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November 10, 2015

Ms. Erica Hamilton  
Commission Secretary  
British Columbia Utilities Commission  
Sixth Floor – 900 Howe Street  
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**RE: British Columbia Utilities Commission (BCUC or Commission)  
British Columbia Hydro and Power Authority (BC Hydro)  
Smart Metering & Infrastructure (SMI) Program –  
Quarterly Update Report No. 22 – July to September 2015 (Report)**

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BC Hydro writes in compliance with Commission Order No. G-67-10, to provide its Report.

For further information, please contact Geoff Higgins at 604-623-4121 or by email at [bchydroregulatorygroup@bchydro.com](mailto:bchydroregulatorygroup@bchydro.com).

Yours sincerely,

Original signed

Tom Loski  
Chief Regulatory Officer

st/rh

Enclosure

Copy to: BCUC Project No. 3698622 (Fiscal 2012 to Fiscal 2014 Revenue Requirements Application) Registered Intervener Distribution List.

**Smart Metering & Infrastructure Program**

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**Quarterly Update Report No. 22**

**F2016 Second Quarter**

**July 2015 to September 2015**

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Appendix A	SMI Program Contracts and Commitments – Executed in F2016 Q2
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## 1 Introduction

2 This Smart Metering & Infrastructure (**SMI**) Quarterly Report No. 22 covers the  
3 Second Quarter of Fiscal 2016 (**F2016 Q2**), the period from July 1, 2015 to  
4 September 30, 2015 and is submitted in accordance with Directive 6 of  
5 Commission Order No. G-67-10. Program expenditures are categorized as identified  
6 in Directive 4 of Commission Order No. G-67-10. As set out in BC Hydro's letter to  
7 the Commission dated March 18, 2011 regarding SMI Quarterly Report No. 3,  
8 [Table 5](#) and [Table 10](#) include estimated total SMI Program expenditures at the  
9 completion of the program. In accordance with Directive 5 of Commission Order  
10 No. G-115-11, a description and value of contracts and commitments related to the  
11 SMI Program undertaken during F2016 Q2 is provided in [Appendix A](#). This report  
12 also identifies the number of smart meters in the field and the number of remaining  
13 smart meter installs, both as of September 30, 2015. Additional tables which identify  
14 total program expenditures to date are also included. This report also identifies the  
15 level of participation in the Meter Choices Program as of September 30, 2015.

16 BC Hydro's activities with respect to the SMI Program in F2009 and F2010 focused  
17 on foundational program elements, such as meter system technologies and  
18 information technology requirements. In F2011, BC Hydro's SMI Program activities  
19 focused on the design, issuance and completion of procurement processes for four  
20 primary work packages, and the award of major contracts that were on the critical  
21 path for the deployment of metering infrastructure for the SMI Program. SMI  
22 Program procurement activities continued in F2012, and focused on the  
23 development of the theft detection solution components including Distribution  
24 System Metering Devices (**DSMD**), and the Energy Analytics Solution (**EAS**) theft  
25 analytics software. BC Hydro's SMI Program activities in F2013 included the  
26 completion of mass deployment of smart meters, the continued installation of  
27 telecommunications infrastructure and implementation of related information  
28 systems, procurement processes related to DSMD and the EAS, and the field testing

1 and deployment of DSMD. In F2014, program activities focused on the procurement  
2 of DSMD, the development of the EAS, telecommunications network optimization,  
3 implementation of the Meter Choices Program, and the installation of smart meters  
4 that were not included as part of the mass deployment. In F2015 SMI Program  
5 activities focused on completing the network optimization and the installation of  
6 telecommunications infrastructure, migrating the meters and the network to a more  
7 advanced networking protocol (**IPv6**), expanding on the EAS capabilities, and  
8 implementation of the DSMD (transformer and feeder meters) and their associated  
9 applications.

10 In F2016 SMI Program activities are focusing on completing the network  
11 optimization and the installation of telecommunications infrastructure, migrating the  
12 meters and the network to IPv6, introducing Energy Balancing capabilities across  
13 distribution feeders supported by Supervisory Control and Data Acquisition  
14 (**SCADA**) devices and Check Meters (distribution equipment) and their associated  
15 applications.

