

November 26, 2010

Kirsten Walli  
Board Secretary  
Ontario Energy Board,  
2300 Yonge St.  
Suite 2700, P.O. Box 2319  
Toronto, Ontario  
M4P 1E4  
Canada

Dear Ms. Walli:

**Re: OEB File No. EB-2010-0130  
Guelph Hydro Electric Systems Inc. (Guelph Hydro) Responses to the Board Staff,  
VECC, and SEC's Interrogatories on 2011 IRM3 Electricity Distribution Rate  
Application**

Please find accompanying this letter Guelph Hydro's responses to Board Staff's, VECC and SEC's interrogatories on Guelph Hydro's application for Electricity and Distribution Rates and Charges effective May 1, 2011 together with an electronic version of the Application and an Excel version of Guelph Hydro's Load Forecast, and Economic Evaluation models.

Should there be any questions, please contact me at the number below.

Respectfully Submitted,



Cristina Birceanu

Manager of Regulatory Affairs  
Guelph Hydro Electric Systems Inc.

395 Southgate Drive,  
Guelph, ON N1G 4Y1  
Telephone- (519) 837-4735  
Mobile- 226-218-2150  
Email- cbirceanu@guelphhydro.com

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

**AND IN THE MATTER OF** an Application by Guelph Hydro Electric Systems Inc. for an Order or Orders approving or fixing just and reasonable distribution rates and other charges, effective May 1, 2011.

**Guelph Hydro Electric Systems Inc.**

**Responses to Interrogatories**

**Board Staff**

**Filed: November 26, 2010**

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**Board Staff Interrogatories**  
**2011 IRM3 Electricity Distribution Rates**  
**Guelph Hydro Electric Systems Inc. (“Guelph Hydro”)**  
**EB-2010-0130**

**Disposition of Group 1 Deferral / Variance Account Balances**

**Board Staff Interrogatory No. 1**

Ref: 2011 IRM3 Rate Generator – Sheet J2.4

Sheet “J2.4 – Deferral and Variance Account Disposition” of the 2011 IRM3 Rate Generator is reproduced below.

**Deferral Variance Account Disposition (2011)**

Rate Rider	Def Var Disp 2011
Sunset Date	30/04/2012 DDMM/YYYY
Metric Applied To	All Customers
Method of Application	Distinct Volumetric

Rate Class	Applied to Class	Fixed Amount	Fixed Metric	Vol Amount	Vol Metric
Residential	Yes	0.000000	Customer - 12 per year	-0.001500	kWh
General Service Less Than 50 kW	Yes	0.000000	Customer - 12 per year	-0.001500	kWh
General Service 50 to 999 kW	Yes	0.000000	Customer - 12 per year	-0.575600	kW
General Service 1,000 to 4,999 kW	Yes	0.000000	Customer - 12 per year	-0.673800	kW
Large Use	Yes	0.000000	Customer - 12 per year	-0.837600	kW
Unmetered Scattered Load	Yes	0.000000	Connection - 12 per year	-0.001500	kWh
Sentinel Lighting	Yes	0.000000	Connection - 12 per year	-0.576100	kW
Street Lighting	Yes	0.000000	Connection - 12 per year	-0.542400	kW

**Questions / Requests:**

- a) Please confirm that the rate riders entered on Sheet J2.4 were previously approved by the Board as part of Guelph’s 2010 IRM Application. If so, Board staff will enter this information on the correct sheet (Sheet J2.3).

## Guelph Hydro's response:

- a) Guelph Hydro confirms that the rate riders entered on Sheet J2.4 were previously approved by the Board (Decision on File Number EB-2009-0226 issued on April 6, 2010) as part of Guelph Hydro's 2010 IRM Application. Guelph Hydro has inserted below Sheet J2.3 of the "Final GHESI 2010 IRM3 Rat Gen.xls" Rate Generator file.



**Name of LDC:** Guelph Hydro Electric Systems Inc.  
**File Number:** EB-2009-0226  
**Effective Date:** Saturday, May 01, 2010

### Deferral Account Rate Rider One

Rate Rider	Deferral Account Rate Rider One
Sunset Date	April 30, 2012 <small>DD/MM/YYYY</small>
Metric Applied To	All Customers
Method of Application	Distinct Volumetric

Rate Class	Applied to Class	Fixed Amount	Fixed Metric	Vol Amount	Vol Metric
Residential	Yes	0.000000	Customer - 12 per year	-0.001530	kWh
General Service Less Than 50 kW	Yes	0.000000	Customer - 12 per year	-0.001520	kWh
General Service 50 to 999 kW	Yes	0.000000	Customer - 12 per year	-0.575600	kW
General Service 1,000 to 4,999 kW	Yes	0.000000	Customer - 12 per year	-0.673770	kW
Large Use - Regular	Yes	0.000000	Customer - 12 per year	-0.837570	kW
Unmetered Scattered Load	Yes	0.000000	Connection -12 per year	-0.001520	kWh
Sentinel Lighting	Yes	0.000000	Connection - 12 per year	-0.576100	kW
Street Lighting	Yes	0.000000	Connection - 12 per year	-0.542400	kW

## Board Staff Interrogatory No. 2

Ref: 2011 IRM3 Rate Generator – Sheet J3.31

Sheet "J3.31 – Applied for Rate Rider for Global Adjustment Sub-Account Disposition – Delivery Component 2011" of the 2011 IRM3 Rate Generator is reproduced below.

## **Applied For Rate Rider for Global Adjustment Sub-Account Disposition - Delivery Component 2011**

Rate Rider	GA Sub-Acct - Delivery 2011
Sunset Date	30/04/2012 DDMMYYYY
Metric Applied To	All Customers
Method of Application	Distinct Volumetric

Rate Class	Applied to Class	Fixed Amount	Fixed Metric	Vol Amount	Vol Metric
Residential	Yes	0.000000	Customer - 12 per year	0.000600	kWh
General Service Less Than 50 kW	Yes	0.000000	Customer - 12 per year	0.000600	kWh
General Service 50 to 999 kW	Yes	0.000000	Customer - 12 per year	0.228000	kW
General Service 1,000 to 4,999 kW	Yes	0.000000	Customer - 12 per year	0.268100	kW
Large Use	Yes	0.000000	Customer - 12 per year	0.333000	kW
Unmetered Scattered Load	Yes	0.000000	Connection - 12 per year	0.000600	kWh
Sentinel Lighting	Yes	0.000000	Connection - 12 per year	0.224300	kW
Street Lighting	Yes	0.000000	Connection - 12 per year	0.215700	kW

### Questions / Requests:

- a) Please confirm that the rate riders entered on Sheet J3.31 were previously approved by the Board as part of Guelph's 2010 IRM Application. If so, Board staff will enter this information on the correct sheet (Sheet J3.3).

### **Guelph Hydro's response:**

Guelph Hydro confirms that the rate riders entered on Sheet J3.31 were previously approved by the Board as part of Guelph Hydro's 2010 IRM Application File Number EB-2009-0226.  
 Guelph Hydro has inserted below Sheet J2.7 of the "Final GHESI 2010 IRM3 Rat Gen.xls" Rate Generator file.



**Name of LDC:** Guelph Hydro Electric Systems Inc.  
**File Number:** EB-2009-0226  
**Effective Date:** Saturday, May 01, 2010

## Global Adjustment Rate Rider

Rate Rider	Global Adjustment Rate Rider
Sunset Date	April 30, 2012 DDMMYYYY
Metric Applied To	All Customers
Method of Application	Distinct Volumetric

Rate Class	Applied to Class	Fixed Amount	Fixed Metric	Vol Amount	Vol Metric
Residential	Yes	0.000000	Customer - 12 per year	0.000600	kWh
General Service Less Than 50 kW	Yes	0.000000	Customer - 12 per year	0.000600	kWh
General Service 50 to 999 kW	Yes	0.000000	Customer - 12 per year	0.227970	kW
General Service 1,000 to 4,999 kW	Yes	0.000000	Customer - 12 per year	0.268080	kW
Large Use - Regular	Yes	0.000000	Customer - 12 per year	0.333010	kW
Unmetered Scattered Load	Yes	0.000000	Connection - 12 per year	0.000600	kWh
Sentinel Lighting	Yes	0.000000	Connection - 12 per year	0.224320	kW
Street Lighting	Yes	0.000000	Connection - 12 per year	0.215680	kW

## Incremental Capital Claim

### Board Staff Interrogatory No. 3

Ref: 2011 IRM3 Rate Generator – Sheet J2.8  
Ref: 2011 IRM3 Incremental Capital Workform

Sheet “J2.8 – Incremental Capital Rate Rider” of the 2011 IRM3 Rate Generator is reproduced below.

### Questions / Requests:

- a) Please provide rationale for the proposed sunset date.

**Guelph Hydro's response:**

The Board established a multi-year rate setting plan for electricity distributors. Guelph Hydro is scheduled to have its Cost of Service application for 2012 year. The remaining IR plan is one-year term. At the time of its Cost of Service application, Guelph Hydro will seek the incorporation of the requested incremental capital expenditures belonging to the New MTS into the rate base; therefore, Guelph Hydro is proposing one year of recovering the requested incremental capital through a variable rate rider. As stated in the Supplemental Report of the Board on 3<sup>rd</sup> Generation Incentive Regulation for Ontario's Electricity Distributors,

*"Distributors that receive rate relief through this module will be required to report to the Board annually on the actual amounts spent. At the time of rebasing, the Board will carry out a prudence review to determine the amounts to be incorporated in rate base. The Board will also make a determination at that time regarding the treatment of differences between forecast and actual capital spending during the IR plan term. Overspending or underspending will be reviewed at the time of rebasing."*

If Guelph Hydro would seek a January 1, 2012 effective date for its 2012 rates (as indicated in its response to the Board's letter on Early rebasing Applications sent on May 11, 2010), and the Board would approve this date for the purpose of aligning the fiscal year with the rate year, the sunset date of the rate rider would be January 1, 2012.

- b) Please provide rationale for recovering the requested incremental capital through a variable rate rider.

**Guelph Hydro's response:**

The rationale for recovering the requested incremental capital through a variable rate is that a volumetric rate rider will seek the recovery in a bigger proportion from large use customers. In addition, a high fixed charge is thought to be a disincentive to energy conservation.

According to the Directive of the Minister of Energy and Infrastructure issued on March 31, 2010, the Board was directed to amend the licences of all distributors and include CDM targets as a condition of distributor's licence.

On November 12, the Board amended Guelph Hydro's licence by adding a condition requiring Guelph Hydro to achieve reduction in electricity consumption and peak demand.

**Board Staff Interrogatory No. 4**

Ref: 2011 IRM3 Incremental Capital Workform – Sheet B1.4

Sheet “B1.4 – Detailed Re-Based Revenue from Rates” of the 2011 IRM3 Incremental Capital Workform is reproduced below.

**Detailed Re-Based Revenue From Rates**

Last COS Re-based Year

2008

Last COS OEB Application Number

EB-2007-0742

Applicants Rate Base		Last Rate Re-based Amount	
<b>Average Net Fixed Assets</b>			
Gross Fixed Assets - Re-based Opening	\$ 123,637,713	A	
Add: CWIP Re-based Opening	\$ -	B	
Re-based Capital Additions	\$ 7,298,949	C	
Re-based Capital Disposals	-\$ 995,146	D	
Re-based Capital Retirements	\$ -	E	
Deduct: CWIP Re-based Closing	\$ -	F	
Gross Fixed Assets - Re-based Closing	\$ 129,941,516	G	
Average Gross Fixed Assets			\$ 126,789,615 H = ( A + G ) / 2
Accumulated Depreciation - Re-based Opening	\$ 37,841,267	I	
Re-based Depreciation Expense	\$ 5,984,160	J	
Re-based Disposals	-\$ 552,335	K	
Re-based Retirements	\$ -	L	
Accumulated Depreciation - Re-based Closing	\$ 43,273,092	M	
Average Accumulated Depreciation			\$ 40,557,180 N = ( I + M ) / 2
<b>Average Net Fixed Assets</b>			\$ 86,232,435 O = H - N
<b>Working Capital Allowance</b>			
Working Capital Allowance Base	\$ 125,742,305	P	
Working Capital Allowance Rate	15.0%	Q	
<b>Working Capital Allowance</b>			\$ 18,861,346 R = P * Q
<b>Rate Base</b>			\$ 105,093,781 S = O + R
<b>Return on Rate Base</b>			
Deemed ShortTerm Debt %	4.00%	T	\$ 4,203,751 W = S * T
Deemed Long Term Debt %	49.30%	U	\$ 51,811,234 X = S * U
Deemed Equity %	46.70%	V	\$ 49,078,796 Y = S * V
Short Term Interest	4.47%	Z	\$ 187,908 AC = W * Z
Long Term Interest	6.10%	AA	\$ 3,160,485 AD = X * AA
Return on Equity	8.57%	AB	\$ 4,206,053 AE = Y * AB
<b>Return on Rate Base</b>			\$ 7,554,446 AF = AC + AD + AE
<b>Distribution Expenses</b>			
OM&A Expenses	\$ 9,325,109	AG	
Amortization	\$ 5,637,037	AH	
Ontario Capital Tax (F1.1 Z-Factor Tax Changes)	\$ 239,079	AI	
Grossed Up PILS (F1.1 Z-Factor Tax Changes)	\$ 1,971,258	AJ	
Low Voltage	\$ 92,876	AK	
Transformer Allowance	\$ 319,608	AL	
	\$ -	AM	
	\$ -	AN	
	\$ -	AO	
			\$ 17,584,967 AP = SUM ( AG : AO )



Preamble:

Board staff has been unable to verify whether some of the data entered on Sheet B1.4 of the 2011 IRM3 Incremental Capital Workform is correct.

Questions / Requests:

- a) Please reconcile the data entered on the above sheet with the Draft Rate Order in EB-2007-0742. Please explain any discrepancies.

**Guelph Hydro's response:**

Please see Appendix 1 Guelph\_IRR\_BoardStaff\_Q4.a – Reconciliation with the Draft Order in EB-2007-0742.

Note: Re 2011 IRM3 Incremental Capital Workform

In developing the responses to the Board Staff, Guelph Hydro noticed an error in the 2011 IRM3 Incremental Capital Workform, Sheet 3.1- Summary of IC Projects, cell F24.

Guelph Hydro has corrected the input to \$10, 857,000 Incremental Capital CAPEX; the requested 2011 incremental revenue requirement is of \$1,068,072 (please see Sheet 4.1 of the Appendix 2 Guelph\_IRR\_BoardStaff\_Q4.a- Correction to 2011 IRM Incremental Capital Workform\_Sheet 3.1).

**Board Staff Interrogatory No. 5**

Ref: 2011 IRM3 Incremental Capital Project Worksheet – Sheet 1

Ref: Incremental Capital Project Evidence – Appendix 5.2 – Page 27

Questions / Requests:

- a) Please provide more detailed descriptions in the Column titled, “Asset Component” in order to allow Board staff to reconcile the data with the Budget Summary included as the last page of Appendix 5.2.

**Guelph Hydro's response:**

Please find below the details of the “Asset Component” included in the Budget Summary.

Guelph Hydro Electric Systems Inc.								
EB-2010-0130								
Reconciliation of Appendix 5.2 with 2011 IRM3 Incremental Capital Project Worksheet								
GUELPH MUNICIPAL TRANSFORMER STATION BUDGET SUMMARY (PER APPENDIX 5.2)							2011 Budget Breakdown	
		Projected	2009 Actuals	2010 Actuals	2010 Projected	2011 Budget	Building Equipment	
<b>1.0 Property</b>								
		\$1,915,825	\$ -	\$1,915,825	\$1,915,825	\$ -		
<b>2.0 Engineering &amp; Environmental</b>								
		\$1,214,268	\$140,180	\$243,727	\$566,227	\$507,861	98,666	409,196
<b>3.0 Major Equipment</b>								
		\$5,970,620	\$ -	\$ -	\$965,488	\$5,005,131		5,005,131
<b>4.0 Construction and Commissioning</b>								
		\$5,000,000	\$ -	\$ -	\$ -	\$5,000,000	2,179,964	2,820,036
<b>5.0 Transmission Line Connection</b>								
		\$494,000	\$ -	\$ -		\$494,000		494,000
<b>6.0 Feeder Egress</b>								
		\$250,000	\$ -	\$ -		\$250,000		250,000
<b>Less Contributed Capital</b>								
		(\$400,000)				(\$400,000)		(400,000)
	<b>TOTAL</b>	<b>\$14,444,713</b>	<b>\$140,180</b>	<b>\$2,159,552</b>	<b>\$3,447,540</b>	<b>\$10,856,993</b>	<b>2,278,630</b>	<b>8,578,363</b>
						<b>\$14,444,713</b>	Note (1)	Note (2)

<b>Note (1)</b>			
Rounded to \$2,279,000 on "2011 IRM3 Incremental Capital Project Worksheet - Sheet 1"			
<b>Note (2)</b>			
<b>Breakdown of Equipment (2011 Budget) - by useful life</b>			
			<b>Amounts per</b>
			<b>2011 IRM3</b>
			<b>Incremental</b>
			<b>Capital Project</b>
			<b>Worksheet -</b>
			<b>Sheet 1</b>
			<b>(ROUNDED)</b>
<b>Major Equipment</b>	<b>Useful Life</b>	<b>Total</b>	
All Protection, Control and SCADA	15	1,302,817.99	1,303,000.00
115 kV Surge Arrestors	25	20,769.56	750,000.00
115kV PT's	25	107,624.09	
230 kV Station Post Insulators	25	54,756.12	
Revenue Metering	25	566,442.60	
Power Transformer	35	3,292,825.74	3,293,000.00
3-115 kV Motorized Disconnect Switches	40	171,191.54	3,232,000.00
230 kV Breakers	40	589,100.31	
13.8 kV Cables	40	143,498.79	
Neutral Cable	40	15,105.14	
13.8 kV Neutral Reactor	40	66,084.97	
13.8 kV Switchgear	40	1,777,332.05	
Feeder Egress	40	470,814.09	8,578,000.00
		8,578,363.00	

## Board Staff Interrogatory No. 6

Ref: Supplemental Report of the Board on 3<sup>rd</sup> Generation Incentive Regulation for Ontario's Electricity Distributors (EB-2007-0673) – Appendix B – Amended Filing Guidelines

### Preamble:

Guelph has not fulfilled all the filing requirements included as Appendix B to the Supplemental Report of the Board on 3<sup>rd</sup> Generation Incentive Regulation for Ontario's Electricity Distributors (EB-2007-0673).

Questions / Requests:

- a) Please indicate whether continued expenditure levels could trigger another Incremental Capital Request before the end of the IR term.

**Guelph Hydro's response:**

Guelph Hydro is scheduled to have its rates rebased in 2012; therefore the actual application, 2011 IRM, is the end of its IR term. Guelph Hydro will request the capital expenditures with the New MTS to be incorporated into the 2012 rate base; therefore the expenditures level will not trigger a further application before the end of the actual Guelph Hydro's 3<sup>rd</sup> Generation IR term.

