recovery in
29	2009 (e.g., as part of the 2009 EDR rebasing applications, IRM
30	applications process or Board reviews), should new sub-accounts of



Hydro Ottawa Limited EB-2011-0054 Exhibit K9 Issue 9.3 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

1	account 1595 be used to record the approved account balances and the
2	associated recoveries collected (or amounts refunded) in rates?
3	
4	A.4 Yes. The Board in 2008 approved sub-accounts of account 1595,
5	Disposition and Recovery of Regulatory Balances Control Account, to
6	record the deferral and variance account balances approved in 2008 and
7	the associated rate recoveries. For deferral and variance account
8	balances approved in 2009, the Board has approved "Sub-account
9	Principal Balances Approved for Disposition in 2009." Distributors will
10	record in this sub-account of account 1595 the approved principal account
11	balances and amounts recovered (or refunds) in rates through regulatory
12	asset or deferral and variance accounts rate riders.
13	
14	The Board's e-filing system section E2.1.1 Deferral/ Variance Accounts includes multiple
15	sub-accounts for account 1595, which are:
16	 1595 Sub-account Disposition of Account Balances Approved in 2008
17	 1595 Sub-account Disposition of Account Balances Approved in 2009
18	 1595 Sub-account Disposition of Account Balances Approved in 2010
19	
20	It is Hydro Ottawa Limited's expectation that a 1595 'Sub-account Disposition of Account
21	Balances Approved in 2012' will be approved for deferral and variance account balances
22	approved out of the distribution rate application process for 2012.



Hydro Ottawa Limited EB-2011-0054 Exhibit K10 Issue 10.1 Interrogatory #1 Filed: 2011-09-08 Page 1 of 3

1	10. LOST REVENUE ADJUSTMENT MECHANISM
2	
3	Issue 10.1 - Is the proposal related to LRAM appropriate?
4	
5	VECC Question #57 - Ref: Exhibit I3, Tab 1, Schedule 1, page 3
6	Please provide a schedule that sets out:
7	• The total adjustment for CDM that was included in the 2008 Load Forecast (Note:
8	Please clarify whether the adjustment was to forecast wholesale purchases or
9	customer billed energy).
10	The break down of the load forecast adjustment by customer class.
11	• The actual 2008 (verified) savings reported from 2008 CDM programs, broken down
12	by customer class. (Note: Please confirm if the reported savings are based on
13	customer billed energy or wholesale purchased energy).
14	• The forecasted persistence of the savings from 2008 CDM programs in the years
15	2009 through 2012, broken down by customer class.
16	
17	Response
18	
19	The total adjustment for conservation and demand management ("CDM") that was
20	included in the 2008 Load Forecast, as part of the Settlement agreement, was 42,667
21	MWh and 7.6 MW. The adjustment was to forecast wholesale purchases. The
22	breakdown of the load forecast by customer class is shown in Table 1 below.
23	
24	The actual 2008 savings from 3 rd tranche and Ontario Power Authority ("OPA")
25	Programs are also shown in the table below. Note that these results are only available
26	broken down by Residential and Commercial and there was no requirement for third
27	party verification as these savings were not being used to calculate a Lost Revenue
28	Adjustment Mechanism.

29



Hydro Ottawa Limited EB-2011-0054 Exhibit K10 Issue 10.1 Interrogatory #1 Filed: 2011-09-08 Page 2 of 3

- 1 The forecasted persistence of the savings from 2008 OPA CDM programs in the years
- 2 2009 through 2012 are also shown in Table 2 below. As explained in Exhibit K3-3-6
- 3 (VECC#32), persistence of 3rd tranche programs after 2008 is not available.

Hydro Ottawa Limited EB-2011-0054 Exhibit K10 Issue 10.1 Interrogatory #1 Filed: 2011-09-08 Page 3 of 3

Table 1 – 2008 CDM Savings

Class	Load F	orecast	Reported 200	08 CDM Savings	Reported 2008 CDM		
	Adjustme	Adjustment for CDM		ranche	Savings OPA Programs		
	MWh	kW	MWh	kW	MWh	MW	
Residential	21,334	N/A	59,468	4,063	11,418	0.3	
General Service < 50 kW	3,071	N/A	18,455	3,104	2,515	42.2	
General Service 50-1,500 kW	12,368	5,409					
General Service 1,500-5,000 kW	3,319	1,289					
Large Use	2,575	856					
Street lighting	0	79					
Total	42,667	7,633	77,923	7,167	13,933	42.5	

2

1

3

Table 2 – Persistence of 2008 OPA CDM Programs Results

Class	2009		2010		2011		2012	
	MWh	MW	MWh	MW	MWh	MW	MWh	MW
Residential	10,616	0.2	10,615	0.2	10,615	0.2	9,631	0.2
Commercial	2,515	6.1	2,515	6.1	2,515	6.1	2,515	6.0
Total	13,131	6.3	13,130	6.3	13,130	6.3	12,146	6.2

4

5



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #1 Filed: 2011-09-08 Page 1 of 2

1	11.	MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2		
3	lss	sue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	ар	propriate?
5		
6	Bo	ard Staff Question #79 - Ref: Exh J-1-1, p7-8
7	a)	Please provide the distributor's depreciation/amortization policy or a written
8		description of the depreciation practices followed and used in preparation for the
9		current rate application.
10	b)	Please provide a list of all exceptions from the TUL in the Kinectrics Report and
11		provide detailed justification for using service lives that are different from the TULs in
12		the Kinectrics Report.
13		
14	Re	sponse
15		
16	a)	Hydro Ottawa Limited's ("Hydro Ottawa") capitalization policy as filed in Exhibit B1-3-
17		1 will be updated prior to January 1, 2012 as noted in Exhibit J1-1-1, page 11.
18		Currently the policy reads "Capital assets are generally amortized based on a
19		method and life set by the Ontario Energy Board (the "Board"), which is considered a
20		suitable indicator of estimated useful life for our industry". Hydro Ottawa believes
21		that the straight-line method best reflects the pattern in which Hydro Ottawa's assets
22		future economic benefits are expected to be consumed. The majority of the assets
23		are continuously in use and are maintained throughout their useful lives to ensure
24		that there is no deterioration in productivity or reduction in benefits. The Kinectrics
25		Report also indicated "The method of depreciation of PP&E used by Ontario
26		distributors is the straight-line remaining service life method, and Kinectrics
27		understands this will continue to be the method used under IFRS". The new policy
28		will indicate that depreciation is recorded on a straight-line basis over the estimated
29		service life of the related asset.
30		
31	b)	Refer to Exhibit K11-1-1 Attachment 1 (Board Staff Question 79) for the internal
32		analysis used to determine components and lives, included in this analysis is a



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

general comparison to the Kinectrics Report. Since the purpose of the Kinectrics
 Report was to provide guidance rather than mandate useful lives, Hydro Ottawa did
 not prepare detailed justifications for every variance from the TUL in the Kinectrics
 Report. The purpose of Kinectrics report as stated in the OEB letter dated July 8,
 2010 is:

6

7 "While utilities remain solely responsible for complying with financial reporting 8 requirements, the Board notes that a generic depreciation study could assist 9 utilities with IFRS compliance in addition to providing considerable regulatory 10 benefits. The study should provide a good starting point for the determination of 11 service lives for distribution assets that may be both acceptable to the Board and 12 useful for financial reporting purposes. Distributors will remain responsible for 13 review and updates of the service lives for their particular assets for financial 14 reporting and regulatory requirements."

15

16 Furthermore, in the Kinectrics Report itself on page 1:

- "Because of the myriad of possible asset and system configurations, there are no
 industry standard components or plant retirement units. Nonetheless, industry
 practice in Ontario has been common enough that there are expected to be
 normative collections of asset components and system design configurations that
 can enable a study of service lives to be performed on the most commonly found
 components and configurations.
- The purpose of this Report is to assist utilities in making the transition to IFRS and to assist them with determining appropriate initial service lives for assets most commonly used in the distribution of electricity in Ontario, particularly in situation where they have not conducted their own study. This approach is considered an effective way to minimize the need and cost to Ontario consumers of a myriad of like studies by individual distributions."
- 29
- 30

HYDRO OTTAWA LIMITED

Components and Estimated Useful Lives

Property, Plant And Equipment

Table of Contents

Background	
Components Useful Lives List	5
TANGIBLE ASSETS	7
Lands – Distribution System	7
Lands – General	7
Substation Building - Brick, Concrete & Steel -Other	7
Substation Building - Brick, Concrete & Steel - Structure	7
General Brick, Concrete & Steel Building Fittings - Internal and External	8
General Brick, Concrete & Steel – Structure	
General Brick, Concrete & Steel - Roof Covering	
General Brick, Concrete & Steel - Power Backup	
General Brick, Concrete & Steel - Parking Lot	
Buildings & Fixtures - Distribution Other Construction	9
Buildings & Fixtures - General Other Construction	9
Office Furniture & Equipment	9
Computer Equipment Desktop	9
Computer Equipment Notebook Computers	9
Computer Equipment Major Initiative	9
Communication Equipment Switches (data and voice); Office telephone handse	ets10
Load Mgmt Controls Cust Prem	10
Load Mgmt Controls Utility Prem	10
Stores Equipment	10
Automobiles	11
Trucks less than 3 tonnes	11
Trucks greater than 3 tonnes	11
Powered Equipment & Trailers	12
Generation Equipment	12
Tools, Shop & Garage Equipment	12
Miscellaneous Equipment	12
Interval Meters	12
Meters (Dumb) - Conventional	13
Suite Meters	13
Smart Meters	13
Measurement & Testing Equipment	14
--	----
Station (Other) Equipment	14
Station Switchgear	14
Station Transformers	15
Wholesale Meters	15
Sentinel Lighting Rental Units	16
SCADA RTU, Relays, Communication Equipment	16
Underground Polymer Insulated Cable	16
Underground Switchgear and Reclosers	17
Vault Switchgear and Reclosers	17
PILC Cable	18
Underground Conduit and cable chambers	18
Line Transformers Overhead & Underground	19
Line Transformers Vault	19
Overhead Conductors and Non-Automated Devices	20
Overhead Automated Devices	21
Poles, Towers and Fixtures	21
Services	22
Other Residential Building	22
Other Commercial Building	22
Other Utility Property	23
INTANGIBLE ASSETS	24
Land Rights – Distribution	24
Land Rights – General	24
Line Connection Contribution	24
Computer Software Regular	24
Computer Software Major Initiative	24
Useful Lives Estimates from Trow Associates Inc.	26
Residual Value Support	29
Comparison to Kinectrics	32
Approval	37

Background

The following document outlines the rationale for establishing the useful life of assets as well as the depreciation method for property, plant and equipment. It is important to note that many factors can influence the useful life of assets and therefore it should not be based simply on the advertised technical life expectancy of those assets (ie. the average natural asset life).

The discussion below will highlight the relevant points in order to support the estimate of useful life in order to calculate depreciation to be recorded under IFRS. The following guidance out of IAS 16.56 and 57 was considered when assessing the useful life of the assets:

(a) Expected usage of the asset. Usage is assessed by reference to the asset's expected capacity or physical output.

(b) Expected physical wear and tear, which depends on operational factors such as the number of shifts for which the asset is to be used and the repair and maintenance program, and the care and maintenance of the asset while idle.

(c) Technical or commercial obsolescence arising from changes or improvements in production, or from a change in the market demand for the product or service output of the asset.

(d) Legal or similar limits on the use of the asset, such as the expiry dates of related leases.

The useful life of an asset is defined in terms of the asset's expected utility to the entity. The asset management policy of the entity may involve the disposal of assets after a specified time or after consumption of a specified proportion of the future economic benefits embodied in the asset. Therefore, the useful life of an asset may be shorter than its economic life. The estimation of the useful life of the asset is a matter of judgement based on the experience of the entity with similar assets.

The nature of the evidence used in order to support the useful lives is relatively consistent amongst the assets. The evidence to support the useful lives is based on useful life estimates of professional engineers within the company that have history and extensive experience in the industry. Asset management plans and historical records were also consulted.

Please note that the documentation below is more extensive for those assets with significant dollar amounts. Assets with a lower historical cost have less documentation to support the useful lives given the fact that they have less ability to impact the depreciation recorded in the statement of operations.

Note on annual review process: In accordance with IAS 16, paragraph 51, "The residual value and the useful life of an asset shall be reviewed at least at each financial year-end and, if expectations differ from previous estimates, the change(s) shall be accounted for as a change in an accounting estimate in accordance with IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors.

Note on residual values: In accordance with IAS 16, paragraph 53, "The depreciable amount of an asset is determined after deducting its residual value. In practice, the residual value of an asset is often insignificant and therefore immaterial in the calculation of the depreciable amount".

Components Useful Lives List

OEB Cost Code	Original JDE Cost Code		Original Asset Components	OEB Depreciation (years)	New JDE Cost Code		New Asset Components	IFRS Life (years)	Residual Value Estimate
Tangible A	SSETS	1	Lands - Distribution	ΝA	1100	1	l ands - Distribution System	NA	NΔ
1005	1100	2	Lands - General	NA	1110	2	Lands - General	NA	NA
1903	1700	-	Buildings & Fixtures Distribution - Brick Concrete & Steel	50	1700	-	Bida Sub Sto BC&S - Other	30	NA
1000	1700	Ũ		50	1710	4	Bldg Sub Stn BC&S - Structure	75	NA
1908	1701	4	Buildings & Fixtures General Brick, Concrete & Steel	50	1710	5	Blda Gen BC&S - Fittinas	30	NA
1000				50	1730	6	Bldg Gen BC&S - Structure	75	NA
				50	1740	7	Bldg Gen BC&S - Roof Covering	25	NA
				50	1750	8	Bldg Gen BC&S - Power Backup	25	NA
				50	1760	9	Bldg Gen BC&S - Parking Lot	20	NA
1808	1900	5	Buildings & Fixtures Brick - Distribution Other Construction	25	1900	10	Bldg & Fixtures - Distribution Other	25	NA
1908	1901	6	Buildings & Fixtures Brick - General Other Construction	25	1910	11	Bldg & Fixtures - General Other	25	NA
1915	2100	7	Office Furniture & Equipment	10	2100	12	Office Furniture & Equipment	10	NA
1920	2300	8	Computer Equipment	5	2300	13	Cmptr Equip General	5	NA
				5	2310	14	Cmptr Equip Notebook Computers	5	NA
				10	2320	15	Computer Equipment Major Initiatives	10	NA
1955	2700	9	Communication Equipment	10	2700	16	Communication Equipment	8	NA
1970	2900	10	Load Mgmt Controls Cust Prem	10	2900	17	Load Mgmt Contrls Cust Prem	10	NA
1975	3100	11	Load Mgmt Controls Utility Prem	10	3100	18	Load Mgmt Contrls Utility Prem	10	NA
1935	3300	12	Stores Equipment	10	3300	19	Stores Equipment	10	NA
1930	3700	13	Automobiles	4	3700	20	Automobiles	7	6%
	3900	14	Trucks less than 3 tonnes	5	3900	21	Trucks Less Than 3 tonnes	8	6%
	4100	15	Trucks greater than 3 tonnes	8	4100	22	Trucks Greater Than 3 tonnes	12	6%
	4300	16	Power Operated Equipment	8	4300	23	Powered Equip & Trailers	15	6%
2075	4700	17	Solar Power Generation	25	4700	24	Generation Equipment	25	
1940	4900	18	Tools, Shop & Garage Equipment	10	4900	25	Tools, Shop & Garage Equipment	10	NA
1960	5100	19	Misc. Equipment	10	5100	26	Equipment - Miscellaneous	10	NA
1860	5500	20	Meters	25	5500	27	Interval Meters	15	NA
	5500	21	Interval Meters	25	5510	28	Meters (Dumb)	25	NA
	5500	22	Suite Meters	25	5520	29	Suite Meters	15	NA
	5600	23	Meters Electronic	15	5600	30	Smart Meters	15	NA
1945	5700	24	Measurement & Testing Equipment	10	5700	31	Measurement & Testing Equipmnt	10	NA
1815	5900	25	Stn. Equip. > 50 KV	40	5900	32	Stn. Equip. > 50 kV Other	25	NA
				40	5910	33	Station Switchgear >50kV	40	NA
				40	5920	34	Station transformers >50 kV	45	NA
	5500	26	Wholesale Meters	25	5930	35	Wholesale Meters >50 kV	15	NA
1820	6100	27	Stn. Equip. < 50 KV	30	6100	36	Stn. Equip. <50kV Other	25	NA
				30	6110	37	Station Switchgear <50kV	40	NA
		~~		30	6120	38	Station transformers <50 kV	45	NA
4005	5500	28	w noiesale Meters	25	6130	39	vvnoiesale Meters< 50KV	15	NA
1985	6300	29	Sentimer Lighting Kental Units	10	6300	40		10	NA NA
1980	6500	30	computer hardware and software)	15	6500	41	SCADA KIU, Kelays, Com Equpmnt	15	NA

OEB Cost Code	Original Cost Code		Original Asset Components	OEB Depreciation (years)		New Cost Code		New Asset Components	IFRS Life (years)	Residual Value Estimate
Tangible A	ssets (cont	inue	ed)							
1845	6700	31	U/G Conductor, Devices	25		6700	42	U/G Polymer Insulated Cable	35	NA
				25		6710	43	U/G Switchgear & Reclosers	25	NA
				25		6720	44	Vault Switchgear and Reclosers	30	NA
				25		6730	45	U/G PILC Cable	60	NA
1840	6900	32	U/G Conduit and cable chambers	25	•	6900	46	U/G Conduit and cable chambers	40	NA
1850	7500	33	Line Transformers	25	1 7	7500	47	Line Transformers O/H & U/G	30	NA
	7510			25		7510	48	Line Transformers Vault	35	NA
1835	8100	34	O/H Conductor, Devices Switchgear and Reclosures	25	1	8100	49	O/H Conductors and Non-Automated Devices	45	NA
				25	1	8110	50	O/H Automated Devices	25	NA
1830	8300	35	Poles, Towers, Fixtures	25	1	8300	51	Poles, Towers, Fixtures	45	NA
1855	8500	36	Services	25	1 8	8500	52	Services	45	NA
2070	7300	37	Other Utility Building	NA		7300	53	Other Residential Building	25	NA
						7310	54	Other Commercial Building	50	NA
	7100	38	Other Utility Property	NA		7100	55	Other Utility Property	NA	NA
Intangible .	Assets									
1806	1300	39	Land Rights - Distribution	50	Í	1300	56	Land Rights - Distribution	50	NA
1906	1300	40	Land Rights - General	50	ŀ	1310	57	Land Rights - General	50	NA
1610					ŀ	1400	58	Line Connection Contribution	45	NA
1925	2500	41	Computer Software Regular	5		2500	59	Cmptr Software Regular	5	NA
1925	2500	42	Computer Software 10 Yrs	10		2510	60	Cmptr Software 10 Yrs	10	NA

Number of Original Components 42

Number of New Components 60

Increase

18

General Brick, Concrete & Steel Building Fittings - Internal and External

Component Code1720Useful Life30 YearsOEB USofA1908 General Plant Buildings and FixturesJDE DescriptionBldg Gen BC&S - Fittings

Component represents all building elements not represented in components 1730 through 1760 and includes but is not limited to Windows, Flooring, Ceiling, Interior Walls, Electrical, and Plumbing. See Appendix 1 for an opinion from Trow Consulting on the useful life. Subcomponents were left as one component due to immaterial nature of each of these subcomponents to the overall asset base.

General Brick, Concrete & Steel – Structure

Component Code	1730
Useful Life	75 Years
OEB USofA	1908 General Plant Buildings and Fixtures
JDE Description	Bldg Gen Stn BC&S - Structure

Component represents the administration buildings: Albion, Merivale, Bank Street, Kanata Work Centre, and Carling Work Centre. Each building is recorded discretely. See Appendix 1 for an opinion from Trow Consulting on the useful life.

General Brick, Concrete & Steel - Roof Covering

Component Code	1740
Useful Life	25 Years
OEB USofA	1908 General Plant Buildings and Fixtures
JDE Description	Bldg Gen BC&S – Roof Covering

All types of roof coverings, including all the constituent parts and layers. See Appendix 1 for an opinion from Trow Consulting on the useful life. The general buildings have inverted roofs.

General Brick, Concrete & Steel - Power Backup

Component Code	1750
Useful Life	25 Years
OEB USofA	1908 General Plant Buildings and Fixtures
JDE Description	Bldg Gen BC&S – Power Backup

UPS and emergency Generators. See Appendix 1 for an opinion from Trow Consulting on the useful life.

General Brick, Concrete & Steel - Parking Lot

Component Code	1760
Useful Life	20 Years
OEB USofA	1908 General Plant Buildings and Fixtures
JDE Description	Bldg Gen BC&S – Parking Lot

Includes all elements down to the sub grade for external parking areas and vehicle access routes. See Appendix 1 for an opinion from Trow Consulting on the useful life.

Buildings & Fixtures - Distribution Other Construction

Component Code1900Useful Life25 YearsOEB USofA1808 Distribution Plant Buildings and FixturesJDE DescriptionBldg & Fixtures – Distribution Other

This component will be used for all stand-alone building used for distribution plant. These will not be built of brick and therefore have a much shorter life than the other structures.

Buildings & Fixtures - General Other Construction

Component Code	1910
Useful Life	25 Years
OEB USofA	1908 General Plant Buildings and Fixtures
JDE Description	Bldgs & Fixtures – General Other

This component will be used for all stand-alone building used for general plant. These will not be built of brick and therefore have a much shorter life than the other structures.

Office Furniture & Equipment

Component Code	2100
Useful Life	10 Years
OEB USofA	1915 Office Furniture and Equipment
JDE Description	Office Furniture & Equipment

General office furniture and equipment. Useful life based on industry norms.

Computer Equipment Desktop

Component Code	2300
Useful Life	5 Years
OEB USofA	1920 Computer Equipment – Hardware
JDE Description	Cmptr Equip General

This component will include the following equipment. Desktop computers Servers SAN (storage) Printers Other Peripheral Devices (E.g.: All-in-Ones; Scanners; Cameras). The life is based upon HOL replacement practices and industry norms.

Computer Equipment Notebook Computers

Component Code	2310
Useful Life	5 Years
OEB USofA	1920 Computer Equipment – Hardware
JDE Description	Cmptr Equip Notebook Computers

This component will include all laptop and notebook computers. The life is based upon HOL replacement practices and industry norms.

Computer Equipment Major Initiative

Component Code	2320
Useful Life	10 Years
OEB USofA	1920 Computer Equipment – Hardware

JDE Description Computer Equipment Major Initiatives

This component will include purchase of specific computer of a material nature which is identified by the user department in consultation with HOL IT and management. Historical experience has shown these types of assets to last for an average of 10 years.

