Rob Barrass
Lead Regulatory Counsel
Toronto Hydro-Electric System Limited
14 Carlton Street
Toronto, Ontario M5B 1K5
Telephone: 416.542.2546
Facsimile: 416.542.3024
regulatoryaffairs@torontohydro.com
www.torontohydro.com

October 21, 2013

via RESS e-filing – signed original to follow by mail

Ms. Kirsten Walli, Board Secretary
Ontario Energy Board
PO Box 2319
2300 Yonge St, 27th floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Application by Toronto Hydro-Electric System Limited ("THESL") for the Disposition and Recovery of Amounts Related to Smart Meter Activities from 2008 to 2010
OEB File No. EB-2013-0287

Pursuant to Procedural Order No. 1, enclosed are THESL's responses to interrogatories from Board Staff, School Energy Coalition and Vulnerable Energy Consumers Coalition. As part of THESL's response to Board Staff Interrogatory 15, an updated live version of Appendix F is also provided.

Please address all inquiries related to this matter to my attention or to Mr. Buonaguro.

Sincerely,

[original signed by]

Rob Barrass
Lead Regulatory Counsel

:RB/JL/acc

cc: Michael Buonaguro, by electronic mail only
Intervenors of Record for EB-2013-0287, by electronic mail only

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 1:

Reference(s): Application, pages 2 and 11-12 of 17,
Appendices C1, C2, C3 and F

Board staff has prepared the attached spreadsheet comparing the capital and OM&A costs by year from THESL's smart meter model in Appendices C1, C2 and C3 and the Board-issued Smart Meter Model populated in Appendix F. The analysis also includes a comparison with the Variance Analysis shown in Appendix B, Table 1 and the Costs by Minimum Functionality and Beyond Minimum Functionality shown in Appendix A, Table 1.

Appendices A and B and Appendix F appear to match, subject to rounding. The table shows different capital amounts for Appendices C1, C2 and C3 compared with Table 1 and Appendix F. In particular, the total capital expenditures documented in Appendices C1, C2 and C3 total $75,536,037, about $1.9 million less than the $77,105,084 in Appendices A, B and F. Also, $5,611,816 of computer hardware and software costs are added to rate base in 2009 in Appendix C1, but appear to be added to rate base in 2008 in Appendix F (and in Appendices A and B). All else being equal, the higher costs and adding the $5.6 million to rate base one year earlier will result in a larger deferred revenue requirement in Appendix F compared to Appendices C1, C2 and C3.

a) Please confirm or correct the inputs on Board staff's spreadsheet.
b) Please indicate what are the correct capital and operating costs and by year for which THESL is seeking recovery of deferred and ongoing incremental revenue requirement costs.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

c) Given that Appendix F differs in terms of the total capital costs and in terms of the timing of when capital and OM&A costs are incurred for the purposes of calculating the deferred revenue requirement, please explain how this supports THESL's claim that the two approaches give similar results.

RESPONSE:

a) THESL confirms that the Board Staff spreadsheet is populated with the correct inputs.

b) The amounts presented in THESL's calculations are the correct values (see Table 2 on page 5 of the Manager's Summary). The capital number differences referenced in this interrogatory (as between Appendices C1, C2, and C3 and the Board-issued model in Appendix F) are as a result of different methodologies being used for the calculation of revenue requirement. As explained in THESL's application (see the Manager's Summary, page 12), THESL has calculated the revenue requirement from smart meters based on in-service capex, while THESL understands that the Board-issued model (Appendix F) is designed to be populated using actual capex spent during the year. The $5,611,816 of IT capex, for example, was incurred in 2008 but did not come into service until 2009. As a result, the Board-issued model requires it to be included together with 2008 spending, while THESL's calculation only includes it in the 2009 value (the year it came into service). THESL notes that the application and THESL's proposed recovery of smart meter amounts is based on the calculations provided in Appendices C1-C3 (which underpin all tables within the Manager's Summary). The Board-issued model (Appendix F) is provided only as a comparative

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

reference, in accordance with its intended purpose (as a tool "to assist" [1]).

c) THESL has populated the Board-issued model and performed its own calculations using the assumptions underpinning each respective approach. Where the assumptions differ (in service vs. capex, for example), the inputs will naturally be slightly different to reflect the appropriate methodology. THESL's statement was meant to highlight that the results of the two distinct yet similar approaches ultimately still produce similar results. In THESL's view, this should give the Board and intervenors some level of comfort as to the accuracy of the calculations, regardless of the methodology chosen.

Nonetheless, for reasons originally noted in its application (on page 12 of the Manager's Summary) and as further updated in response to Board Staff Interrogatory 15, THESL maintains that its calculations based on an in-service capital approach produce the more accurate results, and are more consistent with the manner in which its revenue requirement has and continues to be determined.

[1] G-2011-0001, Smart Meter Guidelines, page 24.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 2:

Reference(s): Application, page 5, Table 2 Smart Meter Expenditures and Appendix A, Table 1

Table 2 on page 5 includes a category "Other Capital Costs" for which a breakdown is provided in Appendix A, Table 1.

a) Please provide a brief explanation as to what is included in each of these categories and why these costs are appropriate for recovery as smart meter related costs.
b) Please provide explanations for the year over year variances in these costs as outlined in Appendix A Table 1.

RESPONSE:

a) Please see Appendix A.

b) Please see Appendix A.

Short Description	Description of the cost	Reason to include in SM Prog.	2008	2009	2010	2009 vs2008	Variance Explaination	2010 vs 2009	Variance Explaination
Web Presentment	Web application to present smart meter data to customers.	Required to allow customers to make use of smart meters by taking advantage of TOU rates. Easy access to real-time data is necessary to allow customers to shift their usage to off peak periods. This is a fundamental intended function of the Smart Meter program.	1,206.4	277.3	0.0	(929.1)	Major functionality was implemented in 2008. There were enhancements and minor changes in 2009.	(277.3)	Project was completed in 2009.
TOU / Business/ System Readiness	Process and system preparation for the implementation of TOU rates in both customer services and IT support areas.	Smart meters provided interval data that support TOU billing. These efforts were required to ensure that the systems were in place (and thoroughly tested) to process the interval TOU data and process customer bills on a TOU basis.	2,848.1	2,096.7	1,253.5	(751.4)	System foundation was laid in 2007, and implementation continued with the enrollment of additional customers.	(843.2)	Enrollment continued, but reduced costs reflect declining number of remaining unconverted customers.
MDMR Integration	Extracted and enrollment of smart meter customers in the provincial MDM/R central database.	The IESO's MDM/R system has been designated as the provisional central smart meter data repository. THESL is required to integrate its smart meter data with the MDM/R.	542.9	513.8	93.6	(29.1)	The project was ongoing.	(420.2)	The project completed majority enrollment.
WAN Cost	WAN connections between Smart Meter collectors and THESL's back office Meter Read System. The most suitable technology available at the time was phoneline infrastructure.	This conponent is required in order to collect smart meter data reads.	171.1	6.6	30.7	(164.5)	Most of the smart meter collectors were deployed over 2007 and 2008.	24.2	Minor collector system expansion.
Cost Related to technical capabilities in the smart meters or related communications infrastructure that exceeds those specified in O.Reg 425/6 (Stock code 9662875 & 9662876)	Relates to specific meters with advanced higher capabilities (such as meters in isolated locations installed with remote disconnect functions)	Due to technical and opration considerations, certain locations required the installation of meters with capabilities beyond defined minimum functionality.	5.8	8.0	46.2	2.2	Immaterial	38.2	Many of the customers remaining to be converted required more unique (advanced) technical solutions.
Total			4,774.3	2,902.3	1,424.0	(1,872.0)		(1,478.3)	

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 3:

Reference(s): Application, Pages 6 and 7, Table 3 Smart Meter Costs

Table 3 is stated as showing that the average per unit cost (capital and operating) for an installed smart meter (residential and commercial) has increased 223% from $163.56 per smart meter in 2006 to $527.96 per smart meter in 2010. For residential & GS < 50 kW smart meters, this increase occurs in the years 2008 to 2010, during which time the installed meter capital costs nearly doubled from $156.49 to $307.39. THESL cites a couple of reasons for this increase stating that it can be partly attributed to a greater number of smart meter installations in difficult and/or costly locations and the installation of a greater proportion of more expensive three-phase meters installed throughout that same time frame.

a) While it is understandable that these factors would tend to increase the cost per average smart meter installed, and have been cited in applications for smart meter cost recoveries by other utilities, please state whether or not these are the only factors? If not, please state what other factors were drivers for the average increase in smart meter costs over time.
b) To the extent possible, please provide a breakdown of the increase in the average cost for smart meters over time between all relevant factors.

RESPONSE:

a) There are a number of factors that contributed to increasing the unit cost in the later years of the smart meter deployment. The fundamental driver was that the initial deployment concentrated on completing less costly residential meters in large

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

volumes to achieve installation efficiencies. For example, in 2006, 99% of the meters installed were the least expensive residential meters and the deployment involved entire streets and/or multi-unit complexes greatly reducing the labour cost component.

In later years, the deployment shifted to finalizing residential locations with installation or access issues and small commercial sites. This increased the labour cost component and in some cases involved more expensive meter types. There were also some additional factors that influenced increasing costs as noted below:

(i) A-Base Meter Installations

The majority of the "A-Base" meter installations were completed in 2008 to 2010. These installations are more labour intensive as they require entry into the home, power being disconnected, and rewiring of the meter base/adaptor. This is in contrast to more typical external installations that essentially only involve a simple swap-out. Based on the additional steps and entry requirements, an "A-Base" meter will cost more than double the cost of an external socket meter installation (not including other factors such as travel time, appointments, and multiple visits).

(ii) Isolations

During the initial deployment, THESL discovered a specific meter base type that had a higher number of meter lug failures[1] when the old meter was removed. For the safety of THESL's staff, these meter bases were identified

[1] A plastic support designed to hold the lug in place was susceptible to breaking, and as a result the lug on the meter base would not release the connectors from the old meter upon change-out.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

in advance, and THESL was required to perform power isolations during the change-out of these meters. An overhead line crew was required for this work to disconnect power to the service. In some cases where multiple meter bases existed on the same street, THESL would isolate the entire street. This work was done for over a thousand installations in 2010.

(iii) Single-Phase vs. Three-Phase

In 2010 only 60% of the meters changed were single-phase or network types, the rest were three-phase meters (three-phase meters are typically more than three times the cost of single-phase meters). Also, 40% of these meters required a three-phase adaptor to convert them to socket based meters. The adaptor alone is the same cost as a single-phase meter. Rewiring was also required for 10-20% of the installations where two meters (a consumption and a demand meter) were replaced with a single smart meter.

(iv) Asbestos

Meters with asbestos backer boards were not changed in the early years of the program. A special project was required to deal with these meters, using a qualified asbestos contractor to make the meter base safe to change. This added additional costs to allow for the installation of the smart meter in the later years.

(v) Commercial Meter Changes

For commercial meter changes THESL required specific appointments. Many businesses could not allow for a power outage during the day, so

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

appointments and planned outages were required. The majority of the commercial meter changes were done in 2010. The number of commercial meters approximately doubled each year from 2006 to 2010 as a percentage of the total number of smart meter installations, increasing average costs.

(vi) Difficult to Access Residential Meter Changes

Difficult to access or indoor residential meters often required multiple visits. THESL staff would leave "appointment required" cards for customers, before entering into an escalation process. Many of these installations required considerable additional time and effort before an appointment could be arranged and conversion could be completed. These types of installations increased (as a proportion of the total meters installed) towards the end of the smart meter project.

b) THESL is not able to quantify the effects of each of the above noted cost drivers in isolation. Where applicable, THESL has identified an order of magnitude estimate of the potential cost impact. THESL notes that the aggregate impact of these factors would be particularly noticeable in the latter years of the program, as the number of these difficult installations increased as a percentage of the total.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 4:

Reference(s): Application, Page 7, Table 4 Relative Cost Factors of Smart Meter Installations

Please state why for Meter Capital cost (relative to Standard 2008), the GS > 50 kW Smart Meters relative cost factor decreased to 4.7 in 2010 from the 8.2 and 8.0 level for 2008 and 2009 respectively.

RESPONSE:

The relative cost factors decreased in 2010 as the portion of a more expensive type of meter installed dropped significantly from 2009 to 2010.

In 2008, THESL was installing GS>50kW meters in areas where the meters were in locations not accessible by its mesh data network. To achieve communication with the metering system, THESL was required to install Smart Sync GPRS meters equipped with a Smart Synch communication module. These meters communicate on Rogers' GPRS network directly to THESL's AMI back-end data collection system. While they do not require a mesh repeater or collector in order to communicate, the meters equipped with the Smart Synch module are more expensive.

General Service locations that were directly accessible via the mesh network had mesh network meters installed commencing in 2009. Like standard residential meters, these meters require a local collector or repeater in order to allow the transmission of their readings. However, the meters themselves are approximately 45% less expensive than those requiring communication modules.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

The relative cost factors provided are based on the weighted average General Service >50kW meter costs in each year. In 2010, since only 3% of conversions required the more expensive Smart Synch meter type, it resulted in a much lower average meter cost.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 5:

Reference(s): Application, Page 8

It is stated that:

> "To prepare customers for mandatory TOU implementation, THESL mailed three sets of direct-to-customer communications (reaching 395,000 customers) in defined groupings throughout 2009. In 2010, THESL customer communications changed from a direct-to-customer approach to a mass media approach, resulting in 2010 smart meter OM&A costs for customer communications increasing slightly from 2009. While customer communication costs are properly classified as smart meter costs (in that they are needed to inform the customer of the change to TOU rates), they are not a cost directly attributable to the installation of smart meters, nor to any annual per unit cost variance analysis."

Please state why THESL changed its customer communication approach in 2010 and why it resulted in higher costs.

RESPONSE:

In 2009, THESL communications strategy involved sending information about the smart meter conversion only to those specific customers who were scheduled to have their meters replaced or were set to be converted to TOU rates. By 2010, with a mass volume of THESL customers already on TOU rates, it was no longer necessary or practical to provide targeted mail-outs. As a result, a mass media approach was used as it was considered more effective in reaching the largest possible audience. The costs were

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

slightly higher in 2010 ($1.6M in 2009 vs. $1.9M in 2010), but the 2009 campaign was smaller and more limited in that it only targeted a fraction of THESL's customer base. Please also see response to VECC Interrogatory 5.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 6:

Reference(s): THESL Smart Meter Model, Appendix C1 – 2008 Smart Meter Costs

a) Please confirm that the 2008 Smart Meter capital costs incurred in 2008 is $28,687.7K, calculated as the sum of $27,559.4K (December 31, 2008 NBV) + $1,128.3K depreciation expense.

b) In Appendix C1, THESL documents $5,611.8K for computer hardware and software as capital additions in 2008 related to the 2008 smart meter installations. Please explain what these capital additions are and how they are directly attributable to the smart meters installed in 2008.

c) Depreciation expense in 2008, and accumulated depreciation are input as an aggregate numbers in the revenue requirement sheet for each year (T5/RR.2008, T3.RR.2009, T3.RR.2010). The smart meter rate base consists of assets of different classes with differing typical useful lives. Please provide the calculation of the depreciation expense for all years.

d) Please provide the calculations showing the depreciation expense calculation, by year, for the 2009 and 2010 smart meter additions documented in, respectively, Appendices C2 and C3.