- b) Please provide a description of the actions that the distributor will take in the event that the Board does not approve the Incremental Capital Request.

**Guelph Hydro's response:**

The consequences of not having the ICM rate rider approved should be viewed from two perspectives 1) the short term financial implications and 2) longer term considerations as it relates to the impact on the Company's credit rating and subsequent borrowing costs.

The short term financial implications are fairly straightforward. Without the cash flow provided by the proposed ICM rate rider, Guelph Hydro will have to fund the capital expenditures from existing working capital which may require temporary short term borrowing through its operating line of credit. The amounts required is difficult to predict as the Guelph Hydro's overall working capital requirements are affected by many items, including the cost of power and transmission charges billed and collected on behalf of other market participants. At this time, Guelph Hydro believes that it has sufficient short term borrowing capacity to carry out its capital plan in the event that the proposed ICM rate rider is not approved.

Guelph Hydro believes, however, that the longer term considerations of not having the ICM approved are much more significant than the short term implications. Guelph Hydro has recently obtained a credit rating from Standard and Poor's and has plans to issue long term debentures via a private placement to qualified third party investors. Stability and predictability of cash flow is a key consideration for the credit rating agency and the investors. Guelph Hydro believes that the ICM mechanism established by the Board is an important element in providing stability and predictability in cash flows when an LDC enters

a period of "step function" growth as we are now with the requirement to construct a new transformer station. While Guelph Hydro will not speculate on how the specifics of this particular request would affect its longer term cost of borrowing, we believe that the ICM is an important ingredient in ensuring ongoing favorable borrowing costs for utilities.

## Board Staff Interrogatory No. 7

### Station Loading

Ref: Appendix 5.2, page 1

#### Preamble:

Guelph Hydro indicates that it is necessary to build a new Municipal Transformer Station ("MTS") to address future load which the current distribution system will not support. Hanlon TS appears to be the primary TS in the area which would have to absorb this demand growth.

#### Questions / Requests:

- a) Given the current system capacity, what actions have generally been taken by Hydro One to address overloading events at Hanlon TS? Has Guelph experienced significant or lasting service interruptions as a result?

#### **Guelph Hydro's response:**

As a general rule, the Hydro One operating staff open the TS tie breaker when loads may be anticipated to reach the Limited Time rating (LTR). However, this leaves the distribution system customers vulnerable if there is any interruption to the High Voltage (HV) system. The most significant cause of interruptions to customers currently supplied from Hanlon TS is loss of bulk supply.

Guelph Hydro presents below the 2008 and 2009 Reliability Statistics registered at Hanlon TS:

2008 & 2009 Reliability Statistics - Hanlon TS	
System	Total Customer Hours of Interruption
Bulk Supply	10,916
Distribution System	2,618

- b) What is the Ten Day LTR<sup>1</sup> of Hanlon TS? What is the current best practice feeder loading protocol (in Amps) for the feeders running into/out of Hanlon TS as defined by Hydro One Distribution and/or Guelph?

**Guelph Hydro's response:**

The current Ten Day LTR of Hanlon TS is 42.9 MW. Hanlon TS was completed in 1999 with six 13.8 kV feeders. Late in 2009, two additional 13.8 kV feeders were added to provide dedicated, redundant supply for a large data centre. Ideally the maximum average feeder loading should be 300 A in normal configuration, while feeders may be required to carry 500 A during contingency operation. Some feeder circuits have short-term capacity of up to 600 A in close proximity to the TS.

- c) Please provide a table showing the maximum feeder loading (in Amps) that has been experienced on each Hanlon TS feeder from 2007 through 2010.

**Guelph Hydro's response:**

Year / Feeder	127M11	127M12	127M13	127M14	127M21	127M22	127M23	127M24
2007	196	469	282	NA	481	452	269	NA
2008	446	428	497	NA	443	456	369	NA
2009	286	261	425	NA	372	420	385	NA
2010	369	309	545	In service Spring 2011	285	311	277	90

Feeder load levels above normal operating levels are normally associated with load transfers between feeder circuits to accommodate planned construction work and equipment maintenance outages. There was one case of a customer adding a large test load outside the time agreed on.

- d) Please provide a table of Hanlon TS peak MW loading for each year from 2007-2010, and highlight any events when a feeder was at / exceeding:
- a. Best practice loading. Note any exceptional circumstances directly associated with each event.

<sup>1</sup> 10-day long term emergency rating in MW

- b. Amp or MW capacity. Note any exceptional circumstances directly associated with each event.

**Guelph Hydro's response:**

	Hanlon TS Peak MW Loading	Comments
2002	34,674.5	
2003	35,443.0	
2004	34,146.0	
2005	38,220.0	
2006	43,780.8	
2007	35,630.8	Transfer of approximately 8MW to Guelph Cedar TS
2008	32,905.0	
2009	35,978.0	
2010	39,447.0	

**Board Staff Interrogatory No. 8**

**New Connections and Demand**

Ref: Appendix 5.2, page 6

Ref: Appendix 5.2, page 20

Preamble:

Guelph states at Appendix 5.2 – Page 6 that one industrial customer is/was expected to increase their demand by 4,000 kW.

Guelph has indicated at Appendix 5.2 – Page 20 that it has commitments with existing and new customers for additional connections in 2011.

Questions / Requests:

- a) Please indicate the time frame associated with the proposed 4,000 kW demand increase.

**Guelph Hydro's response:**

Future load intensification of existing industrial areas was determined through interaction with those customers. For instance, one industrial customer was expected to increase their demand by 4,000 kW.

At the time this study was done (July 2009) the time frame associated with the proposed 4,000kW demand increase was Q3/Q4 of 2008.  
 The demand increase was associated with one customer increasing the capacity at their facility. The peak demand associated with this customer increased from approximately 1 MW in 2007 to 4 MW in 2009 to 4.2 MW in 2010.

- b) Please provide a list of the connection commitments noted by Guelph along with the forecasted load associated with these commitments. Provide customer names alphanumerically if necessary<sup>2</sup>.

**Guelph Hydro's response:**

Customer	Existing Load	Load Forecast	Comments
Customer A GS 1,000-4,999	1.1 MW (July 2008)	4.2 MW (July 2010)	Actual Load
Customer B GS 1,000-4,999kW	2.1 MW (July 2010)	10 MW	Customer supplied forecast
Customer C Existing GS 1,000-4,999 Expansion	3.9 MW (July 2010)	5.7 MW	Customer supplied forecast
Customer D Existing GS 1,000-4,999 Expansion	0	8.6 MW	Customer supplied forecast
Hanlon West Business Park	0	15 MW	

**Board Staff Interrogatory No. 9**

**Load Forecasting**

Ref: Appendix 5.2, page 22-25

Preamble:

Guelph has provided three tables detailing system loading at page 22-24 and a graph, Guelph South Load Forecast, at page 25.

Questions / Requests:

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<sup>2</sup> Standard practice to preserve confidentiality of customers and their associated demand.



- a) Please indicate whether the load forecast methodology used by Guelph is consistent with the most recent load forecast methodology approved by the Board.

**Guelph Hydro's response:**

This forecast is consistent with the Board approved forecast methodology. However, it was developed for capacity planning purposes rather than customer class rate setting.

The system loading in Tables A.1 through A.4 on pages 22-24 represents anticipated and potential new load in the Guelph South study area, based on historical load densities shown in Tables 1 and 2 on page 5. They were used to determine ultimate potential bulk supply requirements in the area without regard for a specific time scale. The graph on page 25 shows the existing Guelph South area load in 2009 plus the new load from the previous tables developing over a range of growth rates. It is intended to show the possible time frame when it might be necessary to add a second stage of transformation capacity in the study area.

- b) Please provide a comparison of Guelph's most recent Board approved load forecast, against the forecast presented in this application. Please comment on any significant demand removals and/or additions captured in these tables.

**Guelph Hydro's response:**

A comparison between Guelph's 2008 cost of service Board approved load forecast and the capacity planning forecast presented in this application will not show the same results as they were developed for different purposes. The capacity planning load forecast presented focuses on a specific study area within Southern Guelph where there is a need for additional capacity. The 2008 Board approved forecast presented in Guelph's 2008 cost of service application was developed for the purpose of customer class rate setting with a focus on forecasting customer growth by class.

- c) Guelph provides as an estimate a growth rate envelope from 1.1% to 2.6% per year. What was the growth rate applied to Guelph's Board approved load forecast in its most recent rate proceeding?

**Guelph Hydro's response:**

In the 2008 Cost of Service proceeding, Guelph Hydro's approved load growth for the next five years is of 2% to 2.5% per year (file number EB-2007-0742; Exhibit 2, Tab 3, Schedule 2, Page 3, line 26 and 27). The Board approved

Guelph Hydro's Load Forecast as presented in the original application (please see the Board's Decision on File No. EB-2001-0742 – page 17).

If compared with the actual 2008 load (2008 sales: 1,574,447 MWh), the approved 2008 forecast (2008 forecast sales: 1,625,884 MWh) was overstated by more than 3%.

To answer Board Staff's question in regards to the growth rate applied in Guelph Hydro's most recent rate proceeding, please note that Guleph Hydro's most recent rate proceeding was 2010 IRM3. The actual IRM plan does not consider any mechanism to address unforecasted in the volume of energy sold.

## **Board Staff Interrogatory No. 10**

### **Risk of Equipment Failure and Costs**

Ref: Appendix 5.2, page 18

#### Preamble:

Guelph notes its high-level estimates of operating and maintenance expenses for MTS#1 at page 18 of Appendix 5.2.

#### Questions/Requests:

- a) Are there any financial risks associated with Guelph owning transformation assets under its proposed MTS#1 plan? For instance, what are the typical costs associated with:
- Replacement of failed transformer
  - Replacement of a failed breaker
  - Replacement of any other piece of significant equipment

#### **Guelph Hydro's response:**

Re: Replacement of failed transformer:

- Replacement cost in the first five years is estimated at about \$200K as they will be under warranty. Thereafter, replacement cost is estimated to be \$1.5M.

Re: Replacement of a failed breaker:

- MV (13.8 kV) breaker is approximately \$50K, while a HV (230/115 kV) breaker is \$200K after five year warranty period.

Re: Replacement of any other piece of significant equipment:

- Other individual components are \$50K or less.

b) Does Guelph have a proposed plan to mitigate these risks through contract terms or any other mechanisms?

**Guelph Hydro's response:**

Guelph Hydro plans to mitigate these risks through:

- design and equipment standards
- technical evaluation of equipment
- evaluation of reputation and accessibility of suppliers
- extended warranties
- continuous automated system monitoring
- working in close co-operation with neighboring LDC's with similar TS's

c) Is Guelph aware that Hydro One has a significant "spares" inventory which Hydro One uses to address unexpected failures in its asset base? Has Guelph explored arrangements to have access to Hydro One's spares inventory in the event of a significant equipment failure and has Guelph identified the costs or any delays that could be associated with such an acquisition?

**Guelph Hydro's response:**

We have not explored the use of Hydro One's spares inventory at this point. Any potential use would likely be limited to a power transformer or HV breaker. The station is a DESN design that will permit it to continue operating with loss of one major component. Service facilities for most of the equipment to be used are located within a one hour drive of the TS site.

**Board Staff Interrogatory No. 11  
Station and Feeder Costs**

Ref: Appendix 5.2, page 18 and 21

Questions / Requests:

a) What is the source of the \$400,000 contribution in "related capital" cited at page 21 and how was the level of funding determined or otherwise negotiated? Please explain.

**Guelph Hydro's response:**

A second (existing) General Service > 1000 kW customer requires two dedicated feeders and associated 13.8 kV switchgear in the TS. The contribution is related to a portion of the switchgear cost associated with meeting the specific customer requirements over and above a normal supply connection.

**Board Staff Interrogatory No. 12**

**Transmission Facility**

Ref: Appendix 5.3, Page 17 - 19

Preamble:

The new municipal transformer station proposed by Guelph will link to 150 kV lines operated by Hydro One Networks Transmission System. As a result, the transformer station will provide transformation connection service, meaning that Guelph would be considered to be operating as a transmitter under the *Transmission System Code*. Guelph does not have a transmission licence to own or operate transmission facilities.

Questions / Requests:

- a) Does Guelph intend to request that the Board deem the new transformer station a distribution asset?

**Guelph Hydro's response:**

Yes, Guelph Hydro intends to request that the Board deem the new transformer station a distribution asset.

- b) If the answer to part (a) is yes, please provide an outline of Guelph's timeline and plan to obtain the necessary approvals to operate this asset in a manner that is compliant with its distribution licence and the *Transmission System Code*.

**Guelph Hydro's response:**

Guelph Hydro has been working with the IESO and Hydro One regarding the necessary approvals. The IESO completed its System Impact Assessment and provided Notification of Conditional Approval of Connection Proposal on October

26, 2010. We are proceeding with completion of the IESO Market Entry process in accordance with the Conditional Approval. Hydro One is currently working on the connection agreement.

- c) If the answer to part (a) is no, please explain how Guelph intends to be compliant with the conditions of its licence once the transformer station is in-service.

**Guelph Hydro's response:**

N/A.

**Board Staff Interrogatory No. 13**

**Capital Spending**

Ref: Appendix 5.2 – Page 27

Preamble:

On Page 27 of appendix 5.2, Guelph has presented the Capital Spending for 2009, 2010 and 2011 related to the MTS.

Questions / Requests:

- a) Please confirm that none of the capital costs have previously been included in rate base.

**Guelph Hydro's response:**

Guelph Hydro confirms that none of the capital costs related to the new MTS#1 have previously been included in rate base.

- b) Please confirm that none of the projects included in the 2011 Capital Budget are discretionary in nature.

**Guelph Hydro's response:**

Guelph Hydro confirms that none of the projects included in the 2011 Capital Budget are discretionary in nature.

## Board Staff Interrogatory No. 14

Ref: Manager's Summary - General

### Preamble:

Guelph has not included a Request for Proposal related to the proposed Transformer Station in Guelph in the Application.

### Questions / Requests:

- a) Was a Request for Proposal issued? If so, please file it with the Board.

### **Guelph Hydro's response:**

Guelph Hydro sought the advice of a number of peer LDC's regarding TS projects early in 2009. Guelph Hydro elected to hire an Engineering consultant to assist with regulatory approvals, engineering design, material procurement and construction management services for a new TS, and then secure the specified equipment and construction services by competitive tender. GHESI issued an RFP for engineering services for the proposed new TS to eight consulting firms in June of 2009. See attached RFP documents (Appendix 3 Guelph\_IRR\_BoardSatff\_Q14.a\_RFP)

- b) Please summarize all the proposals received by Guelph Hydro.

### **Guelph Hydro's response:**

In July, six proposals were received from the firms approached. Except for one outlier, engineering cost estimates were similar. Capital cost estimates ranged from \$10,000,000 to \$16,000,000 (plus property, Hydro One connection and Guelph Hydro feeder connections) depending on the station configuration and equipment. Some of the proponents were not able to provide all of the requested information. Based on a review of the written submissions, they were narrowed down to three to be interviewed by a joint Engineering/Operations management committee.

- c) Please highlight the proposal that was selected by Guelph Hydro.

### **Guelph Hydro's response:**

After a prudent evaluation of the submissions, interviews and references, the committee unanimously agreed that this work should be awarded to Wardrop Engineering of Mississauga, who commenced work on August 17.

- d) Please provide the criteria and weightings Guelph Hydro utilized in selecting a service provider.

Please ensure that enough information is provided in response to the above questions in order to allow Board staff to evaluate the prudence of the selection made by Guelph Hydro. Please provide the requested information in such a manner as to avoid the need for filing the information confidentially.

### **Guelph Hydro's response:**

The criteria utilized in the selection of a service provider included cost, previous experience on similar projects, technical expertise, project management and construction management experience, and proximity to project location. Numerical weightings were not applied to the selection. Highlights related to the consultant selected:

- Engineering cost estimate was in line with those of the other proponents.
- Capital cost estimates ranged from \$10,000,000 to \$12,000,000 (plus property, Hydro One connection and Guelph Hydro feeder connections), among the lowest proposed.
- Consultant and technical staff had experience on similar projects with Hydro One and other Ontario LDC's.
- Consultant recommended a construction management approach with multiple specialized contractors rather than a single general contractor.
- Consultant's office is the closest of all proponents (located within a 35 minute drive of Guelph Hydro offices and the project site), facilitating the many site and project meetings anticipated.

### **Tax Changes**

#### **Board Staff Interrogatory No. 15**

Ref: 2011 IRM3 Shared Tax Savings Workform – Sheet B1.1

Ref: 2011 IRM3 Incremental Capital Workform – Sheet B1.3

Sheet "B1.1 – Rate Class and Re-based Billing Determinants & Rates" of the 2011 IRM3 Shared Tax Savings Workform is reproduced below.

Last COS Re-based Year 2008

Last COS OEB Application Number EB-2007-0742

Rate Group	Rate Class	Fixed Metric	Vol Metric	Re-based Billed Customers	Re-based Billed kWh	Re-based Billed kW	Rate ReBal Base
				or Connections			Service Charge
				A	B	C	D
RES	Residential	Customer	kWh	44,220	357,871,626		13.39
GSLT50	General Service Less Than 50 kW	Customer	kWh	3,612	146,156,347		12.24
GSGT50	General Service 50 to 999 kW	Customer	kW	515	0	1,023,682	230.28
GSGT50	General Service 1,000 to 4,999 kW	Customer	kW	37	0	864,467	618.96
LU	Large Use	Customer	kW	4	0	471,742	905.99
USL	Unmetered Scattered Load	Connection	kWh	591	2,336,603		5.47
Sen	Sentinel Lighting	Connection	kW	30	0	352	6.52
SL	Street Lighting	Connection	kW	13,670	0	25,194	0.23

Sheet “B1.3 – Calculated Re-Based Revenue from Rates” of the 2011 IRM3 Incremental Capital Workform is reproduced below.

Last COS Re-based Year 2008

Last COS OEB Application Number EB-2007-0742

Rate Class	Re-based Billed	Re-based Billed kWh	Re-based Billed kW	Re-based Base Service Charge	Re-based Base Distribution	Re-based Base Distribution
	Customers or Connections				Volumetric Rate kWh	Volumetric Rate kW
	A	B	C	D	E	F
Residential	44,220	357,871,626	0	13.27	0.0163	0.0000
General Service Less Than 50 kW	3,612	146,156,347	0	12.26	0.0157	0.0000
General Service 50 to 999 kW	515	0	1,023,682	230.36	0.0000	2.7620
General Service 1,000 to 4,999 kW	37	0	864,467	613.29	0.0000	1.9595
Large Use	4	0	471,742	897.69	0.0000	2.1526
Unmetered Scattered Load	591	2,336,603	0	5.42	0.0248	0.0000
Sentinel Lighting	30	0	352	6.46	0.0000	7.1400
Street Lighting	13,670	0	25,194	0.14	0.0000	3.3078



Questions / Requests:

- a) Please explain the discrepancies between the rates (Columns D / E / F) recorded on Sheet B1.1 of the 2011 IRM3 Shared Tax Savings Workform and those shown on Sheet B1.3 of the 2011 IRM3 Incremental Capital Workform. If there are errors, please advise and Board staff will make the relevant corrections.

