



## PETERBOROUGH DISTRIBUTION INC.

1867 Ashburnham Drive, PO Box 4125, Station Main  
Peterborough ON, K9J 6Z5

March 28, 2012

Ms. Kirsten Walli  
Board Secretary  
Ontario Energy Board  
2300 Yonge Street, Suite 2700  
Toronto, Ontario  
M4P 1E4

Dear Ms. Walli

**Peterborough Distribution Inc.  
2012 Smart Meter Cost Recovery  
Response to Board Staff Interrogatories  
Board File No. EB-2012-0008**

Please find accompanying this letter two hard copies of Peterborough Distribution Inc's response to the Ontario Energy Board Staff Interrogatories. Electronic version of this response will be forwarded to the Board in PDF format.

Yours truly,

A handwritten signature in black ink, appearing to be 'RK' followed by a horizontal line.

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**Board Staff Interrogatories  
2012 Smart Meter Cost Recovery  
Peterborough Distribution Incorporated (“PDI”)  
EB-2012-0008**

**1. Letters of Comment**

Following publication of the Notice of Application, the Board has received one letter of comment to date.

- a. Please confirm whether Peterborough has received additional letters of comment, and if so, please file a copy of the letters of comment.

Response:

PDI has not received any letters of comment.

- b. Please confirm whether a reply to the letter was sent from Peterborough. If other letters were received, confirm whether a reply was sent for each of those letters. If confirmed, please file the reply with the Board. Please ensure that the author’s contact information except for the name is **redacted**.

Response:

PDI did not send a reply as no letters of comment were received.

- c. If not confirmed, please explain why a response was not sent and confirm if Peterborough intends to respond.

Response:

N/A, see a. and b. above

## **2. Audited Balances**

Peterborough has provided historical accounting details in the Smart Meter Model Version 2.17 (the "Model") indicating that the balances were audited for all years up to and including 2010.

- a. Please confirm that the last audited balances were for December 31, 2010.

Response:

PDI confirms that the audited balances provided in the Model were December 31, 2010 audited balances.

- b. If there is a more recent set of audited balances, please file those balances.

Response:

The amounts filed within the Application are consistent with the December 31, 2011 audited balances.

- c. Please state the percentage that the last audited costs are of the total smart meter costs.

Response:

PDI's Application represents December 31, 2011 audited balances and as such represents 100% of the total smart meter costs. PDI is not intending on making an application for incremental smart meter cost that may occur in 2012 as the project is substantially completed.

## **3. Smart Meter Capital Costs**

On Pages 14 and 15, Peterborough describes the capital items 1.1 to 1.3 found in Table 4 Budget to Actual Cost Summary. Peterborough shows a capital cost over-run in the Table of \$134,436, and states that the major driver for the over-run was a loss on exchange rates of \$457,000.

- a. Please state the dates associated with the balances presented in this table.

Response:

The dates presented in the table are from January 1, 2006 to August 31, 2011.

- b. If audited 2011 figures are available, please provide them.

Response:

The following table is based upon 2011 audited balances.

RATE FILING		Actual	Budget	Variance
1.1	Advanced Metering Communication Devices (AMCD)	4,765,268	4,700,500	64,768
1.2	Advanced Metering Regional Collector (AMRC)	240,464	184,000	56,464
1.3	Advanced Metering Control Computer (AMCC)	259,500	225,000	34,500
1.4	Wide Area Network (WAN)	43,560	5,000	38,560
1.5	Other AMI Capital Cost Related to Minimum Functionality	227,144	287,000	(59,856)
<b>Total Smart Meter Capital Costs</b>		<b>5,535,936</b>	<b>5,401,500</b>	<b>134,436</b>
2.1	Advanced Metering Communication Devices (AMCD)	31,093	0	31,093
2.2	Advanced Metering Regional Collector (AMRC)	10,177	0	10,177
2.3	Advanced Metering Control Computer (AMCC)	22,347	0	22,347
2.5	Other AMI Capital Cost Related to Minimum Functionality	108,730	0	108,730
<b>Total Smart Meter OM&amp;A Costs</b>		<b>172,347</b>	<b>0</b>	<b>172,347</b>
<b>Total Smart Meter Recovery</b>		<b>5,708,283</b>	<b>5,401,500</b>	<b>306,783</b>

- c. Please state the exchange rate that underpinned the capital budget, and the source of the forecast used, or in the alternative, the reason for using the exchange rate chosen by Peterborough.

Response:

PDI's Smart Meter budget was developed in June 2008 with the assistance of Util-Assist which based the exchange rate at \$1 USD = \$1.065 CDN.

- d. For all items over \$10,000 please state the nature of the expense, the exchange rate and the total amount for items 1.1 – 1.3.

Response:

The table on the following page summarizes the requested smart meter items by cost category.

SMART METER CAPITAL COST items 1.1 to 1.3							
	2006	2007	2008	2009	2010	2011	Total
<b>1.1 AMCD</b>							
Meters	197,192	182,065	397,134	2,346,301	413,695	50,738	<b>3,587,125</b>
US exchange meter adjustment	-	-	-	462,502	(5,391)	-	<b>457,111</b>
Meter Seals	-	-	8,197	-	-	-	<b>8,197</b>
Meter Rings	-	-	98,688	39,871	1,780	947	<b>141,286</b>
Meter Adaptors	6,686	20,388	67,280	(2,152)	6,924	-	<b>99,126</b>
Miscellaneous	-	6,169	17,338	24,336	2,961	398	<b>51,202</b>
labour	52,659	82,546	24,618	456,373	131,683	42,553	<b>790,432</b>
Labour - internal	(52,659)	(82,546)	(24,618)	(50,325)	(119,755)	(39,308)	<b>(369,211)</b>
<b>Total 1.1 AMCD</b>	<b>203,878</b>	<b>208,622</b>	<b>588,637</b>	<b>3,276,906</b>	<b>431,897</b>	<b>55,328</b>	<b>4,765,268</b>
<b>1.2 AMRC</b>							
Collector & Enclosure assembly	-	20,656	-	120,908	-	-	<b>141,564</b>
National Wireless - Cellular Modems	-	-	-	39,395	-	-	<b>39,395</b>
Collector Mounting Hardware	-	-	-	20,100	-	-	<b>20,100</b>
Installation of collectors	-	-	-	39,406	-	-	<b>39,406</b>
<b>Total 1.2 AMRC</b>	<b>-</b>	<b>20,656</b>	<b>-</b>	<b>219,809</b>	<b>-</b>	<b>-</b>	<b>240,465</b>
<b>1.3 AMCC</b>							
ODS Server & Oracle Licensing	-	-	11,200	5,145	-	-	<b>16,345</b>
ODS Server & Oracle Licensing	-	-	-	22,386	8,325	-	<b>30,711</b>
AMCC Servers dedicated to MAS	-	-	-	12,623	15,910	-	<b>28,533</b>
Advanced Meter Control Computer MAS Software	-	-	-	75,911	-	-	<b>75,911</b>
Harris implementation fees	-	-	-	97,200	10,800	-	<b>108,000</b>
labour	-	-	-	12,865	-	-	<b>12,865</b>
Labour - internal	-	-	-	(12,865)	-	-	<b>(12,865)</b>
<b>Total 1.3 AMCC</b>	<b>-</b>	<b>-</b>	<b>11,200</b>	<b>213,265</b>	<b>35,035</b>	<b>-</b>	<b>259,500</b>

#### 4. Smart Meter Operating Costs

On page 14 of its Application, Peterborough lists smart meter operating costs in Table 4: Budget to Actual Cost Summary.

a. For each of the items, 2.1 – 2.5, please state the nature of the costs.

Response:

The table on the following page provides Smart Meter Operating cost by activity.

<b>SMART METER OPERATING COST items 2.1 to 2.5</b>					
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Total</b>
<b>2.1 AMCD</b>					
Repair damaged meter bases	-	31,093	-	-	<b>31,093</b>
<b>2.2 AMRC</b>					
Elster meter reading fees	-	10,177	-	-	<b>10,177</b>
<b>2.3 AMCC</b>					
Oracle annual support	-	-	2,818	-	<b>2,818</b>
Elster licence and maintenance fees	-	1,502	18,027	-	<b>19,529</b>
	-	1,502	20,845	-	<b>22,347</b>
<b>2.5 Other AMI Capital Cost</b>					
MeterSense transaction fees	-	38,877	69,853	-	<b>108,730</b>
<b>Total Smart Meter Operating Cost</b>	<b>-</b>	<b>81,649</b>	<b>90,698</b>	<b>-</b>	<b>172,347</b>

b. Please identify any costs relating to Peterborough's staff.

Response:

The smart meter operating costs do not include costs relating to Peterborough's staff.

c. If there are Peterborough staffing costs included, please state if they are incremental costs and indicate the rationale supporting why they should be considered as incremental costs.

Response:

N/A, no Peterborough staff costs have been included in the Smart Meter Application.

d. If they are not incremental costs, please provide the rationale for including them.

Response:

N/A, no Peterborough staff costs have been included in the Smart Meter Application.

## 5. Costs Beyond Minimum Functionality

On page 13 of its Application, Peterborough has stated that it has not incurred costs beyond minimum functionality. However elsewhere it has stated that it has incurred costs related to costs such as MDM/R and TOU rates. The Board's *G-2011-0001 Guideline Smart Meter Funding and Cost Recovery – Final Disposition December 15, 2011* (the "Guideline") at page 17 states the following:

*"Costs for CIS systems, TOU rate implementation, etc. are beyond minimum functionality..."*

and

*"Costs for other matters such as CIS changes or TOU bill presentment may be recoverable, but the distributor will have to support these costs and will have to demonstrate how they are required for the smart meter deployment program and that they are incremental to the distributor's normal operating costs."*

- a. Please state the level of costs and describe the costs incurred for beyond minimum functionality making specific reference to MDM/R, web presentment, CIS changes, TOU rates, business process changes, training and customer education costs.

Response:

PDI does not believe that costs beyond minimum functionality have been included in its Smart Meter Application as discussed below.

The Operational Data Store ("ODS") was installed primarily for auditing purposes in order to verify and validate the data collection process, to ensure completeness and accuracy of the collection process and to be able to provide the necessary data to test results against the performance of the vendor's AMI reporting system. The ODS thereby provided a means of verifying and measuring results to ensure that the Service Level Agreement for AMI operation with the vendor was met. The Operational Data Store has not been used for MDM/R purposes during the installation and commissioning of the AMI system. The Smart Meter Application includes the initial AMI system security audit costs of approximately \$18,000.

Other references in PDI's Smart Meter Application to MDM/R and TOU preparation were provided for background information only and all costs associated with these activities were recorded in a separate project cost centre and are not included in this application.

Business Process Re-Design costs were included in the total Util-Assist management fee and are estimated to be approximately \$10,000 to \$15,000 and are related to mass installation of Smart Meters. CIS changes, of approximately \$10,000, are related to system changes to accommodate the smart meter installation, more specifically;

1. Creation of electronic service orders for the mass installation of smart meters;
2. Automatic resolution of smart meter installation service orders; and
3. To accommodate the mass update of smart meter inventory data.

Pages 10 and 11 of PDI's Smart Meter Application made reference to customer education and web presentment programs. The customer education and web presentment programs will be rolled out in 2012 and as such there have been no costs incurred as at December 31, 2011 and PDI has not included any forecasted cost in the Smart Meter Application.

- b. Please state the reasons that these costs are required for Peterborough's smart meter program, and how they are incremental to Peterborough's normal course of business.

Response:

The costs associated with the Business Process Redesign and CIS changes are considered incremental as the features required within the CIS system to handle the mass introduction of smart meters were outside the scope of the current systems functionality and the associated costs were not a component of the CIS annual capital and operating budget.