Communication Equipment Switches (data and voice); Office telephone handsets

Component Code	2700
Useful Life	8 Years
OEB USofA	1955 Communication Equipment
JDE Description	Communication Equipment

Data and voice communications equipment have an anticipated useful life of 8 years; this is based on HOL's replacement practices and historical averages.

Load Mgmt Controls Cust Prem

Component Code	2900
Useful Life	10 Years
OEB USofA	1970 Load Management Controls - Customer Premises
JDE Description	Load Mgmt Contrls Cust Prem

This account shall include the cost of control equipment on customer premises in connection with the remote control of water heaters, and other customer equipment. There have been no recent additions in this component and the total value is currently not material. Due to this, the useful live has been maintained at the historical value.

Load Mgmt Controls Utility Prem

Component Code	3100
Useful Life	10 Years
OEB USofA	1975 Load Management Controls - Utility Premises
JDE Description	Load Mgmt Contrls Utility Prem

This account shall include the cost of all control devices situated on utility premises, used for the purpose of controlling equipment in component 2900. There have been no recent additions in this component and the total value is currently not material. Due to this, the useful live has been maintained at the historical value.

Stores Equipment

Component Code	3300
Useful Life	10 Years
OEB USofA	1935 Stores Equipment
JDE Description	Stores Equipment

This account shall include the cost of equipment used for the receiving, shipping, handling, and storage of materials and supplies. There have been no recent additions in this component and the total value is currently not material. Due to this, the useful live has been maintained at the historical value.

Automobiles

Component Code3700Useful Life7 YearsOEB USofA1930 Transportation EquipmentJDE DescriptionAutomobiles

The life expectancy is based upon HOL's vehicle replacement policy. This policy can be impacted by vehicle condition assessments and a need to increase the fleet size for operational requirements. Hydro Ottawa's informal policy for vehicle replacement/upgrade is as follows:

Fleet Category	Component	Replacement Standard (in Years)
Automobiles	3700	7
Van - Compact	3900	7
Truck – Pick-Up, Compact	3900	7
Truck – Pick-Up, Conventional	3900 / 4100	8
Van - Cargo	3900 / 4100	8
Van – Step / Cube	4100	15
Truck – Bucket (Aerial Devices)	4100	12
Truck – Digger Derricks (RBD)	4100	15
Truck – Knuckle Boom	4100	15
Truck – Stake / Flatbed	4100	10
Trailers - Pole	4300	20
Tension Machines	4300	15

Trucks less than 3 tonnes

Component Code	3900
Useful Life	8 Years
OEB USofA	1930 Transportation Equipment
JDE Description	Trucks Less Than 3 tonnes

The life expectancy is based upon HOL's vehicle replacement policy. This policy can be impacted by vehicle condition assessments and a need to increase the fleet size for operational requirements. See table above for the types of vehicles included in this category and the replacement standard.

Trucks greater than 3 tonnes

Component Code	4100
Useful Life	12 Years
OEB USofA	1930 Transportation Equipment
JDE Description	Trucks Greater Than 3 tonnes

The life expectancy is based upon HOL's vehicle replacement policy. This policy can be impacted by vehicle condition assessments and a need to increase the fleet size for operational requirements. See table above for the types of vehicles included in this category and the replacement standard.

Powered Equipment & Trailers

Component Code	4300
Useful Life	15 Years
OEB USofA	1930 Transportation Equipment
JDE Description	Powered Equip & Trailers

This component will include but not be limited to trailers, puller/tensioners, and forklift trucks. The life expectancy is based upon HOL's replacement policy. This policy can be impacted by vehicle condition assessments and a need to increase the fleet size for operational requirements. See table above for the tension machines and the replacement standard. Forklift trucks are also included in this category but no replacement standard exists for this type of vehicle, they are typically run to failure. The historical life of 15 years appears to be the accurate estimate of useful life based on history and experience and within industry standards.

Generation Equipment

Component Code	4700
Useful Life	25 Years
OEB USofA	2075 Non-Utility Property Owned or Under Capital Leases
JDE Description	Generation Equipment

Includes the cost of solar generation installed on HOL property and buildings. Major element of this equipment is warranted for 25 years. At this time, it is likely the equipment will be obsolete and replaced. This component currently has minimal investment but will be reviewed as each new phase is entered into to confirm the current life.

Tools, Shop & Garage Equipment

Component Code	4900
Useful Life	10 Years
OEB USofA	1940 Tools, Shop and Garage Equipment
JDE Description	Tools, Shop & Garage Equipment

This account shall include the cost of tools, implements, and equipment used in construction, repair work, general shops, and garages and not specifically provided for or included in other accounts. The historical life of 10 years appears to be the accurate estimate of useful life based on history and experience.

Miscellaneous Equipment

Component Code	5100
Useful Life	10 Years
OEB USofA	1960 Miscellaneous Equipment
JDE Description	Equipment - Miscellaneous

All equipment not included under any other component. The current value of this component is not material. Due to this, the useful live has been maintained at the historical value.

Interval Meters

Component Code	5500
Useful Life	15 Years
OEB USofA	1860 Meters

JDE Description Interval Meters

Conventional metering is essentially being eliminated as part of the smart meter program. Interval metering is electronic metering installed for larger customers and can have additional features. However, a review of this technology indicates that life should be similar to that of a smart meter. Included with the meter is the ancillary metering equipment such as current and potential transformers (CT & PT's) and has the same life as the meter it is associated with.

The useful life of 15 years has been adopted, as it is basically the same as the smart meters, see discussion below on the rationale for 15 years.

Meters (Dumb) - Conventional

Component Code	5510
Useful Life	25 Years
OEB USofA	1860 Meters
JDE Description	Meters (Dumb)

No new life has been assigned to these meters as Hydro Ottawa expects to have these meters fully replaced by smart meters and disposed of in 2011. The life has been maintained at its historical level.

Suite Meters

Component Code	5520
Useful Life	15 Years
OEB USofA	1860 Meters
JDE Description	Suite Meters

Suite Meters represent the metering of multi unit residences through one point supply. This is a new type of asset which HOL does not have a history with, therefore 15 years was used, see below for rationale. The current value of this component is not material.

Smart Meters

Component Code	5600
Useful Life	15 Years
OEB USofA	1860 Meters
JDE Description	Smart Meters

The useful life has been determined using the following factors:

- Hydro Ottawa currently only has minimal experience with the smart meters in order to be able to support a useful life based on empirical evidence or history with the assets.
- The manufacturer has indicated to HOL that the smart meters have a life expectancy of 17 years.
- The electronic meters of today are fully electronic solid-state devices with higher part counts than mechanical devices. Being electronic devices, these meters have electronic components, although with very high precision and known quality characteristics, they can be subject to degradation over time. In the last three years

alone, the meter products of today have gone from a G1, first generation device to a G2 or second-generation device.

 15 years has been selected since there is a possibility of degradation and obsolescence that will reduce the life of the meters from the 17-year expectancy. The expected life is shorter than the theoretical life given the lack of experience with the assets and the fact that they are electronic and are expected to fail sooner or be technologically obsolete before failing.

Measurement & Testing Equipment

Component Code	5700
Useful Life	10 Years
OEB USofA	1945 Measurement and Testing Equipment
JDE Description	Measurement & Testing Equipmnt

Sundry Costs for measurement and testing equipment. The current value of this component is not material. Due to this, the useful live has been maintained at the historical value.

Station (Other) Equipment

Component Code	5900 > 50 kV, 6100 < 50kV
Useful Life	20 Years
OEB USofA	1815 Transformer Station Equipment - Normally Primary above 50kV
JDE Description	Stn. Equip. > 50 kV Other
	Stn. Equip. <50 kV Other

Station equipment currently comprises batteries, other ancillary equipment, and other insignificant equipment. The useful life of 20 years is in line with industry standards and is based on actual experience with the assets. The replacement of the station equipment is not determined by the replacement of other assets, it is replaced on its own. The AMP indicates that the life of batteries could be 25 years; however, this is theoretical and not based on actual experience with the assets.

Station Switchgear

Component Code	5910 > 50 kV, 6110 < 50kV
Useful Life	40 Years
OEB USofA	1815 Transformer Station Equipment - Normally Primary above 50kV
	1820 Transformer Station Equipment - Normally Primary below 50 kV
JDE Description	Station Switchgear > 50 kV
-	Station Switchgear < 50 kV

Station Switchgear has an expected life of 40 years. The useful life has been determined as follows:

- Asset management plan calls for replacement at a maximum life of 40 years. These assets are not run to failure and will be changed based on condition assessments
- Currently some of the station switchgear that is being replaced dates back to 1955 and are currently beyond their useful life
- The replacement is sometimes dependant on the station transformers, which is 40 years as noted below
- Industry standard is 40 years (through discussion with other utilities and history)

The switchgear is linked to the transformers in that the switchgear open and closes the switches that allow the current to flow. Given the close relationship between the types of switchgear (overhead, vault, underground and station are consistent) they have been grouped together. Line reclosers are included with switchgear component, they have the same useful life, and are relatively insignificant as they represent less than 1% of the estimated total assets.

Station Transformers

Component Code	5920 > 50 kV, 6120 < 50kV
Useful Life	45 Years
OEB USofA	1815 Transformer Station Equipment - Normally Primary above 50kV
	1820 Transformer Station Equipment - Normally Primary below 50 kV
JDE Description	Station transformers > 50 kV
-	Station transformers < 50 kV

Station transformers typically have a life of 45 years for both < 50kV and > 50 kV. These are transformers in the substation. The useful life is determined based on the following factors:

- The average age of the transformers is 45 years and the oldest current transformer that is in use is 47 years
- The current asset management plan calls for replacement by 50 years of age which is the mean age for the industry
- Replacement is based on condition assessments routinely conducted during maintenance inspections. These assets are not run to failure and will be replaced based on the condition assessments
- 45 years is typically the industry standard (obtained through discussions with other utilities and through internal practice)
- The replacement of these transformers are not dependent on other assets, they will be replaced based on the condition assessments, not the failure of other assets
- Although held outside, the useful life is longer than overhead and underground due to these transformers are designed to a much higher standard and are maintained and inspected on a regular basis

Wholesale Meters

Component Code	5930 > 50 kV, 6130 < 50kV
Useful Life	15 Years
OEB USofA	1815 Transformer Station Equipment - Normally Primary above 50kV
	1820 Transformer Station Equipment - Normally Primary below 50 kV
JDE Description	Wholesale meters > 50 kV
-	Wholesale meters < 50 kV

Wholesale metering is metering often at transformer stations that the IESO uses to settle with Hydro Ottawa and therefore has very stringent standards

The asset management plan indicates that the meters could last up to 17 years however, 15 years has been selected since there is a possibility of degradation and obsolescence that will reduce the life of the meters.

 Meters are not replaced in line with other assets, therefore, their life is not dependant on the other assets

Sentinel Lighting Rental Units

Component Code6300Useful Life10 YearsOEB USofA1985 Sentinel Lighting Rental UnitsJDE DescriptionSentinel Lighting Rental Units

Cost of Sentinel Lighting units installed at customer premises. The current value of this component is not material. Due to this, the useful live has been maintained at the historical value.

SCADA RTU, Relays, Communication Equipment

Component Code	6500
Useful Life	15 Years
OEB USofA	1980 System Supervisory Equipment
JDE Description	SCADA RTU, Relays, Com Equpmnt

The following subcomponents are included in this component:

- Remote terminal units
- Communication equipment (fibre, modems, wireless control devices)
- Server Equipment
- Operational workstations
- Protective Equipment for the SCADA units

This is high-end computing equipment used in the operations of a distribution system.

The useful life has been arrived at based on the following factors:

- Technological obsolescence rather than physical failure. Cessation of vendor support, no spare parts and incompatibility with new technology are all significant problems even though the hardware might not have failed;
- The last system in place was purchased in 1990-1991 and was replaced in 2006-2007;
- The asset management plan does not stipulate replacement within a specified time-frame, it calls for replacement when the asset fails;
- The replacement of this asset is not driven by the replacement of other assets
- The protective relays have been known to last up to 20-25 years given they are based on more simple computing compared to the remaining assets and as a result are less susceptible to technological obsolescence – this is in line with the estimated lives in the asset management plan, but the average life for the relays is 15 years based on actual experience with the assets

Underground Polymer Insulated Cable

Component Code	6700
Useful Life	35 Years
OEB USofA	1845 Underground Conductors and Devices
JDE Description	U/G Polymer Insulated Cable

XLPE cable has an aluminum or copper core that is covered in plastic. Tree-retardant XPLE cable is a newer XLPE formulation that has an additional compound included that inhibits the growth of electrical stress fractures within the XLPE plastic. This new type of XLPE should increase cable life but insufficient historical data exist to significantly modify current depreciation practice and increase the useful life to 40 years as outlined in the asset management plan. Older XLPE cables have prematurely failed and most utilities are reluctant to use manufacturer's claim of 40-year life expectancies. Other factors include:

- The replacement of the cable is not dependant on other assets, they will be replaced upon their failure, not the failure of other assets
- They are run to failure which is in line with the asset management plan
- This component includes U/G Cable Connections (elbows, stress cones, potheads, splices) these form part of the cable network and are therefore included in this component.
- As part of the current technical standard, all underground cables are now placed in conduit and will be replaced rather than repaired further influencing its useful life.

Underground Switchgear and Reclosers

Component Code	6710
Useful Life	25 Years
OEB USofA	1845 Underground Conductors and Devices
JDE Description	U/G Switchgear & Reclosers

Overhead or underground switchgear or reclosers have a typical life expectancy of 25 years. Switchgear devices are used to interrupt load to transformers and primary cables and have moving parts that are usually air or gas insulated. They are built to the same standards as transformers and will have a similar life. The useful life is determined based on the following factors:

- They are run to failure which is typically 25 years
- The asset management plan allows for a range in years which is based on theoretical failure points of the assets
- They are both outside and have the same service limitations based on weather constraints
- The replacement of the switchgear is not dependent on other assets; they will be replaced upon their failure, not the failure of other assets.

Vault Switchgear and Reclosers

Component Code	6720
Useful Life	30 Years
OEB USofA	1845 Underground Conductors and Devices
JDE Description	Vault Switchgear and Reclosers

There are three types of vault switchgear (Air, SF6 gas, and oil). Air and SF6 gas are the most common with the use of oil being prohibited on a go forward basis. Air can last 20-30 years (based on experience), SF6 and oil can both last 30 years (based on experience). The useful life has been determined as follows:

- The majority of the switchgear currently deployed is Air insulated, therefore, 30 years has been assigned for the category.
- They are held indoors compared to the overhead and underground which are outdoors, therefore, the expected life is longer as they are not exposed to the elements

- They have been assigned 30 years to remain in step with other vault equipment (transformers above) and are likely to be replaced due to load and building changes.
- The asset management plan calls for a 45-50 year replacement for the air switchgear, however, this is theoretical life and not the actual life per experience
- The replacement of the switchgear is not dependent on other assets, it will be replaced upon their failure, not the failure of other assets

PILC Cable

Component Code	6730
Useful Life	60 Years
OEB USofA	1845 Underground Conductors and Devices
JDE Description	U/G PILC Cable

PILC Cables are high voltage cables that have oil soaked paper insulation wrapped in a lead sheath. The core conductor is typically made of copper. The expected life has been determined based on the following:

- Historical experience has shown that PILC cables are capable of lasting longer than 60 years, however, the reality is that lead is a controlled substance and could be subject federal or provincial regulations. We have chosen to base life expectancy on other factor such as load changes and growth that would require circuit upgrades. Road rework will also be a factor that will reduce life expectancy.
- The PILC Cable is run to failure and there is nothing specific in the asset management plan that requires replacement prior to that point.
- This component includes U/G Cable Connections (elbows, stress cones, potheads, splices) these form part of the cable network and are therefore included in this component.

Underground Conduit and cable chambers

Component Code	6900
Useful Life	40 Years
OEB USofA	1840 Underground Conduit
JDE Description	U/G Conduit and cable chambers

Conduit is comprised of the following: 1) Concrete encased duct; 2) direct buried duct; 3) underground cable chambers; and 4) Concrete Equipment bases for pad-mounted switches and transformers. These conduits are used for the installation of both primary and secondary underground cables and may on occasion be replaced in conjunction with these assets. Replacement is likely to occur due to road widening and other municipal activities. The useful life for all of the categories of conduit has been determined to be 40 years based on the following:

- They are made of concrete that can last well in excess of 40 years
- Industry standard is 40 years for the concrete
- The replacement of the conduit is dependent on other factors (roadwork, growth), they will be replaced upon their failure, or the other factors as noted
- The asset management plan calls for replacement at 40 years
- Some conduits are replaced prior to 40 years, in conjunction with municipal road reconstruction, however, on average most last 40 years

Line Transformers Overhead & Underground

Component Code	7500
Useful Life	30 Years
OEB USofA	1850 Line Transformers
JDE Description	Line Transformers O/H & U/G

The life of a transformer is dependent on the loading profiles and ambient temperature change. Other factors such as mechanical damage, exposure to corrosive salts, and voltage surges also have a strong effect. A combination of these factors is used in order to arrive at the useful life.

Underground Transformers

Underground transformers are run to failure and typically have a life of 30 years. The useful life has been determined based on the following factors:

- Asset management plan indicates that the life of a transformer can be in excess of 50 years, however, this is the theoretical life and not in line with actual experience
- The replacement of these transformers are not dependent on other assets, they will be replaced upon their failure, not the failure of other assets
- Industry standard is presumed to be 35 years (obtained based on experience and through discussion with other utilities)
- The useful life of these transformers is shorter than the vault transformer due to it being outside and being susceptible to the elements (heat, rain, snow, cold, salt etc), where the vault transformer remains indoors

Overhead Transformers

Overhead transformers run to failure and typically have a life of 30 years. These transformers rest on poles. The useful life has been determined based on the following factors:

- Asset management plans indicate the theoretical life is 57 years (which is the maximum expected point of failure)
- The replacement of these transformers can be dependent on other assets, they will be replaced upon their failure, and/or the failure of poles
- The useful life of these transformers is shorter than the vault transformer due to the continual exposure to the outdoor elements (heat, rain, snow, cold, salt etc), where the vault transformer are indoors.
- The load profiles/service factors are higher than the vault transformers load profiles are sometimes in excess of 125% of the rating on the transformer, which diminishes the useful life

Presenting multiple types of transformers would not provide any additional value to users, therefore one component was deemed appropriate.

Line Transformers Vault

Component Code	7510
Useful Life	35 Years
OEB USofA	1850 Line Transformers
JDE Description	Line Transformers Vault

Vault transformers installed in a 3-hour fire rated vault are deemed to run to failure and typically have an expected life of 35 years. The useful life has been determined based on the following factors:

- Recent replacement practice shows that the transformers have been lasting up to 50 years however; this is not the average life. Most are replaced due to loading or changes to the building
- The current asset management plan calls for replacement prior to 50 years (which is presumed to be the maximum point of failure)
- The replacement of these transformers are dependent on customer/building loading increases, building use changes, age and failures
- The useful life of these transformers are longer than the underground transformers since they are inside buildings and are not exposed to external elements that would compromise the life of the asset
- Typically the load profile of the transformer can hold more than what is being requested from the building and is not running at max capacity which would otherwise reduce its life

Overhead Conductors and Non-Automated Devices

Component Code	8100
Useful Life	45 Years
OEB USofA	1835 Overhead Conductors and Devices
JDE Description	O/H Conductors and Non-Automated Devices

Insulators are attached to poles and these are the devices that are attached to the wires. The useful life is 45 years, which has been determined as follows:

- The insulators are replaced at the same time as poles are replaced, therefore, 45 years is consistent with the poles below
- The insulators would be able to last longer given their functional capacity, but 45 years has been assigned as they are replaced with poles since they are a low cost component and will fail due to handling towards their end-of-asset life.
- This component includes: conductors, including insulated and bare wires and cables; ground wires, clamps, etc; insulators, including pin, suspension, and other types, and tie wire or clamps; lightning arresters; railroad and highway crossing guards; splices; switches – line cutout switches, fused cutout switches, gang air switches; initial cost of tree trimming, including the cost of permits; other line devices; line cutout switches, fused cutout switches.

Conductors are the wires that go from pole to pole. There are three types of overhead conductors: aluminum, copper and ACSR.

Overhead primary conductors are considered run to failure and the expected life is 45 years. The expected life is determined as follows:

- The replacement of the conductor is dependent on other assets and is replaced during pole line reconstruction and therefore are assigned a life expectancy equal to poles
- There are no specific replacement intervals in the asset management plan
- Although there are variances between the different types of conductors they are typically minor and don't significantly affect life expectancy
- Conductors are not reused and are scrapped after pole line reconstruction

Overhead Automated Devices

Component Code8110Useful Life25 YearsOEB USofA1835 Overhead Conductors and DevicesJDE DescriptionO/H Automated Devices

Overhead switchgear or reclosers have a typical life expectancy of 25 years. Switchgear devices are used to interrupt load to transformers and primary cables and have moving parts that are usually air or gas insulated. They are built to the same standards as transformers and will have a similar life. The useful life is determined based on the following factors:

- They are run to failure which is typically 25 years
- The asset management plan allows for a range in years which is based on theoretical failure points of the assets
- They are both outside and have the same service limitations based on weather constraints
- The replacement of the switchgear is not dependent on other assets; they will be replaced upon their failure, not the failure of other assets.
- This component includes: circuit breakers; reclosures; switchgear; RFI's; complex sealed units; all motorized parts associated with each device. It does not include transformers, capacitors or SCADA equipment.
- This component includes the O/H Line Switch, O/H Line Switch Motor, O/H Line Switch RTU, O/H Integral Switches and the Reclosers.
- Since Hydro Ottawa does not replace these components separately but rather all at once, the useful life is lower as the Motor and RTU will fail and then everything is replaced at once.

Poles, Towers and Fixtures

Component Code	8300
Useful Life	45 Years
OEB USofA	1830 Poles, Towers and Fixtures
JDE Description	Poles, Towers, Fixtures

Wood Poles, Concrete Poles and Composite Poles (Approximately 99% of the poles held are wood poles, concrete and composite poles account for less than 1%.)