RESPONSE:

a) Confirmed.

b) The table below provides a breakdown of the $5,611.8K in computer hardware and software costs:

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

2008 IT Costs	Amount
Web Presentment	1,206.4
TOU / Business/ System Readiness	2,848.1
MDMR Integration	542.9
WAN Cost	171.1
Workforce Automation	61.6
Computer Software	781.7
Total	5,611.8

These expenses are related primarily to enabling TOU billing functions and the implementation of TOU rates. As the implementation of TOU rates was the central purpose of the smart meter program[1], these expenses were directly required. They allowed for the integration of the smart meter network with THESL's billing systems on a TOU basis, and offered data management functions such as web presentment in order for customers to make use of the TOU rates and be able to manage their consumption. Please also refer to the response to Board Staff Interrogatory 2.

c) Please see the table below:

[1] http://www.energy.gov.on.ca/en/smart-meters-and-tou-prices/

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

Depreciation Schedule

SM Total Costs

Dep. Exp. Yr.→ CapEx Yr. ↓	2008	2009	2010	2011	2012	2013	2014	Total
2008	1,128	2,617	3,037	3,118	3,118	2,915	2,287	18,221
2009	-	846	1,670	1,697	1,697	1,553	1,553	9,016
2010	-	-	650	1,547	1,547	1,495	1,495	6,733
	1,128	3,463	5,357	6,361	6,361	5,963	5,335	33,969

Installation

Dep. Exp. Yr.→ CapEx Yr. ↓	2008	2009	2010	2011	2012	2013	2014	Total
2008	1,128	1,913	1,913	1,913	1,913	1,913	1,913	12,609
2009	-	745	1,353	1,353	1,353	1,353	1,353	7,508
2010	-	-	621	1,182	1,182	1,182	1,182	5,348
	1,128	2,658	3,887	4,448	4,448	4,448	4,448	25,465

IT

Dep. Exp. Yr.→ CapEx Yr. ↓	2008	2009	2010	2011	2012	2013	2014	Total
2008	-	703	1,124	1,204	1,204	1,002	374	5,612
2009	-	102	317	344	344	201	201	1,508
2010	-	-	28	365	365	313	313	1,385
	-	805	1,469	1,914	1,914	1,516	887	8,504

d) See response to c) above.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 7:

Reference(s): THESL Application, Appendix E

Table 1 (Sheet 1) of Appendix E of THESL's application is labelled as "2014 Revenue Requirement Due to 2008-2010 Smart Meter Spending". Entries in the table refer to "Start of 2012" (Cell C6) and "End of 2012" (D6). Entries for calculating average NBV and depreciation expense also refer to 2012 amounts.

a) Please state whether Table 1 of Appendix E is calculating the incremental revenue requirement used to derive the SMIRR based on 2012 or 2014 average NBVs of smart meters installed from 2008 to 2010.

b) Please provide the calculation for the derivation of the depreciation expense shown in Table 1.

c) Table 2 (Sheet 2) of Appendix E is labelled as "2011 Revenue Requirement – PILs calculation" but is linked to Table 1. Please state whether Table 2 calculates the estimated PILs expense for 2011, 2012 or 2014.

RESPONSE:

a) This is a typographical error. Table 1 of Appendix E is correctly based on the 2014 average NBVs of Smart Meters installed from 2008 to 2010. The column headings should refer to 2014.

b) See the continuity schedule below for the detailed calculation of the 2014 depreciation value.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

CapEx Schedule

		2008	2009	2010	2011	2012	2013	2014	Total
Install	Install.	29,201	19,704	17,692	-	-	-	-	66,596
IT	IT	5,612	3,130	2,108	-	-	-	-	10,849
Tot	SM Total	34,813	22,833	19,799	-	-	-	-	77,445

Gross Fixed Assets Schedule

SM Total Costs

	2008	2009	2010	2011	2012	2013	2014	
2008	28,688	34,300	34,300	34,300	34,300	34,300	34,300	34,300
2009	-	21,793	21,793	21,793	21,793	21,793	21,793	21,793
2010	-	-	19,444	19,444	19,444	19,444	19,444	19,444
	28,688	56,092	75,536	75,536	75,536	75,536	75,536	75,536

Installation

	2008	2009	2010	2011	2012	2013	2014	
2008	28,688	28,688	28,688	28,688	28,688	28,688	28,688	28,688
2009	-	20,279	20,279	20,279	20,279	20,279	20,279	20,279
2010	-	-	17,757	17,757	17,757	17,757	17,757	17,757
	28,688	48,967	66,724	66,724	66,724	66,724	66,724	66,724

IT

	2008	2009	2010	2011	2012	2013	2013	
2008	-	5,612	5,612	5,612	5,612	5,612	5,612	5,612
2009	-	1,514	1,514	1,514	1,514	1,514	1,514	1,514
2010	-	-	1,687	1,687	1,687	1,687	1,687	1,687
	-	7,125	8,812	8,812	8,812	8,812	8,812	8,812

Depreciation Schedule

SM Total Costs

Dep. Exp. Yr.→ CapEx Yr. ↓	2008	2009	2010	2011	2012	2013	2014	Total
2008	1,128	2,617	3,037	3,118	3,118	2,915	2,287	18,221
2009	-	846	1,670	1,697	1,697	1,553	1,553	9,016
2010	-	-	650	1,547	1,547	1,495	1,495	6,733
	1,128	3,463	5,357	6,361	6,361	5,963	5,335	33,969

Installation

Dep. Exp. Yr.→ CapEx Yr. ↓	2008	2009	2010	2011	2012	2013	2014	Total
2008	1,128	1,913	1,913	1,913	1,913	1,913	1,913	12,609
2009	-	745	1,353	1,353	1,353	1,353	1,353	7,508
2010	-	-	621	1,182	1,182	1,182	1,182	5,348
	1,128	2,658	3,887	4,448	4,448	4,448	4,448	25,465

IT

Dep. Exp. Yr.→ CapEx Yr. ↓	2008	2009	2010	2011	2012	2013	2014	Total
2008	-	703	1,124	1,204	1,204	1,002	374	5,612
2009	-	102	317	344	344	201	201	1,508
2010	-	-	28	365	365	313	313	1,385
	-	805	1,469	1,914	1,914	1,516	887	8,504

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

c) This is a typographical error. Table 2 of Appendix E correctly calculates the estimated PILs expense for 2014.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 8:

Reference(s): Smart Meter Model, Appendix F, Sheet 2 – Smart Meter Costs

In the hardcopy and PDF versions of Appendix F, but not in the Excel version, THESL has overwritten the years to start in 2008. THESL shows smart meter installations from 2006 to 2010 (i.e., 2008 to 2012 via the manual labelling). THESL was a named utility in O.Reg. 427/06 authorized to conduct discretionary metering activities and began deploying smart meters in 2006.

Please state what years the smart meters installed shown on Sheet 2 of Appendix F correspond to.

RESPONSE:

The smart meter installations presented in Appendix F correspond to the years 2008 through 2014 (the years originally presented using the manual labeling). THESL's 2006 and 2007 smart meter installations had already been approved for clearance in previous applications and are not a part of this proceeding. However, as THESL needed to present 7 years of data (2008-2014), and the most recent version of the Board-issued Smart Meter model at the time of filing of this application only allowed for 7 years of data specifically for the period from 2006 through 2012, THESL manually changed the labeling to reflect the accurate timeframe. THESL has since populated the updated Board-issued smart meter model (v4.0) to avoid this issue (see response to Board Staff Interrogatory 15).

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 9:

Reference(s): Smart Meter Model, Appendix F, page 6 Cost of Capital

Please state the source of and the reason for using each of the capital structure and cost of capital parameters by year that are included in this Appendix.

RESPONSE:

Please see the table below:

Year	Source of Capital Structure and Cost of Capital	Justification
2008	OEB Approved - EDR 2008	THESL's revenue requirement for 2008 is based on the 2008 OEB Approved value.
2009	OEB Approved - EDR 2008	The version of the Board Staff Smart Meter model that was available for use by THESL at the time of filing of this application had this cell "locked" and did not allow a different value to be input; THESL submits that the correct value to use is the 2009 OEB approved value. This has been accounted for in the updated Board Staff model (see response to Board Staff Interrogatory 15).
2010	OEB Approved - EDR 2010	THESL's revenue requirement for 2010 is based on the 2010 OEB Approved value.
2011	OEB Approved - EDR 2011	THESL's revenue requirement for 2011 is based on the 2011 OEB Approved value.
2012	OEB Approved - EDR 2011	Since 2012 is an IRM year for THESL, THESL's revenue requirement for 2012 is based on the 2011 OEB approved value.
2013	OEB Approved - EDR 2011	Since 2013 is an IRM year for THESL, THESL's revenue requirement for 2013 is based on the 2011 OEB approved value.
2014	OEB Approved - EDR 2011	Since 2014 is an IRM year for THESL, THESL's revenue requirement for 2014 is based on the 2011 OEB approved value.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 10:

Reference(s): Smart Meter Model, Appendix F, page 6 Working Capital Allowance

Please state the source of and the reason for using each of the working capital allowance rates by year that are included in this Appendix.

RESPONSE:

The working capital allowance ("WCA") rates used for the 2008-2009 period are from the Board's EB-2007-0680 rate decision (THESL's 2008-2009 EDR) and the 2011-2014 WCA rates are from the Board's EB-2010-0142 decision (THESL's 2011 EDR). The rate used for 2010 was in error, and should be 12.45% based on the Board's EB-2009-0139 (THESL's 2010 EDR) decision. This has been addressed in the updated Board-issued model originally filed as Appendix F (see response to Board Staff interrogatory 15). The impact, however, is immaterial (i.e., < $500).

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 11:

Reference(s): Smart Meter Model, Appendix F Taxes/PILs

Please confirm that the tax rates shown in this table are the tax rates corresponding to the taxes or PILs that underpins distribution rates in each of the historical years, and that THESL forecasts it will pay in 2013 and 2014. In the alternative, please explain the tax rates input and their derivation.

RESPONSE:

The tax rates shown in this table correspond to the statutory tax rates by year (2008-2012 Actual and 2013-2014 Forecasted) that THESL has respectively paid and is forecasted to pay.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 12:

Reference(s): Application, page 3– Stranded Meters

THESL states that "In accordance with the Smart Meter Guidelines, the disposition of stranded meter amounts will be addressed in THESL's next rebasing application."

a) Please confirm that THESL is continuing to amortize the capital cost of conventional meters stranded through replacement by smart meters for residential and GS < 50 kW customers.

b) Please provide an estimate, by customer class, of the net book value of conventional meters stranded by replacement by smart meters as of December 31, 2014.

RESPONSE:

a) Yes, THESL confirms that it is continuing to amortise the capital cost of conventional meters stranded through their replacement by smart meters for residential and GS < 50 kW customers.

b) The estimated NBV of the stranded conventional meters due to the installation of smart meters is currently forecast to be $13.04M as of the end of 2014. THESL is unable to provide this information broken down by rate class, as it does not track its fixed assets ledger by rate class.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 13:

Reference(s): Operational Efficiencies and Cost Savings

On page 19 of *Guideline G-2011-0001: Smart Meter Funding and Cost Recovery – Final Disposition*, the Board states:

> "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."

a) Please discuss operational efficiencies and cost savings achieved by THESL resulting from smart meter implementation.
b) Please state whether any operational efficiencies and cost savings resulting from smart meter implementation have been factored into THESL's current Board-approved rates (i.e., whether operational savings were taken into account in THESL's 2011 rates application EB-2010-0142). If so, please explain how these were reflected, and provide references to the evidence in that proceeding where this was documented.
c) Please explain if THESL expects to achieve operational efficiencies and cost savings from smart meter implementation in the future. If so, please provide THESL's estimates as to the timing and nature of these savings.

RESPONSE:

a) As described in THESL's application (page 11 of the Manager's Summary), the main quantifiable efficiencies and costs savings achieved by THESL were reduced manual

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

meter reading costs.

b) Yes, as described in THESL's application (page 11 of the Manager's Summary), the cost savings resulting from smart meter implementation have already been factored into THESL's current Board-approved rates. THESL's evidence in its 2011 rate application makes specific reference to this with regard to meter read cost savings: EB-2010-0142, Exhibit F1, Tab 6, Schedule 3, Page 4 and Page 8.

c) Given that the smart meter roll-out is largely complete, THESL does not anticipate any additional material distribution cost savings in the future as a result of the smart meter implementation. There are, however, a number of associated general benefits that are likely, among them an enhanced ability to detect theft or illegal use of electricity.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 14:

Reference(s): THESL Application, Tables 7 and 8

In these tables, THESL summarizes its derivation of the class-specific SMDRs and SMIRRs, respectively. THESL documents that it is using 2012 customer counts for Residential, GS < 50 kW and GS > 50 kW customer classes as the denominators for deriving the SMDRs and SMIRRs.

a) In the derivation of the deferred revenue requirement for the SMDR, how has THESL allocated SMFA revenues collected by other metered customer classes to Residential, GS < 50 kW and GS > 50 kW classes?
b) Are the 2012 customer numbers shown average or mid-year or year-end customer counts?
c) Why is THESL not using forecasted average or mid-year 2014 customer counts in the denominators for the proposed SMDRs and SMIRRs since the rates are proposed to be implemented for the 2014 rate year?

RESPONSE:

a) As described in its application (on pages 14-15 of the Manager's Summary), THESL has allocated Smart Meter revenues received from the GS 1000-4999 kW and Large Use classes (the "other metered classes") to the Residential, GS<50kW and GS 50-999 kW classes proportionally based on the amount of revenue collected from each of the Residential, GS<50kW and GS 50-999 kW classes.

b) The 2012 customer numbers are year-end values.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

c) THESL believes that the Board's preference is to use Board Approved or actual customer values in clearing deferral and variance accounts. However, THESL is not averse to using a more recent actual value to more closely reflect the anticipated number of customers during the recovery period. The most recent actual customer counts for each of the Residential, GS<50kW, and GS 50-999kW classes are as follows:

Class	Customers (as of Aug 2013)
Residential	607,721
GS<50kW	68,481
GS 50-999kW	11,913

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 15:

Reference(s): Smart Meter Model

a) If THESL has changed its inputs to either of the models submitted in this application, as a result of any of the above interrogatory responses, please update and re-file both models in working Microsoft Excel format.

   i. For the Board-issued model, please use version 4.00. THESL should also include the necessary inputs on sheets 9, 10A and 10B to calculate class-specific SMDRs and SMIRRs for the Residential, GS < 50 kW and GS > 50 kW models. The model is available through the following link: http://www.ontarioenergyboard.ca/OEB/_Documents/2014EDR/2014_Smart_Meter_Model_V4.0.xlsm

   ii. Please also provide updates of THESL's smart meter model, as documented in Appendices C1, C2, C3, D and E, and any ancillary spreadsheets used to document its calculations of aggregate inputs, such as depreciation expense. These models should also be provided in working Microsoft Excel format.

RESPONSE:

i) THESL has repopulated the updated Board-issued Smart Meter model (version 4.0), originally filed as Appendix F, and is filing a live version together with this response (as an update to Appendix F), to account for the following issues:

   a. The new model now shows the correct years in the headers and does not require manual adjustment (see Board Staff Interrogatory 1)

   b. The new model allows for a manual input of the Cost of Capital parameters for 2009 (the cell was locked in the prior version). THESL is

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

now able to use the correct 2009 Board approved value (see response to Board Staff Interrogatory 9)

c. Correct the WCA rate for 2010 – results are immaterial (see response to Board Staff Interrogatory 10)

d. The updated model contains updated capital tax rates for the appropriate years.

These changes produce marginally different results to those in the originally-filed version of the Board-issued model (Appendix F). The originally-filed version resulted in an SMDR that is $333K higher, and an SMIRR that is $3K higher, than the updated Board-issued model (version 4.0).

In comparison to THESL's calculations, the updated version of the Board-issued smart meter model (version 4.0) results in an SMDR $354K lower than THESL's proposed calculations, and an SMIRR $164K higher than THESL's calculations. The reasons for this, originally listed on page 15 of the Manager's Summary, remain largely unchanged:

a. Capex vs. In-Service: the Board-issued model calculates incremental revenue requirement using total smart meter capital expenditures in the year, while THESL calculates incremental revenue requirement using the fixed asset balance. The net effect of this component results in a $967K reduction to the SMDR under THESL's calculations when compared to the Board-issued model.

b. PILs: Similarly, for PILs purposes, the Board-issued model calculates Capital Cost Allowance (CCA) on total annual capital expenditures, while

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

THESL calculated its CCA based on the fixed asset balances, as above. THESL did not include assets in its CCA calculations unless those assets were energized (or were included in CWIP). The net effect of this component results in an SMDR recovery of $808K more than that produced by the Board-issued model.

c. Carrying Charges: The Board-issued model only calculates carrying charges on OM&A and Depreciation expense, while THESL has calculated carrying charges on the net revenue requirement consequences of all smart meter costs components. The net effect of this component results in an SMDR recovery of $529K more than that produced by the Board-issued model.

d. In 2008, THESL's approved capital structure was actually 37.5/62.5; the model is hardcoded with a capital structure using a 40/60 split. This net effect of this component results in an SMDR recovery of $13K more than that produced by the Board-issued model.

