

October 29, 2012

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

Dear Ms. Walli,

**Re: 2012 Smart Meter Cost Recovery Application EB-2012-0310
Kingston Hydro Responses to VECC Interrogatories**

Attached please find Kingston Hydro's Responses to Vulnerable Energy Consumers Coalition (VECC) relating to Kingston Hydro's Smart Meter Application EB-2012-0310.

A complete copy of the Interrogatory Responses and a Smart Meter Model Update (in working Microsoft Excel format) have been filed through the Board's RESS filing system, and two hard copies along with a CD of materials have been sent to the Board via courier.

Yours truly,



Sherry Gibson, MBA
Senior Advisor, Rates and Regulatory Affairs

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Kingston Hydro Corporation
2012 Smart Meter Cost Recovery
EB-2012-0310

**Responses to Vulnerable Energy Consumers Coalition (VECC)
Interrogatories**

VECC Question # 1

Reference: 2.0 Smart Meter and Time of Use Billing Implementation, Page 7

Preamble: The evidence states “In 2005 Kingston Hydro initiated a limited pilot study (500 meters) using CDM Third Tranche funding. The technology used in the pilot study was not the technology selected as part of the RFP process and as a result those meters were removed and replaced with KTI/Sensus meters during the smart meter deployment.

- a) Please explain the difference in the technology and why it was necessary to remove and replace the smart meters from the pilot study.***

Response #1a)

The Advanced Metering Infrastructure (AMI) technology that was used for the pilot study was provided by Itron. The successful vendor under the London Hydro Consortium RFP process was KTI/Sensus. Each technology has a different communication system and the technologies are not exchangeable. Therefore the Itron electric meters were replaced with KTI/Sensus meters so that a single communication system was required.

- b) Please confirm the cost of replacing the meters from the pilot study and confirm these replacement costs are included in this application.***

Response #1b)

The cost to replace these meters would be approximately:
500 X the average per meter capital costs \$194.80 = \$97,400

It is confirmed that these replacement costs are included in this application.

VECC Question # 2

Reference: 2.1.1.1 Advanced Metering Infrastructure (AMI), Page 8

Preamble: The application states “The Advanced Metering Infrastructure (“AMI”) was purchased pursuant to the contract negotiated with KTI/Sensus following the selection of KTI/Sensus as the preferred proponent through the London Hydro RFP process. Kingston Hydro selected the option of owning the AMI equipment with operations performed by KTI/Sensus. This decision was made to mitigate operating risk.

- a) Please summarize the cost/benefit analysis undertaken by Kingston to arrive at the option to own the AMI equipment.***

Response #2a)

Three options were considered in the cost/benefit analysis undertaken by Kingston to arrive at the option to own the AMI and they are described below:

- 1) Kingston Hydro owns and operates all equipment

The capital costs of this option are approximately the same as option 3. In our evaluation it was determined that there was risk in assuming the operation of the equipment as Kingston Hydro did not have the technical resources and required skill sets to execute and operate this type of system. Kingston Hydro would have had to add at least one additional FTE, possibly more, in order to assume the operation of the equipment and this was found to be a higher cost option than entering into an operating agreement with the vendor.

- 2) Vendor owns and operates all the equipment

In this option the capital costs were lower however the on-going operating costs were higher as the vendor was assuming the risk of owning and operating the system. The rate impact of higher operating costs is assumed dollar for dollar by the customer, while the impact of the capital costs is dampened.

In addition, in our evaluation there was a risk that should the vendor limit or cease operations that Kingston Hydro would be unable to seek an alternative solution.

3) Kingston Hydro owns the SMI and contracts with Sensus to operate

It was determined that this option had the best combination of cost and rate impact and the preferred risk profile. A contract to operate the SMI was more cost effective than bringing the operation in-house (see option 1) and ownership of the SMI equipment provides Kingston Hydro the ability to manage risk in the event of a default by the vendor.