- c. Please update Table 2, found on page 17 of the Application, separating out any costs that are beyond minimum functionality using the Board's numbering found in the Model. If the costs found in Table 2 of the Application are not final 2011 costs, please provide an update, and state whether the update is final or not.

Response:

Table 2 of PDI's Smart Meter Application does not include costs beyond minimum functionality and the information is based upon December 31, 2011 audited balances.

- d. Provide the total costs for beyond minimum functionality, and also provide an average unit cost per smart meter.

Response:

PDI's Smart Meter Application does not include costs beyond minimum functionality.

- e. What is the annual impact on OM&A for the beyond minimum functionality processes?

Response:



PDI's Smart Meter Application does not include costs beyond minimum functionality.

## 6. Customer Repairs

The Board in the Guideline stated:

*"The actual costs for materials and parts to repair or replace any customer-owned equipment should be expensed and also tracked separately in a different sub-account of the Smart Meter OM&A Variance Account 1556 until disposition is ordered by the Board following a review for prudence of the smart meter costs. As the meter base remains the property of the customer, the Board determined that it would not be appropriate to have it form part of the distributor's rate base."*

- a. Please provide the total costs of any repairs or replacements of customer-owned equipment.

Response:

PDI's Smart Meter Application includes \$31,093 of incremental operating costs for the repairs of customer-owned meters bases that were damaged during the process of installing smart meters.

- b. Are there any meter bases included in these costs? If so, please provide the total amount.

Response:

Yes, the \$31,093 of costs identified in response to the question above are meter base related.

- c. Please confirm that these costs were recorded in a different sub-account of the Smart Meter OM&A Variance Account 1556.

Response:

These costs were not recorded in a separate sub-account. The details of costs recorded in Smart Meter OM&A Variance Account 1556 were maintained on an excel spreadsheet.

## 7. Smart Meter Model – Smart Meter Capital Costs

In Tab 2 Smart Meter Costs of the Model, Peterborough has provided its capital related expenditures by year. On page 6 of its Application, Peterborough stated that prior to 2010, employees of Peterborough installed smart meters. Board staff notes that Peterborough

incurred costs for and installed 3,925 smart meters in 2006, 2007 and 2008. This is based on the line items; Total Number of Meters Installed, and Total AMCD costs on Tab 2. However, Peterborough was only authorized for smart meter deployment under the London Hydro RFP process in accordance with O.Reg. 427/06, as amended by O.Reg. 235/08 on June 25, 2008.

- a. Please separate out the number of meters installed and the associated meter and installation costs prior to and subsequent to Peterborough becoming authorized under O.Reg. 427/06 as amended by O.Reg. 238/08.

Response:

<b>Meters and Meter Cost prior to Authorization</b>						
<b>Year</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>	<b>Total Claim</b>	<b>Pre-Authorized %</b>
<b>Meters</b>						
<b>Residential</b>	1,088	1,538	536	<b>3,162</b>	31,375	<b>10.1%</b>
<b>GS &lt; 50 kW</b>	55	86		<b>141</b>	3,592	<b>3.9%</b>
<b>Total Meters</b>	<b>1,143</b>	<b>1,624</b>	<b>536</b>	<b>3,303</b>	<b>34,967</b>	<b>9.4%</b>
<b>Costs</b>						
<b>Capital cost</b>	203,878	208,622	63,851	<b>476,351</b>	5,535,936	<b>8.6%</b>
<b>Operating costs</b>	-	-	-	-	172,347	<b>0.0%</b>
<b>Total costs</b>	<b>203,878</b>	<b>208,622</b>	<b>63,851</b>	<b>476,351</b>	<b>5,708,283</b>	<b>8.3%</b>

- b. Please explain the authority under which Peterborough installed smart meters from 2006 to 2008 prior to becoming authorized under O.Reg. 427/06 as amended by O.Reg. 238/08.

Response:

PDI was not authorized.

Given the Province's mandate for TOU rates and the requirement for the installation of smart meters, PDI, in an effort to minimize the cost of replacing conventional meters and to minimize the value of the stranded asset, began installing Elster smart meters in place of conventional meters for new or replacement meters prior to receiving authorization to engage in smart meter activities. Elster metering was also the proposed vendor as noted by the Fairness Commissioner. PDI's smart metering activities were also identified to Board staff in Responses to Board Staff Interrogatories filed February 4, 2009 Page 9, response 7b during the 2009 Electricity Rate Application process that asked "what, if any, efforts will PDI take in 2009 or has taken in recent years to minimize the costs for replacing conventional meters unless necessary?"

PDI submits that it acted in the best interest of its customers and that PDI acted in a prudent and fiscally responsible manner.

- c. Were installations from 2006 to 2008 undertaken as part of pilot projects under the third tranche MARR CDM initiatives? If so, please explain the justification for including the smart meters and associated costs for recovery as part of smart meter deployment. Please state the quantity of smart meter installations by Peterborough employees by class and what that represents as a percentage of the total by class of.

Response:

No, installations from 2006 to 2008 were not undertaken as third tranche MARR CDM initiatives.

Thermal storage heating units were installed in 120 Social Housing units along with 75 load shifting devices in customer's homes as a CDM pilot. The required smart meters installed at these locations to enable Time of Use billing were excluded from the third tranche MARR CDM initiatives and recorded as smart meter capital cost.

## **8. Smart Meter Model – Smart Meter OM&A Costs**

On Tab 2 Smart Meter Costs of the Model, Peterborough has provided the OM&A incurred for smart meters. Maintenance costs for AMCD and AMRC are recorded for 2009; however, there are no similar recordings for 2010 and 2011. Software maintenance costs for the AMCC are recorded for 2009, and 2010, but not for 2011.

- a. Please explain why there are not recurring maintenance costs for AMCD and AMRC?

Response:

The AMCD maintenance costs were related to meter bases that were repaired in 2009. There have been no further costs of this nature.

The AMRC maintenance costs represented the costs of reading smart meters electronically during the period of overlap when they were still being read manually. After manual reading was discontinued the costs of electronic reads was no longer considered to be an incremental cost.

- b. Are these maintenance costs pursuant to a contract between Peterborough and a third party? If so, please explain how the costs were derived. For example, are they based on fixed annual fees, fixed and variable fees, or a variable fee?

Response:

A contract between Peterborough Distribution Inc. and Elster Metering specifies a rate of \$0.108 per meter per month.

- c. Please explain why there are no maintenance costs for the AMCC in 2011.

Response:

PDI has not recorded 2011 recurring maintenance costs for the advanced metering control computer ("AMCC") as the maintenance costs have been offset by reduced meter reading costs and therefore are no longer considered incremental costs going forward.

## 9. Smart Meter Model – Taxes/PILs Rates

Peterborough has used the maximum taxes/PILs rates input on Tab 3 Cost of Service Parameters, for the years 2006, 2007, 2008, 2009, 2010, 2011 and 2012 and beyond. These are summarized in the following table:

YEAR	2006	2007	2008	2009	2010	2011	2012 and beyond
Aggregate Federal and provincial income tax rate	36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.25%

Please confirm that these are the tax rates underpinning Peterborough's rates for each of the respective years. This should be readily available from spreadsheets used in annual cost of service or Incentive Regulation Mechanism ("IRM") rates applications. If required, please correct the affected models.

Response:

PDI's Application was based upon the above, confirmed tax rates.

## 10. Cost Allocation – Riders

Peterborough has allocated its smart meter true-up for its SMDR, and its 2012 incremental revenue requirement for the SMIRR to the residential and GS<50 kW classes. The allocator appears to be smart meter costs. However, the amount does not reconcile with the costs found on Tab 2 Smart Meter Costs of the Model. It is unclear as to what the costs represent.

- a. Please explain how these costs were derived and what they represent (i.e. meter only, installed meters, other).

Response:

The costs are allocated to the Residential and GS<50 kW classes as follows:

- a) Total direct meter cost, \$3,820,478;
- b) Installed meters, 34,967; and
- c) Total cost before PILs

Total Revenue Requirement is allocated to the Residential and GS<50 class as follows;

- a) Total return and amortization is based upon a);
- b) OM&A is based upon b);
- c) PILs is based upon c); and
- d) Smart meter true-up based upon % of total revenue requirement.

b. Please recast the allocation if the allocator is not the cost of the meter only.

In EB-2011-0128 Decision and Order November 11, 2011, the Board found that:

“PowerStream should reduce class specific revenue requirements for each subject class by the amount of the class-specific revenues that have been collected through the adder, plus additional revenues allocated to each of the subject classes from the non-participating classes.”

In Table 5: Smart Meter Disposition Rate Rider By Class, Peterborough has not followed this approach of separating revenues based on class revenues and an allocation of revenues from non-participating class.

Response:

PDI has provided a revised SMDR rate rider in response to question 12. Cost Allocation. The main driver is the cost of the meters, except for the OM&A costs and the PILs allocations. The OM&A cost have been allocated based upon meter count as this is more representative of cost causation. PILs have been allocated based upon total return before PILs. The Smart Meter revenues and smart meter true-up has been allocated based upon the Power Stream Decision, see table in response to question 10(c).

c. Please recalculate the SMDR by allocating the revenues as found by the Board in the Power Stream Decision.

Response:

The following table allocates the smart meter revenue by customer class and attributed to the residential and GS<50 class per the Power Stream Decision.

SMART METER REVENUE ALLOCATION								
	2006	2007	2008	2009	2010	2011	2012	Total
Residential	53,314	92,492	93,786	205,148	364,333	372,097	126,270	1,307,440
GS<50	6,410	11,158	11,240	23,991	42,983	42,834	14,240	152,854
GS>50	659	1,145	1,144	2,440	4,412	4,664	1,576	16,039
LU	4	6	6	14	24	24	8	86
<b>Total</b>	<b>60,386</b>	<b>104,801</b>	<b>106,176</b>	<b>231,592</b>	<b>411,751</b>	<b>419,618</b>	<b>142,094</b>	<b>1,476,419</b>
Residential	53,314	92,492	93,786	205,148	364,333	372,097	126,270	1,307,440
+50% GS>50 & LU	331	576	575	1,227	2,218	2,344	792	8,063
<b>Residential</b>	<b>53,645</b>	<b>93,068</b>	<b>94,361</b>	<b>206,375</b>	<b>366,551</b>	<b>374,441</b>	<b>127,062</b>	<b>1,315,503</b>
GS>50	6,410	11,158	11,240	23,991	42,983	42,834	14,240	152,856
+50% GS>50 & LU	331	575	575	1,226	2,218	2,343	792	8,060
<b>GS&lt;50</b>	<b>6,741</b>	<b>11,733</b>	<b>11,815</b>	<b>25,217</b>	<b>45,201</b>	<b>45,177</b>	<b>15,032</b>	<b>160,916</b>
<b>Total</b>	<b>60,386</b>	<b>104,801</b>	<b>106,176</b>	<b>231,592</b>	<b>411,751</b>	<b>419,618</b>	<b>142,094</b>	<b>1,476,419</b>

## 11. Smart Meter Model – Update

Board staff has addressed a number of concerns in the above set of interrogatories which may require revising the Model. If any of these questions results in changes to the inputs to the Model please update and re-file its Model in working Microsoft Excel format.

Response:

PDI confirms that the smart meter model has been updated and is appended to this response.

## 12. Cost Allocation – Update

Similarly, if Peterborough has made revisions to its Model as a result of question 11, please update its proposed class-specific SMDRs, and class-specific SMIRRs.

Response:

Updated SMDR and SMIRR cost allocations are provided in the tables on the following page.

