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Board Secretary  
Ontario Energy Board  
27<sup>th</sup> Floor  
2300 Yonge Street  
Toronto, ON  
M4P 1E4

March 7, 2012

Dear Ms. Walli,

**RE: Burlington Hydro Inc.  
Smart Meter Recovery Application  
EB-2012-0081**

Please find attached Burlington Hydro Inc.'s updated application for recovery of its Smart Meter costs.

The confidential appendices have been removed in accordance with the Board's requirements.

Two hard copies of the application together with a CD of the filed materials have been couriered to the Board.

I can be reached at 905-332-1851 x234 should you require anything further.

Yours truly,

*Original signed by*

Stephen Shields  
Manager, Regulatory Affairs





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

**AND IN THE MATTER OF** an Application by Burlington  
Hydro Inc. to the Ontario Energy Board for an Order or Orders  
approving rate riders for the recovery of Smart Meter costs as of  
May 1, 2012.

### **APPLICATION**

Burlington Hydro Inc. (the “Applicant” or “Burlington Hydro”) is a corporation incorporated pursuant to the Ontario *Business Corporations Act* with its head office in the City of Burlington, Ontario. The Applicant carries on the business of distributing electricity within the City of Burlington as a licensed electricity distributor operating pursuant to license ED-2003-0004.

The Applicant hereby applies to the Ontario Energy Board (the “OEB” or “the Board”) pursuant to Section 78 of the *Ontario Energy Board Act, 1998 (the “OEB Act”)* for approval of Smart Meter rate riders to effect the recovery of its Smart Meter costs effective May 1, 2012.

Specifically, Burlington Hydro hereby applies for an order or orders in accordance with G-2011-0001 Guideline, Smart Meter Funding and Cost Recovery – Final Disposition, December 15, 2011, including the following:

- a) Elimination of the existing Smart Meter Funding Adder of \$2.50 per metered customer per month effective April 30, 2012;
- b) Addition of a Smart Meter Disposition Rate Rider of (\$0.05) per metered customer per month effective May 1, 2012; and
- c) Addition of a Smart Meter Incremental Revenue Requirement Rate Rider of \$3.10 per metered customer per month effective May 1, 2012.

It is requested that these changes are implemented May 1, 2012 coincident with any rate changes resulting from Burlington Hydro’s 2012 IRM3 application (EB-2011-0155).

This Application is supported by written evidence that may be amended from time to time, prior to the Board's final decision on this Application.

The Applicant requests that, pursuant to Section 34.01 of the Board's *Rules of Practice and Procedure*, this proceeding be conducted by way of written hearing.

The primary day-to-day contact for this application should be:

Stephen Shields  
Manager, Regulatory Affairs  
(905) 332-1851 ext. 234  
E-mail: [sshields@burlingtonhydro.com](mailto:sshields@burlingtonhydro.com)

The Applicant requests that a copy of all documents filed with the Board in this proceeding be served on the Applicant as follows:

Burlington Hydro Inc.  
1340 Brant Street  
Burlington, Ontario  
L7R 3Z7

Attention:  
Mr. Michael J. Kysley  
Executive V.P. and Chief Financial Officer  
Fax: (905) 332-8384  
E-mail: [mkysley@burlingtonhydro.com](mailto:mkysley@burlingtonhydro.com)

DATED at Burlington, Ontario, this 28th day of February, 2012.

**All of which is respectfully submitted.**

**BURLINGTON HYDRO INC.**

*Original signed by*

Michael J. Kysley,  
Executive V.P. and Chief Financial Officer

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## MANAGER'S SUMMARY

### INTRODUCTION

Burlington Hydro is submitting this stand-alone application for the recovery of the costs the utility incurred in implementing its Smart Meter Program. Since Burlington Hydro has now essentially reached the 90% threshold of the audited cost for its program, and since its next cost of service rate application is not scheduled until 2014, the utility considered it appropriate to file for a 2012 stand alone disposition.

As of end of 2011, Burlington Hydro had installed all of its Smart Meters. The total smart meter cost claimed in this application is \$11.95 million as indicated in Table 1 below.

**Table 1 – Summary of Cost Claim**

Total Smart Meter Capital Costs	\$9,848,657
Total Smart Meter OM&A Costs	\$2,101,832
Total Smart Meter Costs	\$11,950,489

The incurred smart meter costs are partially offset (to April 30, 2012) by the Smart Meter Funding Adder – including simple interest – in the amount of \$4.0 million. The resulting rate riders and adders being sought are presented in Table 2 below.

**Table 2 – Summary of Rate Riders and Adders**

Rate Rider	Before	After	Change
Smart Meter Funding Adder (SMFA)	\$2.50	-	-\$2.50
Smart Meter Disposition Rate Rider (SMDR)	-	-\$0.05	-\$0.05
Smart Meter Incremental Revenue Requirement Rate Rider (SMIRR)	-	\$3.10	+\$3.10
<b>Total Smart Meter Rate Change</b>	<b>\$2.50</b>	<b>\$3.05</b>	<b>+\$0.55</b>

All costs incurred in completing Burlington Hydro's Smart Meter Program have been prudently incurred as is evidenced by a per meter capital cost of \$152.77 which compares favourably to the sector average capital cost of \$186.76 derived from the "Sector Smart

Meter Audit Report” issued by the OEB Regulatory Audit and Accounting Group. No cost associated with stranded meters has been included in the application.

Burlington Hydro’s implementation of Time of Use rates was initially scheduled for July 2011 however, due to technical issues with communications equipment, the Board granted the utility a six month extension. Once Burlington Hydro overcame its technical challenges, it was able to implement Time of Use rates January 2012.

This application is structured in six distinct sections, specifically;

- 1) Background - Procurement
- 2) Status of Smart Meter and Time of Use Implementation
- 3) Capital and Operating Cost
- 4) Determination of Specific Smart Meter Rate Riders and Adders
- 5) Summary Rate Change
- 6) Conclusion

## **1) BACKGROUND - PROCUREMENT**

### **SMART METER PILOT AND INVESTMENT PLAN**

In May 2006 as part of its Smart Meter Pilot project, Burlington Hydro purchased 500 Elster Rex 1 Smart Meters to be deployed in the Alton Community, Lowville Community and the Burlington downtown core.

In December 2006, Burlington Hydro filed with the OEB a Smart Metering Investment Plan (SMIP) (Appendix A) outlining the timeline and expected costs to implement smart metering across its current and future customer base. Since smart meters manufactured by Elster were used by most of the leading members of the Coalition of Large Distributors (CLD) to meet the provincial Smart Meter Initiative and thus achieve the 2008-2009 Provincial smart meter targets, Burlington Hydro's SMIP envisaged utilizing these meters also. Burlington Hydro also made a business decision at that time to no longer use mechanical meters and instead, for new residential services and meter seal expiries, install Elster Rex 1 Smart Meters.

In September 25, 2007, the Ontario Energy Board published a Report of the Board entitled "Smart Metering Initiative: Draft Criteria and Filing Guidelines for Smart Metering Pilots".

The principles of authority permitting a Local Distribution Company (LDC) to carry out its Smart Metering Investment Plan are summarized in the introductory section:



“Section 53 of the *Electricity Act, 1998* prohibits distributors from undertaking discretionary metering activities, including the installation of smart meters, unless permitted to do so by regulation, a Board order or Measurement Canada requirements. Thirteen electricity distributors have been authorized by regulation to undertake smart meter deployment activities.

Ontario Regulation 427/06 (Smart Meters: Discretionary Metering Activity and Procurement Principles) (“Regulation 427/06”) made under the *Electricity Act, 1998* provides that any distributor may be permitted to undertake discretionary metering activities under certain limited conditions to test smart meter technologies (“smart meter pilots”). Smart meter pilots must be approved by the Board in advance.”

The smart metering pilot undertaken by Burlington Hydro in the Alton Community, Lowville Community and the downtown core of Burlington was authorized under a Board order approving Burlington Hydro’s Conservation and Demand Management plans.

### **SMART METER PROCUREMENT**

In 2007, London Hydro led a consortium of 21 LDCs (“London RFP”) that released a proposal to solicit pricing and features for a comprehensive Advanced Metering Infrastructure (“AMI”). London Hydro and all of the associated LDCs were bound by the above Draft Criteria and Filing Guidelines for Smart Metering Pilots. They relied on a letter issued on July 25, 2007 by the Minister of Energy, Dwight Duncan, stating

“After a successful RFQ, the government will continue to work with London Hydro and consortium members to enable the rollout of smart metering in your respective service territories.”

Burlington Hydro participated with the other LDCs within the London RFP to implement smart meters in a cost effective manner. The collaborative initiative assisted LDCs in the development of project plans, RFPs and contract.

Following successful completion of the RFQ process, the Ministry recommended an amendment to Ontario Regulation 427/08 (Smart Meters: Discretionary Metering Activity and Procurement Principles) to Cabinet. The amendments authorized distributors participating in the London RFQ process to engage in discretionary metering activities.

### **LONDON HYDRO RFP**

The London Hydro RFP which was structured in phases was comprehensive and asked respondents to showcase their entire range of capabilities.

The first phase required installation of smart meters in a variety of challenging environments:

- Reading Water Meters
- Networked Meters in Apartment Buildings
- Non-networked meters in Apartment Buildings
- Load Shifting in Social Housing Townhouses (electric hot water heaters)
- Difficult Access Meters (Basements)
- Retail Malls (abandonment of Networked Meters)
- Rural
- New Energy Star Homes
- Residential Areas with Known Voltage Regulation Problems

The second phase involved LDC-wide implementation of smart metering. Proponents were asked to evaluate their responses in a tier of four levels:

- Basic Meter Requirements (as per London Hydro's purchasing guidelines and specifications.

- Ontario Ministry of Energy Technical Requirements for Advanced Metering Infrastructure
- London Hydro Supplementary Requirements (i.e. inter-device communication, protocol, security, etc.)
- London Hydro Mandatory and Discretionary Value-added Functionality (Outage management, voltage monitoring, bi-directional meter support), meter tampering notification, demand response, etc.)

### **LONDON RFP REVIEW OF PROPONENTS**

Burlington Hydro signed a Letter of Intent in June 2008 with KTI/Sensus. (Appendix B) The RFP evaluation scoring was based on a number of criteria which included technical and financial elements. Burlington Hydro had an opportunity to customize the scoring weighting when the RFP was initially issued (August 14, 2007) to place emphasis on Burlington Hydro's technical requirements. Burlington Hydro installed the 500 Elster meters approved through its CDM-funded pilot project and also in new services and compliancy testing groups as required; this amounted to approximately 5,000 smart meters. Burlington Hydro re-evaluated the scoring on the basis of including costs for stranded assets of the installed Rex1 meters to arrive at an amended scoring. The re-evaluation was further discussed with the utility's legal team and the Fairness Commissioner. Based on the London Hydro AMI RFP process in July 2008, KTI/Sensus being the "best value (i.e. Life Cycle Value) proponent" was awarded preferred vendor status (Appendix C) though Elster Metering had been identified as the lowest cost (i.e. Lowest First Cost) proponent; the award was made with the approval of the Fairness Commissioner.

Negotiations broke down later in 2008 with KTI/Sensus due to the fact that the company had no meaningful Canadian assets at the time.

Burlington Hydro started negotiations with Elster Metering ("Elster") who was the second best value bidder in 2008; these new negotiations were carried out with approval from the utility's

legal counsel and the Fairness Commissioner (Appendix D). Successful negotiations resulted in a procurement contract for Elster's Energy Axis AMI system (Appendix E).

### **SMART METER PROJECT OVERVIEW OF SERVICES**

Burlington Hydro contracted with various suppliers for supporting services:

- *ODS Data Collection (2008-2011)* – Burlington Hydro selected Elster to sub contract to Olameter for data collection on Burlington Hydro's rented – and later to be owned – server and software (EA\_MS). The decision to have Elster contract this service to Olameter was for system conformability reasons and the successful experience other LDCs had had with Olameter. It was also decided to contract Olameter to run the ODS solution (inView Premier Software) as offered by Olameter. Burlington Hydro purchased the EA\_MS from Elster in December 2011.
- *WAN RFP and award of Contract (2008)* – Burlington Hydro invited Rogers and Bell to quote on the Wide Area Network (WAN) Communications for the Smart Meter project. Rogers was successful because of their pricing and service.
- *Meter Disposal (2008)* – Burlington Hydro invited Wentworth Metal Recycling, Green Port Environmental Ltd. and Unican International Ltd. to bid on meter disposal. Wentworth Metal Recycling was successful on the price per pound for the meter quotation submitted.
- *Meter Base Repairs (2009)* – Burlington Hydro issued an RFP for meter base repairs for smart meter deployment. Halton Electric was successful based on pricing, safety and qualifications. Other proponents asked to bid were Brant Electric, Brigadier Electric, Kennedy Electric, LD Electric and McCleary Electric
- *Paperless Work Orders ( 2009 – 2010)* – Burlington Hydro choose Fieldworker Mobile Technology Solutions based on a CLD member's utilization of the same Daffron Billing System as Burlington Hydro. The software moved the field work file in the correct format to the Daffron system thus improving efficiency of operation. Because the software was already operational on the other utility's Daffron system, it was acquired for a nominal

sum.

- *Sky Energy (2009 – 2011)* Based on a report from AESI (2009), Sky Energy was chosen over EARTH Group after meetings with both companies and further follow up discussions with other utilities (specifically PowerStream and Veridian) regarding their experiences working with Sky Energy.

Sky Energy provided Project Management and Staff Training with the new Business Process and end-to-end testing with MDM/R as it related to smart meter data flow.

- *Residential Installation Service Provider (2009 – 2011)* – Burlington Hydro issued an RFP to Olameter, OZZ, Force Field Services and Honeywell. The contract was awarded on pricing to OZZ who was eventually purchased by Olameter. Olameter honoured the contract pricing for the term of the new agreement.
- *Commercial Installments Service Provider (2009 – 2011)* Burlington Hydro chose Rodan Power based on the fact that no other vendor/contractor met the technical requirements / certifications to meet the scope of the contract.
- *Web Presentment (2010)* – After Burlington Hydro reviewed presentations from four vendors (Whitecap, Daffron, Olameter and Utilismart), it was decided to award the contract to Whitecap. This decision was endorsed by the Electricity Distributors Association and based on an internal evaluation by the Burlington Hydro leadership team.
- *Security Audit* - In January 2011 Burlington Hydro was made aware of a consortium sponsored by Util-Assist and N-Dimensions that consisted of 16 LDCs using Elster meters. This consortium was formed to retain the services of a cyber-security company, specifically for the purpose of auditing data transmission security of customer data across the Elster network. Since the greater the number of participating LDCs then the lower the per utility cost and, always wanting to ensure the safety and integrity of Burlington Hydro customer data together with endeavoring to prove the utility's continuing due diligence on this very high profile and sensitive subject, the Leadership Team approved

Burlington Hydro joining the consortium. With Burlington Hydro's addition and that of another LDC, this brought the group to a total of 18 members.

In February 2009, after a thorough review of Elster's final propagation study of Burlington Hydro's diverse service territory, orders were placed for 110 collectors and 100 repeaters and installed over 2009/2010. Meter orders were placed by March 2009 with delivery scheduled to begin April 2009.

## **2) STATUS OF SMART METER AND TIME OF USE IMPLEMENTATION**

Burlington Hydro began installing smart meters as part of its initial pilot in May 2006 for its Residential and General Service < 50 kW customers. The rollout was stepped up for the full smart meter program in April 2009.

Burlington Hydro's full-scale smart meter deployment started April 2009 with 29,850 meters installed in 2009 and 33,724 meters installed in 2010; full implementation was completed in 2011. Burlington Hydro installed a total of 64,470 smart meters as of year-end 2011 which represents 100% of its Residential, General Service < 50 kW (GS<50kW) meters and General Service > 50kW (GS>50kW) meters.

By the end of December 2011, Burlington Hydro decided on the purchasing option to own its AMI system but to have it operated by the AMI Vendor.

Projected 2012 operating costs include monthly fees for EA\_MS software maintenance, WAN maintenance, ODS maintenance, Elster administrative costs, security audit costs, meter maintenance, CIS software maintenance, customer education mail out and MDM/R-IESO costs.

In 2012, Burlington Hydro plans to install another 1,200 smart meters based on assumed growth of Residential and GS<50kW customers. (Neither the capital cost nor the operating cost of these meters is included for recovery sought in this application.) For 2012 and beyond, the capital and operating costs for smart meters will be included in the 2014 cost of service rate application.

In an effort to meet its mandated TOU implementation deadline of July 2011, the installation of smart meters was given very high priority by the company's senior management.

Table 3 below shows the actual number of smart meters installed per year with 100% installation (64,470 smart meters) completed by end of 2011. As will be subsequently discussed, 571 smart meters for Burlington Hydro's GS>50kW customers were installed as part of the program.

**Table 3: Schedule of Actual Installation of Smart Meters**

<b>Customer Class</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Residential</b>	0	71	559	27,999	30,123	4
<b>GS&lt;50kW</b>	0	161	81	1,792	3,071	5
<b>GS&gt;50kW</b>	0	10	5	59	497	0
<b>MicroFit</b>	0	0	0	0	33	0
<b>TOTAL</b>	0	242	645	29,850	33,724	9

Burlington Hydro's TOU implementation proceeded on plan per the following schedule.