Useful life of poles at 45 years has been determined as follows:

- Current asset management plan has the poles being replaced at the point of failure, which is typically a maximum of 50 years
- The replacement of the wood poles is not dependent on other assets, they will be replaced upon their failure, not the failure of other assets
- Historical experience shows that poles last on average 45 years and not achieve their technical life expectancy do to road widening mandated by the road authority and new customer connections.
- The majority of wood poles owned by Hydro Ottawa are full length pressure treated which extends the useful life beyond untreated pole
- 99% of the poles that are held are wood

 Concrete and composite poles are a minor asset class (less than 1%) and therefore do not warrant a separate life expectancy. These assets will be subject to the same replacement issues as wood poles, namely road reconstruction and upgrades. The manufacturer has indicated that a composite pole can last 80 years, however, Hydro Ottawa only has a limited number of these poles in use with only 3 years of experience which is not sufficient to warrant a longer useful life at this time

Services

Component Code	8500
Useful Life	45 Years
OEB USofA	1855 Services
JDE Description	Services

Services are the actual wires that go into the homes of Hydro Ottawa's customers and are connected to an overhead or underground transformer as well as poles. There is no significant difference between overhead or underground services. The useful life has been determined as follows:

- Services are usually replaced at the same time as the poles are changed or moved. In addition, they may be upgraded with the transformer. 45 years has been chosen to be in line with the pole line rehabilitation. The underground services are not replaced at the same time as the transformer; therefore, the age of the transformer is not applicable. Residential underground servicing became the standard in new subdivisions in the late 1960's.
- Other external factors will influence the useful life such as falling trees, road widening or fences installation. Damage can occur at any time but can usually be repaired.

Other Residential Building

Component Code	7300
Useful Life	25 Years
OEB USofA	2070 Other Utility Plant
JDE Description	Other Residential Building

Residential properties on land held for future expansion (in many cases these buildings are rented to third parties). These have a much shorter life than the other structures and thus 25 years is used as the estimated useful life.

Other Commercial Building

Component Code	7310
Useful Life	50 Years
OEB USofA	2070 Other Utility Plant
JDE Description	Other Commercial Building

Commercial properties held for possible future expansion or properties identified as surplus (in many cases these buildings are rented to third parties). These buildings are commercial in nature and therefore have a longer life than the residential buildings noted above, 50 years is the estimated useful life.

Other Utility Property Component Code 710

Component Code7100Useful LifeNAOEB USofA2070 Other Utility PlantJDE DescriptionOther Utility Property

Land held for future expansion or surplus land. Some of this land has properties built on it. These are held under component 7300 and component 7310.

INTANGIBLE ASSETS

Land Rights – Distribution

Component Code	1300
Useful Life	50 Years
OEB USofA	1806 Distribution Plant Land Rights
JDE Description	Land Rights - Distribution

This component represents the cost of rights, interests, and privileges held by HOL in land owned by others for distribution. The useful live is based on our historical experience of the length of these types of agreements.

Land Rights - General

Component Code	1310
Useful Life	50 Years
OEB USofA	1906 General Plant Land Rights
JDE Description	Land Rights – General

This component represents the cost of rights, interests, and privileges held by HOL in land owned by others for general use. The useful live is based on our historical experience of the length of these types of agreements.

Line Connection Contribution

Component Code	1400
Useful Life	45 years
OEB USofA	1610
JDE Description	Line Connection Contribution

Hydro Ottawa has paid amounts to Hydro One to upgrade Hydro One's lines and stations. The amounts are recognized as an intangible asset and amortized over the estimated useful life of the related assets, which is 45 years.

Computer Software Regular

Component Code2500Useful Life5 YearsOEB USofA1925 Computer SoftwareJDE DescriptionCmptr Software Regular

This component includes all software either purchased or developed in house. The useful life is based on industry standards.

Computer Software Major Initiative

Component Code	2510
Useful Life	10 Years
OEB USofA	1925 Computer Software
JDE Description	Cmptr Software 10 Yrs

This component includes purchased or developed specific computer software of a material nature, which is identified by the user department in consultation with HOL IT to have a life

beyond 5 years. Historical experience has shown these types of assets to last for an average of 10 years.

Useful Lives Estimates from Trow Associates Inc.

The new identity of Trow Associates Inc.

May 19th, 2011

Mr. Peter Leonard Hydro Ottawa Limited P.O. Box 8700 3025 Albion Road North Ottawa, ON K1G 3S4



Via e-mail: peterleonard@hydroottawa.com

Re: OTBS00020004C - Building Life Cycle Costs

Dear Mr. Leonard:

In accordance with your request, we have attached a table of average life cycles for common building systems. The life spans indicated are average values which are useful in budgeting the lifespan of components of commercial office buildings and light industrial facilities. They indicate the normal expected lifespan from the date of original construction or replacement of the particular building system under normal operating conditions. The table also includes an estimate of the percentage contribution of each component to the overall maintenance costs.

Specific life spans for such systems can vary considerably, depending on the quality of the original installation, materials, workmanship and maintenance. However, we have found that the average lifespans indicated are appropriate for budgeting if detailed review of the individual systems is not feasible. Greater detail can be provided if you require systems to be broken into smaller components.

exp Services has designed renovations and repairs for numerous Hydro Ottawa (HOL) buildings for more than twenty years. We have undertaken many evaluations and studies of building systems to guide Hydro Ottawa in their maintenance and replacement plans for such buildings, as well as providing engineering support for major and minor upgrades to HOL facilities. We believe the average lifespans provided here are applicable to these facilities.

Please contact us if you require any further information regarding these matters.

Sincerely,

Randall W. Potter, P.Eng. Senior Project Manager Building Engineering

Chantal Wegner, M.A.Sc., P.Eng. Manager Building Engineering

Enclosure: Building Systems - Average Life Expectancy table

The new identity of Trow Associates Inc.



Building Systems Average Life Expectancy

Major Components	Sub-components	Life Expectancy (years)					
Structure			75				
Building Fittings			30				
	Windows	30					
	Doors	30					
	Exterior sealants	15					
	Exterior cladding	35					
	Flooring	15					
	Ceiling	30					
	Interior Walls	30					
	Electrical	25					
	Plumbing	25					
	HVAC units	20					
Roofing - conventional			20				
Roofing – inverted			25				
Power Backup			25				
	UPS	25					
	Generator	25					
Parking Lot - asphalt			20				
Elevator refit			15				
Retaining walls			25				
Chain link fencing			20				
Concrete or masonry			30				
fencing							

Residual Value Support

Residual Value Support

Opening Balance Sheet Analysis:

Residual values are to be documented and finalized as of the date of transition. Currently under CGAAP none of the assets have Residual Values, during the whitepaper process we noted that most of the items in PP&E have a negligible residual value because they are kept for their entire physical lives, except for vehicles. An argument could be made that the buildings have a residual value but after 75 years (revised useful life), any value would not be material. Therefore we have decided to compute residual values for vehicles only.

In order to determine the residual values of vehicles we contacted the Supervisor of Fleet Services for some background information.

Replacement standards:

Hydro does not have statistical analysis supporting our replacement standards. Rather, our standards were compiled with consideration of:

- Hydro legacy company replacement standards / practices;
- Treasury Board of Canada Standards for the Federal Fleet;
- NAFA Standards (National Association of Fleet Administrators);
- APWA (American Public Works Association);
- As well as personal professional experience.

Fleet Category	Component	Replacement
		Standard (in
		Years)
Automobiles	3700	7
Van - Compact	3900	7
Truck – Pick-Up, Compact	3900	7
Truck – Pick-Up, Conventional	3900 / 4100	8
Van - Cargo	3900 / 4100	8
Van – Step / Cube	4100	15
Truck – Bucket (Aerial Devices)	4100	12
Truck – Digger Derricks (RBD)	4100	15
Truck – Knuckle Boom	4100	15
Truck – Stake / Flatbed	4100	10
Trailers - Pole	4300	20
Tension Machines	4300	15

Background information:

Owned vehicles traditionally have longer life cycles when compared to leased vehicles. Historically, accounting rules did not favour rapid turn-over of motor vehicles (leasing) in governmental type organization such as HOL. Additionally, due to HOL operational requirements, we install significant amounts of specialized equipment. We also apply lots of decals and logos. These two items add significantly to our capitalization costs and therefore result in incrementally higher annualized cost of ownership as life cycles shorten. Also, distance travelled per year in our company is deemed low by industry average, favouring longer useful and economic life.

Residual Value Support

Resale Value:

The market determines the final prices paid for used equipment and it can fluctuate greatly year over year. To improve our disposal revenues, we sell directly to end users through reputable auction houses (we no longer Trade-In against new purchases) and we attempt to sell in the area likely to generate the best returns. We sell in the Ottawa, Montreal and Toronto area through Ritchie Brother Auctions (biggest auction company in the world) and Rideau Auctions.

Calculation of Estimated Residual value:

The Supervisor of Fleet Services estimated 10% as a rough average of what we can expect to receive on disposal considering our longer life cycles. However on compiling the data, a 5% residual life has been calculated, 2009 and 2010 percentages are low at 2% therefore 6% will be used to couteract the effect on this 2 years and this will be monitored on an ongoing basis. We confirmed the appropriateness of 6% with the with Supervisor of Fleet Services.

	Vehicle Disposals		
Year	Cost	Proceeds	
2004	285,724.20	-42,457.80	-15%
2005	440,424.92	-28,403.00	-6%
2006	386,177.26	-38,296.00	-10%
2007	317,862.01	-16,102.13	-5%
2008	3,961,189.07	-222,168.91	-6%
2009	718,433.59	-11,796.16	-2%
2010	1,155,106.84	-19,483.00	-2%
Grand Total	7,264,917.89	-378,707.00	-5%

Conclusion:

The residual values for vehicles will be 6% on January 1, 2011. Each year thereafter a revised calculation will be performed based on the previous year's history and the 6% estimation will be revised as appropriate.

Comparison to Kinectrics

Legend:

HOL does not use these assets or only a very small number exist in the system

		ASSET DETAILS		Kinectrics USEFUL LIFE KINECTRICS FACTORS **									HOL New IFRS	IFRS	% Diff from	Old OEB		
PARENI	"	Categor	y - Compon	ent - Type	Min	Тур	Max	MC	EL	EN	OP	MF	P NP	F Components	LIFE	Typical	LIFE	Comments
	1	Fully Dressed	Overall	Wood	35	45	75	н	L	м	NI	L	L	Poles, Towers, Fixtures	45	0%	25	Replace entire pole, only time cross arm would be replaced as a separate component would be if the cross arm failed
	i	Wood Poles	Cross Arm	Steel	30	70	95	-										prematurely but this is not the experience.
	ı	Fully	Overall		50	60	80	\square		\square	\square	\square	+					Very little concrete and sizer poles in the system.
0	2	Dressed		Wood	20	40	55	н	L	м	NI	L	N					
v	i	Poles	Cross Arm	Steel	30	70	95	1										
e r	i	Eully	Overall		60	60	80					1						
h e	3	Dressed	Cross Arm	Wood	20	40	55	н	м	L	NI	L	NI					
a	1	Steel Poles	Cross Ann	Steel	30	70	95											
u	4	OH Line Swit	.ch		30	45	55	L	L	L	L	м	L	O/H Automated Devices	25	-44%	25	
L i	5	OH Line Switch Motor			15	25	25	L	NI	L	L	м	L	O/H Automated Devices	25	0%	25	4,5,6,7 & 11 grouped together as one component, this is
n e	6	OH Line Swit	ch RTU		15	20	20	NI	NI	L	L	L	м	O/H Automated Devices	25	25%	25	the main reason for the deviation against the Kinetrics lives
S	7	OH Integral S	Switches		35	45	60	L	м	м	м	L	н	O/H Automated Devices	25	-44%	25	1
(он)	8	OH Conductors			50	60	75	м	L	м	NI	NI	L	O/H Conductors & Non- Automated Devices	45	-25%	25	OH Conductors are lined up with the Pole life because they are replaced at the same time - this is the reason for the deviation against the Kinectrics lives
	9	OH Transformers & Voltage Regulators ⁺		je Regulators *	30	40	60	L	м	м	NI	NI	м	Line Transformers Overhead & Underground	30	-25%	25	9,13 & 34 grouped together
	10	OH Shunt Ca	OH Shunt Capacitor Banks		25	30	40	-	-	-	-	-	-					
	11	Reclosers			25	40	55	L	L	L	м	L	м	O/H Automated Devices	25	-38%	25	4,5,6,7 & 11 grouped together

Legend:

HOL does not use these assets or only a very small number exist in the system

DADENT*	#	ASSET DETAILS		Kinec	KINECTRICS FACTORS **						HOL New IFRS	IFRS	% Diff from	Old OEB			
PARENT	#	Category	- Component - Type	Min	Тур	Max	MC	EL	EN	OP	MP	NPF	Components	LIFE	Typical	LIFE	Comments
T r	12	Power Transf	Overall	30	45	60	NI	м	м	L	L	NI	Station Transformers	45	0%	40 & 30	Replace entire asset at once, tap changers for example do not fit on new transformers therefore can't replace
а			Bushing	10	20	30							>50 KV & <50KV	_			transformer and keep old tap changer.
n			Tap Changer	20	30	60											· · · -
f	13	Station Servio	e Transformer	30	45	55	NI	L	м	L	NI	L	Line Transformers Overhead &	30	-33%	25	9,13 & 34 grouped together
o r	14	Station Grour	nding Transformer	30	40	40	-	-	-	-	-	1					
m e		Station DC	Overall	10	20	30							Other Stn. Equip.				
r	15	System	Battery bank	10	15	15	NI	м	L	L	м	м	>50kV & < 50 kV	25	25%	40 & 30	Changed all at once - newer batteries are lasting longer
			Charger	20	20	30											
a n Ț	16	Station Metal Clad	Overall	30	40	60	L	L	м	м	м	м	Station Switchgear	40	0%	40 & 30	
d s		Switchgear	Removable Breaker	25	40	60							>50kV & <50kV				
M & u & i S c)	17	Station Independent Breakers		35	45	65	м	м	м	м	м	м	Station Switchgear >50kV & <50kV	40	-11%	40 & 30	16, 17, 18, 19, 22, and 23 grouped together as one component but hardly any 22 or 23 in system
р	18	Station Swite	h	30	50	60	м	L	м	м	М	L	Station Switchgear >50kV & <50kV	40	-20%	40 & 30	
a I	19	Electromecha	nical Relays	25	35	50	NI	NI	NI	NI	NI	н	Station Switchgear >50kV & <50kV	40	14%	40 & 30	
S t	20	Solid State Re	lays	10	30	45	NI	NI	NI	NI	NI	н	SCADA RTU,Relays,Communica	15	-50%	15	20.21 and 42 survey data address
a t i	21	Digital & Numeric Relays		15	20	20	NI	NI	NI	NI	NI	н	SCADA RTU,Relays,Communica tion Equipment	15	-25%	15	20, 21 and 43 grouped together
o n	22	Rigid Busbars		30	55	60	L	L	L	NI	NI	L					16, 17, 18, 19, 22, and 23 grouped together as one
S	23	Steel Structur	e	35	50	90	L	NI	м	NI	NI	L					component but hardly any 22 or 23 in system

Table 1

Legend:

HOL does not use these assets or only a very small number exist in the system

	щ	ASSET DETAILS	Kinec	trics USEFU	LLIFE	к	INECT	RICS	FACT	ORS	**	HOL New IFRS	IFRS	% Diff from	Old OEB	
PARENT	#	Category - Component - Type	Min	Тур	Max	мс	EL	EN	OP	MP	NPF	Components	LIFE	Typical	LIFE	Comments
	24	Primary Paper Insulated Lead Covered (PILC) Cables	60	65	75	L	L	м	L	NI	м	U/G PILC Cable	60	-8%	25	
	25	Primary Ethylene-Propylene Rubber (EPR) Cables	20	25	25	NI	м	L	NI	NI	NI	U/G Polymer Insulated Cable	35	40%	25	
U n d e r	26	Primary Non-Tree Retardant (TR) Cross Linked Polyethylene (XLPE) Cables - Direct Buried	20	25	30	м	м	М	L	L	L	U/G Polymer Insulated Cable	35	40%	25	25, 26, 27, 28 and 29 grouped together as one component
g r o u	27	Primary Non-TR XLPE Cables - In Duct	20	25	30	м	м	м	L	L	м	U/G Polymer Insulated Cable	35	40%	25	this is the main reason for the deviation against the Kinetrics lives
n d S v	28	Primary TR XLPE Cables - Direct Buried	25	30	35	м	м	м	L	L	L	U/G Polymer Insulated Cable	35	17%	25	
s t	29	Primary TR XLPE Cables - In Duct	35	40	55	м	м	м	L	L	L	U/G Polymer Insulated Cable	35	-13%	25	
e	30	Secondary PILC Cables	70	75	80	NI	L	L	NI	NI	н	Services	45	-40%	25	
m s U	31	Secondary Cables - Direct Buried	25	35	40	м	м	м	L	NI	NI	Services	45	29%	25	30, 31, 32 grouped together as one component this is the main reason for the deviation against the Kinetrics lives
G _	32	Secondary Cables - In Duct	35	40	60	м	м	м	L	NI	NI	Services	45	13%	25	
	33	Network Overall Transformer	20	35	50	NI		н	NI	NI	NI					
		s Protector	20	35	40											
	34	Pad-Mounted Transformers	25	40	45	L	М	М	NI	L	L	Line Transformers	30	-25%	25	9,13 & 34 Grouped together
	35	Submersible Vault Transformers	25	35	45	L	м	м	NI	L	L	Line Transformers Vault	35	0	25	

Legend:

HOL does not use these assets or only a very small number exist in the system

DADENIT*	#	ASSET DETAILS	L LIFE	к	INEC	TRICS	FACT	ORS	**	HOL New IFRS	IFRS	% Diff from	Old OEB			
PAREINI	#	Category - Component - Type	Min	Тур	Max	MC	EL	EN	OP	MP	NPF	Components	LIFE	Typical	LIFE	Comments
S	36	UG Foundations	35	55	70	М	NI	М	L	L	М	U/G Conduit and cable	40	-27%	25	
Uy	Overall	40	60	80	м	NI	ими			U/G Conduit and cable 40	40 22%	25	36, 37, 40, 41 & 42 grouped together as one component			
d s		Roof	20	30	45					-	-	chambers +0	5570	20		
e t	38	UG Vault Switches	20	35	50	L	L	L	L	L	NI	Vault Switchgear and Reclosers	30	-14%	25	
r m g s	39	Pad-Mounted Switchgear	20	30	45	L	L	н	L	L	L	U/G Switchgear and Reclosers	25	-17%	25	
r o (40	Ducts	30	50	85	н	NI	м	NI	NI	L	U/G Conduit and cable chambers	40	-20%	25	36, 37, 40, 41 & 42 grouped together as one component
n G		Concrete Encased Duct Banks	35	55	80	Μ	NI	М	NI	NI	L	U/G Conduit and cable	40	-27%	25	this is the main reason for the deviation against the
d _	42	Cable Chambers	50	60	80	м	NI	н	NI	L	NI	U/G Conduit and cable chambers	40	-33%	25	Kinetrics lives
Monitoring and Control Systems (S)	43	Remote SCADA	15	20	30	NI	NI	L	NI	L	н	SCADA RTU,Relays,Communica tion Equipment	15	-25%	15	20, 21 and 43 grouped together

Approval

May 31, 11 Date

Bill Bennett, Director of Distribution Asset Management

Geoff Simpson, Director of Phance

<u>May 31/2011</u> Date

Jare Scott, Manager of Rates and Revenue



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #2 Filed: 2011-09-08 Page 1 of 2

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #80 - Ref: Exh J-1-1, p9
7	Please provide the following information in detail for overhead costs on self-constructed
8	assets for the bridge and test years:

9

Nature of the overhead costs	Dollar Impact Bridge Year	Dollar Impact Test Year	Directly attributable? (Y/N)	Reasons why the costs are allowed to be capitalized under MIFRS given the more stringent limitations on capitalized overhead

10

11 **Response**

12

13 Table 5 in Exhibit J1-1-1 provides the overhead costs on self-constructed assets, an

14 additional level of detail is provided in the table below. Comparisons provided are for the

15 Test Year only, as that is considered the relevant comparator. The burden rate

16 percentage prior to transition and after transition is noted at the bottom of the table.

17

18


1

Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

Nature of overhead cost	CGAAP 2012 \$M	MIFRS 2012 \$M	Variance	Directly attributable (Y/N)	Reason why cost can be capitalized under MIFRS
Supply Chain	2.3	1.2	1.1	Y	Certain activities capitalized under CGAAP are not considered directly attributable to self-constructed assets. Amount remaining is directly attributable.
Facilities	1.0	0.0	1.0	N	
HR	1.7	0.0	1.7	N	
IT	0.2	0.0	0.2	N	
COO	0.1	0.0	0.1	N	
Finance	0.8	0.0	0.8	N	
Corporate	0.5	0.0	0.5	N	
Holding Company	0.3	0.0	0.3	N	
Regulatory	0.1	0.0	0.1	N	
Engineering	4.4	1.8	2.6	Y	Certain activities capitalized under CGAAP are not considered directly attributable to self-constructed assets. Amount remaining is directly attributable.
Supervision	4.0	1.9	2.1	Y	Certain activities capitalized under CGAAP are not considered directly attributable to self-constructed assets. Amount remaining is directly attributable.
Total	\$15.4	\$4.9	\$10.5		
CAPEX	\$92.0	\$92.0	\$92.0		
Burden Rate %	16.7%	5.3%	11.4%		

Table 1 – CGAAP and MIFRS Overhead Costs for 2012 Test Year

2



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #3 Filed: 2011-09-08 Page 1 of 1

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #81 - Ref: Exh J-1-1, p9
7	Has the applicant consulted with its external auditors or professional advisors regarding
8	the change in capitalization of overhead within IFRS requirements? If yes, please
9	provide supporting documentation. If not, please identify if there is any plan in the near
10	future for such a consultation.
11	
12	Response
13	
14	Hydro Ottawa Limited ("Hydro Ottawa") has consulted with professional advisors
15	regarding the change in capitalization of overhead throughout the IFRS transition
16	project. Hydro Ottawa is utilizing the external audit firm as the IFRS advisory firm.
17	Consultations have occurred with the IFRS advisory team but not yet with the external
18	audit team. While there is overlap of external audit staff on the IFRS advisory team,
19	formal consultation with the external audit team will occur during Q4 of 2011.
20	
21	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #4 Filed: 2011-09-08 Page 1 of 1

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #82 - Ref: Exh J-1-1, p9
7	
8	Please identify all overhead related items (e.g. indirect costs, corporate centre costs)
9	and identify the items that are ineligible and how much overhead in total has been
10	removed from capitalization for ineligible costs.
11	
12	Response
13	
14	Please see the response to Exhibit K11-1-2 (Board Staff #80).
15	
16	



1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #83 - Ref: Exh J-1-1, p9
7	Please identify the burden rates related to the capitalization of costs of self-constructed
8	assets:
9	a) Prior to transition (from the last rebasing application to January 1, 2011), and
10	b) After transition (on or after January 1, 2011).
11	
12	Response
13	
14	Please see the response to Exhibit K11-1-2 (Board Staff #80).
15	
1.	