## 16 **2 Meter Choices Program**

17 On July 18, 2013, the Minister of Energy and Mines announced that in response to  
18 public concerns, BC Hydro would offer new options for customers who delayed their  
19 smart meter installation. On September 25, 2013, the Government of British  
20 Columbia issued Direction No. 4 providing direction to the Commission with respect  
21 to implementing Government policy. On October 7, 2013 BC Hydro filed its  
22 Application for approval of charges related to the Meter Choices Program, offering  
23 eligible customers an installation of a standard smart meter at no cost, or an  
24 installation of a radio-off meter, or the existing legacy meter at the premises for a fee  
25 approved by the Commission. On April 25, 2014, the Commission issued  
26 Order No. G-59-14 and set the charges related to the Meter Choices Program on a  
27 permanent basis.

1 On July 31, 2014, in accordance with the updated tariff approved by the Commission  
 2 on July 22, 2014, BC Hydro applied the “missed read credit adjustment” including  
 3 interest to the accounts of Meter Choices Program customers that had estimated  
 4 scheduled readings from the start of the Meter Choices Program to July 30, 2014.

5 The composition of Meter Choices Program participants as of September 30, 2015 is  
 6 identified in [Table 1](#).

7 **Table 1 Meter Choices Program Participation**  
 8 **Breakdown – As of September 30, 2015**

Option	Number of Accounts
Legacy Meter	13,150
Selected Radio-off	597
<b>Total</b>	<b>13,747</b>

9 All BC Hydro electricity meters are required to have a valid Measurement Canada  
 10 accuracy seal. In 2014, BC Hydro was required, under Measurement Canada  
 11 Regulations, to exchange 10,700 Meter Choices customers’ legacy meters because  
 12 the accuracy seal had expired. These meters must be replaced by a meter with a  
 13 valid Measurement Canada seal. BC Hydro sent letters to customers explaining why  
 14 the BC Hydro legacy meter at their premises was being replaced with another legacy  
 15 meter. Of these customers, approximately 2,600 refused to permit BC Hydro to  
 16 exchange the time expired meter at their premises.

17 BC Hydro is continuing to work with these customers and as of September 30, 2015,  
 18 of the approximately 2,600 customers who refused access, 1,415 customers have  
 19 had their meter replaced. Out of the remaining 1,185 customers, 485 have  
 20 consented to replacement of the legacy meter with another legacy meter, and  
 21 700 customers still require a resolution.

22 In late March 2015, an additional 1,320 letters were sent to customers informing  
 23 them that the Measurement Canada accuracy seal on the legacy meters at their  
 24 premises would expire in 2015 and require meter exchange. Of these,

1 165 customers were informed that because the stock of legacy meters for their  
2 service type has been exhausted, a radio-off meter or a smart meter at the  
3 Customer's election will need to be installed. As of September 30, 2015, of the  
4 1,320 customers to whom letters were sent, 720 customers have had the meter on  
5 their premises exchanged, 250 work orders have been issued to replace legacy  
6 meters with smart meters, 25 work orders have been issued to replace legacy  
7 meters with radio off meters, and 325 legacy meters still require meter exchange  
8 with another legacy meter.

9 The Measurement Canada accuracy seals of all legacy meters remaining in service  
10 will expire in subsequent years through 2022, at which point all legacy meters will  
11 have expired seals and require replacement.

### 12 **3 Project Status**

13 During F2016 Q2, BC Hydro took the following steps to advance and implement the  
14 SMI Program:

- 15 • Continued deployment of customer meters and telecom equipment;
- 16 • Continued transition of customers to automated billing;
- 17 • Continued telecom network optimization;
- 18 • Continued work related to the Meter Choices Program including exchanges of  
19 legacy meters with expired seals;
- 20 • Completed development of the meter configuration management tool;
- 21 • Implemented the IPv6 advanced network protocol;
- 22 • Implemented Data Lake (data storage and processing) infrastructure and  
23 check-meters information technology;
- 24 • Continued development and testing of the EAS;

- 1 • Continued integration activities of SCADA capable devices; and
- 2 • Continued development of Disaster Recovery Capability.

## 3 **4 Project Schedule**

4 [Table 2](#) shows the status of the major activities in F2016 Q2 as reported in  
 5 F2016 Q1 Quarterly Report No. 21.