Smart Meter Actual Cost Recovery Rate Rider - SMDR Calculated by Rate Class			
	Total	Residential	GS < 50
<b>Allocators</b>			
CWMC (Account 1860) - Cost Allocation, Tab I6, Row 45	3,820,478	2,729,211	1,091,267
CWMC (Account 1860)	100.00%	71.40%	28.60%
Number of meters installed	34,967	31,375	3,592
Number of meters installed	100.00%	89.73%	10.27%
Total Return (deemed interest plus return on equity)	\$ 931,588	\$ 665,154	\$ 266,434
Amortization	\$ 1,092,698	\$ 780,186	\$ 312,512
OM&A	\$ 172,347	\$ 154,643	\$ 17,704
Total Before PILs	\$ 2,196,633	\$ 1,599,983	\$ 596,650
PILs	\$ 119,853	\$ 87,298	\$ 32,555
Total Revenue Requirement 2006 to 2011	\$ 2,316,486	\$ 1,687,281	\$ 629,205
	100.00%	72.84%	27.16%
Smart Meter Rate Adder Revenues	(\$1,476,419)	(\$1,315,503)	(\$160,916)
Carrying Charge	(\$61,142)	(\$54,478)	(\$6,664)
Smart Meter True-up	\$ 778,925	\$ 317,301	\$ 461,625
Metered Customers	34,967	31,375	3,592
Rate Rider to Recover Smart Meter Costs - 2 yrs	\$ 0.93	\$ 0.42	\$ 5.35

Based upon a re-allocation of Smart Meter Revenues and Carrying Charges, the residential SMDR rate rider has decreased from \$0.75 per Residential customer to \$0.42 and General Service < 50 kW SMDR rate rider has increased from \$2.45 to \$5.35.

Smart Meter Actual Cost Recovery Rate Rider - SMIRR Calculated by Rate Class			
	Total	Residential	GS < 50
<b>Allocators</b>			
CWMC (Account 1860) - Cost Allocation, Tab I6, Row 45	3,820,478	2,729,211	1,091,267
CWMC (Account 1860)	100.00%	71.44%	28.56%
Number of meters installed	34,967	31,375	3,592
Number of meters installed	100.00%	89.73%	10.27%
Total Return (deemed interest plus return on equity)	\$ 294,429	\$ 210,329	\$ 84,100
Amortization	\$ 410,764	\$ 293,435	\$ 117,329
OM&A	\$ -	\$ -	\$ -
Total Before PILs	\$ 705,193	\$ 503,764	\$ 201,429
PILs	\$ 65,363	\$ 46,693	\$ 18,670
Total Revenue Requirement 2006 to 2011	\$ 770,556	\$ 550,457	\$ 220,099
	100.00%	71.44%	28.56%
Smart Meter Rate Adder Revenues	\$0		
Carrying Charge	\$0		
Smart Meter True-up	\$ 770,556	\$ 550,457	\$ 220,099
Metered Customers	34,967	31,375	3,592
Rate Rider to Recover Smart Meter Costs -1 yr	\$ 1.84	\$ 1.46	\$ 5.11

There has been no change in the proposed SMIRR Rate Rider.

### **13. Stranded Meters**

On page 15 Peterborough states that it is not seeking disposition of its stranded meter costs in this Application. Peterborough states that it continues to recover these costs by including the net book value of stranded meters in its rate base. Please provide Peterborough's estimate of the NBV of stranded meters as of December 31, 2012.

Response:

PDI estimates that the NBV of the stranded meters will be \$2.00 million as of December 31, 2012.





Ontario Energy Board

## Smart Meter Model

## Choose Your Utility:

Parry Sound Power Corporation  
 Peterborough Distribution Incorporated

## Application Contact Information

Name: Robert Kent

Title: Manager of Finance and Regulatory Compliance

Phone Number: 705-748-9301 ext 1272

Email Address: rkent@peterboroughutilities.ca

We are applying for rates effective: May 1, 2012

Last COS Re-based Year: 2009

## 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.*



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.

		2006	2007	2008	2009	2010	2011	2012 and later	Total
		Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
<b>Smart Meter Capital Cost and Operational Expense Data</b>									
<b>Smart Meter Installation Plan</b>									
<b>Actual/Planned number of Smart Meters installed during the Calendar Year</b>									
Residential		1,088	1,538	1,089	26,811	545	295	9	31375
General Service < 50 kW		55	86	69	2,001	1,120	203	58	3592
Actual/Planned number of Smart Meters installed (Residential and GS < 50 kW only)		1143	1624	1158	28812	1665	498	67	34967
Percentage of Residential and GS < 50 kW Smart Meter Installations Completed		3.27%	7.91%	11.22%	93.62%	98.38%	99.81%	100.00%	100.00%
Actual/Planned number of GS > 50 kW meters installed		0	0	3	14	108	28	243	396
Other (please identify)									0
Total Number of Smart Meters installed or planned to be installed		1143	1624	1161	28826	1773	526	310	35363
<b>1 Capital Costs</b>									
<b>1.1 ADVANCED METERING COMMUNICATION DEVICE (AMCD)</b>									
		Asset Type							
		Asset type must be selected to enable calculations							
1.1.1 Smart Meters (may include new meters and modules, etc.)	Smart Meter	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	\$
		191,808	168,734	395,901	2,808,802	408,303	50,738		4,024,286
1.1.2 Installation Costs (may include socket kits, labour, vehicle, benefits, etc.)	Smart Meter	12,070	39,888	192,736	468,104	23,594	4,590		740,982
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)		\$ 203,878	\$ 208,622	\$ 588,637	\$ 3,276,906	\$ 431,897	\$ 55,328	\$ -	\$ 4,765,268
<b>1.2 ADVANCED METERING REGIONAL COLLECTOR (AMRC) (includes LAN)</b>									
		Asset Type							
1.2.1 Collectors	Smart Meter	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	\$
			20,656		160,303				180,959
1.2.2 Repeaters (may include radio licence, etc.)									\$ -
1.2.3 Installation (may include meter seals and rings, collector computer hardware, etc.)	Smart Meter				59,505				\$ 59,505
Total Advanced Metering Regional Collector (AMRC) (Includes LAN)		\$ -	\$ 20,656	\$ -	\$ 219,808	\$ -	\$ -	\$ -	\$ 240,464

### 1.3 ADVANCED METERING CONTROL COMPUTER (AMCC)

	Asset Type	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
1.3.1 Computer Hardware	Computer Hardware			11,200	17,767	15,910			\$ 44,877
1.3.2 Computer Software	Computer Software				195,498	19,125			\$ 214,623
1.3.3 Computer Software Licences & Installation (includes hardware and software) (may include AS/400 disk space, backup and recovery computer, UPS, etc.)									\$ -
<b>Total Advanced Metering Control Computer (AMCC)</b>		\$ -	\$ -	\$ 11,200	\$ 213,265	\$ 35,035	\$ -	\$ -	\$ 259,500

### 1.4 WIDE AREA NETWORK (WAN)

	Asset Type	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
1.4.1 Activation Fees	Computer Software				43,560				\$ 43,560
<b>Total Wide Area Network (WAN)</b>		\$ -	\$ -	\$ -	\$ 43,560	\$ -	\$ -	\$ -	\$ 43,560

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

	Asset Type	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
1.5.1 Customer Equipment (including repair of damaged equipment)	Smart Meter				15,998	928	375		\$ 17,301
1.5.2 AMI Interface to CIS	Computer Software				9,703				\$ 9,703
1.5.3 Professional Fees	Smart Meter			20,452	72,661	726	11,307		\$ 105,146
1.5.4 Integration									\$ -
1.5.5 Program Management	Smart Meter				68,301		26,693		\$ 94,994
1.5.6 Other AMI Capital									\$ -
<b>Total Other AMI Capital Costs Related to Minimum Functionality</b>		\$ -	\$ -	\$ 20,452	\$ 166,663	\$ 1,654	\$ 38,375	\$ -	\$ 227,144
<b>Total Capital Costs Related to Minimum Functionality</b>		\$ 203,878	\$ 229,278	\$ 620,289	\$ 3,920,202	\$ 468,586	\$ 93,703	\$ -	\$ 5,535,936

### 1.6 CAPITAL COSTS BEYOND MINIMUM FUNCTIONALITY

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

	Asset Type	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
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.									\$ -
<b>Total Capital Costs Beyond Minimum Functionality</b>		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Smart Meter Capital Costs</b>		\$ 203,878	\$ 229,278	\$ 620,289	\$ 3,920,202	\$ 468,586	\$ 93,703	\$ -	\$ 5,535,936

## 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)

#### 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	Forecast	Forecast	
				31,093				\$ 31,093
								\$ -
	\$ -	\$ -	\$ -	\$ 31,093	\$ -	\$ -	\$ -	\$ 31,093
				10,177				\$ 10,177
								\$ -
	\$ -	\$ -	\$ -	\$ 10,177	\$ -	\$ -	\$ -	\$ 10,177
								\$ -
				1,502	20,845			\$ 22,347
								\$ -
	\$ -	\$ -	\$ -	\$ 1,502	\$ 20,845	\$ -	\$ -	\$ 22,347
								\$ -
								\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
								\$ -
								\$ -
								\$ -
				38,877	69,853			\$ 108,730
								\$ -
	\$ -	\$ -	\$ -	\$ 38,877	\$ 69,853	\$ -	\$ -	\$ 108,730
	\$ -	\$ -	\$ -	\$ 81,649	\$ 90,698	\$ -	\$ -	\$ 172,347
	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast		
								\$ -
								\$ -
								\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ 81,649	\$ 90,698	\$ -	\$ -	\$ 172,347

**3 Aggregate Smart Meter Costs by Category**

<b>3.1</b>	<b>Capital</b>								
3.1.1	Smart Meter	\$ 203,878	\$ 229,278	\$ 609,089	\$ 3,653,674	\$ 433,551	\$ 93,703	\$ -	\$ 5,223,173
3.1.2	Computer Hardware	\$ -	\$ -	\$ 11,200	\$ 17,767	\$ 15,910	\$ -	\$ -	\$ 44,877
3.1.3	Computer Software	\$ -	\$ -	\$ -	\$ 248,761	\$ 19,125	\$ -	\$ -	\$ 267,886
3.1.4	Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3.1.5	Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3.1.6	Applications Software	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>3.1.7</b>	<b>Total Capital Costs</b>	<u><u>\$ 203,878</u></u>	<u><u>\$ 229,278</u></u>	<u><u>\$ 620,289</u></u>	<u><u>\$ 3,920,202</u></u>	<u><u>\$ 468,586</u></u>	<u><u>\$ 93,703</u></u>	<u><u>\$ -</u></u>	<u><u>\$ 5,535,936</u></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></u>	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>	<u><u>\$ 81,649</u></u>	<u><u>\$ 90,698</u></u>	<u><u>\$ -</u></u>	<u><u>\$ -</u></u>	<u><u>\$ 172,347</u></u>



# Peterborough Distribution Incorporated

	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%	4.0%	4.0%	4.0%	4.0%
Deemed Long-term Debt Capitalization	50.0%	50.0%	53.3%	52.7%	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			4.50%	1.33%	1.33%	1.33%	1.33%
Long-term Debt Rate (actual/embedded/deemed) <sup>2</sup>	6.04%	6.04%	6.04%	6.59%	6.59%	6.59%	6.59%
Target Return on Equity (ROE)	9.0%	9.00%	9.00%	8.01%	8.01%	8.01%	8.01%
Return on Preferred Shares	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>WACC</b>	7.52%	7.52%	7.42%	6.99%	6.95%	6.95%	6.95%
<b>Working Capital Allowance</b>							
Working Capital Allowance Rate	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
(% of the sum of Cost of Power + controllable expenses)							