16



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #6 Filed: 2011-09-08 Page 1 of 1

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #84 - Ref: Exh J-1-1, p9
7	Please identify the overall level of increase in OM&A expense in the test year in relation
8	to a decrease in capitalized overhead. Please provide a variance analysis for this
9	increase in OM&A expense for the test year in respect to each of the bridge year and
10	historical years.
11	
12	Response
13	
14	Please refer to Table 5 in Exhibit J1-1-1 and see the response to Exhibit K11-1-2 (Board
15	Staff #80), which identifies the overall increase in OM&A expense in the test year
16	relating to the decrease in capitalized overhead. For the comparison of OM&A expenses
17	for test year, bridge year and historical years, refer to Table 1 in Exhibit D1-1-1.
18	
19	
20	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #7 Filed: 2011-09-08 Page 1 of 1

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #85 - Ref: Report of the Board, Transition to IFRS, EB-2008-0408
7	P5 of the Board Report issued July 28, 2009, states:
8	
9	The Board will require utilities to adhere to IFRS capitalization accounting
10	requirements for rate making and regulatory reporting purposes after the date of
11	adoption of IFRS.
12	
13	IAS 16 Property, Plant and Equipment states that the cost of PP&E comprises any costs
14	directly attributable to bringing the asset to the location and condition necessary for it to
15	be capable of operating in the manner intended by management.
16	
17	Please confirm that costs capitalized in the current application are directly attributable to
18	bringing assets to the location and condition necessary for it to be capable of operating
19	in the manner intended by management. If not, please explain.
20	
21	Response
22	
23	Hydro Ottawa confirms that costs capitalized in the current rate application are directly
24	attributable to bringing assets to the location and condition necessary for the asset to be
25	capable of operating in the manner intended by management.
26	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #8 Filed: 2011-09-08 Page 1 of 2

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #86 - Ref: Exh J1-1-1, p12; Ref: Report of the Board, Transition to
7	IFRS, EB-2008-0408
8	P19 of the Board Report states:
9	
10	Where a utility for financial reporting purposes under IFRS has accounted for the
11	amount of gain or loss on the retirement of assets in a pool of like assets as a
12	charge or credit to income, for reporting and rate application filings the utility shall
13	reclassify such gains and losses as depreciation expense and disclose the
14	amount separately. Where a utility for financial reporting purposes under IFRS
15	has reported a gain or loss on disposition of individual assets, such amounts
16	should be identified separately in rate filings for review by the Board.
17	
18	Hydro Ottawa states that it does not have sufficient historical data for reliable trend
19	analysis on which to base a forecast of the amount of gains or losses expected as a
20	result of derecognizing pooled assets. Hydro Ottawa further states that gains on pooled
21	assets can arise where proceeds of sales are received and losses on pooled assets are
22	largely resulted from early asset disposals due to unforeseen/unplanned events. As a
23	result, no estimates have been included in the rate application for gains or losses from
24	disposals of pooled assets.
25	a) Please explain how Hydro Ottawa defines the pooled assets.
26	b) When does Hydro Ottawa anticipate that it will have sufficient historical data related
27	to gains or losses from disposals of pooled assets?
28	
29	
30	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #8 Filed: 2011-09-08 Page 2 of 2

1 Response

- 2
- a) Hydro Ottawa Limited ("Hydro Ottawa") defines pooled assets as a group of
 homogenous assets, such as poles. Hydro Ottawa does not identify or track each
 pole separately within the accounting system, a 'pool' per year is created where all
 poles installed in any given year is grouped into one pool.
- 7
- b) As Hydro Ottawa was not required to dispose of pooled assets under CGAAP, no
 historical data has been kept for accounting purposes. IFRS requires disposition,
 therefore historical data tracking has commenced in 2011 for the comparative year to
 the 2012 financial statements. Hydro Ottawa anticipates having sufficient historical
 data by 2014 as at that time there will be 3 years of historical data to analyze, draw
 conclusions from and base future projections upon.
- 14
- 15



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #9 Filed: 2011-09-08 Page 1 of 1

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #87 - Ref: Exh J1-1-1, p13
7	IAS 23 states that directly attributable borrowing costs are capitalized upon qualifying
8	assets only. The standard also indicates that a qualifying asset is an asset that
9	necessarily takes a substantial period of time to get ready for its intended use or sale.
10	
11	Hydro Ottawa states that it has determined that any asset that takes greater than six
12	months to complete is a qualifying asset under IFRS after reviewing historical data on
13	project durations and benchmarks against other utilities. Please provide the analysis
14	from the review of historical data on project durations and benchmarking.
15	
16	Response
17	
18	Hydro Ottawa Limited's ("Hydro Ottawa") benchmarking indicated that other utilities were
19	defining a substantial period as between four and twelve months. Hydro Ottawa
20	determined that most projects are either completed in less than 2 months or they take a
21	substantial period of time. A substantial period of time ranging anywhere from three to
22	nine months would yield identical results in terms of which assets borrowing costs were
23	capitalized, therefore Hydro Ottawa has elected to use six months as the appropriate
24	duration.
25	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #10 Filed: 2011-09-08 Page 1 of 2

1	11	. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2		
3	lss	sue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	ар	propriate?
5		
6	<u>Bo</u>	ard Staff Question #88 - Ref: Exh J1-1-1, p13-14; Ref: Report of the Board, Transition
7	to	IFRS, EB-2008-0408
8	P4	0 of the Board Report states:
9		
10		The Board will continue to publish interest rates for CWIP as it does now. Where
11		incurred debt is acquired on an arms length basis, the actual borrowing cost
12		should be used for determining the amount of carrying charges to be capitalized
13		to CWIP for rate making during the period, in accordance with IFRS. Where
14		incurred debt is not acquired on an arm's length basis, the actual borrowing cost
15		may be used for rate making, provided that the interest rate is no greater than the
16		Board's published rates. Otherwise, the distributor should use the Board's
17		published rates.
18		
19	Hy	dro Ottawa states that it has utilized Hydro Ottawa Holding Inc's forecast weighted
20	av	erage cost of borrowing for the purposes of determining the interest rate per IAS 23.
21	Th	e weighted average rate forecast for 2012 test year is 5.1%.
22	a)	Please provide the calculation of 5.1% weighted average rate forecast for 2012 by
23		providing the amounts of the debts and the associated interest rates.
24	b)	Please compare the weighted average rate forecasted of 5.1% to the most recent
25		Board prescribed interest rates on CWIP and demonstrate how it is consistent with
26		the Board's guidance.
27		
28	Re	sponse
29		
30	a)	Please see Exhibit K11-1-10 Attachment 1 (Board Staff Question 88) for the 2012
31		torecast calculation of 5.1%.
32		



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #10 Filed: 2011-09-08 Page 2 of 2

1	b)	The most recent Ontario Energy Board (the "Board") prescribed rate for CWIP
2		accounts is 4.29%. The prescribed rate has fluctuated from of low of 4.01% in Q4
3		2010 to a high of 6.61% in Q2 2009 and averaged 5.0% since 2008. This compares
4		to the 5.1% forecast Hydro Ottawa Limited ("Hydro Ottawa") has used 2012.
5		
6		The Board's guidance regarding the rate for CWIP is noted in Exhibit J1-1-1 p.13
7		where the November 8, 2010 Board IFRS guidance is quoted:
8		
9		"Where incurred debt is acquired on an arms length basis, the actual borrowing cost
10		should be used for determining the amount of carrying charges to be capitalized to
11		CWIP for rate making during the period, in accordance with IFRS"
12		
13		Hydro Ottawa has followed the Board guidance in estimating the CWIP rate for 2012
14		as it has used the rate determined from debt acquired on an arms length basis in
15		accordance with IFRS.
16		

16



Hydro Ottawa Holdings Inc. Weighted average interest rate on external debt for 2012 December 31, 2012

				Effective	
		Average O/S Daily Balance		Interest rate	Interest expense
Senior Unsecured Debentures		50,000,000		5.0%	2,489,675
Senior Unsecured Debentures		200,000,000		5.1%	10,102,090
	Jan	37,500,000	31	4.4%	138,545
	Feb	40,000,000	28	4.4%	133,479
	Mar	42,500,000	31	4.4%	157,017
	April	45,000,000	30	4.8%	175,685
	May	47,500,000	31	4.8%	191,627
	Jun	50,000,000	30	4.8%	195,205
	July	52,500,000	31	5.1%	227,404
	Aug	55,000,000	31	5.1%	238,233
	Sept	57,500,000	30	5.1%	241,027
	Oct	60,000,000	31	5.5%	280,274
	Nov	62,500,000	30	5.5%	282,534
	Dec	65,000,000	31	5.5%	303,630
BNS Operating LOC		51,250,000	365	5.0%	2,564,661
		Average O/S Daily Balance	I	nterest rate	Interest expense

Unsecured debentures interest	50,000,000	5.0%	2,489,675
Unsecured debentures interest	200,000,000	5.1%	10,102,090
BNS Operating LOC	51,250,000	5.0%	2,564,661
BNS Standby Charges			356,995
BNS Interest Earned			-
Average Long and Short Term Rate 2012	301,250,000	5.1%	15,513,421



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #11 Filed: 2011-09-08 Page 1 of 1

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #89 - Ref: Exh J1-1-1, p14; Ref: Report of the Board, Transition to
7	IFRS, EB-2008-0408
8	P40 of the Board Report states:
9	
10	For regulatory reporting and rate making purposes, customer contributions will be
11	treated as deferred revenue to be included as an offset to rate base and amortized to
12	income over the life of the facilities to which they relate. Distributors should confirm in
13	the introduction to their first rates application after the IFRS transition that the
14	amortization period is being adjusted on an ongoing basis.
15	
16	Please confirm whether Hydro Ottawa has adjusted the amortization period of customer
17	contribution on an ongoing basis. If not, please make the adjustment and provide any
18	updated numbers for this rate application.
19	
20	Response
21	
22	Hydro Ottawa confirms that the amortization periods of customer contributions have
23	been adjusted.
24	
25	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #12 Filed: 2011-09-08 Page 1 of 2

1	11.	MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS			
2					
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS				
4	appropriate?				
5					
6	Bo	ard Staff Question #90 - Ref: Exh J1-1-1, p14			
7	Hy	dro Ottawa states that, "The amount of capital contributions under IFRS has			
8	de	creased because of lower overhead amounts being capitalized." The capital			
9	COI	ntribution in 2012 test year is reduced by \$2 million.			
10	a)	Please confirm whether the capital contributions referred to are the customer			
11		contributions received for the specific capital programs/assets. If not, please explain			
12		how Hydro Ottawa defines the capital contribution.			
13	b)	Please describe the process for accounting for the customer contributions received.			
14	c)	Please explain how the change of overhead capitalization impacts the amount of			
15		capital contribution.			
16	d)	Please provide a list of capital contribution for 2012 test year and the related capital			
17		assets.			
18	e)	Please provide the breakdown of \$2 million reduction by the capital assets.			
19					
20	Re	sponse			
21					
22	a)	Yes. The capital contributions referred to are the customer contributions received for			
23		the specific capital programs/assets.			
24					
25	b)	Customer contributions under CGAAP were capitalized as an offset to capital assets			
26		and amortized using the same life as the asset. The amortization was charged as an			
27		offset to depreciation expense. Under IFRS, customer contributions will be recorded			
28		as a deferred liability and amortized to other revenue using the same life as the			
29		related capital asset.			
30					
3I 22	C)	As per Hydro Ottawa Limited's Conditions of Service page 66, capital contributions			
52		are calculated based on burdened costs.			



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #12 Filed: 2011-09-08 Page 2 of 2

"Cost" in all references implies burdened labour, material, and vehicles and
 equipment expenses, including travel time (one hour return), however, excludes
 applicable taxes, although taxes are applicable to the final cost. "Cost" and "Fee"
 may be interchangeable"

5

6 7 IAS 16 specifically prohibits the capitalization of administration and other general overhead costs resulting in a reduction of burdened costs. This in turn reduced the amount of capital contributions.

8 9

10 d) Please refer to the table below.

11

1	2
- 1	1.

Table 1: List of Contributed Capital for 2012 test year

Decentration 1		Deleted			Vanlanaa
Description	Code	Capital	2012	1FK3 2012	variance \$000
	Code	Asset	\$000	\$000	φυυυ
		Code	<i>Q</i> UUU	<i>Q</i> UUU	
CC –Smart Meters	1995	1860	\$528	\$480	\$48
CC – Station Equipment					
(Below 50kV)	1995	1820	52	46	6
CC – System Supervisory					
Equipment	1995	1980	3	2	1
CC – Underground					
Conductors and Devices	1995	1845	4,858	4,378	480
CC – Underground Conduit	1995	1840	2,240	1,981	259
CC - Line Transformers	1995	1850	4,356	3,940	416
CC – Overhead Conductors					
and Devices	1995	1835	1,557	1,386	171
CC - Poles, Towers,					
Fixtures	1995	1830	1,935	1,735	200
CC - Services	1995	1855	3,694	3,250	444
Total Contributed Capital			\$19,223	\$17,198	\$2,025

13

14 e) Please see the table above:

¹ CC indicates Contributed Capital



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #13 Filed: 2011-09-08 Page 1 of 3

1	11.	MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS			
2					
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS				
4	appropriate?				
5					
6	Boa	ard Staff Question #91 - Ref: Exh A3-1-1, Attachment K and Exh J1-1-1, p15			
7	As	per Hydro Ottawa's 2010 Audited Financial Statements at Note 11 Employee Future			
8	Bei	nefits, an updated actuarial valuation was performed as at January 1, 2011. As a			
9	res	ult, there were \$2,814,000 unamortized losses, as of December 31, 2010. The			
10	una	amortized losses were related to employee future benefits other than pension from			
11	Hy	dro Ottawa's defined benefit plans.			
12					
13	Hy	dro Ottawa further states in Exh J-1-1 that Hydro Ottawa elected to apply the IFRS 1			
14	exe	emption to recognize all cumulative actuarial losses in retained earnings at the date of			
15	the	transition. The impact to the balance sheet is an increase in the liability and a			
16	deo	crease in retained earnings of \$2.7 M as of January 1, 2011. Under CGAAP, this			
17	am	ount would have been included in OM&A over time. As a result, pension expense in			
18	ON	1&A for the 2012 test year will be lower under IFRS than CGAAP by approximately			
19	\$15	52k.			
20	a)	Please confirm that the actuarial loss of \$2.7 million is related to employee benefits.			
21		If it is related to employee benefits, please provide the account to be used to record			
22		the expense in OM&A.			
23	b)	Please confirm if the decrease in retained earning of 2.7 M noted in Exhibit J			
24		corresponds to \$2,814,000 unamortized losses presented in 2010 AFSs. If so,			
25		please explain the difference between these two numbers.			
26	c)	Please provide the detailed calculation of how Hydro Ottawa arrived at the \$152k			
27		lower pension expense under IFRS than CGAAP (please include the calculation of			
28		the amortization of the unamortized losses under CGAAP and under IFRS).			
29	d)	Please confirm if Hydro Ottawa's external auditor has reviewed the actuarial			
30		valuation report and validated the underlying assumptions regarding the valuation			



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #13 Filed: 2011-09-08 Page 2 of 3

1		performed on January 1, 2011. If not, please identify if there is any plan in the near
2		future for such a review.
3		
4	Re	sponse
5		
6	a)	The actuarial loss of \$2.7M is related to employee benefits. Hydro Ottawa has
7		elected to apply the IFRS 1 exemption to recognize all cumulative actuarial losses in
8		retained earnings at the date of transition, and therefore will not be recording an
9		expense in OM&A.
10		
11	b)	The decrease in retained earnings of \$2.7M noted in Exhibit J corresponds to the
12		\$2,814,000 unamortized losses presented in 2010 AFSs. The \$2.7M was an
13		inadvertent typo and should read \$2.8M.
14		
15	c)	Hydro Ottawa obtained two actuarial valuation reports as at December 31, 2010, one
16		under IFRS (Exhibit K11-1-13 Attachment 1) and one under CGAAP (Exhibit K11-1-
17		13 Attachment 2). Note that the attachments cover all entities within the Hydro
18		Ottawa Group of Companies, the appendices however are segregated by entity,
19		refer to the pages labeled LDC for Hydro Ottawa (this represents pages 10 through
20		12 in Exhibit K11-1-13 Attachment 1 and pages 14 through 16 in Exhibit K11-1-13
21		Attachment 2). The \$152k reduction in the 2012 pension expense is forecasted from
22		an estimate of the amortization of the actuarial loss for 2011 as shown in the table
23		below.
24		

- 24
- 25

Table 1: Estimated Reduction in Pension Expense

2011	IFRS (Actuarial Valuation Report as at December 31, 2010)	CGAAP (Actuarial Valuation Report as at December 31, 2010)	Reduction
Current service cost	\$107K	\$107K	
Interest cost on accrued benefit obligation	\$382K	\$382K	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #13 Filed: 2011-09-08 Page 3 of 3

Amortization of loss (gain) vs year loss (gain) on obligation	\$Nil	\$152K	
Total estimated benefit cost	\$489K	\$641K	\$152K

1

d) Hydro Ottawa's external auditor is currently in the process of reviewing the actuarial
 valuation report as part of the audit of the IFRS opening balance sheet. Results of
 this audit are expected to be available and presented to the Audit Committee in
 November 2011.



HUMAN RESOURCE CONSULTING AND ADMINISTRATIVE SOLUTIONS SERVICES-CONSEILS EN RESSOURCES HUMAINES ET SOLUTIONS ADMINISTRATIVES Calgary • Fredericton • Halifax • Kitchener • London • Montréal • Ottawa • Pittsburgh • Québec • St. John's • Toronto • Vancouver www.morneaushepell.com

Tour de la Bourse — Place Victoria 800, rue du Square-Victoria, bureau 4000 C.P. 211 Montréal QC H4Z 0A4 tél. : 514.878.9090 • téléc. : 514.875.2673

HYDOTT.0008

February 11, 2011

CONFIDENTIAL

Mr. Wayne M. Ebata Corporate Controller **Hydro Ottawa Group of Companies** 3025 Albion Road North P.O. Box 8700 Ottawa ON K1G 3S4

RE: Transition to International accounting for employee benefits programs at January 1, 2011

Dear Mr. Ebata:

The purpose of this letter is to inform you on the impact with regards to post retirement benefits of the changeover to International Financial Reporting Standards (IFRS) accounting for publicly accountable entities (PAE) in Canada at January 1, 2011. The changeover will apply from fiscal years beginning on or after January 1, 2011. As prescribed by the IFRS, comparative figures are required in financial statements. The company uses a fiscal year that runs from January 1 to December 31, and thus, January 1, 2011, is the transition date to IFRS. Information on accounting figures under IFRS is needed from that date moving forward.

For employee future benefits, transition means that current CICA 3461 will be replaced by IAS 19. Morneau Shepell has already published numerous documents on IFRS and transition. For more information, you may wish to consult our May 2009 Vision publication and IFRS Corner section of our "News & Views" found on our website at <u>www.morneaushepell.com</u>.

The present document will give you the initial impact at January 1, 2011. This will serve as a basis for disclosure requirements in your financial statements.

Our analysis covers the following company plan(s):

- > The retirement grant program
- > The post retirement life insurance program

Mr. Wayne M Ebata February 11, 2011

Transition to the New Standards

There are specific provisions that apply to transition, namely for gains and losses and past service costs. The transition to the new accounting standards will be made on a retrospective basis, that is, the company is required to rework accounting standards as if they had always applied. For post retirement benefits, this means the application of IAS19 from the inception of the plans to determine at transition date the amounts that would have been recognized on the balance sheet and those that would still be unamortized.

This may prove to be a pretty difficult task to perform for post retirement benefits, especially for gains and losses. As such, IFRS enables a company to elect for an exemption at transition. Under such election, all gains and losses are recognized on the balance sheet at transition. We have assumed that the exemption at transition would be elected by Hydro Ottawa.

As for unamortized past service costs at transition, it must be determined which portion relates to non vested benefits. If there are such non vested past service costs, they are left unamortized and will be recognized in expense over the period to full vesting. For the vested portion of the unamortized past service costs, they are recognized on the balance sheet. In Hydro Ottawa's particular case, it does not apply since there is no unamortized past service costs at time of transition.

Any adjustment to the balance sheet at transition will have an impact on opening retained earnings. Our figures are on pre-tax basis and company should adjust impact on retained earnings for any tax consideration.

We have based our calculation on the most recent accounting valuation results at December 31, 2010 with respect to the post-retirement benefits programs. Assumptions are included in our letter dated January 14, 2011.

The following table compares results at transition date under CICA 3461 and IAS 19. The pre-tax impact to the balance sheet and retained earnings are *\$2,747,700* for post-retirement benefits programs.

	Dec. 31, 2010 CICA3461	Jan. 1, 2011 IAS19	Transition Impact
	\$	\$	
Defined Benefit Obligation	809,100	809,100	
Value of Assets	0	0	
Excess (deficit)	-809,100	-809,100	
Unamortized losses (gains)	-16,800	0	
Unamortized past service costs	0	0	
Transitional balance	0	0	
Asset (liability) recognized	-825,900	-809,100	
Adjustment to opening retained earnings	5		Increase of 16,800 net of any tax consideration

RETIREMENT GRANT

POST RETIREMENT LIFE INSURANCE

	Dec. 31, 2010 CICA3461	Jan. 1, 2011 IAS19	Transition Impact
	\$	\$	
Defined Benefit Obligation	7,868,900	7,868,900	
Value of Assets	0	0	
Excess (deficit)	-7,868,900	-7,868,900	
Unamortized losses (gains)	2,764,500	0	
Unamortized past service costs	0	0	
Transitional balance	0	0	
Asset (liability) recognized	-5,104,400	-7,868,900	
Adjustment to opening retained earnings			Decrease of 2,764,500 net of any tax consideration

We are available, at your convenience, to provide you with any additional information that you may require on the upcoming transition to International accounting in Canada.