VECC Question # 3

Reference: 2.1.1.3 Meter Disposal, Page 9

Preamble: The evidence states “Approximately 2700 scrap meters were sold for use by another Canadian utility while the remainder were disposed of as scrap metal. A local scrap dealer was used. The scrap pricing is regularly tested against the local market and the use of a local company also eliminates the need for transportation of the materials and the company provides drop off and pick up of the bins.

a) Please indicate how the scrap meter sales are reflected in this application.

Response #3a)

According to Filing Guideline G-2011-0001 Smart Meter Funding and Cost Recovery – Final Disposition “The stranded meter costs, for recovery purposes, would be comprised of the gross costs of the stranded meters, less any capital contributions, accumulated depreciation and any net proceeds received from the disposition of the replaced meters.”

Kingston Hydro is not applying for disposition of the stranded meter costs until the next cost of service application, as indicated on page 6 of this application, and therefore the scrap meter sale proceeds are not reflected in the current application.

VECC Question # 4

Reference: 2.1.1.7 Security Audit, Page 11

Preamble: "In 2011 Kingston Hydro, along with several other LDC's using the KTI/Sensus technology, participated in the first stage of a security audit performed by Util-assist and Bell Wurldtech. This security audit focuses on the meters, communications between meters and head end AMI systems. It was determined that participation in the consortium would be the most cost effective approach to undertake this important assessment of the current systems' risks and vulnerabilities.

- a) Please provide the cost of the security audit and indicate how this cost is reflected in the current application.**

Response #4a)

All costs associated with the security audit are captured as an operating cost in the current application. The following table details how this cost is reflected in the application by year and associated amount:

Year	Cost
2011	\$8224.69
2012	\$2869.00
Total	\$11,093.69

VECC Question # 5

Reference: 3.0 Status of Smart Meter and Time of Use Implementation, Page 12

Preamble: The evidence states “It is anticipated that approximately 600 meters per year will be required for new services and as replacements for malfunctioning meters. Our AMI provider has advised us that a hardware upgrade of the Advanced Metering Control Computer (AMCC) known as a Regional Network Interface will be required in 2013.

- a) *Please provide a breakdown of the 600 meters between the number of new services and replacements.***

Response #5a)

The forecast is for approximately 300 new services representing a 1% growth rate.

In addition, we are forecasting replacement meters of approximately the same number based on the meter failure rate that we have been experiencing since the smart meter conversion.

- b) *Please more fully explain the Regional Network Interface required for 2013.***

Response #5b)

Our AMI provider has advised that a major upgrade of the software and hardware for the Regional Network Interface (Advanced Metering Control Computer –AMCC) is required to continue to function. This software update addresses various issues in the current software version. The current version of the software will have support end dated at a date to be determined such that this hardware upgrade is unavoidable.

Since the time of the application we have received additional information from our AMI provider. The current quote to perform the work is \$93,000, which is less than the forecasted amount of \$120,000 in the application. The Smart Meter Model will be updated accordingly to reflect this additional information.

VECC Question # 6

Reference: 4.0 Capital and Operation Expenses, Audited Costs, Page 13

Preamble: Kingston indicates that 90% or more of the total program costs are required to be audited and Kingston has achieved 85% audited costs. VECC notes that when 2013 forecast costs are excluded, audited costs represent 94% of the costs (\$4,811,487/\$5,102,821).

a) Please provide the rationale for including 2013 forecast costs.

Response #6a)

Kingston Hydro has included the 2013 forecast costs as these costs are part of Smart Meter project costs incurred and should therefore be included for disposition at this time as the Applicant's next cost of service application is not until 2015. Kingston Hydro believes it is more efficient for all parties to deal with the total smart meter project costs once.

VECC Question # 7

Reference: 4.1 Capital Expenses, Table 4.1, Page 14

Preamble: In Table 4.1, Kingston provides actual expenditures from 2009 to June 30, 2012 and forecasted costs are for the remainder of 2012. VECC notes Table 4.1 also includes forecast 2013 capital costs.