**Guelph Hydro's response:**

Re: 2011 IRM3 Shared Tax Savings:

According to the User instructions for completion of 2011 IRM3 Shared Tax Savings Workform for Electricity Distributors, Sheet B1.1 Rate Class and re-Based Billing Determinants & Rates, the user was instructed to input fixed service charge and distribution volumetric rate into columns D, E, and/or F for each applicable rate class from Sheet E1.1 from 2011 IRM3 Rate Generator. According to the Use Instructions for Completion of 2011 IRM3 Rate Generator for Electricity Distributors, Sheet E1.1 of 2011 IRM3 Rate Generator calculates rebalanced base distribution rates after revenue to cost ratio adjustment (no adjustment requested on Guelph Hydro's 2011 rates), which are actually Guelph Hydro's current 2010 distribution rates and charges.

If the last re-based rates (i.e. 2008 rates) without rate riders and adders should have been entered in Sheet B1.1 of 2011 IRM3 Shared Tax Savings, Guelph Hydro is respectfully asking the Board staff to make the relevant corrections.

Re: 2011 IRM3 Incremental Capital Workform – Sheet B1.3:

The rates input in this sheet are Guelph Hydro's 2008 distribution rates (last re-based rates) without rate riders and adders.

**Retail Transmission Service Rates**

**Board Staff Interrogatory No. 16**

Ref: 2011 IRM3 RTSR Workform – Sheet B1.2

Sheet "B1.2 – 2009 Distributor Billing Determinants" of the 2011 IRM3 RTSR Workform is reproduced below.

Questions / Requests:

- a) Please confirm that the data entered in Column A (metered kWh) is metered data (i.e. no loss factor applied). If a loss factor has been applied to the data in Column A, please re-file the data for Column A and Board staff will make the relevant corrections to the RTSR Workform.

**Guelph Hydro's response:**

Guelph Hydro confirms that the data entered in Column A (metered kWh) is metered data (i.e. no loss factor applied).

**Smart Meter Adder**

**Board Staff Interrogatory No. 17**

Ref: Smart Meter Rate Adder Calculation Model - General

Questions / Requests:

- a) Please provide the total number of smart meters installed in the service area at the end of October 2010 for each the residential rate class and the GS > 50kW rate class.

**Guelph Hydro's response:**

As of end October 2010, Guelph Hydro has installed 36,445 meters in residential rate class (approx 80%) of target, and 1,518 general service less than 50 kW rate class (approx 66% of target.)

- b) If necessary, please provide an update to Sheet 2 of the Smart Meter Adder Workform which more accurately reflects Guelph's progress towards smart meter deployment.

**Guelph Hydro's response:**

As of November 15th 2010, Guelph Hydro has installed over 42,500 or approximately 89% of total target [approximately 40,825 residential (89%) and 1,740 small general service (75%)].

At this time Guelph Hydro does not anticipate a change in the forecasted overall project cost.

**Board Staff Interrogatory No. 18**

Ref: Smart Meter Rate Adder Calculation Model – Sheet 8

Questions / Requests:

- a) Please provide the September 13, 2010 Load Forecast cited on Sheet 8 of the Smart Meter Rate Adder Calculation Model.

**Guelph Hydro's response:**

Guelph Hydro has provided the requested Load Forecast in Appendix 4 – Load Forecast used for Smart Meter Rate Adder Calculation - metered customers. Please note that the Load Forecast is in working progress, and its final results for 2011 forecast are expected in March 2011 when all consumption belonging to 2010 will be billed.

Assumption used in September 13 version: 2010 Number of customers is equal with 2009 Number of customers.

**Board Staff Interrogatory No. 19**

Ref: Manager's Summary – Page 29

Ref: 2011 IRM3 Smart Meter Rate Calculation Model – Sheet 2

Preamble:

On page 29 of the Manager's Summary, Guelph Hydro states "Guelph Hydro's smart meters and associated back-office systems meet the minimum specifications set out by O. Reg. 425/06. The meters exceed the specification in one specific area with respect to the inclusion of a communications chip based on the Zigbee standard. This communication chip will enable Guelph Hydro, through the smart meter, to communicate with in home devices such as displays, thermostats, and Zigbee equipped smart appliances.

Guelph Hydro believed that it was prudent to include the communication chip in the smart meters on the basis that the incremental cost to do so was minor (\$12.25/meter) in comparison to the alternative of having to replace large volumes of meters before their end of useful life (15 years). In addition, Guelph Hydro believes that substantial customer and electric system benefits would be missed if the chip was not included."

Questions / Requests:

- a) Please confirm which line item on Sheet 2 of the Smart Meter Rate Calculation Model is related to the communication chip cited in the preamble.

**Guelph Hydro's response:**

Guelph Hydro confirms that the line item 1.1.1 of the Smart Meter Rate Calculation Model includes the cost of the smart meter as well as the Zigbee communications chip embedded within the smart meter.

- b) Please explain the statement cited above regarding the alternative to the inclusion of the communication chip being the replacement of large volumes of meters before their end of useful life.

**Guelph Hydro's response:**

Guelph Hydro believed that in order to take full advantage of the benefits that a smart meter could offer, including the provision of real-time consumption information to a customer to empower customers to better understand and manage their energy consumption, as well as a cornerstone for "smartgrid" application development; for example, to support the development of Home Area Networking (HAN) and residential demand response, it was important to include the Zigbee communications chip embedded as part of the meter, at the time of initial purchase of the meter.

LDCs that were early adopters of the smart meter technology did not have the ability to include a communications chip inside the meter, as the technology was not sufficiently mature at the time, and standards were still evolving in the earlier days of smart metering.

The Zigbee communications standard emerged a key tool designed to enable some of the aforementioned applications, and we believed it would become an important element in the further development of a "culture of conservation" and the goals of reduced energy consumption for our residential customer class. By including the Zigbee chip at the time of initial smart meter procurement, Guelph Hydro believed it would avoid the expense of the future replacement of smart meters that were not equipped with the in-home communications tool, understanding that smart meters were expected to have a 15 year useful life.

**Appendix 1**

**Guelph\_IRR\_BoardStaff\_Q4.a –**

**Reconciliation with the Draft Rate Order**

**in EB-2007-0742**

**GUELPH HYDRO ELECTRIC SYSTEMS INC.**

**2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565,  
File Number EB-2007-0742**

**REVENUE REQUIREMENT**

	<b>Original Submission</b>	<b>Board Decision and Rate Order</b>	<b>Difference</b>	<b>Notes</b>
OM&A Expenses	\$ 10,167,742	\$ 9,737,594	\$ (430,148)	(1)
Amortization Expenses	5,899,200	5,637,037	\$ (262,163)	(2)
Total Distribution Expenses	16,066,942	15,374,631		
Regulated Return On Capital	7,870,884	7,554,446	\$ (316,438)	(3)
PILs	2,603,904	2,210,336	\$ (393,568)	(4)
<b>Service Revenue Requirement</b>	26,541,729	25,139,413	\$ (1,402,317)	
Revenue Offsets	(1,908,813)	(1,865,313)	\$ 43,500	(5)
<b>Base Revenue Requirement per OEB Decision - July 31, 2008</b>	24,632,916	23,274,100	\$ (1,358,816)	
<b>Board estimate of PILs overstatement in 2008 EDR</b>				
<b>\$200,000 to be credited to ratepayers in variance account #1592 over remainder of rate rebasing period i.e. 32 mths</b>				
Annual impact = \$200,000 x 12/32 =	0	(75,000)	\$ (75,000)	
<b>Base Revenue Requirement per OEB Decision and Rate Order - Sept 15, 2008</b>	\$ 24,632,916	\$ 23,199,100	\$ (1,433,816)	

**Notes:**

- (1) APPENDIX A
- (2) APPENDIX B
- (3) APPENDIX C
- (4) APPENDIX D
- (5) APPENDIX E

**GUELPH HYDRO ELECTRIC SYSTEMS INC.**

**2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742**

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<b>OM &amp; A Expenses</b>
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OM&A Expenses-Original Submission                      \$            10,167,742

**Adjustments:**

Removal of Smart Meter OM&A Expenditures	(193,500)	} (430,148) change
Removal of operating expenses related to Dawson Rd	(25,200)	
Remove consulting costs related to CDM program	(45,000)	
Eliminate one-time regulatory costs	(168,448)	
Add OEB approved amount for external regulatory costs	110,000	
Reduction of estimate for post-employment benefit costs as per OEB decision	(108,000)	

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**\$            9,737,594**

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**GUELPH HYDRO ELECTRIC SYSTEMS INC.**

**2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742**

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**AMORTIZATION**

Total Amortization Expense - Original Submission                      \$        5,899,200

**Adjustments:**

Removal of depreciation related to Smart Meter Capital Expenditures	(178,117)	} (262,163) change
Removal of depreciation related to Rockwood Substation and related feeders \$933,903 x 1/25 yrs =	(37,356)	
Removal of depreciation related to System Expansion & Upgrades not in service post 2008 \$674,000 x 1/25 yrs =	(26,960)	
Dawson Road disposal - impact insig (Original cost = 960,442 + 23,044 shed = 983,486 x 1/50yrs	(19,730)	
	<hr/>	
	\$        5,637,037	



## GUELPH HYDRO ELECTRIC SYSTEMS INC.

2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565,  
File Number EB-2007-0742

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### REGULATED RETURN ON CAPITAL

Regulated Return on Capital - Original  
Submission \$ 7,870,884

#### Adjustments:

##### Impact of change in rate base

Original rate base	106,012,735
Revised rate base	105,093,781
	<u>(918,954)</u>
x Original Rate of Return	<u>7.42%</u>

(68,186)

##### Impact of change in rate of return

Revised rate base	105,093,781
x Change in rate of return 7.19% less 7.42%	<u>-0.23%</u>

(241,716)

(6,536)

(316,438)  
change

\$ 7,554,445

#### Component Parts of Return

	Original	Revised	Difference
Deemed Interest Expense	3,484,480	3,348,393	(136,087)
Deemed Return on Equity	4,386,404	4,206,053	(180,351)
	<u>7,870,884</u>	<u>7,554,446</u>	<u>(316,438)</u>

GUELPH HYDRO ELECTRIC SYSTEMS INC.

2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742

## Rates of Return & Rate Base Calculations

2008 OEB APPROVED RATES OF RETURN		
Description	Deemed Portion	Effective Rate
Long-Term Debt	49.30%	6.10%
Short-Term Debt	4.00%	4.47%
Return On Equity	46.70%	8.57%
<b>Weighted Debt Rate</b>		5.98%
<b>Regulated Rate of Return</b>		7.19%

ORIGINAL RATE BASE CALCULATION FOR 2008		
Fixed Assets Opening Balance 2008		85,796,446.53
Fixed Assets Closing Balance 2008		91,222,427.55
<b>Average Fixed Asset Balance for 2008</b>		88,509,437.04
Working Capital Allowance		17,489,366.55
<b>Rate Base</b>		106,012,734.99
Regulated Rate of Return		7.42%
<b>Regulated Return on Capital</b>		7,870,883.71
Deemed Interest Expense		3,484,479.58
Deemed Return on Equity		4,386,404.13

RATE BASE CALCULATION FOR 2008		
Fixed Assets Opening Balance 2008		85,796,446.53
Fixed Assets Closing Balance 2008		86,668,423.86
<b>Average Fixed Asset Balance for 2008</b>		86,232,435.20
Working Capital Allowance		18,861,345.75
<b>Rate Base</b>		105,093,780.95
Regulated Rate of Return		7.19%
<b>Regulated Return on Capital</b>		7,554,445.75
Deemed Interest Expense		3,348,392.95
Deemed Return on Equity		4,206,052.79

# **GUELPH HYDRO ELECTRIC SYSTEMS INC.**

## **2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742**

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### **RATE BASE CALCULATION FOR 2008**

Net Fixed Assets Closing Balance 2008 -  
Original Submission

\$ 91,222,428

#### **Adjustments:**

Removal of Smart Meter Capital  
Expenditures

(2,765,452)

Removal of Accumulated Depreciation  
related to Smart Meters

178,117

Removal of Rockwood Substation

(711,174)

Removal of Feeders related to Rockwood  
Substation

(222,729)

Removal of Accumulated Depreciation  
related to Rockwood Substation and  
related feeders

37,356

Removal of System Expansions and  
Connections expenditures with in-service  
dates beyond the 2008 test year

(674,000)

(4,554,004)

Removal of Accumulated Depreciation  
related to System Expansions and  
Connections expenditures with in-service  
dates beyond the 2008 test year

26,960

Removal of Land and Building Related to  
Sale of Dawson Road Property

(995,146)

Removal of Accumulated Depreciation  
related to Sale of Dawson Road Property  
Remove 2008 Depreciation calculated on  
Dawson Road property

552,334

19,730

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\$ 86,668,424

# **GUELPH HYDRO ELECTRIC SYSTEMS INC.**

## **2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742**

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### WORKING CAPITAL ALLOWANCE FOR 2008

#### **Distribution Expenses**

Distribution Expenses - Operation	\$ 1,223,322
Distribution Expenses - Maintenance	1,433,534
Billing and Collecting	2,152,730
Community Relations	101,500
Administrative and General Expenses	4,599,604
Taxes Other than Income Taxes	531,629
Capital Taxes within 6105	(304,725)
Total Eligible Distribution Expenses	<u>9,737,594</u>

#### **Power Supply Expenses**

116,004,711

#### **Total Working Capital Expenses**

\$ 125,742,305

#### **Working Capital Allowance rate of 15%**

\$ 18,861,346

Total Working Capital Expenses - Original Submission

\$ 116,595,777

#### **Adjustments:**

Removal of Smart Meter OM&A Expenditures	(193,500)	9,146,528 change
Remove initial cost of power estimate	(106,428,035)	
Revised cost of power estimate	116,004,711	
Removal of operating expenses related to Dawson Rd	(25,200)	
Remove consulting costs related to CDM program	(45,000)	
Eliminate one-time regulatory costs	(168,448)	
Add OEB approved amount for external regulatory costs	110,000	
Reduction of estimate for post-employment benefit costs as per OEB decision	(108,000)	

#### **Total Working Capital Expenses**

125,742,305

#### **Working Capital Allowance rate of 15%**

\$ 18,861,346

**GUELPH HYDRO ELECTRIC SYSTEMS INC.**

**2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742**

**PILS**

Total PILS - Original Submission				\$ 2,603,904	
<b>Adjustments:</b>	<b>Ref</b>				
<i>Adjustments to Utility Income Before Income Taxes</i>					
Decrease in Base Revenue Requirement		(1,358,816)			
Decrease in OM &A Expenses	APPENDIX A	430,148			
Decrease in Amortization Expense	APPENDIX B	262,163			
Decrease in Deemed Interest Expense	APPENDIX C	136,087			
Decrease in Revenue Offsets	APPENDIX D	(43,500)			
Decrease in Capital Tax	Reference	62,756			
<b>Change in Utility Income Before Income Taxes</b>		(511,162)	\$	(511,162)	
<i>Adjustments to Taxable Income</i>					
Reduction in addback for Amortization Expense	APPENDIX B	(262,163)			
Add taxable capital gain related to sale of Dawson Rd property - land	Details Attached	369,278			\$393,567
Reduction in addback of ending financial statement reserves due to reduction in estimate of post-employment benefits cost liability	Details Attached	(126,467)			decrease
Removal of interest addback as per OEB decision	Details Attached	(604,588)			
Reduction in CCA due to removal of capital asset additions as per OEB decision	Details Attached	147,602			
<b>Change in Utility Income Before Income Taxes</b>		(476,338)		(476,338)	
<b>Change in Taxable Income</b>				(987,500)	
<b>Tax Rate</b>				33.50%	
<b>Reduction in Income Taxes</b>			(330,812)	(330,812)	
<b>Reduction in Capital Taxes</b>				(62,756)	
<b>Rounding</b>				1	
				<u>\$ 2,210,336</u>	

The total market value of the 4.47 acres at Dawson road, and all the Buildings were assessed at \$ 1,494,000 in 2007. At this time, the land had a value of \$32,000/.12acres based on a sale of a portion of the Dawson land at that time. Applying this rate to the 4.47 acres results in a land value of 4.47acres x \$32,000/.12 acres = \$ 1,192,000 or approximately 80% of the total FMV of the property

## (2) Post-Employment Benefit Liability

Estimate per original Submission 8,707,467

Decision per Board:

Actual 2007 Balance	8,169,000	
Allowable increase	<u>412,000</u>	8,581,000

Reduction in addback of ending financial statement reserves	<u>(126,467)</u>
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## (3) Capital Cost Allowance Changes

Removal of capital asset additions as per OEB Decision:

- Smart Meters	2,765,452				
- Rockwood Substation & Feeders	933,903				
- System Expansions and Connections	<u>674,000</u>	4,373,355	x	0.04 =	174,934

1/2 year rule rates



Adjustment to Buildings CCA class for Dawson road removed at lesser of cost or proceeds:

Undepreciated Capital Cost of pool (beg of year)	643,093			
Less: removal of Dawson property at lesser of cost or proceeds	<u>(187,554)</u>			
	455,539	x	0.06 =	(27,332)

N.B. No CCA taken on Dawson property in original submission

147,602

**GUELPH HYDRO ELECTRIC SYSTEMS INC.**

**2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742**

**CAPITAL TAX**

**Original Net Taxable Capital** 105,906,236

Less:

Utilization of Full \$15M Exemption	OEB Decision	(15,000,000)	
	Original Claim	<u>14,874,014</u>	(125,986)

**Adjustments to Net Taxable Capital**

<i>Reduction in Retained Earnings</i>	See calc below	(181,175)
---------------------------------------	----------------	-----------

<i>Reduction in deferred credits (employee future benefits)</i>	Original estimate	(8,707,467)	
	Revised estimate	<u>8,581,000</u>	(126,467)

*Increase in Other Reserves (NBV-UCC difference)*

OEB Decision UCC	98,940,804	
NBV	<u>(86,668,424)</u>	
	12,272,380	
Original UCC	102,711,019	
NBV	<u>(91,222,428)</u>	
	11,488,591	783,789

Revised Net Taxable Capital Amount - OEB Decision	<u>106,256,397</u>
---	--------------------

Capital Tax Rate	<u>0.225%</u>
------------------	---------------

Revised Capital Tax Amount - OEB Decision	<b>239,077</b>
---	----------------

Original Capital Tax Amount	301,833
-----------------------------	---------

<u>(62,756)</u>
-----------------

*Reduction in Retained Earnings*

Decrease in Base Revenue Requirement		(1,358,816)
Decrease in OM &A Expenses	APPENDIX A	430,148
Decrease in Amortization Expense	APPENDIX B	262,163
Decrease in Deemed Interest Expense	APPENDIX C	136,087
Decrease in Revenue Offsets	APPENDIX D	(43,500)
Decrease in Capital Tax	Reference	<u>61,515</u>