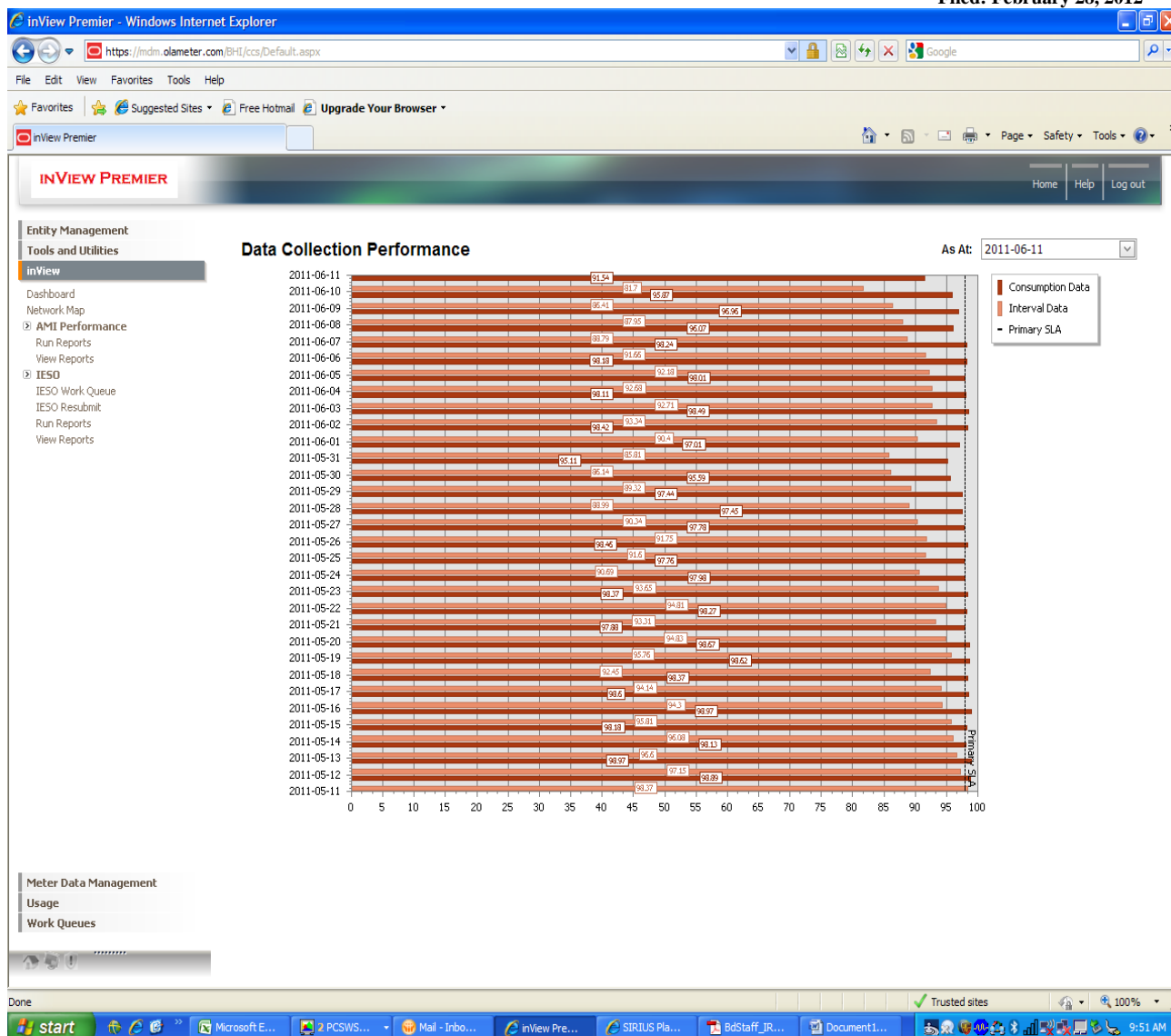
Bill Cycle #	Books to be billed TOU	Request USDP	1st Comm. Conversion Date	TOU Begin Read Date	2nd Comm. Reminder Package	TOU End Read Date	Read Days	Rate Class	First TOU Bill Mailed and Web Access (Whitecap) authentication pack
9	90/94/95/96/97	12-May-11	20-Jun-11	4-Jul-11	21-Jul-11	2-Aug-11	monthly	GS<50kW	19-Aug-11
10	91/92/93	12-May-11	21-Jun-11	5-Jul-11	22-Jul-11	3-Aug-11	monthly	GS<50kW	22-Aug-11
11	34	12-May-11	22-Jun-11	6-Jul-11	25-Jul-11	4-Aug-11	monthly	GS<50kW	23-Aug-11
12	37/38/40	12-May-11	23-Jun-11	7-Jul-11	26-Jul-11	5-Aug-11	monthly	GS<50kW	24-Aug-11
13	41/102	12-May-11	24-Jun-11	8-Jul-11	27-Jul-11	8-Aug-11	monthly	GS<50kW	25-Aug-11
14	104/105	12-May-11	27-Jun-11	11-Jul-11	28-Jul-11	9-Aug-11	monthly	GS<50kW	26-Aug-11
15	107/108/110	12-May-11	28-Jun-11	12-Jul-11	29-Jul-11	10-Aug-11	monthly	GS<50kW	29-Aug-11
17	53/54	12-May-11	5-Jul-11	14-Jul-11	3-Aug-11	12-Aug-11	monthly	GS<50kW	1-Sep-11
18	58/119	12-May-11	6-Jul-11	15-Jul-11	4-Aug-11	15-Aug-11	monthly	GS<50kW	2-Sep-11
19	123	12-May-11	7-Jul-11	18-Jul-11	5-Aug-11	16-Aug-11	monthly	GS<50kW	6-Sep-11
20	125/126/127	12-May-11	8-Jul-11	19-Jul-11	8-Aug-11	17-Aug-11	monthly	GS<50kW	7-Sep-11
1	2/3/9	12-May-11	11-Jul-11	20-Jul-11	9-Aug-11	18-Aug-11	monthly	GS<50kW	9-Sep-11
2	5/6	12-May-11	12-Jul-11	21-Jul-11	10-Aug-11	19-Aug-11	monthly	GS<50kW	12-Sep-11
3	8/70	12-May-11	13-Jul-11	22-Jul-11	11-Aug-11	22-Aug-11	monthly	GS<50kW	13-Sep-11
4	72/73/74	12-May-11	14-Jul-11	25-Jul-11	12-Aug-11	23-Aug-11	monthly	GS<50kW	14-Sep-11
5	17/77	12-May-11	15-Jul-11	26-Jul-11	15-Aug-11	24-Aug-11	monthly	GS<50kW	15-Sep-11
6	19	12-May-11	18-Jul-11	27-Jul-11	16-Aug-11	25-Aug-11	monthly	GS<50kW	16-Sep-11
7	22/87	12-May-11	19-Jul-11	28-Jul-11	7-Aug-11	26-Aug-11	monthly	GS<50kW	19-Sep-11
55	466/457/458/459	24-May-11	19-May-11	4-Jul-11	21-Jul-11	1-Sep-11	bi-monthly	Residential	21-Sep-11
56	468/469/470	24-May-11	20-May-11	5-Jul-11	22-Jul-11	2-Sep-11	bi-monthly	Residential	22-Sep-11
57	471/472/473	24-May-11	24-May-11	6-Jul-11	25-Jul-11	6-Sep-11	bi-monthly	Residential	23-Sep-11
58	467/474/484/485	24-May-11	25-May-11	7-Jul-11	26-Jul-11	7-Sep-11	bi-monthly	Residential	26-Sep-11
59	486/487/488	24-May-11	26-May-11	8-Jul-11	27-Jul-11	8-Sep-11	bi-monthly	Residential	27-Sep-11
60	489/490/499/500	24-May-11	27-May-11	11-Jul-11	28-Jul-11	9-Sep-11	bi-monthly	Residential	28-Sep-11
61	501/502/503/504/505/506	24-May-11	30-May-11	12-Jul-11	29-Jul-11	12-Sep-11	bi-monthly	Residential	29-Sep-11
22	137/138/139/140/141	24-May-11	1-Jun-11	13-Jul-11	2-Aug-11	13-Sep-11	bi-monthly	Residential	3-Oct-11
23	150/151/152/153/154	24-May-11	2-Jun-11	14-Jul-11	3-Aug-11	14-Sep-11	bi-monthly	Residential	4-Oct-11
24	163/164/165/166	24-May-11	3-Jun-11	15-Jul-11	4-Aug-11	18-Sep-11	bi-monthly	Residential	5-Oct-11
25	167/168/169/170/171/172	25-May-11	6-Jun-11	18-Jul-11	5-Aug-11	16-Sep-11	bi-monthly	Residential	6-Oct-11
26	173/179/180/181/182/183	25-May-11	7-Jun-11	19-Jul-11	8-Aug-11	19-Sep-11	bi-monthly	Residential	7-Oct-11
27	184/185/186/187/202/204	25-May-11	8-Jun-11	20-Jul-11	9-Aug-11	20-Sep-11	bi-monthly	Residential	11-Oct-11
28	188/189/198/199/200	25-May-11	9-Jun-11	21-Jul-11	10-Aug-11	21-Sep-11	bi-monthly	Residential	12-Oct-11
29	201/203/210/211/212/213/214	25-May-11	10-Jun-11	22-Jul-11	11-Aug-11	22-Sep-11	bi-monthly	Residential	13-Oct-11
30	215/216/217/218/219	26-May-11	13-Jun-11	25-Jul-11	12-Aug-11	23-Sep-11	bi-monthly	Residential	14-Oct-11
31	227/228/229/230/231	26-May-11	14-Jun-11	26-Jul-11	15-Aug-11	26-Sep-11	bi-monthly	Residential	17-Oct-11
32	232/233/234/235/236/244	26-May-11	15-Jun-11	27-Jul-11	16-Aug-11	27-Sep-11	bi-monthly	Residential	18-Oct-11
33	245/246/247/248/249	26-May-11	16-Jun-11	28-Jul-11	17-Aug-11	28-Sep-11	bi-monthly	Residential	19-Oct-11
34	259/260/261/525/526/527/528/529/530	26-May-11	17-Jun-11	29-Jul-11	18-Aug-11	29-Sep-11	bi-monthly	Residential	20-Oct-11
35	262/263/272/273/274/531	27-May-11	20-Jun-11	2-Aug-11	19-Aug-11	3-Oct-11	bi-monthly	Residential	21-Oct-11
36	275/276/277/278/279	27-May-11	21-Jun-11	3-Aug-11	22-Aug-11	4-Oct-11	bi-monthly	Residential	24-Oct-11
37	289/290/291/292/293	27-May-11	22-Jun-11	4-Aug-11	23-Aug-11	5-Oct-11	bi-monthly	Residential	25-Oct-11
38	294/295/306/306/307/308	27-May-11	23-Jun-11	5-Aug-11	24-Aug-11	6-Oct-11	bi-monthly	Residential	26-Oct-11
39	309/310/311/312/313/314/316	27-May-11	24-Jun-11	8-Aug-11	25-Aug-11	7-Oct-11	bi-monthly	Residential	27-Oct-11
40	315/317/324/325/326/329	27-May-11	27-Jun-11	9-Aug-11	28-Aug-11	11-Oct-11	bi-monthly	Residential	28-Oct-11
41	330/327/328/337/338/339	27-May-11	28-Jun-11	10-Aug-11	29-Aug-11	12-Oct-11	bi-monthly	Residential	1-Nov-11
42	340/341/342/351/352	30-May-11	4-Jul-11	11-Aug-11	1-Sep-11	13-Oct-11	bi-monthly	Residential	2-Nov-11
43	353/354/355/356/358/359/360/361/600/620	30-May-11	5-Jul-11	12-Aug-11	2-Sep-11	14-Oct-11	bi-monthly	Residential	3-Nov-11
44	357/366/367/368/369	30-May-11	6-Jul-11	15-Aug-11	6-Sep-11	17-Oct-11	bi-monthly	Residential	4-Nov-11
45	370/379/380/381/382	30-May-11	7-Jul-11	16-Aug-11	7-Sep-11	18-Oct-11	bi-monthly	Residential	7-Nov-11
46	383/384/385/386/392/393/394	30-May-11	8-Jul-11	17-Aug-11	8-Sep-11	19-Oct-11	bi-monthly	Residential	8-Nov-11
47	395/397/398/399/639/640/660/680	31-May-11	11-Jul-11	18-Aug-11	9-Sep-11	20-Oct-11	bi-monthly	Residential	9-Nov-11
48	400/401/402/403/700/701	31-May-11	12-Jul-11	19-Aug-11	12-Sep-11	21-Oct-11	bi-monthly	Residential	10-Nov-11
49	405/408/409/410/411/414	31-May-11	13-Jul-11	22-Aug-11	13-Sep-11	24-Oct-11	bi-monthly	Residential	11-Nov-11
50	396/412/413/422	31-May-11	14-Jul-11	23-Aug-11	14-Sep-11	25-Oct-11	bi-monthly	Residential	14-Nov-11
51	404/406/407/423/424/425/431	31-May-11	15-Jul-11	24-Aug-11	15-Sep-11	26-Oct-11	bi-monthly	Residential	15-Nov-11
52	426/427/428/429/430/438	2-Jun-11	18-Jul-11	25-Aug-11	16-Sep-11	27-Oct-11	bi-monthly	Residential	16-Nov-11
53	437/439/440/441/442/444	2-Jun-11	19-Jul-11	26-Aug-11	19-Sep-11	28-Oct-11	bi-monthly	Residential	17-Nov-11
54	443/453/454/455	2-Jun-11	20-Jul-11	29-Aug-11	20-Sep-11	1-Nov-11	bi-monthly	Residential	18-Nov-11

While recognizing that installation of smart meters for GS>50kW customers was technically beyond minimum functionality, Burlington Hydro decided that the only prudent course of action was to install smart meters for this customer class also; indeed, senior management concluded that not installing smart meters for this customer class would have been an evidently bad business decision. The key factors supporting the installation of smart meters for the GS>50kW customers were:

- Changing out virtually a complete bank of meters so that they could be read remotely while leaving only one or two meters which required to be read manually would result in a grossly inefficient meter reading operation.

- Since the majority of the GS>50kW customers had loads which could potentially fall into the GS<50kW customer class, it made no sense to wait and only change the meter if and when the actual customer designation changed. (For example; in 2011 the load recorded for 350 of the 571 customers (i.e. 61%) in the GS>50kW customer class were *below* the GS<50kW / GS>50kW threshold for virtually the whole year. However, because the load for these customers crossed above the threshold occasionally (often only for one month in the year), they **had** to be classified as GS>50kW customers so these customers would be charged for peak. Thus, there is a significant potential for many of the GS>50kW customers to be re-classified at any time as GS<50kW customers; when this occurs the installation of smart meters becomes mandatory.)
- Providing the GS>50kW customers with a smart meter would provide these customers with peak and energy-saving opportunities consistent with the Government's Conservation and Demand Management objectives.

By early May 2011 when installation of the smart meters was virtually complete (except for only a few unique cases). By then, it became apparent that telecommunication problems were likely to be experienced when the trees in the heavily-wooded parts of the service area grew their full foliage. While the local area network (LAN) had been extensively tested under winter and early spring conditions during which time minimal foliage was present to cause signal interference, Burlington Hydro's experts had serious concerns about the LAN's ability in its then-current configuration to self-heal in the presence of extensive foliage. Consequently, Burlington Hydro applied to the Board on May 9, 2011 for a six month extension to its TOU mandated date. The chart below was provided in response a Board staff interrogatory on June 28, 2011 and shows that the telecommunications problems that had earlier been anticipated had in fact occurred resulting in a reported accuracy in May 31, 2011 of only 85% (compared to the 98% standard).



In its decision EB-2011-0137, August 17, 2011 the Board approved an extension in the mandated date until January 1, 2012.

Burlington Hydro implemented Time of Use pricing for its Residential and GS<50kW customers at the beginning of January 2012. Allowing for the billing cycle, full implementation of TOU billing is expected by April 2012.

### 3) CAPITAL AND OPERATING COSTS

#### AUDITED COSTS

The Guideline states that the Board expects the majority of the total program costs for which the distributor is seeking recovery will be audited. In the early preparation of this application, Burlington Hydro determined that 89% of the total program costs for which recovery would be sought had been already audited as part of its 2010 audited financial statements and the balance would be included in its 2011 audited financial statements which would be released by the external auditors in March/April 2012. In order to strictly adhere to the Guideline, a request was made to Burlington Hydro's auditor for it to begin its annual audit with a review of the smart meter costs and to issue an advanced opinion on these costs before the 2011 financial statements were finalized; by performing this advanced sub-audit, this application would therefore strictly meet the recommended 90% total cost target. The additional cost quoted for this advanced sub-audit was \$5,000. Since this would be an additional cost ultimately incurred by Burlington Hydro's customers – and only to increase the audited total costs by a mere 1% – it was not judged to be a prudent action at a time when all utilities are under extreme pressure to flatten their costs and minimize rates.

Consequently, Burlington Hydro requests that the Board accept this current application for consideration with 89% of the total program costs audited on the strict understanding that Burlington Hydro will file its 2011 financial statements immediately after they are finalized in March/April 2012. Burlington Hydro does not expect nor request the Board to issue its decision on the smart meter costs claimed for recovery until after the 2011 audited financial statements have been filed with the Board.

## **CAPITAL AND OPERATING COSTS**

In this application, Burlington Hydro is seeking recovery for the 64,470 smart meters installed in its service area by the end of 2011. Apart from installing meters for new customers in 2012 and beyond, smart meter installation is complete. The only capital expenditure planned for 2012 and beyond that is included for recovery in this application is for a LAN security enhancement in 2012. The cost of the post-2011 new smart meters – both capital and operations – is excluded from the recovery amount shown in Table 4 below.

**Table 4: Summary of Smart Meter Costs Claimed for Recovery**

	<b>Actual</b>	<b>Forecasted</b>			<b>Total</b>
<b>Cost Elements</b>	<b>2006-2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	
<b>Capital</b>	\$9,748,657	\$100,000	\$0	\$0	\$9,848,657
<b>OM&amp;A</b>	\$1,022,529	\$1,079,303	\$0	\$0	\$2,101,832
<b>Total</b>	<b>\$10,771,186</b>	<b>\$1,179,303</b>	<b>\$0</b>	<b>\$0</b>	<b>\$11,950,489</b>

NB: Actual/Forecasted Revenue has not been deducted

Full details of the various cost components by year are shown in Sheet 2 of the Smart Meter Model attached as Appendix F. Table 5 below provides an intermediate-level break down of the summary costs shown above.

**Table 5: Smart Meter Costs Claimed for Recovery**

<b>Cost Element</b>	<b>Cost Sub-Elements</b>	<b>Total Costs</b>
<b>Capital</b>	1.1 Advanced Metering Communication Device	\$8,688,498
	1.2 Advanced Metering Regional Collector	\$384,092
	1.3 Advanced Metering Control Computer	\$108,532
	1.4 Wide Area Network	\$10,476
	1.5 Other Capital Costs Related to Minimal Functionality	\$657,059
	1.6 Capital Costs Beyond Minimum Functionality	\$0
	<b>Total Smart Meter Capital Costs</b>	<b>\$9,848,657</b>

<b>OM&amp;A</b>	2.1 Advanced Metering Communication Device	\$77,825
	2.2 Advanced Metering Regional Collector	\$0
	2.3 Advanced Metering Control Computer	\$515,039
	2.4 Wide Area Network	\$1,044,274
	2.5 Other AMI OM&A Costs Related to Minimal Functionality	\$464,694
	2.6 OM&A Costs Related To Beyond Minimum Functionality	\$0
	<b>Total Smart Meter OM&amp;A Costs</b>	<b>\$2,101,832</b>
<b>TOTAL</b>	<b>TOTAL SMART METER COSTS</b>	<b>\$11,950,489</b>

NB: Actual/Forecasted Revenue has not been deducted

Since this is a stand-alone application then, consistent with the Guideline, no claim is made for stranded meters. Burlington Hydro will claim for its stranded meters in its next cost of service application scheduled for 2014.

The resulting Burlington Hydro capital cost per smart meter is \$152.77 (i.e. 64,470 installed smart meters with a capital cost of \$9,848,657). This amount compares favourably to the sector average capital cost of \$186.76 derived from the “Sector Smart Meter Audit Report” issued by the OEB Regulatory Audit and Accounting Group on March 21, 2010 (based on 3,053,931 meters with a capital cost of \$570,339,200).

Burlington Hydro submits that its total program costs and thus its cost per installed meter are reasonable and were prudently incurred.

### **INCREMENTAL COST SAVINGS**

While the installation of smart meters has increased the operating cost of Burlington Hydro, certain offsets have resulted. The most significant of these is the virtual elimination of manual meter reading for which the cost to Burlington Hydro has been reduced accordingly. (Please

note that not all manual meter reading costs have been eliminated; Measurement Canada requires LDCs to perform one manual “verification” reading on all smart meters per year.)

### **VARIANCE ANALYSIS**

Although an interim recovery was permitted in earlier guidelines, Burlington Hydro did not previously apply to the Board for partial recovery of its smart meter costs after it had installed 50% of them. Accordingly, a variance analysis comparing actual costs to previously-approved recovery of costs has not been performed.