- a) Please recast the table to include a column for 2012 actual to June 30, 2012 and 2012 forecast July 1, 2012 to Dec 31, 2012.**

Response #7a)

From Table 4.1, Page 14, the 2012 column in this capital expenditures table has been recast below to include a column for 2012 actual to June 30, 2012 and 2012 forecast for July 1, 2012 to December 31, 2012.

OEB Category	Description	2012 Actuals	2012 Forecast	Total 2012
1.1.1	AMCD-Smart Meters	58,103	75,000	133,103
1.1.2	AMCD-Installation Costs	4,506		4,506
1.2.1	AMRC-Collectors	-		-
1.3.1	AMCC-Computer Hardware	-	10,000	10,000
1.3.2	AMCC-Computer Software	6,000		6,000
1.5.1	Other AMI-Customer Equipment	-		-
1.5.3	Other AMI-Professional Fees	-	-	-
	Total Costs for Minimum Functionality	68,609	85,000	153,609
1.6.3	Capital Costs Beyond Minimum Functionality	13,532	29,200	42,732
	Total Smart Meter Capital Costs	82,141	114,200	196,341

Reference: 4.2 Operations, Maintenance and Administration Expenses, Page 15

Preamble: In Table 4.2, Kingston provides actual expenditures from 2009 to June 30, 2012 and forecasted costs are for the remainder of 2012. VECC notes Table 4.2 also includes forecast 2013 OM&A costs.

- b) Please recast the table to include a column for 2012 actual to June 30, 2012 and 2012 forecast July 1, 2012 to Dec 31, 2012.**

Response # 7b)

From Table 4.2, Page 15, the 2012 column in this OM&A table has been recast below to include a column for 2012 actual to June 30, 2012 and 2012 forecast July 1, 2012 to December 31, 2012.

OEB Category	Description	2012	2012 Forecast	2012
2.1.1	AMCD Maintenance			-
2.1.2	Other			
2.2.1	AMRC-Maintenance	38,678	41,529	80,207
2.3.2	Software Maintenance		5,400	5,400
2.4.1	WAN Maintenance	4,350	4,350	8,700
	Total Costs for Minimum Functionality	43,028	51,279	94,307
2.6.3	Costs for TOU rate implementation	686	-	686
	Total Costs Beyond Minimum Functionality	686	-	686
	Total OM&A Costs	43,714	51,279	94,993

VECC Question # 8

Reference: 3.0 Status of Smart Meters and Time of Use Implementation, Page 12

Preamble: Kingston has installed a total of 26,385 meters.

a) Please complete the following table to show the calculation of average costs based on meter type.

Class	Type of Meter	Quantity	Meter Cost	Average Meter Cost	Installation Cost	Average Installation Cost	Other Capital Costs	Total Average Cost
Residential								
GS<50 kW								

Response #8a)

Kingston Hydro stated on Page 12 of its Application that “a total of 26,385 meters were installed, 23,244 residential meters and 3,141 General Service < 50kW.” Kingston tracked the number of meters installed by rate class however did not track the specific cost of each type of meter installed. Hence Kingston is unable to provide any Cost per Type of Meter.

The majority of meters installed would have been of the Single Phase Meter type and that cost should not materially differ between rate classes, thus, the average cost per meter is calculated as the same. Smart meter cost per meter is provided in Table 1.0 of the Application, Page 5.