## Taxes/PILs

Aggregate Corporate Income Tax Rate  
Capital Tax (until July 1st, 2010)

36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.25%
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  
- rate (%)  
Computer Hardware - years  
- rate (%)  
Computer Software - years  
- rate (%)  
Tools & Equipment - years  
- rate (%)  
Other Equipment - years  
- rate (%)

15	15	15	15	15	15	15
6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%
5	5	5	5	5	5	5
20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
5	5	5	5	5	5	5
20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

## CCA Rates

Smart Meters - CCA Class  
Smart Meters - CCA Rate  
  
Computer Equipment - CCA Class  
Computer Equipment - CCA Rate  
  
General Equipment - CCA Class  
General Equipment - CCA Rate  
  
Applications Software - CCA Class  
Applications Software - CCA Rate

47	47	47	47	47	47	47
8%	8%	8%	8%	8%	8%	8%
45	50	50	50	50	50	50
45%	55%	55%	55%	55%	55%	55%
45	50	50	50	50	50	50
45%	55%	55%	55%	55%	55%	55%

## 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.



# Peterborough Distribution Incorporated

	2006	2007	2008	2009	2010	2011	2012 and later
<b>Net Fixed Assets - Smart Meters</b>							
<b>Gross Book Value</b>							
Opening Balance		\$ 203,878	\$ 433,156	\$ 1,042,245	\$ 4,695,919	\$ 5,129,470	\$ 5,223,173
Capital Additions during year (from Smart Meter Costs)	\$ 203,878	\$ 229,278	\$ 609,089	\$ 3,653,674	\$ 433,551	\$ 93,703	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ 203,878	\$ 433,156	\$ 1,042,245	\$ 4,695,919	\$ 5,129,470	\$ 5,223,173	\$ 5,223,173
<b>Accumulated Depreciation</b>							
Opening Balance		-\$ 6,796	-\$ 28,030	-\$ 77,210	-\$ 268,483	-\$ 595,996	-\$ 941,084
Amortization expense during year	-\$ 6,796	-\$ 21,234	-\$ 49,180	-\$ 191,272	-\$ 327,513	-\$ 345,088	-\$ 348,212
Retirements/Removals (if applicable)							
Closing Balance	-\$ 6,796	-\$ 28,030	-\$ 77,210	-\$ 268,483	-\$ 595,996	-\$ 941,084	-\$ 1,289,295
<b>Net Book Value</b>							
Opening Balance	\$ -	\$ 197,082	\$ 405,126	\$ 965,035	\$ 4,427,436	\$ 4,533,474	\$ 4,282,089
Closing Balance	\$ 197,082	\$ 405,126	\$ 965,035	\$ 4,427,436	\$ 4,533,474	\$ 4,282,089	\$ 3,933,878
Average Net Book Value	\$ 98,541	\$ 301,104	\$ 685,080	\$ 2,696,236	\$ 4,480,455	\$ 4,407,782	\$ 4,107,984
<b>Net Fixed Assets - Computer Hardware</b>							
<b>Gross Book Value</b>							
Opening Balance		\$ -	\$ -	\$ 11,200	\$ 28,967	\$ 44,877	\$ 44,877
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ -	\$ 11,200	\$ 17,767	\$ 15,910	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ 11,200	\$ 28,967	\$ 44,877	\$ 44,877	\$ 44,877
<b>Accumulated Depreciation</b>							
Opening Balance	\$ -	\$ -	\$ -	-\$ 1,120	-\$ 5,137	-\$ 12,521	-\$ 21,497
Amortization expense during year	-\$ -	-\$ 1,120	-\$ 1,120	-\$ 4,017	-\$ 7,384	-\$ 8,975	-\$ 8,975
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	-\$ 1,120	-\$ 5,137	-\$ 12,521	-\$ 21,497	-\$ 30,472
<b>Net Book Value</b>							
Opening Balance	\$ -	\$ -	\$ -	\$ 10,080	\$ 23,830	\$ 32,356	\$ 23,381
Closing Balance	\$ -	\$ -	\$ 10,080	\$ 23,830	\$ 32,356	\$ 23,381	\$ 14,405
Average Net Book Value	\$ -	\$ -	\$ 5,040	\$ 16,955	\$ 28,093	\$ 27,868	\$ 18,893
<b>Net Fixed Assets - Computer Software (including Applications Software)</b>							
<b>Gross Book Value</b>							
Opening Balance		\$ -	\$ -	\$ -	\$ 248,761	\$ 267,886	\$ 267,886
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ -	\$ -	\$ 248,761	\$ 19,125	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ 248,761	\$ 267,886	\$ 267,886	\$ 267,886
<b>Accumulated Depreciation</b>							
Opening Balance	\$ -	\$ -	\$ -	\$ -	-\$ 24,876	-\$ 76,541	-\$ 130,118
Amortization expense during year	-\$ -	-\$ -	-\$ -	-\$ 24,876	-\$ 51,665	-\$ 53,577	-\$ 53,577
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	-\$ 24,876	-\$ 76,541	-\$ 130,118	-\$ 183,695
<b>Net Book Value</b>							
Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ 223,885	\$ 191,345	\$ 137,768
Closing Balance	\$ -	\$ -	\$ -	\$ 223,885	\$ 191,345	\$ 137,768	\$ 84,191
Average Net Book Value	\$ -	\$ -	\$ -	\$ 111,942	\$ 207,615	\$ 164,557	\$ 110,979



Net Fixed Assets - Tools and Equipment

<b>Gross Book Value</b>							
Opening Balance		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Accumulated Depreciation</b>							
Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amortization expense during year	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Net Book Value</b>							
Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Average Net Book Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Net Fixed Assets - Other Equipment

<b>Gross Book Value</b>							
Opening Balance		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Additions during year (from Smart Meter Costs)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Accumulated Depreciation</b>							
Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amortization expense during year	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retirements/Removals (if applicable)							
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Net Book Value</b>							
Opening Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Average Net Book Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -



Ontario Energy Board

## Smart Meter Model

### Peterborough Distribution Incorporated

	2006	2007	2008	2009	2010	2011	2012 and Later
<b>Average Net Fixed Asset Values (from Sheet 4)</b>							
Smart Meters	\$ 98,541	\$ 301,104	\$ 685,080	\$ 2,696,236	\$ 4,480,455	\$ 4,407,782	\$ 4,107,984
Computer Hardware	\$ -	\$ -	\$ 5,040	\$ 16,955	\$ 28,093	\$ 27,868	\$ 18,893
Computer Software	\$ -	\$ -	\$ -	\$ 111,942	\$ 207,615	\$ 164,557	\$ 110,979
Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Net Fixed Assets</b>	<b>\$ 98,541</b>	<b>\$ 301,104</b>	<b>\$ 690,120</b>	<b>\$ 2,825,133</b>	<b>\$ 4,716,164</b>	<b>\$ 4,600,207</b>	<b>\$ 4,237,856</b>
<b>Working Capital</b>							
Operating Expenses (from Sheet 2)	\$ -	\$ -	\$ -	\$ 81,649	\$ 90,698	\$ -	\$ -
Working Capital Factor (from Sheet 3)	15%	15%	15%	15%	15%	15%	15%
Working Capital Allowance	\$ -	\$ -	\$ -	\$ 12,247	\$ 13,605	\$ -	\$ -
<b>Incremental Smart Meter Rate Base</b>	<b>\$ 98,541</b>	<b>\$ 301,104</b>	<b>\$ 690,120</b>	<b>\$ 2,837,380</b>	<b>\$ 4,729,768</b>	<b>\$ 4,600,207</b>	<b>\$ 4,237,856</b>
<b>Return on Rate Base</b>							
<b>Capital Structure</b>							
Deemed Short Term Debt	\$ -	\$ -	\$ -	\$ 113,495	\$ 189,191	\$ 184,008	\$ 169,514
Deemed Long Term Debt	\$ 49,271	\$ 150,552	\$ 367,834	\$ 1,495,299	\$ 2,648,670	\$ 2,576,116	\$ 2,373,199
Equity	\$ 49,271	\$ 150,552	\$ 322,286	\$ 1,228,586	\$ 1,891,907	\$ 1,840,083	\$ 1,695,142
Preferred Shares	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Capitalization</b>	<b>\$ 98,541</b>	<b>\$ 301,104</b>	<b>\$ 690,120</b>	<b>\$ 2,837,380</b>	<b>\$ 4,729,768</b>	<b>\$ 4,600,207</b>	<b>\$ 4,237,856</b>
<b>Return on</b>							
Deemed Short Term Debt	\$ -	\$ -	\$ -	\$ 1,509	\$ 2,516	\$ 2,447	\$ 2,255
Deemed Long Term Debt	\$ 2,976	\$ 9,093	\$ 22,217	\$ 98,540	\$ 174,547	\$ 169,766	\$ 156,394
Equity	\$ 4,434	\$ 13,550	\$ 29,006	\$ 98,410	\$ 151,542	\$ 147,391	\$ 135,781
Preferred Shares	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Return on Capital</b>	<b>\$ 7,410</b>	<b>\$ 22,643</b>	<b>\$ 51,223</b>	<b>\$ 198,459</b>	<b>\$ 328,605</b>	<b>\$ 319,604</b>	<b>\$ 294,429</b>
<b>Operating Expenses</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 81,649</b>	<b>\$ 90,698</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Amortization Expenses (from Sheet 4)</b>							
Smart Meters	\$ 6,796	\$ 21,234	\$ 49,180	\$ 191,272	\$ 327,513	\$ 345,088	\$ 348,212
Computer Hardware	\$ -	\$ -	\$ 1,120	\$ 4,017	\$ 7,384	\$ 8,975	\$ 8,975
Computer Software	\$ -	\$ -	\$ -	\$ 24,876	\$ 51,665	\$ 53,577	\$ 53,577
Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Amortization Expense in Year</b>	<b>\$ 6,796</b>	<b>\$ 21,234</b>	<b>\$ 50,300</b>	<b>\$ 220,165</b>	<b>\$ 386,562</b>	<b>\$ 407,641</b>	<b>\$ 410,764</b>
<b>Incremental Revenue Requirement before Taxes/PILs</b>	<b>\$ 14,206</b>	<b>\$ 43,877</b>	<b>\$ 101,523</b>	<b>\$ 500,273</b>	<b>\$ 805,865</b>	<b>\$ 727,245</b>	<b>\$ 705,193</b>
<b>Calculation of Taxable Income</b>							
Incremental Operating Expenses	\$ -	\$ -	\$ -	\$ 81,649	\$ 90,698	\$ -	\$ -
Amortization Expense	\$ 6,796	\$ 21,234	\$ 50,300	\$ 220,165	\$ 386,562	\$ 407,641	\$ 410,764
Interest Expense	\$ 2,976	\$ 9,093	\$ 22,217	\$ 100,050	\$ 177,064	\$ 172,213	\$ 158,648
<b>Net Income for Taxes/PILs</b>	<b>\$ 4,434</b>	<b>\$ 13,550</b>	<b>\$ 29,006</b>	<b>\$ 98,410</b>	<b>\$ 151,542</b>	<b>\$ 147,391</b>	<b>\$ 135,781</b>
<b>Grossed-up Taxes/PILs (from Sheet 7)</b>	<b>\$ 2,330.05</b>	<b>\$ 6,540.55</b>	<b>\$ 12,192.86</b>	<b>\$ 19,599.41</b>	<b>\$ 26,977.39</b>	<b>\$ 52,212.75</b>	<b>\$ 65,363.11</b>
<b>Revenue Requirement, including Grossed-up Taxes/PILs</b>	<b>\$ 16,536</b>	<b>\$ 50,418</b>	<b>\$ 113,716</b>	<b>\$ 519,873</b>	<b>\$ 832,843</b>	<b>\$ 779,457</b>	<b>\$ 770,557</b>