6 **Table 2 Project Schedule F2016 Q2**

<b>Date</b>	<b>Activity</b>	
July 2015	In Field/Over the Air Meter Mitigation – Network Stability	Ongoing
	Continue Network Stabilization and Optimization	Ongoing
	Upgrade of Automated Data Collection System ( <b>ADCS</b> ), Meter Data Management System ( <b>MDMS</b> ) and Network Management System ( <b>NMS</b> ) to new software versions	Ongoing
	Operational Insights Requirements and Design	Complete
	Meter Choices Program: Install Radio Off & Smart Meters	Ongoing
	SCADA Recloser Reconfiguration	Ongoing
	SCADA Infrastructure and Reclosers Field Upgrades	Ongoing
	SCADA Relay Resolution Reconfiguration	Ongoing
	Design Check Meter Information Technology Systems	Complete
	Build Check Meter Information Technology Systems	Ongoing
	Check Meter Device Testing	Ongoing
	Test EAS 2b (SCADA and Check Meters)	Ongoing
	Data Lake Build and Testing SCADA, Check Meters and MDMS	Ongoing
	Disaster Recovery Capability Network Failover Design	Ongoing
	Advanced Telecom: WiMAX	Ongoing
August 2015	In Field/Over the Air Meter Mitigation – Network Stability	Ongoing
	Continue Network Stabilization and Optimization	Ongoing
	Upgrade of ADCS, MDMS and NMS to new software versions	Ongoing
	Operational Insights Build	Commenced
	Meter Choices Program: Install Radio Off & Smart Meters	Ongoing
	SCADA Recloser Reconfiguration	Ongoing
	SCADA Infrastructure and Reclosers Field Upgrades	Ongoing
	SCADA Relay Resolution Reconfiguration	Ongoing
	Build Check Meter Information Technology Systems	Complete



Date	Activity	
	Test Check Meter Information Technology Systems	Ongoing
	Check Meter Device Testing	Ongoing
	Test EAS 2b (SCADA and Check Meters)	Ongoing
	Data Lake Deployment	Complete
	Disaster Recovery Capability Failover Network Testing	Commenced
	Advanced Telecom: WiMAX	Ongoing
September 2015	In Field/Over the Air Meter Mitigation – Network Stability	Ongoing
	Continue Network Stabilization and Optimization	Ongoing
	Upgrade of ADCS, MDMS and NMS to new software versions	Ongoing
	Operational Insights Build	Ongoing
	Meter Choices Program: Install Radio Off & Smart Meters	Ongoing
	SCADA Recloser Reconfiguration	Ongoing
	SCADA Infrastructure and Reclosers Field Upgrades	Ongoing
	SCADA Relay Resolution Reconfiguration	Ongoing
	Test Check Meter Information Technology Systems	Complete
	Deploy Check Meter Information Technology Systems	Complete
	Check Meter Device Testing and Soft Deployment	Ongoing
	EAS 2b (SCADA and Check Meters) Technical Deployment	Commenced
	Disaster Recovery Capability Failover Network Testing	Ongoing
	Advanced Telecom: WiMAX	Ongoing

1 [Table 3](#) shows the major activities included in the project schedule for the third  
2 quarter of F2016.

3 **Table 3 Project Schedule F2016 Q3**

Date	Activity
October 2015	In Field/Over the Air Meter Mitigation – Network Stability
	Continue Network Stabilization and Optimization
	Upgrade of ADCS, MDMS and NMS to new software versions
	Operational Insights Build
	Meter Choices Program: Install Radio Off & Smart Meters
	SCADA Recloser Reconfiguration
	SCADA Infrastructure and Reclosers Field Upgrades
	SCADA Relay Resolution Reconfiguration
	Check Meter Device Testing and Soft Deployment
	EAS 2b (SCADA and Check Meters) Functional Deployment

Date	Activity
	Disaster Recovery Capability Failover Network Testing
	Advanced Telecom: WiMAX
November 2015	In Field/Over the Air Meter Mitigation – Network Stability
	Continue Network Stabilization and Optimization
	Operational Insights Build
	Meter Choices Program: Install Radio Off & Smart Meters
	Itron Cellular Solution Meter Deployment
	SCADA Recloser Reconfiguration
	SCADA Infrastructure and Reclosers Field Upgrades
	SCADA Relay Resolution Reconfiguration
	Check Meter Device Testing and Soft Deployment
	EAS 2b (SCADA and Check Meters) advanced deployment
	Disaster Recovery Capability Failover Network Testing
	Advanced Telecom: WiMAX
December 2015	In Field/Over the Air Meter Mitigation – Network Stability
	Continue Network Stabilization and Optimization
	Operational Insights Testing and Deployment
	Meter Choices Program: Install Radio Off & Smart Meters
	Itron Cellular Solution Meter Deployment
	SCADA Recloser Reconfiguration
	SCADA Infrastructure and Reclosers Field Upgrades
	SCADA Relay Resolution Reconfiguration
	Check Meter Device Deployment
	Disaster Recovery Capability Production Turnover