THESL maintains, for the reasons noted above, that its calculations more accurately reflect the true revenue requirement associated with its smart meter expenses in 2008 through 2010 than those produced by the Board-issued model. The Smart Meter Filing Guidelines identify the purpose of the Board-issued model as one "to assist"[1] utilities in preparing their application and THESL submits that it is intended only to guide applicants' calculations. Where a utility has provided more accurate calculations, THESL submits that those calculations are the appropriate basis on which to calculate revenue requirement.

[1] G-2011-0001, Smart Meter Guidelines, page 24.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

ii) The inputs into THESL's smart meter calculations (other than those noted above as they apply to the Board-issued smart meter model in Appendix F) have not changed and remain accurate (the WCA rate correction noted in response to Board Staff Interrogatory 10 applies to both models, but is immaterial). As a result, THESL appendices C1, C2, C3, D and E do not need to be updated.

RESPONSES TO INTERROGATORIES OF ONTARIO ENERGY BOARD STAFF

INTERROGATORY 16:

Reference(s): THESL Application/page 17 – Bill Impacts

Please provide an update to Table 10 showing revised bill impacts as a result of any changes due to responses in interrogatories for each of the two models.

RESPONSE:

As THESL's calculation did not change as a result of this interrogatory process, no changes to Table 10 are required. The WCA correction noted in response to Board Staff Interrogatory 10 was considered immaterial (< $500).

THESL notes that it did not provide bill impacts in its original application based on the results of the Board-issued model, and is unable to do so now without knowing the detailed cost allocation methodology that is to be used (e.g., certain parameters are not implicit in the Board-issued model; allocation of revenue from other classes, for example). However, given the relatively minor differences in total clearance amounts as determined by the two approaches (see response to Board Staff Interrogatory 15), and the fact that recovery is based on a monthly charge (without the sensitivity of adjustment of a volumetric rate) the total bill impacts presented in Table 10 would be expected to be nearly identical as between the two models.

RESPONSES TO INTERROGATORIES OF SCHOOL ENERGY COALITION

INTERROGATORY 1:

Reference(s): p. 7

Please detail the type and quantity of meters that were installed on the premises of GS>50 customers. If there are more than one type, please provide an explanation.

RESPONSE:

a) Please see the schedule below:

Meter Type	Number of Meters	Application
METER, POLYPHASE ELECTRONIC	16	2 Element Form 35S, Transfomer Type 120/480V, 20A, with internal modem and pulse outputs
METER, POLYPHASE ELECTRONIC	40	2.5 Element Form 36S, 3Ø 4 Wire, Transfomer Type 120/347V, 20A, with internal modem and pulse outputs
METER,ALPHA A3RAL ADVANCED FOUR QUADRANT	8	2.5 Element Form 36S,transformer rated interval capable meter 4 quadrant for bi-directional 8 channels of Load Profile data for y services with internal modem
METER POLYPHASE ELECTRONIC	8	2 Element - Form 35S, Transfomer Type 120/480V, 20A, 4 quadrant for bi-directional 8 channels of Load Profile data for delta services with internal modem
METER POLYPHASE ELECTRONIC	8	3 Element - Form 9S, 3Ø 4 Wire Transfomer Type 120/480V, 20A, 4 quadrant for bi-directional 8 channels of Load Profile data with internal modem
METER ELECTRONIC, 0.1 TO 10 MP 120-347	747	2.5 Element - Form 36S, 3Ø 4 Wire, Transfomer Type 120/347V, 10A, Type A3RL, Internal SmartSynch GPRS Communication Module

RESPONSES TO INTERROGATORIES OF SCHOOL ENERGY COALITION

Meter Type	Number of Meters	Application
METER ELECTRONIC 0.1 TO 10 AMP 120-347	1,700	3.0 Element - Form 9S, 3Ø 4 Wire Transfomer Type 120/347V, 10A, Internal SmartSynch GPRS Communication Module
METER ELECTRONIC 0.1 TO 10 AMP 120-480	2,512	2.0 Element - Form 35S, Transfomer Type 120/480V, 20A, Internal SmartSynch GPRS Communication Module
METER ELECTRONIC, TRANSFORMER TYPE	1,104	3.0 Element - Form 9S, 3Ø 4 Wire, Transformer Type 120/347V, 10A, 900 MHZ Communication Module, Mesh Network (Node) With Pulse Outputs
METER ELECTRONIC, TRANSFORMER TYPE	2,224	2.5 Element - Form 36S, 3Ø 4 Wire, Transformer Type, 120/347V, 10A, 900 MHZ Communication Module, Mesh Network (Node) With Pulse Outputs
METER,NETWORK SELF CONTAINED 200A,	4	2.0 Element - Form 12S, 3Ø 3 Wire Self Contained Electronic Meter, 120/480V, 200A, 900 MHZ Communication Module, Mesh Network (Node) w/Ext. Antenna
Total GS>50	8,371	

There are a variety of meter types installed in facilities that fall in the GS<50kW rate class. The metering installed generally reflects the technical requirements of the location including diversity of current, voltage, supply configurations, and communication requirements.

Services with a current rating of 200 amps or less, typically residential or small commercial buildings, use meters which are “self-contained“ meaning that the meter is able to measure the energy use through the meter itself (no external equipment is required). Services greater than 200 amps require transformers to step-down the

RESPONSES TO INTERROGATORIES OF SCHOOL ENERGY COALITION

current and/or voltage to a volume that can be metered, multipliers are used to factor up the lower amperage and/or voltage.

In addition, one of three versions of meters may be required, (2-element, 2.5-element, and 3-element), and each type can be equipped with one of three communication options – either a GPRS smart sync communication module, a 900 MHz LAN option board, or internal modem. The communication option depends on the location of the meter within a building (i.e., if the meter is located in a parking lot two levels below grade wireless communication via GPRS or 900 MHz mesh will not work and would require a meter with an internal modem connected to a phone-line). If the meter is at or above ground but not located within range of a local collector or repeater, THESL would install a GPRS meter. If the meter is at ground level and within range of a collector or repeater, THESL would use a meter that will work on its 900 MHz mesh.

In all cases, THESL uses the meter that is best suited for the unique technical requirements of any given location.

RESPONSES TO INTERROGATORIES OF SCHOOL ENERGY COALITION

INTERROGATORY 2:

Reference(s): p. 8

With respect to customer communication costs:

a) Please provide the amount of consumer communication costs for GS>50 costumers for each year between 2008 and 2010.

b) Please detail how the customer communications cost was allocated to the various rate classes?

RESPONSE:

a) THESL does not have a breakdown of customer communication costs by rate class.

b) The customer communications costs, together with all other operating expenses, were allocated to the various rate classes by their respective portion of installed meters between 2008 and 2010.

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 1:

Reference(s): EB-2013-0287 Application, Page 6

Table 3: Smart Meter Costs ($/unit installed) provides combined installed meter capital costs for the residential and GS<50 kW customer classes.

a) Please provide Table 3 with separate installed meter capital costs for the residential and GS<50 customer classes.

b) Please provide total OPEX costs and OPEX costs by customer class.

RESPONSE:

a) THESL has presented the costs of the residential and GS<50kW class customers together in accordance with the minimum functionality breakdown outlined in the Smart Meter Filing Guidelines. While THESL does not have records that distinguish between residential and GS<50kW costs for 2006-2007, it has provided a breakdown of the costs between the two classes for 2008-2010 below:

	2008	2009	2010
Residential [(1)]	120.83	172.45	178.70
GS<50	648.69	564.11	508.30

Note 1: Includes Collectors

b) THESL does not track OPEX costs by customer class. OPEX costs were allocated based on the weighted number of meters installed; as a result, a majority has been allocated to the residential class (see Table 7 on page 14 of the Manager's Summary).

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 2:

Reference(s): EB-2013-0287 Application, Page 7

THESL indicates a greater proportion of the more expensive three-phase smart meters and fewer single-phase smart meters were installed in the latter years of deployment (2008 through 2010).

a) Please provide a breakdown of the type and quantity of smart meters installed by customer class by year for the period 2006 to 2010.

b) Please complete the following table to show the average installed cost by meter type.

Class	Type of Meter	Quantity	Installed Cost	Average Costs
Residential				
GS<50 kW				
GS>50 kW				

c) Please provide the relative increase of three-phase smart meters compared to single-phase smart meters installed by customer class.

RESPONSE:

a) Please see response to b) below.

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

b) The breakdown of the type and quantity of smart meters installed by customer class by year is provided in the attached appendix. THESL notes that the values provided for 2006 and 2007 are not available. THESL does not track installed meter costs by meter type.

c) The relative number of smart meters installed, broken down by three-phase and single- phase, is shown below. All values are relative to the number of single-phase residential meters installed in 2008 (e.g., in 2009 THESL installed 28.8% of the number residential single-phase meters installed in 2008). In both the GS<50kW and GS>50kW classes, where the three-phase meters make up a higher portion of total meters installed, the proportion of three-phase meters increases over 2008 through 2010.

Description	Residential			GS<50			GS>50		
	2008	2009	2010	2008	2009	2010	2008	2009	2010
Single Phase	100.0%	28.8%	16.8%	1.5%	2.2%	3.2%	0.0%	0.0%	0.0%
Three Phase	0.4%	0.2%	0.3%	5.8%	7.0%	7.7%	1.7%	1.9%	2.2%

	Residential				GS<50				GS>50			
Description	2008	2009	2010	Residential	2008	2009	2010	GS<50	2008	2009	2010	GS>50
Meter Polyphase Electronic	1	-	-	1	-	-	-	-	-	8	-	8
Single Phase Energy Meter, 200 Amp 240	51,916	-	-	51,916	532	-	-	532	-	-	-	-
Single Phase Collector Meter, 200 Amp	132	196	24	352	-	-	-	-	-	-	-	-
Single Phase Energy Meter	-	-	8	8	-	-	-	-	-	-	-	-
Meter Electronic, 0.1 To 10 Mp 120-347	227	11	(5)	233	2,596	1,141	(495)	3,242	83	664	-	747
Meter Electronic 0.1 To 10 Amp 120-480	-	-	-	-	-	-	-	-	1,606	806	100	2,512
Meter, Electronic, Network Energy	46,840	11,976	-	58,816	474	522	-	996	-	-	-	-
Meter, Network Collector Meter, Form 12S	52	75	-	127	-	-	-	-	-	-	-	-
Meter Polyphase, Form 16S, 200 Amp	36	-	-	36	950	-	-	950	-	-	-	-
Meter, Form 2S Complete With Disconnect,	16	22	43	81	20	26	53	99	-	-	-	-
Meter,Form 12S Complete With Disconnect,	-	-	74	74	-	-	74	74	-	-	-	-
Meter, Form 3S, Transformer-Type Meter,	428	329	-	757	72	55	-	127	-	-	-	-
Meter, Form 16S Alpha, A3Rl Electronic	285	334	354	973	4,807	8,866	9,399	23,072	-	-	-	-
Meter, Single Phase Energy Meter,	44,493	26,414	16,350	87,257	1,015	1,129	1,216	3,360	-	-	-	-
Meter, Network Energy Metre, 200 A,120V	-	2,441	6,178	8,619	-	575	948	1,523	-	-	-	-
Meter, Single Phase, Transformer-Type	-	23	18	41	-	727	574	1,301	-	-	-	-
Meter,Single-Phase Self Contained Energy	-	3	48	51	-	1	13	14	-	-	-	-
Meter, Single Phase, A3Tl, Collector,	34	-	-	34	-	-	-	-	-	-	-	-
Meter, Kwh/Kw/Kva Registers, 600V, 200A,	-	-	-	-	-	26	4	30	-	-	-	-
Meter , 2 Element,600V,200A, Multiplier	-	-	24	24	-	-	2,208	2,208	-	-	-	-
Meter, Form 3S, Transformer-Type Meter,	-	-	1,348	1,348	-	-	227	227	-	-	-	-
Meter Electronic, Transformer Type Form	-	2	28	30	-	98	1,472	1,570	-	-	-	-
Meter, Polyphase, A3Rl, Collector Self-	-	8	8	16	-	-	-	-	-	-	-	-
Meter, Polyphase Electronic With	-	-	-	-	-	-	-	-	-	-	16	16
Meter, Polyphase Electronic With	-	-	-	-	-	-	-	-	-	40	-	40
Meter,Alpha A3Ral Advanced Four Quadrant	-	-	-	-	-	-	-	-	-	8	-	8
Meter Polyphase Electronic	-	-	-	-	-	-	-	-	-	8	-	8
Meter Electronic 0.1 To 10 Amp 120-347	-	-	-	-	-	-	-	-	816	884	-	1,700
Meter Electronic, Transformer Type Form	-	-	-	-	-	-	-	-	-	248	856	1,104
Meter Electronic, Transformer Type Form	-	-	-	-	-	-	-	-	-	-	2,224	2,224
Meter,Network Self Contained 200A,	-	-	-	-	-	-	-	-	-	-	4	4
Total	144,460	41,834	24,500	210,794	10,466	13,166	15,693	39,325	2,505	2,666	3,200	8,371

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 3:

Reference(s): EB-2013-0287 Application, Page 6

THESL indicates the increase in the per unit smart meter installed costs in the years 2008 to 2010 can be partly attributed to a greater number of smart meter installations in difficult and/or costly locations.

a) Please provide the number of smart meter installations for difficult and/or costly locations by customer class and year.

b) Please provide the installed meter costs for difficult and/or costly locations by customer class and by year.

c) Please confirm the percentage of total meters that are installed in difficult and/or costly locations.

d) Please provide further details on the reasons for difficult or costly locations, the frequency of occurrence and explain THESL's approach to resolving these issues.

RESPONSE:

a) There are multiple factors affecting difficult and or costly installations, and various degrees to which they are prevalent. THESL is unable to breakdown its installations to this degree of specificity. See response to Board Staff Interrogatory 3 for more information regarding the factors that affect these types of installations.

b) There are multiple factors affecting difficult and or costly installations, and various degrees to which they are prevalent. THESL is unable to breakdown its meter costs to this degree of specificity. See response to Board Staff Interrogatory 3 for more information regarding the factors that affect these types of installations.

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

c) Based on its operational records, THESL estimates that of the 700,000 total meters installed, approximately 140,000 meters were in difficult and more costly locations as a result of one or more of the following factors: A-Base meter installations, required adaptor installations, required power isolations, presence of an asbestos backer board, and/or required appointments to gain access for meter replacement. The inability to gain access was the most prevalent of these factors (>90% of cases).

d) Please refer to THESL's response to Board Staff Interrogatory 3 for an explanation of factors which result in difficult or more costly installations, and THESL's approach to resolving these issues. In most cases, there is no alternative solution other than completing the installation using more costly technology, performing additional work in preparation for installation, or requiring more time to complete the installation. All these factors increase the cost of installation.

With regard to difficult to access residential meters, THESL has implemented a multi-step approach to engage its customers and arrange the required access to complete installation. This process begins with automated phone messages informing customers of THESL's intention to replace their meter, followed up by calls requesting an appointment at the customer's convenience. If access remains a challenge, follow-up letters are sent and additional efforts made until THESL is able to complete the conversion.

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 4:

Reference(s): EB-2013-0287 Application, Page 7

a) Please explain why for Meter Capital Cost (relative to standard 2008), the GS<50 kW smart meters relative cost factor decreased from 4.4 in 2009 to 3.5 in 2010.

b) Please confirm standard residential meters are single-phase meters.

RESPONSE:

a) The cost factors provided are based on a weighted average of the meter type and quantity installed during any given year. In 2010, the cost factor decreased for the GS<50kW class because technical circumstances allowed THESL to install a higher portion of a less costly meter (3-phase, 2-element, 600V, 200A, Self-contained meter), rather than the more expensive standard meter (3-element self-contained 120-347 WAC Wide Range Supply meter).

b) The standard residential meter is a single-phase meter or network meter. These account for ~98% of all current residential meters. Some residential customers, however, require non-standard meters to address various technical requirements.