Ontario Energy Board

Smart Meter Model

Peterborough Distribution Incorporated

## For PILs Calculation

### UCC - Smart Meters

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Forecast	2012 and later Forecast
Opening UCC	\$ -	\$ 195,722.88	\$ 400,171.93	\$ 952,883.62	\$ 4,384,179.97	\$ 4,449,654.53	\$ 4,183,637.05
Capital Additions	\$ 203,878.00	\$ 229,278.00	\$ 609,089.00	\$ 3,653,674.00	\$ 433,551.00	\$ 93,703.00	\$ -
Retirements/Removals (if applicable)							
UCC Before Half Year Rule	\$ 203,878.00	\$ 425,000.88	\$ 1,009,260.93	\$ 4,606,557.62	\$ 4,817,730.97	\$ 4,543,357.53	\$ 4,183,637.05
Half Year Rule (1/2 Additions - Disposals)	\$ 101,939.00	\$ 114,639.00	\$ 304,544.50	\$ 1,826,837.00	\$ 216,775.50	\$ 46,851.50	\$ -
Reduced UCC	\$ 101,939.00	\$ 310,361.88	\$ 704,716.43	\$ 2,779,720.62	\$ 4,600,955.47	\$ 4,496,506.03	\$ 4,183,637.05
CCA Rate Class	47	47	47	47	47	47	47
CCA Rate	8%	8%	8%	8%	8%	8%	8%
CCA	\$ 8,155.12	\$ 24,828.95	\$ 56,377.31	\$ 222,377.65	\$ 368,076.44	\$ 359,720.48	\$ 334,690.96
Closing UCC	\$ 195,722.88	\$ 400,171.93	\$ 952,883.62	\$ 4,384,179.97	\$ 4,449,654.53	\$ 4,183,637.05	\$ 3,848,946.08

### UCC - Computer Equipment

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Forecast	2012 and later Forecast
Opening UCC	\$ -	\$ -	\$ -	\$ 8,120.00	\$ 196,886.80	\$ 113,999.44	\$ 51,299.75
Capital Additions Computer Hardware	\$ -	\$ -	\$ 11,200.00	\$ 17,767.00	\$ 15,910.00	\$ -	\$ -
Capital Additions Computer Software	\$ -	\$ -	\$ -	\$ 248,761.00	\$ 19,125.00	\$ -	\$ -
Retirements/Removals (if applicable)							
UCC Before Half Year Rule	\$ -	\$ -	\$ 11,200.00	\$ 274,648.00	\$ 231,921.80	\$ 113,999.44	\$ 51,299.75
Half Year Rule (1/2 Additions - Disposals)	\$ -	\$ -	\$ 5,600.00	\$ 133,264.00	\$ 17,517.50	\$ -	\$ -
Reduced UCC	\$ -	\$ -	\$ 5,600.00	\$ 141,384.00	\$ 214,404.30	\$ 113,999.44	\$ 51,299.75
CCA Rate Class	45	50	50	50	50	50	50
CCA Rate	45%	55%	55%	55%	55%	55%	55%
CCA	\$ -	\$ -	\$ 3,080.00	\$ 77,761.20	\$ 117,922.37	\$ 62,699.69	\$ 28,214.86
Closing UCC	\$ -	\$ -	\$ 8,120.00	\$ 196,886.80	\$ 113,999.44	\$ 51,299.75	\$ 23,084.89

### UCC - General Equipment

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Forecast	2012 and later Forecast
Opening UCC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Additions Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Additions Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Retirements/Removals (if applicable)							
UCC Before Half Year Rule	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Half Year Rule (1/2 Additions - Disposals)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Reduced UCC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CCA Rate Class	0	0	0	0	0	0	0
CCA Rate	0%	0%	0%	0%	0%	0%	0%
CCA	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Closing UCC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -



## PILs Calculation

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Forecast	2012 and later Forecast
<b>INCOME TAX</b>							
Net Income	\$ 4,434.35	\$ 13,549.67	\$ 29,005.75	\$ 98,409.72	\$ 151,541.78	\$ 147,390.62	\$ 135,780.90
Amortization	\$ 6,795.93	\$ 21,234.47	\$ 50,300.03	\$ 220,164.93	\$ 386,562.07	\$ 407,640.70	\$ 410,764.13
CCA - Smart Meters	-\$ 8,155.12	-\$ 24,828.95	-\$ 56,377.31	-\$ 222,377.65	-\$ 368,076.44	-\$ 359,720.48	-\$ 334,690.96
CCA - Computers	\$ -	\$ -	\$ 3,080.00	-\$ 77,761.20	-\$ 117,922.37	-\$ 62,699.69	-\$ 28,214.86
CCA - Applications Software	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CCA - Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Change in taxable income	\$ 3,075.16	\$ 9,955.19	\$ 19,848.47	\$ 18,435.80	\$ 52,105.04	\$ 132,611.15	\$ 183,639.21
Tax Rate (from Sheet 3)	36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.25%
Income Taxes Payable	\$ 1,110.75	\$ 3,595.81	\$ 6,649.24	\$ 6,083.81	\$ 16,152.56	\$ 37,462.65	\$ 48,205.29
<b>ONTARIO CAPITAL TAX</b>							
Smart Meters	\$ 197,082.07	\$ 405,125.60	\$ 965,034.57	\$ 4,427,436.43	\$ 4,533,474.47	\$ 4,282,089.37	\$ 3,933,877.83
Computer Hardware	\$ -	\$ -	\$ 10,080.00	\$ 23,830.30	\$ 32,355.90	\$ 23,380.50	\$ 14,405.10
Computer Software (Including Application Software)	\$ -	\$ -	\$ -	\$ 223,884.90	\$ 191,345.20	\$ 137,768.00	\$ 84,190.80
Tools & Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Rate Base	\$ 197,082.07	\$ 405,125.60	\$ 975,114.57	\$ 4,675,151.63	\$ 4,757,175.57	\$ 4,443,237.87	\$ 4,032,473.73
Less: Exemption	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Deemed Taxable Capital	\$ 197,082.07	\$ 405,125.60	\$ 975,114.57	\$ 4,675,151.63	\$ 4,757,175.57	\$ 4,443,237.87	\$ 4,032,473.73
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)	\$ 591.25	\$ 911.53	\$ 2,194.01	\$ 10,519.09	\$ 3,567.88	\$ -	\$ -
Change in Income Taxes Payable	\$ 1,110.75	\$ 3,595.81	\$ 6,649.24	\$ 6,083.81	\$ 16,152.56	\$ 37,462.65	\$ 48,205.29
Change in OCT	\$ 591.25	\$ 911.53	\$ 2,194.01	\$ 10,519.09	\$ 3,567.88	\$ -	\$ -
PILs	\$ 1,701.99	\$ 4,507.35	\$ 8,843.24	\$ 16,602.91	\$ 19,720.44	\$ 37,462.65	\$ 48,205.29
<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	\$ 1,738.80	\$ 5,629.01	\$ 9,998.85	\$ 9,080.32	\$ 23,409.51	\$ 52,212.75	\$ 65,363.11
Change in OCT	\$ 591.25	\$ 911.53	\$ 2,194.01	\$ 10,519.09	\$ 3,567.88	\$ -	\$ -
PILs	\$ 2,330.05	\$ 6,540.55	\$ 12,192.86	\$ 19,599.41	\$ 26,977.39	\$ 52,212.75	\$ 65,363.11