1 Meter deployment continued throughout F2016 Q2, increasing the total number of  
 2 smart meters installed by 8,051 during the quarter, none of which were installed by  
 3 Corix, as shown in [Table 4](#).

4 On September 30, 2015, there were 1,928,706 smart meters in the field, and  
 5 3,370 conventional meters remaining in the field (excluding 13,150 legacy meters  
 6 remaining under the Meter Choices Program).

7 During the second quarter of F2016, five Field Area Network (**FAN**) collectors (Cisco  
 8 Connected Grid Routers) were removed (after review of meter performance and

1 business criteria), bringing the total number installed to 1,850 by the end of  
2 F2016 Q2. Six Range Extenders were installed during the quarter, bringing the total  
3 number in the field at the end of the quarter to 5,242. Small numbers of FAN  
4 collectors and range extenders will be installed as part of the optimization of the  
5 telecom network which is currently underway and is expected to continue through  
6 F2016.

**Table 4 Customer Mass Meter Deployment – June 2011 Schedule and Actuals**

Corix Installations (June 2011 Plan)		Fiscal 2012			Fiscal 2013				Fiscal 2014				Fiscal 2015				Fiscal 2016		Total
Region	Total Meters	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
<b>Corix Installations (June 2011 Plan)</b>																			
Lower Mainland South	444,215	51,542	127,290	127,050	113,613	24,720	-												444,215
North Interior	104,367	16,163	22,411	24,292	23,522	17,979	-												104,367
North Coast	42,432	3,265	21,205	15,711	1,635	616	-												42,432
Vancouver Island	387,895	26,765	76,129	80,599	81,660	77,628	45,114												387,895
Lower Mainland North (Metro)	623,611	14,875	135,681	152,653	154,563	134,737	31,102												623,611
	368,311	14,875	95,282	107,867	68,404	71,315	10,568												368,311
	38,206	-	10,000	28,206	-	-	-												38,206
	83,534	-	-	-	-	63,000	20,534												83,534
	78,911	-	-	16,580	62,331	-	-												78,911
	24,250	-	-	-	23,828	422	-												24,250
	18,975	-	18,975	-	-	-	-												18,975
	11,424	-	11,424	-	-	-	-												11,424
South Interior	191,966	-	30,244	32,281	38,871	66,637	23,933												191,966
Kootenay	54,438	-	-	-	15,803	32,324	6,311												54,438
<b>Planned Corix Installations (June 2011 Plan)</b>	<b>1,848,924</b>	<b>112,610</b>	<b>412,960</b>	<b>432,586</b>	<b>429,667</b>	<b>354,641</b>	<b>106,460</b>												<b>1,848,924</b>
<b>To End of Q2 F2016</b>																			
Actual Corix Installations	1,769,629	116,583	422,563	451,796	385,314	261,527	70,307	16,291	3,148	216	14,514	20,207	6,254	909	-	-	-	-	1,769,629
Actual BC Hydro Installations	159,077 **																		
Total Smart Meter Installations	1,928,706																		
Conventional Meters Remaining in Field (Excl. Meter Choices Program)	3,370																		

\* Revised figure.

## 5 Project Costs: F2016 Q2 and Program to Date

Excluding contingency, which has been allocated to planned expenditures for F2016 Q2, actual operating expenditures were \$0.6 million less than planned during F2016 Q2. Similarly, actual capital expenditures during F2016 Q2 are less than plan by \$6.2 million primarily due to delays in implementation activities to later in F2016. Forecast operating and capital expenditures at the completion of the program have been adjusted downward from \$860.6 million to \$848.7 million. The reduction in forecast reflects \$11.9 million savings in Smart Grid solution components.