### **MINIMUM FUNCTIONALITY**

Burlington Hydro installed two types of smart meters: Residential customers had Rex 2 meters installed while the commercial customers (i.e. GS<50kW and GS>50kW customers) had A3RL meters installed.

Though the Rex 2 meters slightly exceeded the specifications adopted in O. Reg. 425/06, they were in fact the most basic meters manufactured as a standard item; to have acquired Rex 2-type meters that *just* met the minimal functionality requirement would have resulted in additional customization to “de-rate” the standard Rex 2 meters. In other words, it was less expensive to purchase the standard Rex 2 meters (with slightly enhanced functionality) than to purchase a customized version that just met the minimal functionality level.

As noted, smart meters were installed for Burlington Hydro’s GS>50kW customers. An important component of the rationale was the significant potential for GS>50kW customers to cross over the GS<50kW / GS>50kW threshold and thus the installation of a smart meter would have been mandatory. The A3RL smart meters provide the ability to read the usage of all the commercial customers. Acquiring a single type of meter for all such customers was the most prudent business decision.

Burlington Hydro submits that the selection of the Residential and commercial meters was eminently reasonable, prudent and a sound business decision that minimized the cost for all its customers.

The costs that Burlington Hydro incurred for TOU rate implementation, CIS system changes, web presentment, bill presentment, integration with MDM/R, etc. were the minimal costs necessary for implementing the smart meter program and a functioning TOU system. All costs claimed in this application are strictly incremental; that is, they are the essential minimal additional net costs necessary to meet the Government's smart meter mandate. No cost is included for which the Smart Meter Entity has exclusive authority to act pursuant to O. Reg. 393/07. Costs incurred for materials and/or parts for customer-owned equipment (e.g. repairing meter bases that were damaged in the process of removing the existing meters) were expensed and tracked separately.

The only capital expenditure in 2012 is for \$100,000 for security devices related to the LAN collectors to ensure data integrity and protect customer confidentiality. Neither the capital cost nor the operating cost of post 2011 meters have been included for recovery in this application. For 2012 and beyond, the capital and operating costs for smart meters will be included in the 2014 cost of service rate application.



#### **4) DETERMINATION OF SPECIFIC RATE RIDERS AND ADDERS**

In the Board's March 21, 2006 Decision (RP-2005-0020, EB-2005-0529) local distribution companies that had not already installed smart meters were allocated advance funding equivalent to \$0.30 per *residential* customer per month. The advance funding was provided in the form of a Smart Meter Funding Adder (SMFA) which was spread across all *metered* customers thus reducing the actual amount included in all metered customers' bills to generally between \$0.25 to \$0.28 per metered customer per month.

In the Board's April 12, 2006 Decision (RP-2005-0020, EB-2005-0356) on Burlington Hydro's 2006 rates, a \$0.27 SMFA was applied to all metered customers and embedded in the monthly Service Charge beginning May 1, 2006.

The \$0.27 SMFA amount continued to be embedded in Burlington Hydro's customers' rates until the Board's March 10, 2009 Decision and Order (EB-2008-0163) on Burlington Hydro's 2009 rates when the amount for the embedded SMFA was adjusted to \$1.00 per metered customer per month effective May 1, 2009.

The \$1.00 SMFA amount was again approved in the Board's March 26, 2010 Rate Order (EB-2009-0259) on Burlington Hydro's 2010 rates when the amount was included explicitly on the tariff sheet effective May 1, 2010.

The SMFA amount was adjusted in the Board's March 17, 2011 Decision and Order on Burlington Hydro's 2011 rates when the SMFA amount was increased to \$2.50 per metered customer per month effective May 1, 2011.

As noted in the Guideline, page 20, the SMFA is expected to cease on April 30, 2012.

Table 6 below shows the actual and forecasted SMFA revenue. Simple interest is included.  
Details are included in the Smart Meter Model attached as Appendix F.

**Table 6: Actual and Forecasted Smart Meter Funding Adder Revenue**

<b>Year</b>	<b>SMFA Revenue</b>
2006	\$103,959
2007	\$200,482
2008	\$223,104
2009	\$577,913
2010	\$777,961
2011	\$1,419,882
2012	\$702,285
<b>Total</b>	<b>\$4,005,585</b>

#### **COST ALLOCATION**

In preparing this application, Burlington Hydro attempted to allocate the capital and operating costs being claimed for recovery across its three metered classes as recommended by the Guideline. While detailed records exist for the smart meters acquired for each of the three metered classes, an accurate allocation of the balance of the capital costs together with the operating expenses was not possible with any degree of accuracy. Rather than making an unsubstantiated allocation across classes and thus introduce approximations that could not be supported, Burlington Hydro has opted to determine a single Smart Meter Disposition Rate Rider (SMDR) value and a single Smart Meter Incremental Revenue Requirement Rate Rider (SMIRR) for all three of its metered classes.

**SMART METER DISPOSITION RATE RIDER (SMDR)**

Burlington Hydro is seeking Board approval for a Smart Meter Disposition Rate Rider in the amount of -\$0.05 per metered customer per month for the two year period May 1, 2012 to April 30, 2014. The calculation was made utilizing the Board's Smart Meter Model (Appendix F).

The value of the SMDR is based on the net amount resulting from:

- Deferred and forecasted Smart Meter Incremental Revenue Requirement from January 1, 2007 to December 31, 2011

Plus

- Interest on Deferred and forecasted OM&A and Amortization Expenses from January 1, 2007 to December 31, 2011

Less

- SMFA Revenues collected (including carrying charges) from May 1, 2006 to April 30, 2012

Table 7 below shows the calculation of the SMDR. Full details are contained in Appendix F.

**Table 7: Smart Meter Disposition Rate Rider**

Deferred and forecasted Smart Meter Incremental Revenue Requirement	\$3,894,685
Interest on Deferred and forecasted OM&A and Amortization Expenses	\$31,993
<b>Deferred Incremental Revenue Requirement</b>	<b>\$3,926,679</b>
Smart Meter Rate Adder Revenue	\$3,872,298
Carrying Costs	\$133,287
<b>SMFA Revenue Collected</b>	<b>\$4,005,585</b>
<b>Net Deferred Revenue Requirement</b>	<b>-\$78,905</b>
Metered Customers	64,998
<b>Smart Meter Disposition Rate Rider (SMDR)</b>	<b>-\$0.05</b>

**SMART METER INCREMENTAL REVENUE REQUIREMENT RATE RIDER (SMIRR)**

Burlington Hydro is seeking Board approval for Smart Meter Incremental Revenue Requirement Rate Rider in the amount of \$3.10 per metered customer per month for the two year period May 1, 2012 to April 30, 2014. The calculation was made utilizing the Board's Smart Meter Model (Appendix F).

Table 8 below shows the calculation of the SMIRR. Full details are contained in Appendix G.

**Table 8: Smart Meter Incremental Revenue Requirement Rate Rider**

Total Return on Capital	\$551,021
Operating Expenses	\$1,079,303
Total Amortization Expenses	\$677,486
<b>Incremental Revenue Requirement before Taxes</b>	<b>\$2,307,811</b>
Grossed-up Taxes/PILs	\$107,096
<b>Incremental Revenue Requirement</b>	<b>\$2,414,907</b>
Metered Customers	64,998
<b>Smart Meter Incremental Revenue Requirement Rate Rider (SMIRR)</b>	<b>\$3.10</b>

## 5) RATE CHANGE SUMMARY

Table 9 below shows the \$0.55 nominal rate change Burlington Hydro is seeking approval for in this application. The “before” value corresponds to the currently-approved values; i.e. those contained in Appendix A to Decision and Order, Tariff of Rates and Charges, EB-2010-0067, dated March 17, 2011.

**Table 9: Summary of Smart Meter Rate Changes**

<b>Rate Rider</b>	<b>Before</b>	<b>After</b>	<b>Change</b>
Smart Meter Funding Adder (SMFA)	\$2.50	-	-\$2.50
Smart Meter Disposition Rate Rider (SMDR)	-	-\$0.05	-\$0.05
Smart Meter Incremental Revenue Requirement Rate Rider (SMIRR)	-	\$3.10	+\$3.10
<b>Total Smart Meter Rate Change</b>	<b>\$2.50</b>	<b>\$3.05</b>	<b>+\$0.55</b>

## **6) CONCLUSION**

It is respectfully submitted that the costs requested for recovery in this application have been necessary to fulfill Burlington Hydro's obligations under the Provincially-mandated Smart Meter Initiative; have been prudently incurred in accordance with Board guidelines; the proposed rate riders are just and reasonable; the associated customer bill impacts are minimal; and it is therefore appropriate that the Board approve the proposed rate riders and eliminate the funding adder for implementation effective May 1, 2012.

## **APPENDIX A**



**Burlington Hydro Inc**

**Smart Meter Investment Plan**

**2008 to 2010**

***Preliminary***



**Burlington Hydro Inc.  
1340 Brant Street  
Burlington, Ontario  
L7R 3Z7**

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- 2. Guiding Principles**
- 3. Pilot Programs**
- 4. Advanced Metering Infrastructure & Information Technology**
- 5. Implementation Strategy and Schedule**
- 6. Budget**

## **Appendices**

**A Functional Specification for an Advanced Metering Infrastructure – July 14, 2006**

**B Condominium Submetering Report – MMM DD 20xx**

**C Report: Energy Savings through “Smart Metering” at Harbour Lights**

## **1.0 Executive Summary**

This is a preliminary report that sets out the Smart Meter Investment Plan for the period 2008 to 2010. The final report will be issued on June 29, 2007, pending final decisions made on various issues identified herein that can not be resolved at this time.

## **2.0 Guiding Principles**

- ☒ Most economical/best value for ratepayers
- ☒ Burlington Hydro's ability to retain all meter data
- ☒ Serves as the "hub" for the customer information system (CIS)
- ☒ Full compliance with the Functional Specifications for an Advanced Metering Infrastructure and all other relevant code, regulations and legislation

### 3.0 Pilot Programs

Burlington Hydro has engaged in four pilot programs designed to evaluate available technology and implementation strategies. The pilot projects differ considerably by customer type and technology. The following is a summary of the programs, their outcomes and lessons learned:

#### 3.1 Harbour Lights Condominium

This 83 unit condominium was retrofitted with a Quadlogic Minicloset 5 system in 2005. The electrical distribution to each unit was fitted with current transformers (CTs) which provide the input needed to calculate power consumption. Data is transmitted between data collection panels via power line carrier. The common area major loads (chillers, lighting, etc.) are monitored separately to provide detailed information regarding power use within the facility.

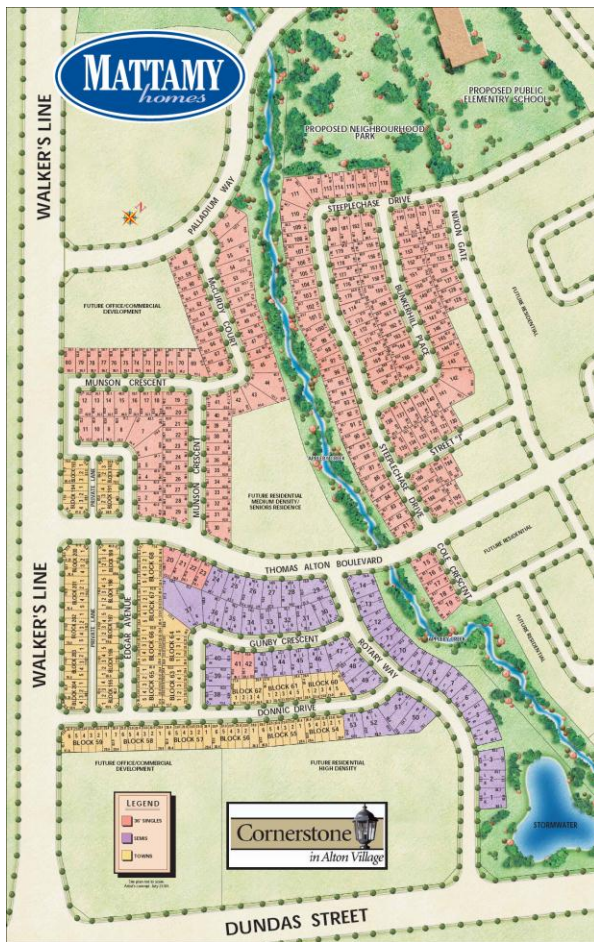
Space limitations within existing electrical closets mandate the use of data collection systems as opposed to installing individual smart meters for each condominium unit.



Usage data is remotely read through a telephone line and managed via Burlington Hydro's MV90xi software. The Condominium Corporation continues to be a "bulk metered" account. Each individual unit (suite) has become a separate residential customer.

This application, often referred to as "sub-metering", usually results in a conservation effect. Unit owners or tenants pay for their own energy use and a proportional share of use attributed to common services such as corridor lighting, air conditioning and ventilation systems which is typically included in monthly maintenance fees. Those who use less in their units, pay less – those who use more, pay more. Industry reports suggest that energy use in condominiums can drop by up to 25% as a result of sub-metering installation. In the case of Harbour Lights, usage dropped by 20.2% in addition to 112,700 kWh (9.5%) which is attributed to an energy efficient lighting retrofit that took place simultaneously through another Burlington Hydro Conservation and Demand Management Program.

### 3.2 Alton Community



The Alton Village Community is located near the central eastern boundary of the City of Burlington. It is a newly constructed community comprising detached, semi-detached and town houses.

Burlington Hydro conducted a pilot program in 2006 to install smart meters as construction neared completion of each unit within this community. This comprised 264 meters. The Elster Rex Meter™ along with Olameter data collection and management technology was selected for this installation. Several meter choices were reviewed prior to undertaking the pilot as outlined in Table 1 below.

The pilot effectively demonstrated that the technology is very reliable. Only 64 of the installed meters must “skip” across other meters to capture communications with the collectors. Alton however is a relatively flat topography. Performance across hillier terrain, such as the

escarpment lands north of Highway #5 may pose challenges for this technology.

Table 1  
Basis for Advanced Metering Infrastructure Selection for Alton  
Community

Meter	Advantages	Disadvantages
Elster- REX™ Meter	<input checked="" type="checkbox"/> Provides full 2-way wireless communication <input checked="" type="checkbox"/> Designed for single phase residential applications <input checked="" type="checkbox"/> Measurement Canada Approved <input checked="" type="checkbox"/> Compatible with Elster “family” of meters <input checked="" type="checkbox"/> Used by Toronto Hydro and Hamilton Hydro <input checked="" type="checkbox"/> Successful trial in pilot projects <input checked="" type="checkbox"/> Local, Burlington based supplier	
Itron – Centron Meter	<input checked="" type="checkbox"/> Used by Burlington Hydro for larger customers (> 200 kW) <input checked="" type="checkbox"/> Successfully piloted in Wasaga Beach	<input checked="" type="checkbox"/> True 2-way communication was not available at the pilot project stage <input checked="" type="checkbox"/> Requirement to pay for ongoing access to wireless network
Sensus - Flexnet	<input checked="" type="checkbox"/> Used by Powerstream	<input checked="" type="checkbox"/> Not Measurement Canada approved at pilot stage
Tantalus	<input checked="" type="checkbox"/> Used by Chatham Kent Hydro	<input checked="" type="checkbox"/> Conversion Kit – Converts existing mechanical meters into a wireless device <input checked="" type="checkbox"/> Digital wireless meter not Measurement Canada approved <input checked="" type="checkbox"/> Not selected by the Coalition of Large Distributors as one of the 5 approved vendors
Silver Spring Networks	Not Reviewed at Pilot Stage	Not Reviewed at Pilot Stage
Trilliant	<input checked="" type="checkbox"/> Used by Milton Hydro & Hydro One	<input checked="" type="checkbox"/> Burlington Hydro has experienced customer service problems with distributor

### **3.3 General Service Customers – 200 kW and Greater**

As part of the third tranch Conservation and Demand Management Plan, Burlington Hydro installed Itron meters in all of its General Service Customers with loads in excess of 200 kW. Meter data is collected via telephone lines and is managed through MV90xi.

### **3.4 Downtown Burlington Wi-Fi**

Two Hundred and forty two Elster meters were installed for commercial and industrial customers in Burlington's downtown core. Data from these meters will be collected through a 1X wireless telephone network and is operating well. FibreWired Burlington Hydro Communications is currently adapting the communications network to use fibre optics as a pilot. As this installation is in its finals stages of completion, Burlington Hydro Inc has not yet developed a complete understanding of the system's functionality.

## 4.0 Advanced Metering Infrastructure & Information Technology

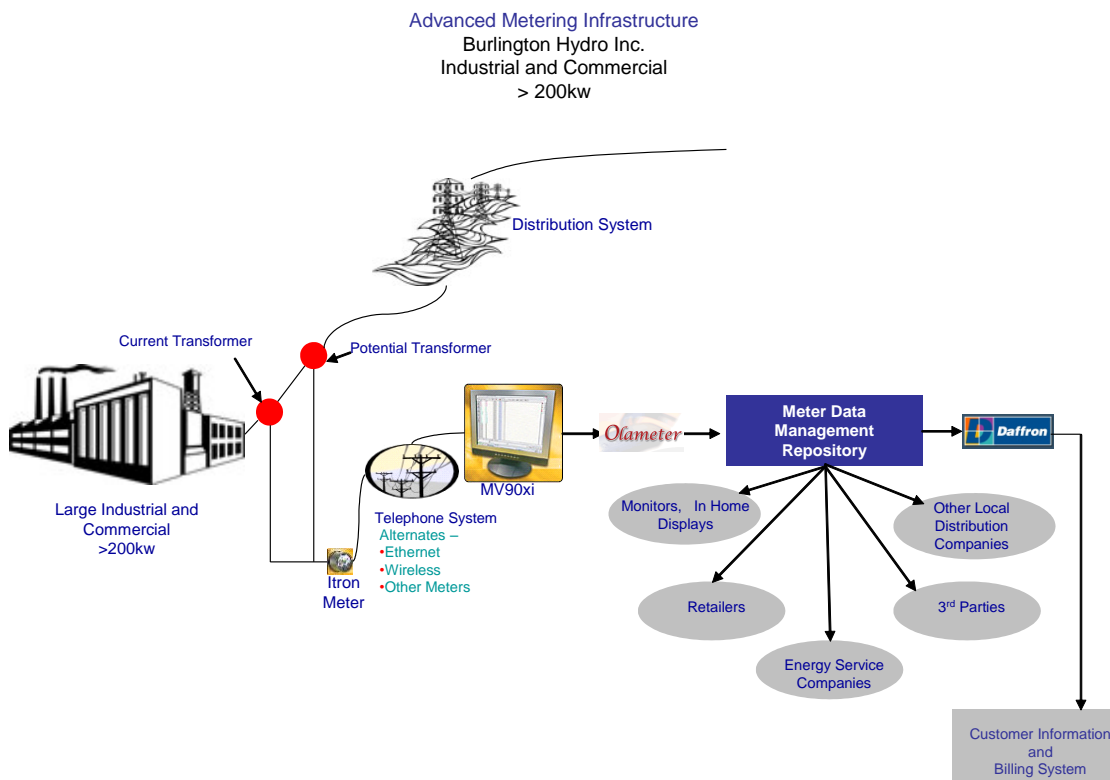
The technology of Advanced Metering Infrastructure and supporting Information Technology is evolving rapidly. The choices selected for the pilot projects were made upon the principles of best-fit into existing Burlington Hydro Inc systems, cost, ease of application and technical capability. The Smart Meter Investment Plan 2008 to 2010 is based on building upon these pilot project technologies, subject to the following provision:

*Burlington Hydro will review the technology currently available by March 30, 2007 in advance of drafting the final Smart Metering Investment Plan publication scheduled for June 29, 2007. Certain nascent technologies, such as open wave communications, will not be available at that time. A further review may be required at a later date.*

The following architecture is proposed:

### 4.1 General Service Customers Greater than 200 kW

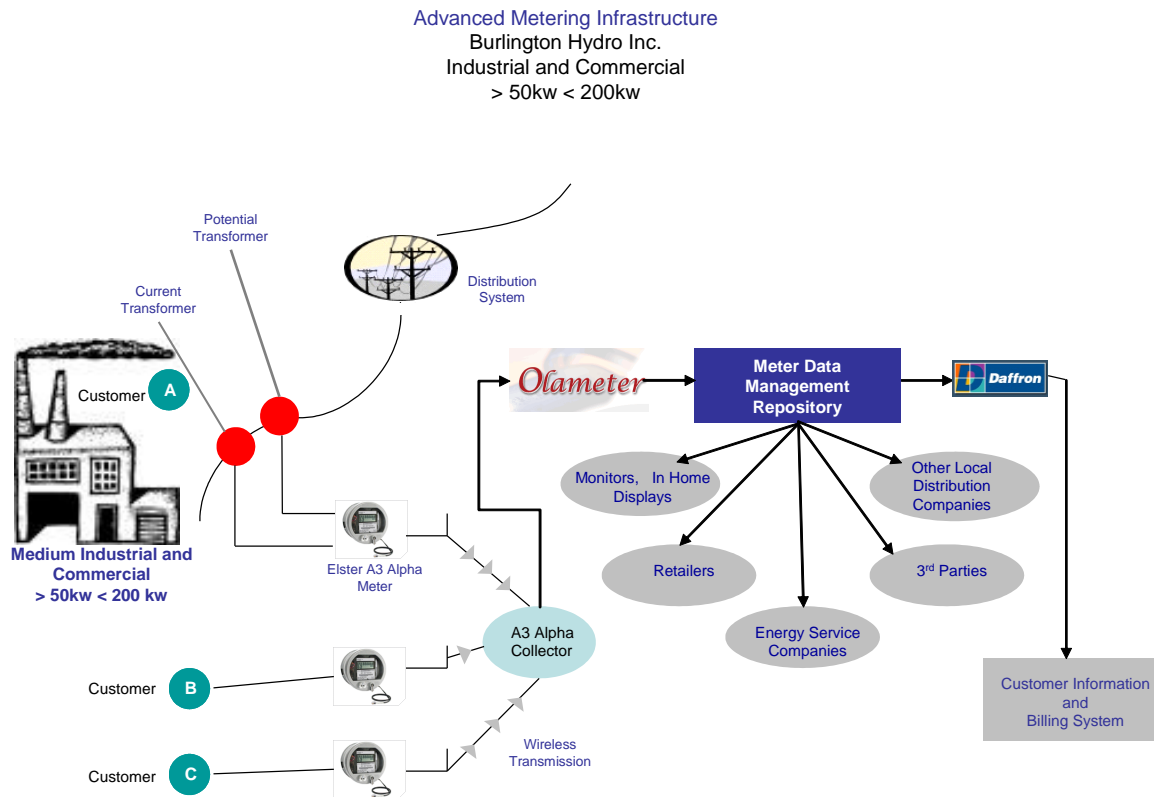
Itron meters have been installed for all customers with peak monthly demands in excess of 200 kW. MV90xi, through telephone lines connected to the meters, collects and manages the interval data and processes it for the billing and presentment system, Daffron. A small number of customers (approximately 16) have not made the arrangements to install the requisite telephone lines and will require that data be captured manually until meter communications are established.



Manual intervention is required in order to correctly account for consumption and demand data when ownership of the customer changes (i.e. Move in – Move out) and final meter readings and billings are required. This class of customer historically has not changed ownership frequently and as a result the required intervention is nominal. Otherwise the system is operating well.

#### 4.2 Medium Commercial and Industrial (Less than 50 kW and up to 200 kW)

This rate group will be undertaken using the Elster A3 Alpha meters with the appropriate current and potential sensing devices. Two channel meters capturing consumption, demand and power factor will be installed, accommodating future incorporation of power factor billing into this rate class.



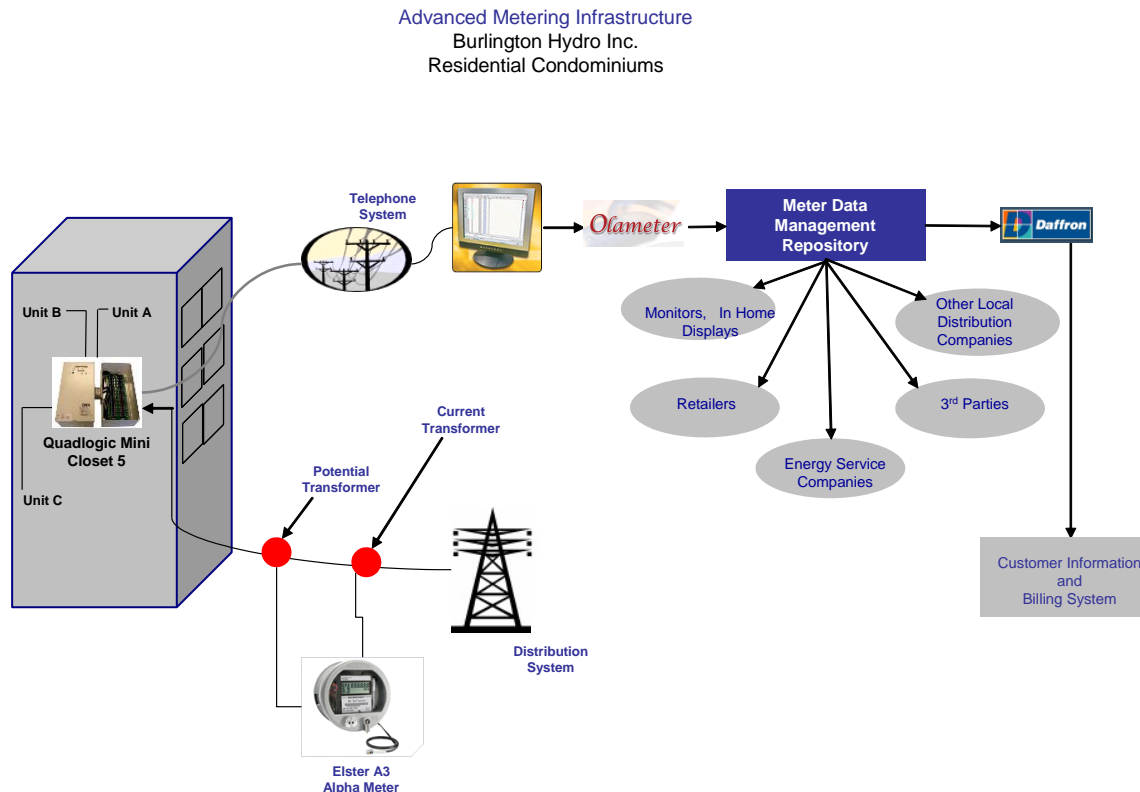


### 4.3 Multi-unit Condominium Corporations (Normally General Service)

The Harbour Lights project was a successful demonstration of Measurement Canada approved data collection systems and smart metering of condominium units.

Burlington Hydro will continue to install such systems in additional condominium corporations and once licensing requirements have been clarified by the Ontario Energy Board, Burlington Hydro expects to offer this solution to the other 18 registered condominium corporations in Burlington. Burlington Hydro will provide these initial offerings using the Quadlogic Meters Canada Inc system, but at the same time review alternate technologies in advance of finalizing this plan.

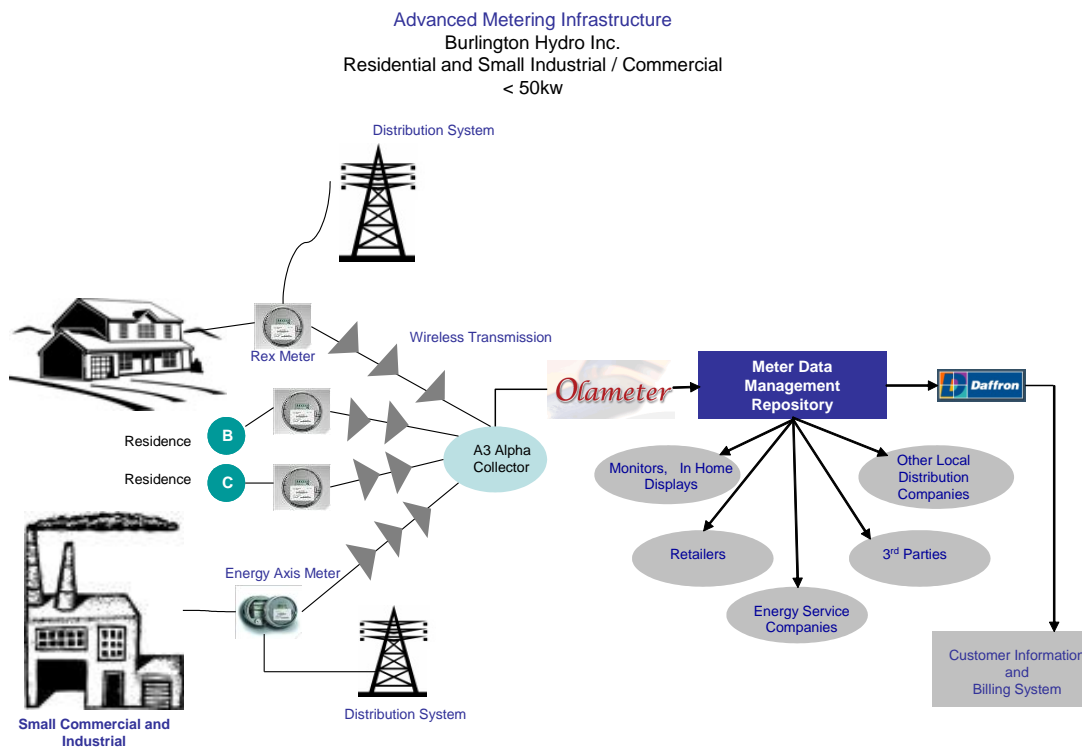
The Quadlogic Meters Canada Inc system communicates to MV90xi, through a telephone line which collects the interval data and processes it for the billing and presentment system, Daffron. Ownership changes are more frequent in this customer class and manual intervention is more frequently required. Should additional condominium corporations be added, the adequacy of the IT infrastructure must be evaluated.



#### 4.4 Residential & Small Commercial and Industrial Less Than 50kW

The Alton Community pilot successfully demonstrated the application of wireless smart metering.

The Alton Community is fitted with Elster Meters. Meter data is collected through Wide Area Network (WAN) collectors and transferred through 1X wireless telephone equipment to a billing and presentment system operated by Ollimeter.



#### 4.5 Infrastructure and Information Technology Decisions Pending

While a great deal has been learned through the pilot programs and ongoing research, there remain a number of decisions to be made after further research. The following table outlines the decisions, relevant issues and the individual responsible for collecting additional data and reporting upon the outcomes:

**Table 2**  
**Infrastructure and Information Technology Decisions Pending**

Item	Relevant Information	Leader and Team Contributors	Due Date
1. Outage Management	<input checked="" type="checkbox"/> The Elster Meter outage management technology utilizing “last gasp” technology has not been released for evaluation.	Kevin Boggs	Mar 30/07
2. Mass Data Server	<input checked="" type="checkbox"/> Ownership and operations options include: <ul style="list-style-type: none"> <li>▪ Burlington Hydro Inc</li> <li>▪ FibreWired</li> <li>▪ Other 3<sup>rd</sup> Party</li> </ul> <input checked="" type="checkbox"/> Acquisition cost - \$85,000 <input checked="" type="checkbox"/> Operating cost - \$0.24/customer/month + 2 employees	Dan Lowry <ul style="list-style-type: none"> <li>▪ Senior Mgmt</li> </ul>	Undetermined
3. Update CIS, GIS & Billing Systems	<input checked="" type="checkbox"/> Adequacy of legacy systems? <input checked="" type="checkbox"/> Renewal of upgrade to accommodate next 10 years	Dan Lowry	Undetermined
4. Ability of Daffron to Manage Time of Use Rates		Dan Lowry <ul style="list-style-type: none"> <li>▪ Anne Rampado</li> </ul>	Undetermined
5. Ability of Daffron to Manage Move-in/Move-out Customers		Dan Lowry <ul style="list-style-type: none"> <li>▪ Anne Rampado</li> </ul>	Undetermined
6. Final Configuration of Meter Data Management/Repository	<input checked="" type="checkbox"/> Adequacy of legacy or planned systems to interface with eventual configuration	Dan Lowry	Undetermined
7. Implementation of Time of Use Rates to Additional Customer Classes	<input checked="" type="checkbox"/> Will await OEB direction in 2007	Anne Rampado <ul style="list-style-type: none"> <li>▪ Dan Lowry</li> </ul>	2007
8. Work Force Automation	<input checked="" type="checkbox"/> Volumes of data and numbers of customers will require automation technology	Kevin Boggs & Dan Lowry	Undetermined

9. Application of Optional Remote Service Connect and Disconnect	<input checked="" type="checkbox"/> Technology is optional with Elster Meters <input checked="" type="checkbox"/> Will require a policy decision regarding customer profiles and history warranting remote disconnect <input checked="" type="checkbox"/> Affected customers may amount to 100 in number <input checked="" type="checkbox"/> Will likely not adopt remote connect for safety reasons	Anne Rampado & Kevin Boggs <ul style="list-style-type: none"> <li>▪ Senior Mgmt</li> </ul>	Undetermined
10. Contract with Third Party Meter Installer	<input checked="" type="checkbox"/> Current choice is current third party meter reader – MDMA <input checked="" type="checkbox"/> Can use proprietary workforce automation or adapt current choice – Fieldworks <input checked="" type="checkbox"/> Need to lock in provider early to ensure competitive pricing	Kevin Boggs <ul style="list-style-type: none"> <li>▪ Senior Mgmt</li> </ul>	Undetermined
11. Communication with Itron Meters Without Telephone Connection	<input checked="" type="checkbox"/> Approximately 16 customers are not connected for communications <input checked="" type="checkbox"/> Alternate technologies include: <ul style="list-style-type: none"> <li>▪ Wireless meters</li> <li>▪ Internet connection</li> <li>▪ 1X networks</li> </ul>	Kevin Boggs	Fully resolved in 2007
12. Integration of Water Meter Data Collection	<input checked="" type="checkbox"/> Will affect data collection network design <input checked="" type="checkbox"/> Will incur additional costs <input checked="" type="checkbox"/> The Regional Municipality of Halton needs to be given an opportunity to participate during smart meter implementation	Dan Lowry	2007

## 5.0 Implementation Strategy and Schedule

### 5.1 Installations to Date

Activities to date include the pilot projects described in Section 3.0 and replacement of any meters requiring Measurement Canada recalibration and all new installations or replacement of those meters which have failed. Funding for these activities come from the Post Third Traunch Conservation and Demand Management Plan which provided \$350,000 and the Ontario Energy Board EB-2005-0529 Generic Decision which provided an amount determined as \$0.30 per residential customer per month be reflected in Burlington Hydro revenue requirements.

By December 31, 2006, the following meters have been installed:

- General Service Greater than 200 kW – xxxx (Kevin??)
- Harbour Lights Condominium – 83
- Alton Community – 264
- Downtown Burlington Wi-Fi – 242
- New Residential & Meter Replacements – Approximately 500

**Total – xxx Smart Meters**

All costs have been allocated to the appropriate Conservation and Demand Management Plan budgets or have been captured in separate Work Orders for future reconciliation.

### 5.2 Implementation Plan – 2006, 2007 and 2008 to 2010

As the smart metering solution will be based upon wireless technology, implementation will be most effective if undertaken on a geographic basis with a view to systematically eliminating meter reading routes and thereby reducing costs. The City of Burlington will be divided into three regions:

- ☒ East Burlington
- ☒ Central Burlington
- ☒ West Burlington and Rural (North of Highway #5)

The rural component will be undertaken in the final year so that solutions may be found to any potential wireless communication network problems such as those associated with hilly terrains. Solutions will be tested, and, if problems occur, solutions such as higher transmission wattage meters, power line carriers, Ethernet connections, Wi-max, or regular telephone lines will be tested.

To ensure efficient installations and technology embracement by customers, an education and information campaign will be developed and delivered as well as provision of information to allow customers to take advantage of time-of-use rates when introduced.

Data collectors will only be partially loaded (less than 50%) to accommodate eventual “smart metering” of water meters for which Burlington Hydro currently provides billing services on behalf of The Regional Municipality of Halton and any anticipated in-fill construction. Collector locations will be determined by Elster Meters using their mapping technology. **Is there terrain mapping technology to assist with the potential communication problems that may exist north of Highway 5? Kevin to confirm????**

Olameter will maintain a “meter marriage file” in parallel to Burlington Hydro’s records maintained in the Customer Information System to ensure data integrity.

During the period 2008 to 2010, approximately 20,000 meters will be undertaken per year in all rate classes up to 200 kW. Customers currently above 200 kW have been converted to smart meters (Itron) and are being read by the MV90xi on a nightly basis. These customers will remain with this technology.

Burlington Hydro Inc will carry on with Residential Meter Compliance Sampling with Measurement Canada and ask for temporary permission (Bulletin ENF -10) to extend the seal life of all C&I customers (50 -200kW) that will be part of the smart metering program. This will ensure that the cost of delivering the smart meter plan is minimized.

The following summarizes the number of meters subject to Compliance Sampling:

## **2007**

- ☑ Total meters due for compliance sampling = 7501
  - Residential = 6843 with 15 Compliance groups in number (6110)
  - Commercial = 658
- ☑ Carry-over from 2006 = 180 C&I
- ☑ Vectron replacement (200 kW & Greater) = 120
- ☑ Two Compliance Groups will be replaced due to age along with meters that have no grouping.
- ☑ All new service connections will be provided with Elster Rex Meters.
- ☑ Burlington Hydro Inc has ordered 4000 Rex Meters for stock. This entitles Burlington Hydro Inc to the same pricing as provided to the Coalition of Large Distributors (CLD).
- ☑ Approximately 60 Commercial and Industrial customers in the 50 to 200 kW category will be converted to Elster A3 Alpha meters

## 2008

- ☑ Total meters due for compliance sampling = 7485
  - Residential = 6585 with 10 Compliance groups
  - Commercial = 890 C&I (50-200kW) – Will be seeking an extension from Measurement Canada.
  - Interval (200 kW & Greater) = 10
- ☑ First phase of geographically based replacement (East Burlington)
- ☑ Commercial and Industrial extension groups with Measurement Canada
- ☑ Two Compliance Groups will be replaced due to age along with meters that have no grouping.
- ☑ All new service connections will be provided with Elster Rex Meters

## 2009

- ☑ Total Meters Due = 5275
  - Residential = 4925 with 6 Compliance Groups
  - Commercial = 646 Customers – Will be seeking an extension from Measurement Canada.
  - Interval (200 kW & Greater) = 4
- ☑ Second Phase of geographically based replacement (Central Burlington)
- ☑ Commercial and Industrial extension groups with Measurement Canada
- ☑ Change-outs of non-grouped Residential meters (Approx 1700 meters)
- ☑ Six groups of Compliance Meters to be submitted for testing.