- b) Please provide a summary of Kingston's incremental internal labour costs included in this application in terms of positions, contract type (permanent vs. temporary, part-time vs. full-time), length of employment and work activities.**

Response #8b)

The following table provides a summary of Kingston's internal labour costs included in this application:

	Engineering/Project and Process Planning-Full Time	Metering/Installation-Full-Time		IT Staff-Full Time	Billing Full-Time	Billing Temporary
	Implementation Activities	Installation Activities		IT Programming	Implementation Activities	Implementation Activities
	Labour	Labour	Overtime	Labour	Overtime	Labour
2009	\$ 54,584.42	\$ 1,541.13	\$ 68.56			
2010	\$ 56,048.26	\$ 174,227.82	\$ 8,533.90	\$ 59,539.88		\$ 2,661.85
2011	\$ 2,522.23	\$ 47,918.82	\$ 811.83	\$ 106,702.68	\$ 20,345.97	\$ 36,453.37
2012	\$ 12,225.76	\$ 6,144.85				
Total	\$ 125,380.67	\$ 229,832.61	\$ 9,414.29	\$ 166,242.56	\$ 20,345.97	\$ 39,115.22

VECC Question # 9

Reference: Smart Meter Model V3, 02120824, Sheet 2

Preamble: The evidence states “The installed meters and systems do not exceed the minimum functionality as specified in O. Reg. 425/06. Kingston has incurred costs beyond minimum functionality for integration with the MDM/R, TOU rate implementation, and forecasted web presentment.”

- a) *Please provide a breakdown and description of the capital costs beyond minimum functionality regarding line 1.6.3 Costs for TOU rate implementation, CIS system upgrades, web presentation, integration with the MDM/R, etc.***

Response #9a)

The following table provides a breakdown and description of the capital costs beyond minimum functionality regarding line 1.6.3 of Sheet 2 from the Smart Meter Model:

Capital Costs – Beyond Minimum Functionality

Description	Cost
MDM/R Integration	\$ 5,157
Web Presentment	<u>\$ 42,100</u>
Total	\$ 47,257

- b) Please provide a breakdown and description of the OM&A costs beyond minimum functionality regarding line 2.6.3 Costs for TOU rate implementation, CIS system upgrades, web presentation, integration with the MDM/R, etc.**

Response #9b)

The following table provides a breakdown and description of the OM&A costs beyond minimum functionality regarding line 2.6.3 of Sheet 2 from the Smart Meter Model:

OM&A Costs – Beyond Minimum Functionality

Description	Cost
MDM/R Integration	\$ 1,436
Web Presentment	<u>\$ 3,600</u>
Total	\$ 5,036

- c) Please explain how these costs are required for its smart meter program and how these costs are incremental.**

Response #9c)

According to Filing Guideline G-2011-0001 Smart Meter Funding and Cost Recovery – Final Disposition the items described above are considered “Beyond Minimum Functionality” as they were not defined in O. Reg. 425/06, *Criteria and Requirements for Meters and Metering Equipment, Systems and Technology* and the associated document *Functional Specification for an Advanced Metering Infrastructure, Version 2*, issued July 5, 2007 (the “Functional Specification”).

The costs that are included as “Beyond Minimum Functionality” were required to implement Time-of-Use billing and include the costs for software needed to connect the Customer Information System (CIS) to the MDM/R which was not previously required, costs to upgrade the CIS to add additional fields and functionality to enable synchronization with the MDM/R, and web presentment to facilitate communication about Time-of-Use rates and consumption patterns to customers.

VECC Question # 10

Reference: Cost Allocation, Page 17

Preamble: Kingston indicates “Class-specific smart meter cost data is not readily available so Kingston Hydro is proposing an allocator based on the number of class specific smart meters installed. The number of smart meters installed for the Residential class was 23,244 and 3,141 smart meters installed for the General Service less than 50kW customer class, as filed in the smart meter filings. This has provided an allocation factor of 88.10% for Residential customer class and 11.90% for the General Service less than 50kW customer class.

a) Please explain what Kingston means by “cost data is not readily available”.

Response #10a)

Please see response to VECC #11 d).

b) Please explain how Kingston tracked its smart meter capital and OM&A data by rate class.

Response #10b)

Please see response to VECC #11 d).

c) Please explain the rationale for a uniform SMIRR rate rider.

Response #10c)

Please see response to VECC #11 d).