Operating and capital expenditures related to the SMI Program incurred by BC Hydro in F2016 Q2 and for the SMI Program to date are shown in [Table 5](#), [Table 6](#) and [Table 7](#) respectively.

**Table 5 SMI Program Operating and Capital Expenditures – F2016 Q2 and Forecast at Completion**

(\$ million)	Operating Expenditures			Capital Expenditures			Forecast at Completion (\$)	
	Actual	Plan	Variance	Actual	Plan	Variance	Operating	Capital
Labour	0.1	0.3	0.2	0.7	0.6	(0.1)	28.6	52.6
Consultants and Contractors	0.3	0.7	0.4	11.6	19.5	7.9	42.0	362.8
Materials/Other	0.0	0.0	0.0	1.0	(0.5)	(1.5)	(8.1)	358.8
Interest	n/a	n/a	n/a	0.4	0.3	(0.1)	n/a	12.0
<b>Sub-total SMI Program</b>	<b>0.4</b>	<b>1.0</b>	<b>0.6</b>	<b>13.7</b>	<b>19.9</b>	<b>6.2</b>	<b>62.5</b>	<b>786.2</b>
Interest on Deferral	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>Total</b>	<b>0.4</b>	<b>1.0</b>	<b>0.6</b>	<b>13.7</b>	<b>19.9</b>	<b>6.2</b>	<b>848.7</b>	

**Table 6 SMI Program Operating and Capital Expenditures – F2016 Year to Date**

(\$ million)	Operating Expenditures			Capital Expenditures		
	Actual	Plan	Variance	Actual	Plan	Variance
Labour	0.2	0.5	0.3	1.6	1.3	(0.3)
Consultants and Contractors	0.5	0.9	0.4	16.6	30.1	13.5
Materials/Other	0.0	0.0	0.0	2.9	(2.9)	(5.8)
Interest	n/a	n/a	n/a	0.7	0.7	0.0
<b>Sub-total SMI Program</b>	<b>0.7</b>	<b>1.4</b>	<b>0.7</b>	<b>21.8</b>	<b>29.2</b>	<b>7.4</b>
Interest on Deferral	n/a	n/a	n/a	n/a	n/a	n/a
<b>Total</b>	<b>0.7</b>	<b>1.4</b>	<b>0.7</b>	<b>21.8</b>	<b>29.2</b>	<b>7.4</b>

**Table 7 SMI Program Operating and Capital Expenditures – SMI Program to Date**

(\$ million)	Operating Expenditures	Capital Expenditures	Total Expenditures
Labour	27.8	51.8	79.6
Consultants and Contractors	41.3	340.5	381.8
Materials/Other	(8.4)	286.2	277.8
Interest	n/a	11.5	11.5
<b>Sub-total SMI Program</b>	<b>60.7</b>	<b>690.0</b>	<b>750.7</b>
Interest on Deferral	7.5	n/a	7.5
<b>Total</b>	<b>68.2</b>	<b>690.0</b>	<b>758.2</b>

Operating and capital expenditures by program component<sup>1</sup> for F2016 Q2, F2016 Year to Date, and SMI Program to date are presented in [Table 8](#), [Table 9](#) and [Table 10](#) respectively.

<sup>1</sup> In Directive No. 4 of Commission Order No. G-67-10, BC Hydro was directed to report SMI Program costs broken down by the components specified therein.