## 2010

- ☑ Total Meters Due = 6322
  - Residential = 5822 with 8 Compliance Groups
  - Commercial = 455 Customers – Extension Request Measurement Canada
  - Interval (200 kW & Greater) = 45
- ☑ Third Phase of geographically based replacement (West Burlington & Rural Areas)
- ☑ Commercial and Industrial extension groups with Measurement Canada
- ☑ Change-outs of non-grouped Residential meters (Approx 350 meters)

## 7.0 Budget

### Burlington Hydro Inc.

#### Backup For Smart Meter Plan Costs

- detail based on meter information as collected for cost allocation purposes

Residential	GS <50			GS>50-Regular					Standby	TOTAL
	G01	P01	Total	G02	G50	P02	P50	Total		

#### METERS REQUIRED TO CONVERT

Single Phase 200 Amp - Urban	SPH	51,134	1,179	0	1,179	10	0	0	0	10	52,323
Central Meter	CME	201	65	0	65	0	0	0	0	0	266
Network Meter (Costs to be updated)	NME	3,074	82	0	82	0	0	0	0	0	3,156
Three-phase - No demand	3PH	1	438	0	438	3	0	0	0	3	442
Demand without IT (usually three-phase)	DNO	3	2,098	0	2,098	220	0	0	0	220	2,321
Demand with IT	DIT	5	663	0	663	355	17	0	0	372	1,040

#### TOTAL METERS TO CONVERT

54,418	4,525	0	4,525	588	17	0	0	605	0	59,548
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#### SMART/INTERVAL CAPABLE METERS

Smart Meters	SMA	544	11	0	11	0	0	0	0	0	555
Demand with IT and Interval Capability - Secondary	DIS	0	17	1	18	142	62	55	223	482	501
Demand with IT and Interval Capability - Primary	DIP	0	0	0	0	0	0	0	25	25	26
Demand with IT and Interval Capability -Special (WMP)	DEM	0	0	0	0	0	0	0	0	0	0

#### TOTAL METERS WITH NO CONVERSION

544	28	1	29	142	62	55	248	507	2	1,082
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#### TOTAL ALL METERS

54,962	4,553	1	4,554	730	79	55	248	1,112	2	60,630
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#### Estimated Costs for Conversions:

- cost for switchout, meter and installation	\$ 250.00	\$ 825.00	\$ 4,100.00	
- number of meters, as detailed above	54,418	4,525	605	59,548
- total estimated cost per class	\$ 13,604,500	\$ 3,733,125	\$ 2,480,500	\$ 19,818,125

An allowance of \$5,000,000 will be included to accommodate the IT and other infrastructure requirements.



## **APPENDIX B**

Chris Teehan  
National Sales Manager  
KTI Limited

June 24, 2008

**Re: KTI/Sensus Submission for Request for Proposal for Advanced Metering Infrastructure (AMI) - Phase I Smartmeter Deployment (London Hydro)**

Dear Mr. Teehan,

We are pleased to inform you that you are the number one ranked proponent under this Request for Proposal, using Burlington Hydro Inc's scoring criteria and meter population data.

We intend to enter into Statement of Work negotiations with your firm, as defined in the Request for Proposal.

Prior to commencement of these negotiations, we will require that the proposal submitted to London Hydro be made specific to the Burlington Hydro operating environment. This would involve, as a minimum, determination of the layout of the RF network system and interfaces between this and Burlington Hydro's existing information technology structure and pricing thereof. We appreciate that you will not have all of the information needed at this time and we would be pleased to provide it on receipt of your requirements.

As we are committed to proceeding with smart metering, we would like to receive your proposal by July 7, 2008.

We look forward to working with you. Please call if you have any questions.

Thank you.

Yours truly,

Gerry Smallegange, P.Eng., M.B.A.  
Chief Operating Officer

## **APPENDIX D**



# PRP International, Inc.

## *Fairness Advisory Services*

March 23, 2009

Mr. Gerry Smallegange, MBA, P.Eng.  
Chief Operating Officer  
Burlington Hydro Inc.  
1340 Brant Street,  
Burlington, ON L7R 3Z7

Dear Mr. Smallegange:

Subject: Attestation Letter (Negotiations) of the Fairness Commissioner  
Burlington Hydro Inc. – Elster Metering Contract Award  
Advanced Metering Infrastructure RFP, August 2007  
London Hydro & Consortium of LDCs Smartmetering Project

PRP International, Inc. is pleased to submit its Attestation Letter (Negotiations) of the Fairness Commissioner for the noted negotiations and contracting phase of the London Hydro AMI Request for Proposal (RFP) procurement. This judgment is being provided for the information and use of Burlington Hydro Inc. (“BHI”), in its administration of the contract awarded to its #2 ranked Proponent, Elster Metering following unsuccessful negotiations with its #1 ranked Proponent, KTI/Sensus.

*“It is the judgment of PRP International, Inc.(as the Fairness Commissioner engaged by BHI for the phase of negotiations and contract award) that the successful conclusion of negotiations and contract award to Elster Metering, was undertaken in accordance with the principles for such negotiations and contract award set out in the RFP, issued August 14, 2007 and the Fairness Protocol, issued August 2008.”*

A backgrounder and summary of the Fairness Protocol is attached and forms part of this Attestation Letter (Negotiations).

Yours truly,

Peter Sorensen  
President

Attachment: Negotiations and Contract Phase Backgrounder

203 - 8 Queen Street, Summerside, PEI C1N 0A6  
Direct telephone: 902.436.3930 Fax: 604-677-5409  
Email: [fairness@telus.net](mailto:fairness@telus.net)

## **BACKGROUNDER TO FAIRNESS CONFIRMATION / ATTESTATION**

### **Advanced Metering Infrastructure Procurement**

#### **TO WHOM IT MAY CONCERN:**

##### **Background:**

- A Request for Proposal procurement transaction was conducted by London Hydro Inc., as the lead sponsoring Local Distribution Company (LDC) and with a consortia of another 63 LDCs, during the period August 2007 to July, 2008;
- The evaluation and selection phase of the RFP provided for the determination of the #1 and #2 ranked Proponents for each LDC;
- RFP Provision 7.5.14<sup>1</sup> provides the framework (principle) for negotiations and contracting based on the principle of “first right to negotiation and execution of a contract” being accorded to the ranked order of Proponents commencing with the highest ranked Proponent and proceeding in a consecutive order thereafter; and
- Each LDC was provided the evaluation results for their #1 and #2 ranked Proponents supported by the Attestation Letter of the Fairness Commissioner as to those rankings.

##### **Fairness Coverage Objective:**

Normally, fairness coverage terminates with the determination of the ranked Proponents following the evaluation and selection phase of the RFP; however, certain LDCs expressed a wish to secure additional fairness coverage during the subsequent phase of negotiations and contract award. The objective for this second phase fairness coverage is to assure that LDCs undertook a phase of negotiations and contracting that meets the RFP provisions of consecutive negotiations where required, e.g. with their top two ranked Proponents and in the event of unsuccessful negotiations with the #1 ranked Proponent, a subsequent contract award to the next ranked Proponent would be on an equitable basis as was the requirements in the negotiations with the #1 ranked Proponent.

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##### **7.5.14 Final Contract Negotiations**

Any conditions and provisions that a bidder seeks shall be a part of this proposal. Notwithstanding, nothing herein shall be interpreted to prohibit London Hydro from introducing or modifying contract terms and conditions during negotiation of the final contract.

London Hydro has scheduled no more than two weeks for contract negotiations (if necessary), and expects the successful bidder to maintain a prompt and responsive negotiation to accomplish and complete final contract agreement within that time period. If contract negotiations exceed an interval acceptable to London Hydro, London Hydro retains the option to terminate negotiations and continue to the next apparent successful bidder, at the sole discretion of London Hydro. Said interval shall in no event be less than three weeks.

<sup>1</sup>

## **BACKGROUNDER TO FAIRNESS CONFIRMATION / ATTESTATION**

### **Advanced Metering Infrastructure Procurement**

#### **Fairness Protocols:**

- A Fairness Protocol was developed and issued to all LDCs, in August 2008 that set forth the best practices for fair consecutive-based negotiations and contract award.
  - The fundamental principle of the Protocol was the requirement for the LDC to establish the negotiations agenda for their top ranked Proponents and submit a copy to the Fairness Commissioner prior to engagement of their #1 ranked Proponent, i.e. the agenda would demonstrate a common statement of work, a LDC standard for pass/fail in their negotiations and the negotiation issues would only differ to the extent of the respective Proponent's technical solution being offered.

#### **Form of Fairness Confirmation / Attestation<sup>2</sup>:**

1. A confirmation of fair negotiations and contract award would be issued if the LDC's #1 ranked Proponent was awarded a contract; the original Attestation Letter remains in effect.
2. An Attestation of fair negotiations and contract award would be issued if the LDC determined that their #1 Proponent was to be set aside and the LDC successfully contracted with their next ranked Proponent, e.g. their #2; the original Attestation Letter is thus superseded by the Negotiations and Contract Award Attestation Letter.

#### **Local Distribution Company:**

Burlington Hydro Inc.

Mr. Gerry Smallegange, MBA, P.Eng.  
Chief Operating Officer  
Burlington Hydro Inc.  
1340 Brant Street,  
Burlington, ON L7R 3Z7

---

#### <sup>2</sup> **Conditions on the rendering of this Confirmation / Attestation.**

- The two Negotiations Agenda were provided by BHI;
- Fairness Commissioner undertook no direct participation or oversight in the negotiations between BHI and either of their #1 or #2 ranked Proponents;
- The successful contract award was based on the BHI criteria and no independent analysis nor any comparison with the evaluation results of the RFP process was carried out by the Fairness Commissioner; and
- The confirmation of the Fairness Commissioner was based on the progress report(s) provided by BHI.

## **APPENDIX F**



Ontario Energy Board

## Smart Meter Model

## Choose Your Utility:

Burlington Hydro Inc.

Cambridge and North Dumfries Hydro Inc.

## Application Contact Information

Name: Stephen Shields

Title: Manager, Regulatory Affairs

Phone Number: 905 332 1851 ext 234

Email Address: sshields@burlingtonhydro.com

We are applying for rates effective: May 1, 2012

Last COS Re-based Year: 2010

## Legend

DROP-DOWN MENU

INPUT FIELD

CALCULATION FIELD

## Copyright

*This Workbook Model is protected by copyright and is being made available to you solely for the purpose of filing your application. You may use and copy this model for that purpose, and provide a copy of this model to any person that is advising or assisting you in that regard. Except as indicated above, any copying, reproduction, publication, sale, adaptation, translation, modification, reverse engineering or other use or dissemination of this model without the express written consent of the Ontario Energy Board is prohibited. If you provide a copy of this model to a person that is advising or assisting you in preparing the application or reviewing your draft rate order, you must ensure that the person understands and agrees to the restrictions noted above.*

*While this model has been provided in Excel format and is required to be filed with the applications, the onus remains on the applicant to ensure the accuracy of the data and the results. The use of any models and spreadsheets does not automatically imply Board approval. The onus is on the distributor to prepare, document and support its application. Board-issued Excel models and spreadsheets are offered to assist parties in providing the necessary information so as to facilitate an expeditious review of an application. The onus remains on the applicant to ensure the accuracy of the data and the results.*





Ontario Energy Board

## Smart Meter Model

Burlington Hydro Inc.

Distributors must enter all incremental costs related to their smart meter program and all revenues recovered to date in the applicable tabs except for those costs (and associated revenues) for which the Board has approved on a final basis, i.e. capital costs have been included in rate base and OM&A costs in revenue requirement.

For 2012, distributors that have completed their deployments by the end of 2011 are not expected to enter any capital costs. However, for OM&A, regardless of whether a distributor has deployments in 2012, distributors should enter the forecasted OM&A for 2012 for all smart meters in service.

### Smart Meter Capital Cost and Operational Expense Data

#### Smart Meter Installation Plan

Actual/Planned number of Smart Meters installed during the Calendar Year

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 and later Forecast	Total
Residential		71	559	27,999	30,123	4		58756
General Service < 50 kW		161	81	1,792	3,071	5		5110
Actual/Planned number of Smart Meters installed (Residential and GS < 50 kW only)	0	232	640	29791	33194	9	0	63866
Percentage of Residential and GS < 50 kW Smart Meter Installations Completed	0.00%	0.36%	1.37%	48.01%	99.99%	100.00%	0.00%	100.00%
Actual/Planned number of GS > 50 kW meters installed		10	5	59	497			571
Other (please identify) <span>Micro Fit Customers</span>					33			33
Total Number of Smart Meters installed or planned to be installed	0	242	645	29850	33724	9	0	64470

### 1 Capital Costs

#### 1.1 ADVANCED METERING COMMUNICATION DEVICE (AMCD)

1.1.1 Smart Meters (may include new meters and modules, etc.)

1.1.2 Installation Costs (may include socket kits, labour, vehicle, benefits, etc.)

1.1.3a Workforce Automation Hardware (may include fieldwork handhelds, barcode hardware, etc.)

1.1.3b Workforce Automation Software (may include fieldwork handhelds, barcode hardware, etc.)

Total Advanced Metering Communications Devices (AMCD)

Asset Type  
Asset type must be  
selected to enable  
calculations

	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	
Smart Meter	0	405,978	221,236	3,312,315	3,794,975	145,309		\$ 7,879,813
Smart Meter		16,140	5,250	166,299	559,950	36,585		\$ 784,224
Computer Hardware				24,395	65			\$ 24,460
								\$ -
Total Advanced Metering Communications Devices (AMCD)	\$ -	\$ 422,118	\$ 226,486	\$ 3,503,009	\$ 4,354,990	\$ 181,895	\$ -	\$ 8,688,498

#### 1.2 ADVANCED METERING REGIONAL COLLECTOR (AMRC) (includes LAN)

1.2.1 Collectors

1.2.2 Repeaters (may include radio licence, etc.)

1.2.3 Installation (may include meter seals and rings, collector computer hardware, etc.)

Total Advanced Metering Regional Collector (AMRC) (Includes LAN)

Asset Type

	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	
Smart Meter					260,850		100,000	\$ 360,850
Smart Meter					23,242			\$ 23,242
Smart Meter								\$ -
Total Advanced Metering Regional Collector (AMRC) (Includes LAN)	\$ -	\$ -	\$ -	\$ -	\$ 284,092	\$ -	\$ 100,000	\$ 384,092

### 1.3 ADVANCED METERING CONTROL COMPUTER (AMCC)

1.3.1 Computer Hardware

1.3.2 Computer Software

1.3.3 Computer Software Licences & Installation (includes hardware and software)  
(may include AS/400 disk space, backup and recovery computer, UPS, etc.)

**Total Advanced Metering Control Computer (AMCC)**

Asset Type	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	
Computer Hardware			1,403		5,143			\$ 6,546
Computer Software					56,969	40,018		\$ 96,987
Computer Software		5,000						\$ 5,000
	\$ -	\$ 5,000	\$ 1,403	\$ -	\$ 62,111	\$ 40,018	\$ -	\$ 108,532

### 1.4 WIDE AREA NETWORK (WAN)

1.4.1 Activation Fees

**Total Wide Area Network (WAN)**

Asset Type	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	
Tools & Equipment					10,476			\$ 10,476
	\$ -	\$ -	\$ -	\$ -	\$ 10,476	\$ -	\$ -	\$ 10,476

### 1.5 OTHER AMI CAPITAL COSTS RELATED TO MINIMUM FUNCTIONALITY

1.5.1 Customer Equipment (including repair of damaged equipment)

1.5.2 AMI Interface to CIS

1.5.3 Professional Fees

1.5.4 Integration

1.5.5 Program Management

1.5.6 Other AMI Capital

**Total Other AMI Capital Costs Related to Minimum Functionality**

**Total Capital Costs Related to Minimum Functionality**

Asset Type	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	
								\$ -
Computer Software		1,163	4,972	4,153	831			\$ 11,119
Computer Software				20,088	15,000			\$ 35,088
								\$ -
Smart Meter		20,221	27,334	39,368	228,820	295,110		\$ 610,852
								\$ -
	\$ -	\$ 21,384	\$ 32,306	\$ 63,609	\$ 244,650	\$ 295,110	\$ -	\$ 657,059
	\$ -	\$ 448,502	\$ 260,195	\$ 3,566,618	\$ 4,956,320	\$ 517,023	\$ 100,000	\$ 9,848,657

### 1.6 CAPITAL COSTS BEYOND MINIMUM FUNCTIONALITY

(Please provide a descriptive title and identify nature of beyond minimum functionality costs)

1.6.1 Costs related to technical capabilities in the smart meters or related communications infrastructure that exceed those specified in O.Reg 425/06

1.6.2 Costs for deployment of smart meters to customers other than residential and small general service

1.6.3 Costs for TOU rate implementation, CIS system upgrades, web presentation, integration with the MDM/R, etc.

**Total Capital Costs Beyond Minimum Functionality**

**Total Smart Meter Capital Costs**

Asset Type	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	
Computer Software								\$ -
Applications Software								\$ -
								\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ 448,502	\$ 260,195	\$ 3,566,618	\$ 4,956,320	\$ 517,023	\$ 100,000	\$ 9,848,657

## 2 OM&A Expenses

### 2.1 ADVANCED METERING COMMUNICATION DEVICE (AMCD)

2.1.1 Maintenance (may include meter reverification costs, etc.)

2.1.2 Other (please specify)

Meter Base Repairs

#### Total Incremental AMCD OM&A Costs

### 2.2 ADVANCED METERING REGIONAL COLLECTOR (AMRC) (includes LAN)

2.2.1 Maintenance

2.2.2 Other (please specify)

#### Total Incremental AMRC OM&A Costs

### 2.3 ADVANCED METERING CONTROL COMPUTER (AMCC)

2.3.1 Hardware Maintenance (may include server support, etc.)

2.3.2 Software Maintenance (may include maintenance support, etc.)

2.3.2 Other (please specify)

#### Total Incremental AMCC OM&A Costs

### 2.4 WIDE AREA NETWORK (WAN)

2.4.1 WAN Maintenance

2.4.2 Other (please specify)

#### Total Incremental AMRC OM&A Costs

### 2.5 OTHER AMI OM&A COSTS RELATED TO MINIMUM FUNCTIONALITY

2.5.1 Business Process Redesign

2.5.2 Customer Communication (may include project communication, etc.)

2.5.3 Program Management

2.5.4 Change Management (may include training, etc.)

2.5.5 Administration Costs

2.5.6 Other AMI Expenses

(please specify)

#### Total Other AMI OM&A Costs Related to Minimum Functionality

#### TOTAL OM&A COSTS RELATED TO MINIMUM FUNCTIONALITY

### 2.6 OM&A COSTS RELATED TO BEYOND MINIMUM FUNCTIONALITY

(Please provide a descriptive title and identify nature of beyond minimum functionality costs)

2.6.1 Costs related to technical capabilities in the smart meters or related communications infrastructure that exceed those specified in O.Reg 425/06