Best regards,

Nicolas Boutin, FCIA Senior Consultant

NB/DB/dd

c.c :. Mr. Louis Bernatchez, Morneau Shepell

Hydro Ottawa Energy - Post Retirement Life IAS

	IAS 19
January 1st	2011
Basic information	
Defined benefit portion (DB) . Accrued benefit obligation	
- Life Insurance	44,300
. Total accrued benefit obligation (before past service costs)	44,300
. Past service costs (Beginning of year)	
- Life Insurance	0
 Total past service costs (Beginning of year) Total accrued benefit obligation Fair value of plan assets Plan surplus (deficit) 	0 44,300 0 -44,300
 Current service cost (employer) Life Insurance Total current service cost (employer) 	2,200 2,200
 Average remaining service period past service costs amortization Benefit Payments Expected 	17.5
- Life Insurance - Total expected	1,000 1,000
- Life Insurance - Total actual	1,000 1,000
Significant assumptions	
. Benefit cost (current year) - Discount rate	5.00%
- Rate of Salaray escalation	3.10%

Hydro Ottawa Energy - Post Retirement Life IAS

	IAS 19
January 1st	2011
I- Interest cost on accrued benefit obligation	
. Accrued benefit obligation	44,300
. Current service cost and employee contributions	2,200
. Past service costs	0
. Benefit payments (mid-year)	-500
. Average expected value of accrued benefit obligation	46,000
. Interest cost on accrued benefit obligation	2,300
II- Actuarial gain (loss) on accrued benefit obligation	
. Accrued benefit obligation	44,300
. Current service cost and employee contributions	2,200
. Past service costs	0
. Interest cost on accrued benefit obligation	2,300
. Benefit payments	-1,000
. Expected value of accrued benefit obligation	47,800
. Actual value of accrued benefit obligation	47,800
. Experience gain (loss)	0
II- Amortization of past service costs	
. Opening balance	0
. Past service costs this year	0
. Amortization for current year	0
. Closing balance	0
V- Determination of benefit cost	
. Current service cost	2,200
. Interest cost on accrued benefit obligation	2,300
. Past service costs	0
. Special event	0
. Benefit cost	4,500
V- Accrued benefit liability (asset)	
. Opening balance	44,300
. Benefit cost for the year	4,500
. Benefit payments	-1,000
. Amount recognized in SORIE	0
. Closing Balance	47,800
VI- Amount recognized in SORIE	
. Opening balance	0
. Gain (loss) for the year on obligation	0
. Gain (loss) for the year on asset	0
. Closing Balance	0

Hydro Ottawa Energy - Post Retirement Life IAS

	IAS 19	9
January 1st	2011	

ADDITIONAL DISCLOSURE ITEMS REQUIRED

Reconciliation of Accrued Benefit Obligation

. Opening balance	44,300
. Current service cost	2,200
. Employees contributions	0
. Interest cost on accrued benefit obligation	2,300
. Benefit payments	-1,000
. Past service costs	0
. Actuarial loss (gain)	0
. Closing balance	47,800

Assumptions

 Benefit cost (current year) discount rate rate of salary escalation 	5.00% 3.10%
 Accrued benefit obligation (end of year) discount rate rate of salary escalation 	5.00% 3.10%

Hydro Ottawa Hold Co. - Post Retirement Life IAS

	IAS 19
January 1st	2011
Basic information	
Defined benefit portion (DB) . Accrued benefit obligation	
- Life Insurance	63,000
. Total accrued benefit obligation (before past service costs)	63,000
. Past service costs (Beginning of year)	
- Life Insurance	0
 Total past service costs (Beginning of year) Total accrued benefit obligation Fair value of plan assets 	0 63,000 0
. Plan surplus (deficit) Current service cost (employer)	-63,000
 - Life Insurance - Total current service cost (employer) Average ramaining service period 	13,300 13,300
- past service costs amortization . Benefit Payments	16.2
- Life Insurance - Total expected	0 0
. Actual - Life Insurance Total actual	0
- Total actual	0
. Benefit cost (current year)	
- Discount rate	5.00%
- Rate of Salaray escalation	3.10%

Hydro Ottawa Hold Co. - Post Retirement Life IAS

Townson 1st	IAS 19
January 1st	2011
I- Interest cost on accrued benefit obligation	
. Accrued benefit obligation	63,000
. Current service cost and employee contributions	13,300
. Past service costs	0
. Benefit payments (mid-year)	0
. Average expected value of accrued benefit obligation	76,300
. Interest cost on accrued benefit obligation	3,800
II- Actuarial gain (loss) on accrued benefit obligation	
. Accrued benefit obligation	63,000
. Current service cost and employee contributions	13,300
. Past service costs	0
. Interest cost on accrued benefit obligation	3,800
. Benefit payments	0
. Expected value of accrued benefit obligation	80,100
. Actual value of accrued benefit obligation	80,100
. Experience gain (loss)	0
III- Amortization of past service costs	
. Opening balance	0
. Past service costs this year	0
. Amortization for current year	0
. Closing balance	0
IV- Determination of benefit cost	
. Current service cost	13,300
. Interest cost on accrued benefit obligation	3,800
. Past service costs	0
. Special event	0
. Benefit cost	17,100
V- Accrued benefit liability (asset)	
. Opening balance	63,000
. Benefit cost for the year	17,100
. Benefit payments	0
. Amount recognized in SORIE	0
. Closing Balance	80,100
VI- Amount recognized in SORIE	
. Opening balance	0
. Gain (loss) for the year on obligation	0
. Gain (loss) for the year on asset	0
. Closing Balance	0

Hydro Ottawa Hold Co. - Post Retirement Life IAS

	IAS 19
January 1st	2011

ADDITIONAL DISCLOSURE ITEMS REQUIRED

Reconciliation of Accrued Benefit Obligation

. Opening balance	63,000
. Current service cost	13,300
. Employees contributions	0
. Interest cost on accrued benefit obligation	3,800
. Benefit payments	0
. Past service costs	0
. Actuarial loss (gain)	0
. Closing balance	80,100

Assumptions

. Benefit cost (current year) - discount rate - rate of salary escalation	5.00% 3.10%
. Accrued benefit obligation (end of year)	0.107
- discount rate - rate of salary escalation	5.00% 3.10%

Hydro Ottawa LDC - Post Retirement Life IAS

	IAS 19
January 1st	2011
Basic information	
Defined benefit portion (DB)	
. Accrued benefit obligation	
- Life Insurance	7,761,600
. Total accrued benefit obligation (before past service costs)	7,761,600
. Past service costs (Beginning of year)	
- Life Insurance	0
. Total past service costs (Beginning of year)	0
. Total accrued benefit obligation	7,761,600
. Fair value of plan assets	0
. Plan surplus (deficit)	-7,761,600
. Current service cost (employer)	
- Life Insurance	107,000
- Total current service cost (employer)	107,000
. Average remaining service period	
- past service costs amortization	13.1
. Benefit Payments	
. Expected	
- Life Insurance	464,500
- Total expected	464,500
. Actual	
- Life Insurance	464,500
- Total actual	464,500
Significant assumptions	
. Benefit cost (current year)	
- Discount rate	5.00%
- Rate of Salaray escalation	3.10%

Hydro Ottawa LDC - Post Retirement Life IAS

January 1st	IAS 19 2011
I- Interest cost on accrued benefit obligation	
. Accrued benefit obligation	7,761,600
. Current service cost and employee contributions	107,000
. Past service costs	0
. Benefit payments (mid-year)	-232,300
. Average expected value of accrued benefit obligation	7,636,300
. Interest cost on accrued benefit obligation	381,800
II- Actuarial gain (loss) on accrued benefit obligation	
. Accrued benefit obligation	7,761,600
. Current service cost and employee contributions	107,000
. Past service costs	0
. Interest cost on accrued benefit obligation	381,800
. Benefit payments	-464,500
. Expected value of accrued benefit obligation	7,785,900
. Actual value of accrued benefit obligation	7,785,900
. Experience gain (loss)	0
II- Amortization of past service costs	
. Opening balance	0
. Past service costs this year	0
. Amortization for current year	0
. Closing balance	0
V- Determination of benefit cost	
. Current service cost	107,000
. Interest cost on accrued benefit obligation	381,800
. Past service costs	0
. Special event	0
. Benefit cost	488,800
V- Accrued benefit liability (asset)	
. Opening balance	7,761,600
. Benefit cost for the year	488,800
. Benefit payments	-464,500
. Amount recognized in SORIE	0
. Closing Balance	7,785,900
VI- Amount recognized in SORIE	
. Opening balance	0
. Gain (loss) for the year on obligation	0
. Gain (loss) for the year on asset	0
. Closing Balance	0

Hydro Ottawa LDC - Post Retirement Life IAS

	IAS 19
January 1st	2011
ADDITIONAL DISCLOSURE ITEMS REQUIRED	

Reconciliation of Accrued Benefit Obligation

7,761,600
107,000
0
381,800
-464,500
0
0
7,785,900

Assumptions

. Benefit cost (current year)	
- discount rate	5.00%
- rate of salary escalation	3.10%
Accrued benefit obligation (end of year)	
- discount rate	5.00%
rate of salary assalation	3 10%
- fate of safary escalation	5.10%

Hydro Ottawa Total - Post Retirement Life IAS

	IAS 19
January 1st	2011
Basic information	
Defined benefit portion (DB) Accrued benefit obligation	
- Life Insurance	7,868,900
. Total accrued benefit obligation (before past service costs)	7,868,900
. Past service costs (Beginning of year)	
- Life Insurance	0
. Total past service costs (Beginning of year)	0
. Total accrued benefit obligation	7,868,900
. Fair value of plan assets	0
. Plan surplus (deficit)	-7,868,900
. Current service cost (employer)	
- Life Insurance	122,500
- Total current service cost (employer)	122,500
. Average remaining service period	
- past service costs amortization	13.3
. Benefit Payments	
. Expected	
- Life Insurance	465,500
- Total expected	465,500
. Actual	
- Life Insurance	465,500
- Total actual	465,500
Significant assumptions	
. Benefit cost (current year)	
- Discount rate	5.00%
- Rate of Salaray escalation	3.10%

Hydro Ottawa Total - Post Retirement Life IAS

January 1st	IAS 19 2011
I- Interest cost on accrued benefit obligation	
. Accrued benefit obligation	7,868,900
. Current service cost and employee contributions	122,500
Past service costs	0
Benefit payments (mid-year)	-232.800
Average expected value of accrued benefit obligation	7.758.600
. Interest cost on accrued benefit obligation	387,900
II- Actuarial gain (loss) on accrued benefit obligation	
. Accrued benefit obligation	7,868,900
. Current service cost and employee contributions	122,500
. Past service costs	0
. Interest cost on accrued benefit obligation	387,900
. Benefit payments	-465,500
. Expected value of accrued benefit obligation	7.913.800
. Actual value of accrued benefit obligation	7.913.800
. Experience gain (loss)	0
II- Amortization of past service costs	
. Opening balance	0
. Past service costs this year	0
. Amortization for current year	0
. Closing balance	0
V- Determination of benefit cost	
. Current service cost	122,500
. Interest cost on accrued benefit obligation	387,900
. Past service costs	0
. Special event	0
. Benefit cost	510,400
V- Accrued benefit liability (asset)	
. Opening balance	7,868,900
. Benefit cost for the year	510,400
. Benefit payments	-465,500
. Amount recognized in SORIE	0
. Closing Balance	7,913,800
/I- Amount recognized in SORIE	
. Opening balance	0
. Gain (loss) for the year on obligation	0
. Gain (loss) for the year on asset	0
. Closing Balance	0

Hydro Ottawa Total - Post Retirement Life IAS

	IAS 19
January 1st	2011
ADDITIONAL DISCLOSURE ITEMS REQUIRED	

Reconciliation of Accrued Benefit Obligation

. Opening balance	7,868,900
. Current service cost	122,500
. Employees contributions	0
. Interest cost on accrued benefit obligation	387,900
. Benefit payments	-465,500
. Past service costs	0
. Actuarial loss (gain)	0
. Closing balance	7,913,800
Assumptions	

5.00%
3.10%
5.00%
3.10%

Hydro Ottawa Retirement Grant IAS

Townson, 1ct	IAS 19
January 1st	2011
Basic information	
Defined benefit portion (DB)	
. Accrued benefit obligation	
- Retirement Grant	809,100
. Total accrued benefit obligation (before past service costs)	809,100
. Past service costs (Beginning of year)	
- Retirement Grant	0
. Total past service costs (Beginning of year)	0
. Total accrued benefit obligation	809,100
. Fair value of plan assets	0
. Plan surplus (deficit)	-809,100
. Current service cost (employer)	
- Retirement Grant	36,800
- Total current service cost (employer)	36,800
. Average remaining service period	
- past service costs amortization	14.7
. Benefit Payments	
. Expected	
- Retirement Grant	133,100
- Total expected	133,100
. Actual	
- Retirement Grant	133,100
- Total actual	133,100
Significant assumptions	
. Benefit cost (current year)	
- Discount rate	5.00%
- Rate of Salaray escalation	3.10%

Hydro Ottawa Retirement Grant IAS

	January 1st	IAS 19 2011
	•	
I-	Interest cost on accrued benefit obligation	
	. Accrued benefit obligation	809,100
	. Current service cost and employee contributions	36,800
	. Past service costs	0
	. Benefit payments (mid-year)	-66,600
	. Average expected value of accrued benefit obligation	779,300
	. Interest cost on accrued benefit obligation	39,000
II-	Actuarial gain (loss) on accrued benefit obligation	
	. Accrued benefit obligation	809,100
	. Current service cost and employee contributions	36,800
	. Past service costs	0
	. Interest cost on accrued benefit obligation	39,000
	. Benefit payments	-133,100
	. Expected value of accrued benefit obligation	751,800
	. Actual value of accrued benefit obligation	751,800
	. Experience gain (loss)	0
III-	Amortization of past service costs	
	. Opening balance	0
	. Past service costs this year	0
	. Amortization for current year	0
	. Closing balance	0
IV-	Determination of benefit cost	
	. Current service cost	36,800
	. Interest cost on accrued benefit obligation	39,000
	. Past service costs	0
	. Special event	0
	. Benefit cost	75,800
V-	Accrued benefit liability (asset)	
	. Opening balance	809,100
	. Benefit cost for the year	75,800
	. Benefit payments	-133,100
	. Amount recognized in SORIE	0
	. Closing Balance	751,800
VI-	Amount recognized in SORIE	
	. Opening balance	0
	. Gain (loss) for the year on obligation	0
	. Gain (loss) for the year on asset	0
	Closing Balance	0
	5	

Hydro Ottawa Retirement Grant IAS

	IAS 19
January 1st	2011

ADDITIONAL DISCLOSURE ITEMS REQUIRED

Reconciliation of Accrued Benefit Obligation

. Opening balance	809,100
. Current service cost	36,800
. Employees contributions	0
. Interest cost on accrued benefit obligation	39,000
. Benefit payments	-133,100
. Past service costs	0
. Actuarial loss (gain)	0
. Closing balance	751,800

Assumptions

. Benefit cost (current year)	
- discount rate	5.00%
- rate of salary escalation	3.10%
. Accrued benefit obligation (end of year)	
- discount rate	5.00%
- rate of salary escalation	3.10%


HUMAN RESOURCE CONSULTING AND ADMINISTRATIVE SOLUTIONS SERVICES-CONSEILS EN RESSOURCES HUMAINES ET SOLUTIONS ADMINISTRATIVES Calgary • Fredericton • Halifax • Kitchener • London • Montréal • Ottawa • Pittsburgh • Québec • St. John's • Toronto • Vancouver www.morneaushepell.com

Tour de la Bourse — Place Victoria 800, rue du Square-Victoria, bureau 4000 C.P. 211 Montréal QC H4Z 0A4 tél. : 514.878.9090 • téléc. : 514.875.2673

January 14, 2011

HYDOTT.0008

CONFIDENTIAL

Mr. Wayne M. Ebata Corporate Controller **Hydro Ottawa Group of Companies** 3025 Albion Road North P.O. Box 8700 Ottawa ON K1G 3S4

Dear Mr. Ebata:

RE: Post Retirement Benefits Accounting Valuation as at December 31, 2010

Hydro Ottawa Holding Inc. retained the services of Morneau Shepell to perform the accounting valuation as at December 31, 2010, in order to determine the benefit cost and the accrued benefit obligation for Post Retirement Benefits other than pension. The Post Retirement Benefits considered for this valuation are the post retirement life insurance program and the retirement grant program of Hydro Ottawa Holding Inc. and its subsidiary (Hydro Ottawa).

The purpose of this letter is to report on the costs and obligations of the Post Retirement Benefits other than pension for the fiscal year ending December 31, 2010, and to provide the information to disclose in the financial statements of Hydro Ottawa Holding Inc. for the year ending December 31, 2010.

Assumptions and Method

The Corporation management selected the actuarial assumptions after consultation with the actuaries certifying this opinion. We do not express any opinion on such assumptions.

The main actuarial assumptions adopted in measuring the Corporation's year-end accrued benefit obligations were revised for the fiscal year ending December 31, 2010 and compare as follows with the assumptions used for the fiscal year ending December 31, 2009:

Assumptions		December 31, 2009	December 31, 2010
>	Discount rate	6.00%	5.00%
>	Salary increases (for all years)	3.10%	3.10%

A description of the actuarial assumptions and methodology used can be found in Appendix B of this document.

The projected benefit method prorated on service was used for the valuation and the determination of the benefit expense and was applied in a manner consistent with Section 3461 of the CICA Handbook.

Data and Plan Provisions

We used the membership data supplied by the company as of December 31, 2010 to calculate the actuarial benefit obligation as of December 31, 2010. A summary of membership data and plan provision are provided in Appendices C and D respectively of this document.

The benefit expense for 2010 was calculated using the results of the December 31, 2009 valuation and using an interest rate of 6.00%.

The membership data used for the December 31, 2009 valuation can be found in Appendix C.

The Unregistered Supplemental Pension (USP) program for widows which was valued during the previous years is now terminated since the last surviving recipient passed away in 2010.

Plan Assets

There are no plan assets for Post Retirement Benefits.

Changes since December 31, 2010

As of the date of this letter, we are not aware of any matter or event that has occurred since December 31, 2010 which would materially affect the results of our valuation.

Accrued Benefit Obligation as at December 31, 2010

Actuarial Value of Accrued Benefit Obligation and Current Service Cost

We have performed a complete actuarial valuation of the Post Retirement Benefits other than pension as of December 31, 2010 in order to calculate the Accrued Benefit Obligation. A valuation as of December 31, 2009 was used to calculate the 2010 benefit expense.

Value of Assets

There are no plan assets for Post Retirement Benefits.

Subsequent Events

To the best of our knowledge, no event has occurred that could have a significant effect on this valuation.

Results as at December 31, 2010

The following tables present the results of our projections. Detailed results are provided in Appendix A.

Table 1
Projection of Accrued Benefit Obligation from December 31, 2009 to December 31, 2010

		Life Insurance	Retirement Grant
Op	ening balance	\$6,641,600	\$843,300
>	Current service cost	\$85,400	\$36,800
>	Interest cost	\$390,300	\$48,300
>	Benefit payments	(\$388,600)	(\$51,800)
>	Assumed actuarial loss (gain)	\$1,140,200	(\$67,500)
Clo	osing balance	\$7,868,900	\$809,100

An actuarial loss of \$1,140,200 was realized as at December 31, 2010 for the post retirement life insurance program and a gain of \$67,500 was realized on the retirement grant program. These gains/(losses) arise from the difference between the previous complete actuarial valuation as at December 31, 2009 using an interest rate of 6.00% and the results of the complete actuarial valuation as at December 31, 2010 using an interest rate of 5.00%. The nature of these actuarial gains/(losses) is broken down in Table 2.

Table 2 Actuarial gain / (loss)

		Life Insurance	Retirement Grant
>	Change in demography	(\$151,800)	\$10,100
>	Change in discount rate assumption (from 6.00% to 5.00%)	(\$988,400)	(\$68,500)
>	Change in taxes and expenses factor ¹		\$125,900
То	tal	(\$1,140,200)	\$67,500

¹ A loading factor of 15% for taxes and expenses was removed from the retirement grant benefit valuation of December 31, 2010 since this plan is not considered as an insurance product. In previous years, this factor was taken into account.

Table 3

Financial Status as at December 31, 2010 of the Post Retirement Benefits other than Pension

	Life Insurance	Retirement Grant
Accrued benefit obligation	\$7,868,900	\$809,100
Fair value of assets	0	0
Excess (deficit)	(\$7,868,900)	(\$809,100)
Unamortized amounts		
> Actuarial (gains) losses	\$2,764,500	(\$16,800)
> Transitional (asset) obligation	0	0
> Past service cost	0_	0
Sub-total	\$2,764,500	(\$16,800)
Accrued benefit (asset) liability	\$5,104,400	\$825,900

Table 4 2010 Benefit Cost for Post Retirement Benefits other than Pension

	Life Insurance	Retirement Grant
Current service cost	\$85,400	\$36,800
Interest cost	\$390,300	\$48,300
Actuarial loss (gain) on obligation	\$1,140,200	(\$67,500)
Benefit cost before adjustment	\$1,615,900	\$17,600
Adjustments:		
> Amortization of loss (gain) vs year loss (gain)	(\$1,062,000)	\$67,500
> Amortization of the transitional obligation (asset)	0	0
Adjustments sub-total	(\$1,062,000)	\$67,500
Benefit cost	\$553,900	\$85,100

You will find in Appendix A a breakdown by reporting entities, the details required for presentation and disclosure with accordance to CICA Handbook Section 3461. We also include an estimate of the 2011 benefit cost.

Actuarial Certification

With respect to the Post Retirement Benefits plan for Employees of Hydro Ottawa Holding and its subsidiary (Hydro Ottawa).

We certify, to the best of our knowledge, the following:

- 1) The Post Retirement Benefits other than Pension for employees of Hydro Ottawa Holding Inc. are defined benefits for purposes of Section 3461 of the CICA Handbook.
- 2) An actuarial valuation for accounting purposes of the Post Retirement Benefits other than Pension was performed as at December 31, 2010.
- 3) Our valuation and extrapolation thereof have been made in accordance with the standards of the Canadian Institute of Actuaries. The financial statement items as at December 31, 2010 resulting from our valuation and extrapolation thereof have been prepared in accordance with generally accepted accounting principles. The projected benefit method prorated on service was used for the valuation and the determination of the Benefit Cost and was applied in a manner consistent with Section 3461 of the CICA Handbook.
- 4) We have confirmed with the plan administrator that the plan provisions are up to date as of the date of our valuation report and extrapolation thereof.
- 5) Our actuarial valuation and extrapolation thereof were performed using best-estimate assumptions developed by the plan sponsor and we do not express any opinion on such assumptions.
- 6) We have confirmed with the employer that, up to the date of the report, there are no amendments nor any extraordinary changes to the membership data which would materially affect the results of this actuarial valuation other than those listed in this report.
- 7) At least one person is a Fellow in good standing of the Canadian Institute of Actuaries, and as such, is familiar with the Institute's standards and subject to its disciplinary procedures.
- 8) We have been duly appointed by the plan sponsor to prepare the above Actuarial Extrapolation details at December 31, 2010 in accordance with the standards of the Canadian Institute of Actuaries.
- 9) We are aware that Ernst & Young intends to use this report as audit evidence.
- 10) We have used a materiality of \$100,000 for the accrued benefit obligation.

We hereby declare that, in our opinion:

- a) The data on which this valuation is based are sufficient and reliable for the purpose of the valuation.
- b) This valuation conforms to the requirements of the Canadian Institute of Chartered Accountants Handbook Section 3461.
- c) Emerging experience differing from the assumptions may result in gains or losses. These will be revealed in future actuarial valuations.
- d) This letter has been prepared and our opinion given in accordance with generally accepted actuarial practice.

We are available, at your convenience, to provide you with any additional information that you may require.