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 5:

Reference(s): EB-2013-0287 Application, Page 8

THESL indicates its customer communication costs in 2010 increased slightly from 2009.

a) Please provide the nature and quantum of customer communication costs for the years 2008, 2009 & 2010.

RESPONSE:

a) Customer communication costs were $0.2M in 2008, $1.6M in 2009, and $1.9M in 2010 (refer to Appendix B, line 24 of THESL's application).

Customer communications activity in 2008 involved targeted direct to customer mailers regarding the upcoming TOU conversion. In 2009, in addition to the continuation of the direct to customer mailers, THESL expanded its communication efforts to include website communications and outreach through media and community events. In 2010, with the a majority of customers converted to TOU, THESL shifted from a targeted mailer approach to a mass market communication including transit, newspaper, radio, billboards and online advertisement. Outreach at community events also continued, particularly in vulnerable or fixed income communities. In all cases, the communications focused on educating customers about the benefits of smart meters and TOU rates, and advising them of ways to effectively manage their electricity use under the new rate structure. The messages were also adjusted throughout the implementation period to be responsive to the immediate concerns of THESL customers (e.g., the 2010 summer communications campaign addressed rising bills as a result of hot summer weather). A key purpose of the

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

communications was to address any potential customer concerns or confusion concerning smart meters and TOU rates.

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 6:

Reference(s): Guideline G-2011-0001Smart Meter Funding and Cost Recovery – Final Disposition, Page 8

The Board's Guideline G-2011-0001 states "In many 2011 EDR rate applications, whether incentive regulation mechanism ("IRM") or cost of service, the Board determined that the existing or proposed Smart Meter Funding Adder ("SMFA") would cease on April 30, 2012. THESL seeks discontinuation of the SMFA effective April 30, 2014.

a) Please provide THESL's Board approval for a SMFA that continues beyond April 30, 2012.

b) Please provide a table that summarizes the total SMFA revenue collected by customer class by year.

RESPONSE:

a) THESL's SMFA, when originally approved, did not include a specific termination date, and unlike the referenced cases above, the OEB has never made a determination in THESL's past EDR rate applications that the SMFA was to cease on April 30, 2012.

b) Please see the SMFA Recovery Schedule below (all values in $000s):

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

Year	Residential	GS<50 kW	GS 50-999 kW	GS 1000-5000 kW	GS>5000 kW	Total
2008 (from May)	3,358.3	367.3	66.9	2.9	0.3	3,795.7
2009	5,039.9	594.6	101.5	4.2	0.4	5,740.7
2010	5,115.9	547.0	106.7	4.2	0.4	5,774.2
2011	5,200.7	553.6	107.3	4.2	0.4	5,866.2
2012	5,227.5	556.9	100.2	4.1	0.4	5,889.0
2013	5,309.5	564.8	102.2	3.5	0.4	5,980.3
2014 (to Apr)	1,755.6	186.6	33.5	1.4	0.1	1,977.3
	31,007.5	3,370.8	618.2	24.4	2.4	35,023.3

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 7:

Reference(s): Smart Meter Model

THESL completed the Smart Meter Model (Appendix F) to calculate the proposed Smart Meter Incremental Rate Rider and the proposed Smart Meter Disposition Rate Rider.

Reference(s): Board Guideline G-2011-0001, Smart Meter Funding and Cost Recovery – Final Disposition, dated December 15, 2011, Page 19

The Guideline states, "The Board views that, where practical and where data is available, class specific SMDRs should be calculated on full cost causality.

Reference (s): Application, Page 15

"THESL submits that these allocations are in accordance with the Smart Meter Guidelines and the Board's previous smart meter clearance decisions."

a) Please summarize the cost allocation methodology used by THESL to calculate the SMDR rate riders in relation to the Smart Meter Guidelines and the Board's previous smart meter clearance decisions.
b) Please discuss if THESL kept records by class and if accounts 1556 and 1555 are segregated by rate class? If not, why not?
c) Please complete a separate smart meter revenue requirement model by customer class based on full cost causality by rate class. Please provide live smart meter models.

RESPONSE:

a) The Smart Meter Guidelines and the OEB's decisions and guidance in previous smart meter clearance applications both advocate for a cost allocation methodology that

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

most closely reflects actual cost causality. THESL's proposed allocation (as described on page 14, lines 8-15 and page 15 lines 1-3 of the Manager's Summary), reflects these principles. Wherever possible, THESL has directly allocated costs by class (e.g., meter capital and rate rider revenues). Where not possible, THESL has allocated costs using appropriate allocators (e.g., non-meter capital based on meter capital, Opex based on the number of meters, and PILs based on the pre-PILs revenue requirement).

b) THESL does not keep records in accounts 1556 and 1555 by rate class. THESL is not aware of a requirement to do so, but more fundamentally, in certain cases THESL would be unable to do so because of the difficulty in allocating specific capital investments (whose benefits very likely extend beyond one rate class) to only one rate class (smart meter-related IT capital, for example).

c) To the extent possible (limited only by the available data), THESL's proposed cost allocation methodology already reflects full cost causality. Similarly, live smart meter models have already been filed with the OEB as part of this proceeding. Where these models have been updated in the course of this interrogatory process, new versions have been provided (see response to Board Staff Interrogatory 15).

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 8:

Reference(s): Appendix F, Smart Meter Model, Tab 2 Smart Meter Costs

a) Please provide a breakdown and explanation of costs for 1.5.1 Customer Equipment.
b) For 1.5.1 Customer Equipment, please discuss THESL's treatment and tracking of labour and associated costs, and material and parts cost for customer-owned equipment.
c) Please provide a breakdown and explanation of costs for 1.5.5 Program Management.
d) Please explain the reason for the increase in costs in 2010 compared to 2009 for 1.6.1 Capital Costs Beyond Minimum Functionality.
e) Please provide a breakdown and explanation of costs for 2.5.3 Program Management.
f) Please provide a breakdown and explanation of costs for 2.5.6 Other AMI Expenses.

RESPONSE:

a) The costs contained in 1.5.1 relate to contractor costs required to repair customer equipment damaged during the installation of smart meters or related components. THESL is unable to breakdown these costs ($73K in 2008, $141K in 2009, and $28K in 2010) into any additional sub-categories.

b) In the event that customer owned equipment was damaged during the installation of a smart meter, THESL would repair the equipment and restore it to working condition. To that end, THESL contracted two licensed electrical contract firms to perform any required meter base repairs. Typical repairs would require a meter base change and/or standpipe repair or replacement. All costs associated with this work were tracked using standard operating practices.

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

c) This cost category relates to engineering capital associated with the Smart Meter program. Engineering capital represents labour costs that are capitalized but not directly attributable to the Smart Meter program. These consist of the labour costs of technologists and design supervisors for engineering, design and planning work that is performed on distribution assets in order to allow for the installation of smart meters.

d) The approximately $40K increase in this cost category in 2010 over 2009 is a result of the need to install a higher number of meters with advanced technical capabilities. This is partly attributable to the higher number of meters required to be installed in costly and/or difficult to access locations.

e) Category 2.5.3 is comprised of various employee expenses related to management, supervision, and planning tasks associated with the installation of smart meters and the implantation of the smart meter program. It includes salaries, transportation costs, and other various other assorted employee expenses (communication costs, minor equipment, etc.).

f) Of the costs shown in category 2.5.6 ($100K in 2008, $745K in 2009, and $60K in 2010), a large majority (approximately $50K, $600K, and $50K, respectively) are associated with the installation of phone line infrastructure required to connect collector meters with THESL's metering and billing system. The remainder of the expenses relates to associated communication components.

RESPONSES TO INTERROGATORIES OF VULNERABLE ENERGY CONSUMERS COALITION

INTERROGATORY 9:

Reference(s): none provided

Please provide a breakdown of the positions and cost of additional incremental permanent and contract staff hired by year for the deployment of smart meters and implementation of TOU rates.

RESPONSE:

THESL does not record positions and costs in the manner requested. A majority of the smart meter installations and work was performed by existing THESL staff, after appropriate work reprioritization (employees re-assigned or partially re-assigned from other areas to the smart meter project). While some new employees who were brought on during this period may have been involved in smart meter installations, and certain others may have taken on roles previously held by employees re-assigned to perform smart meter installations, THESL cannot provide a specific number of net employee additions in connection with smart meter deployment and TOU rate implementation.

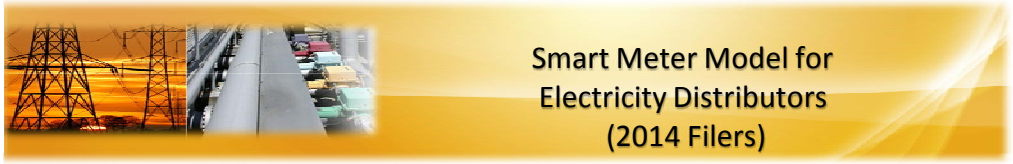
Smart Meter Model for Electricity Distributors (2014 Filers)

Version **4.00**

Utility Name	Toronto Hydro-Electric System Limited
Assigned EB Number	
Name and Title	
Phone Number	
Email Address	
Date	
Last COS Re-based Year	**2011**

Note: Drop-down lists are shaded blue; Input cells are shaded green.

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 2014, distributors that have completed their deployments by the end of 2013 are not expected to enter any capital costs. However, for OM&A, regardless of whether a distributor has deployments in 2014, distributors should enter the forecasted OM&A for 2014 for all smart meters in service.

Smart Meter Capital Cost and Operational Expense Data		2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
		Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
Smart Meter Installation Plan											
Actual/Planned number of Smart Meters installed during the Calendar Year											
Residential		191,370	202,882	144,242	41,555	24,468					604517
General Service < 50 kW		2,070	7,564	10,466	13,166	15,693					48959
Actual/Planned number of Smart Meters installed (Residential and GS < 50 kW only)		193440	210446	154708	54721	40161	0	0	0	0	653476
Percentage of Residential and GS < 50 kW Smart Meter Installations Completed		29.60%	61.81%	85.48%	93.85%	100.00%	0.00%	100.00%	0.00%	38.19%	100.00%
Actual/Planned number of GS > 50 kW meters installed		560	4,206	2,505	2,666	3,200					13137
Other (please identify)				218	279	32					529
Total Number of Smart Meters installed or planned to be installed		194000	214652	157431	57666	43393	0	0	0	0	667142
1 Capital Costs											
1.1 ADVANCED METERING COMMUNICATION DEVICE (AMCD)	**Asset Type** (Asset type must be selected to enable calculations)	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
1.1.1 Smart Meters *(may include new meters and modules, etc.)*	Smart Meter			17,601,781	9,666,499	7,443,438					$ 34,711,718
1.1.2 Installation Costs *(may include socket kits, labour, vehicle, benefits, etc.)*	Smart Meter			6,401,179	4,613,493	4,869,991					$ 15,884,663
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)		$ -	$ -	$ 24,002,959	$ 14,279,993	$ 12,313,429	$ -	$ -	$ -	$ -	$ 50,596,381
1.2 ADVANCED METERING REGIONAL COLLECTOR (AMRC) (includes LAN)	**Asset Type**	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
1.2.1 Collectors	Smart Meter			177,221	236,420	25,438					$ 439,079
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			64,576	124,920	15,992					$ 205,488
Total Advanced Metering Regional Collector (AMRC) (Includes LAN)		$ -	$ -	$ 241,797	$ 361,339	$ 41,430	$ -	$ -	$ -	$ -	$ 644,566

	Asset Type											
1.3 ADVANCED METERING CONTROL COMPUTER (AMCC)		Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast		
1.3.1 Computer Hardware	Computer Hardware			0	24,018	0					$	24,018
1.3.2 Computer Software	Computer Software			781,744	210,398	161,846					$	1,153,988
1.3.3 Computer Software Licences & Installation (includes hardware and software) *(may include AS/400 disk space, backup and recovery computer, UPS, etc.)*				0	0	0					$	-
Total Advanced Metering Control Computer (AMCC)		$ -	$ -	$ 781,744	$ 234,415	$ 161,846	$ -	$ -	$ -	$ -	$	1,178,005

	Asset Type											
1.4 WIDE AREA NETWORK (WAN)		Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast		
1.4.1 Activiation Fees				0	0	0					$	-
Total Wide Area Network (WAN)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$	-

	Asset Type											
1.5 OTHER AMI CAPITAL COSTS RELATED TO MINIMUM FUNCTIONALITY		Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast		
1.5.1 Customer Equipment *(including repair of damaged equipment)*	Smart Meter			73,581	141,254	28,877					$	243,712
1.5.2 AMI Interface to CIS											$	-
1.5.3 Professional Fees											$	-
1.5.4 Integration											$	-
1.5.5 Program Management	Smart Meter			1,111,641	1,071,016	1,174,121					$	3,356,778
1.5.6 Other AMI Capital											$	-
Total Other AMI Capital Costs Related to Minimum Functionality		$ -	$ -	$ 1,185,222	$ 1,212,270	$ 1,202,998	$ -	$ -	$ -	$ -	$	3,600,490
Total Capital Costs Related to Minimum Functionality		$ -	$ -	$ 26,211,722	$ 16,088,017	$ 13,719,703	$ -	$ -	$ -	$ -	$	56,019,442

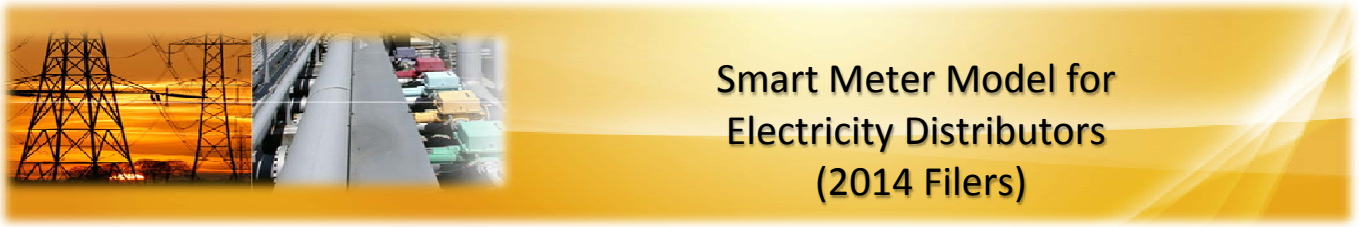
	Asset Type											
1.6 CAPITAL COSTS BEYOND MINIMUM FUNCTIONALITY *(Please provide a descriptive title and identify nature of beyond minimum functionality costs)*		Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast		
1.6.1 Costs related to technical capabilities in the smart meters or related communications infrastructure that exceed those specified in O.Reg 425/06	Smart Meter			5,809	7,980	46,219					$	60,008
1.6.2 Costs for deployment of smart meters to customers other than residential and small general service	Smart Meter			3,764,930	3,841,926	4,087,754					$	11,694,609
1.6.3 Costs for TOU rate implementation, CIS system upgrades, web presentation, integration with the MDM/R, etc.	Computer Software			4,830,071	2,895,265	1,945,709					$	9,671,044
Total Capital Costs Beyond Minimum Functionality		$ -	$ -	$ 8,600,809	$ 6,745,170	$ 6,079,682	$ -	$ -	$ -	$ -	$	21,425,661
Total Smart Meter Capital Costs		$ -	$ -	$ 34,812,531	$ 22,833,187	$ 19,799,385	$ -	$ -	$ -	$ -	$	77,445,103