2.6.2 Costs for deployment of smart meters to customers other than residential and small general service

2.6.3 Costs for TOU rate implementation, CIS system upgrades, web presentation, integration with the MDM/R, etc.

#### Total OM&A Costs Beyond Minimum Functionality

#### Total Smart Meter OM&A Costs

	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	
								\$ -
				34,773	36,500	6,553		\$ 77,825
	\$ -	\$ -	\$ -	\$ 34,773	\$ 36,500	\$ 6,553	\$ -	\$ 77,825
								\$ -
								\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
								\$ -
						140,649	374,389	\$ 515,039
								\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 140,649	\$ 374,389	\$ 515,039
								\$ -
						470,974	573,300	\$ 1,044,274
								\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 470,974	\$ 573,300	\$ 1,044,274
								\$ 49,000
				43,309	55,311	154,296	26,166	\$ 279,082
								\$ -
								\$ -
		760		4,711	8,156	5,055		\$ 18,681
		122	559	15,163	9,582	36,058	56,448	\$ 117,932
	\$ -	\$ 882	\$ 559	\$ 63,182	\$ 73,049	\$ 195,409	\$ 131,614	\$ 464,694
	\$ -	\$ 882	\$ 559	\$ 97,955	\$ 109,548	\$ 813,585	\$ 1,079,303	\$ 2,101,832
	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual		
								\$ -
								\$ -
								\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ 882	\$ 559	\$ 97,955	\$ 109,548	\$ 813,585	\$ 1,079,303	\$ 2,101,832

**3 Aggregate Smart Meter Costs by Category**

<b>3.1</b>	<b>Capital</b>								
3.1.1	Smart Meter	\$ -	\$ 442,338	\$ 253,820	\$ 3,517,982	\$ 4,867,837	\$ 477,005	\$ 100,000	\$ 9,658,982
3.1.2	Computer Hardware	\$ -	\$ -	\$ 1,403	\$ 24,395	\$ 5,207	\$ -	\$ -	\$ 31,006
3.1.3	Computer Software	\$ -	\$ 6,163	\$ 4,972	\$ 24,241	\$ 72,799	\$ 40,018	\$ -	\$ 148,193
3.1.4	Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ 10,476	\$ -	\$ -	\$ 10,476
3.1.5	Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3.1.6	Applications Software	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>3.1.7</b>	<b>Total Capital Costs</b>	<u>\$ -</u>	<u>\$ 448,502</u>	<u>\$ 260,195</u>	<u>\$ 3,566,618</u>	<u>\$ 4,956,320</u>	<u>\$ 517,023</u>	<u>\$ 100,000</u>	<u>\$ 9,848,657</u>
<b>3.2</b>	<b>OM&amp;A Costs</b>								
<b>3.2.1</b>	<b>Total OM&amp;A Costs</b>	<u>\$ -</u>	<u>\$ 882</u>	<u>\$ 559</u>	<u>\$ 97,955</u>	<u>\$ 109,548</u>	<u>\$ 813,585</u>	<u>\$ 1,079,303</u>	<u>\$ 2,101,832</u>



Ontario Energy Board

## Smart Meter Model

### Burlington Hydro Inc.

	2006	2007	2008	2009	2010	2011	2012 and later
<b>Cost of Capital</b>							
<b>Capital Structure<sup>1</sup></b>							
Deemed Short-term Debt Capitalization			0.0%	0.0%	4.0%	4.0%	4.0%
Deemed Long-term Debt Capitalization	50.0%	50.0%	53.3%	56.7%	56.0%	56.0%	56.0%
Deemed Equity Capitalization	50.0%	50.0%	46.7%	43.3%	40.0%	40.0%	40.0%
Preferred Shares	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Cost of Capital Parameters</b>							
Deemed Short-term Debt Rate			0.00%	0.00%	2.07%	2.46%	2.08%
Long-term Debt Rate (actual/embedded/deemed) <sup>2</sup>	6.25%	6.25%	7.25%	7.25%	5.87%	5.32%	5.01%
Target Return on Equity (ROE)	9.0%	9.00%	9.00%	9.00%	9.85%	9.58%	9.42%
Return on Preferred Shares	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>WACC</b>	7.63%	7.63%	8.07%	8.01%	7.31%	6.91%	6.66%
<b>Working Capital Allowance</b>							
Working Capital Allowance Rate (% of the sum of Cost of Power + controllable expenses)	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
<b>Taxes/PILs</b>							
Aggregate Corporate Income Tax Rate	36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.25%
Capital Tax (until July 1st, 2010)	0.30%	0.225%	0.225%	0.225%	0.075%	0.00%	0.00%

## Depreciation Rates

(expressed as expected useful life in years)

Smart Meters - years	15	15	15	15	15	15	15
- rate (%)	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%
Computer Hardware - years	5	5	5	5	5	5	5
- rate (%)	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
Computer Software - years	5	5	5	5	5	5	5
- rate (%)	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
Tools & Equipment - years	10	10	10	10	10	10	10
- rate (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Other Equipment - years	10	10	10	10	10	10	10
- rate (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%

## CCA Rates

Smart Meters - CCA Class	47	47	47	47	47	47	47
Smart Meters - CCA Rate	8%	8%	8%	8%	8%	8%	8%
Computer Equipment - CCA Class	45	50	50	50	50	50	50
Computer Equipment - CCA Rate	45%	55%	55%	55%	55%	55%	55%
General Equipment - CCA Class	8	8	8	8	8	8	8
General Equipment - CCA Rate	20%	20%	20%	20%	20%	20%	20%
Applications Software - CCA Class							
Applications Software - CCA Rate							

## Assumptions

<sup>1</sup> Planned smart meter installations occur evenly throughout the year.

<sup>2</sup> Fiscal calendar year (January 1 to December 31) used.

<sup>3</sup> Amortization is done on a straight line basis and has the "half-year" rule applied.



Ontario Energy Board

Smart Meter Model

Burlington Hydro Inc.

	2006	2007	2008	2009	2010	2011	2012 and later
<b>Net Fixed Assets - Smart Meters</b>							
<b>Gross Book Value</b>							
Opening Balance		\$ -	\$ 442,338	\$ 696,158	\$ 4,214,140	\$ 9,081,977	\$ 9,558,982
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ 442,338	\$ 253,820	\$ 3,517,982	\$ 4,867,837	\$ 477,005	\$ 100,000
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ 442,338	\$ 696,158	\$ 4,214,140	\$ 9,081,977	\$ 9,558,982	\$ 9,658,982
<b>Accumulated Depreciation</b>							
Opening Balance		\$ -	-\$ 14,745	-\$ 52,694	-\$ 216,371	-\$ 659,575	-\$ 1,280,940
Amortization expense during year	\$ -	-\$ 14,745	-\$ 37,950	-\$ 163,677	-\$ 443,204	-\$ 621,365	-\$ 640,599
Retirements/Removals (if applicable)							
Closing Balance	\$ -	-\$ 14,745	-\$ 52,694	-\$ 216,371	-\$ 659,575	-\$ 1,280,940	-\$ 1,921,539
<b>Net Book Value</b>							
Opening Balance	\$ -	\$ -	\$ 427,594	\$ 643,464	\$ 3,997,769	\$ 8,422,402	\$ 8,278,041
Closing Balance	\$ -	\$ 427,594	\$ 643,464	\$ 3,997,769	\$ 8,422,402	\$ 8,278,041	\$ 7,737,443
Average Net Book Value	\$ -	\$ 213,797	\$ 535,529	\$ 2,320,616	\$ 6,210,085	\$ 8,350,222	\$ 8,007,742
<b>Net Fixed Assets - Computer Hardware</b>							
<b>Gross Book Value</b>							
Opening Balance		\$ -	\$ -	\$ 1,403	\$ 25,799	\$ 31,006	\$ 31,006
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ -	\$ 1,403	\$ 24,395	\$ 5,207	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ 1,403	\$ 25,799	\$ 31,006	\$ 31,006	\$ 31,006
<b>Accumulated Depreciation</b>							
Opening Balance	\$ -	\$ -	\$ -	140	2,861	8,541	14,742
Amortization expense during year	\$ -	\$ -	-\$ 140	-\$ 2,720	-\$ 5,680	-\$ 6,201	-\$ 6,201
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	-\$ 140	-\$ 2,861	-\$ 8,541	-\$ 14,742	-\$ 20,943
<b>Net Book Value</b>							
Opening Balance	\$ -	\$ -	\$ -	\$ 1,263	\$ 22,938	\$ 22,465	\$ 16,264
Closing Balance	\$ -	\$ -	\$ 1,263	\$ 22,938	\$ 22,465	\$ 16,264	\$ 10,063
Average Net Book Value	\$ -	\$ -	\$ 631	\$ 12,101	\$ 22,702	\$ 19,364	\$ 13,163
<b>Net Fixed Assets - Computer Software (including Applications Software)</b>							
<b>Gross Book Value</b>							
Opening Balance		\$ -	\$ 6,163	\$ 11,136	\$ 35,376	\$ 108,176	\$ 148,193
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ 6,163	\$ 4,972	\$ 24,241	\$ 72,799	\$ 40,018	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ 6,163	\$ 11,136	\$ 35,376	\$ 108,176	\$ 148,193	\$ 148,193
<b>Accumulated Depreciation</b>							
Opening Balance	\$ -	\$ -	-\$ 616	-\$ 2,346	-\$ 6,997	-\$ 21,353	-\$ 46,990
Amortization expense during year	\$ -	-\$ 616	-\$ 1,730	-\$ 4,651	-\$ 14,355	-\$ 25,637	-\$ 29,639
Retirements/Removals (if applicable)							
Closing Balance	\$ -	-\$ 616	-\$ 2,346	-\$ 6,997	-\$ 21,353	-\$ 46,990	-\$ 76,628
<b>Net Book Value</b>							
Opening Balance	\$ -	\$ -	\$ 5,547	\$ 8,789	\$ 28,379	\$ 86,823	\$ 101,204
Closing Balance	\$ -	\$ 5,547	\$ 8,789	\$ 28,379	\$ 86,823	\$ 101,204	\$ 71,565
Average Net Book Value	\$ -	\$ 2,774	\$ 7,168	\$ 18,584	\$ 57,601	\$ 94,013	\$ 86,385

# Net Fixed Assets - Tools and Equipment

## Gross Book Value

Opening Balance		\$ -	\$ -	\$ -	\$ -	\$ 10,476	\$ 10,476
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ -	\$ -	\$ -	\$ 10,476	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ 10,476	\$ 10,476	\$ 10,476

## Accumulated Depreciation

Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 524	\$ 1,571
Amortization expense during year	\$ -	\$ -	\$ -	\$ -	\$ 524	\$ 1,048	\$ 1,048
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ 524	\$ 1,571	\$ 2,619

## Net Book Value

Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,952	\$ 8,905
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ 9,952	\$ 8,905	\$ 7,857
Average Net Book Value	\$ -	\$ -	\$ -	\$ -	\$ 4,976	\$ 9,428	\$ 8,381

# Net Fixed Assets - Other Equipment

## Gross Book Value

Opening Balance		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

## Accumulated Depreciation

Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amortization expense during year	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

## Net Book Value

Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Average Net Book Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -





Ontario Energy Board

## Smart Meter Model

### Burlington Hydro Inc.

	2006	2007	2008	2009	2010	2011	2012 and Later
<b>Average Net Fixed Asset Values (from Sheet 4)</b>							
Smart Meters	\$ -	\$ 213,797	\$ 535,529	\$ 2,320,616	\$ 6,210,085	\$ 8,350,222	\$ 8,007,742
Computer Hardware	\$ -	\$ -	\$ 631	\$ 12,101	\$ 22,702	\$ 19,364	\$ 13,163
Computer Software	\$ -	\$ 2,774	\$ 7,168	\$ 18,584	\$ 57,601	\$ 94,013	\$ 86,385
Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ 4,976	\$ 9,428	\$ 8,381
Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Net Fixed Assets</b>	<b>\$ -</b>	<b>\$ 216,570</b>	<b>\$ 543,328</b>	<b>\$ 2,351,301</b>	<b>\$ 6,295,364</b>	<b>\$ 8,473,028</b>	<b>\$ 8,115,671</b>
<b>Working Capital</b>							
Operating Expenses (from Sheet 2)	\$ -	\$ 882	\$ 559	\$ 97,955	\$ 109,548	\$ 813,585	\$ 1,079,303
Working Capital Factor (from Sheet 3)	15%	15%	15%	15%	15%	15%	15%
Working Capital Allowance	\$ -	\$ 132	\$ 84	\$ 14,693	\$ 16,432	\$ 122,038	\$ 161,896
<b>Incremental Smart Meter Rate Base</b>	<b>\$ -</b>	<b>\$ 216,703</b>	<b>\$ 543,412</b>	<b>\$ 2,365,994</b>	<b>\$ 6,311,796</b>	<b>\$ 8,595,066</b>	<b>\$ 8,277,566</b>
<b>Return on Rate Base</b>							
<b>Capital Structure</b>							
Deemed Short Term Debt	\$ -	\$ -	\$ -	\$ -	\$ 252,472	\$ 343,803	\$ 331,103
Deemed Long Term Debt	\$ -	\$ 108,351	\$ 289,639	\$ 1,341,519	\$ 3,534,606	\$ 4,813,237	\$ 4,635,437
Equity	\$ -	\$ 108,351	\$ 253,773	\$ 1,024,475	\$ 2,524,718	\$ 3,438,026	\$ 3,311,026
Preferred Shares	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Capitalization</b>	<b>\$ -</b>	<b>\$ 216,703</b>	<b>\$ 543,412</b>	<b>\$ 2,365,994</b>	<b>\$ 6,311,796</b>	<b>\$ 8,595,066</b>	<b>\$ 8,277,566</b>
<b>Return on</b>							
Deemed Short Term Debt	\$ -	\$ -	\$ -	\$ -	\$ 5,226	\$ 8,458	\$ 6,887
Deemed Long Term Debt	\$ -	\$ 6,772	\$ 20,999	\$ 97,260	\$ 207,481	\$ 256,064	\$ 232,235
Equity	\$ -	\$ 9,752	\$ 22,840	\$ 92,203	\$ 248,685	\$ 329,363	\$ 311,899
Preferred Shares	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Return on Capital</b>	<b>\$ -</b>	<b>\$ 16,524</b>	<b>\$ 43,838</b>	<b>\$ 189,463</b>	<b>\$ 461,392</b>	<b>\$ 593,885</b>	<b>\$ 551,021</b>
<b>Operating Expenses</b>	<b>\$ -</b>	<b>\$ 882</b>	<b>\$ 559</b>	<b>\$ 97,955</b>	<b>\$ 109,548</b>	<b>\$ 813,585</b>	<b>\$ 1,079,303</b>
<b>Amortization Expenses (from Sheet 4)</b>							
Smart Meters	\$ -	\$ 14,745	\$ 37,950	\$ 163,677	\$ 443,204	\$ 621,365	\$ 640,599
Computer Hardware	\$ -	\$ -	\$ 140	\$ 2,720	\$ 5,680	\$ 6,201	\$ 6,201
Computer Software	\$ -	\$ 616	\$ 1,730	\$ 4,651	\$ 14,355	\$ 25,637	\$ 29,639
Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ 524	\$ 1,048	\$ 1,048
Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Amortization Expense in Year</b>	<b>\$ -</b>	<b>\$ 15,361</b>	<b>\$ 39,820</b>	<b>\$ 171,048</b>	<b>\$ 463,763</b>	<b>\$ 654,251</b>	<b>\$ 677,486</b>
<b>Incremental Revenue Requirement before Taxes/PILs</b>	<b>\$ -</b>	<b>\$ 32,766</b>	<b>\$ 84,217</b>	<b>\$ 458,466</b>	<b>\$ 1,034,704</b>	<b>\$ 2,061,721</b>	<b>\$ 2,307,811</b>
<b>Calculation of Taxable Income</b>							
Incremental Operating Expenses	\$ -	\$ 882	\$ 559	\$ 97,955	\$ 109,548	\$ 813,585	\$ 1,079,303
Amortization Expense	\$ -	\$ 15,361	\$ 39,820	\$ 171,048	\$ 463,763	\$ 654,251	\$ 677,486
Interest Expense	\$ -	\$ 6,772	\$ 20,999	\$ 92,203	\$ 212,708	\$ 264,522	\$ 239,122
<b>Net Income for Taxes/PILs</b>	<b>\$ -</b>	<b>\$ 9,752</b>	<b>\$ 22,840</b>	<b>\$ 92,203</b>	<b>\$ 248,685</b>	<b>\$ 329,363</b>	<b>\$ 311,899</b>
<b>Grossed-up Taxes/PILs (from Sheet 7)</b>	<b>\$ -</b>	<b>\$ 4,211.17</b>	<b>\$ 8,686.49</b>	<b>\$ 36,082.39</b>	<b>\$ 77,091.36</b>	<b>\$ 96,740.30</b>	<b>\$ 107,096.10</b>
<b>Revenue Requirement, including Grossed-up Taxes/PILs</b>	<b>\$ -</b>	<b>\$ 36,977</b>	<b>\$ 92,904</b>	<b>\$ 494,548</b>	<b>\$ 1,111,795</b>	<b>\$ 2,158,461</b>	<b>\$ 2,414,907</b>



Ontario Energy Board

Smart Meter Model

Burlington Hydro Inc.