Best regards,

Nicolas Boutin, FCIA

Alige Digen

Philippe Grégoire

NB/DD

c.c. : Louis Bernatchez, Morneau Shepell

Encl.

Appendix A – Detailed calculations

The following pages provide the calculation details of this year's expense (income). In addition, closing values regarding accrued benefit asset (liability) and the value of the accrued benefit obligation for employee benefit plans covered by this report are also included. An estimate of the expense (income) for the ensuing year is provided, as well as a comparison with the previous year's results.

Hydro Ottawa	CAD GAAP	CAD GAAP
Energy - Post Retirement Life	Valuation	Valuation
January 1, to December 31,	2010	2011
Basic information		
Defined benefit portion (DB)		
. Total accrued benefit obligation (before past service costs)	34,500	44,300
. Total past service costs (Beginning of year)	0	0
. Total accrued benefit obligation	34,500	44,300
. Plan surplus (deficit)	-34,500	-44,300
. Market-related value of plan assets	0	0
. Asset smoothing period	0	0
. Current service cost (employer)		
- Life insurance	1,600	2,200
- Retirement gratuity	0	0
- Total	1,600	2,200
. Contributions by the company		
. Expected	1,000	1,000
. Actual	0	1,000
. Contributions by the employees		
. Expected	0	0
. Actual	0	0
. Average remaining service period		
- gains and losses amortization	17.4	17.5
- past service costs amortization	17.4	17.5
. Benefit Payments		
- Total expected	1,000	1,000
- Total actual	0	1,000
. Net transfert out (in)	0	0
Significant assumptions		
. Benefit cost (current year)		
- Discount rate	6.00%	5.00%
- Rate of salary escalation	3.10%	3.10%
IV- Interest cost on accrued benefit obligation		
. Accrued benefit obligation	34,500	44,300
. Current service cost and employee contributions	1,600	2,200
. Past service costs	0	0
. Benefit payments (mid-year)	-500	-500
. Average expected value of accrued benefit obligation	35,600	46,000
. Interest cost on accrued benefit obligation	2,100	2,300

Hydro Ottawa	CAD GAAP	CAD GAAP
Energy - Post Retirement Life	Valuation	Valuation
January 1, to December 31,	2010	2011
V- Actuarial gain (loss) on accrued benefit obligation		
. Accrued benefit obligation	34,500	44,300
. Current service cost and employee contributions	1,600	2,200
. Past service costs	0	0
. Interest cost on accrued benefit obligation	2,100	2,300
. Benefit payments	0	-1,000
. Expected value of accrued benefit obligation	38,200	47,800
. Actual value of accrued benefit obligation	44,300	47,800
. Experience gain (loss)	-6,100	0
VI- Required amortization of unamortized net actuarial gain (loss)		
. Accrued benefit obligation	34,500	44,300
. Value of plan assets	0	0
. 10% of the greater of obligation and assets	3,450	4,430
. Unamortized net actuarial gain (loss)	1,100	-5,100
. Less actuarial gain not yet in market-related value	0	0
. Sub-total	1,100	-5,100
. Amount subject to amortization	0	670
. Minimum required amortization	0	0
VII- Schedule of unamortized net actuarial gain (loss)		
. Opening balance	1,100	-5,100
. Net gain (loss) for the year	-6,100	0
. Amortization for current year	-100	300
. Closing balance	-5,100	-4,800
VIII- Amortization of past service costs		
. Opening balance	0	0
. Past service costs this year	0	0
. Amortization for current year	0	0
. Closing balance	0	0
X- Determination of benefit cost		
. Current service cost	1,600	2,200
. Interest cost on accrued benefit obligation	2,100	2,300
. Actual return on plan assets	0	0
. Actuarial loss (gain) on obligation	6,100	0
. Past service costs	0	0
. Special event	0	0
. Benefit cost before adjustments	9,800	4,500
. Adjustments		
- expected return vs actual return on plan assets	0	0
- amortization of loss (gain) vs year loss (gain) on obligation	-6,200	300
- amortization of past service costs vs year past service costs	0	0
- amortization of the transitional obligation (asset)	0	0
- sub-total	-6,200	300
. Change in valuation allowance	0	0
. Benefit cost for defined benefit	3,600	4,800
. Benefit cost for defined contribution	0	0
. Total benefit cost	3,600	4,800

Hydro Ottawa	CAD GAAP	CAD GAAP
Energy - Post Retirement Life	Valuation	Valuation
January 1, to December 31,	2010	2011
XI. Accrued benefit liability (asset)		
Opening balance	35 600	39 200
Benefit cost for the year	3 600	4 800
Contributions by the company	0	-1.000
. Closing Balance	39,200	43,000
ADDITIONAL DISCLOSURE ITEMS REQUIRED		
Reconciliation of Accrued Benefit Obligation		
. Opening balance	34,500	44,300
. Current service cost	1,600	2,200
. Employees contributions	0	0
. Interest cost on accrued benefit obligation	2,100	2,300
. Benefit payments	0	-1,000
. Past service costs	0	0
. Actuarial loss (gain)	6,100	0
. Special event	0	0
. Closing balance	44,300	47,800
Reconciliation of accrued benefit obligation		
to accrued benefit asset (liability) at end of year		
. Plan assets at fair value	0	0
. Accrued benefit obligation	44,300	47,800
. Plan surplus (deficit)	-44,300	-47,800
. Unamortized transitional obligation (asset)	0	0
. Unamortized past service costs	0	0
. Unamortized net actuarial loss (gain)	5,100	4,800
. Accrued benefit asset (liability)	-39,200	-43,000
. Valuation allowance	0	0
. Accrued benefit asset (liability) net of valuation allowance	-39,200	-43,000
Assumptions		
Benefit cost (current year)		
- discount rate	6.00%	5.00%
- rate of salary escalation	3.10%	3.00%
- health care cost trend	5.10/0	5.10/0
. Accrued benefit obligation (end of year)		
- discount rate	5.00%	5.00%
- rate of salary escalation	3.10%	3.10%

Hydro Ottawa	CAD GAAP	CAD GAAP
Hold Co Post Retirement Life	Valuation	Valuation
January 1, to December 31,	2010	2011
Basic information		
Defined benefit portion (DB)		
. Total accrued benefit obligation (before past service costs)	39,600	63,000
. Total past service costs (Beginning of year)	0	0
. Total accrued benefit obligation	39,600	63,000
. Plan surplus (deficit)	-39,600	-63,000
. Market-related value of plan assets	0	0
. Asset smoothing period	0	0
. Current service cost (employer)		
- Life insurance	9,100	13,300
- Retirement gratuity	0	
- Total	9,100	13,300
. Contributions by the company		
. Expected	0	0
Actual	0	0
Contributions by the employees		
Expected	0	0
Actual	0	0
Average remaining service period		-
- gains and losses amortization	17.8	16.2
- past service costs amortization	17.8	16.2
Benefit Payments		- • · -
- Total expected	0	0
- Total actual	0	0
. Net transfert out (in)	0	0
Significant assumptions		
. Benefit cost (current year)		
- Discount rate	6.00%	5.00%
- Rate of salary escalation	3.10%	3.10%
IV- Interest cost on accrued benefit obligation		
. Accrued benefit obligation	39,600	63,000
. Current service cost and employee contributions	9,100	13,300
. Past service costs	0	0
. Benefit payments (mid-year)	0	0
. Average expected value of accrued benefit obligation	48,700	76,300
. Interest cost on accrued benefit obligation	2,900	3,800

Hydro Ottawa Hold Co Post Retirement Life January 1, to December 31,	CAD GAAP Valuation 2010	CAD GAAP Valuation 2011
V. Actuarial gain (loss) on accrued benefit obligation		
Accrued henefit obligation	39,600	63,000
Current service cost and employee contributions	9,100	13 300
. Past service costs	0	10,000
. Interest cost on accrued benefit obligation	2,900	3,800
. Benefit payments	0	0
. Expected value of accrued benefit obligation	51,600	80,100
. Actual value of accrued benefit obligation	63,000	80,100
. Experience gain (loss)	-11,400	0
VI- Required amortization of unamortized net actuarial gain (loss)		
. Accrued benefit obligation	39,600	63,000
. Value of plan assets	0	0
. 10% of the greater of obligation and assets	3,960	6,300
. Unamortized net actuarial gain (loss)	86,400	71,000
. Less actuarial gain not yet in market-related value	0	0
. Sub-total	86,400	71,000
. Amount subject to amortization	82,440	64,700
. Minimum required amortization	-4,600	-4,000
VII- Schedule of unamortized net actuarial gain (loss)		
. Opening balance	86,400	71,000
. Net gain (loss) for the year	-11,400	0
. Amortization for current year	-4,000	-3,800
. Closing balance	71,000	67,200
VIII- Amortization of past service costs		
. Opening balance	0	0
. Past service costs this year	0	0
. Amortization for current year	0	0
. Closing balance	0	0
X- Determination of benefit cost		
. Current service cost	9,100	13,300
. Interest cost on accrued benefit obligation	2,900	3,800
. Actual return on plan assets	0	0
. Actuarial loss (gain) on obligation	11,400	0
. Past service costs	0	0
. Special event	0	0
. Benefit cost before adjustments	23,400	17,100
. Adjustments	0	0
- expected return vs actual return on plan assets	-15 400	-3 800
- amortization of nast service costs vs year nast service costs	-13,400	-3,800
- amortization of the transitional obligation (asset)	0	0
- sub-total	-15.400	-3.800
. Change in valuation allowance	0	0
. Benefit cost for defined benefit	8,000	13,300
Benefit cost for defined contribution	Ω	0
. Total benefit cost	8.000	13.300

Hvdro Ottawa	CAD GAAP	CAD GAAP
Hold Co Post Retirement Life	Valuation	Valuation
January 1, to December 31,	2010	2011
XI- Accrued benefit liability (asset)		
. Opening balance	126,000	134,000
. Benefit cost for the year	8,000	13,300
. Contributions by the company	0	0
. Closing Balance	134,000	147,300
ADDITIONAL DISCLOSURE ITEMS REQUIRED		
Reconciliation of Accrued Benefit Obligation		
. Opening balance	39,600	63,000
. Current service cost	9,100	13,300
. Employees contributions	0	0
. Interest cost on accrued benefit obligation	2,900	3,800
. Benefit payments	0	0
. Past service costs	0	0
. Actuarial loss (gain)	11,400	0
. Special event	0	0
. Closing balance	63,000	80,100
Reconciliation of accrued benefit obligation		
to accrued benefit asset (liability) at end of year		
. Plan assets at fair value	0	0
. Accrued benefit obligation	63,000	80,100
. Plan surplus (deficit)	-63,000	-80,100
. Unamortized transitional obligation (asset)	0	0
. Unamortized past service costs	0	0
. Unamortized net actuarial loss (gain)	-71,000	-67,200
. Accrued benefit asset (liability)	-134,000	-147,300
. Valuation allowance	0	0
. Accrued benefit asset (liability) net of valuation allowance	-134,000	-147,300
Assumptions		
. Benefit cost (current year)		
- discount rate	6.00%	5.00%
- rate of salary escalation	3.10%	3.10%
- health care cost trend		
. Accrued benefit obligation (end of year)		
- discount rate	5.00%	5.00%
- rate of salary escalation	3.10%	3.10%

Hydro Ottawa		CAD GAAP	CAD GAAP	
LDC -	Post Retirement Life	Valuation	Valuation	
	January 1, to December 51,	2010	2011	
Basic i	nformation			
	Defined benefit portion (DB)			
	. Total accrued benefit obligation (before past service costs)	6,567,500	7,761,600	
	. Total past service costs (Beginning of year)	0	0	
	. Total accrued benefit obligation	6,567,500	7,761,600	
	. Plan surplus (deficit)	-6,567,500	-7,761,600	
	. Market-related value of plan assets	0	0	
	. Asset smoothing period	0	0	
	. Current service cost (employer)			
	- Life insurance	74,700	107,000	
	- Retirement gratuity	0	0	
	- Total	74,700	107,000	
	. Contributions by the company			
	. Expected	443,100	464,500	
	. Actual	388,600	464,500	
	. Contributions by the employees			
	. Expected	0	0	
	. Actual	0	0	
	. Average remaining service period			
	- gains and losses amortization	13.3	13.1	
	- past service costs amortization	13.3	13.1	
	. Benefit Payments			
	- Total expected	443,100	464,500	
	- Total actual	388,600	464,500	
	. Net transfert out (in)	0	0	
	Significant assumptions Benefit cost (current year)			
	Discount rate	6.00%	5 00%	
	- Discount rate Pate of salary assolution	3 10%	3.10%	
	- Kate of salary escalation	5.10%	5.10%	
IV	Interest cost on accrued benefit obligation			
	. Accrued benefit obligation	6,567,500	7,761,600	
	. Current service cost and employee contributions	74,700	107,000	
	. Past service costs	0	0	
	. Benefit payments (mid-year)	-221,600	-232,300	
	. Average expected value of accrued benefit obligation	6,420,600	7,636,300	
	. Interest cost on accrued benefit obligation	385,200	381,800	
v	Actuarial gain (loss) on accrued benefit obligation			
	. Accrued benefit obligation	6,567,500	7,761,600	
	. Current service cost and employee contributions	74,700	107,000	
	. Past service costs	0	0	
	. Interest cost on accrued benefit obligation	385,200	381,800	
	. Benefit payments	-388,600	-464,500	
	. Expected value of accrued benefit obligation	6,638,800	7,785,900	
	. Actual value of accrued benefit obligation	7,761,600	7,785,900	
	. Experience gain (loss)	-1,122,800	0	

Hydro Ottawa LDC - Post Retirement Life January 1, to December 31,	CAD GAAP Valuation 2010	CAD GAAP Valuation 2011
VI- Required amortization of unamortized net actuarial gain (loss)		
. Accrued benefit obligation	6,567,500	7,761,600
. Value of plan assets	0	0
. 10% of the greater of obligation and assets	656,750	776,160
. Unamortized net actuarial gain (loss)	-1,790,000	-2,830,600
. Less actuarial gain not yet in market-related value	0	0
. Sub-total	-1,790,000	-2,830,600
. Amount subject to amortization	1,133,250	2,054,440
. Minimum required amortization	85,400	156,800
VII- Schedule of unamortized net actuarial gain (loss)		
. Opening balance	-1,790,000	-2,830,600
. Net gain (loss) for the year	-1,122,800	0
. Special adjustment to match ABL	0	0
. Amortization for current year	82,200	152,300
. Closing balance	-2,830,600	-2,678,300
VIII- Amortization of past service costs		
. Opening balance	0	0
. Past service costs this year	0	0
. Amortization for current year	0	0
. Closing balance	0	0
X- Determination of benefit cost		
. Current service cost	74,700	107,000
. Interest cost on accrued benefit obligation	385,200	381,800
. Actual return on plan assets	0	0
. Actuarial loss (gain) on obligation	1,122,800	0
. Past service costs	0	0
. Special event	0	0
. Benefit cost before adjustments	1,582,700	488,800
. Adjustments	0	0
- expected return vs actual return on plan assets	1 040 600	152,200
- amortization of loss (gain) vs year loss (gain) on obligation	-1,040,600	152,300
- amortization of the transitional ablication (access)	0	0
- amoruzation of the transitional obligation (asset)	1.040.000	152 200
- SUD-TOTAL	-1,040,600	152,300
. Change in valuation allowance	542,100	0
. Benefit cost for defined benefit	542,100	641,100
. Benefit cost for defined contribution	0	0
. Total benefit cost	542,100	641,100

Hvdro Ottawa	CAD GAAP	CAD GAAP	
LDC - Post Retirement Life	Valuation	Valuation	
January 1, to December 31,	2010	2011	
Al- Accrued benefit hability (asset)	4 777 400	4 020 000	
. Opening balance	4,777,400	4,930,900	
Special adjustment to match API	542,100	041,100	
Contributions by the commonly	288.600	464.500	
Closing Balance	-388,000	-404,300	
. Closing Balance	4,950,900	5,107,500	
ADDITIONAL DISCLOSURE ITEMS REQUIRED			
Reconciliation of Accrued Benefit Obligation			
. Opening balance	6,567,500	7,761,600	
. Current service cost	74,700	107,000	
. Employees contributions	0	0	
. Interest cost on accrued benefit obligation	385,200	381,800	
. Benefit payments	-388,600	-464,500	
. Past service costs	0	0	
. Actuarial loss (gain)	1,122,800	0	
. Special event	0	0	
. Closing balance	7,761,600	7,785,900	
Reconciliation of accrued benefit obligation			
to accrued benefit asset (liability) at end of year			
. Plan assets at fair value	0	0	
. Accrued benefit obligation	7,761,600	7,785,900	
. Plan surplus (deficit)	-7,761,600	-7,785,900	
. Unamortized transitional obligation (asset)	0	0	
. Unamortized past service costs	0	0	
. Unamortized net actuarial loss (gain)	2,830,600	2,678,300	
. Accrued benefit asset (liability)	-4,931,000	-5,107,600	
. Valuation allowance	0	0	
. Accrued benefit asset (liability) net of valuation allowance	-4,931,000	-5,107,600	
Assumptions			
Benefit cost (current vear)			
- discount rate	6.00%	5.00%	
- rate of salary escalation	3.10%	3.10%	
- health care cost trend	212070	2.1070	
. Accrued benefit obligation (end of year)			
- discount rate	5.00%	5.00%	
- rate of salary escalation	3.10%	3.10%	

Hydro Ottawa	CAD GAAP	CAD GAAP	
Total - Post Retirement Life	Valuation	Valuation	
January 1, to December 31,	2010	2011	
Basic information			
Defined benefit portion (DB)			
. Total accrued benefit obligation (before past service costs)	6,641,600	7,868,900	
. Total past service costs (Beginning of year)	0	0	
. Total accrued benefit obligation	6,641,600	7,868,900	
. Plan surplus (deficit)	-6,641,600	-7,868,900	
. Market-related value of plan assets	0	0	
. Asset smoothing period	0	0	
. Current service cost (employer)			
- Life insurance	85,400	122,500	
- Retirement gratuity	0	0	
- Total	85,400	122,500	
. Contributions by the company			
. Expected	444,100	465,500	
. Actual	388,600	465,500	
. Contributions by the employees			
. Expected	0	0	
. Actual	0	0	
. Average remaining service period			
- gains and losses amortization	13.3	13.3	
- past service costs amortization	13.3	13.3	
. Benefit Payments			
- Total expected	444,100	465,500	
- Total actual	388.600	465,500	
. Net transfert out (in)	0	0	
Significant assumptions			
. Benefit cost (current year)			
- Discount rate	6.00%	5.00%	
- Rate of salary escalation	3.10%	3.10%	
IV- Interest cost on accrued benefit obligation			
Accrued benefit obligation	6 641 600	7 868 900	
Current service cost and employee contributions	85 400	122 500	
Past service costs	0.5,400	122,500	
Benefit payments (mid-year)	-222,100	-232 800	
Average expected value of accrued benefit obligation	6 504 900	7 758 600	
Interest cost on accrued benefit obligation	390,300	387 900	
cost on accraca concilit congation	2,000	201,900	

Hyd	lro Ottawa	CAD GAAP	CAD GAAP	
Total - Post Retirement Life		Valuation 2010	Valuation	
	January 1, to December 31,	2010	2011	
V-	Actuarial gain (loss) on accrued benefit obligation			
	. Accrued benefit obligation	6,641,600	7,868,900	
	. Current service cost and employee contributions	85,400	122,500	
	. Past service costs	0	0	
	. Interest cost on accrued benefit obligation	390,300	387,900	
	. Benefit payments	-388,600	-465,500	
	. Expected value of accrued benefit obligation	6,728,700	7,913,800	
	. Actual value of accrued benefit obligation	7,868,900	7,913,800	
	. Experience gain (loss)	-1,140,200	0	
VI-	Required amortization of unamortized net actuarial gain (loss)			
	Accrued benefit obligation	6 641 600	7 868 900	
	Value of plan assets	0,011,000	0	
	. 10% of the greater of obligation and assets	664,160	786,890	
	Unamentized not actuarial pain (lass)	1 702 500	2 764 500	
	Unamortized net actuarial gain (loss)	-1,702,500	-2,764,500	
	. Less actuarial gain not yet in market-related value	0	0	
	. Sub-total	-1,702,500	-2,764,500	
	. Amount subject to amortization	1,038,340	1,977,610	
	. Minimum required amortization	78,200	148,700	
VII-	Schedule of unamortized net actuarial gain (loss)			
	. Opening balance	-1,702,500	-2,764,500	
	. Net gain (loss) for the year	-1,140,200	0	
	. Special adjustment to match ABL	0		
	. Amortization for current year	78,200	148,700	
	. Final Amortization	0	0	
	. Closing balance	-2,764,500	-2,615,800	
VIII-	Amortization of past service costs			
V III-	Opening balance	0	0	
	Past service costs this year	0	0	
	A mortization for current year	0	0	
	Clasing halange	0	0	
	. Closing balance	0	0	
Х-	Determination of benefit cost			
	. Current service cost	85,400	122,500	
	. Interest cost on accrued benefit obligation	390,300	387,900	
	. Actual return on plan assets	0	0	
	. Actuarial loss (gain) on obligation	1,140,200	0	
	. Past service costs	0	0	
	. Special event	0	0	
	. Benefit cost before adjustments	1,615,900	510,400	
	. Adjustments	_	_	
	 expected return vs actual return on plan assets 	0	0	
	- amortization of loss (gain) vs year loss (gain) on obligation	-1,062,000	148,700	
	- amortization of past service costs vs year past service costs	0	0	
	- amortization of the transitional obligation (asset)	0	0	
	- sub-total	-1,062,000	148,700	
	. Change in valuation allowance	0	0	
	. Benefit cost for defined benefit	553,900	659,100	
	Benefit cost for defined contribution	Ο	Ο	
	Total benefit cost	553 900	659 100	
	. Total benefit cost	555,700	059,100	