Ontario Energy Board

Smart Meter Model

Peterborough Distribution Incorporated

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	Board Approved Smart Meter Funding Adder (from Tariff)
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	\$ -	\$ 960.00	4.14%	\$ -	\$ 960.00		
2007 Q2	4.59%	4.72%	Jun-06	2006	Q2	\$ 960.00	\$ 7,589.00	4.14%	\$ 3.31	\$ 8,552.31		
2007 Q3	4.59%	5.18%	Jul-06	2006	Q3	\$ 8,549.00	\$ 8,611.00	4.59%	\$ 32.70	\$ 17,192.70		
2007 Q4	5.14%	5.18%	Aug-06	2006	Q3	\$ 17,160.00	\$ 9,093.00	4.59%	\$ 65.64	\$ 26,318.64		
2008 Q1	5.14%	5.18%	Sep-06	2006	Q3	\$ 26,253.00	\$ 8,663.00	4.59%	\$ 100.42	\$ 35,016.42		
2008 Q2	4.08%	5.18%	Oct-06	2006	Q4	\$ 34,916.00	\$ 8,353.00	4.59%	\$ 133.55	\$ 43,402.55		
2008 Q3	3.35%	5.43%	Nov-06	2006	Q4	\$ 43,269.00	\$ 8,965.00	4.59%	\$ 165.50	\$ 52,399.50		
2008 Q4	3.35%	5.43%	Dec-06	2006	Q4	\$ 52,234.00	\$ 8,153.00	4.59%	\$ 199.80	\$ 60,586.80	\$ 61,087.92	
2009 Q1	2.45%	6.61%	Jan-07	2007	Q1	\$ 60,387.00	\$ 9,449.00	4.59%	\$ 230.98	\$ 70,066.98		
2009 Q2	1.00%	6.61%	Feb-07	2007	Q1	\$ 69,836.00	\$ 8,085.00	4.59%	\$ 267.12	\$ 78,188.12		
2009 Q3	0.55%	5.67%	Mar-07	2007	Q1	\$ 77,921.00	\$ 9,071.00	4.59%	\$ 298.05	\$ 87,290.05		
2009 Q4	0.55%	4.66%	Apr-07	2007	Q2	\$ 86,992.00	\$ 8,750.00	4.59%	\$ 332.74	\$ 96,074.74		
2010 Q1	0.55%	4.34%	May-07	2007	Q2	\$ 95,742.00	\$ 8,753.00	4.59%	\$ 366.21	\$ 104,861.21		
2010 Q2	0.55%	4.34%	Jun-07	2007	Q2	\$ 104,495.00	\$ 8,720.00	4.59%	\$ 399.69	\$ 113,614.69		
2010 Q3	0.89%	4.66%	Jul-07	2007	Q3	\$ 113,215.00	\$ 8,744.00	4.59%	\$ 433.05	\$ 122,392.05		
2010 Q4	1.20%	4.01%	Aug-07	2007	Q3	\$ 121,959.00	\$ 9,099.00	4.59%	\$ 466.49	\$ 131,524.49		
2011 Q1	1.47%	4.29%	Sep-07	2007	Q3	\$ 131,058.00	\$ 8,038.00	4.59%	\$ 501.30	\$ 139,597.30		
2011 Q2	1.47%	4.29%	Oct-07	2007	Q4	\$ 139,096.00	\$ 9,487.00	5.14%	\$ 595.79	\$ 149,178.79		
2011 Q3	1.47%	4.29%	Nov-07	2007	Q4	\$ 148,583.00	\$ 8,446.00	5.14%	\$ 636.43	\$ 157,665.43		
2011 Q4	1.47%	4.29%	Dec-07	2007	Q4	\$ 157,029.00	\$ 8,160.00	5.14%	\$ 672.61	\$ 165,861.61	\$ 110,002.46	
2012 Q1	1.47%	4.29%	Jan-08	2008	Q1	\$ 165,189.00	\$ 9,858.00	5.14%	\$ 707.56	\$ 175,754.56		
2012 Q2	1.47%	4.29%	Feb-08	2008	Q1	\$ 175,047.00	\$ 8,139.00	5.14%	\$ 749.78	\$ 183,935.78		
2012 Q3	1.47%	4.29%	Mar-08	2008	Q1	\$ 183,186.00	\$ 8,035.00	5.14%	\$ 784.65	\$ 192,005.65		
2012 Q4	1.47%	4.29%	Apr-08	2008	Q2	\$ 191,221.00	\$ 9,639.00	4.08%	\$ 650.15	\$ 201,510.15		
			May-08	2008	Q2	\$ 200,860.00	\$ 8,833.00	4.08%	\$ 682.92	\$ 210,375.92		
			Jun-08	2008	Q2	\$ 209,693.00	\$ 8,822.00	4.08%	\$ 712.96	\$ 219,227.96		
			Jul-08	2008	Q3	\$ 218,515.00	\$ 9,141.00	3.35%	\$ 610.02	\$ 228,266.02		
			Aug-08	2008	Q3	\$ 227,656.00	\$ 8,810.00	3.35%	\$ 635.54	\$ 237,101.54		
			Sep-08	2008	Q3	\$ 236,466.00	\$ 8,558.00	3.35%	\$ 660.13	\$ 245,684.13		
			Oct-08	2008	Q4	\$ 245,024.00	\$ 8,875.00	3.35%	\$ 684.03	\$ 254,583.03		
			Nov-08	2008	Q4	\$ 253,899.00	\$ 8,560.00	3.35%	\$ 708.80	\$ 263,167.80		
			Dec-08	2008	Q4	\$ 262,459.00	\$ 8,907.00	3.35%	\$ 732.70	\$ 272,098.70	\$ 114,496.24	
			Jan-09	2009	Q1	\$ 271,366.00	\$ 9,217.00	2.45%	\$ 554.04	\$ 281,137.04		
			Feb-09	2009	Q1	\$ 280,583.00	\$ 8,107.00	2.45%	\$ 572.86	\$ 289,262.86		
			Mar-09	2009	Q1	\$ 288,690.00	\$ 9,728.00	2.45%	\$ 589.41	\$ 299,007.41		
			Apr-09	2009	Q2	\$ 298,418.00	\$ 8,605.00	1.00%	\$ 248.68	\$ 307,271.68		
			May-09	2009	Q2	\$ 307,023.00	\$ 8,416.00	1.00%	\$ 255.85	\$ 315,694.85		
			Jun-09	2009	Q2	\$ 315,439.00	\$ 9,713.00	1.00%	\$ 262.87	\$ 325,414.87		
			Jul-09	2009	Q3	\$ 325,152.00	\$ 12,832.00	0.55%	\$ 149.03	\$ 338,133.03		
			Aug-09	2009	Q3	\$ 337,984.00	\$ 30,388.00	0.55%	\$ 154.91	\$ 368,526.91		
			Sep-09	2009	Q3	\$ 368,372.00	\$ 32,803.00	0.55%	\$ 168.84	\$ 401,343.84		
			Oct-09	2009	Q4	\$ 401,175.00	\$ 34,503.00	0.55%	\$ 183.87	\$ 435,861.87		
			Nov-09	2009	Q4	\$ 435,678.00	\$ 32,675.00	0.55%	\$ 199.69	\$ 468,552.69		
			Dec-09	2009	Q4	\$ 468,353.00	\$ 34,606.00	0.55%	\$ 214.66	\$ 503,173.66	\$ 235,147.71	
			Jan-10	2010	Q1	\$ 502,959.00	\$ 34,742.00	0.55%	\$ 230.52	\$ 537,931.52		
			Feb-10	2010	Q1	\$ 537,701.00	\$ 29,228.00	0.55%	\$ 246.45	\$ 567,175.45		
			Mar-10	2010	Q1	\$ 566,929.00	\$ 40,221.00	0.55%	\$ 259.84	\$ 607,409.84		
			Apr-10	2010	Q2	\$ 607,150.00	\$ 31,128.00	0.55%	\$ 278.28	\$ 638,556.28		
			May-10	2010	Q2	\$ 638,278.00	\$ 33,022.00	0.55%	\$ 292.54	\$ 671,592.54		
			Jun-10	2010	Q2	\$ 671,300.00	\$ 36,438.00	0.55%	\$ 307.68	\$ 708,045.68		
			Jul-10	2010	Q3	\$ 707,738.00	\$ 34,627.00	0.89%	\$ 524.91	\$ 742,889.91		
			Aug-10	2010	Q3	\$ 742,365.00	\$ 34,697.00	0.89%	\$ 550.59	\$ 777,612.59		
			Sep-10	2010	Q3	\$ 777,062.00	\$ 34,713.00	0.89%	\$ 576.32	\$ 812,351.32		
			Oct-10	2010	Q4	\$ 811,775.00	\$ 33,072.00	1.20%	\$ 811.78	\$ 845,658.78		
			Nov-10	2010	Q4	\$ 844,847.00	\$ 34,947.00	1.20%	\$ 844.85	\$ 880,638.85		
			Dec-10	2010	Q4	\$ 879,794.00	\$ 34,914.00	1.20%	\$ 879.79	\$ 915,587.79	\$ 417,552.55	
			Jan-11	2011	Q1	\$ 914,708.00	\$ 36,750.00	1.47%	\$ 1,120.52	\$ 952,578.52		
			Feb-11	2011	Q1	\$ 951,458.00	\$ 31,883.00	1.47%	\$ 1,165.54	\$ 984,506.54		
			Mar-11	2011	Q1	\$ 983,341.00	\$ 38,236.00	1.47%	\$ 1,204.59	\$ 1,022,781.59		
			Apr-11	2011	Q2	\$ 1,021,577.00	\$ 33,649.00	1.47%	\$ 1,251.43	\$ 1,056,477.43		
			May-11	2011	Q2	\$ 1,055,226.00	\$ 36,560.00	1.47%	\$ 1,292.65	\$ 1,093,078.65		
			Jun-11	2011	Q2	\$ 1,091,786.00	\$ 34,841.00	1.47%	\$ 1,337.44	\$ 1,127,964.44		
			Jul-11	2011	Q3	\$ 1,126,627.00	\$ 33,363.00	1.47%	\$ 1,380.12	\$ 1,161,370.12		
			Aug-11	2011	Q3	\$ 1,159,990.00	\$ 36,793.50	1.47%	\$ 1,420.99	\$ 1,198,204.49		
			Sep-11	2011	Q3	\$ 1,196,783.50	\$ 35,097.01	1.47%	\$ 1,466.06	\$ 1,233,346.57		



Ontario Energy Board

Smart Meter Model

Peterborough Distribution Incorporated

This worksheet calculates the funding adder revenues.

Account 1555 - Sub-account Funding Adder Revenues

Interest Rates	Approved Deferral and Variance Accounts	CWIP				Opening Balance	Funding Adder	Interest		Closing Balance	Annual amounts	Board Approved Smart Meter Funding Adder (from Tariff)
			Date	Year	Quarter	(Principal)	Revenues	Rate	Interest			
			Oct-11	2011	Q4	\$ 1,231,880.51	\$ 33,410.98	1.47%	\$ 1,509.05	\$ 1,266,800.54		
			Nov-11	2011	Q4	\$ 1,265,291.49	\$ 35,058.00	1.47%	\$ 1,549.98	\$ 1,301,899.47		
			Dec-11	2011	Q4	\$ 1,300,349.49	\$ 33,975.79	1.47%	\$ 1,592.93	\$ 1,335,918.21	\$ 435,908.58	
			Jan-12	2012	Q1	\$ 1,334,325.28	\$ 36,668.99	1.47%	\$ 1,634.55	\$ 1,372,628.82		
			Feb-12	2012	Q1	\$ 1,370,994.27	\$ 35,309.70	1.47%	\$ 1,679.47	\$ 1,407,983.44		
			Mar-12	2012	Q1	\$ 1,406,303.97	\$ 35,058.00	1.47%	\$ 1,722.72	\$ 1,443,084.69		
			Apr-12	2012	Q2	\$ 1,441,361.97	\$ 35,058.00	1.47%	\$ 1,765.67	\$ 1,478,185.64		
			May-12	2012	Q2	\$ 1,476,419.97		1.47%	\$ 1,808.61	\$ 1,478,228.58		
			Jun-12	2012	Q2	\$ 1,476,419.97		1.47%	\$ 1,808.61	\$ 1,478,228.58		
			Jul-12	2012	Q3	\$ 1,476,419.97		1.47%	\$ 1,808.61	\$ 1,478,228.58		
			Aug-12	2012	Q3	\$ 1,476,419.97		1.47%	\$ 1,808.61	\$ 1,478,228.58		
			Sep-12	2012	Q3	\$ 1,476,419.97		1.47%	\$ 1,808.61	\$ 1,478,228.58		
			Oct-12	2012	Q4	\$ 1,476,419.97		1.47%	\$ 1,808.61	\$ 1,478,228.58		
			Nov-12	2012	Q4	\$ 1,476,419.97		1.47%	\$ 1,808.61	\$ 1,478,228.58		
			Dec-12	2012	Q4	\$ 1,476,419.97		1.47%	\$ 1,808.61	\$ 1,478,228.58	\$ 163,365.98	
Total Funding Adder Revenues Collected						\$ 1,476,419.97			\$ 61,141.47	\$ 1,537,561.44	\$ 1,537,561.44	



Ontario Energy Board

## Smart Meter Model

### Peterborough Distribution Incorporated

This worksheet calculates the interest on OM&A and amortization/depreciation expense, based on monthly data.

#### Account 1556 - Sub-accounts Operating Expenses, Amortization Expenses, Carrying Charges

Prescribed Interest Rates	Approved Deferral and Variance Accounts	CWIP	Date	Year	Quarter	Opening Balance (Principal)	OM&A Expenses	Amortization / Depreciation Expense	Closing Balance (Principal)	(Annual) Interest Rate	Interest (on opening balance)	Cumulative Interest
2006 Q1	0.00%	0.00%	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	-			-	4.14%	-	-
2007 Q2	4.59%	4.72%	Jun-06	2006	Q2	-			-	4.14%	-	-
2007 Q3	4.59%	5.18%	Jul-06	2006	Q3	-			-	4.59%	-	-
2007 Q4	5.14%	5.18%	Aug-06	2006	Q3	-			-	4.59%	-	-
2008 Q1	5.14%	5.18%	Sep-06	2006	Q3	-			-	4.59%	-	-
2008 Q2	4.08%	5.18%	Oct-06	2006	Q4	-			-	4.59%	-	-
2008 Q3	3.35%	5.43%	Nov-06	2006	Q4	-			-	4.59%	-	-
2008 Q4	3.35%	5.43%	Dec-06	2006	Q4	-			-	4.59%	-	-
2009 Q1	2.45%	6.61%	Jan-07	2007	Q1	-			-	4.59%	-	-
2009 Q2	1.00%	6.61%	Feb-07	2007	Q1	-			-	4.59%	-	-
2009 Q3	0.55%	5.67%	Mar-07	2007	Q1	-			-	4.59%	-	-
2009 Q4	0.55%	4.66%	Apr-07	2007	Q2	-			-	4.59%	-	-
2010 Q1	0.55%	4.34%	May-07	2007	Q2	-			-	4.59%	-	-
2010 Q2	0.55%	4.34%	Jun-07	2007	Q2	-			-	4.59%	-	-
2010 Q3	0.89%	4.66%	Jul-07	2007	Q3	-			-	4.59%	-	-
2010 Q4	1.20%	4.01%	Aug-07	2007	Q3	-			-	4.59%	-	-
2011 Q1	1.47%	4.29%	Sep-07	2007	Q3	-			-	4.59%	-	-
2011 Q2	1.47%	4.29%	Oct-07	2007	Q4	-			-	5.14%	-	-
2011 Q3	1.47%	4.29%	Nov-07	2007	Q4	-			-	5.14%	-	-
2011 Q4	1.47%	4.29%	Dec-07	2007	Q4	-			-	5.14%	-	-
2012 Q1	1.47%	4.29%	Jan-08	2008	Q1	-			-	5.14%	-	-
2012 Q2	1.47%	4.29%	Feb-08	2008	Q1	-			-	5.14%	-	-
2012 Q3	1.47%	4.29%	Mar-08	2008	Q1	-			-	5.14%	-	-
2012 Q4	1.47%	4.29%	Apr-08	2008	Q2	-			-	4.08%	-	-