VECC Question # 11

Reference 1: Smart Meter Model V3, 20120824

Reference 2: Board Guideline G-2011-0001, Smart Meter Funding and Cost Recovery

– Final Disposition, dated December 15, 2011, Page 19

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

- a) Please complete a separate smart meter revenue requirement model by customer class. (This should include any adjustments resulting from interrogatory responses)**

Response #11a)

Please see response to VECC #11 d).

- b) Please re-calculate the SMDR & SMIRR rate riders based on full cost causality by rate class.**

Response #11b)

Please see response to VECC #11 d).

c) Please provide a table that summarizes the total Smart Meter Rate Adder Revenue collected by customer class.

Response #11c)

Kingston used customer numbers as proxy to allocate Smart Meter Rate Adder (SMFA) revenue to rate classes. Please see response to Board Staff #13 a) 2) for further explanation of SMFA revenues allocation.

The following table summarizes total SMFA revenue rate class allocation:

<u>SMFA Revenue Allocation</u>		
<u>Rate Class</u>	<u>Total SMFA by Class</u>	<u>Percentages</u>
Residential	\$ 886,288.99	86.47%
GS<50	\$ 125,225.35	12.22%
GS>50	\$ 13,342.50	1.30%
<u>Large User</u>	\$ 114.82	<u>0.01%</u>
Total	\$ 1,024,971.65	100.00%

d) If Kingston is unable to provide separate smart meter revenue requirement models by rate class, please provide a detailed explanation.

Response #11 d)

Reference 1: Guideline G-2008-0002: Smart Meter Funding & Cost Recovery, dated October 22, 2008, Page 6.

Reference 2: Guideline G-2011-0001: Smart Meter Funding & Cost Recovery – the Final Disposition, dated December 15, 2011 (supersedes Reference 1 a)), Page 10, Page 19

Reference 3: 2011 COS [EB-2010-0136] Responses to VECC #34 e), f) and h), filed November 15, 2010.

Kingston has tracked its smart meter capital and OM&A data in accordance with Board Guidelines. On the issue of smart meter accounting treatment, the Guideline dated October 22, 2008, indicated that accounts 1555 and 1556 should continue to be used to track smart meter related capital and operating costs, respectively. In the current Guideline dated December 15, 2011 and which supersedes the 2008 dated Guideline, the 2011 Guideline states “Accounts 1555 and 1556 track smart

meter related capital and operating costs respectively.” Neither the current nor the previous Guideline indicated that there was a requirement to track these costs by rate class.

Further, for electricity reporting and record keeping (RRR) purposes, with respect to Section 2.1.1 deferral and variance account balances reporting and includes accounts 1555 and 1556, the form and manner required by the Board for filing smart meter accounts data has not been by rate class. Hence from a RRR perspective it has not been necessary to track costs by rate class.

In Kingston’s 2011 Cost of Service Application (EB-2010-0136), as part of the interrogatory process, Kingston was asked to provide smart meter capital and OM&A data by rate class. Kingston indicated in its responses to VECC that the data was not available by rate class. Kingston did not receive any Board directives or orders stemming from 2011 cost of service interrogatory responses related to smart meters and tracking of data by rate class. Kingston continued to track smart meter data in the same manner as it had been, on the basis of practicality.

The current Guideline states that “the Board notes that utilities have not been specifically directed to record all costs on a class-specific basis”. In addition, the Guideline indicates that the Board is of the view that class specific SMDRs should be calculated on full cost causality, where practical and where the data is available, and that “a uniform SMDR is suitable only where adequate data is not available”. Since Kingston was not required to and did not specifically track smart meter capital and OM&A data by rate class, the data is not available to calculate class specific SMDRs on full cost causality. This same rationale extends to Kingston’s uniform SMIRR rate rider, since as indicated in the Guideline, “in general, the cost allocation methodology should be the same for both the SMDR and the SMIRR”. As a result, Kingston is unable to provide separate smart meter revenue requirement models by rate class.