<b>Change in Utility Income Before Income Taxes</b>	(512,403)	\$	(512,403)	<b>A</b>
---	-----------	----	-----------	----------



*Adjustments to Taxable Income*

Reduction in addback for Amortization Expense	APPENDIX B	(262,163)	
Add taxable capital gain related to sale of Dawson Rd property - land	Details Attached	369,278	
Reduction in addback of ending financial statement reserves due to reduction in estimate of post-employment benefits cost liability	Details Attached	(126,467)	
Removal of interest addback as per OEB decision	Details Attached	(604,588)	
Reduction in CCA due to removal of capital asset additions as per OEB decision	Details Attached	<u>147,602</u>	
<b>Change in Utility Income Before Income Taxes</b>		(476,338)	<u>(476,338)</u>
<b>Change in Taxable Income</b>			(988,741)
<b>Tax Rate</b>			<u>33.50%</u>
<b>Reduction in Income Taxes</b>			<u>(331,228) B</u>
<b>Reduction in Retained Earnings</b>	<b>A - B</b>		<u>(181,175)</u>

\$ (1,865,313)

**GUELPH HYDRO ELECTRIC SYSTEMS INC.**

**2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742**

Account	Account #	USoA #	dr	cr
<b>1</b> Meter Reading Expenses-Work Order Chgs	1-5057-551.58-00	5310		193,500
Cash		1005	193,500	
			<u>193,500</u>	<u>193,500</u>
<b>Remove Smart Meter OM&amp;A expenses</b>				
<b>2</b> Smart Meter Capital and Recovery Offset				
Variance account		1555	2,765,452	
Smart Meters		1860		2,765,452
Accumulated amortization of electric utility plant - property, plant & equipment		2105	178,117	CCA Impact
Amortization of electric utility plant - property, plant & equipment		5705		178,117
			<u>2,943,569</u>	<u>2,943,569</u>
<b>Remove Smart Meter Capital expenses</b>				
<b>3</b> Cash		1005	933,903	
Substation Equipment		1820		711,174
UG Conduit		1840		222,729
Accumulated amortization of electric utility plant - property, plant & equipment		2105	37,356	
Amortization of electric utility plant - property, plant & equipment		5705		37,356
			<u>971,259</u>	<u>971,259</u>
<b>Remove Rockwood substation expenses</b>				
<b>4</b> Cash		1005	674,000	
Poles, Towers & Fixtures		1830		27,000
UG Conductors & Devices		1845		647,000
Accumulated amortization of electric utility plant - property, plant & equipment		2105	26,960	
Amortization of electric utility plant - property, plant & equipment		5705		26,960
			<u>700,960</u>	<u>700,960</u>
<b>Remove Expansion and upgrade expenses</b>				
<b>5</b> Cash		1005	937,771	
Land		1805		11,660
Building		1808		983,486
Accumulated Depreciation		2105	552,334	
Gain on Disposition		4355		298,079
Prepayments		1180		196,880
Accumulated amortization of electric utility plant - property, plant & equipment		2105	19,730	
Amortization of electric utility plant - property, plant & equipment		5705		19,730
			<u>1,509,835</u>	<u>1,509,835</u>
<b>Record disposal of Dawson Road property and removal of associated depreciation expense</b>				
<b>6</b> Non-utility rental income		4385	43,500	
Cash		1005		43,500

**GUELPH HYDRO ELECTRIC SYSTEMS INC.**

**2008 Forward Test Year Rate Application of January 12, 2008, License Number EB-2002-0565, File Number EB-2007-0742**

---

Account	Account #	USoA #	dr	cr
Maintenance of general plant		5675		25,200
Cash			25,200	

**Remove lease revenues and operating costs related to Dawson Road Property**

7 Residential energy Sales	4006	14,628,679	15,571,956
Energy Sales to Large Users	4020	8,260,481	8,793,128
Streetlighting Energy Sales	4025	169,522	180,453
Sentinel Lighting Energy Sales	4030	5,108	5,438
General Energy Sales	4035	52,652,209	56,047,294
Energy Sales for Resale	4055	10,308,119	10,972,800
Billed WMS	4062	10,457,834	10,417,259
Billed NW	4066	6,965,265	6,954,313
Billed CN	4068	7,073,195	7,062,070
Power Purchased	4705	91,571,069	86,024,119
Charges WMS	4708	10,417,259	10,457,834
Charges One Time	4712	-	-
Charges NW	4714	6,954,313	6,965,265
Charges CN	4716	7,062,070	7,073,195
		<u>226,525,124</u>	<u>226,525,124</u>

**Correct cost of power for error identified during interrogatory responses and OEB approved loss factors and all-in supply cost for power**

8 Outside services employed	5630		45,000
Cash	1005	45,000	

**Remove consulting costs related to the CDM programs as per OEB decision**

9 Cash	1005	168,448	
Regulatory expenses	5655		168,448
Cash	1005		110,000
Regulatory expenses	5655	110,000	

**Remove one time regulatory expenses disallowed by Board \$168,448**

**Add \$110,000 (\$50,000 + \$60,000) representing OEB approved amount for external regulatory costs**

10 Cash	1005	108,000	
Employee pensions & benefits	5645		108,000

**Reduce estimate of post-employment benefit costs as per OEB decision**

# **Appendix 2**

## **Guelph\_IRR\_BoardStaff\_Q4.a\_Correction to 2011 IRM Incremental Capital Workform\_Sheet E3.1**



Name of LDC: Guelph Hydro Electric Systems Inc.  
File Number: IRM3  
Effective Date: Sunday, May 01, 2011  
Version : 1.0

## LDC Information

<b>Applicant Name</b>	Guelph Hydro Electric Systems Inc.
<b>OEB Application Number</b>	IRM3
<b>LDC Licence Number</b>	ED-2002-0565
<b>Applied for Effective Date</b>	May 1, 2011
<b>Stretch Factor Group</b>	II
<b>Stretch Factor Value</b>	0.4%
<b>Last COS Re-based Year</b>	2008
<b>Last COS OEB Application Number</b>	EB-2007-0742
<b>ICM Billing Determinants for Growth - Numerator</b>	2009 Audited RRR
<b>ICM Billing Determinants for Growth - Denominator</b>	2008 Re-Based Forecast



**Name of LDC:** Guelph Hydro Electric Systems Inc.  
**File Number:** IRM3  
**Effective Date:** Sunday, May 01, 2011  
**Version :** 1.0

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### Purpose of Sheet

Enter LDC Data

Table of Contents

Set Up Rate Classes and enter Re-Based Billing Determinants and Tariff Rates

Removal of Rate Adders

Calculated Re-Based Revenue From Rates

Detailed Re-Based Revenue From Rates

Enter Billing Determinants for most recent actual year

Enter Current Rates to calculate current rate allocation

Shows calculation of Price Cap and Growth used for incremental capital threshold calculation

Input sheet to calculate Threshold and Incremental Capital

Summary of Incremental Capital Projects

Shows Calculation of Incremental Capital Revenue Requirement

Option A - Calculation of Incremental Capital Rate Rider - Fixed & Variable Split

Option B - Calculation of Incremental Capital Rate Rider - Variable Allocation



Name of LDC: Guelph Hydro Electric Systems Inc.  
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## Rate Class and Re-Based Billing Determinants & Rates

Last COS Re-based Year

2008

Last COS OEB Application Number

EB-2007-0742

Rate Group	Rate Class	Fixed Metric	Vol Metric	Re-based Billed Customers or Connections A	Re-based Billed kWh B	Re-based Billed kW C	Re-based Tariff Service Charge D	Re-based Tariff Distribution Volumetric Rate kWh E	Re-based Tariff Distribution Volumetric Rate kW F
RES	Residential	Customer	kWh	44,220	357,871,626		14.27	0.0164	
GSLT50	General Service Less Than 50 kW	Customer	kWh	3,612	146,156,347		13.26	0.0158	
GSGT50	General Service 50 to 999 kW	Customer	kW	515	0	1,023,682	231.36		2.7994
GSGT50	General Service 1,000 to 4,999 kW	Customer	kW	37	0	864,467	614.29		1.9595
LU	Large Use	Customer	kW	4	0	471,742	898.69		2.1526
USL	Unmetered Scattered Load	Connection	kWh	591	2,336,603		5.42	0.0249	
Sen	Sentinel Lighting	Connection	kW	30	0	352	6.46		7.1686
SL	Street Lighting	Connection	kW	13,670	0	25,194	0.14		3.3423
NA	Rate Class 9	NA	NA						
NA	Rate Class 10	NA	NA						
NA	Rate Class 11	NA	NA						
NA	Rate Class 12	NA	NA						
NA	Rate Class 13	NA	NA						
NA	Rate Class 14	NA	NA						
NA	Rate Class 15	NA	NA						
NA	Rate Class 16	NA	NA						
NA	Rate Class 17	NA	NA						
NA	Rate Class 18	NA	NA						
NA	Rate Class 19	NA	NA						
NA	Rate Class 20	NA	NA						
NA	Rate Class 21	NA	NA						
NA	Rate Class 22	NA	NA						
NA	Rate Class 23	NA	NA						
NA	Rate Class 24	NA	NA						
NA	Rate Class 25	NA	NA						





Name of LDC: Guelph Hydro Electric Systems Inc.  
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Removal of Rate Adders

Last COS Re-based Year	2008
Last COS OEB Application Number	EB-2007-0742

Rate Class	Re-based Tariff Service Charge	Re-based Tariff Distribution Volumetric Rate kWh	Re-based Tariff Distribution Volumetric Rate kW	Service Charge Rate Adders	Distribution Volumetric kWh Rate Adders	Distribution Volumetric kW Rate Adders
	A	B	C	D	E	F
Residential	14.27	0.0164	0.0000	1.00	0.0001	0.0000
General Service Less Than 50 kW	13.26	0.0158	0.0000	1.00	0.0001	0.0000
General Service 50 to 999 kW	231.36	0.0000	2.7994	1.00	0.0000	0.0374
General Service 1,000 to 4,999 kW	614.29	0.0000	1.9595	1.00	0.0000	0.0000
Large Use	898.69	0.0000	2.1526	1.00	0.0000	0.0000
Unmetered Scattered Load	5.42	0.0249	0.0000	0.00	0.0001	0.0000
Sentinel Lighting	6.46	0.0000	7.1686	0.00	0.0000	0.0286
Street Lighting	0.14	0.0000	3.3423	0.00	0.0000	0.0345



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## Calculated Re-Based Revenue From Rates

Last COS Re-based Year 2008

Last COS OEB Application Number EB-2007-0742

Rate Class	Re-based Billed Customers or Connections	Re-based Billed kWh	Re-based Billed kW	Re-based Base Service Charge	Re-based Base Distribution Volumetric Rate kWh	Re-based Base Distribution Volumetric Rate kW	Service Charge Revenue G = A * D *12	Distribution Volumetric Rate Revenue kWh H = B * E	Distribution Volumetric Rate Revenue kW I = C * F	Revenue Requirement from Rates J = G + H + I
	A	B	C	D	E	F				
Residential	44,220	357,871,626	0	13.27	0.0163	0.0000	7,041,593	5,833,308	0	12,874,900
General Service Less Than 50 kW	3,612	146,156,347	0	12.26	0.0157	0.0000	531,397	2,294,655	0	2,826,052
General Service 50 to 999 kW	515	0	1,023,682	230.36	0.0000	2.7620	1,423,625	0	2,827,410	4,251,034
General Service 1,000 to 4,999 kW	37	0	864,467	613.29	0.0000	1.9595	272,301	0	1,693,923	1,966,224
Large Use	4	0	471,742	897.69	0.0000	2.1526	43,089	0	1,015,472	1,058,561
Unmetered Scattered Load	591	2,336,603	0	5.42	0.0248	0.0000	38,439	57,948	0	96,386
Sentinel Lighting	30	0	352	6.46	0.0000	7.1400	2,326	0	2,513	4,839
Street Lighting	13,670	0	25,194	0.14	0.0000	3.3078	22,966	0	83,337	106,302
							9,375,735	8,185,910	5,622,655	23,184,299



Name of LDC: Guelph Hydro Electric Systems Inc.  
File Number: IRM3  
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## Detailed Re-Based Revenue From Rates

Last COS Re-based Year

2008

Last COS OEB Application Number

EB-2007-0742

Applicants Rate Base		Last Rate Re-based Amount	
<b>Average Net Fixed Assets</b>			
Gross Fixed Assets - Re-based Opening	\$ 123,637,713	A	
Add: CWIP Re-based Opening	\$ -	B	
Re-based Capital Additions	\$ 7,298,949	C	
Re-based Capital Disposals	-\$ 995,146	D	
Re-based Capital Retirements	\$ -	E	
Deduct: CWIP Re-based Closing	\$ -	F	
Gross Fixed Assets - Re-based Closing	\$ 129,941,516	G	
Average Gross Fixed Assets			\$ 126,789,615 $H = (A + G) / 2$
Accumulated Depreciation - Re-based Opening	\$ 37,841,267	I	
Re-based Depreciation Expense	\$ 5,984,160	J	
Re-based Disposals	-\$ 552,335	K	
Re-based Retirements	\$ -	L	
Accumulated Depreciation - Re-based Closing	\$ 43,273,092	M	
Average Accumulated Depreciation			\$ 40,557,180 $N = (I + M) / 2$
<b>Average Net Fixed Assets</b>			\$ 86,232,435 $O = H - N$
<b>Working Capital Allowance</b>			
Working Capital Allowance Base	\$ 125,742,305	P	
Working Capital Allowance Rate	15.0%	Q	
<b>Working Capital Allowance</b>			\$ 18,861,346 $R = P * Q$
<b>Rate Base</b>			\$ 105,093,781 $S = O + R$
<b>Return on Rate Base</b>			
Deemed ShortTerm Debt %	4.00%	T	\$ 4,203,751 $W = S * T$
Deemed Long Term Debt %	49.30%	U	\$ 51,811,234 $X = S * U$
Deemed Equity %	46.70%	V	\$ 49,078,796 $Y = S * V$
Short Term Interest	4.47%	Z	\$ 187,908 $AC = W * Z$
Long Term Interest	6.10%	AA	\$ 3,160,485 $AD = X * AA$
Return on Equity	8.57%	AB	\$ 4,206,053 $AE = Y * AB$
<b>Return on Rate Base</b>			\$ 7,554,446 $AF = AC + AD + AE$
<b>Distribution Expenses</b>			
OM&A Expenses	\$ 9,325,109	AG	
Amortization	\$ 5,637,037	AH	
Ontario Capital Tax (F1.1 Z-Factor Tax Changes)	\$ 239,079	AI	
Grossed Up PILs (F1.1 Z-Factor Tax Changes)	\$ 1,971,258	AJ	
Low Voltage	\$ 92,876	AK	
Transformer Allowance	\$ 319,608	AL	
	\$ -	AM	
	\$ -	AN	
	\$ -	AO	
			\$ 17,584,967 $AP = \text{SUM} (AG : AO)$
<b>Revenue Offsets</b>			
Specific Service Charges	-\$ 248,600	AQ	
Late Payment Charges	-\$ 100,000	AR	
Other Distribution Income	-\$ 125,213	AS	
Other Income and Deductions	-\$ 1,391,500	AT	-\$ 1,865,313 $AU = \text{SUM} (AQ : AT)$
<b>Revenue Requirement from Distribution Rates</b>			\$ 23,274,100 $AV = AF + AP + AU$
<b>Rate Classes Revenue</b>			
Rate Classes Revenue - Total (B1.1 Re-based Revenue - Gen)			\$ 23,184,299 $AW$



Name of LDC: Guelph Hydro Electric Systems Inc.  
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## Load Actual - Most Recent Year

Please enter 2009 Audited RRR on this page

Rate Class	Fixed Metric	Vol Metric	Billed Customers or Connections A	Billed kWh B	Billed kW C	Base Service Charge D	Base Distribution Volumetric Rate kWh E	Base Distribution Volumetric Rate kW F	Service Charge Revenue G = A * D * 12	Distribution Volumetric Rate Revenue kWh H = B * E	Distribution Volumetric Rate Revenue kW I = C * F	Total Revenue by Rate Class J = G + H + I
Residential	Customer	kWh	44,584	352,708,669	0	\$13.27	\$0.0163	\$0.0000	\$7,099,477	\$5,749,151	\$0	\$12,848,628
General Service Less Than 50 kW	Customer	kWh	3,624	141,492,398	0	\$12.26	\$0.0157	\$0.0000	\$533,126	\$2,221,431	\$0	\$2,754,557
General Service 50 to 999 kW	Customer	kW	538	368,795,357	1,000,754	\$230.36	\$0.0000	\$2.7620	\$1,485,822	\$0	\$2,764,083	\$4,249,905
General Service 1,000 to 4,999 kW	Customer	kW	41	373,502,975	893,555	\$613.29	\$0.0000	\$1.9595	\$301,739	\$0	\$1,750,921	\$2,052,660
Large Use	Customer	kW	4	237,183,984	439,421	\$897.69	\$0.0000	\$2.1526	\$43,089	\$0	\$945,897	\$988,986
Unmetered Scattered Load	Connection	kWh	582	2,424,418	0	\$5.42	\$0.0248	\$0.0000	\$37,853	\$60,126	\$0	\$97,979
Sentinel Lighting	Connection	kW	28	101,502	275	\$6.46	\$0.0000	\$7.1400	\$2,177	\$0	\$1,962	\$4,139
Street Lighting	Connection	kW	12,860	9,321,265	26,052	\$0.14	\$0.0000	\$3.3078	\$21,605	\$0	\$86,174	\$107,779
									<b>\$9,524,888</b>	<b>\$8,030,708</b>	<b>\$5,549,037</b>	<b>\$23,104,632</b>



**Name of LDC:** Guelph Hydro Electric Systems Inc  
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## Current Revenue from Rates

This sheet is used to determine the applicants most current alloc (after the most recent revenue cost ratio adjustment, if applicable calculate the incremental capital rate riders.