## For PILs Calculation

### UCC - Smart Meters

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 and later Forecast
Opening UCC	\$ -	\$ -	\$ 424,644.81	\$ 634,340.15	\$ 3,960,855.54	\$ 8,317,110.44	\$ 8,109,666.31
Capital Additions	\$ -	\$ 442,338.34	\$ 253,819.72	\$ 3,517,981.87	\$ 4,867,836.82	\$ 477,004.90	\$ 100,000.00
Retirements/Removals (if applicable)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
UCC Before Half Year Rule	\$ -	\$ 442,338.34	\$ 678,464.53	\$ 4,152,322.02	\$ 8,828,692.36	\$ 8,794,115.34	\$ 8,209,666.31
Half Year Rule (1/2 Additions - Disposals)	\$ -	\$ 221,169.17	\$ 126,909.86	\$ 1,758,990.94	\$ 2,433,918.41	\$ 238,502.45	\$ 50,000.00
Reduced UCC	\$ -	\$ 221,169.17	\$ 551,554.67	\$ 2,393,331.09	\$ 6,394,773.95	\$ 8,555,612.89	\$ 8,159,666.31
CCA Rate Class	47	47	47	47	47	47	47
CCA Rate	8%	8%	8%	8%	8%	8%	8%
CCA	\$ -	\$ 17,693.53	\$ 44,124.37	\$ 191,466.49	\$ 511,581.92	\$ 684,449.03	\$ 652,773.30
Closing UCC	\$ -	\$ 424,644.81	\$ 634,340.15	\$ 3,960,855.54	\$ 8,317,110.44	\$ 8,109,666.31	\$ 7,556,893.00

### UCC - Computer Equipment

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 and later Forecast
Opening UCC	\$ -	\$ -	\$ 4,468.52	\$ 6,632.87	\$ 38,246.07	\$ 73,765.63	\$ 62,207.38
Capital Additions Computer Hardware	\$ -	\$ -	\$ 1,403.20	\$ 24,395.45	\$ 5,207.36	\$ -	\$ -
Capital Additions Computer Software	\$ -	\$ 6,163.48	\$ 4,972.02	\$ 24,240.80	\$ 72,799.39	\$ 40,017.72	\$ -
Retirements/Removals (if applicable)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
UCC Before Half Year Rule	\$ -	\$ 6,163.48	\$ 10,843.74	\$ 55,269.12	\$ 116,252.82	\$ 113,783.35	\$ 62,207.38
Half Year Rule (1/2 Additions - Disposals)	\$ -	\$ 3,081.74	\$ 3,187.61	\$ 24,318.13	\$ 39,003.38	\$ 20,008.86	\$ -
Reduced UCC	\$ -	\$ 3,081.74	\$ 7,656.13	\$ 30,950.99	\$ 77,249.45	\$ 93,774.49	\$ 62,207.38
CCA Rate Class	45	50	50	50	50	50	50
CCA Rate	45%	55%	55%	55%	55%	55%	55%
CCA	\$ -	\$ 1,694.96	\$ 4,210.87	\$ 17,023.05	\$ 42,487.20	\$ 51,575.97	\$ 34,214.06
Closing UCC	\$ -	\$ 4,468.52	\$ 6,632.87	\$ 38,246.07	\$ 73,765.63	\$ 62,207.38	\$ 27,993.32

### UCC - General Equipment

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 and later Forecast
Opening UCC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,428.40	\$ 7,542.72
Capital Additions Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ 10,476.00	\$ -	\$ -
Capital Additions Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retirements/Removals (if applicable)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
UCC Before Half Year Rule	\$ -	\$ -	\$ -	\$ -	\$ 10,476.00	\$ 9,428.40	\$ 7,542.72
Half Year Rule (1/2 Additions - Disposals)	\$ -	\$ -	\$ -	\$ -	\$ 5,238.00	\$ -	\$ -
Reduced UCC	\$ -	\$ -	\$ -	\$ -	\$ 5,238.00	\$ 9,428.40	\$ 7,542.72
CCA Rate Class	8	8	8	8	8	8	8
CCA Rate	20%	20%	20%	20%	20%	20%	20%
CCA	\$ -	\$ -	\$ -	\$ -	\$ 1,047.60	\$ 1,885.68	\$ 1,508.54
Closing UCC	\$ -	\$ -	\$ -	\$ -	\$ 9,428.40	\$ 7,542.72	\$ 6,034.18



## PILs Calculation

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 and later Forecast
<b>INCOME TAX</b>							
Net Income	\$ -	\$ 9,751.62	\$ 22,839.61	\$ 92,202.79	\$ 248,684.77	\$ 329,362.92	\$ 311,898.69
Amortization	\$ -	\$ 15,360.96	\$ 39,820.10	\$ 171,047.96	\$ 463,763.35	\$ 654,250.99	\$ 677,486.26
CCA - Smart Meters	\$ -	\$ 17,693.53	\$ 44,124.37	\$ 191,466.49	\$ 511,581.92	\$ 684,449.03	\$ 652,773.30
CCA - Computers	\$ -	\$ 1,694.96	\$ 4,210.87	\$ 17,023.05	\$ 42,487.20	\$ 51,575.97	\$ 34,214.06
CCA - Applications Software	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CCA - Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ 1,047.60	\$ 1,885.68	\$ 1,508.54
Change in taxable income	\$ -	\$ 5,724.09	\$ 14,324.46	\$ 54,761.22	\$ 157,331.41	\$ 245,703.23	\$ 300,889.04
Tax Rate (from Sheet 3)	36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.25%
Income Taxes Payable	\$ -	\$ 2,067.54	\$ 4,798.69	\$ 18,071.20	\$ 48,772.74	\$ 69,411.16	\$ 78,983.37
<b>ONTARIO CAPITAL TAX</b>							
Smart Meters	\$ -	\$ 427,593.73	\$ 643,463.57	\$ 3,997,768.84	\$ 8,422,401.77	\$ 8,278,041.39	\$ 7,737,442.61
Computer Hardware	\$ -	\$ -	\$ 1,262.88	\$ 22,938.15	\$ 22,465.04	\$ 16,263.84	\$ 10,062.64
Computer Software (Including Application Software)	\$ -	\$ 5,547.13	\$ 8,789.25	\$ 28,378.87	\$ 86,823.07	\$ 101,203.88	\$ 71,565.19
Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ 9,952.20	\$ 8,904.60	\$ 7,857.00
Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Rate Base	\$ -	\$ 433,140.86	\$ 653,515.70	\$ 4,049,085.86	\$ 8,541,642.07	\$ 8,404,413.70	\$ 7,826,927.44
Less: Exemption	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Deemed Taxable Capital	\$ -	\$ 433,140.86	\$ 653,515.70	\$ 4,049,085.86	\$ 8,541,642.07	\$ 8,404,413.70	\$ 7,826,927.44
Ontario Capital Tax Rate (from Sheet 3)	0.300%	0.225%	0.225%	0.225%	0.075%	0.000%	0.000%
Net Amount (Taxable Capital x Rate)	\$ -	\$ 974.57	\$ 1,470.41	\$ 9,110.44	\$ 6,406.23	\$ -	\$ -
Change in Income Taxes Payable	\$ -	\$ 2,067.54	\$ 4,798.69	\$ 18,071.20	\$ 48,772.74	\$ 69,411.16	\$ 78,983.37
Change in OCT	\$ -	\$ 974.57	\$ 1,470.41	\$ 9,110.44	\$ 6,406.23	\$ -	\$ -
PILs	\$ -	\$ 3,042.11	\$ 6,269.10	\$ 27,181.64	\$ 55,178.97	\$ 69,411.16	\$ 78,983.37
<b>Gross Up PILs</b>							
Tax Rate	36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.25%
Change in Income Taxes Payable	\$ -	\$ 3,236.60	\$ 7,216.08	\$ 26,971.94	\$ 70,685.13	\$ 96,740.30	\$ 107,096.10
Change in OCT	\$ -	\$ 974.57	\$ 1,470.41	\$ 9,110.44	\$ 6,406.23	\$ -	\$ -
PILs	\$ -	\$ 4,211.17	\$ 8,686.49	\$ 36,082.39	\$ 77,091.36	\$ 96,740.30	\$ 107,096.10



Ontario Energy Board

Smart Meter Model

Burlington Hydro Inc.

This worksheet calculates the funding adder revenues.

Account 1555 - Sub-account Funding Adder Revenues

Interest Rates	Approved Deferral and Variance Accounts	CWIP	Date	Year	Quarter	Opening Balance (Principal)	Funding Adder Revenues	Interest Rate	Interest	Closing Balance	Annual amounts
2006 Q1			Jan-06	2006	Q1	\$ -		0.00%	\$ -	\$ -	
2006 Q2	4.14%	4.68%	Feb-06	2006	Q1	\$ -		0.00%	\$ -	\$ -	
2006 Q3	4.59%	5.05%	Mar-06	2006	Q1	\$ -		0.00%	\$ -	\$ -	
2006 Q4	4.59%	4.72%	Apr-06	2006	Q2	\$ -		4.14%	\$ -	\$ -	
2007 Q1	4.59%	4.72%	May-06	2006	Q2	\$ -	\$ 53.53	4.14%	\$ -	\$ 53.53	
2007 Q2	4.59%	4.72%	Jun-06	2006	Q2	\$ 53.53	\$ 7,482.14	4.14%	\$ 0.18	\$ 7,535.85	
2007 Q3	4.59%	5.18%	Jul-06	2006	Q3	\$ 7,535.67	\$ 15,691.51	4.59%	\$ 28.82	\$ 23,256.00	
2007 Q4	5.14%	5.18%	Aug-06	2006	Q3	\$ 23,227.18	\$ 14,842.28	4.59%	\$ 88.84	\$ 38,158.30	
2008 Q1	5.14%	5.18%	Sep-06	2006	Q3	\$ 38,069.46	\$ 17,685.84	4.59%	\$ 145.62	\$ 55,900.92	
2008 Q2	4.08%	5.18%	Oct-06	2006	Q4	\$ 55,755.30	\$ 14,889.99	4.59%	\$ 213.26	\$ 70,858.55	
2008 Q3	3.35%	5.43%	Nov-06	2006	Q4	\$ 70,645.29	\$ 17,365.81	4.59%	\$ 270.22	\$ 88,281.32	
2008 Q4	3.35%	5.43%	Dec-06	2006	Q4	\$ 88,011.10	\$ 14,864.43	4.59%	\$ 336.64	\$ 103,212.17	\$ 103,959.11
2009 Q1	2.45%	6.61%	Jan-07	2007	Q1	\$ 102,875.53	\$ 12,874.51	4.59%	\$ 393.50	\$ 116,143.54	
2009 Q2	1.00%	6.61%	Feb-07	2007	Q1	\$ 115,750.04	\$ 15,296.78	4.59%	\$ 442.74	\$ 131,489.56	
2009 Q3	0.55%	5.67%	Mar-07	2007	Q1	\$ 131,046.82	\$ 17,589.13	4.59%	\$ 501.25	\$ 149,137.20	
2009 Q4	0.55%	4.66%	Apr-07	2007	Q2	\$ 148,635.95	\$ 15,351.85	4.59%	\$ 568.53	\$ 164,556.33	
2010 Q1	0.55%	4.34%	May-07	2007	Q2	\$ 163,987.80	\$ 17,517.74	4.59%	\$ 627.25	\$ 182,132.79	
2010 Q2	0.55%	4.34%	Jun-07	2007	Q2	\$ 181,505.54	\$ 15,426.79	4.59%	\$ 694.26	\$ 197,626.59	
2010 Q3	0.89%	4.66%	Jul-07	2007	Q3	\$ 196,932.33	\$ 15,667.55	4.59%	\$ 753.27	\$ 213,353.15	
2010 Q4	1.20%	4.01%	Aug-07	2007	Q3	\$ 212,599.88	\$ 15,502.33	4.59%	\$ 813.19	\$ 228,915.40	
2011 Q1	1.47%	4.29%	Sep-07	2007	Q3	\$ 228,102.21	\$ 17,557.38	4.59%	\$ 872.49	\$ 246,532.08	
2011 Q2	1.47%	4.29%	Oct-07	2007	Q4	\$ 245,659.59	\$ 15,487.04	5.14%	\$ 1,052.24	\$ 262,198.87	
2011 Q3	1.47%	4.29%	Nov-07	2007	Q4	\$ 261,146.63	\$ 17,666.48	5.14%	\$ 1,118.58	\$ 279,931.69	
2011 Q4	1.47%	4.29%	Dec-07	2007	Q4	\$ 278,813.11	\$ 15,512.91	5.14%	\$ 1,194.25	\$ 295,520.27	\$ 200,482.04
2012 Q1	1.47%	4.29%	Jan-08	2008	Q1	\$ 294,326.02	\$ 17,651.63	5.14%	\$ 1,260.70	\$ 313,238.35	
2012 Q2	1.47%	4.29%	Feb-08	2008	Q1	\$ 311,977.65	\$ 15,653.97	5.14%	\$ 1,336.30	\$ 328,967.92	
2012 Q3	1.47%	4.29%	Mar-08	2008	Q1	\$ 327,631.62	\$ 17,730.98	5.14%	\$ 1,403.36	\$ 346,765.96	
2012 Q4	1.47%	4.29%	Apr-08	2008	Q2	\$ 345,362.60	\$ 15,699.60	4.08%	\$ 1,174.23	\$ 362,236.43	
			May-08	2008	Q2	\$ 361,062.20	\$ 17,778.24	4.08%	\$ 1,227.61	\$ 380,068.05	
			Jun-08	2008	Q2	\$ 378,840.44	\$ 15,759.86	4.08%	\$ 1,288.06	\$ 395,888.36	
			Jul-08	2008	Q3	\$ 394,600.30	\$ 17,792.98	3.35%	\$ 1,101.59	\$ 413,494.87	
			Aug-08	2008	Q3	\$ 412,393.28	\$ 15,860.95	3.35%	\$ 1,151.26	\$ 429,405.49	
			Sep-08	2008	Q3	\$ 428,254.23	\$ 17,719.37	3.35%	\$ 1,195.54	\$ 447,169.14	
			Oct-08	2008	Q4	\$ 445,973.60	\$ 15,857.17	3.35%	\$ 1,245.01	\$ 463,075.78	
			Nov-08	2008	Q4	\$ 461,830.77	\$ 17,765.73	3.35%	\$ 1,289.28	\$ 480,885.78	
			Dec-08	2008	Q4	\$ 479,596.50	\$ 22,821.27	3.35%	\$ 1,338.87	\$ 503,756.64	\$ 223,103.56
			Jan-09	2009	Q1	\$ 502,417.77	\$ 17,779.21	2.45%	\$ 1,025.77	\$ 521,222.75	
			Feb-09	2009	Q1	\$ 520,196.98	\$ 16,053.64	2.45%	\$ 1,062.07	\$ 537,312.69	
			Mar-09	2009	Q1	\$ 536,250.62	\$ 17,854.05	2.45%	\$ 1,094.85	\$ 555,199.52	
			Apr-09	2009	Q2	\$ 554,104.67	\$ 16,157.27	1.00%	\$ 461.75	\$ 570,723.69	
			May-09	2009	Q2	\$ 570,261.94	\$ 63,827.92	1.00%	\$ 475.22	\$ 634,565.08	
			Jun-09	2009	Q2	\$ 634,089.86	\$ 59,866.60	1.00%	\$ 528.41	\$ 694,484.87	
			Jul-09	2009	Q3	\$ 693,956.46	\$ 66,441.95	0.55%	\$ 318.06	\$ 760,716.47	
			Aug-09	2009	Q3	\$ 760,398.41	\$ 60,111.90	0.55%	\$ 348.52	\$ 820,858.83	
			Sep-09	2009	Q3	\$ 820,510.31	\$ 66,262.79	0.55%	\$ 376.07	\$ 887,149.17	
			Oct-09	2009	Q4	\$ 886,773.10	\$ 60,145.01	0.55%	\$ 406.44	\$ 947,324.55	
			Nov-09	2009	Q4	\$ 946,918.11	\$ 66,326.14	0.55%	\$ 434.00	\$ 1,013,678.25	
			Dec-09	2009	Q4	\$ 1,013,244.25	\$ 60,090.56	0.55%	\$ 464.40	\$ 1,073,799.21	\$ 577,912.60
			Jan-10	2010	Q1	\$ 1,073,334.81	\$ 66,351.59	0.55%	\$ 491.95	\$ 1,140,178.35	
			Feb-10	2010	Q1	\$ 1,139,686.40	\$ 60,706.38	0.55%	\$ 522.36	\$ 1,200,915.14	
			Mar-10	2010	Q1	\$ 1,200,392.78	\$ 66,388.36	0.55%	\$ 550.18	\$ 1,267,331.32	
			Apr-10	2010	Q2	\$ 1,266,781.14	\$ 60,876.73	0.55%	\$ 580.61	\$ 1,328,238.48	
			May-10	2010	Q2	\$ 1,327,657.87	\$ 66,473.80	0.55%	\$ 608.51	\$ 1,394,740.18	
			Jun-10	2010	Q2	\$ 1,394,131.67	\$ 61,146.38	0.55%	\$ 638.98	\$ 1,455,917.03	
			Jul-10	2010	Q3	\$ 1,455,278.05	\$ 66,739.27	0.89%	\$ 1,079.33	\$ 1,523,096.65	
			Aug-10	2010	Q3	\$ 1,522,017.32	\$ 61,246.38	0.89%	\$ 1,128.83	\$ 1,584,392.53	
			Sep-10	2010	Q3	\$ 1,583,263.70	\$ 66,486.37	0.89%	\$ 1,174.25	\$ 1,650,924.32	
			Oct-10	2010	Q4	\$ 1,649,750.07	\$ 61,342.32	1.20%	\$ 1,649.75	\$ 1,712,742.14	
			Nov-10	2010	Q4	\$ 1,711,092.39	\$ 66,654.24	1.20%	\$ 1,711.09	\$ 1,779,457.72	
			Dec-10	2010	Q4	\$ 1,777,746.63	\$ 61,635.31	1.20%	\$ 1,777.75	\$ 1,841,159.69	\$ 777,960.72
			Jan-11	2011	Q1	\$ 1,839,381.94	\$ 66,678.63	1.47%	\$ 2,253.24	\$ 1,908,313.81	
			Feb-11	2011	Q1	\$ 1,906,060.57	\$ 61,885.85	1.47%	\$ 2,334.92	\$ 1,970,281.34	
			Mar-11	2011	Q1	\$ 1,967,946.42	\$ 66,902.20	1.47%	\$ 2,410.73	\$ 2,037,259.35	
			Apr-11	2011	Q2	\$ 2,034,848.62	\$ 61,820.67	1.47%	\$ 2,492.69	\$ 2,099,161.98	
			May-11	2011	Q2	\$ 2,096,669.29	\$ 69,090.32	1.47%	\$ 2,568.42	\$ 2,168,328.03	
			Jun-11	2011	Q2	\$ 2,165,759.61	\$ 103,982.35	1.47%	\$ 2,653.06	\$ 2,272,395.02	
			Jul-11	2011	Q3	\$ 2,269,741.96	\$ 153,029.05	1.47%	\$ 2,780.43	\$ 2,425,551.44	
			Aug-11	2011	Q3	\$ 2,422,771.01	\$ 155,941.73	1.47%	\$ 2,967.89	\$ 2,581,680.63	
			Sep-11	2011	Q3	\$ 2,578,712.74	\$ 167,015.30	1.47%	\$ 3,158.92	\$ 2,748,886.96	



Ontario Energy Board

Smart Meter Model

Burlington Hydro Inc.

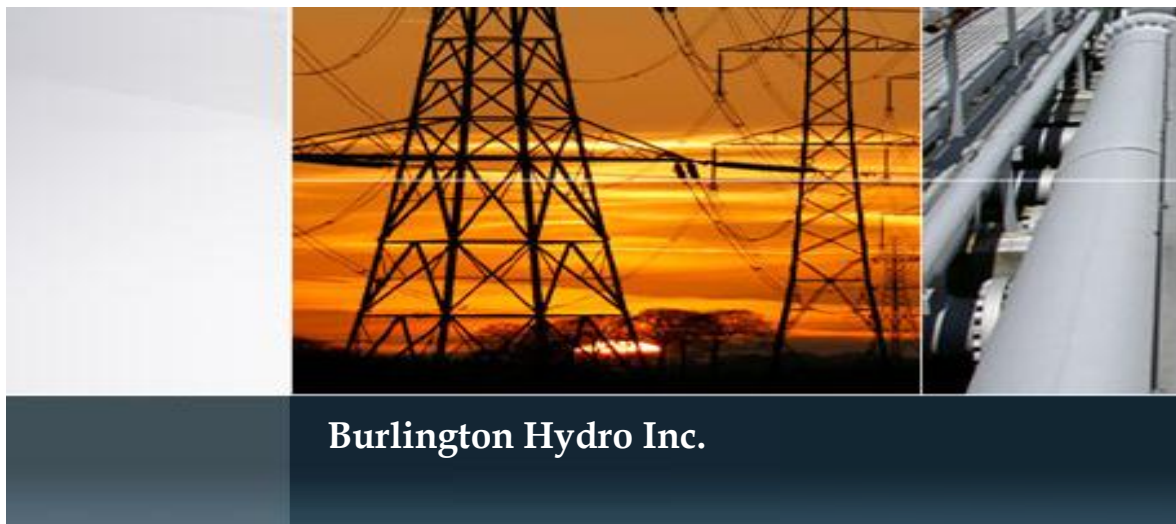
This worksheet calculates the funding adder revenues.