Hydro Ottawa	CADGAAP	CAD GAAP
Total - Post Ratirement Life	Valuation	Valuation
I otal - 1 ost Kell ement Life January 1 to December 31	2010	valuation 2011
sandary 1, to becember 51,	2010	2011
XI- Accrued benefit liability (asset)		
. Opening balance	4,939,000	5,104,300
. Benefit cost for the year	553,900	659,100
. Special adjustment to match ABL	0	0
. Contributions by the company	-388,600	-465,500
. Closing Balance	5,104,300	5,297,900
ADDITIONAL DISCLOSURE ITEMS REQUIRED		
Reconciliation of Accrued Benefit Obligation		
. Opening balance	6,641,600	7,868,900
. Current service cost	85,400	122,500
. Employees contributions	0	0
. Interest cost on accrued benefit obligation	390,300	387,900
. Benefit payments	-388,600	-465,500
. Past service costs	0	0
. Actuarial loss (gain)	1,140,200	0
. Special event	0	0
. Closing balance	7,868,900	7,913,800
Reconciliation of accrued benefit obligation		
to accrued benefit asset (liability) at end of year		
. Plan assets at fair value	0	0
. Accrued benefit obligation	7,868,900	7,913,800
. Plan surplus (deficit)	-7,868,900	-7,913,800
. Unamortized transitional obligation (asset)	0	0
. Unamortized past service costs	0	0
. Unamortized net actuarial loss (gain)	2,764,500	2,615,800
. Accrued benefit asset (liability)	-5,104,400	-5,298,000
. Valuation allowance	0	0
. Accrued benefit asset (liability) net of valuation allowance	-5,104,400	-5,298,000
Assumptions		
. Benefit cost (current year)		
- discount rate	6.00%	5.00%
- rate of salary escalation	3.10%	3.10%
- health care cost trend		
. Accrued benefit obligation (end of year)		
- discount rate	5.00%	5.00%
- rate of salary escalation	3.10%	3.10%

HY Retire	ement Grant January 1, to December 31,	CAD GAAP Valuation 2010	CAD GAAP Valuation 2011
Basic i	nformation		
	Defined benefit portion (DB)		
	. Total accrued benefit obligation (before past service costs)	843,300	809,100
	. Total past service costs (Beginning of year)	0	0
	. Total accrued benefit obligation	843,300	809,100
	. Plan surplus (deficit)	-843,300	-809,100
	. Market-related value of plan assets	0	0
	. Asset smoothing period	0	0
	. Current service cost (employer)		
	- Life insurance	0	0
	- Retirement gratuity	36,800	36,800
	- Total	36,800	36,800
	. Contributions by the company		
	. Expected	148,900	133,100
	Actual	51.800	133,100
	. Contributions by the employees		,
	. Expected	0	0
	. Actual	0	0
	. Average remaining service period		
	- gains and losses amortization	13.3	14.7
	- past service costs amortization	13.3	14.7
	. Benefit Payments		
	- Total expected	148,900	133,100
	- Total actual	51,800	133,100
	. Net transfert out (in)	0	0
	Significant assumptions		
	. Benefit cost (current year)	< 000V	5.000/
	- Discount rate	6.00%	5.00%
	- Kate of salary escalation	5.10%	3.10%
Ι	- Actual return on plan assets		
	. Contributions	0	0
	. Sub-total	0	0
11	- Expected return on plan assets	0	0
	Denotity neurona (mid-year)	0	0
	Augments (mid-year)	0	0
	. Average expected value of plan assets	0	0
	. Expected return on plan assets	0	0
IV	- Interest cost on accrued benefit obligation	0.40.000	000 100
	. Accrued benefit obligation	843,300	809,100
	. Current service cost and employee contributions	36,800	36,800
	. Past service costs	0	0
	. Benefit payments (mid-year)	-/4,500	-66,600
	Average expected value of accrued benefit obligation	805,600	779,300
	. Interest cost on accrued benefit obligation	48,300	39,000

.ya tiren	FO OLLAWA nent Grant January 1, to December 31,	CAD GAAP Valuation 2010	CAD GAAP Valuation 2011
v-	Actuarial gain (loss) on accrued benefit obligation		
	Accrued henefit obligation	843 300	809 100
	Current service cost and employee contributions	36.800	36.800
	Past service costs	0	0
	Interest cost on accrued benefit obligation	48 300	39,000
	Benefit navments	-51.800	-133,100
	Expected value of accrued benefit obligation	876.600	751 800
	Actual value of accrued benefit obligation	809,100	751,800
	. Experience gain (loss)	67,500	0
VI-	Required amortization of unamortized net actuarial gain (loss)		
	. Accrued benefit obligation	843,300	809,100
	. Value of plan assets	0	0
	. 10% of the greater of obligation and assets	84,330	80,910
	. Unamortized net actuarial gain (loss)	-50,700	16,800
	. Less actuarial gain not yet in market-related value	0	0
	. Sub-total	-50,700	16,800
	. Amount subject to amortization	0	0
	. Minimum required amortization	0	0
/II-	Schedule of unamortized net actuarial gain (loss)		
	. Opening balance	-50,700	16,800
	. Net gain (loss) for the year	67,500	0
	. Special adjustment to match ABL	0	
	. Amortization for current year	0	0
	. Closing balance	16,800	16,800
III-	Amortization of past service costs		
	. Opening balance	0	0
	. Past service costs this year	0	0
	. Amortization for current year	0	0
	. Closing balance	0	0
X-	Determination of benefit cost		
	. Current service cost	36,800	36,800
	. Interest cost on accrued benefit obligation	48,300	39,000
	. Actual return on plan assets	0	0
	. Actuarial loss (gain) on obligation	-67,500	0
	. Past service costs	0	0
	. Special event	0	0
	. Benefit cost before adjustments	17,600	75,800
	Adjustments	0	0
	- amortization of loss (gain) vs year loss (gain) on obligation	67 500	0
	- amortization of past service costs vs year past service costs	07,500	0
	- amortization of the transitional obligation (asset)	0	0
	- sub-total	67 500	0
	Change in valuation allowance	07,500	0
	Renefit cost for defined benefit	85 100	75 800
		65,100	75,800
	. Benefit cost for defined contribution	0	0
		05 100	TF 000

Hvdro Ottawa	CAD GAAP	CAD GAAP	
Retirement Grant	Valuation	Valuation	
January 1, to December 31,	2010	2011	
XI- Accrued benefit liability (asset)			
. Opening balance	792,600	825,900	
. Benefit cost for the year	85,100	75,800	
Special adjustment to match ABL	0		
. Contributions by the company	-51,800	-133,100	
. Closing Balance	825,900	768,600	
DDITIONAL DISCLOSURE ITEMS REQUIRED			
econciliation of Accrued Benefit Obligation			
. Opening balance	843,300	809,100	
. Current service cost	36,800	36,800	
. Employees contributions	0	0	
. Interest cost on accrued benefit obligation	48,300	39,000	
. Benefit payments	-51,800	-133,100	
. Past service costs	0	C	
. Actuarial loss (gain)	-67,500	C	
. Special event	0	0	
. Closing balance	809,100	751,800	
econciliation of accrued benefit obligation			
to accrued benefit asset (liability) at end of year			
. Plan assets at fair value	0	0	
. Accrued benefit obligation	809,100	751,800	
. Plan surplus (deficit)	-809,100	-751,800	
. Unamortized transitional obligation (asset)	0	0	
. Unamortized past service costs	0	0	
. Unamortized net actuarial loss (gain)	-16,800	-16,800	
. Accrued benefit asset (liability)	-825,900	-768,600	
. Valuation allowance	0	0	
. Accrued benefit asset (liability) net of valuation allowance	-825,900	-768,600	
ssumptions			
. Benefit cost (current year)			
- discount rate	6.00%	5.00%	
- rate of salary escalation	3.10%	3.10%	
- health care cost trend			
. Accrued benefit obligation (end of year)			
- discount rate	5.00%	5.00%	
	2 100/	2 100/	

Appendix B – Actuarial Assumptions and Methods

Actuarial Cost Method

For all active employees, the accrued benefit obligation and the current service cost were calculated using the "projected benefit method pro rated on service". According to this method, the accrued benefit obligation is equal to the actuarial present value of all future benefits (net of retiree cost sharing), taking into account the assumptions described below, multiplied by the ratio of an employee's service at the valuation date to total service at the full eligibility date.

The current service cost for a period for each member who has not reached the full eligibility date is equal to the actuarial present value of benefits attributed to the employee divided by the total service at full eligibility date.

For each member who is at or past the full eligibility date and each pensioner, the accrued benefit obligation is determined as the actuarial present value of all future post-retirement benefits which will be paid on their behalf. The current service cost for members at or past the full eligibility date and for pensioners is zero.

Actuarial Assumptions

The actuarial assumptions used for the valuation are summarized in the following tables. All rates and percentages are annualized unless otherwise noted.

Table A.1

Actuarial Assumptions – Economic Factors		
	Discount rate	
2010 benefit expense	6.00%	
Accrued benefit obligation as at December 31, 2010	5.00%	
2011 estimated benefit expense	5.00%	

	Demographic Fa			
	Decembe	er 31, 2009	Decembe	er 31, 2010
Mortality	100% UPS	94-G - male	100% UPS	94-G - male
	100% UP94	4-G - female	100% UP9	4-G - female
Termination of employment	Age		Age	
	20	10.0%	20	10.0%
	25	7.5%	25	7.5%
	30	5.0%	30	5.0%
	35	3.4%	35	3.4%
	40	2.4%	40	2.4%
	45	1.5%	45	1.5%
	50	0.0%	50	0.0%
Retirement age	Upon attainment of Rule of 90; or		Upon attainment of Rule of 90; or	
	Completion of service subject of 55, and a n	of 30 years of t to a minimum naximum of 65	Completion service subject of 55, and a r	of 30 years of ct to a minimum naximum of 65
Salary increases	3.1	0%	3.2	10%
Expenses and taxes	15.	00%	15.	00%
Age difference between spouses	veen Women are 3 years younger Women are 3 years than men than men		years younger	

Actuarial Assumptions – Demographic Factors

Appendix C – Membership Data

Description of Membership Data

We have based our valuation on data supplied to us by Hydro Ottawa in December 2010.

We have performed tests to verify reasonableness and internal consistency and are satisfied that the data is sufficient and reliable for the purposes of this valuation.

Statistics on the data are shown in the tables below:

Su	Immary of Membership Data	December 2009	December 2010
Ac	tive Employees		
>	Number	579	596
>	Average age	44.1	44.4
>	Average service	14.4	14.4
>	Average salary	\$72,500	\$75,100
Re	etirees		
>	Number	293	296
>	Average age	70.3	70.6
>	Average insurance in force	\$34,200	\$34,500

Table C.1 – Life Insurance Program

Table C.2 –	Retirement	Grant	Program
-------------	------------	-------	---------

Sum	mary of Membership Data	December 2009	December 2010
Activ	ve Employees		
>	Number	405	409
>	Average age	43.3	43.4
>	Average service	15.2	15.2
>	Average salary	\$63,900	\$66,100

Appendix D – Summary of Plan Provisions

The following is a summary of the main provisions of post-retirement benefits for Hydro Ottawa. This summary is based on information provided by Hydro Ottawa.

Co	Cost sharing			100% employer paid
Re	tired	mem	bers	
>	Dep	penda	nt coverage	None
>	 Upon termination other than retirement or disability 		nination other than retirement or	No coverage
>	> Upon retirement		rement	
	> With less than 10 years of service		less than 10 years of service	Flat coverage of \$2,000
	 With more than 10 years of service, and 		more than 10 years of service,	
		-	Hired before May 1, 1967	70% of the amount for which you were insured, prior to retirment.
		-	Hired after May 1, 1967 and	
			 Elected coverage under Options 2, 3, or 4 at any time prior to retirement 	50% of final annual earnings reducing by 2.5% at the end of each year following retirement for ten years, to a minimum of 25%
			 Elected coverage under Option 1 	50% of final annual earnings

>	Retirement Grant		
		Eligibility: If 25 years of service	at retirement
		a) four week's pay or	
		b) a retirement grant	
		The retirement grant is based on the employee's sick lear record and is calculated as follows;	
		The amount of the retirement g (to a maximum of 35 days) mul factor. Allowance will be made illness (sixty working days) from	rant is the years of service tiplied by the sick leave of exclude one three-mont n the calculation.
		Average Sick Leave usage	Eligibility
		per year	
		4.0 days 100%	
		4.5 days	80%
		5.0 days	60%
		5.5 days	40%
		6.0 days	20%
		Over 6.0 days	0%
pple	mental pension plan (Widow progra	am)	
>	Unregistered pension supplement payable to former retirees of Hydro Ottawa and their spouses.	The program is now terminated recipient passed away in 2010.	since the last surviving

Appendix E – Statement of Conformity

With regards to the post retirement benefits valuation at December 31, 2010, I confirm to the best of our knowledge that:

- > Data relevant to employees and beneficiaries transmitted to Morneau Shepell are complete and exact.
- > Complete information on the plan and its modifications was given to Morneau Shepell.
- > I am not aware of any event or major change in plan participation, subsequent to the date at which the above-mentioned information was compiled which might have a material effect on results.

Hydro Ottawa Group of Companies

Signature

Name

Title

Date



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #14 Filed: 2011-09-08 Page 1 of 1

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #92 - Ref: Exh J1-1-1
7	IASB has recently amended IAS 19 Employee Benefits with the requirement for adoption
8	on January 1, 2013. Early adoption is permitted. The revision includes the elimination of
9	the option to defer the recognition of gains and losses, known as the "corridor method".
10	
11	Please confirm if Hydro Ottawa is an early adopter of the amended IAS 19. If so, please
12	indicate where the impacts of this early adoption are incorporated in the rate application.
13	
14	Response
15	
16	Hydro Ottawa Limited has no plans to early adopt the amended version of IAS 19
17	therefore no impacts of early adoption have been incorporated in the rate application.
18	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #15 Filed: 2011-09-08 Page 1 of 2

1	11	. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2		
3	lss	sue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	ар	propriate?
5		
6	Bo	ard Staff Question #93 - Ref: Exh D5-1-1, p4 and Exh J1-1-1; Ref: Report of the
7	<u>Bo</u>	ard, Transition to IFRS, EB-2008-0408
8	Hy	dro Ottawa has asset retirement obligations related to station equipment and line
9	tra	nsformers. The 2010 net book value of the asset retirement obligations is \$704,757.
10		
11	IFF	RS requires that asset retirement obligations include estimates of the cost of
12	CO	nstructive obligations, which was not required under CGAAP, and revaluation of those
13	ob	ligations during the life of the assets. P40 of the Board Report states:
14		Utilities shall identify separately in their rate applications the depreciation
15		expense associated with amortizing asset retirement costs and the accretion
16		expense associated with the amortization of the asset retirement obligations. The
17		Board will assess these costs independently of other amortization costs to
18		determine the portion, if any, of these costs that should be recovered in revenue
19		requirement.
20	a)	Has Hydro Ottawa identified the cost of constructive obligations for asset retirement
21		obligations? If so, please quantify the changes due to the adoption of IFRS for the
22		test year and bridge year. If not, please provide the reasons for not doing so and the
23		plan to address the matter.
24	b)	For the AROs identified above, please provide the depreciation expenses and
25		accretion expenses and how these expense are currently included in the rate
26		application.
27		
28		



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #15 Filed: 2011-09-08 Page 2 of 2

1 Response

2		
3	a)	Hydro Ottawa Limited completed a review of constructive obligations as defined in
4		IAS 37 and did not identify any additional asset retirement obligations. The only
5		asset retirement obligations which exist are those currently required under CGAAP.
6		
7	b)	Depreciation expense is shown in Exhibit D5-1-1, page 4, and is included in
8		Amortization Expense for rate application purposes. The 2010 accretion expense
9		was \$9k. No accretion expense was included in the rate application as it is expected
10		to remain immaterial.
11		
12		



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.1 Interrogatory #16 Filed: 2011-09-08 Page 1 of 1

1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Board Staff Question #94 - Ref: Exh J1-1-1; Ref: Report of the Board, Transition to
7	IFRS, EB-2008-0408 (Board Staff #94)
8	P41 of the Board Report states:
9	Where for financial reporting purposes under IFRS a utility has recorded an asset
10	impairment loss, for rate application filings such losses shall be reclassified to
11	PP&E and identified separately to allow consideration of whether and how such
12	amounts are to be reflected in rates.
13	
14	Please disclose any asset impairment loss recorded under IFRS which should be
15	reclassified to PP&E. Please describe:
16	a) The nature of the losses;
17	b) The amounts of the losses; and
18	c) Whether and how such amounts are to be reflected in rates.
19	
20	Response
21	
22	Hydro Ottawa Limited has not recorded any asset impairment losses to date and none
23	are forecasted for the test year.
24	



1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.1 - Is the proposed revenue requirement determined using modified IFRS
4	appropriate?
5	
6	Energy Probe Question #65 - Ref: Exhibit J1, Tab 1, Sch. 1, page 7
7	Please provide a copy of the internal analysis that Hydro Ottawa used to determine its
8	components and lives for depreciation purposes.
9	
10	Response
11	
12	Please refer to K11-1-1 (Board Staff #79).
13	



1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS
2	
3	Issue 11.2 – Are the proposed new MIRFS deferral and variance accounts
4	appropriate?
5	
6	Board Staff Question #95 - Ref: Exh J4-1-1, Attachment AZ and Staff Discussion Paper
7	 Transition to IFRS – Implementation in an IRM Environment (March 2011)
8	The staff discussion paper states:
9	
10	The proposed PP&E deferral account is to cover differences arising only as a
11	result of the accounting policy changes caused by the transition from CGAAP to
12	MIFRSWhile the differences are recorded annually, the rate base is adjusted
13	to MIFRS only at the next rebasing. The rate base then being adjusted is the
14	opening rate base in the year of rebasing.
15	
16	Hydro Ottawa is requesting a PP&E deferral account to capture the difference in the
17	closing Net Book Value ("NBV") of PP&E between CGAAP and MIFRS as at
18	December 31, 2011. In Attachment AZ, Hydro Ottawa presented the calculation of the
19	difference of \$427k in the PP&E deferral account.
20	
21	Please confirm if Hydro Ottawa has included the \$427k adjustment into its rate base. If
22	so, please provide the reference as to where this amount is included. If not, please
23	provide an updated rate base calculation with the adjustment included.
24	
25	Response
26	
27	Hydro Ottawa Limited has not included the \$427k adjustment into its rate base, however
28	the revenue requirement related to this increase in rate base has been included in the
29	total revenue requirement as shown in Table 2 of Exhibit J1-1-1.
30	



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.2 Interrogatory #1 Filed: 2011-09-08 Page 2 of 2

- 1 An updated rate base calculation with the \$427k adjustment is shown in the following
- 2 Table 1, which is an update to Table 1 of Exhibit J1-1-1.
- 3
- 4

Table 1 – MIFRS Impact to Rate Base

Rate Base	CGAAP		MIFRS	
	\$0	00	\$0	00
2011 Net Fixed Assets	\$550,361		\$549,935	
2012 Net Fixed Assets	592,707		592,002	
Average Net Fixed Assets		\$571,534		\$570,968
Cost of Power	680,576		680,576	
OM&A	65,698		75,988	
Working Capital Requirement @ 14.2%		105,971		107,432
Adjustment to Rate Base related to MIFRS				427
Rate Base		\$677,505		\$678,827
Increase in Rate Base				\$1,322

5



1	11	. MODIFIE	D INTERNATIONAL FI	NANCIAL REPORTING STANDARDS
2				
3	Issue 11.2 – Are the proposed new MIRFS deferral and variance accounts			
4	ар	propriate	?	
5				
6	Bo	ard Staff C	uestion #96 - Ref: Exh	J4-1-1, Attachment AZ and Staff Discussion Paper
7	_]	Fransition t	o IFRS - Implementatio	n in an IRM Environment (March 2011)
8	As	per the sta	aff discussion paper:	
9				
10		Utilitie	s who expect to experience	ence a large cost impact upon transition to IFRS for
11		non-F	P&E related items may	apply to the Board on an individual basis for
12		appro	priate relief.	
13				
14	Hy	dro Ottawa	a states that as a result	of \$2.7 million actuarial losses from the actuarial
15	va	luation con	ducted on January 1, 2	011, a deferral account to capture the opening
16	ba	lance adju	stment is required for pe	ensions.
17	a)	What acc	ount number does Hydr	o Ottawa propose to use in the USoA?
18	b)	What are	the proposed journal er	ntries to be recorded in this account?
19	c)	When do	es Hydro Ottawa plan to	ask for its disposition?
20	d)	How does	s Hydro Ottawa plan to	allocate this amount by rate class?
21	e)	What nev	v or additional information	on is available that would improve the Board's ability
22		to make a	a decision to approve th	e recording of these costs or fees in a deferral
23		account?		
24				
25	Re	sponse		
26				
27	a)	Hydro Ot	awa Limited ("Hydro Ot	tawa") proposes that the Ontario Energy Board
28		assign a	new USoA account with	in the 1500 range for this deferral account.
29				
30	b)	The prop	osed journal entries to b	be recorded in this account would be as follows:
31		DR	Regulatory Asset	2.8M
32		CR	Benefit	2.8M


Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.2 Interrogatory #2 Filed: 2011-09-08 Page 2 of 2

1		To se	t up the Liability		
2		DR	Distribution Revenue	2.8M	
3		CR	Regulatory Asset		2.8M
4		To ree	cord the collection from cus	tomers.	
5					
6	c)	Hydro Ott	tawa proposes to ask for di	sposition of	this account at the first Cost of
7		Service a	pplication after the account	has been	audited at the end of December 2012.
8					
9	d)	Hydro Ott	tawa would propose that thi	is account	would be allocated to rate classes
10		based on	Distribution Revenue.		
11					
12	e)	No new o	r additional information on	this propos	ed deferral account is available at this
13		time			



1	11. MODIFIED INTERNATIONAL FINANCIAL REPORTING STANDARDS							
2								
3	Issue 11.2 – Are the proposed new MIRFS deferral and variance accounts							
4	appropriate?							
5								
6	Board Staff Question #97 - Ref: Exh J4-1-1, Attachment AZ and Staff Discussion Paper							
7	– Transition to IFRS – Implementation in an IRM Environment (March 2011)							
8	As per the staff discussion paper:							
9								
10	Utilities who expect to experience a large cost impact upon transition to IFRS for							
11	non-PP&E related items may apply to the Board on an individual basis for							
12	appropriate relief.							
13								
14	Hydro Ottawa states that it has difficulties in forecasting the gains and losses on disposal							
15	of pooled assets and therefore is seeking an individual deferral account to capture the							
16	amounts.							
17	a) What account number does Hydro Ottawa propose to use in the USoA?							
18	b) What are the proposed journal entries to be recorded in this account?							
19	c) When does Hydro Ottawa plan to ask for its disposition?							
20	d) How does Hydro Ottawa plan to allocate this amount by rate class?							
21	e) What new or additional information is available that would improve the Board's ability							
22	to make a decision to approve the recording of these costs or fees in a deferral							
23	account?							
24								
25	Response							
26								
27	a) Hydro Ottawa Limited ("Hydro Ottawa") proposes that the Ontario Energy Board							
28	assign a new USoA account within the 1500 range for this deferral account.							
29								
30	b) The proposed journal entries to be recorded in this account would be as follows:							
31	DR Regulatory Asset XXX							



Hydro Ottawa Limited EB-2011-0054 Exhibit K11 Issue 11.2 Interrogatory #3 Filed: 2011-09-08 Page 2 of 2

1		CR	Regulatory Liability	XXX	
2		DR	Distribution Revenue	XXX	
3		CR	Regulatory Asset	XXX	
4		To re	cord the collection from custo	omers.	
5					
6		DR	Regulatory Liability	XXX	
7		CR	Loss Recovery Revenue	XXX	
8		To cle	ear the liability and record the	e revenue received	
9					
10	c)	Hydro	Ottawa proposes to ask for d	lisposition of this account once we have	
11		sufficie	ent history that enables us to	start forecasting gains and losses on disp	osal
12		of poo	led assets.		
13					
14	d)	No ne	w or additional information on	this proposed deferral account is availabl	le at
15		this tin	ne.		