Rate Class	Fixed Metric
Residential	Customer
General Service Less Than 50 kW	Customer
General Service 50 to 999 kW	Customer
General Service 1,000 to 4,999 kW	Customer
Large Use	Customer
Unmetered Scattered Load	Connection
Sentinel Lighting	Connection
Street Lighting	Connection

C.

ation of revenues  
e) to be used to

Vol Metric	Current Base Service Charge A	Current Base Distribution Volumetric Rate kWh B	Current Base Distribution Volumetric Rate kW C	Re-based Billed Customers or Connections D
kWh	13.39	0.0164		44,220
kWh	12.24	0.0156		3,612
kW	230.28		2.7615	515
kW	618.96		1.9777	37
kW	905.99		2.1725	4
kWh	5.47	0.0250		591
kW	6.52		7.2063	30
kW	0.23		5.5465	13,670

Re-based Billed kWh E	Re-based Billed kW F	Current Base Service Charge Revenue G = A * D *12	Current Base Distribution Volumetric Rate kWh Revenue H = B * E	Current Base Distribution Volumetric Rate kW Revenue I = C * F	Total Current Base Revenue J = G + H + I
357,871,626	0	7,105,270	5,869,095	0	12,974,364
146,156,347	0	530,531	2,280,039	0	2,810,570
0	1,023,682	1,423,130	0	2,826,898	4,250,028
0	864,467	274,818	0	1,709,656	1,984,475
0	471,742	43,488	0	1,024,859	1,068,347
2,336,603	0	38,793	58,415	0	97,208
0	352	2,347	0	2,537	4,884
0	25,194	37,729	0	139,739	177,468
		9,456,106	8,207,549	5,703,689	23,367,344

<b>Service Charge % Total Revenue L = G / \$K</b>	<b>Distribution Volumetric Rate % Total Revenue M = H / \$K</b>	<b>Distribution Volumetric Rate % Total Revenue N = I / \$K</b>	<b>Total % Revenue O = J / \$K</b>
30.4%	25.1%	0.0%	55.5%
2.3%	9.8%	0.0%	12.0%
6.1%	0.0%	12.1%	18.2%
1.2%	0.0%	7.3%	8.5%
0.2%	0.0%	4.4%	4.6%
0.2%	0.2%	0.0%	0.4%
0.0%	0.0%	0.0%	0.0%
0.2%	0.0%	0.6%	0.8%
40.5%	35.1%	24.4%	100.0%





**Name of LDC:** Guelph Hydro Electric Systems Inc.  
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## Threshold Parameters

### Price Cap Index

Price Escalator (GDP-IPI)	1.30%
Less Productivity Factor	-0.72%
Less Stretch Factor	-0.40%

**Price Cap Index** **0.18%**

### Growth

ICM Billing Determinants for Growth - Numerator : 2009 Audited RRR	<u>\$23,104,632</u>	A
ICM Billing Determinants for Growth - Denominator : 2008 Re-Based Forecast	<u>\$23,184,299</u>	B

**Growth** **-0.34%** C = A / B



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## Threshold Test

Year	2008	
Status	Re-Basing	
<b>Price Cap Index</b>	<b>0.18%</b>	<b>A</b>
<b>Growth</b>	<b>-0.34%</b>	<b>B</b>
<b>Dead Band</b>	<b>20%</b>	<b>C</b>
<b>Average Net Fixed Assets</b>		
Gross Fixed Assets Opening	\$ 123,637,713	
Add: CWIP Opening	\$ -	
Capital Additions	\$ 7,298,949	
Capital Disposals	-\$ 995,146	
Capital Retirements	\$ -	
Deduct: CWIP Closing	\$ -	
Gross Fixed Assets - Closing	\$ 129,941,516	
Average Gross Fixed Assets	<u>\$ 126,789,615</u>	
Accumulated Depreciation - Opening	\$ 37,841,267	
Depreciation Expense	\$ 5,984,160	<b>D</b>
Disposals	-\$ 552,335	
Retirements	\$ -	
Accumulated Depreciation - Closing	\$ 43,273,092	
Average Accumulated Depreciation	<u>\$ 40,557,180</u>	
<b>Average Net Fixed Assets</b>	<u><b>\$ 86,232,435</b></u>	<b>E</b>
<b>Working Capital Allowance</b>		
Working Capital Allowance Base	\$ 125,742,305	
Working Capital Allowance Rate	15%	
<b>Working Capital Allowance</b>	<u><b>\$ 18,861,346</b></u>	<b>F</b>
<b>Rate Base</b>	<u><b>\$ 105,093,781</b></u>	<b>G = E + F</b>
<b>Depreciation</b>	<b>D \$ 5,984,160</b>	<b>H</b>
<b>Threshold Test</b>	<b>117.12%</b>	<b>I = 1 + ( G / H ) * ( B + A * ( 1 + B ) ) + C</b>
<b>Threshold CAPEX</b>	<b>\$ 7,008,381</b>	<b>J = H * I</b>



**Name of LDC:** Guelph Hydro Electric Systems Inc.  
**File Number:** IRM3  
**Effective Date:** Sunday, May 01, 2011  
**Version :** 1.0

## Summary of Incremental Capital Projects

Number of ICP's

1

Project ID #	Incremental Capital Non-Discretionary Project Description	Incremental Capital CAPEX	Amortization Expense	CCA
ICP 1	Municipal Transformer Station 115 kV to 13.8 kV	10,857,000	337,332	822,980
		<u>10,857,000</u>	<u>337,332</u>	<u>822,980</u>



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Guelph Hydro Electric Systems Inc.  
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## Incremental Capital Adjustment

### Current Revenue Requirement

Current Revenue Requirement - Total	\$	23,274,100	A
-------------------------------------	----	------------	---

### Return on Rate Base

Incremental Capital CAPEX			\$	10,857,000	B
Depreciation Expense			\$	337,332	C
Incremental Capital CAPEX to be included in Rate Base			\$	10,519,668	D = B - C
Deemed ShortTerm Debt %	4.0%	E	\$	420,787	G = D * E
Deemed Long Term Debt %	49.3%	F	\$	5,186,196	H = D * F
Short Term Interest	4.47%	I	\$	18,809	K = G * I
Long Term Interest	6.10%	J	\$	316,358	L = H * J
Return on Rate Base - Interest			\$	335,167	M = K + L
Deemed Equity %	46.7%	N	\$	4,912,685	P = D * N
Return on Rate Base -Equity	8.57%	O	\$	421,017	Q = P * O
Return on Rate Base - Total			\$	756,184	R = M + Q

### Amortization Expense

Amortization Expense - Incremental	C	\$	337,332	S
------------------------------------	---	----	---------	---

### Grossed up PIL's

Regulatory Taxable Income	O	\$	421,017	T
Add Back Amortization Expense	S	\$	337,332	U
Deduct CCA		\$	822,980	V
Incremental Taxable Income		\$	64,631	W = T + U - V
Current Tax Rate (F1.1 Z-Factor Tax Changes)	28.2%	X		Y = W * X
PIL's Before Gross Up		\$	18,257	Z = Y / (1 - X)
Incremental Grossed Up PIL's		\$	25,444	

### Ontario Capital Tax

Incremental Capital CAPEX		\$	10,857,000	AA
Less : Available Capital Exemption (if any)		\$	11,000,000	AB
Incremental Capital CAPEX subject to OCT		\$	143,000	AC = AA - AB
Ontario Capital Tax Rate (F1.1 Z-Factor Tax Changes)	0.000%	AD		AE = AC * AD
Incremental Ontario Capital Tax		\$	-	

### Incremental Revenue Requirement

Return on Rate Base - Total	Q	\$	756,184	AF
Amortization Expense - Total	S	\$	337,332	AG
Incremental Grossed Up PIL's	Z	\$	25,444	AH
Incremental Ontario Capital Tax	AE	\$	-	AI
Incremental Revenue Requirement		\$	1,068,072	AJ = AF + AG + AH + AI



Name of LDC: Guelph Hydro Electric Systems Inc.  
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Effective Date: Sunday, May 01, 2011  
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## Calculation of Incremental Capital Rate Rider - Option A Fixed and Variable

Rate Class	Distribution			Distribution				Billed			Distribution		
	Service	Volumetric	Volumetric	Service	Rate	Distribution	Total Revenue	Customers	Billed	Billed	Service	Volumetric	Volumetric
	Charge %	Rate %	Rate %	Charge %	Revenue kWh	Rate Revenue kW		or Connections	kWh	kW	Charge Rate Rider	Rate kWh	Rate kW
	A	B	C	D = \$N * A	E = \$N * B	F = \$N * C	G = D + E + F	H	I	J	K = D / H / 12	L = E / I	M = F / J
Residential	30.4%	25.1%	0.0%	#####	\$ 268,264.00	\$ -	\$ 593,030.97	44,220	#####	0	\$0.612029	\$0.000750	
General Service Less Than 50 kW	2.3%	9.8%	0.0%	\$ 24,249.44	\$ 104,215.80	\$ -	\$ 128,465.24	3,612	#####	0	\$0.559465	\$0.000713	
General Service 50 to 999 kW	6.1%	0.0%	12.1%	\$ 65,048.30	\$ -	\$ 129,211.57	\$ 194,259.87	515	0	#####	\$10.525616		\$0.126222
General Service 1,000 to 4,999 kW	1.2%	0.0%	7.3%	\$ 12,561.37	\$ -	\$ 78,144.81	\$ 90,706.17	37	0	864,467	\$28.291363		\$0.090397
Large Use	0.2%	0.0%	4.4%	\$ 1,987.72	\$ -	\$ 46,844.18	\$ 48,831.90	4	0	471,742	\$41.410902		\$0.099300
Unmetered Scattered Load	0.2%	0.2%	0.0%	\$ 1,773.16	\$ 2,670.03	\$ -	\$ 4,443.19	591	2,336,603	0	\$0.250022	\$0.001143	
Sentinel Lighting	0.0%	0.0%	0.0%	\$ 107.29	\$ -	\$ 115.94	\$ 223.23	30	0	352	\$0.298016		\$0.329385
Street Lighting	0.2%	0.0%	0.6%	\$ 1,724.52	\$ -	\$ 6,387.15	\$ 8,111.68	13,670	0	25,194	\$0.010513		\$0.253519
				#####	\$ 375,149.83	\$ 260,703.65	\$ 1,068,072.24						

N

Enter the above rate riders onto Sheet "J2.8 Incremental Capital Rate Rider" of the 2011 OEB IRM3 Rate Generator.



**Name of LDC:** Guelph Hydro Electric Systems Inc.  
**File Number:** IRM3  
**Effective Date:** Sunday, May 01, 2011  
**Version :** 1.0

## Calculation of Incremental Capital Rate Rider - Option B Variable

Rate Class	Total Revenue \$ by Rate Class A	Total Revenue % by Rate Class B = A / \$H	Total Incremental Capital \$ by Rate Class C = \$I * B	Billed kWh D	Billed kW E	Distributio n Volumetric Rate kWh Rate Rider F = C / D	Distributio n Volumetric Rate kW Rate Rider G = C / E
Residential	\$12,974,364	55.52%	\$593,031	#####	0	\$0.0017	
General Service Less Than 50 kW	\$2,810,570	12.03%	\$128,465	#####	0	\$0.0009	
General Service 50 to 999 kW	\$4,250,028	18.19%	\$194,260	0	#####		\$0.1898
General Service 1,000 to 4,999 kW	\$1,984,475	8.49%	\$90,706	0	864,467		\$0.1049
Large Use	\$1,068,347	4.57%	\$48,832	0	471,742		\$0.1035
Unmetered Scattered Load	\$97,208	0.42%	\$4,443	2,336,603	0	\$0.0019	
Sentinel Lighting	\$4,884	0.02%	\$223	0	352		\$0.6342
Street Lighting	\$177,468	0.76%	\$8,112	0	25,194		\$0.3220
	<b>\$23,367,344</b>	<b>100.00%</b>	<b>\$1,068,072</b>				
	<b>H</b>		<b>I</b>				

Enter the above rate riders onto  
 Sheet  
 "J2.8 Incremental Capital Rate  
 Rider"

# **Appendix 3**

## **Guelph\_IRR\_BoardStaff\_Q14.a\_RFP**



395 Southgate Drive  
Guelph, ON N1G 4Y1  
Tel: (519) 837-4710  
Fax: (519) 822-4963  
Email: amolyneaux@guelphhydro.com  
www.guelphhydro.com

## **REQUEST FOR PROPOSAL – GUELPH HYDRO ELECTRIC SYSTEMS INC. 115kV-13.8kV TRANSFORMER STATION**

June 22, 2009

### **1.0 General**

Guelph Hydro Electric Systems Inc. (GHESI) is considering the construction of a new 115kV-13.8kV TS in the south end of the city of Guelph. This would be the first TS constructed by GHESI. The other three existing TS's in Guelph are owned and operated by Hydro One. The proposed site(s) are in close proximity to the 115kV transmission lines and the lands are in an industrial area where zoning will permit a TS. The in-service date shall be mid-2011. Following the selection of a proponent, work for fees may commence as early as July 31, 2009.

Firms submitting a RFP for consideration must confirm to GHESI in their submission that they have the necessary resources available to meet this schedule taking into account the long lead times for major equipment (i.e. transformers and switchgear).

Firms are also requested to submit a list of all key team members and their qualifications along with examples of recent comparable projects with at least three references. In your submission, please demonstrate your recent experience with respect to construction of 115kV or 230kV - 13.8kV transformer stations in Ontario. Other experience dealing with the IESO, Hydro One and the Ministry of Environment should be noted.

As part of this RFP we are looking for budgetary costs for a completed TS (exclusive of property acquisition and 13.8kV feeder cables) for the Base Design and Options 1 and 2 as outlined in section 2.0, as well as the engineering services as outlined in section 3.0. Additional design requirements are outlined in Section 4.0.



## **2.0 Basic Electrical Arrangement**

As part of this RFP, there are two design options as follows:

Base Design: The TS will have two (2) 30/40/50 (65MVA ten day summer LTR) power transformers with associated 115kV and 13.8kV assemblies. The station will be designed with an ultimate configuration of twelve (12) 13.8kV feeders. The initial number of 13.8kV feeder breakers will be eight (8). A basic single line diagram for this base design is shown in figure 1.

Option 1: This option is to include the installation of feeder tie switches. A basic single line diagram for this option is shown in figure 2.

Option 2: This option is to include power transformers with dual high voltage primary (230kV and 115kV); and 230kV primary switchgear to facilitate conversion to 230kV supply at a later date.

The successful proponent may prepare enhancements or alternate schemes as required.

## **3.0 Scope of Engineering Services**

Engineering services shall include but not be limited to:

- Provide engineering services to obtain all necessary approvals from the IESO, Hydro One, the City of Guelph, the Ministry of Environment, etc. to allow construction of the station, including but not limited to the IESO System Impact Assessment (SIA) and the Hydro One Connection Impact Assessment (CIA). It also includes acoustic engineering, geotechnical engineering and landscaping design.
- Complete a Class Environmental Assessment for minor transmission facilities as per the latest requirements of the Ministry of Environment.
- Provide architectural and structural services to construct a suitable building to house the low voltage switchgear and associated equipment.
- Provide engineering services to construct the high voltage yard for high voltage equipment and two transformers.
- Complete the design of the electrical and structural facilities including preparation of equipment specifications, preparation of tender documents and contracts for equipment, material and contractors.

- Schedule all material and contractors necessary to complete the work to the satisfaction of GHESI.
- Review of manufacturer's drawings and bid analysis and recommendations. All purchase orders for material and labour will be issued by GHESI.
- Provide engineering design and coordination services for the IESO wholesale metering requirements. The proponent will also be required to work with GHESI's selected Meter Service Provider (MSP).
- Witness testing of major equipment (i.e. transformers, circuit switchers and switchgear).
- Provide project and construction management.
- Commissioning of electrical and mechanical systems to ensure correct function to the point of operational readiness.

Your proposal will provide a total estimated cost for engineering and architectural services to obtain necessary approvals, design, manage, construct, install and commission all facilities associated with a new 115kV or 230kV - 13.8kV TS consistent with this RFP to a point of operational readiness. Pricing should be submitted for the base design along with price adders for both option 1 and option 2.

Break down the costing for each part of the work in as much detail as possible. Include a page showing your standard hourly rates. Payment should be identified on an hourly basis with a reasonable upset limit subject to allowances for work that could not be reasonably expected. If your firm would be hiring other firm(s) for part of the work, please indicate what firm(s) you would be using and indicate their scope of work. All work must be done in accordance with IESO requirements, the OEB Transmission System Code, Hydro One requirements, all relevant legislation (including health and safety regulations), municipal requirements and industry accepted practice. Price is not the only consideration in selecting a proponent.

#### **4.0 Additional Design Requirements**

##### **4.1 115kV or 230kV Switchgear**

The 115kV or 230kV switchgear is to be "outdoor" and will connect to the transformer with an overhead air insulated bus. Connections to the Hydro One 115kV system will be designed and installed under this contract and in accordance with Hydro One requirements. Hydro One may be required to

change out an existing 115kV tower. Required Hydro One and IESO approvals will be obtained by the engineering firm. The engineering firm will also coordinate the project with Hydro One as required. Provision for the conversion of all associated equipment from 115kV to 230kV is to be outlined in option 2.

#### **4.2 13.8kV Switchgear**

The 13.8kV feeder breakers will be “indoor”. This RFP is to be based on air insulated switchgear however, GHESI may entertain other alternatives. A spare breaker will also be required for emergencies or maintenance purposes. The initial design shall be based on eight (8) feeder breakers with the provision for four (4) additional breakers.

Design/installation/termination of the outgoing feeder cables shall be excluded from this contract. Provision shall be made for termination of our standard feeder cable which is 15kV, 1000 kcmil Al.

#### **4.3 SCADA Interface/Protection**

All standard status, analog and control points will be monitored by GHESI's existing SCADA Master Station. The GHESI supplied RTU will be Telvent Sage based using DNP/IP protocol to communicate with the SCADA Master Station. The protection and control communication networks will be based on Ethernet infrastructure using IP based protocols (i.e. DNP/IP).

#### **4.4 Wholesale Revenue Metering**

Metering shall be 13.8kV outdoor secondary bus metering. Tertiary Emergency Restoration Plan metering will be required and shall be supplied from the protection and control IT's. The proponent shall work with GHESI's MSP to facilitate installation of the IESO compliant wholesale revenue metering.

All primary, equipment and secondary protection shall be designed per the latest IESO, Hydro One and GHESI specifications and practices. All Wholesale Revenue Metering shall be designed per the latest IESO, Hydro One and Guelph Hydro specifications and practices.

#### **4.5 Transformers**

The two (2) transformers shall be 30/40/50 MVA with a 65 MVA ten day summer LTR. The transformers shall have secondary on-load tap changers.

As mentioned above, there are three existing transformer stations located in Guelph. Parallels will be made between the 13.8kV feeders from the GHESI and the existing Hydro One TS's, thus the 13.8kV phasor relationship must be identical with the three existing TS's.

#### **4.6 Building / Duct Structures**

The building shall be designed to include a full basement with 10' ceiling to accommodate cable tray and feeder egress. A tamperproof full grounding grid shall be incorporated into the design. Duct structures within the station property will be designed and installed under this contract, as necessary, and will terminate at locations designated by GHESI.