2 OM&A Expenses

2.1 ADVANCED METERING COMMUNICATION DEVICE (AMCD)	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
2.1.1 Maintenance *(may include meter reverification costs, etc.)*										$ -
2.1.2 Other *(please specifiy)*										$ -
Total Incremental AMCD OM&A Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2.2 ADVANCED METERING REGIONAL COLLECTOR (AMRC) (includes LAN)										
2.2.1 Maintenance										$ -
2.2.2 Other *(please specifiy)*										$ -
Total Incremental AMRC OM&A Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2.3 ADVANCED METERING CONTROL COMPUTER (AMCC)										
2.3.1 Hardware Maintenance *(may include server support, etc.)*										$ -
2.3.1 Software Maintenance *(may include maintenance support, etc.)*										$ -
2.3.2 Other *(please specifiy)*										$ -
Total Incremental AMCC OM&A Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2.4 WIDE AREA NETWORK (WAN)										
2.4.1 WAN Maintenance										$ -
2.4.2 Other *(please specifiy)*										$ -
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.)			223,287	1,562,209	1,939,852					$ 3,725,348
2.5.3 Program Management			419,707	213,750	391,555					$ 1,025,012
2.5.4 Change Management (may include training, etc.)										$ -
2.5.5 Administration Costs										$ -
2.5.6 Other AMI Expenses *(please specify)*			108,471	745,395	60,265					$ 914,132
Total Other AMI OM&A Costs Related to Minimum Functionality	$ -	$ -	$ 751,465	$ 2,521,354	$ 2,391,673	$ -	$ -	$ -	$ -	$ 5,664,492
TOTAL OM&A COSTS RELATED TO MINIMUM FUNCTIONALITY	$ -	$ -	$ 751,465	$ 2,521,354	$ 2,391,673	$ -	$ -	$ -	$ -	$ 5,664,492
2.6 OM&A COSTS RELATED TO BEYOND MINIMUM FUNCTIONALITY *(Please provide a descriptive title and identify nature of beyond minimum functionality costs)*	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Audited Actual	Forecast	Forecast	
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			111,230	610,712	718,650					$ 1,440,592
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	$ -	$ -	$ 111,230	$ 610,712	$ 718,650	$ -	$ -	$ -	$ -	$ 1,440,592
Total Smart Meter OM&A Costs	$ -	$ -	$ 862,695	$ 3,132,066	$ 3,110,323	$ -	$ -	$ -	$ -	$ 7,105,084

3 Aggregate Smart Meter Costs by Category

3.1	**Capital**										
3.1.1	Smart Meter	$ -	$ -	$ 29,200,717	$ 19,703,507	$ 17,691,830	$ -	$ -	$ -	$ -	$ 66,596,054
3.1.2	Computer Hardware	$ -	$ -	$ -	$ 24,018	$ -	$ -	$ -	$ -	$ -	$ 24,018
3.1.3	Computer Software	$ -	$ -	$ 5,611,815	$ 3,105,662	$ 2,107,555	$ -	$ -	$ -	$ -	$ 10,825,032
3.1.4	Tools & Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3.1.5	Other Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3.1.6	Applications Software	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3.1.7	**Total Capital Costs**	**$ -**	**$ -**	**$ 34,812,531**	**$ 22,833,187**	**$ 19,799,385**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 77,445,103**
3.2	**OM&A Costs**										
3.2.1	**Total OM&A Costs**	**$ -**	**$ -**	**$ 862,695**	**$ 3,132,066**	**$ 3,110,323**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 7,105,084**



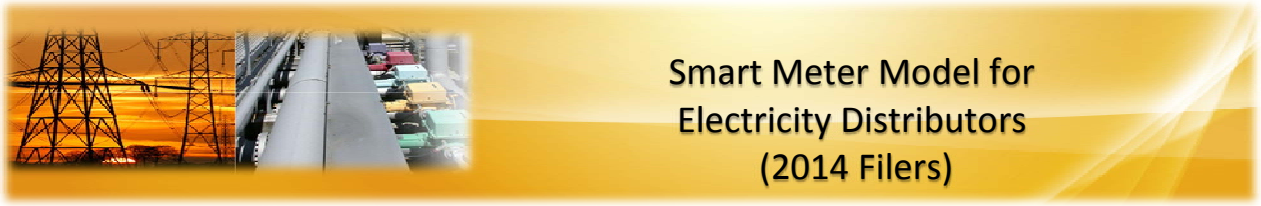
	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cost of Capital									
Capital Structure[1]									
Deemed Short-term Debt Capitalization			4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Deemed Long-term Debt Capitalization		0.0%	56.0%	56.0%	56.0%	56.0%	56.0%	56.0%	56.0%
Deemed Equity Capitalization	100.0%	100.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Preferred Shares									
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of Capital Parameters									
Deemed Short-term Debt Rate			4.47%	1.33%	2.30%	2.46%	2.46%	2.46%	2.46%
Long-term Debt Rate (actual/embedded/deemed)[2]	5.80%	5.80%	5.48%	5.50%	5.37%	5.38%	5.38%	5.38%	5.38%
Target Return on Equity (ROE)	9.0%	9.00%	8.57%	8.01%	9.85%	9.58%	9.58%	9.58%	9.58%
Return on Preferred Shares									
WACC	9.00%	9.00%	6.68%	6.34%	7.04%	6.94%	6.94%	6.94%	6.94%
Working Capital Allowance									
Working Capital Allowance Rate			12.5%	12.6%	12.5%	12.9%	12.9%	12.9%	12.9%
(% of the sum of Cost of Power + controllable expenses)									
Taxes/PILs									
Aggregate Corporate Income Tax Rate	36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.50%	26.50%	26.50%
Capital Tax (until July 1st, 2010)	0.30%	0.225%	0.225%	0.225%	0.075%	0.00%	0.00%	0.00%	0.00%
Depreciation Rates									
(expressed as expected useful life in years)									
Smart Meters - years	15	15	15	15	15	15	15	15	15
- rate (%)	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%
Computer Hardware - years	5	5	5	5	5	5	5	5	5
- rate (%)	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
Computer Software - years	5	5	5	5	5	5	5	5	5
- rate (%)	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
Tools & Equipment - years	10	10	10	10	10	10	10	10	10
- rate (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Other Equipment - years	10	10	10	10	10	10	10	10	10
- rate (%)	10.00%	10.00%	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	47	47
Smart Meters - CCA Rate	8%	8%	8%	8%	8%	8%	8%	8%	8%
Computer Equipment - CCA Class			50	52	52	52	52	52	52
Computer Equipment - CCA Rate			55%	100%	100%	100%	100%	100%	100%
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			12	12	12	12	12	12	12
Applications Software - CCA Rate			100%	100%	100%	100%	100%	100%	100%

Assumptions

[1] *Planned smart meter installations occur evenly throughout the year.*

[2] *Fiscal calendar year (January 1 to December 31) used.*

3 *Amortization is done on a striaght line basis and has the "half-year" rule applied.*



	2006	2007	2008	2009	2010	2011	2012	2013	2014
Net Fixed Assets - Smart Meters									
Gross Book Value									
Opening Balance		$ -	$ -	$ 29,200,717	$ 48,904,224	$ 66,596,054	$ 66,596,054	$ 66,596,054	$ 66,596,054
Capital Additions during year (from Smart Meter Costs)	$ -	$ -	$ 29,200,717	$ 19,703,507	$ 17,691,830	$ -	$ -	$ -	$ -
Retirements/Removals (if applicable)									
Closing Balance	$ -	$ -	$ 29,200,717	$ 48,904,224	$ 66,596,054	$ 66,596,054	$ 66,596,054	$ 66,596,054	$ 66,596,054
Accumulated Depreciation									
Opening Balance		$ -	$ -	-$ 1,128,299	-$ 3,786,436	-$ 7,673,705	-$ 12,121,458	-$ 16,569,211	-$ 21,016,964
Amortization expense during year	$ -	$ -	-$ 1,128,299	-$ 2,658,137	-$ 3,887,269	-$ 4,447,753	-$ 4,447,753	-$ 4,447,753	-$ 4,447,754
Retirements/Removals (if applicable)									
Closing Balance	$ -	$ -	-$ 1,128,299	-$ 3,786,436	-$ 7,673,705	-$ 12,121,458	-$ 16,569,211	-$ 21,016,964	-$ 25,464,718
Net Book Value									
Opening Balance	$ -	$ -	$ -	$ 28,072,418	$ 45,117,788	$ 58,922,349	$ 54,474,596	$ 50,026,843	$ 45,579,090
Closing Balance	$ -	$ -	$ 28,072,418	$ 45,117,788	$ 58,922,349	$ 54,474,596	$ 50,026,843	$ 45,579,090	$ 41,131,336
Average Net Book Value	$ -	$ -	$ 14,036,209	$ 36,595,103	$ 52,020,068	$ 56,698,472	$ 52,250,719	$ 47,802,966	$ 43,355,213
Net Fixed Assets - Computer Hardware									
Gross Book Value									
Opening Balance		$ -	$ -	$ -	$ 24,018	$ 24,018	$ 24,018	$ 24,018	$ 24,018
Capital Additions during year (from Smart Meter Costs)	$ -	$ -	$ -	$ 24,018	$ -	$ -	$ -	$ -	$ -
Retirements/Removals (if applicable)									
Closing Balance	$ -	$ -	$ -	$ 24,018	$ 24,018	$ 24,018	$ 24,018	$ 24,018	$ 24,018
Accumulated Depreciation									
Opening Balance	$ -	$ -	$ -	$ -	-$ 2,402	-$ 7,205	-$ 12,009	-$ 16,812	-$ 21,616
Amortization expense during year	$ -	$ -	$ -	-$ 2,402	-$ 4,804	-$ 4,804	-$ 4,804	-$ 4,804	-$ 2,402
Retirements/Removals (if applicable)									
Closing Balance	$ -	$ -	$ -	-$ 2,402	-$ 7,205	-$ 12,009	-$ 16,812	-$ 21,616	-$ 24,018
Net Book Value									
Opening Balance	$ -	$ -	$ -	$ -	$ 21,616	$ 16,812	$ 12,009	$ 7,205	$ 2,402
Closing Balance	$ -	$ -	$ -	$ 21,616	$ 16,812	$ 12,009	$ 7,205	$ 2,402	$ -
Average Net Book Value	$ -	$ -	$ -	$ 10,808	$ 19,214	$ 14,411	$ 9,607	$ 4,804	$ 1,201

Net Fixed Assets - Computer Software (including Applications Software)

Gross Book Value										
Opening Balance		$ -	$ -	$ 5,611,815	$ 8,717,477	$ 10,825,032	$ 10,825,032	$ 10,825,032	$ 10,825,032	$ 10,825,032
Capital Additions during year (from Smart Meter Costs)	$ -	$ -	$ -	$ 5,611,815	$ 3,105,662	$ 2,107,555	$ -	$ -	$ -	$ -
Retirements/Removals (if applicable)										
Closing Balance	$ -	$ -	$ -	$ 5,611,815	$ 8,717,477	$ 10,825,032	$ 10,825,032	$ 10,825,032	$ 10,825,032	$ 10,825,032
Accumulated Depreciation										
Opening Balance	$ -	$ -	$ -	$ -	-$ 802,608	-$ 2,267,081	-$ 4,175,928	-$ 6,084,776	-$ 7,595,560	
Amortization expense during year	$ -	$ -	$ -	-$ 802,608	-$ 1,464,473	-$ 1,908,848	-$ 1,908,848	-$ 1,510,785	-$ 884,916	
Retirements/Removals (if applicable)										
Closing Balance	$ -	$ -	$ -	-$ 802,608	-$ 2,267,081	-$ 4,175,928	-$ 6,084,776	-$ 7,595,560	-$ 8,480,477	
Net Book Value										
Opening Balance	$ -	$ -	$ -	$ 5,611,815	$ 7,914,868	$ 8,557,951	$ 6,649,103	$ 4,740,256	$ 3,229,471	
Closing Balance	$ -	$ -	$ 5,611,815	$ 7,914,868	$ 8,557,951	$ 6,649,103	$ 4,740,256	$ 3,229,471	$ 2,344,555	
Average Net Book Value	$ -	$ -	$ 2,805,907	$ 6,763,341	$ 8,236,410	$ 7,603,527	$ 5,694,680	$ 3,984,864	$ 2,787,013	

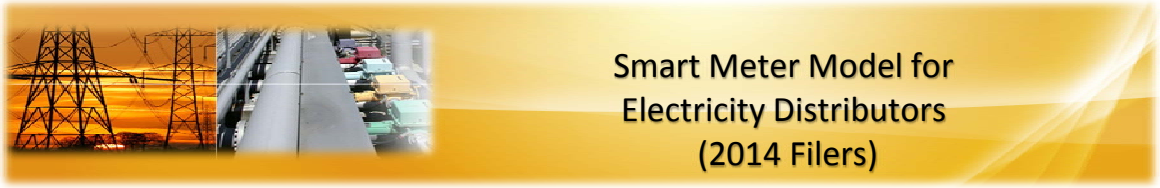
Net Fixed Assets - Tools and Equipment

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	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

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	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Average Net Fixed Asset Values (from Sheet 4)									
Smart Meters	$ -	$ -	$ 14,036,209	$ 36,595,103	$ 52,020,068	$ 56,698,472	$ 52,250,719	$ 47,802,966	$ 43,355,213
Computer Hardware	$ -	$ -	$ -	$ 10,808	$ 19,214	$ 14,411	$ 9,607	$ 4,804	$ 1,201
Computer Software	$ -	$ -	$ 2,805,907	$ 6,763,341	$ 8,236,410	$ 7,603,527	$ 5,694,680	$ 3,984,864	$ 2,787,013
Tools & Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Net Fixed Assets	**$ -**	**$ -**	**$ 16,842,116**	**$ 43,369,252**	**$ 60,275,692**	**$ 64,316,410**	**$ 57,955,006**	**$ 51,792,633**	**$ 46,143,427**
Working Capital									
Operating Expenses (from Sheet 2)	$ -	$ -	$ 862,695	$ 3,132,066	$ 3,110,323	$ -	$ -	$ -	$ -
Working Capital Factor (from Sheet 3)	0%	0%	12%	13%	12%	13%	13%	13%	13%
Working Capital Allowance	$ -	$ -	$ 107,822	$ 393,342	$ 387,235	$ -	$ -	$ -	$ -
Incremental Smart Meter Rate Base	**$ -**	**$ -**	**$ 16,949,938**	**$ 43,762,594**	**$ 60,662,927**	**$ 64,316,410**	**$ 57,955,006**	**$ 51,792,633**	**$ 46,143,427**
Return on Rate Base									
Capital Structure									
Deemed Short Term Debt	$ -	$ -	$ 677,998	$ 1,750,504	$ 2,426,517	$ 2,572,656	$ 2,318,200	$ 2,071,705	$ 1,845,737
Deemed Long Term Debt	$ -	$ -	$ 9,491,965	$ 24,507,052	$ 33,971,239	$ 36,017,189	$ 32,454,803	$ 29,003,875	$ 25,840,319
Equity	$ -	$ -	$ 6,779,975	$ 17,505,037	$ 24,265,171	$ 25,726,564	$ 23,182,002	$ 20,717,053	$ 18,457,371
Preferred Shares	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Capitalization	$ -	$ -	$ 16,949,938	$ 43,762,594	$ 60,662,927	$ 64,316,410	$ 57,955,006	$ 51,792,633	$ 46,143,427
Return on									
Deemed Short Term Debt	$ -	$ -	$ 30,306	$ 23,282	$ 55,810	$ 63,287	$ 57,028	$ 50,964	$ 45,405
Deemed Long Term Debt	$ -	$ -	$ 520,160	$ 1,347,888	$ 1,824,256	$ 1,937,725	$ 1,746,068	$ 1,560,408	$ 1,390,209
Equity	$ -	$ -	$ 581,044	$ 1,402,154	$ 2,390,119	$ 2,464,605	$ 2,220,836	$ 1,984,694	$ 1,768,216
Preferred Shares	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Return on Capital	$ -	$ -	$ 1,131,510	$ 2,773,323	$ 4,270,185	$ 4,465,617	$ 4,023,932	$ 3,596,066	$ 3,203,830
Operating Expenses	$ -	$ -	$ 862,695	$ 3,132,066	$ 3,110,323	$ -	$ -	$ -	$ -
Amortization Expenses (from Sheet 4)									
Smart Meters	$ -	$ -	$ 1,128,299	$ 2,658,137	$ 3,887,269	$ 4,447,753	$ 4,447,753	$ 4,447,753	$ 4,447,754
Computer Hardware	$ -	$ -	$ -	$ 2,402	$ 4,804	$ 4,804	$ 4,804	$ 4,804	$ 2,402
Computer Software	$ -	$ -	$ -	$ 802,608	$ 1,464,473	$ 1,908,848	$ 1,908,848	$ 1,510,785	$ 884,916
Tools & Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Amortization Expense in Year	$ -	$ -	$ 1,128,299	$ 3,463,147	$ 5,356,545	$ 6,361,404	$ 6,361,404	$ 5,963,341	$ 5,335,072
Incremental Revenue Requirement before Taxes/PILs	$ -	$ -	$ 3,122,504	$ 9,368,536	$ 12,737,052	$ 10,827,021	$ 10,385,336	$ 9,559,407	$ 8,538,902
Calculation of Taxable Income									
Incremental Operating Expenses	$ -	$ -	$ 862,695	$ 3,132,066	$ 3,110,323	$ -	$ -	$ -	$ -
Amortization Expense	$ -	$ -	$ 1,128,299	$ 3,463,147	$ 5,356,545	$ 6,361,404	$ 6,361,404	$ 5,963,341	$ 5,335,072
Interest Expense	$ -	$ -	$ 550,466	$ 1,371,170	$ 1,880,065	$ 2,001,012	$ 1,803,096	$ 1,611,372	$ 1,435,614
Net Income for Taxes/PILs	$ -	$ -	$ 581,044	$ 1,402,154	$ 2,390,119	$ 2,464,605	$ 2,220,836	$ 1,984,694	$ 1,768,216
Grossed-up Taxes/PILs (from Sheet 7)	$ -	$ -	-$ 428,944.54	-$ 1,751,708.23	$ 429,783.69	$ 1,229,683.48	$ 1,552,182.93	$ 1,446,891.46	$ 1,255,821.08
Revenue Requirement, including Grossed-up Taxes/PILs	$ -	$ -	$ 2,693,560	$ 7,616,828	$ 13,166,836	$ 12,056,704	$ 11,937,519	$ 11,006,299	$ 9,794,723