Account 1555 - Sub-account Funding Adder Revenues

Interest Rates	Approved Deferral and Variance Accounts	CWIP	Date	Year	Quarter	Opening Balance (Principal)	Funding Adder Revenues	Interest Rate	Interest	Closing Balance	Annual amounts
			Oct-11	2011	Q4	\$ 2,745,728.04	\$ 155,616.85	1.47%	\$ 3,363.52	\$ 2,904,708.41	
			Nov-11	2011	Q4	\$ 2,901,344.89	\$ 167,655.25	1.47%	\$ 3,554.15	\$ 3,072,554.29	
			Dec-11	2011	Q4	\$ 3,069,000.14	\$ 155,966.58	1.47%	\$ 3,759.53	\$ 3,228,726.25	\$ 1,419,882.28
			Jan-12	2012	Q1	\$ 3,224,966.72	\$ 167,330.79	1.47%	\$ 3,950.58	\$ 3,396,248.09	
			Feb-12	2012	Q1	\$ 3,392,297.51	\$ 160,000.00	1.47%	\$ 4,155.56	\$ 3,556,453.07	
			Mar-12	2012	Q1	\$ 3,552,297.51	\$ 160,000.00	1.47%	\$ 4,351.56	\$ 3,716,649.07	
			Apr-12	2012	Q2	\$ 3,712,297.51	\$ 160,000.00	1.47%	\$ 4,547.56	\$ 3,876,845.07	
			May-12	2012	Q2	\$ 3,872,297.51		1.47%	\$ 4,743.56	\$ 3,877,041.07	
			Jun-12	2012	Q2	\$ 3,872,297.51		1.47%	\$ 4,743.56	\$ 3,877,041.07	
			Jul-12	2012	Q3	\$ 3,872,297.51		1.47%	\$ 4,743.56	\$ 3,877,041.07	
			Aug-12	2012	Q3	\$ 3,872,297.51		1.47%	\$ 4,743.56	\$ 3,877,041.07	
			Sep-12	2012	Q3	\$ 3,872,297.51		1.47%	\$ 4,743.56	\$ 3,877,041.07	
			Oct-12	2012	Q4	\$ 3,872,297.51		1.47%	\$ 4,743.56	\$ 3,877,041.07	
			Nov-12	2012	Q4	\$ 3,872,297.51		1.47%	\$ 4,743.56	\$ 3,877,041.07	
			Dec-12	2012	Q4	\$ 3,872,297.51		1.47%	\$ 4,743.56	\$ 3,877,041.07	\$ 702,284.53
Total Funding Adder Revenues Collected						\$ 3,872,297.51			\$ 133,287.33	\$ 4,005,584.84	\$ 4,005,584.84

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This worksheet calculates the interest on OM&A and amortization/depr

Account 1556 - Su

Prescribed Interest Rates	Approved Deferral and Variance Accounts	CWIP	Date	Year	Quarter	Opening Balance (Principal)
2006 Q1	0.00%	0.00%	Jan-06	2006	Q1	\$ -
2006 Q2	4.14%	4.68%	Feb-06	2006	Q1	-
2006 Q3	4.59%	5.05%	Mar-06	2006	Q1	-
2006 Q4	4.59%	4.72%	Apr-06	2006	Q2	-
2007 Q1	4.59%	4.72%	May-06	2006	Q2	-
2007 Q2	4.59%	4.72%	Jun-06	2006	Q2	-
2007 Q3	4.59%	5.18%	Jul-06	2006	Q3	-
2007 Q4	5.14%	5.18%	Aug-06	2006	Q3	-
2008 Q1	5.14%	5.18%	Sep-06	2006	Q3	-
2008 Q2	4.08%	5.18%	Oct-06	2006	Q4	-
2008 Q3	3.35%	5.43%	Nov-06	2006	Q4	-
2008 Q4	3.35%	5.43%	Dec-06	2006	Q4	-
2009 Q1	2.45%	6.61%	Jan-07	2007	Q1	-
2009 Q2	1.00%	6.61%	Feb-07	2007	Q1	-
2009 Q3	0.55%	5.67%	Mar-07	2007	Q1	-
2009 Q4	0.55%	4.66%	Apr-07	2007	Q2	-
2010 Q1	0.55%	4.34%	May-07	2007	Q2	416.67
2010 Q2	0.55%	4.34%	Jun-07	2007	Q2	416.67
2010 Q3	0.89%	4.66%	Jul-07	2007	Q3	666.67
2010 Q4	1.20%	4.01%	Aug-07	2007	Q3	666.67
2011 Q1	1.47%	4.29%	Sep-07	2007	Q3	4,229.52
2011 Q2	1.47%	4.29%	Oct-07	2007	Q4	5,896.19
2011 Q3	1.47%	4.29%	Nov-07	2007	Q4	6,562.88



2011 Q4	1.47%	4.29%		Dec-07	2007	Q4	7,319.69
2012 Q1	1.47%	4.29%		Jan-08	2008	Q1	8,542.51
2012 Q2	1.47%	4.29%		Feb-08	2008	Q1	8,542.51
2012 Q3	1.47%	4.29%		Mar-08	2008	Q1	8,542.51
2012 Q4	1.47%	4.29%		Apr-08	2008	Q2	8,542.51
				May-08	2008	Q2	10,829.26
				Jun-08	2008	Q2	10,829.26
				Jul-08	2008	Q3	10,829.26
				Aug-08	2008	Q3	20,030.50
				Sep-08	2008	Q3	21,483.36
				Oct-08	2008	Q4	21,483.36
				Nov-08	2008	Q4	25,028.13
				Dec-08	2008	Q4	25,028.13
				Jan-09	2009	Q1	156,420.52
				Feb-09	2009	Q1	156,420.52
				Mar-09	2009	Q1	156,420.52
				Apr-09	2009	Q2	156,420.52
				May-09	2009	Q2	179,630.30
				Jun-09	2009	Q2	181,672.15
				Jul-09	2009	Q3	209,319.59
				Aug-09	2009	Q3	260,643.40
				Sep-09	2009	Q3	266,349.86
				Oct-09	2009	Q4	276,969.75
				Nov-09	2009	Q4	283,564.51
				Dec-09	2009	Q4	286,314.86
				Jan-10	2010	Q1	634,930.99
				Feb-10	2010	Q1	635,930.99
				Mar-10	2010	Q1	646,418.81
				Apr-10	2010	Q2	653,504.86
				May-10	2010	Q2	655,833.51
				Jun-10	2010	Q2	660,878.61
				Jul-10	2010	Q3	671,804.14
				Aug-10	2010	Q3	677,027.90
				Sep-10	2010	Q3	729,926.85
				Oct-10	2010	Q4	766,936.34
				Nov-10	2010	Q4	826,716.98
				Dec-10	2010	Q4	833,619.29
				Jan-11	2011	Q1	1,560,298.61
				Feb-11	2011	Q1	1,560,663.49
				Mar-11	2011	Q1	1,448,448.53
				Apr-11	2011	Q2	1,460,261.19
				May-11	2011	Q2	1,462,835.77
				Jun-11	2011	Q2	1,472,452.71
				Jul-11	2011	Q3	1,486,205.66
				Aug-11	2011	Q3	1,647,890.94
				Sep-11	2011	Q3	1,684,859.46
				Oct-11	2011	Q4	1,720,695.51
				Nov-11	2011	Q4	1,770,579.28
				Dec-11	2011	Q4	1,876,234.74

	Jan-12	2012	Q1	2,496,416.01
	Feb-12	2012	Q1	2,496,416.01
	Mar-12	2012	Q1	2,496,416.01
	Apr-12	2012	Q2	2,496,416.01
	May-12	2012	Q2	2,496,416.01
	Jun-12	2012	Q2	2,496,416.01
	Jul-12	2012	Q3	2,496,416.01
	Aug-12	2012	Q3	2,496,416.01
	Sep-12	2012	Q3	2,496,416.01
	Oct-12	2012	Q4	2,496,416.01
	Nov-12	2012	Q4	2,496,416.01
	Dec-12	2012	Q4	2,496,416.01



Depreciation expense, based on monthly data.

**b-accounts Operating Expenses, Amortization Expenses, Carrying Charges**

OM&A Expenses	Amortization / Depreciation Expense	Closing Balance (Principal)	(Annual) Interest Rate	Interest (on opening balance)	Cumulative Interest
		-	0.00%	-	-
		-	0.00%	-	-
		-	0.00%	-	-
		-	4.14%	-	-
		-	4.14%	-	-
		-	4.14%	-	-
		-	4.59%	-	-
		-	4.59%	-	-
		-	4.59%	-	-
		-	4.59%	-	-
		-	4.59%	-	-
		-	4.59%	-	-
		-	4.59%	-	-
		-	4.59%	-	-
		-	4.59%	-	-
\$ 416.67		416.67	4.59%	-	-
		416.67	4.59%	1.59	1.59
\$ 250.00		666.67	4.59%	1.59	3.19
		666.67	4.59%	2.55	5.74
\$ 3,562.85		4,229.52	4.59%	2.55	8.29
\$ 1,666.67		5,896.19	4.59%	16.18	24.47
\$ 666.69		6,562.88	5.14%	25.26	49.72
\$ 756.81		7,319.69	5.14%	28.11	77.83

\$ 1,222.82		8,542.51	5.14%	31.35	109.18
		8,542.51	5.14%	36.59	145.77
		8,542.51	5.14%	36.59	182.37
		8,542.51	5.14%	36.59	218.96
\$ 2,286.75		10,829.26	4.08%	29.04	248.00
		10,829.26	4.08%	36.82	284.82
		10,829.26	4.08%	36.82	321.64
\$ 9,201.24		20,030.50	3.35%	30.23	351.87
\$ 1,452.86		21,483.36	3.35%	55.92	407.79
		21,483.36	3.35%	59.97	467.76
\$ 3,544.77		25,028.13	3.35%	59.97	527.74
		25,028.13	3.35%	69.87	597.61
\$ 10,848.71	\$ 120,543.68	156,420.52	3.35%	69.87	667.48
		156,420.52	2.45%	319.36	986.84
		156,420.52	2.45%	319.36	1,306.20
		156,420.52	2.45%	319.36	1,625.55
\$ 23,209.78		179,630.30	1.00%	130.35	1,755.90
\$ 2,041.85		181,672.15	1.00%	149.69	1,905.60
\$ 27,647.44		209,319.59	1.00%	151.39	2,056.99
\$ 51,323.81		260,643.40	0.55%	95.94	2,152.93
\$ 5,706.46		266,349.86	0.55%	119.46	2,272.39
\$ 10,619.89		276,969.75	0.55%	122.08	2,394.47
\$ 6,594.76		283,564.51	0.55%	126.94	2,521.41
\$ 2,750.35		286,314.86	0.55%	129.97	2,651.38
\$ 16,990.80	\$ 331,625.33	634,930.99	0.55%	131.23	2,782.61
\$ 1,000.00		635,930.99	0.55%	291.01	3,073.62
\$ 10,487.82		646,418.81	0.55%	291.47	3,365.08
\$ 7,086.05		653,504.86	0.55%	296.28	3,661.36
\$ 2,328.65		655,833.51	0.55%	299.52	3,960.88
\$ 5,045.10		660,878.61	0.55%	300.59	4,261.47
\$ 10,925.53		671,804.14	0.55%	302.90	4,564.38
\$ 5,223.76		677,027.90	0.89%	498.25	5,062.63
\$ 52,898.95		729,926.85	0.89%	502.13	5,564.76
\$ 37,009.49		766,936.34	0.89%	541.36	6,106.12
\$ 59,780.64		826,716.98	1.20%	766.94	6,873.06
\$ 6,902.31		833,619.29	1.20%	826.72	7,699.78
\$ 124,785.68	\$ 601,893.64	1,560,298.61	1.20%	833.62	8,533.39
\$ 364.88		1,560,663.49	1.47%	1,911.37	10,444.76
-\$ 112,214.96		1,448,448.53	1.47%	1,911.81	12,356.57
\$ 11,812.66		1,460,261.19	1.47%	1,774.35	14,130.92
\$ 2,574.58		1,462,835.77	1.47%	1,788.82	15,919.74
\$ 9,616.94		1,472,452.71	1.47%	1,791.97	17,711.72
\$ 13,752.95		1,486,205.66	1.47%	1,803.75	19,515.47
\$ 161,685.28		1,647,890.94	1.47%	1,820.60	21,336.07
\$ 36,968.52		1,684,859.46	1.47%	2,018.67	23,354.74
\$ 35,836.05		1,720,695.51	1.47%	2,063.95	25,418.69
\$ 49,883.77		1,770,579.28	1.47%	2,107.85	27,526.54
\$ 105,655.46		1,876,234.74	1.47%	2,168.96	29,695.50
\$ 230,361.58	\$ 389,819.69	2,496,416.01	1.47%	2,298.39	31,993.89

		2,496,416.01	1.47%	3,058.11	35,052.00
		2,496,416.01	1.47%	3,058.11	38,110.11
		2,496,416.01	1.47%	3,058.11	41,168.22
		2,496,416.01	1.47%	3,058.11	44,226.33
		2,496,416.01	1.47%	3,058.11	47,284.44
		2,496,416.01	1.47%	3,058.11	50,342.55
		2,496,416.01	1.47%	3,058.11	53,400.66
		2,496,416.01	1.47%	3,058.11	56,458.77
		2,496,416.01	1.47%	3,058.11	59,516.88
		2,496,416.01	1.47%	3,058.11	62,574.99
		2,496,416.01	1.47%	3,058.11	65,633.10
		2,496,416.01	1.47%	3,058.11	68,691.21

\$ 1,052,533.67    \$ 1,443,882.34    \$ 2,496,416.01





This worksheet calculates the interest on OM&A and amortization/depreciation expen

Year	OM&A (from Sheet 5)	Amortization Expense (from Sheet 5)	Cumulative OM&A and Amortization Expense
2006	\$ -	\$ -	\$ -
2007	\$ 881.78	\$ 15,360.96	\$ 16,242.74
2008	\$ 558.64	\$ 39,820.10	\$ 56,621.48
2009	\$ 97,954.71	\$ 171,047.96	\$ 325,624.15
2010	\$ 109,548.47	\$ 463,763.35	\$ 898,935.98
2011	\$ 813,585.22	\$ 654,250.99	\$ 2,366,772.19
2012	\$ 1,079,303.40	\$ 677,486.26	\$ 4,123,561.85

**Cumulative Interest to 2011**

**Cumulative Interest to 2012**



use, in the absence of monthly data.

Average Cumulative OM&A and Amortization Expense	Average Annual Prescribed Interest Rate for Deferral and Variance Accounts (from Sheets 8A and 8B)	Simple Interest on OM&A and Amortization Expenses
\$ -	4.37%	\$ -
\$ 8,121.37	4.73%	\$ 383.94
\$ 36,432.11	3.98%	\$ 1,450.00
\$ 191,122.81	1.14%	\$ 2,174.02
\$ 612,280.06	0.80%	\$ 4,882.93
\$ 1,632,854.08	1.47%	\$ 24,002.96
\$ 3,245,167.02	1.47%	\$ 47,703.96
		\$ 32,893.85
		\$ 80,597.80







Ontario Energy Board

## Smart Meter Model

Burlington Hydro Inc.

This worksheet calculates the Smart Meter Disposition Rider and the Smart Meter Incremental Revenue Requirement Rate Rider, if applicable. This worksheet also calculates any new Smart Meter Funding Adder that a distributor may wish to request. However, please note that in many 2011 IRM decisions, the Board noted that current funding adders will cease on April 30, 2011 and that the Board's expectation is that distributors will file for a final review of prudence at the earliest opportunity. The Board also noted that the SMFA is a tool designed to provide advance funding and to mitigate the anticipated rate impact of smart meter costs when recovery of those costs is approved by the Board. The Board observed that the SMFA was not intended to be compensatory (return on and of capital) on a cumulative basis over the term the SMFA was in effect. The SMFA was initially designed to fund future investment, and not fully fund prior capital investment. Distributors that seek a new SMFA should provide evidence to support its proposal. This would include documentation of where the distributor is with respect to its smart meter deployment program, and reasons as to why the distributor's circumstances are such that continuation of the SMFA is warranted. Press the "UPDATE WORKSHEET" button after choosing the applicable adders/riders.

Check if  
applicable

- ☐ Smart Meter Funding Adder (SMFA)
- ☒ Smart Meter Disposition Rider (SMDR)
- ☒ Smart Meter Incremental Revenue Requirement Rate Rider (SMIRR)

The SMDR is calculated based on costs to December 31, 2011

The SMIRR is calculated based on the incremental revenue requirement associated with the recovery of capital related costs to December 31, 2012 and associated OM&A.

	2006	2007	2008	2009	2010	2011	2012 and later	Total
Deferred and forecasted Smart Meter Incremental Revenue Requirement (from Sheet 5)	\$ -	\$ 36,977.49	\$ 92,903.64	\$ 494,547.94	\$ 1,111,795.49	\$ 2,158,461.17	\$ 2,414,906.78	\$ 6,309,592.51
Interest on Deferred and forecasted OM&A and Amortization Expense (Sheet 8A/8B) (Check one of the boxes below)	\$ -	\$ 109.18	\$ 558.29	\$ 2,115.13	\$ 5,750.79	\$ 23,460.50		\$ 31,993.89
<input checked="" type="checkbox"/> Sheet 8A (Interest calculated on monthly balances)	\$ -	\$ 109.18	\$ 558.29	\$ 2,115.13	\$ 5,750.79	\$ 23,460.50		\$ 31,993.89
<input type="checkbox"/> Sheet 8B (Interest calculated on average annual balances)								\$ -
SMFA Revenues (from Sheet 8)	\$ 102,875.53	\$ 191,450.49	\$ 208,091.75	\$ 570,917.04	\$ 766,047.13	\$ 1,385,584.78	\$ 647,330.79	\$ 3,872,297.51
SMFA Interest (from Sheet 8)	\$ 1,083.58	\$ 9,031.55	\$ 15,011.81	\$ 6,995.56	\$ 11,913.59	\$ 34,297.50	\$ 54,953.74	\$ 133,287.33
Net Deferred Revenue Requirement	-\$ 103,959.11	-\$ 163,395.37	-\$ 129,641.62	-\$ 81,249.53	\$ 339,585.56	\$ 762,039.38	\$ 1,712,622.25	\$ 2,336,001.56

Number of Metered Customers (average for 2012 test year) 64998

### Calculation of Smart Meter Disposition Rider (per metered customer per month)

Years for collection or refunding	<span style="border: 1px solid black; padding: 2px;">2</span>	
Deferred Incremental Revenue Requirement from 2006 to December 31, 2011 plus Interest on OM&A and Amortization	\$ 3,926,679.62	
SMFA Revenues collected from 2006 to 2012 test year (inclusive) Plus Simple Interest on SMFA Revenues	\$ 4,005,584.84	
Net Deferred Revenue Requirement	-\$ 78,905.22	
SMDR <span style="border: 1px solid black; padding: 2px;">May 1, 2012 to April 30, 2014</span>	-\$ 0.05	} Match
Check: Forecasted SMDR Revenues	-\$ 77,997.60	

### Calculation of Smart Meter Incremental Revenue Requirement Rate Rider (per metered customer per month)

Incremental Revenue Requirement for 2012	\$ 2,414,906.78	
SMIRR	\$ 3.10	} Match

Check: Forecasted SMIRR Revenues

\$ 2,417,925.60