#### **5.0 GHESI Project Administration**

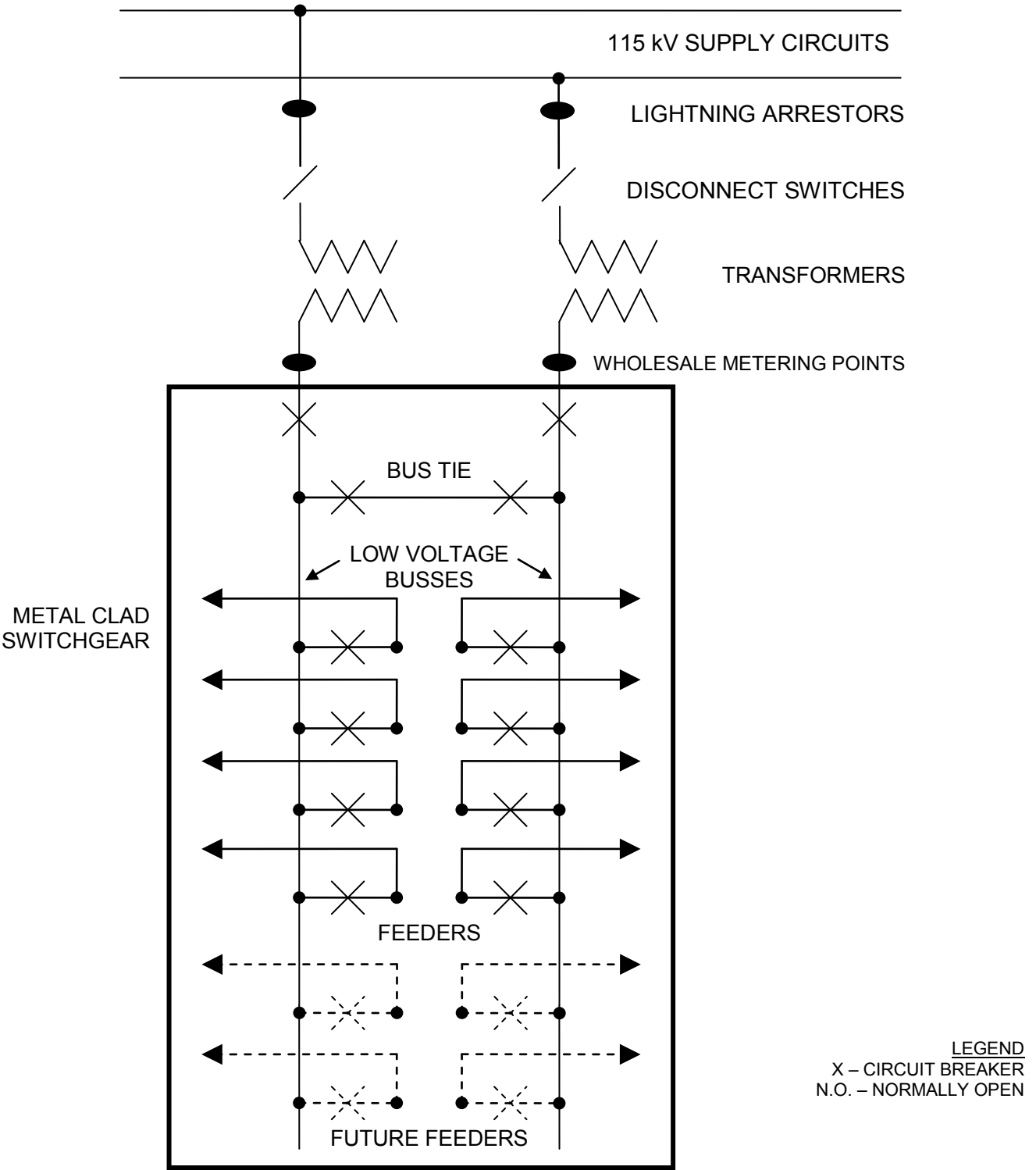
This RFP is to provide proponents with a broad overview of the proposed new Transformer Station. The successful proponent will be expected to prepare specifications based on the requirements of a number of staff members at GHESI who will provide input at each stage of the design process. GHESI will be responsible for the ongoing maintenance and operation of the station. The two main contacts at GHESI will be Arlen Molyneaux and Michael Wittemund. Inquiries can be made to either of these individuals by telephone or e-mail as follows:

Arlen R. Molyneaux, P.Eng.  
Director of Engineering  
Guelph Hydro Electric Systems Inc.  
519-837-4710  
[amolyneaux@guelphhydro.com](mailto:amolyneaux@guelphhydro.com)

Michael Wittemund, P.Eng.  
Planning and Standards Engineer  
Guelph Hydro Electric Systems Inc.  
519-837-4719  
[mwittemund@guelphhydro.com](mailto:mwittemund@guelphhydro.com)

# Base Design

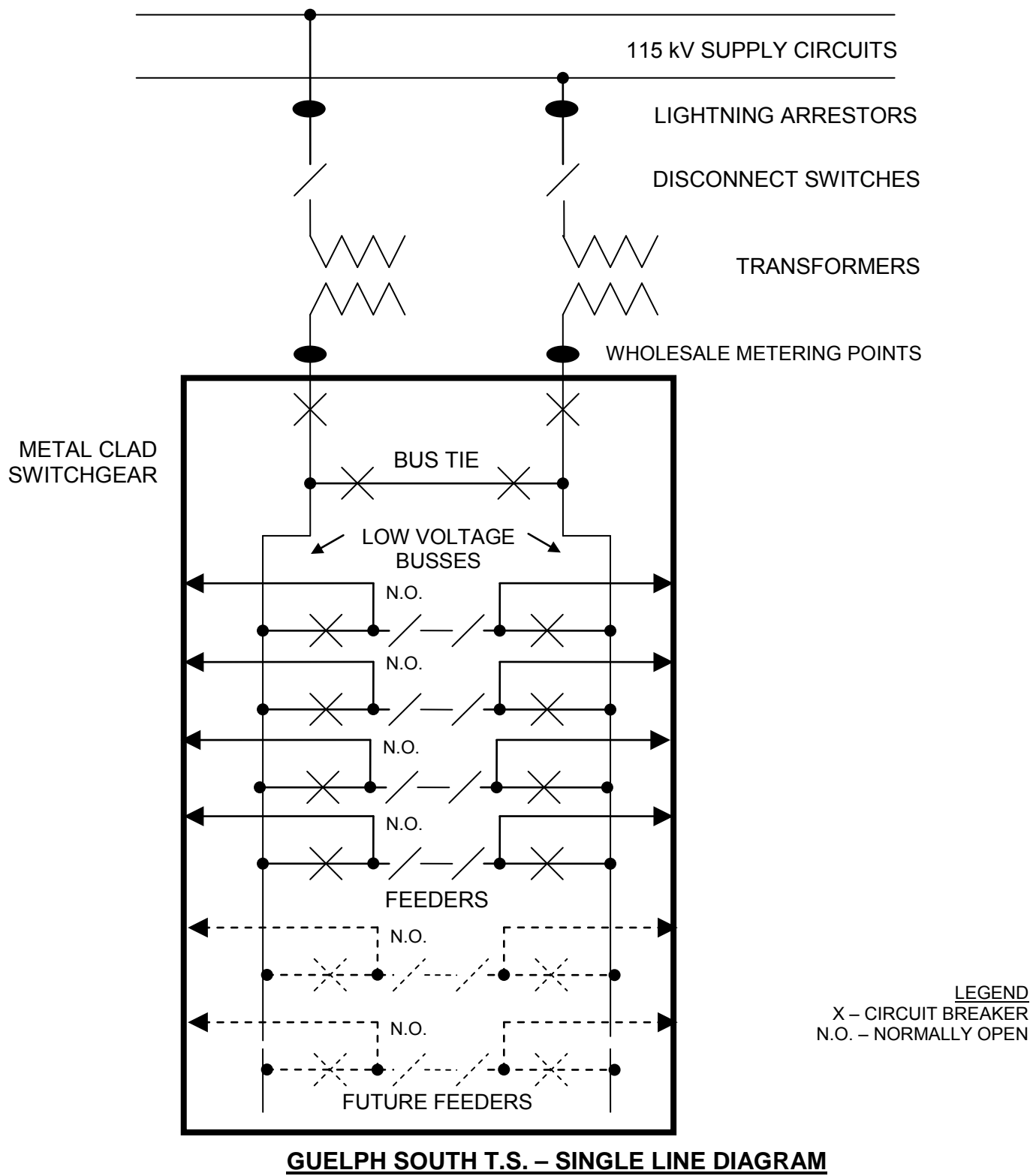
FIGURE 1



GUELPH SOUTH T.S. – SINGLE LINE DIAGRAM

# Option #1

FIGURE 2



# **Appendix 4**

## **Guelph\_IRR\_BoardStaff\_Q18.a\_Load Forecast used for Smart Meter Rate Adder Calculation - metered customers**

**(for more details, please see the electronic file in Excel)**

## Hydro Weather Normal Load Forecast for 2010 Rate Application

11/26/2010

**2011 Metered  
customers  
49,933**

	2002 Actual	2003 Actual	2004 Actual	2005 Actual	2006 Actual	2007 Actual	2008	2009	2010	2011 Weather Normal
Actual kWh Purchases	1,521,498,085	1,508,144,802	1,578,638,924	1,641,442,335	1,633,788,172	1,631,697,103	1,594,089,338	1,504,188,795	1,100,104,886	0
Predicted kWh Purchases	1,545,864,359	1,536,432,450	1,566,451,639	1,614,685,202	1,596,020,835	1,633,348,938	1,602,609,387	1,528,173,234	1,604,906,611	1,660,608,145
% Difference	1.6%	1.9%	-0.8%	-1.6%	-2.3%	0.1%	0.5%	1.6%	45.9%	
Billed kWh	1,429,964,026	1,485,066,532	1,556,406,606	1,619,044,518	1,609,929,223	1,609,674,693	1,574,447,832	1,485,530,567	1,062,154,355	1,596,124,707
<b>By Class</b>										
<b>Residential</b>										
Customers	36,847	38,064	39,401	40,692	41,643	42,728	43,747	44,584	44,584	45,658
kWh	293,799,852	325,123,193	333,362,711	356,926,019	348,418,729	356,617,106	356,875,114	352,708,669	252,186,698	415,279,852
<b>General Service &lt; 50 kW</b>										
Customers	3,213	3,249	3,324	3,422	3,468	3,534	3,581	3,624	3,624	3,679
kWh	136,077,545	134,877,221	136,449,757	144,289,566	141,613,943	145,574,704	146,877,568	141,492,398	101,167,064	163,627,236
<b>General Service &gt; 50 to 999 kW</b>										
Customers	446	461	488	498	510	521	539	538	538	550
kWh	359,367,947	418,240,754	441,567,398	428,032,331	427,648,833	447,771,407	425,057,772	368,795,357	263,688,680	411,591,250
kW	948,603	1,100,318	1,152,315	1,130,150	1,098,433	1,146,098	1,096,291	1,000,754	715,539	1,081,791
<b>General Service &gt; 1000 to 4999 kW</b>										
Customers	35	37	38	39	40	41	41	41	41	42
kWh	400,932,784	370,939,934	372,045,282	424,553,499	420,373,256	389,939,014	385,445,266	373,502,975	267,054,627	365,660,808
kW	793,258	809,727	799,328	896,363	893,595	839,674	869,193	893,555	638,892	802,018
<b>Large Use &gt;5000 kW</b>										
Customers	4	4	4	4	4	4	4	4	4	4
kWh	227,961,458	224,351,882	261,286,315	253,448,418	260,643,976	258,415,580	248,400,500	237,183,984	169,586,549	228,573,883
kW	370,271	402,534	467,895	463,386	474,726	469,790	450,555	439,421	314,186	411,331
<b>Streetlights</b>										
Customers	10,737	10,876	11,253	11,838	12,237	12,574	12,781	12,860	12,881	13,177
kWh	9,092,083	8,140,829	8,359,778	8,527,565	8,759,526	8,768,684	9,257,880	9,321,265	6,664,705	8,980,968
kW	22,446	22,768	23,322	23,860	24,507	25,377	25,810	26,052	18,627	24,870
<b>Sentinel Lights</b>										
Connections	34	30	29	31	31	29	28	28	28	27
kWh	87,564	128,972	127,140	127,894	127,133	119,940	101,463	101,502	72,574	99,147
kW	276	359	439	355	346	326	281	275	197	284
<b>Unmetered Loads</b>										
Connections	568	588	602	595	581	579	580	582	585	587
kWh	2,644,793	3,263,747	3,208,225	3,139,226	2,343,827	2,468,258	2,432,270	2,424,418	1,733,459	2,311,562
<b>Total</b>										
Customer/Connections	51,883	53,309	55,139	57,118	58,513	60,010	61,301	62,260	62,284	63,725
kWh	1,429,964,026	1,485,066,532	1,556,406,606	1,619,044,518	1,609,929,223	1,609,674,693	1,574,447,832	1,485,530,567	1,062,154,355	1,596,124,707
kW from applicable classes	2,134,853	2,335,707	2,443,299	2,514,114	2,491,607	2,481,265	2,442,130	2,360,057	1,687,440	2,320,294
	51,883	53,309	55,139	57,118	58,513	60,010	61,301	62,260	62,284	63,725
	1,429,964,026	1,485,066,532	1,556,406,606	1,619,044,518	1,609,929,223	1,609,674,693	1,574,447,832	1,485,530,567	1,062,154,355	1,596,124,707
	2,134,853	2,335,707	2,443,299	2,514,114	2,491,607	2,481,265	2,442,130	2,360,057	1,687,440	2,320,294



	2008 Board Approved	2008	2009	2010	2011 Weather Normal
Actual kWh Purchases		1,594,089,338	1,504,188,795	1,100,104,886	
Predicted kWh Purchases		1,602,609,387	1,528,173,234	1,604,906,611	1,660,608,145
% Difference		0.53%	1.59%	45.89%	0.00%
Billed kWh		1,574,447,832	1,485,530,567	1,062,154,355	1,596,124,707
<b>By Class</b>					
Residential					
Customers	44,220	43,747	44,584	44,584	45,658
kWh	357,871,626	356,875,114	352,708,669	252,186,698	415,279,852
General Service < 50 kW					
Customers	3,612	3,581	3,624	3,624	3,679
kWh	146,156,347	146,877,568	141,492,398	101,167,064	163,627,236
General Service > 50 to 999 kW					
Customers	515	539	538	538	550
kWh	443,687,218	425,057,772	368,795,357	263,688,680	411,591,250
kW	1,023,682	1,096,291	1,000,754	715,539	1,081,791
General Service 1000 to 4999 kW					
Customers	37	41	41	41	42
kWh	402,368,663	385,445,266	373,502,975	267,054,627	365,660,808
kW	864,467	869,193	893,555	638,892	802,018
Large Use >5000 kW					
Customers	4	4	4	4	4
kWh	260,157,189	248,400,500	237,183,984	169,586,549	228,573,883
kW	471,742	450,555	439,421	314,186	411,331
Streetlights					
Connections	13,670	12,781	12,860	12,881	13,177
kWh	9,180,192	9,257,880	9,321,265	6,664,705	8,980,968
kW	25,194	25,810	26,052	18,627	24,870
Sentinel Lights					
Connections	30	28	28	28	27
kWh	128,416	101,463	101,502	72,574	99,147
kW	352	281	275	197	284
Unmetered Loads					
Connections	591	580	582	585	587
kWh	2,336,603	2,432,270	2,424,418	1,733,459	2,311,562
Total					
Customer/Connections	62,679	61,301	62,260	62,284	63,725
kWh	1,621,886,254	1,574,447,832	1,485,530,567	1,062,154,355	1,596,124,707
kW from applicable classes	2,385,437	2,442,130	2,360,057	1,687,440	2,320,294

Table 19 - Variance from 2008 Board Approved [%]

	2008 Board Approved	2008 Actual Variance	2009 Actual Variance	2010 Actual Variance	2011 Weather Normal Variance
<b>By Class</b>					
Residential					
Customers	44,220	-1.07%	0.82%	0.82%	3.25%
kWh	357,871,626	-0.28%	-1.44%	-29.53%	16.04%
General Service <					
Customers	3,612	-0.86%	0.33%	0.33%	1.85%
kWh	146,156,347	0.49%	-3.19%	-30.78%	11.95%
General Service > 50 to 999 kW					
Customers	515	4.68%	4.37%	4.37%	6.85%
kWh	443,687,218	-4.20%	-16.88%	-40.57%	-7.23%
kW	1,023,682	7.09%	-2.24%	-30.10%	5.68%
General Service 1000 to 4999 kW					
Customers	37	10.59%	10.81%	10.81%	12.86%
kWh	402,368,663	-4.21%	-7.17%	-33.63%	-9.12%
kW	864,467	0.55%	3.36%	-26.09%	-7.22%
Large Use >5000					
Customers	4	0.00%	0.00%	0.00%	0.00%
kWh	260,157,189	-4.52%			
kW	471,742	-4.49%	-6.85%	-33.40%	-12.81%
Streetlights					
Connections	13,670	-6.50%	-5.93%	-5.77%	-3.60%
kWh	9,180,192	0.85%	1.54%	-27.40%	-2.17%
kW	25,194	2.45%	3.40%	-26.07%	-1.29%
Sentinel Lights					
Connections	30	-7.22%	-6.39%	-6.39%	-8.45%
kWh	128,416	-20.99%	-20.96%	-43.49%	-22.79%
kW	352	-20.31%	-21.92%	-44.17%	-19.31%
Unmetered Loads					
Connections	591	-1.86%	-1.52%	-1.02%	-0.65%
kWh	2,336,603	4.09%	3.76%	-25.81%	-1.07%
Total					
Customer/Connections	62,679	-2.20%	-0.67%	-0.63%	1.67%
kWh	1,621,886,254	-2.92%	-8.41%	-34.51%	-1.59%
kW from applicable classes	2,385,437	2.38%	-1.06%	-29.26%	-2.73%