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 Audited Actual	2013 Forecast	2014 Forecast
Opening UCC	$ -	$ -	$ -	$ 28,032,687.84	$ 44,705,439.82	$ 58,113,161.44	$ 53,464,108.52	$ 49,186,979.84	$ 45,252,021.45
Capital Additions	$ -	$ -	$ 29,200,716.50	$ 19,703,507.30	$ 17,691,830.00	$ -	$ -	$ -	$ -
Retirements/Removals (if applicable)									
UCC Before Half Year Rule	$ -	$ -	$ 29,200,716.50	$ 47,736,195.14	$ 62,397,269.82	$ 58,113,161.44	$ 53,464,108.52	$ 49,186,979.84	$ 45,252,021.45
Half Year Rule (1/2 Additions - Disposals)	$ -	$ -	$ 14,600,358.25	$ 9,851,753.65	$ 8,845,915.00	$ -	$ -	$ -	$ -
Reduced UCC	$ -	$ -	$ 14,600,358.25	$ 37,884,441.49	$ 53,551,354.82	$ 58,113,161.44	$ 53,464,108.52	$ 49,186,979.84	$ 45,252,021.45
CCA Rate Class	47	47	47	47	47	47	47	47	47
CCA Rate	8%	8%	8%	8%	8%	8%	8%	8%	8%
CCA	$ -	$ -	$ 1,168,028.66	$ 3,030,755.32	$ 4,284,108.39	$ 4,649,052.91	$ 4,277,128.68	$ 3,934,958.39	$ 3,620,161.72
Closing UCC	$ -	$ -	$ 28,032,687.84	$ 44,705,439.82	$ 58,113,161.44	$ 53,464,108.52	$ 49,186,979.84	$ 45,252,021.45	$ 41,631,859.74

UCC - Computer Equipment

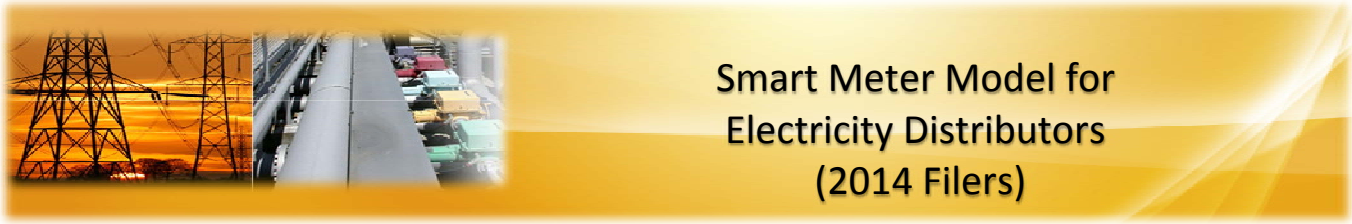
	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 Audited Actual	2013 Forecast	2014 Forecast
Opening UCC	$ -	$ -	$ -	$ 4,068,565.51	$ 1,564,839.75	$ 1,053,777.50	$ -	$ -	$ -
Capital Additions Computer Hardware	$ -	$ -	$ -	$ 24,017.50	$ -	$ -	$ -	$ -	$ -
Capital Additions Computer Software	$ -	$ -	$ 5,611,814.50	$ 3,105,662.00	$ 2,107,555.00	$ -	$ -	$ -	$ -
Retirements/Removals (if applicable)									
UCC Before Half Year Rule	$ -	$ -	$ 5,611,814.50	$ 7,198,245.01	$ 3,672,394.75	$ 1,053,777.50	$ -	$ -	$ -
Half Year Rule (1/2 Additions - Disposals)	$ -	$ -	$ 2,805,907.25	$ 1,564,839.75	$ 1,053,777.50	$ -	$ -	$ -	$ -
Reduced UCC	$ -	$ -	$ 2,805,907.25	$ 5,633,405.26	$ 2,618,617.25	$ 1,053,777.50	$ -	$ -	$ -
CCA Rate Class	0	0	50	52	52	52	52	52	52
CCA Rate	0%	0%	55%	100%	100%	100%	100%	100%	100%
CCA	$ -	$ -	$ 1,543,248.99	$ 5,633,405.26	$ 2,618,617.25	$ 1,053,777.50	$ -	$ -	$ -
Closing UCC	$ -	$ -	$ 4,068,565.51	$ 1,564,839.75	$ 1,053,777.50	$ -	$ -	$ -	$ -

UCC - General Equipment

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 Audited Actual	2013 Forecast	2014 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	8	8	8	8	8	8	8
CCA Rate	0%	0%	20%	20%	20%	20%	20%	20%	20%
CCA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Closing UCC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

UCC - Applications Software

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 Audited Actual	2013 Forecast	2014 Forecast
Opening UCC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Capital Additions Applications Software	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Retirements/Removals (if applicable)									
UCC Before Half Year Rule	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Half Year Rule (1/2 Additions - Disposals)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Reduced UCC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CCA Rate Class	0	0	12	12	12	12	12	12	12
CCA Rate	0%	0%	100%	100%	100%	100%	100%	100%	100%
CCA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Closing UCC	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -



PILs Calculation

	2006 Audited Actual	2007 Audited Actual	2008 Audited Actual	2009 Audited Actual	2010 Audited Actual	2011 Audited Actual	2012 Audited Actual	2013 Forecast	2014 Forecast
INCOME TAX									
Net Income	$ -	$ -	$ 581,043.87	$ 1,402,153.50	$ 2,390,119.32	$ 2,464,604.82	$ 2,220,835.82	$ 1,984,693.71	$ 1,768,216.11
Amortization	$ -	$ -	$ 1,128,299.00	$ 3,463,147.00	$ 5,356,545.00	$ 6,361,404.00	$ 6,361,404.00	$ 5,963,341.00	$ 5,335,072.00
CCA - Smart Meters	$ -	$ -	-$ 1,168,028.66	-$ 3,030,755.32	-$ 4,284,108.39	-$ 4,649,052.91	-$ 4,277,128.68	-$ 3,934,958.39	-$ 3,620,161.72
CCA - Computers	$ -	$ -	-$ 1,543,248.99	-$ 5,633,405.26	-$ 2,618,617.25	-$ 1,053,777.50	$ -	$ -	$ -
CCA - Applications Software	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CCA - Other Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Change in taxable income	$ -	$ -	-$ 1,001,934.77	-$ 3,798,860.08	$ 843,938.69	$ 3,123,178.41	$ 4,305,111.14	$ 4,013,076.32	$ 3,483,126.40
Tax Rate (from Sheet 3)	36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.50%	26.50%	26.50%
Income Taxes Payable	$ -	$ -	-$ 335,648.15	-$ 1,253,623.83	$ 261,620.99	$ 882,297.90	$ 1,140,854.45	$ 1,063,465.23	$ 923,028.50
ONTARIO CAPITAL TAX									
Smart Meters	$ -	$ -	$ 28,072,417.50	$ 45,117,787.80	$ 58,922,348.80	$ 54,474,595.80	$ 50,026,842.80	$ 45,579,089.80	$ 41,131,335.80
Computer Hardware	$ -	$ -	$ -	$ 21,615.75	$ 16,812.25	$ 12,008.75	$ 7,205.25	$ 2,401.75	$ -
Computer Software (Including Application Software)	$ -	$ -	$ 5,611,814.50	$ 7,914,868.25	$ 8,557,950.75	$ 6,649,103.25	$ 4,740,255.75	$ 3,229,471.25	$ 2,344,555.00
Tools & Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Rate Base	$ -	$ -	$ 33,684,232.00	$ 53,054,271.80	$ 67,497,111.80	$ 61,135,707.80	$ 54,774,303.80	$ 48,810,962.80	$ 43,475,890.80
Less: Exemption									
Deemed Taxable Capital	$ -	$ -	$ 33,684,232.00	$ 53,054,271.80	$ 67,497,111.80	$ 61,135,707.80	$ 54,774,303.80	$ 48,810,962.80	$ 43,475,890.80
Ontario Capital Tax Rate (from Sheet 3)	0.300%	0.225%	0.225%	0.225%	0.075%	0.000%	0.000%	0.000%	0.000%
Net Amount (Taxable Capital x Rate)	$ -	$ -	$ 75,789.52	$ 119,372.11	$ 50,622.83	$ -	$ -	$ -	$ -
Change in Income Taxes Payable	$ -	$ -	-$ 335,648.15	-$ 1,253,623.83	$ 261,620.99	$ 882,297.90	$ 1,140,854.45	$ 1,063,465.23	$ 923,028.50
Change in OCT	$ -	$ -	$ 75,789.52	$ 119,372.11	$ 50,622.83	$ -	$ -	$ -	$ -
PILs	$ -	$ -	-$ 259,858.63	-$ 1,134,251.71	$ 312,243.83	$ 882,297.90	$ 1,140,854.45	$ 1,063,465.23	$ 923,028.50
Gross Up PILs									
Tax Rate	36.12%	36.12%	33.50%	33.00%	31.00%	28.25%	26.50%	26.50%	26.50%
Change in Income Taxes Payable	$ -	$ -	-$ 504,734.06	-$ 1,871,080.34	$ 379,160.86	$ 1,229,683.48	$ 1,552,182.93	$ 1,446,891.46	$ 1,255,821.08
Change in OCT	$ -	$ -	$ 75,789.52	$ 119,372.11	$ 50,622.83	$ -	$ -	$ -	$ -
PILs	**$ -**	**$ -**	**-$ 428,944.54**	**-$ 1,751,708.23**	**$ 429,783.69**	**$ 1,229,683.48**	**$ 1,552,182.93**	**$ 1,446,891.46**	**$ 1,255,821.08**

Smart Meter Model for Electricity Distributors (2014 Filers)

This worksheet calculates the funding adder revenues.

Account 1555 - Sub-account Funding Adder Revenues

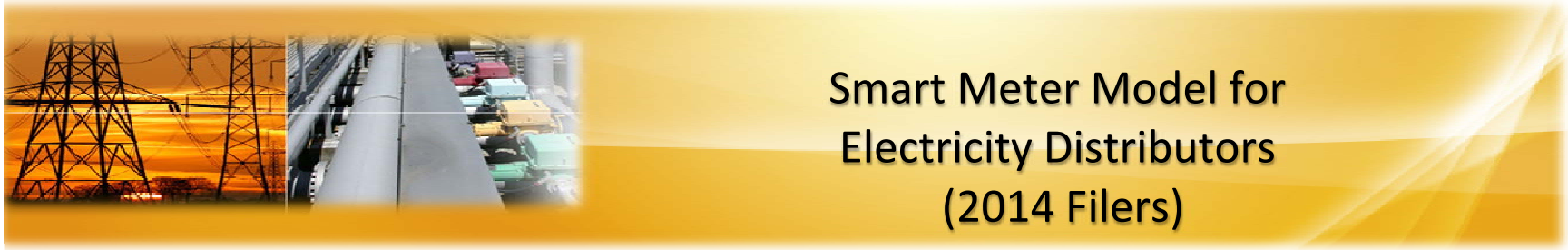
Interest Rates	Approved Deferral and Variance Accounts	CWIP	Date	*Year*	*Quarter*	Opening Balance (Principal)	Funding Adder Revenues	Interest Rate	Interest	Closing Balance	Annual amounts	Board Approved Smart Meter Funding Adder (from Tariff)
2006 Q1			Jan-06	*2006*	*Q1*	$ -		0.00%	$ -	$ -		
2006 Q2	4.14%	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*	$ -		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%	$ -	$ -		

Smart Meter Model for Electricity Distributors (2014 Filers)

This worksheet calculates the funding adder revenues.

Account 1555 - Sub-account Funding Adder Revenues

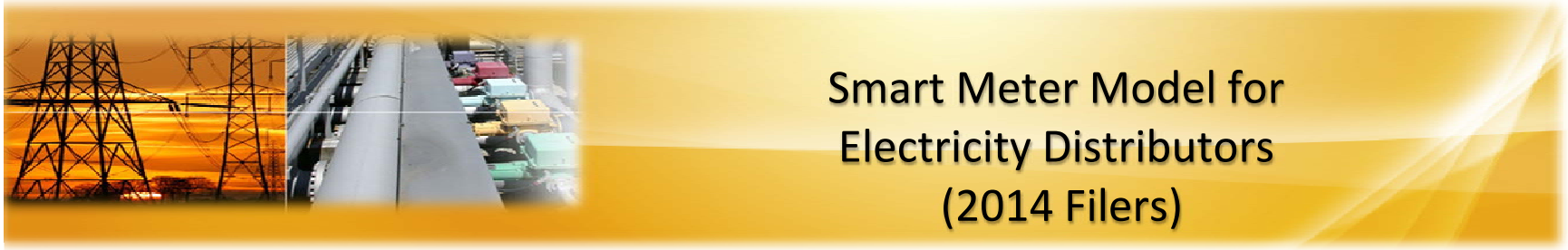
Interest Rates	Approved Deferral and Variance Accounts	CWIP	Date	Year	Quarter	Opening Balance (Principal)	Funding Adder Revenues	Interest Rate	Interest	Closing Balance	Annual amounts	Board Approved Smart Meter Funding Adder (from Tariff)
2011 Q1	1.47%	4.29%	Sep-07	2007	Q3	$ -		4.59%	$ -	$ -		
2011 Q2	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%	3.92%	Dec-07	2007	Q4	$ -		5.14%	$ -	$ -	$ -	
2012 Q1	1.47%	3.92%	Jan-08	2008	Q1	$ -		5.14%	$ -	$ -		
2012 Q2	1.47%	3.51%	Feb-08	2008	Q1	$ -		5.14%	$ -	$ -		
2012 Q3	1.47%	3.51%	Mar-08	2008	Q1	$ -		5.14%	$ -	$ -		
2012 Q4	1.47%	3.23%	Apr-08	2008	Q2	$ -		4.08%	$ -	$ -		
2013 Q1	1.47%	3.23%	May-08	2008	Q2	$ -	$ 479,631.83	4.08%	$ -	$ 479,631.83		
2013 Q2	1.47%	3.23%	Jun-08	2008	Q2	$ 479,631.83	$ 464,459.04	4.08%	$ 1,630.75	$ 945,721.62		
2013 Q3	1.47%	3.23%	Jul-08	2008	Q3	$ 944,090.87	$ 479,922.83	3.35%	$ 2,635.59	$ 1,426,649.30		
2013 Q4			Aug-08	2008	Q3	$ 1,424,013.71	$ 480,129.25	3.35%	$ 3,975.37	$ 1,908,118.32		
2014 Q1			Sep-08	2008	Q3	$ 1,904,142.95	$ 465,094.53	3.35%	$ 5,315.73	$ 2,374,553.21		
2014 Q2			Oct-08	2008	Q4	$ 2,369,237.48	$ 480,511.20	3.35%	$ 6,614.12	$ 2,856,362.81		
2014 Q3			Nov-08	2008	Q4	$ 2,849,748.69	$ 465,234.24	3.35%	$ 7,955.55	$ 3,322,938.48		
2014 Q4			Dec-08	2008	Q4	$ 3,314,982.93	$ 480,670.57	3.35%	$ 9,254.33	$ 3,804,907.83	$ 3,833,034.94	
			Jan-09	2009	Q1	$ 3,795,653.50	$ 480,856.10	2.45%	$ 7,749.46	$ 4,284,259.06		
			Feb-09	2009	Q1	$ 4,276,509.60	$ 435,481.99	2.45%	$ 8,731.21	$ 4,720,722.80		
			Mar-09	2009	Q1	$ 4,711,991.59	$ 482,511.39	2.45%	$ 9,620.32	$ 5,204,123.30		
			Apr-09	2009	Q2	$ 5,194,502.98	$ 516,154.57	1.00%	$ 4,328.75	$ 5,714,986.30		
			May-09	2009	Q2	$ 5,710,657.55	$ 483,087.70	1.00%	$ 4,758.88	$ 6,198,504.13		



This worksheet calculates the funding adder revenues.