May-08	2008	Q2	-			-	4.08%	-	-
Jun-08	2008	Q2	-			-	4.08%	-	-
Jul-08	2008	Q3	-			-	3.35%	-	-
Aug-08	2008	Q3	-			-	3.35%	-	-
Sep-08	2008	Q3	-			-	3.35%	-	-
Oct-08	2008	Q4	-			-	3.35%	-	-
Nov-08	2008	Q4	-			-	3.35%	-	-
Dec-08	2008	Q4	-			-	3.35%	-	-
Jan-09	2009	Q1	-			-	2.45%	-	-
Feb-09	2009	Q1	-			-	2.45%	-	-
Mar-09	2009	Q1	-			-	2.45%	-	-
Apr-09	2009	Q2	-			-	1.00%	-	-
May-09	2009	Q2	-			-	1.00%	-	-
Jun-09	2009	Q2	-	\$ 3,507.48		3,507.48	1.00%	-	-
Jul-09	2009	Q3	3,507.48	\$ 8,868.78		12,376.26	0.55%	1.61	1.61
Aug-09	2009	Q3	12,376.26	\$ -		12,376.26	0.55%	5.67	7.28
Sep-09	2009	Q3	12,376.26	\$ 10,463.28		22,839.54	0.55%	5.67	12.95
Oct-09	2009	Q4	22,839.54	\$ 5,310.36		28,149.90	0.55%	10.47	23.42
Nov-09	2009	Q4	28,149.90	\$ 5,345.85		33,495.75	0.55%	12.90	36.32
Dec-09	2009	Q4	33,495.75	\$ 48,153.89		81,649.64	0.55%	15.35	51.67
Jan-10	2010	Q1	81,649.64	\$ -		81,649.64	0.55%	37.42	89.10
Feb-10	2010	Q1	81,649.64	\$ 23,427.87		105,077.51	0.55%	37.42	126.52
Mar-10	2010	Q1	105,077.51	\$ 10,897.42		115,974.93	0.55%	48.16	174.68
Apr-10	2010	Q2	115,974.93	\$ 5,514.16		121,489.09	0.55%	53.16	227.84
May-10	2010	Q2	121,489.09	\$ 5,553.68		127,042.77	0.55%	55.68	283.52
Jun-10	2010	Q2	127,042.77	\$ 5,566.65		132,609.42	0.55%	58.23	341.75
Jul-10	2010	Q3	132,609.42	\$ 5,583.17		138,192.59	0.89%	98.35	440.10
Aug-10	2010	Q3	138,192.59	\$ 5,113.36		143,305.95	0.89%	102.49	542.59
Sep-10	2010	Q3	143,305.95	\$ 5,210.85		148,516.80	0.89%	106.29	648.88
Oct-10	2010	Q4	148,516.80	\$ 5,230.80		153,747.60	1.20%	148.52	797.39
Nov-10	2010	Q4	153,747.60	\$ 5,248.05		158,995.65	1.20%	153.75	951.14
Dec-10	2010	Q4	158,995.65	\$ 13,351.76		172,347.41	1.20%	159.00	1,110.14
Jan-11	2011	Q1	172,347.41			172,347.41	1.47%	211.13	1,321.26
Feb-11	2011	Q1	172,347.41			172,347.41	1.47%	211.13	1,532.39
Mar-11	2011	Q1	172,347.41			172,347.41	1.47%	211.13	1,743.51
Apr-11	2011	Q2	172,347.41			172,347.41	1.47%	211.13	1,954.64
May-11	2011	Q2	172,347.41			172,347.41	1.47%	211.13	2,165.76
Jun-11	2011	Q2	172,347.41			172,347.41	1.47%	211.13	2,376.89
Jul-11	2011	Q3	172,347.41			172,347.41	1.47%	211.13	2,588.02
Aug-11	2011	Q3	172,347.41			172,347.41	1.47%	211.13	2,799.14
Sep-11	2011	Q3	172,347.41			172,347.41	1.47%	211.13	3,010.27
Oct-11	2011	Q4	172,347.41			172,347.41	1.47%	211.13	3,221.39
Nov-11	2011	Q4	172,347.41			172,347.41	1.47%	211.13	3,432.52
Dec-11	2011	Q4	172,347.41			172,347.41	1.47%	211.13	3,643.64
Jan-12	2012	Q1	172,347.41			172,347.41	1.47%	211.13	3,854.77
Feb-12	2012	Q1	172,347.41			172,347.41	1.47%	211.13	4,065.89
Mar-12	2012	Q1	172,347.41			172,347.41	1.47%	211.13	4,277.02
Apr-12	2012	Q2	172,347.41			172,347.41	1.47%	211.13	4,488.15
May-12	2012	Q2	172,347.41			172,347.41	1.47%	211.13	4,699.27
Jun-12	2012	Q2	172,347.41			172,347.41	1.47%	211.13	4,910.40
Jul-12	2012	Q3	172,347.41			172,347.41	1.47%	211.13	5,121.52
Aug-12	2012	Q3	172,347.41			172,347.41	1.47%	211.13	5,332.65
Sep-12	2012	Q3	172,347.41			172,347.41	1.47%	211.13	5,543.77
Oct-12	2012	Q4	172,347.41			172,347.41	1.47%	211.13	5,754.90



	Nov-12	2012	Q4	172,347.41		172,347.41	1.47%	211.13	5,966.02
	Dec-12	2012	Q4	172,347.41		172,347.41	1.47%	211.13	6,177.15
				\$ 172,347.41	\$ -	\$ 172,347.41			



Ontario Energy Board

## Smart Meter Model

### Peterborough Distribution Incorporated

This worksheet calculates the interest on OM&A and amortization/depreciation expense, in the absence of monthly data.

Year	OM&A (from Sheet 5)	Amortization Expense (from Sheet 5)	Cumulative OM&A and Amortization Expense	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
2006	\$ -	\$ 6,795.93	\$ 6,795.93	\$ 3,397.97	4.37%	\$ 148.32
2007	\$ -	\$ 21,234.47	\$ 28,030.40	\$ 17,413.17	4.73%	\$ 823.21
2008	\$ -	\$ 50,300.03	\$ 78,330.43	\$ 53,180.42	3.98%	\$ 2,116.58
2009	\$ 81,649.00	\$ 220,164.93	\$ 380,144.37	\$ 229,237.40	1.14%	\$ 2,607.58
2010	\$ 90,698.00	\$ 386,562.07	\$ 857,404.43	\$ 618,774.40	0.80%	\$ 4,934.73
2011	\$ -	\$ 407,640.70	\$ 1,265,045.13	\$ 1,061,224.78	1.47%	\$ 15,600.00
2012	\$ -	\$ 410,764.13	\$ 1,675,809.27	\$ 1,470,427.20	1.47%	\$ 21,615.28
Cumulative Interest to 2011						\$ 26,230.41
Cumulative Interest to 2012						\$ 47,845.69



Ontario Energy Board

## Smart Meter Model

### Peterborough Distribution Incorporated

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)	\$ 16,536.27	\$ 50,418.02	\$ 113,715.81	\$ 519,872.79	\$ 832,842.84	\$ 779,457.41	\$ 770,556.51	\$ 3,083,399.66
Interest on Deferred and forecasted OM&A and Amortization Expense (Sheet 8A/8B) (Check one of the boxes below)	\$ -	\$ -	\$ -	\$ 51.67	\$ 1,058.46	\$ 2,533.51		\$ 3,643.64
<input checked="" type="checkbox"/> Sheet 8A (Interest calculated on monthly balances)	\$ -	\$ -	\$ -	\$ 51.67	\$ 1,058.46	\$ 2,533.51		\$ 3,643.64
<input type="checkbox"/> Sheet 8B (Interest calculated on average annual balances)								\$ -
SMFA Revenues (from Sheet 8)	\$ 60,387.00	\$ 104,802.00	\$ 106,177.00	\$ 231,593.00	\$ 411,749.00	\$ 419,617.28	\$ 142,094.69	\$ 1,476,419.97
SMFA Interest (from Sheet 8)	\$ 700.92	\$ 5,200.46	\$ 8,319.24	\$ 3,554.71	\$ 5,803.55	\$ 16,291.30	\$ 21,271.29	\$ 61,141.47
Net Deferred Revenue Requirement	-\$ 44,551.65	-\$ 59,584.44	-\$ 780.43	\$ 284,776.75	\$ 416,348.75	\$ 346,082.34	\$ 607,190.53	\$ 1,549,481.86
Number of Metered Customers (average for 2012 test year)							34967	

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

Years for collection or refunding	2
Deferred Incremental Revenue Requirement from 2006 to December 31, 2011 plus Interest on OM&A and Amortization	\$ 2,316,486.79
SMFA Revenues collected from 2006 to 2012 test year (inclusive) Plus Simple Interest on SMFA Revenues	\$ 1,537,561.44
Net Deferred Revenue Requirement	\$ 778,925.35
SMDR May 1, 2012 to April 30, 2014	\$ 0.93
Check: Forecasted SMDR Revenues	\$ 780,463.44

Match

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

Incremental Revenue Requirement for 2012	\$ 770,556.51
SMIRR	\$ 1.84
Check: Forecasted SMIRR Revenues	\$ 772,071.36

Match



## Funding and Cost Recovery Mechanisms

The following table provides a summary of the three mechanisms for smart meter funding and cost recovery that the Board has established and that can be calculated by this model. The Smart Meter Funding Adder ("SMFA") was described in Guideline G-2008-0002. The Smart Meter Disposition Rider ("SMDR") and Smart Meter Incremental Revenue Requirement Rate Rider ("SMIRR") were defined by the Board in the Decision for PowerStream Inc.'s application for Smart Meter disposition [EB-2010-0209], October 1, 2010.