Exhibit #	Question #	Intervenor	Submission 2011-09-08	Submission 2011-09-XX
K 1- 1- 1	1	Board Staff	2011-09-08	
K 1- 1- 2(2)	1	Energy Probe		
K 1- 1- 2(3)	1	Energy Probe		
K 1- 1- 2	1	Energy Probe		
K 1- 1- 2(1)	1	Energy Probe		
K 1- 1- 3	1	CCC		
K 1- 1- 4	2	CCC	2011-09-08	
K 1- 1- 5	3	CCC		
K 1- 1- 6	4	CCC	2011-09-08	
K 1- 1- 7	5	CCC	2011-09-08	
K 1- 1- 7(1)	5	CCC	2011-09-08	
K 1- 1- 8	1	SEC	2011-09-08	
K 1- 1- 9	1	VECC		
K 1- 2- 1	2	Board Staff	2011-09-08	
K 1- 2- 2	2	Energy Probe		
K 1- 2- 3	3	Energy Probe	2011-09-08	
K 1- 2- 4	6	CCC	2011-09-08	
K 1- 2- 5	2	SEC	2011-09-08	
K 1- 2- 5(1)	2	SEC	2011-09-08	
K 1- 2- 5(2)	2	SEC	2011-09-08	
K 1- 2- 6	3	SEC		
K 1- 2- 7	4	SEC		
K 1- 2- 8	2	VECC	2011-09-08	
K 1- 2- 9	5	VECC	2011-09-08	
K 1- 2-10	6	VECC	2011-09-08	
K 1- 3- 1	3	Board Staff	2011-09-08	
K 1- 3- 2	3	VECC	2011-09-08	
K 1- 3- 3	4	VECC	2011-09-08	
K 1- 4- 1	4	Board Staff	2011-09-08	
K1-4-2	5	Board Staff		
K 1- 4- 3	6	Board Staff		
K 1- 4- 4	4	Energy Probe		
K 1- 4- 4(1)	4	Energy Probe		
K 1- 4- 5	5	Energy Probe	2011-09-08	
K1-4-6	6	Energy Probe	2011-09-08	
K 1- 4- 7	7	CCC		
K 2- 1- 1	7	Board Staff	2011-09-08	
K 2- 1- 2	8	Board Staff	2011-09-08	
K 2- 1- 3	7	Energy Probe	2011-09-08	
K 2- 1- 4	8	Energy Probe		
K 2- 1- 5	9	Energy Probe	2011-09-08	
K 2- 1- 6	10	Energy Probe	2011-09-08	
K 2- 1- 7	11	Energy Probe	2011-09-08	
K 2- 1- 8	12	Energy Probe	2011-09-08	
K 2- 1- 9	13	Energy Probe	2011-09-08	
K 2- 1-10	5	SEC	2011-09-08	
K 2- 1-11	6	SEC	0011	
K 2- 1-12	7	SEC	2011-09-08	
K 2- 1-13	8	SEC	0011.00.00	
K 2- 1-14	9	SEC	2011-09-08	
K 2- 1-15	10	SEC	2011-09-08	
K 2- 1-16	11	SEC	2011-09-08	
K 2- 1-1/	12	SEC	2011-09-08	
K 2- 1-18	13	SEL	2011-09-08	
K 2- 1-19	14	SEL	2011-09-08	
K 2- 1-20	15	SEC	2011-09-08	
K 2- 1-21	16	SEC	2011-09-08	
K 2- 1-22	/		2011 00 00	
K 2- 1-23	8		2011-09-08	
K 2- 1-24	9		2011-09-08	
K 2- 1-25	10		2011-09-08	
K 2- 1-26	11		2011-09-08	
$K_2 - 1 - 26(1)$	1 11	IVEUU	2011-09-08	1



Exhibit #	Question #	Intervenor	Submission 2011-09-08	Submission 2011-09-XX
K 2- 1-27	12	VECC	2011-09-08	
K 2- 1-28	13	VECC	2011-09-08	
K 2- 1-29	14	VECC	2011-09-08	
K 2- 1-29 (1)	14	VECC	2011-09-08	
K 2- 1-30	15	VECC	2011-09-08	
K 2- 1-31	16	VECC	2011-09-08	
K 2- 1-32	23	VECC		
K 2- 1-33	1	EnviroCentre	2011-09-08	
K 2- 1-33	2	EnviroCentre	2011-09-08	
K 2- 1-34	3	EnviroCentre	2011-09-08	
K 2- 2- 1	9	Board Staff	2011-09-08	
K 2- 2- 2	10	Board Staff	2011-09-08	
K 2- 2- 3	11	Board Staff	2011-09-08	
K 2- 2- 4	14	Energy Probe	2011-09-08	
K 2- 2- 5	15	Energy Probe	2011-09-08	
K 2- 2- 6	16	Energy Probe	2011-09-08	
K 2- 2- 7	17	Energy Probe	2011-09-08	
K 2- 2- 8	8		2011-09-08	
N 2- 2- 9	9		2011-09-08	
K 2- 2- 10	11		2011-09-08	
K 2- 2-11	12		2011-09-00	
K 2- 2-12 K 2- 2-13	12	000	2011-09-00	
K 2- 2-13 K 2- 2-14	13	000	2011-03-00	
K 2- 2-14 K 2- 2-15	15	000		
K 2- 2-16	16	000	2011-09-08	
K 2- 2-17	17	222	2011-09-08	
K 2- 2-18	18	CCC	2011-09-08	
K 2- 2-19	17	VECC	2011-09-08	
K 2- 2-20	18	VECC	2011-09-08	
K 2- 3- 1	12	Board Staff	2011-09-08	
K 2- 3- 2	13	Board Staff	2011-09-08	
K 2- 3- 3	14	Board Staff	2011-09-08	
K 2- 3- 4	15	Board Staff	2011-09-08	
K 2- 3- 5	16	Board Staff	2011-09-08	
K 2- 3- 6	18	Energy Probe	2011-09-08	
K 2- 3- 7	19	Energy Probe	2011-09-08	
K 2- 3- 8	20	Energy Probe	2011-09-08	
K 2- 3- 9	21	Energy Probe	2011-09-08	
K 2- 3-10	22	Energy Probe	2011-09-08	
K 2- 3-11	17	SEC	2011-09-08	
K 2- 3-12	18	SEC	2011-09-08	
K 2- 3-12(1)	18	SEC	2011-09-08	
K 2- 3-12(2)	18	SEC	2011-09-08	
K 2- 3-13	19	SEC	2011-09-08	
K 2- 3-14	20	SEC	2011-09-08	
K 2- 3-15	21	SEC	2011-09-08	
N 2- 3- 10	22		2011-09-08	
K 2- 3- 17	23	SEC	2011-09-08	
K 2 - 3 - 10	24	SEC	2011-09-08	
K 2- 3- 20	25	SEC	2011-09-08	
K 2- 3-20	20	SEC	2011-09-08	
K 2- 3-22	28	SEC	2011-09-08	
K 2- 3-23	29	SEC	2011-09-08	
K 2- 3-24	30	SEC	2011-09-08	
K 2- 3-25	31	SEC	2011-09-08	
K 2- 3-26	32	SEC	2011-09-08	
K 2- 3-27	33	SEC	2011-09-08	
K 2- 3-28	34	SEC	2011-09-08	
K 2- 3-29	35	SEC	2011-09-08	
K 2- 3-30	36	SEC	2011-09-08	
K 2- 4- 1	19	VECC	2011-09-08	



Exhibit #	Question #	Intervenor	Submission 2011-09-08	Submission 2011-09-XX
K 2- 4- 2	20	VECC	2011-09-08	
K 2- 5- 1	17	Board Staff	2011-09-08	
K 2- 5- 1(1)	17	Board Staff	2011-09-08	
K 2- 5- 1(2)	17	Board Staff	2011-09-08	
K 2- 5- 2	18	Board Staff	2011-09-08	
K 2- 5- 3	19	Board Staff	2011-09-08	
K 2- 5- 4	20	Board Staff	2011-09-08	
K 2- 5- 5	21	Board Staff	2011-09-08	
K 2- 5- 6	22	Board Staff	2011-09-08	
K 2- 5- 7	23	Energy Probe	2011-09-08	
K 2- 5- 8	19	CCC	2011-09-08	
K 2- 5- 9	20	CCC	2011-09-08	
K 2- 5-10	21	CCC	2011-09-08	
K 2- 5-11	21	VECC	2011-09-08	
K 2- 5-12	22	VECC	2011-09-08	
K 2- 5-13	4	EnviroCentre	2011-09-08	
K 2- 5-14	5	EnviroCentre	2011-09-08	
K 2- 5-15	6	EnviroCentre	2011-09-08	
K 2- 5-16	/	EnviroCentre	2011-09-08	
K 3- 1- 1	23	Board Stall	2011-09-08	
K 3- 1- Z	24	Board Staff	2011-09-08	
K 3- 1- 3	20	Board Stall	2011-09-08	
K 3- 1- 4 K 2- 1- 5	20	Board Staff	2011-09-08	
K 3- 1- 6	21	Board Staff	2011-09-08	
K 3- 1- 6 (1)	20	Board Staff	2011-09-08	
K 3- 1- 7	24	Energy Probe	2011-09-08	
K 3- 1- 7(1)	24	Energy Probe	2011-09-08	
K 3- 1- 8	24	VECC	2011-09-08	
K 3- 1- 8(1)	24	VECC	2011-09-08	
K 3- 1- 8(2)	24	VECC	2011-09-08	
K 3- 1- 9	25	VECC	2011-09-08	
K 3- 1-10	26	VECC	2011-09-08	
K 3- 1-11	27	VECC	2011-09-08	
K 3- 1-11(1)	27	VECC	2011-09-08	
K 3- 1-12	28	VECC	2011-09-08	
K 3- 2- 1	29	Board Staff	2011-09-08	
K 3- 2- 1 (1)		Board Staff	2011-09-08	
K 3- 2- 2	25	Energy Probe	2011-09-08	
K 3- 2- 3	26	Energy Probe	2011-09-08	
K 3- 2- 4	27	Energy Probe	2011-09-08	
K 3- 2- 4 (1)	27	Energy Probe	2011-09-08	
K 3- 2- 5	29	VECC		
K 3- 2- 5(1)	29	VECC		
K 3- 2- 6	30	VECC	2011-09-08	
К 3-3-1	30	Board Staff	2011-09-08	
K 3- 3- 2	28	Energy Probe	2011-09-08	
K 3- 3- 3	29	Energy Probe	2011-09-08	
K 3- 3- 4	30	Energy Probe	2011-09-08	
K 3- 3- 5	31		2011-09-08	
K 3- 3- 6	32		2011-09-08	
N 3- 4- 1 K 2 5 4	33 24	VEUU Roard Stoff	2011 00 00	
K 2 5 2	31	Duard Staff	2011-09-08	
K 3- 5- 2	J∠ 21	Energy Probe	2011-03-08	
K 3- 5- 4	20	Energy Probe	2011-03-00	
$K_{3-} 5-4$	32 32	Energy Probe		
K 3- 5- 4 (1) K 3- 5- 5	3∠ 33	Energy Probe	2011-09-08	
K 3- 5- 6	33	Energy Probe	2011-09-00	
K 3- 5- 7	22	CCC	2011-09-08	
K 3- 5- 8	34	VECC	2011-09-08	
K 3- 5- 9	35	VECC	2011-09-08	
K 3- 5-10	36	VECC	2011-09-08	
		1		



Exhibit #	Question #	Intervenor	Submission 2011-09-08	Submission 2011-09-XX
K 3- 5-11	37	VECC	2011-09-08	
K 4- 1- 1	33	Board Staff	2011-09-08	
K 4- 1- 2	34	Board Staff	2011-09-08	
K 4- 1- 3	35	Board Staff	2011-09-08	
K 4- 1- 4	36	Board Staff	2011-09-08	
K 4- 1- 5	37	Board Staff	2011-09-08	
K 4- 1- 6	38	Board Staff	2011-09-08	
K 4- 1- 7	39	Board Staff	2011-09-08	
K 4- 1- 8	35	Energy Probe	2011-09-08	
K 4- 1- 8(1)	35	Energy Probe	2011-09-08	
K 4- 1- 9	36	Energy Probe	2011-09-08	
K 4- 1-10	37	Energy Probe	2011-09-08	
K 4- 1-11	38	Energy Probe	2011-09-08	
K 4- 1-12	39	Energy Probe	2011-09-08	
K 4- 1-13		Skip		
K 4- 1-14	23	CCC	2011-09-08	
K 4- 1-15	24	CCC		
K 4- 1-16	25	CCC	2011-09-08	
K 4- 1-17	26	CCC	2011-09-08	
K 4- 1-18	27	CCC	2011-09-08	
K 4- 1-19	37	SEC	2011-09-08	
K 4- 1-20	38	SEC	2011-09-08	
K 4- 1-21	39	SEC	2011-09-08	
K 4- 1-22	40	SEC	2011-09-08	
K 4- 1-23	41	SEC	2011-09-08	
K 4- 1-24	38	VECC	2011-09-08	
K 4- 1-25	39	VECC	2011-09-08	
K 4- 1-25(1)		VECC	2011-09-08	
K 4- 1-25(2)		VECC	2011-09-08	
K 4- 1-26	8	EnviroCentre	2011-09-08	
K 4- 1-27	9	EnviroCentre	2011-09-08	
K 4- 1-28	10	EnviroCentre	2011-09-08	
K 4- 2- 1	40	Energy Probe	2011-09-08	
K 4- 2- 2	41	Energy Probe	2011-09-08	
K 4- 2- 3	42	Energy Probe	2011-09-08	
K 4- 2- 4	43	Energy Probe	2011-09-08	
K 4- 2- 5	44	Energy Probe	2011-09-08	
K 4- 2- 0 K 4- 2- 7	40	Energy Probe	2011-09-08	
K 4 - 2 - 7	40	Energy Probe	2011-09-08	
K 4- 2- 0	47	Energy Probe	2011-09-08	
K 4- 2- 9	40	Energy Probe	2011-09-08	
K 4- 2-10 K 4-2-11	49 50	Energy Probe	2011-09-08	
K 4- 2-11 K 4- 2-12	32		2011-09-08	
K 4- 2-12 K 4- 2-13	33	000	2011-09-08	
K 4- 2-13	34		2011-09-08	<u> </u>
K 4- 2-15	35	000	2011-09-08	
K 4- 4- 1	40	Board Staff	2011-09-08	
K 4- 4- 2	40	Board Staff	2011-09-08	
K 4- 4- 3	42	Board Staff	2011-09-08	l
K 4- 4- 4	43	Board Staff	2011-09-08	[
K 4- 4- 5	44	Board Staff	2011-09-08	[
K 4- 4- 6	45	Board Staff	2011-09-08	[
K 4- 4- 7	46	Board Staff	2011-09-08	
K 4- 4- 8	47	Board Staff	2011-09-08	
K 4- 4- 9	51	Energy Probe	2011-09-08	
K 4- 4-10	28	CCC	2011-09-08	[
K 4- 4-11	29	CCC	2011-09-08	
K 4- 4-12	30	CCC	2011-09-08	
K 4- 4-13	31	CCC	2011-09-08	
K 4- 4-14	42	SEC	2011-09-08	[
K 4- 4-14(1)	42	SEC	2011-09-08	
K 4- 4-15	43	SEC	2011-09-08	[
	-	-		l



Exhibit #	Question #	Intervenor	Submission 2011-09-08	Submission 2011-09-XX
K 4- 4-16	44	SEC	2011-09-08	
K 4- 4-17	45	SEC	2011-09-08	
K 4- 4-18	46	SEC	2011-09-08	
K 4- 4-19	47	SEC	2011-09-08	
K 4- 4-20	48	SEC	2011-09-08	
K 4- 4-21	49	SEC	2011-09-08	
K 4- 4-22	50	SEC	2011-09-08	
K 4- 4-23	51	SEC	2011-09-08	
K 4- 4-24	40	VECC	2011-09-08	
K 4- 4-25	41	VECC	2011-09-08	
K 4- 4-26	42	VECC	2011-09-08	
K 4- 4-27	43	VECC	2011-09-08	
K 4- 5- 1	52	Energy Probe	2011-09-08	
K 4- 6- 1	48	Board Staff		
K 4- 6- 1(1)	48	Board Staff		
K 4- 6- 1(2)	48	Board Staff		
K 4- 6- 2	49	Board Staff	2011-09-08	
K 4- 6- 3	50	Board Staff		
K 4- 6- 3(1)	50	Board Staff		
K 4- 6- 4	53	Energy Probe	2011-09-08	
K 4- 6- 5	54	Energy Probe	2011-09-08	
K 4- 6- 6	55	Energy Probe		
K 5- 1- 1	56	Energy Probe	2011-09-08	
K 5- 1- 2	36	CCC	2011-09-08	
K 5- 1- 3	44	VECC	2011-09-08	
K 5- 1- 3(1)	44	VECC	2011-09-08	
K 5- 1- 4	45	VECC	2011-09-08	
K 5- 2- 1	51	Board Staff	2011-09-08	
K 5- 2- 2	52	Board Staff	2011-09-08	
K 5- 2- 3	57	Energy Probe	2011-09-08	
K 5- 2- 4	37	CCC	2011-09-08	
K 5- 2- 5	52	SEC	2011-09-08	
K 6- 1- 1	53	Board Staff		
K 6- 1- 2	38	000	2011-09-08	
K 6- 1- 3	39	222		
K6-1-4	40	222		
K 6- 1- 5	53	SEC		
K 6- 1- 6	46	VECC	2011-09-08	
K 6- 2- 1	54	Board Staff	2011-09-08	
K 6- 2- 2	55	Board Staff		
K 6- 2- 3	47	VECC		
K 6- 2- 4	48	VECC	2011-09-08	
K 6- 2- 5	49	VECC		
K 6-3-1	56	Board Staff		
K 6- 3- 1(1)	56	Board Staff		
N /- 1- 1 K 7 4 0	5/	Board Staff	2014 00 00	
N /- 1- 2	58	Board Staff	2011-09-08	
K 7- 1- 3	59	Board Staff	2011-09-08	
$r_{1} - 1 - 4$	58	Energy Probe		
K 7- 1- 4 (1)	58	Energy Probe		
K 7- 1- 5	54	SEC		
K /- 1- 6 K 7 4 7	50			
K /- 1- /	51			
K /- Z- 1	59			
K /- 2- 2	41	Deard Staff		
κ ö- 1- 1 Κ ο. 4. ο	60	BOARD STATT		
K 8- 1- 2	52			
K 8-1-3	53	VEUU Reard Staff		
κδ- 2- 1 Κθ Ο 1 (4)	61	Dualu Statt		
K 0 2 4			2014 00 00	
κ δ- 3- 1 κ δ- α 4(4)	60	Energy Probe	2011-09-08	
κ <u>σ-3-1(1)</u>	60	Linergy Probe	2011-09-08	
K 8- 3- 2	54	VECC	2011-09-08	



Exhibit #	Question #	Intervenor	Submission 2011-09-08	Submission 2011-09-XX
K 8- 3- 3	55	VECC	2011-09-08	
K8-4-1	62	Board Staff	2011-09-08	
K8-4-2	63	Board Staff	2011-09-08	
K8-4-3	64	Board Staff	2011-09-08	
K8-4-4	65	Board Staff		
K8-4-5	56	VECC	2011-09-08	
K9-1-1	66	Board Staff		
K9-1-2	67	Board Staff	2011-09-08	
K9-1-3	68	Board Staff		
K9-1-4	69	Board Staff	2011-09-08	
K9-1-5	70	Board Staff	2011-09-08	
K9-1-6	71	Board Staff		
K9-1-7	72	Board Staff	2011-09-08	
K9-1-8	73	Board Staff		
K9-1-9	74	Board Staff		
K 9- 1-10	75	Board Staff		
K 9- 1-10 (1)	75	Board Staff		
K 9- 1-10 (2)	75	Board Staff		
K 9- 1-10 (3)	75	Board Staff		
K 9- 1-10 (4)	75	Board Staff		
K 9- 1-11	76	Board Staff		
K 9- 1-11(1)	76	Board Staff		
K 9- 1-12	77	Board Staff	2011-09-08	
K 9- 1-13	78	Board Staff	2011-09-08	
K 9- 1-14	55	SEC	2011-09-08	
K 9- 2- 1	61	Energy Probe		
K9-3-1	62	Energy Probe	2011-09-08	
K10- 1- 1	57	VECC	2011-09-08	
K10- 1- 2	58	VECC		
K10- 1- 2(1)	58	VECC		
K11- 1- 1	79	Board Staff	2011-09-08	
K11- 1- 1(1)	79	Board Staff	2011-09-08	
K11- 1- 2	80	Board Staff	2011-09-08	
K11- 1- 3	81	Board Staff	2011-09-08	
K11- 1- 4	82	Board Staff	2011-09-08	
K11- 1- 5	83	Board Staff	2011-09-08	
K11- 1- 6	84	Board Staff	2011-09-08	
K11- 1- 7	85	Board Staff	2011-09-08	
K11- 1- 8	86	Board Staff	2011-09-08	
K11- 1- 9	87	Board Staff	2011-09-08	
K11- 1-10	88	Board Staff	2011-09-08	
K11- 1-10(1)	88	Board Staff	2011-09-08	
K11- 1-11	89	Board Staff	2011-09-08	
K11- 1-12	90	Board Staff	2011-09-08	
K11- 1-13	91	Board Staff	2011-09-08	
K11- 1-13(1)	91	Board Staff	2011-09-08	
K11- 1-13(2)	91	Board Staff	2011-09-08	
K11- 1-14	92	Board Staff	2011-09-08	
K11- 1-15	93	Board Staff	2011-09-08	
N11- 1- 10	94	Board Staff	2011-09-08	
K11- 1-17	63			
K11- 1-18 K44 4 40	64	Energy Probe	2011.00.00	
K11- 1- 19 K44 4 00	60	Energy Probe	2011-09-08	
N11- 1-20 K11- 2-1	00	Energy Probe	2011.00.00	
K11- Z- 1 K11- D- D	95	Duard Statt	2011-09-08	
N11- Z- Z	96	Board Staff	2011-09-08	
N11- 2- 3	97	Board Staff	2011-09-08	
K11- 2- 4	67	Energy Probe		