Account 1555 - Sub-account Funding Adder Revenues

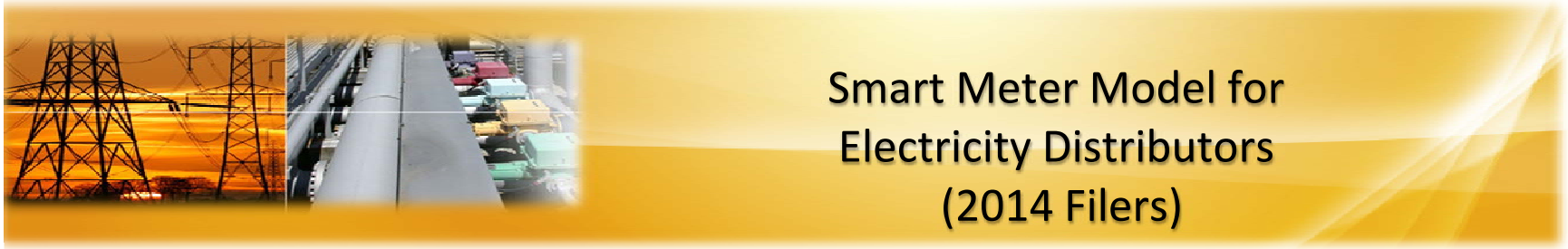
Interest Rates	Approved Deferral and Variance Accounts	CWIP	Date	*Year*	*Quarter*	Opening Balance (Principal)	Funding Adder Revenues	Interest Rate	Interest	Closing Balance	Annual amounts	Board Approved Smart Meter Funding Adder (from Tariff)
			Jun-09	*2009*	*Q2*	$ 6,193,745.25	$ 468,041.78	1.00%	$ 5,161.45	$ 6,666,948.48		
			Jul-09	*2009*	*Q3*	$ 6,661,787.03	$ 483,762.19	0.55%	$ 3,053.32	$ 7,148,602.55		
			Aug-09	*2009*	*Q3*	$ 7,145,549.23	$ 483,949.93	0.55%	$ 3,275.04	$ 7,632,774.19		
			Sep-09	*2009*	*Q3*	$ 7,629,499.15	$ 468,654.43	0.55%	$ 3,496.85	$ 8,101,650.43		
			Oct-09	*2009*	*Q4*	$ 8,098,153.58	$ 484,243.48	0.55%	$ 3,711.65	$ 8,586,108.71		
			Nov-09	*2009*	*Q4*	$ 8,582,397.06	$ 468,914.63	0.55%	$ 3,933.60	$ 9,055,245.29		
			Dec-09	*2009*	*Q4*	$ 9,051,311.69	$ 485,002.37	0.55%	$ 4,148.52	$ 9,540,462.58	$ 5,802,629.61	
			Jan-10	*2010*	*Q1*	$ 9,536,314.06	$ 485,834.41	0.55%	$ 4,370.81	$ 10,026,519.28		
			Feb-10	*2010*	*Q1*	$ 10,022,148.47	$ 440,180.08	0.55%	$ 4,593.48	$ 10,466,922.04		
			Mar-10	*2010*	*Q1*	$ 10,462,328.56	$ 488,054.06	0.55%	$ 4,795.23	$ 10,955,177.84		
			Apr-10	*2010*	*Q2*	$ 10,950,382.61	$ 472,204.63	0.55%	$ 5,018.93	$ 11,427,606.17		
			May-10	*2010*	*Q2*	$ 11,422,587.24	$ 488,011.15	0.55%	$ 5,235.35	$ 11,915,833.75		
			Jun-10	*2010*	*Q2*	$ 11,910,598.40	$ 488,784.41	0.55%	$ 5,459.02	$ 12,404,841.83		
			Jul-10	*2010*	*Q3*	$ 12,399,382.81	$ 489,948.40	0.89%	$ 9,196.21	$ 12,898,527.42		
			Aug-10	*2010*	*Q3*	$ 12,889,331.21	$ 489,646.36	0.89%	$ 9,559.59	$ 13,388,537.16		
			Sep-10	*2010*	*Q3*	$ 13,378,977.57	$ 474,038.78	0.89%	$ 9,922.74	$ 13,862,939.09		
			Oct-10	*2010*	*Q4*	$ 13,853,016.35	$ 490,338.45	1.20%	$ 13,853.02	$ 14,357,207.82		
			Nov-10	*2010*	*Q4*	$ 14,343,354.80	$ 475,019.44	1.20%	$ 14,343.35	$ 14,832,717.59		
			Dec-10	*2010*	*Q4*	$ 14,818,374.24	$ 492,131.62	1.20%	$ 14,818.37	$ 15,325,324.22	$ 5,875,357.89	
			Jan-11	*2011*	*Q1*	$ 15,310,505.85	$ 492,960.15	1.47%	$ 18,755.37	$ 15,822,221.38		
			Feb-11	*2011*	*Q1*	$ 15,803,466.01	$ 493,732.85	1.47%	$ 19,359.25	$ 16,316,558.11		



This worksheet calculates the funding adder revenues.

Account 1555 - Sub-account Funding Adder Revenues

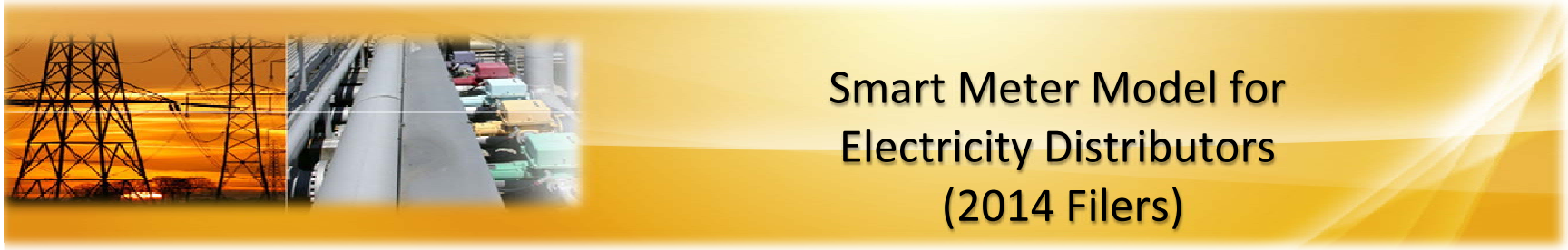
Interest Rates	Approved Deferral and Variance Accounts	CWIP	Date	*Year*	*Quarter*	Opening Balance (Principal)	Funding Adder Revenues	Interest Rate	Interest	Closing Balance	Annual amounts	Board Approved Smart Meter Funding Adder (from Tariff)
			Mar-11	*2011*	*Q1*	$ 16,297,198.86	$ 494,236.30	1.47%	$ 19,964.07	$ 16,811,399.23		
			Apr-11	*2011*	*Q2*	$ 16,791,435.16	$ 477,830.70	1.47%	$ 20,569.51	$ 17,289,835.37		
			May-11	*2011*	*Q2*	$ 17,269,265.86	$ 493,862.96	1.47%	$ 21,154.85	$ 17,784,283.67		
			Jun-11	*2011*	*Q2*	$ 17,763,128.82	$ 479,208.78	1.47%	$ 21,759.83	$ 18,264,097.43		
			Jul-11	*2011*	*Q3*	$ 18,242,337.60	$ 495,394.09	1.47%	$ 22,346.86	$ 18,760,078.55		
			Aug-11	*2011*	*Q3*	$ 18,737,731.69	$ 496,465.77	1.47%	$ 22,953.72	$ 19,257,151.19		
			Sep-11	*2011*	*Q3*	$ 19,234,197.47	$ 480,931.24	1.47%	$ 23,561.89	$ 19,738,690.60		
			Oct-11	*2011*	*Q4*	$ 19,715,128.71	$ 481,269.88	1.47%	$ 24,151.03	$ 20,220,549.62		
			Nov-11	*2011*	*Q4*	$ 20,196,398.59	$ 481,805.41	1.47%	$ 24,740.59	$ 20,702,944.59		
			Dec-11	*2011*	*Q4*	$ 20,678,204.00	$ 498,497.52	1.47%	$ 25,330.80	$ 21,202,032.31	$ 6,130,843.43	
			Jan-12	*2012*	*Q1*	$ 21,176,701.51	$ 483,032.56	1.47%	$ 25,941.46	$ 21,685,675.53		
			Feb-12	*2012*	*Q1*	$ 21,659,734.07	$ 483,296.44	1.47%	$ 26,533.17	$ 22,169,563.68		
			Mar-12	*2012*	*Q1*	$ 22,143,030.51	$ 465,607.85	1.47%	$ 27,125.21	$ 22,635,763.57		
			Apr-12	*2012*	*Q2*	$ 22,608,638.36	$ 483,493.82	1.47%	$ 27,695.58	$ 23,119,827.76		
			May-12	*2012*	*Q2*	$ 23,092,132.18	$ 485,836.28	1.47%	$ 28,287.86	$ 23,606,256.32		
			Jun-12	*2012*	*Q2*	$ 23,577,968.46	$ 484,293.93	1.47%	$ 28,883.01	$ 24,091,145.40		
			Jul-12	*2012*	*Q3*	$ 24,062,262.39	$ 501,405.34	1.47%	$ 29,476.27	$ 24,593,144.00		
			Aug-12	*2012*	*Q3*	$ 24,563,667.73	$ 501,771.00	1.47%	$ 30,090.49	$ 25,095,529.21		
			Sep-12	*2012*	*Q3*	$ 25,065,438.72	$ 503,001.02	1.47%	$ 30,705.16	$ 25,599,144.91		
			Oct-12	*2012*	*Q4*	$ 25,568,439.75	$ 503,953.98	1.47%	$ 31,321.34	$ 26,103,715.07		
			Nov-12	*2012*	*Q4*	$ 26,072,393.73	$ 488,373.96	1.47%	$ 31,938.68	$ 26,592,706.37		



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)
			Dec-12	2012	Q4	$ 26,560,767.69	$ 504,972.85	1.47%	$ 32,536.94	$ 27,098,277.48	$ 6,239,574.20	
			Jan-13	2013	Q1	$ 27,065,740.54	$ 505,708.45	1.47%	$ 33,155.53	$ 27,604,604.52		
			Feb-13	2013	Q1	$ 27,571,448.99	$ 473,710.85	1.47%	$ 33,775.03	$ 28,078,934.87		
			Mar-13	2013	Q1	$ 28,045,159.84	$ 506,803.93	1.47%	$ 34,355.32	$ 28,586,319.09		
			Apr-13	2013	Q2	$ 28,551,963.77	$ 491,046.03	1.47%	$ 34,976.16	$ 29,077,985.96		
			May-13	2013	Q2	$ 29,043,009.80	$ 507,692.70	1.47%	$ 35,577.69	$ 29,586,280.19		
			Jun-13	2013	Q2	$ 29,550,702.50	$ 491,815.27	1.47%	$ 36,199.61	$ 30,078,717.38		
			Jul-13	2013	Q3	$ 30,042,517.77	$ 501,405.34	1.47%	$ 36,802.08	$ 30,580,725.19		
			Aug-13	2013	Q3	$ 30,543,923.11	$ 501,771.00	1.47%	$ 37,416.31	$ 31,083,110.41		
			Sep-13	2013	Q3	$ 31,045,694.10	$ 503,001.02	1.47%	$ 38,030.98	$ 31,586,726.11		
			Oct-13	2013	Q4	$ 31,548,695.13	$ 503,953.98	1.47%	$ 38,647.15	$ 32,091,296.26		
			Nov-13	2013	Q4	$ 32,052,649.11	$ 488,373.96	1.47%	$ 39,264.50	$ 32,580,287.57		
			Dec-13	2013	Q4	$ 32,541,023.07	$ 504,972.85	1.47%	$ 39,862.75	$ 33,085,858.67	$ 6,418,318.49	
			Jan-14	2014	Q1	$ 33,045,995.92	$ 505,708.45	0.00%	$ -	$ 33,551,704.37		
			Feb-14	2014	Q1	$ 33,551,704.37	$ 473,710.85	0.00%	$ -	$ 34,025,415.21		
			Mar-14	2014	Q1	$ 34,025,415.21	$ 506,803.93	0.00%	$ -	$ 34,532,219.15		
			Apr-14	2014	Q2	$ 34,532,219.15	$ 491,046.03	0.00%	$ -	$ 35,023,265.18		
			May-14	2014	Q2	$ 35,023,265.18		0.00%	$ -	$ 35,023,265.18		
			Jun-14	2014	Q2	$ 35,023,265.18		0.00%	$ -	$ 35,023,265.18		
			Jul-14	2014	Q3	$ 35,023,265.18		0.00%	$ -	$ 35,023,265.18		
			Aug-14	2014	Q3	$ 35,023,265.18		0.00%	$ -	$ 35,023,265.18		



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)
			Sep-14	2014	Q3	$ 35,023,265.18		0.00%	$ -	$ 35,023,265.18		
			Oct-14	2014	Q4	$ 35,023,265.18		0.00%	$ -	$ 35,023,265.18		
			Nov-14	2014	Q4	$ 35,023,265.18		0.00%	$ -	$ 35,023,265.18		
			Dec-14	2014	Q4	$ 35,023,265.18		0.00%	$ -	$ 35,023,265.18	$ 1,977,269.26	
			Total Funding Adder Revenues Collected				**$ 35,023,265.18**		**$ 1,253,762.64**	**$ 36,277,027.82**	**$ 36,277,027.82**	

Smart Meter Model for Electricity Distributors (2014 Filers)