	Purchased wo Losses	Heating Days=10 =V1	Cooling Degree Days=V2	Ontario Real GDP Monthly %=V3	Real Ontario GDP (chained \$1997 with Base 100 in 1997)	Number of Days in Month=V4	Population V5	Number of Peak Hours=V6	Blackout Flag=V7	Manufacturing GDP chained Jan. 1997=V8	Predicted Purchases=V9	Variances (KWh)	% Variance
Dec-88		334.8	0	86.81									
Jan-89		379.1	0	89.47									
Feb-90		296.6	0	89.34									
Mar-90		125.1	17.8	89.21									
Apr-90		16.8	1.2	89.08									
May-90		0	52	88.95									
Jun-90		0	93.3	88.82									
Jul-90		0	74.9	88.69									
Aug-90		2.6	21.7	88.56									
Sep-90		63.2	3.9	88.43									
Oct-90		180.2	0	88.30									
Nov-90		339.4	0	88.17									
Dec-90		486.5	0	87.9									
Jan-91		347.8	0	87.6	31	352	0						
Feb-91		261.6	0	87.3	31	320	0						
Mar-91		90.1	3.9	87.0	30	336	0						
Apr-91		12.5	54	86.7	31	352	0						
May-91		0	78.5	86.4	30	320	0						
Jun-91		0	115.1	86.1	31	352	0						
Jul-91		0	96.5	85.9	31	336	0						
Aug-91		14.8	32.8	85.6	30	320	0						
Sep-91		57.4	1.3	85.3	31	352	0						
Oct-91		229.6	0	85.0	30	336	0						
Nov-91		383	0	84.7	31	320	0						
Dec-91		439.9	0	84.8	31	352	0						
Jan-92		403.7	0	84.8	29	320	0						
Feb-92		345	0	84.9	31	352	0						
Mar-92		143.8	0	85.0	30	320	0						
Apr-92		22.3	3.3	85.0	31	320	0						
May-92		3	18.5	85.1	30	352	0						
Jun-92		0	24.5	85.2	31	352	0						
Jul-92		0	32.5	85.3	31	320	0						
Aug-92		11.3	23.3	85.3	30	336	0						
Sep-92		102.7	0	85.4	31	336	0						
Oct-92		216.8	0	85.4	30	352	0						
Nov-92		359.1	0	85.5	31	352	0						
Dec-92		423.1	0	85.5	31	320	0						
Jan-93		488.8	0	85.6	28	320	0						
Feb-93		354.1	0	85.7	31	368	0						
Mar-93		119.5	0	85.8	30	320	0						
Apr-93		14.3	4.3	85.8	31	320	0						
May-93		20	17.9	85.9	30	352	0						
Jun-93		10	107.8	86.0	31	336	0						
Jul-93		103.5	15.7	86.0	31	336	0						
Aug-93		17.5	15.7	86.1	30	336	0						
Sep-93		92	2.5	86.2	31	320	0						
Oct-93		210.4	0	86.2	30	352	0						
Nov-93		381.2	0	86.3	31	368	0						
Dec-93		693.4	0	86.7	31	336	0						
Jan-94		513.5	0	87.1	28	320	0						
Feb-94		333.5	0	87.6	31	352	0						
Mar-94		107	0.5	88.0	30	304	0						
Apr-94		23.7	8.2	88.4	31	336	0						
May-94		0	67.7	88.8	30	352	0						
Jun-94		0	111.2	89.2	31	320	0						
Jul-94		0	46.4	89.7	31	352	0						
Aug-94		0	13.7	90.1	30	336	0						
Sep-94		40.9	0	90.5	31	320	0						
Oct-94		149.8	0	91.0	30	352	0						
Nov-94		314.5	0	91.4	31	336	0						
Dec-94		405.2	0	91.7	31	352	0						
Jan-95		483	0	91.9	28	320	0						
Feb-95		253.5	0	92.2	31	368	0						
Mar-95		178.9	0	92.5	30	288	0						
Apr-95		4.5	4.5	92.7	31	352	0						
May-95		0	71.8	93.0	30	352	0						
Jun-95		0	143.9	93.3	31	320	0						
Jul-95		0	150.8	93.5	31	352	0						
Aug-95		1.2	16.7	93.8	30	320	0						
Sep-95		37	1.6	94.1	31	336	0						
Oct-95		273.9	0	94.4	30	352	0						
Nov-95		469.5	0	94.6	31	336	0						
Dec-95		517.2	0	94.7	31	352	0						
Jan-96		457.8	0	94.8	29	95,329	0			81.02	117,049,784		
Feb-96		397.6	0	94.9	31	95,452	0			81.95	104,408,045		
Mar-96		176	0	95.0	30	95,575	0			81.96	108,211,632		
Apr-96		29.8	8.6	95.1	31	95,698	0			82.45	104,971,104		
May-96		0	38.3	95.2	30	95,821	0			83.21	102,941,813		
Jun-96		0	59.6	95.3	31	96,048	0			82.60	105,618,765		
Jul-96		0	87.1	95.4	31	96,275	0			84.70	112,671,470		
Aug-96		1.7	27.1	95.5	30	96,502	0			84.46	105,151,775		
Sep-96		57.6	0	95.6	31	96,730	0			85.44	107,979,929		
Oct-96		274.8	0	95.7	30	96,957	0			85.03	105,628,206		
Nov-96		323.6	0	95.7	31	97,184	0			85.84	114,591,146		
Dec-96		508.6	0	96.0	31	97,411	0						
Jan-97		369	0	96.4	28	97,638	0						
Feb-97		352	0	96.7	31	97,865	0						
Mar-97		137.3	0	97.1	30	98,092	0						
Apr-97		36.4	0	97.4	31	98,320	0						
May-97		0	73.2	97.8	30	98,547	0						
Jun-97		0	103	98.2	31	98,774	0						
Jul-97		0	46.8	98.5	31	99,001	0						
Aug-97		1.6	11.7	98.9	30	99,228	0						
Sep-97		81.9	2.8	99.3	31	99,455	0						
Oct-97		226.6	0	99.6	30	99,683	0						
Nov-97		338.2	0	100.0	31								

May-01	119,625,195	0.3	12.2	119.9	31	109,223	352	0	101.62	123,250,346
Jun-01	124,543,574	0	79.7	120.1	30	109,450	336	0	100.85	124,953,148
Jul-01	121,840,585	0	100.9	120.3	31	109,542	336	0	99.51	128,127,050
Aug-01	132,701,947	0	160	120.4	31	109,633	352	0	99.28	134,324,929
Sep-01	117,876,415	2.7	35.7	120.6	30	109,725	304	0	97.51	117,155,771
Oct-01	123,985,757	54.3	2	120.8	31	109,816	352	0	97.78	122,733,096
Nov-01	122,675,409	99.5	0	121.0	30	109,908	352	0	98.09	122,182,635
Dec-01	120,522,977	261.1	0	121.1	31	109,999	304	0	95.79	123,626,876
Jan-02	132,472,741	324.2	0	121.5	31	110,091	352	0	100.00	132,101,928
Feb-02	120,584,948	316.2	0	121.9	28	110,182	320	0	101.26	123,574,043
Mar-02	128,573,487	297.6	0	122.2	31	110,274	320	0	100.10	128,636,081
Apr-02	122,493,739	129.4	8.3	122.6	30	110,366	352	0	101.38	125,952,255
May-02	120,901,842	49	7.8	122.9	31	110,457	352	0	102.30	126,037,255
Jun-02	123,228,452	0	70	123.3	30	110,549	320	0	101.18	126,037,255
Jul-02	135,146,133	0	192.4	123.7	31	110,640	352	0	101.93	138,523,630
Aug-02	132,810,002	0	142.7	124.0	31	110,732	336	0	102.14	134,307,698
Sep-02	125,737,406	0	87.6	124.4	30	110,823	320	0	100.11	125,526,552
Oct-02	126,538,624	91.8	10	124.8	31	110,915	352	0	100.77	127,556,312
Nov-02	126,350,234	214.2	0	125.1	30	111,006	336	0	100.24	126,898,159
Dec-02	126,860,477	371.4	0	125.3	31	111,098	320	0	98.74	131,556,249
Jan-03	138,020,012	566.5	0	125.7	31	111,169	352	0	99.24	140,822,033
Feb-03	125,285,750	475	0	125.8	28	111,281	320	0	99.33	129,144,087
Mar-03	130,708,315	334.5	0	126.0	31	111,373	336	0	99.66	132,655,621
Apr-03	120,954,881	160.3	2.4	126.1	30	111,464	336	0	99.24	125,433,905
May-03	119,050,807	5.2	0	126.2	31	111,556	336	0	99.64	122,799,026
Jun-03	121,559,458	0	52.9	126.4	30	111,647	336	0	98.80	124,571,518
Jul-03	127,839,234	0	118.3	126.5	31	111,739	352	0	100.01	133,839,040
Aug-03	116,632,060	1.1	28	126.7	31	111,830	320	1	98.04	116,632,060
Sep-03	122,466,795	1.1	124	126.8	30	111,922	336	0	100.74	123,398,376
Oct-03	127,605,742	70	0	127.0	31	112,013	352	0	102.07	127,719,641
Nov-03	127,569,437	180.6	0	127.1	30	112,105	320	0	102.08	125,615,777
Dec-03	130,452,311	313.5	0	127.3	31	112,197	336	0	102.10	133,801,366
Jan-04	142,514,375	601.1	0	127.5	31	112,288	336	0	100.54	133,801,366
Feb-04	131,014,897	399.7	0	127.8	29	112,380	320	0	100.53	130,395,015
Mar-04	137,456,784	245	0	128.1	31	112,471	368	0	102.52	135,258,462
Apr-04	123,653,700	116.4	0	128.3	30	112,563	336	0	101.79	126,124,722
May-04	125,173,525	18.9	8.6	128.6	31	112,654	320	0	100.83	123,998,886
Jun-04	127,179,406	0	31.6	128.9	30	112,746	352	0	102.51	127,183,078
Jul-04	128,976,196	0	86.4	129.1	31	112,837	336	0	101.86	131,922,769
Aug-04	130,654,610	0	59.6	129.4	31	112,929	336	0	102.13	130,910,480
Sep-04	131,024,581	25.7	41.2	129.7	30	113,020	368	0	103.23	127,143,255
Oct-04	130,716,810	140.1	1.5	129.9	31	113,112	320	0	103.27	125,014,337
Nov-04	133,082,346	140.1	0	130.2	30	113,204	352	0	102.47	129,445,428
Dec-04	136,991,696	395.4	0	130.5	31	113,295	336	0	102.91	138,035,159
Jan-05	145,934,607	522	0	131.0	28	113,387	320	0	103.67	140,815,326
Feb-05	130,289,323	392.4	0	131.3	31	113,478	352	0	103.86	131,078,435
Mar-05	140,140,933	361.1	0	131.6	30	113,570	352	0	103.33	138,023,455
Apr-05	123,036,658	83.2	0.8	131.9	31	113,661	336	0	103.57	127,952,908
May-05	125,247,527	28.6	0	132.2	30	113,753	352	0	103.63	127,952,908
Jun-05	144,685,687	0	146.3	132.5	31	113,844	320	0	103.48	136,250,214
Jul-05	141,797,488	0	188.7	132.8	31	113,936	352	0	103.25	140,701,930
Aug-05	145,925,490	0	140.7	133.1	30	114,028	336	0	103.93	140,283,169
Sep-05	133,631,086	0	52.1	133.4	31	114,119	320	0	103.74	127,708,585
Oct-05	134,334,867	41.2	7.6	133.7	30	114,211	352	0	104.09	127,708,585
Nov-05	136,612,176	161.2	0	133.7	31	114,302	336	0	104.66	139,462,222
Dec-05	139,563,134	417.3	0	134.0	31	114,394	320	0	105.25	137,951,658
Jan-06	143,559,898	303.3	0	134.3	28	114,485	336	0	105.25	137,951,658
Feb-06	132,539,698	380.3	0	134.5	31	114,577	320	0	104.41	132,450,633
Mar-06	142,937,971	268.7	0	134.8	31	114,668	368	0	104.42	130,743,471
Apr-06	123,688,590	77.5	0	135.1	30	114,760	304	0	102.01	125,146,214
May-06	132,368,029	9.6	28	135.4	31	114,851	352	0	102.01	131,556,246
Jun-06	137,004,145	0	73.6	135.6	30	114,943	352	0	101.35	132,922,432
Jul-06	143,859,116	0	167.3	135.9	31	115,290	320	0	101.14	139,523,624
Aug-06	143,299,190	0	101.6	136.2	31	115,290	352	0	101.06	137,382,296
Sep-06	128,579,498	1.5	12.9	136.5	30	115,637	352	0	101.79	137,382,296
Oct-06	135,079,908	74.9	1.1	136.8	31	115,984	320	0	99.88	124,899,429
Nov-06	135,688,463	143.3	0	137.0	30	116,331	336	0	99.22	129,609,626
Dec-06	133,398,425	252.5	0	137.3	31	116,679	304	0	98.74	131,493,263
Jan-07	144,060,767	399.1	0	137.6	28	117,020	352	0	101.55	133,339,943
Feb-07	135,868,564	516.1	0	137.8	31	117,120	352	0	101.46	142,385,297
Mar-07	142,052,653	302.9	0	138.1	31	118,067	320	0	101.82	139,974,282
Apr-07	128,480,658	145.8	0	138.4	30	118,414	352	0	101.75	139,974,282
May-07	131,342,094	5.9	22.4	138.6	31	118,761	320	0	101.44	132,929,208
Jun-07	138,449,893	0	99.2	138.9	30	119,108	336	0	100.99	135,418,052
Jul-07	134,837,492	0	108.1	139.2	31	119,456	336	0	100.34	137,848,341
Aug-07	141,992,903	0.3	141	139.4	31	119,803	352	0	100.51	142,372,277
Sep-07	130,837,136	15.1	47.5	139.7	30	120,150	304	0	99.95	128,009,057
Oct-07	134,638,758	582.2	19.8	140.0	31	120,497	352	0	99.95	133,166,828
Nov-07	135,533,908	223	0	140.2	30	120,844	352	0	100.04	136,106,412
Dec-07	133,602,881	382.7	0	140.5	31	121,191	304	0	97.62	137,529,294
Jan-08	144,881,994	379.8	0	140.4	29	121,538	320	0	97.45	141,891,579
Feb-08	137,054,946	442.7	0	140.3	31	121,885	320	0	96.64	136,475,427
Mar-08	138,804,604	362.2	0	140.2	30	122,232	304	0	94.96	135,817,423
Apr-08	127,497,951	77.9	0	140.2	31	122,580	352	0	96.80	135,817,423
May-08	124,504,998	13.9	0	140.1	31	122,927	336	0	96.60	129,526,877
Jun-08	131,553,955	0	111	140.1	31	123,099	336	0	96.60	129,526,877
Jul-08	137,523,955	0	64	140.0	30	123,315	352	0	96.86	133,166,828
Aug-08	131,880,827	0	26.7	140.0	31	123,662	352	0	96.86	133,166,828
Sep-08	129,230,670	0	0	139.9	31	124,009	304	0	89.21	138,022,777
Oct-08	130,054,392	61.9	0	140.3	30	124,357	336	0	86.67	141,646,780
Nov-08	129,509,182	219.4	0	140.2	31	124,704	336	0	85.07	141,646,780
Dec-08	131,612,522	406.6	0	139.8	28	125,051	304	0	85.01	126,201,809
Jan-09	138,327,633	582.2	0	139.4	31	125,357	352	0	86.51	133,027,315
Feb-09	122,210,537	382.4	0	138.6	31	125,658	320	0	82.75	121,941,180
Mar-09	117,245,108	265.9	0	137.8	30	125,998	320	0	81.54	121,941,180
Apr-09	111,133,472	12.6	6.9	137.4	31	127,002	352	0	81.61	124,037,538
May-09	116,699,841	0	34.2	137.0	30	127,439	352	0	82.49	127,449,312
Jun-09	118,779,479	0	43.7	136.6	31	127,866	352	0	82.05	127,682,915
Aug-09	130,895,153	0	91	136.2	31	128,133	320	0	83.11	122,011,166
Sep-09	125,105,609	1.3	20.9	135.8	30	128,481	336	0	83.25	124,144,359
Oct-09	130,037,167	69.9	0	135.4	31	128,828	336	0	84.10	122,899,184
Nov-09	128,105,079	124.4	0	135.3	31	129,175	320	0	85.13	136,175,305
Dec-09	136,081,860	383.3	0	135.0	28	129,522	352	0	86.45	136,659,942
Jan-10	142,782,177	472	0	135.6	31	130,216	304	0	87.55	126,573,976
Feb-10	131,951,027	374.3	0	135.2	30	130,563	368	0	89.10	133,820,600
Mar-10	138,355,825	177.5	0	135.9	31	130,910	320	0	99.30	127,746,668
Apr-10	124,831,860	30.3	0	136.2	31	131,257	320	0	99.37	133,273,152
May-10	132,837,470	18	0	136.5	30	131,605	352	0	99.15	134,852,978
Jun-10	145,237,									



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.93
R Square	0.87
Adjusted R Square	0.86
Standard Error	3,410.071.62
Observations	153.00

ANOVA				
	df	SS	MS	F
Regression	8	1.09078E+16	1.36347E+15	117.2514
Residual	144	1.67452E+15	1.16286E+13	
Total	152	1.25823E+16		3.83299E-59

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-86,845,140.99	13,881,412.28	-6.26	0.00	-114,282,794.37	-59,407,487.60	-114,282,794.37	-59,407,487.60
Heating Degree Days	30,341.01	1,919.70	15.81	0.00	26,546.59	34,135.44	26,546.59	34,135.44
Cooling Degree Days	80,427.84	6,824.00	11.79	0.00	66,939.68	93,916.00	66,939.68	93,916.00
Ontario Real GDP Monthly %	354,868.49	67,565.25	5.25	0.00	221,320.70	488,416.28	221,320.70	488,416.28
Number of Days in Month	2,003,764.46	358,941.91	5.58	0.00	1,294,288.84	2,713,240.09	1,294,288.84	2,713,240.09
Population	223.71	95.70	2.34	0.02	34.55	412.87	34.55	412.87
Number of Peak Hours	93,835.88	18,089.85	5.19	0.00	58,079.93	129,591.83	58,079.93	129,591.83
Blackout Flag	-14,246,202.35	3,495,763.61	-4.08	0.00	-21,155,841.53	-7,336,563.17	-21,155,841.53	-7,336,563.17
Manufacturing GDP	462,250.36	60,754.12	7.61	0.00	342,165.28	582,335.44	342,165.28	582,335.44

Guelph Hydro's Monthly Predicted kWh

Intercept	+	-86,845,140.99
Heating Degree Days	X	30,341.01
Cooling Degree Days	X	80,427.84
Ontario Real GDP Monthly %	X	354,868.49
Number of Days in Month	X	2,003,764.46
Population	X	223.71
Number of Peak Hours	X	93,835.88
Blackout Flag	X	-14,246,202.35
Manufacturing GDP	X	462,250.36
0	X	0.00