VECC Question # 12

Reference: Smart Meter Model V3, 20120824, Sheet 2

- a) Please explain the smart meter costs (1.1.1) and installation costs (1.1.2) incurred in 2009 but no smart meters installed in 2009.**

Response #12a)

Smart meters were procured late in 2009 in preparation for the main deployment effort that began in early 2010.

- b) Please explain the smart meter installation costs of \$229,779 (1.1.2) incurred in 2011 and explain no smart meters costs (1.1.1), yet 477 smart meters were installed in 2011.**

Response #12b)

The 477 smart meters that were installed in 2011 were part of the bulk purchases that were made during 2009 and 2010, and hence the reason for smart meter installation costs incurred in 2011 however no smart meter costs.

- c) Please provide a breakdown and explanation of smart meter costs (1.1.1) of \$133,103 in 2012, noting 20 meters are forecast for installation in 2012.**

Response #12c)

The following table provides a breakdown of smart meter costs in 2012 from line 1.1.1 of Sheet 2 of the Smart Meter Model:

Description	Cost
Smart meters	(actual to June 30) \$58,103
New and Replacement Meters	<u>(forecast) \$75,000</u>
Total	\$133,103

The 20 smart meters have been installed for 2012 and actual cost is provided in the table.

- d) ***Please provide a breakdown and explanation of smart meter costs (1.1.1) of \$153,000 in 2013, and explain no installation costs (1.1.2) in 2013 and no forecast smart meters to be installed in 2013.***

Response #12d)

Please see response to VECC Question #5 a).

- e) ***Please provide a breakdown and explanation of the forecast computer hardware costs (1.3.1) of \$120,000 in 2013.***

Response #12e)

Please see response to VECC Question #5 b).

- f) ***Please provide a breakdown and explanation of the forecast Other costs (Labour and Security) (2.1.2) of \$169,830 in 2013.***

Response #12f)

The following table provides a breakdown and of the forecast of Other costs in 2013 from line 2.1.2 of Sheet 2 of the Smart Meter Model:

Description	Cost
Incremental Labour	\$148,830
Security audit	<u>\$21,000</u>
Total	\$169,830

The security audit cost in 2013 relates to the phase 2 of the security audit. Explanation of the 2011 audit phase 1 is provided in section 2.1.1.7 of the application. Phase 2 of the security audit performed by Bell-Wurldtech for a consortium of Ontario Local Distribution companies is intended to test remediation activities completed by the AMI provider. Upon completion of the phase 1 audit the AMI provider completed several initiatives to close vulnerabilities discovered in the AMI system. The phase 2 audit in 2013 will revisit the original vulnerability and ensure that they are in fact no longer a risk to the local distribution company.

The incremental labour in 2013 relates to meter shop employee activities to address metering issues.

g) *Please provide an explanation of the increase in maintenance costs (2.2.1) in 2012 and 2013 compared to 2011.*

Response #12g)

The initial focus of the project was the installation of new meters which is a capitalized cost. Now that the meters are installed and reporting, the focus has changed to a need to address metering issues such as investigations of communication and metering failures to ensure that data is available for billing. This will be an on-going focus going forward and is a maintenance cost, hence the increase in maintenance costs in 2012 and 2013 compared to 2011.

h) *Please provide a breakdown of one-time expenses and ongoing expenses in 2013.*

Response #12h)

The following tables provide a breakdown of one-time expenses and ongoing expenses in 2013 relating to the 2013 expenses from Sheet 2 of the application's Smart Meter Model:

On-going Expenses in 2013

Description	Cost
New and replacement smart meters	\$153,000
Incremental Labour - Metering Staff	\$148,830
AMI operating agreement	\$85,134
AS2 software and web presentment	\$4,350
WAN	\$8,700
ODS	<u>\$5,508</u>
Total	\$405,522

One-Time Expenses in 2013

Description	Cost
RNI upgrade (anticipated on approximately 4 year cycle)	\$120,000
Security audit phase 2	<u>\$21,000</u>
Total	\$141,000