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%	3.92%	Dec-07	2007	Q4	$	-			$	-	5.14%	$	-	$	-
2012 Q1	1.47%	3.92%	Jan-08	2008	Q1	$	-			$	-	5.14%	$	-	$	-
2012 Q2	1.47%	3.51%	Feb-08	2008	Q1	$	-			$	-	5.14%	$	-	$	-
2012 Q3	1.47%	3.51%	Mar-08	2008	Q1	$	-			$	-	5.14%	$	-	$	-
2012 Q4	1.47%	3.23%	Apr-08	2008	Q2	$	-			$	-	4.08%	$	-	$	-
2013 Q1	1.47%	3.23%	May-08	2008	Q2	$	-			$	-	4.08%	$	-	$	-
2013 Q2	1.47%	3.23%	Jun-08	2008	Q2	$	-			$	-	4.08%	$	-	$	-
2013 Q3	1.47%	3.23%	Jul-08	2008	Q3	$	-			$	-	3.35%	$	-	$	-
2013 Q4	0.00%	0.00%	Aug-08	2008	Q3	$	-			$	-	3.35%	$	-	$	-
2014 Q1	0.00%	0.00%	Sep-08	2008	Q3	$	-			$	-	3.35%	$	-	$	-
2014 Q2	0.00%	0.00%	Oct-08	2008	Q4	$	-			$	-	3.35%	$	-	$	-
2014 Q3	0.00%	0.00%	Nov-08	2008	Q4	$	-			$	-	3.35%	$	-	$	-
2014 Q4	0.00%	0.00%	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	$	-			$	-	1.00%	$	-	$	-
			Jul-09	2009	Q3	$	-			$	-	0.55%	$	-	$	-
			Aug-09	2009	Q3	$	-			$	-	0.55%	$	-	$	-
			Sep-09	2009	Q3	$	-			$	-	0.55%	$	-	$	-
			Oct-09	2009	Q4	$	-			$	-	0.55%	$	-	$	-
			Nov-09	2009	Q4	$	-			$	-	0.55%	$	-	$	-
			Dec-09	2009	Q4	$	-			$	-	0.55%	$	-	$	-
			Jan-10	2010	Q1	$	-			$	-	0.55%	$	-	$	-
			Feb-10	2010	Q1	$	-			$	-	0.55%	$	-	$	-
			Mar-10	2010	Q1	$	-			$	-	0.55%	$	-	$	-
			Apr-10	2010	Q2	$	-			$	-	0.55%	$	-	$	-
			May-10	2010	Q2	$	-			$	-	0.55%	$	-	$	-
			Jun-10	2010	Q2	$	-			$	-	0.55%	$	-	$	-
			Jul-10	2010	Q3	$	-			$	-	0.89%	$	-	$	-
			Aug-10	2010	Q3	$	-			$	-	0.89%	$	-	$	-
			Sep-10	2010	Q3	$	-			$	-	0.89%	$	-	$	-
			Oct-10	2010	Q4	$	-			$	-	1.20%	$	-	$	-
			Nov-10	2010	Q4	$	-			$	-	1.20%	$	-	$	-
			Dec-10	2010	Q4	$	-			$	-	1.20%	$	-	$	-

Jan-11	2011	Q1	$ -			$ -	1.47%	$ -	$	-	
Feb-11	2011	Q1	$ -			$ -	1.47%	$ -	$	-	
Mar-11	2011	Q1	$ -			$ -	1.47%	$ -	$	-	
Apr-11	2011	Q2	$ -			$ -	1.47%	$ -	$	-	
May-11	2011	Q2	$ -			$ -	1.47%	$ -	$	-	
Jun-11	2011	Q2	$ -			$ -	1.47%	$ -	$	-	
Jul-11	2011	Q3	$ -			$ -	1.47%	$ -	$	-	
Aug-11	2011	Q3	$ -			$ -	1.47%	$ -	$	-	
Sep-11	2011	Q3	$ -			$ -	1.47%	$ -	$	-	
Oct-11	2011	Q4	$ -			$ -	1.47%	$ -	$	-	
Nov-11	2011	Q4	$ -			$ -	1.47%	$ -	$	-	
Dec-11	2011	Q4	$ -			$ -	1.47%	$ -	$	-	
Jan-12	2012	Q1	$ -			$ -	1.47%	$ -	$	-	
Feb-12	2012	Q1	$ -			$ -	1.47%	$ -	$	-	
Mar-12	2012	Q1	$ -			$ -	1.47%	$ -	$	-	
Apr-12	2012	Q2	$ -			$ -	1.47%	$ -	$	-	
May-12	2012	Q2	$ -			$ -	1.47%	$ -	$	-	
Jun-12	2012	Q2	$ -			$ -	1.47%	$ -	$	-	
Jul-12	2012	Q3	$ -			$ -	1.47%	$ -	$	-	
Aug-12	2012	Q3	$ -			$ -	1.47%	$ -	$	-	
Sep-12	2012	Q3	$ -			$ -	1.47%	$ -	$	-	
Oct-12	2012	Q4	$ -			$ -	1.47%	$ -	$	-	
Nov-12	2012	Q4	$ -			$ -	1.47%	$ -	$	-	
Dec-12	2012	Q4	$ -			$ -	1.47%	$ -	$	-	
Jan-13	2013	Q1	$ -			$ -	1.47%	$ -	$	-	
Feb-13	2013	Q1	$ -			$ -	1.47%	$ -	$	-	
Mar-13	2013	Q1	$ -			$ -	1.47%	$ -	$	-	
Apr-13	2013	Q2	$ -			$ -	1.47%	$ -	$	-	
May-13	2013	Q2	$ -			$ -	1.47%	$ -	$	-	
Jun-13	2013	Q2	$ -			$ -	1.47%	$ -	$	-	
Jul-13	2013	Q3	$ -			$ -	1.47%	$ -	$	-	
Aug-13	2013	Q3	$ -			$ -	1.47%	$ -	$	-	
Sep-13	2013	Q3	$ -			$ -	1.47%	$ -	$	-	
Oct-13	2013	Q4	$ -			$ -	1.47%	$ -	$	-	
Nov-13	2013	Q4	$ -			$ -	1.47%	$ -	$	-	
Dec-13	2013	Q4	$ -			$ -	1.47%	$ -	$	-	
Jan-14	2014	Q1	$ -			$ -	0.00%	$ -	$	-	
Feb-14	2014	Q1	$ -			$ -	0.00%	$ -	$	-	
Mar-14	2014	Q1	$ -			$ -	0.00%	$ -	$	-	
Apr-14	2014	Q2	$ -			$ -	0.00%	$ -	$	-	
May-14	2014	Q2	$ -			$ -	0.00%	$ -	$	-	
Jun-14	2014	Q2	$ -			$ -	0.00%	$ -	$	-	
Jul-14	2014	Q3	$ -			$ -	0.00%	$ -	$	-	

Aug-14	2014	Q3	$	-			$	-	0.00%	$	-	$	-
Sep-14	2014	Q3	$	-			$	-	0.00%	$	-	$	-
Oct-14	2014	Q4	$	-			$	-	0.00%	$	-	$	-
Nov-14	2014	Q4	$	-			$	-	0.00%	$	-	$	-
Dec-14	2014	Q4	$	-			$	-	0.00%	$	-	$	-
					$	-	$	-	$	-		$	-	$	-

Smart Meter Model for Electricity Distributors (2014 Filers)

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	$ -	$ -	$ -	$ -	4.37%	$ -
2007	$ -	$ -	$ -	$ -	4.73%	$ -
2008	$ 862,695.00	$ 1,128,299.00	$ 1,990,994.00	$ 995,497.00	3.98%	$ 39,620.78
2009	$ 3,132,066.30	$ 3,463,147.00	$ 8,586,207.30	$ 5,288,600.65	1.14%	$ 60,157.83
2010	$ 3,110,322.70	$ 5,356,545.00	$ 17,053,075.00	$ 12,819,641.15	0.80%	$ 102,236.64
2011	$ -	$ 6,361,404.00	$ 23,414,479.00	$ 20,233,777.00	1.47%	$ 297,436.52
2012	$ -	$ 6,361,404.00	$ 29,775,883.00	$ 26,595,181.00	1.47%	$ 390,949.16
2013	$ -	$ 5,963,341.00	$ 35,739,224.00	$ 32,757,553.50	1.47%	$ 481,536.04
2014	$ -	$ 5,335,072.00	$ 41,074,296.00	$ 38,406,760.00	0.00%	$ -

Cumulative Interest to 2012	$ 890,400.93
Cumulative Interest to 2013	$ 1,371,936.97
Cumulative Interest to 2014	$ 1,371,936.97

Smart Meter Model for Electricity Distributors (2014 Filers)

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)	
X	Smart Meter Disposition Rider (SMDR)	**The SMDR is calculated based on costs to December 31, 2011**
X	Smart Meter Incremental Revenue Requirement Rate Rider (SMIRR)	**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	2013	2014	Total
Deferred and forecasted Smart Meter Incremental Revenue Requirement (from Sheet 5)	$ -	$ -	$ 2,693,559.52	$ 7,616,828.16	$ 13,166,836.15	$ 12,056,704.45	$ 11,937,518.89	$ 11,006,298.58	$ 9,794,723.49	$ 58,477,745.75
Interest on Deferred and forecasted OM&A and Amortization Expense (Sheet 8A/8B) (Check **one** of the boxes below)	$ -	$ -	$ 39,620.78	$ 60,157.83	$ 102,236.64	$ 297,436.52	$ 390,949.16	$ 481,536.04		$ 1,371,936.97
	Sheet 8A (Interest calculated on monthly balances)									
X	Sheet 8B (Interest calculated on average annual balances)	$ -	$ -	$ 39,620.78	$ 60,157.83	$ 102,236.64	$ 297,436.52	$ 390,949.16	$ 481,536.04	$ -	$ 1,371,936.97
SMFA Revenues (from Sheet 8)	$ -	$ -	$ 3,795,653.50	$ 5,740,660.56	$ 5,774,191.79	$ 5,866,195.66	$ 5,889,039.03	$ 5,980,255.38	$ 1,977,269.26	$ 35,023,265.18
SMFA Interest (from Sheet 8)	$ -	$ -	$ 37,381.44	$ 61,969.05	$ 101,166.10	$ 264,647.77	$ 350,535.17	$ 438,063.11	$ -	$ 1,253,762.64
Net Deferred Revenue Requirement	$ -	$ -	-$ 1,099,854.64	$ 1,874,356.38	$ 7,393,714.90	$ 6,223,297.54	$ 6,088,893.86	$ 5,069,516.13	$ 7,817,454.23	$ 23,572,654.90
Number of Metered Customers (average for 2014 test year) - Number of metered customers for which smart meter were deployed as part of program). Residential and GS < 50 kW customer classes and any other metered classes involved (e.g. GS 50 to 4999 kW for which interval meters were upgraded to uti AMI and ODS assets)									712804	

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

Years for collection or refunding	3	
Deferred Incremental Revenue Requirement from 2006 to December 31, 2013 plus Interest on OM&A and Amortization	$ 59,849,682.72	
SMFA Revenues collected from 2006 to 2014 test year (inclusive) Plus Simple Interest on SMFA Revenues	$ 36,277,027.82	
Net Deferred Revenue Requirement	$ 23,572,654.90	
SMDR XXX 1, 2014 to XXX 30/31, 201X	$ 0.92	Match
Check: Forecasted SMDR Revenues	$ 23,608,068.48	

Calculation of Smart Meter Incremental Revenue Requirement Rate Rider (per metered customer per montl

Incremental Revenue Requirement for 2014	$ 9,794,723.49	
SMIRR	$ 1.15	Match
Check: Forecasted SMIRR Revenues	$ 9,836,695.20	

Smart Meter Model for Electricity Distributors (2014 Filers)

This worksheet calculates the class-specific SMDRs according to accepted practice. A distributor may choose to use its own methodology, but should provide analogous support for its allocation and derivation of class-specific SMDRs and SMIRRs.

Class-specific SMDRs

Revenue Requirement for Historical Years	2006	2007	2008	2009	2010	2011	2012	2013	Total 2006 to 2013	**Explanation / Allocator**	Residential	GS < 50 kW	GS 50 to 4999 kW	Other (please specify)	Total
										Check Row if SMDR/SMIRR apply to class	X	X			2
											%	%	%	%	
Return on Capital	$ -	$ -	$ 1,131,510.06	$ 2,773,323.09	$ 4,270,184.76	$ 4,465,616.97	$ 4,023,931.96	$ 3,596,066.12	$ 20,260,632.94	Weighted Meter Cost - Capital Allocated per class	$ -	$ -	$ -	$ -	0%
Depreciation/Amortization expense and related interest	$ -	$ -	$ 1,128,299.00	$ 3,463,147.00	$ 5,356,545.00	$ 6,361,404.00	$ 6,361,404.00	$ 5,963,341.00							
	$ -	$ -	$ 22,453.15	$ 31,588.88	$ 64,679.78	$ 297,436.52	$ 390,949.16	$ 481,536.04							
	$ -	$ -	$ 1,150,752.15	$ 3,494,735.88	$ 5,421,224.78	$ 6,658,840.52	$ 6,752,353.16	$ 6,444,877.04	$ 29,922,783.53	Weighted Meter Cost - Capital Allocated per class	0% $ -	0% $ -	0% $ -	0% $ -	0%
Operating Expenses and related interest	$ -	$ -	$ 862,695.00	$ 3,132,066.30	$ 3,110,322.70	$ -	$ -	$ -							
	$ -	$ -	$ 17,167.63	$ 28,568.95	$ 37,556.86	$ -	$ -	$ -							
	$ -	$ -	$ 879,862.63	$ 3,160,635.25	$ 3,147,879.56	$ -	$ -	$ -	$ 7,188,377.44	Number of Smart Meters installed by Class Allocated per class	# $ -	# $ -	# 0	# 0	
Revenue Requirement before Taxes/PILs									$ 57,371,793.91		$ -	$ -	$ -	$ -	########
										Revenue Requirement before PILs	0.00%	0.00%	0.00%	0.00%	0%
Grossed-up Taxes/PILs	$ -	$ -	-$ 428,944.54	-$ 1,751,708.23	$ 429,783.69	$ 1,229,683.48	$ 1,552,182.93	$ 1,446,891.46	$ 2,477,888.81						
Total Revenue Requirement plus interest on OM&A and depreciation expense									$ 59,849,682.72		$ -	$ -	$ -	$ -	
									$ -	Percentage of costs allocated to each clas	0.00%	0.00%	0.00%	0.00%	
										Percentage of costs for classes with SMDR/SMIRR	0.00%	0.00%	0.00%	0.00%	
											%	%	%	%	
										SMFA Revenues directly attributable to class					0%
										Residual SMFA Revenues (from other metered classes) attributed evenly	0.00%	0.00%	0.00%	0.00%	0.00%
										Total	50.00%	50.00%	0.00%	0.00%	
SMFA Revenues plus interest expense									$ 36,277,027.82		$ 18,138,513.91	$ 18,138,513.91	$ -	$ -	
Net Deferred Revenue Requirement to be recovered via SMDR									$ 23,572,654.90		-$ 18,138,513.91	-$ 18,138,513.91	$ -	$ -	
Average number of metered customers by class (2014), for customer classes with smart meters deployed									Average number of customers (2014)		0	0	0	0	
Number of Years for SMDR recovery										years	0	0	0	0	
Smart Meter Disposition Rider ($/month per metered customer in the customer class)															
Estimated SMDR Revenues									$ -		$ -	$ -	$ -	$ -	
									$ 23,572,654.90						

This worksheet calculates the class-specific SMIRRs according to accepted practice. A distributor may choose to use its own methodology, but should provide analogous support for its allocation and derivation of class-specific SMDRs and SMIRRs.

Class-specific SMDRs

Revenue Requirement for 2013

		2014	**Explanation / Allocator**	Residential	GS < 50 kW	GS 50 to 4999 kW	Other (please specify)	Total
			Check Row if SMDR/SMIRR apply to class	X	X			2
				%	%	%	%	
			Weighted Meter Cost - Capital	0.00%	0.00%	0.00%	0.00%	0%
Return on Capital	$	3,203,830.41	Allocated per class	$ -	$ -	$ -	$ -	
Depreciation/Amortization expense			Weighted Meter Cost - Capital	0.00%	0.00%	0.00%	0.00%	0%
	$	5,335,072.00	Allocated per class	$ -	$ -	$ -	$ -	
Operating Expenses	$	-						
			Number of Smart Meters installed by Class	# -	# -	# -	# -	
	$	-	Allocated per class	$ -	$ -	$ -	$ -	
Revenue Requirement before Taxes/PILs	$	8,538,902.41		$ -	$ -	$ -	$ -	########
			Revenue Requirement before PILs	0.00%	0.00%	0.00%	0.00%	0%
Grossed-up Taxes/PILs	$	1,255,821.08		$ -	$ -	$ -	$ -	
Total Revenue Requirement for 2013	$	9,794,723.49		$ -	$ -	$ -	$ -	
			Percentage of costs allocated to each cla	0.00%	0.00%	0.00%	0.00%	
	$	-	Percentage of costs for classes with SMDR/SMIRR	0.00%	0.00%	0.00%	0.00%	
				0.00%	0.00%	0.00%	0.00%	
Average number of metered customers by class (2013)				-	-	-	-	
The SMIRR is recovered as an annualized rate until the effective date of the distributor's next rebased rates resulting from a cost of service application		1 year		1	1	1	1	
Smart Meter Incremental Revenue Requirement Rate Rider ($/month per metered customer in the customer class)								
Estimated SMIRR Revenues	$	-		$ -	$ -	$ -	$ -	
	-$	9,794,723.49						