Title	Acronym	Description
Smart Meter Funding Adder	SMFA	<ul style="list-style-type: none"> <li>Mechanism to provide funding before and during smart meter deployment and acts to smooth the rate increases due to smart meter implementation.</li> <li>First implemented in rates for May 1, 2006.</li> <li>Initially established at a level of about \$0.26/month per metered customer for most distributors; some utilities have had unique SMFA rates due to initial Smart Meter Implementation Plans. Distributors could subsequently apply for a standard SMFA of \$1.00 per metered customer per month or a utility-specific SMFA.</li> <li>SMFA revenues are tracked in a sub-account of Account 1555. Upon disposition, the SMFA revenues and simple interest are used to offset the deferred historical revenue requirement of installed smart meters plus interest on the OM&amp;A and amortization/depreciation expenses, with the variance recovered or refunded through the SMDR.</li> <li>In many 2011 EDR applications, the Board capped the SMFA at \$2.50/month per metered customer. Further, the Board indicated that the SMFA would cease by April 30, 2012.</li> </ul>
Smart Meter Disposition Rider	SMDR	<ul style="list-style-type: none"> <li>The SMDR recovers, over a specified time period, the variance between: 1) the deferred revenue requirement for the installed smart meters up to the time of disposition and interest on OM&amp;A and depreciation/amortization expenses; and 2) the SMFA revenues collected and associated interest.</li> <li>The SMDR should be calculated as a fixed monthly charge. The capital (smart meter, AMI, systems hardware and software) and operating expenses are largely fixed costs and invariant to a customer's demand, and hence should be recovered largely through fixed charges.</li> <li>In many cases the SMDR has been recovered on an equal basis from all metered customer classes, although more recent decisions have dealt with class-specific disposition riders. The distributor should determine and support its proposed allocation, based on principles of cost causality and practicality.</li> </ul>
Smart Meter Incremental Revenue Requirement Rate Rider	SMIRR	<ul style="list-style-type: none"> <li>When smart meter disposition occurs in a stand-alone application, a SMIRR is calculated as the proxy for the incremental change in the distribution rates that would have occurred if the assets and operating expenses were incorporated into the rate base and the revenue requirement.</li> <li>The SMIRR is calculated as the annualized revenue requirement for the test year for the capital and operating costs for smart meters.</li> <li>The SMIRR should be calculated as a fixed monthly charge, similar to the SMDR.</li> <li>The allocation for the SMIRR should generally be the same as for the SMDR.</li> <li>The SMIRR ceases at the time of the utility's next cost of service application when smart meter capital and operating costs are explicitly incorporated into the rate base and revenue requirement.</li> </ul>

## Cost of Service Applications

The recovery of smart meter capital and operating costs is normally approved (or denied) following a review for prudence and disposition in a cost of service proceeding. A smart meter disposition rate rider (SMDR) is used to recover the residual revenue requirement that is made up of smart meter costs up to the time of disposition plus interest on OM&A and depreciation/amortization expenses, less amounts collected through the SMFA and associated interest. The approved gross book value and accumulated depreciation of installed smart meters are then added to rate base, and the test period operating expenses are added to OM&A. This ensures the recovery of the incremental revenue requirement on a going-forward basis through base rates. Further, smart meter capital and operating costs should be reflected in the cost allocation study to ensure an appropriate allocation of costs to the various customer classes.<sup>1</sup>

If a distributor seeks approval for costs related to 100% smart meter deployment, any capital and operating costs for smart meters that are installed beyond the (2012) test year (i.e. for new customers) should not be recorded in Accounts 1555 and 1556.

The Board considers that rates will be fully compensatory when smart meter costs are either incorporated into base rates or recovered by means of the SMIRR. When smart meters are installed for new customers, these customers will pay rates that reflect the recovery of smart meter costs. The costs of these additional smart meter costs should be reflected in normal capital and operating accounts, akin to other normal distribution assets and costs.

## Stand-alone Applications

As per *Chapter 3 of the Filing Requirements for Transmission and Distribution Applications*, issued June 22, 2011, the Board expects those distributors that are scheduled to remain on IRM to file a stand-alone application with the Board seeking final approval for smart meter related costs. When rates are adjusted in a stand-alone application, there is no re-evaluation of rate base or of the revenue requirement for the purpose of setting distribution rates. Where the Board approves smart meter capital and operating costs outside of a cost of service proceeding, a SMDR is still required. In addition, a smart meter incremental revenue requirement rate rider (SMIRR) is established to recover the prospective annualized incremental revenue requirement for the approved smart meters, until the distributor's next cost of service application. The SMIRR continues until the effective date of the distributor's next cost of service rate order, at which time assets and costs are incorporated into the rate base and revenue requirement and recovered on a going-forward basis through base rates.

As in a cost of service application, when smart meter costs are approved for 100% deployment, capital and operating costs for smart meters on a going-forward basis are no longer recorded in Accounts 1555 and 1556; instead the costs are recorded in the applicable capital or operating expense account (e.g. Account 1860 – Meters for smart meter capital assets).

## Evidence to be Filed in Support of Smart Meter Cost Recovery in a Cost of Service or Stand-Alone Application

The purpose of this model is to calculate a smart meter revenue requirement from a distributor's capital and OM&A costs, and to provide one methodology for the determination of associated riders and/or adders. In addition to filing this model, distributors must provide in any application for cost recovery detailed descriptions of all costs incurred. The onus is on the distributor to support its case, and the distributor should provide any additional information necessary to understand the distributor's costs in light of its circumstances. In considering the recovery of smart meter costs, the Board also expects that a distributor will provide evidence on any operational efficiencies and cost savings that result from smart meter implementation. As an example, meter reading expenses may be reduced with the activation of remote meter reading through the AMI network for residential and small general service customers.

When applying for the recovery of smart meter costs, a distributor should ensure that historical cost information has been audited including the smart meter-related deferral account balances up to the distributor's last Audited Financial Statements. A distributor may also include historical costs that are not audited and estimated costs, corresponding to a stub period or to a forecast for the test rate year. The Board expects that the majority (i.e. 90% or more) of costs for which the distributor is seeking recovery will be audited. In all cases, the Board expects that the distributor will document and explain any differences between unaudited or forecasted amounts and audited costs.

## Costs Beyond Minimum Functionality

While authorized smart meter deployment must meet the requirements for minimum functionality, a distributor may incur costs that are beyond the "minimum functionality". To date, the Board has reviewed three types of costs that are "beyond minimum functionality":

**A.** Costs for technical capabilities in the smart meters or related communications infrastructure that exceed those specified in O.Reg 425/06;

**B.** Costs for deployment of smart meters to customers other than residential and small general service (i.e. Residential and GS < 50 kW customers); and

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

**Costs beyond minimum functionality for which recovery is sought must be recorded in the Smart Meter Costs tab of the model in these three categories, and appropriate supporting evidence for each cost type must be provided in the application. Further comments on each of these cost types are provided below.**

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

O.Reg. 425/06 specifies that costs that exceed minimum functionality may be approved by the Board for recovery. In deciding whether technical capabilities of installed smart meters or associated communications or other infrastructure that exceed minimum functionality are recoverable, the Board will consider the benefits of the added technical features and the prudence of these costs. Any distributor seeking recovery for these additional capabilities should provide documentation of the additional technical capabilities, the reasons for them and a detailed cost/benefit analysis.

Technical functionality beyond minimum functionality was dealt with by the Board with respect to Hydro One Networks' 2008 cost of service application, regarding the costs and benefits of super-capacitors in the smart meters and AML collectors. In its Decision and Order on that application (EB-2007-0681), issued December 18, 2008, the Board approved the recovery of the incremental costs.

**B. Costs for deployment of smart meters to customers other than residential and small general service**

O.Reg. 425/06 defines smart meter deployment as pertaining to residential and small general service customers. The Functional Specification sets the required minimum level of functionality for the AMI to be "for residential and small general service consumers where the metering of demand is not required." As such, minimum functionality has been defined as customers in the residential and general service ("GS") < 50 kW classes.

While some customers in other metered customer classes (GS > 50 kW, Intermediate, Large Use) have interval meters that measure peak demand in a time interval, some distributors may have customers in these classes that have conventional meters and are not eligible for the regulated price plan ("RPP") and therefore are subject to the weighted average spot market price.

A distributor may, as part of its smart meter deployment program, decide to install smart meters for these customers. This could be on the basis that these customers will have higher demand than will typical residential and GS < 50 kW customers, and providing them with better information on how much and when they consume electricity may provide these customers with opportunities for more energy conservation and load shifting. While such meter conversions may generally appear to be logical, they are outside of the regulation and hence are beyond minimum functionality. In other instances, a distributor may convert the meters of interval-metered customers upon repair or re-sealing to "smart" meters that communicate using the AMI infrastructure that the distributor has installed, replacing the existing communications systems for these meters. Again, as these are for meters for customers other than residential and small general service, they are outside of the regulation and hence beyond minimum functionality.

The Board, as part of the Combined Proceeding (EB-2007-0063, December 13, 2007), approved cost recovery for meter conversions for GS > 50 kW customers for both Toronto Hydro Electric System Limited ("Toronto Hydro") and Hydro Ottawa Limited. However the Board stated:

*"The Board is explicitly not finding that the costs associated with these meters fall into the minimum functionality costs. The Board approval of these costs is ancillary to the smart meter decision."*

With respect to Toronto Hydro, the Board subsequently approved the recovery of these costs for smart meter installation/conversion for GS > 50 kW customers in Toronto Hydro's 2008-2009 [EB-2007-0681] and 2011 [EB-2010-0142] cost of service rate applications.

Some distributors may be doing "smart meter" conversions for General Service > 50 kW customers upon repair or resealing to enable meter data collection through the AMI infrastructure. While it is recognized that these smart meter installations and conversions are "beyond minimum functionality", a distributor may apply for the recovery of such costs. The application should document the nature, the justification and the cost per meter separately from those for the residential and GS < 50 kW customers.

**C. Costs for TOU rate implementation, CIS system upgrades, web presentation, etc.**

Costs for CIS systems, TOU rate implementation, etc., are beyond minimum functionality as established by the Board in the Combined Proceeding. However, such costs may be recoverable. In its application, a distributor should show how these costs are required for its smart meter program. Further, a distributor should document how these costs are incremental. For example, if a distributor has a normal budget for maintenance of its billing and CIS systems, costs claimed for system maintenance and upgrades must be shown to be incremental to the normal budget that is already recovered in base rates.

All costs beyond minimum functionality should be clearly identified and supported. Costs that are for meter data functions that will be the responsibility of the Smart Metering Entity will not be recoverable, unless already allowed for as per O.Reg. 426/06. Costs for other matters such as CIS changes or TOU bill presentation may be recoverable, but the distributor will have to support these costs and will have to demonstrate how they are required for the smart meter deployment program and that they are incremental to the distributor's normal operating costs.

Cost recovery for ongoing costs of the Smart Metering Entity should not be included in any smart meter cost recovery application, until such time as the Board establishes a cost recovery mechanism. To date, the Board has disallowed requests for either cost recovery or the establishment of a deferral account to track these costs.

## Cost Allocation

The model does not deal with allocations between customer rate classes. In calculating the SMDR and SMIRR, the Board has approved, in some applications, the recovery of amounts from certain applicable customer classes based on the availability of detailed data at the customer class level and on principles of cost causality.

If a distributor does not have sufficient information to support an allocation to the applicable classes, a distributor may choose to propose a recovery on the basis of all metered customers resulting in one uniform rate rider for all metered customer classes. The model calculates the SMFA, SMIRR and SMDR on this basis.

Whichever method is adopted, the Board is of the view that any cost allocation approach should be consistent between the SMDR and the SMIRR when disposition is sought in a stand-alone application. The Board will entertain proposals supported by analysis for SMDRs and SMIRRs based on principles of cost causality and where the distributor has the necessary historical and forecasted data. Distributors should refer to the PowerStream application considered under EB-2010-0209 for a practical approach. However, if a distributor decides to adopt this approach in its application, it will have to adjust it to its own circumstances.<sup>2</sup> Further, adoption of this approach will not predetermine its approval by the Board in an individual application.

## Stranded Meters

The model does not address the recovery of stranded meter costs. Distributors filing Cost of Service applications should refer to *Chapter 2 of the Filing Requirements for Transmission and Distribution Applications*, issued June 22, 2011 (Section 2.5.1.5).

While it would be preferable, conceptually, to also deal with stranded meter costs in a non-cost of service application, the Board recognizes that practical difficulties would arise since there is no restatement of rate base and rates. The Board therefore expects that stranded meter costs will be left in rate base until the distributor's next cost of service application.

The Stranded Meter Rate Rider to recover the residual Net Book Value of stranded (i.e. replaced conventional) meters is separate from any SMDR or SMIRR. In other words, a distributor must calculate (and should show its derivation) the Stranded Meter Rate Rider on a stand-alone basis.

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<sup>1</sup> See Section 2.10 – Cost Allocation of Chapter 2 of the Filing Requirements for Transmission and Distribution Applications, issued June 22, 2011.

<sup>2</sup> For example, if a distributor has deployed smart meters to classes other than Residential and GS < 50 kW, it will have to reflect the additional classes in any cost allocation proposal.