						General Service								
Purchases	Modeled Purchases	Difference	% Difference	Loss Factor	Total Billed	Residential	General Service < 50 kW	General Service > 50 to 999 kW	> 1000 to 4999 kW	Large Use >5000 kW	Streetlights	Sentinel Lights	Unmetered Loads	
Weather Normal Projection														
1997	0	0												
1998	1,368,341,834	1,337,578,884	(30,762,950)	-2.2%										
1999	1,419,862,044	1,425,500,286	5,638,242	0.4%										
2000	1,491,540,734	1,507,941,878	16,401,144	1.1%										
2001	1,489,293,270	1,508,075,047	18,781,777	1.3%										
2002	1,521,498,085	1,545,864,359	24,366,274	1.6%	1.0640	1,429,964,026	293,799,852	136,077,545	359,367,947	400,932,784	227,961,458	87,564	2,644,793	
2003	1,508,144,802	1,536,432,450	28,287,648	1.9%	1.0155	1,485,066,532	325,123,193	134,877,221	418,240,754	370,939,934	224,351,882	8,140,829	3,263,747	
2004	1,578,638,924	1,566,451,639	(12,187,285)	-0.8%	1.0143	1,556,406,606	333,362,711	136,449,757	441,567,398	372,045,282	261,286,315	8,359,778	3,208,225	
2005	1,641,442,335	1,614,685,202	(26,757,133)	-1.6%	1.0138	1,619,044,518	356,926,019	144,289,566	428,032,331	424,553,499	253,448,418	8,527,565	3,139,226	
2006	1,633,788,172	1,596,020,835	(37,767,337)	-2.3%	1.0148	1,609,929,223	348,418,729	141,613,943	427,648,833	420,373,256	260,643,976	8,759,526	2,343,827	
2007	1,631,697,103	1,633,348,938	1,651,835	0.1%	1.0137	1,609,674,693	356,617,106	145,574,704	447,771,407	389,939,014	258,415,580	8,768,684	2,468,258	
2008	1,594,089,338	1,602,609,387	8,520,049	0.5%	1.0125	1,574,447,832	356,875,114	146,877,568	425,057,772	385,445,266	248,400,500	9,257,880	2,432,270	
2009	1,504,188,795	1,528,173,234	23,984,439	1.6%	1.0126	1,485,530,567	352,708,669	141,492,398	368,795,357	373,502,975	237,183,984	9,321,265	2,424,418	
2010	1,100,104,886	1,604,906,611	504,801,725	45.9%	1.0357	1,062,154,355	252,186,698	101,167,064	263,688,680	267,054,627	169,586,549	6,664,705	1,733,459	
2011		1,660,608,145				1,596,124,707	weather corrected am.							
Average				actual loss factor	1.0404									
Usage Per Customer														
2000														
2001														
2002														
2003														
2004														
2005														
2006														
2007														
2008														
2009														
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2007														
2008														
2009														
2010														
Used														
Geomean														
Non Weather Corrected Forecast														
2011						1,432,151,792	346,038,929	136,345,149	354,796,611	355,005,542	228,573,883	8,980,968	99,147	2,311,562
Weather Corrected Forecast														
2011						1,596,124,707	415,279,852	163,627,236	411,591,250	365,660,808	228,573,883	8,980,968	99,147	2,311,562
Total														
Allocation of Weather Sensitive Amount														
2011						69,240,924	27,282,087	56,794,639	10,655,266	0	0	0	0	0
Total														
819,472,198														

	<u>Residential</u>	<u>General Service</u> <u>&lt; 50 kW</u>	<u>General Service</u> <u>&gt; 50 to 999 kW</u>	<u>General Service &gt;</u> <u>1000 to 4999 kW</u>	<u>Large Use &gt;5000</u> <u>kW</u>	<u>Streetlights</u>	<u>Sentinel</u> <u>Lights</u>	<u>Unmetered</u> <u>Loads</u>	<u>Total</u>
2000	presumption: the 2010 data identical with 2009								
2001									
2002	36,847	3,213	446	35	4	10,737	34	568	51,883
2003	38,064	3,249	461	37	4	10,876	30	588	53,309
2004	39,401	3,324	488	38	4	11,253	29	602	55,139
2005	40,692	3,422	498	39	4	11,838	31	595	57,118
2006	41,643	3,468	510	40	4	12,237	31	581	58,513
2007	42,728	3,534	521	41	4	12,574	29	579	60,010
2008	43,747	3,581	539	41	4	12,781	28	580	61,301
2009	44,584	3,624	538	41	4	12,860	28	582	62,260
2010	44,584	3,624	538	41	4	12,881	28	585	62,284
2011	45,658	3,679	550	42	4	13,177	27	587	63,725

← colour

Growth Rate in Customer Numbers

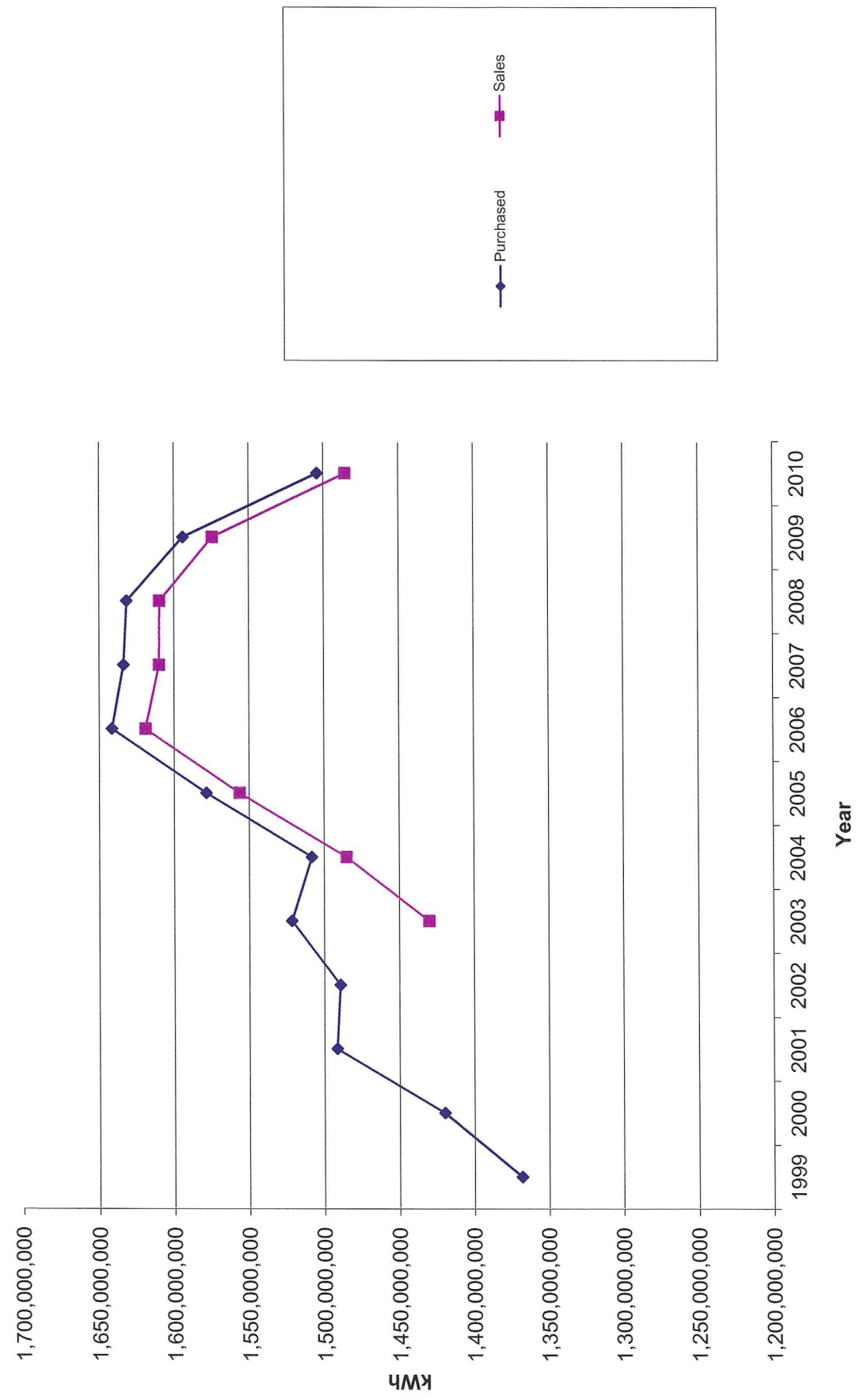
2000									
2001									
2002									
2003	1.0330	1.0112	1.0348	1.0400	1.0000	1.0129	0.8844	1.0352	1.0275
2004	1.0351	1.0231	1.0582	1.0317	1.0000	1.0347	0.9916	1.0238	1.0343
2005	1.0328	1.0295	1.0202	1.0175	1.0000	1.0520	1.0538	0.9884	1.0359
2006	1.0234	1.0136	1.0244	1.0345	1.0000	1.0337	0.9866	0.9765	1.0244
2007	1.0261	1.0189	1.0216	1.0208	1.0000	1.0275	0.9482	0.9966	1.0256
2008	1.0238	1.0133	1.0350	1.0020	1.0000	1.0165	0.9598	1.0017	1.0215
2009	1.0191	1.0120	0.9971	1.0020	1.0000	1.0062	1.0090	1.0034	1.0156
2010	1.0000	1.0000	1.0000	1.0000	1.0000	1.0016	1.0000	1.0052	1.0004
Used	1.0241	1.0152	1.0237	1.0185	1.0000	1.0230	0.9780	1.0037	1.0231
Geomean	1.0241	1.0152	1.0237	1.0185	1.0000	1.0230	0.9780	1.0037	1.0231

General Service		General Service > 1000 to 4999 kW	Large Use >5000 kW		Streetlights		Sentinel Lights	Total
> 50 to 999 kW		the 2010 data is identical with 2009						
2001								
2002	948,603	793,258	370,271		22,446		276	2,134,853
2003	1,100,318	809,727	402,534		22,768		359	2,335,707
2004	1,152,315	799,328	467,895		23,322		439	2,443,299
2005	1,130,150	896,363	463,386		23,860		355	2,514,114
2006	1,098,433	893,595	474,726		24,507		346	2,491,607
2007	1,146,098	839,674	469,790		25,377		326	2,481,265
2008	1,096,291	869,193	450,555		25,810		281	2,442,130
2009	1,000,754	893,555	439,421		26,052		275	2,360,057
2010	715,539	638,892	314,186		18,627		197	1,687,440
2011	1,081,791	802,018	411,331		24,870		284	2,320,294

kW/kWh									
2000									
2002	0.2640%	0.1979%	0.1624%	0.2469%	0.3147%				
2003	0.2631%	0.2183%	0.1794%	0.2797%	0.2787%				
2004	0.2610%	0.2148%	0.1791%	0.2790%	0.3457%				
2005	0.2640%	0.2111%	0.1828%	0.2798%	0.2778%				
2006	0.2569%	0.2126%	0.1821%	0.2798%	0.2719%				
2007	0.2560%	0.2153%	0.1818%	0.2894%	0.2715%				
2008	0.2579%	0.2255%	0.1814%	0.2788%	0.2765%				
2009	0.2714%	0.2392%	0.1853%	0.2795%	0.2708%				
2010	0.2714%	0.2392%	0.1853%	0.2795%	0.2708%				
Average	0.2628%	0.2193%	0.1800%	0.2769%	0.2865%				



Actual Purchased versus Sales kWh

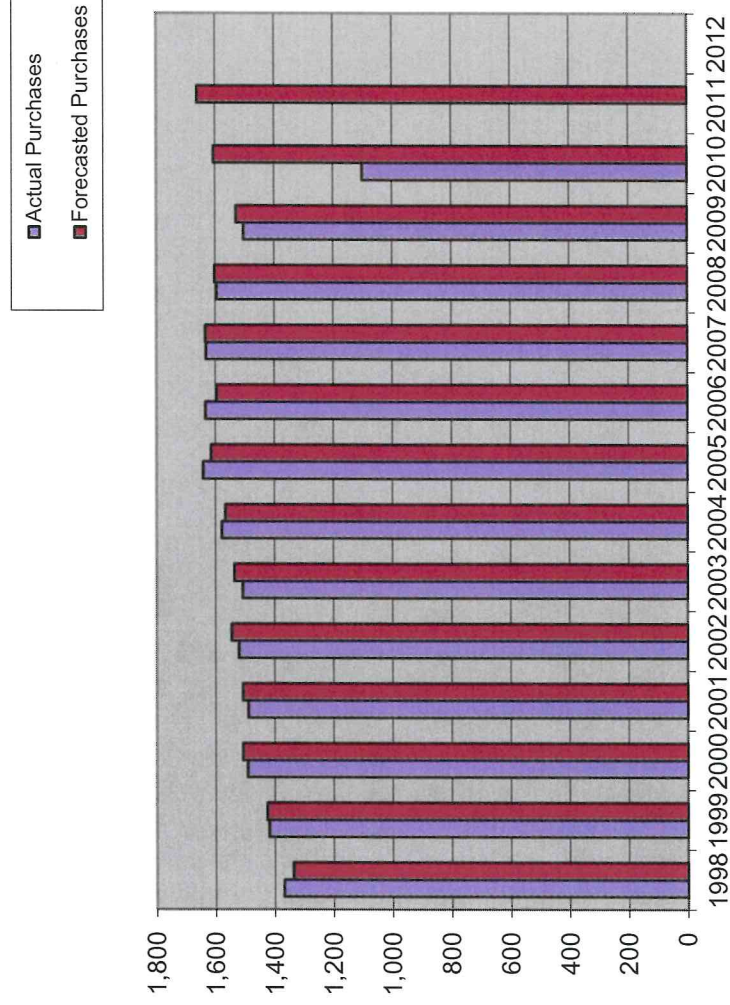


Actual versus Forecasted purchases		
Actual	Forecasted	
Purchases	Purchases	
1998	1,368	1,338
1999	1,420	1,426
2000	1,492	1,508
2001	1,489	1,508
2002	1,521	1,546
2003	1,508	1,536
2004	1,579	1,566
2005	1,641	1,615
2006	1,634	1,596
2007	1,632	1,633
2008	1,594	1,603
2009	1,504	1,528
2010	1,100	1,605
2011		1,661
2012		0

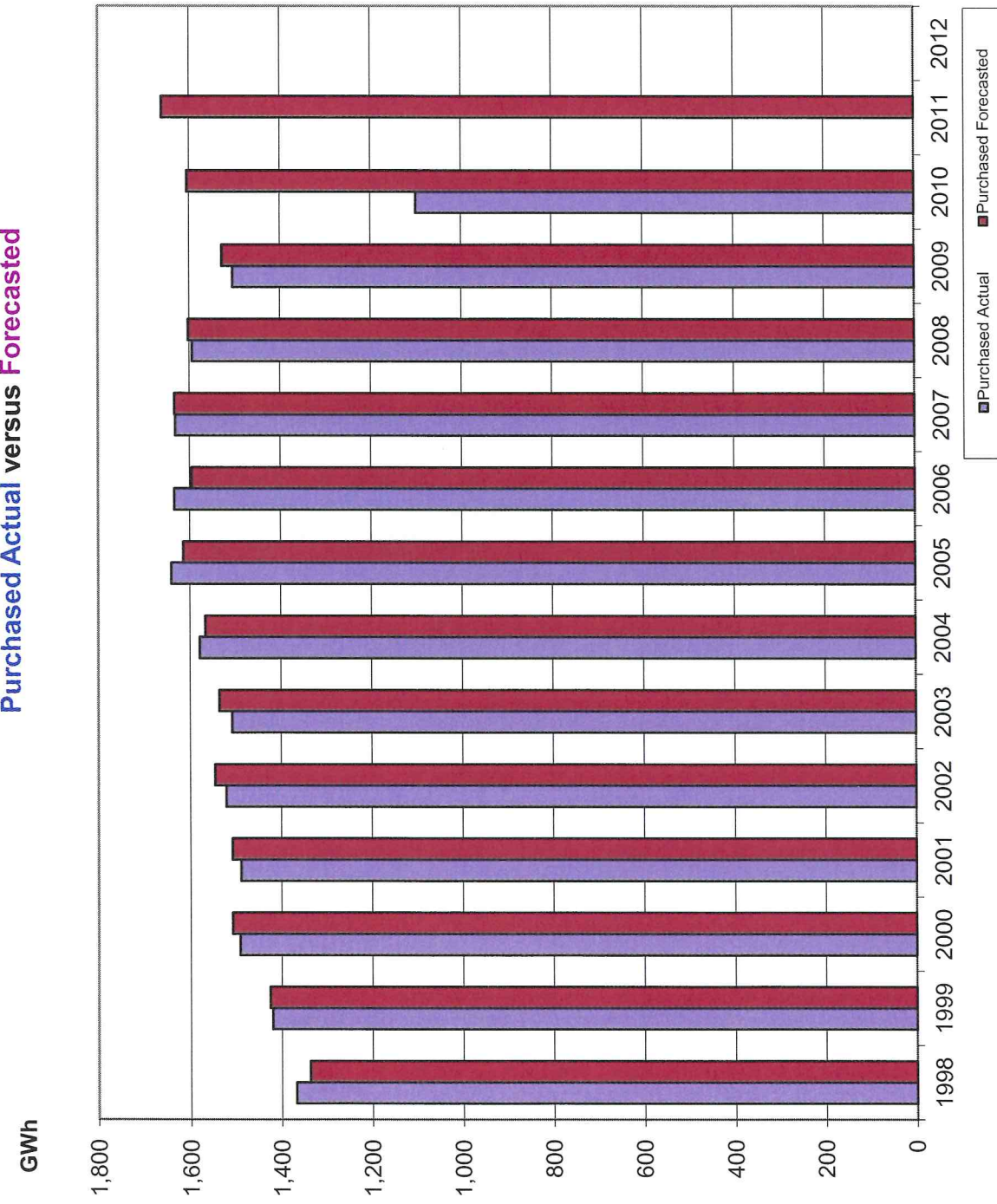
1,000,000

## Actual versus Forecasted Purchases Comparison

GWh



Purchased Actual versus Forecasted



Usage Per Customer [kWh]

	Residential	General Service ≤ 50 kW	General Service ≥ 50 to 999 kW	General Service ≥ 1000 to 4999 kW	Large Use >5000 kW	Streetslights	Sentinel Lights	Unmetered Loads
2002	7,974	42,355	806,662	11,320,455	56,990,365	847	2,610	4,656
2003	8,541	41,518	907,247	10,070,767	56,087,970	749	4,347	5,551
2004	8,461	41,052	905,160	9,790,665	65,321,579	743	4,322	5,329
2005	8,771	42,166	860,078	10,979,832	63,362,104	720	4,126	5,276
2006	8,367	40,830	838,801	10,509,331	65,160,994	716	4,157	4,034
2007	8,346	41,194	859,721	9,549,527	64,603,895	697	4,136	4,263
2008	8,158	41,018	788,482	9,420,251	62,100,125	724	3,645	4,194
2009	7,911	39,046	686,131	9,109,829	59,295,996	725	3,614	4,166
2010	5,657	27,918	490,584	6,513,527	42,396,637	517	2,584	2,963

Consumption growth per customer [%]

	Residential	General Service ≤ 50 kW	General Service ≥ 50 to 999 kW	General Service ≥ 1000 to 4999 kW	Large Use >5000 kW	Streetslights	Sentinel Lights	Unmetered Loads
2003	7.12%	-1.98%	12.47%	-11.04%	-1.58%	-11.61%	66.55%	19.21%
2004	-0.94%	-1.12%	-0.23%	-2.78%	16.46%	-0.75%	-0.58%	-3.99%
2005	3.67%	2.71%	-4.98%	12.15%	-3.00%	-3.03%	-4.54%	-1.00%
2006	-4.61%	-3.17%	-2.47%	-4.29%	2.84%	-0.63%	0.76%	-23.54%
2007	-0.25%	0.89%	2.49%	-9.13%	-0.85%	-2.58%	-0.51%	5.67%
2008	-2.26%	-0.43%	-8.29%	-1.35%	-3.88%	3.87%	-11.86%	-1.63%
2009	-3.02%	-4.81%	-12.98%	-3.30%	-4.52%	0.07%	-0.85%	-0.67%

Consumption per customer