**Table 8 SMI Program Operating and Capital Expenditures by SMI Program Component – F2016 Q2**

(\$ million)	Operating Expenditures			Capital Expenditures		
	Actual	Plan	Variance	Actual	Plan	Variance
Smart Meters	0.0	0.0	0.0	0.9	0.4	(0.5)
Telecommunications Systems	0.0	0.0	0.0	(0.9)	0.0	0.9
Meter Data Management System	0.0	0.0	0.0	0.0	0.0	0.0
Solution Integration	0.0	0.0	0.0	0.9	0.8	(0.1)
In-Home Display/In-Home Feedback	(0.1)	0.1	0.2	0.0	0.1	0.1
Conservation Based Rates	0.0	0.0	0.0	0.0	0.0	0.0
Smart Grid <sup>1</sup>	0.4	0.6	0.2	12.3	17.0	4.7
Other						
Procurement	0.0	0.0	0.0	0.0	0.0	0.0
Program Management	0.0	0.0	0.0	0.1	0.6	0.5
Facilities	0.0	0.0	0.0	0.1	0.0	(0.1)
Finance	0.0	0.0	0.0	0.2	0.5	0.3
Human Resources	0.0	0.2	0.2	0.0	0.0	0.0
Contract Management	0.0	0.0	0.0	0.1	0.2	0.1
IT Infrastructure	0.0	0.0	0.0	0.0	0.2	0.2
Security	0.0	0.0	0.0	0.0	0.1	0.1
Communications & Stakeholder Engagement	0.0	0.0	0.0	0.0	0.0	0.0
Regulatory	0.0	0.0	0.0	0.0	0.0	0.0
Transition to Operations	0.1	0.1	0.0	0.0	0.0	0.0
Interest During Construction <sup>2</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Total Other	0.1	0.3	0.2	0.5	1.6	1.1
Contingency	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>0.4</b>	<b>1.0</b>	<b>0.6</b>	<b>13.7</b>	<b>19.9</b>	<b>6.2</b>

<sup>1</sup> Smart Grid includes theft detection and other advanced telecom infrastructure related expenditures.

<sup>2</sup> Interest during construction is included in actual expenditures for each expenditure category, but not included in planned expenditures by category. Therefore, a separate line item is included in "Other."

Most of the variance in capital expenditures for F2016 Q2 in [Table 8](#) relates to the postponement of the implementation activities to later in F2016.

**Table 9 SMI Program Operating and Capital Expenditures by SMI Program Component – F2016 Year to Date**

(\$ million)	Operating Expenditures			Capital Expenditures		
	Actual	Plan	Variance	Actual	Plan	Variance
Smart Meters	(0.5)	(0.4)	0.1	1.3	1.0	(0.3)
Telecommunications Systems	0.0	0.0	0.0	(1.0)	0.0	1.0
Meter Data Management System	0.0	0.0	0.0	0.0	0.0	0.0
Solution Integration	0.0	0.0	0.0	1.6	1.3	(0.3)
In-Home Display/In-Home Feedback	0.0	0.1	0.1	0.0	0.2	0.2
Conservation Based Rates	0.0	0.0	0.0	0.0	0.0	0.0
Smart Grid <sup>1</sup>	1.0	1.3	0.3	18.9	24.1	5.2
Other						
Procurement	0.0	0.0	0.0	0.0	0.0	0.0
Program Management	0.0	0.0	0.0	0.0	1.0	1.0
Facilities	0.0	0.0	0.0	0.3	0.0	(0.3)
Finance	0.0	0.0	0.0	0.3	1.0	0.7
Human Resources	0.0	0.2	0.2	0.0	0.0	0.0
Contract Management	0.0	0.0	0.0	0.2	0.3	0.1
IT Infrastructure	0.0	0.0	0.0	0.1	0.2	0.1
Security	0.0	0.0	0.0	0.1	0.1	0.0
Communication & Stakeholder Engagement	0.1	0.1	0.0	0.0	0.0	0.0
Regulatory	0.0	0.0	0.0	0.0	0.0	0.0
Transition to Operations	0.1	0.1	0.0	0.0	0.0	0.0
Interest During Construction <sup>2</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Total Other	0.2	0.4	0.2	1.0	2.6	1.6
Contingency	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>0.7</b>	<b>1.4</b>	<b>0.7</b>	<b>21.8</b>	<b>29.2</b>	<b>7.4</b>

<sup>1</sup> Smart Grid includes theft detection and other advanced telecom infrastructure related expenditures.

<sup>2</sup> Interest during construction is included in actual expenditures for each expenditure category, but not included in planned expenditures by category. Therefore, a separate line item is included in "Other."



**Table 10 SMI Program Operating and Capital Expenditures by SMI Program Component – SMI Program to Date and Forecast at Completion of Program**

(\$ million)	Actual Expenditures – Program to Date			Forecast Expenditures - Completion of Program	
	Operating Expenditures	Capital Expenditures	Total Expenditures	Operating	Capital
Smart Meters	11.0	359.1	370.1	11.1	359.5
Telecommunications Systems	0.4	40.4	40.8	0.4	40.4
Meter Data Management System	0.2	8.1	8.3	0.2	8.1
Solution Integration	0.0	52.8	52.8	0.0	53.5
In-Home Display/In-Home Feedback	7.3	19.1	26.4	7.5	19.3
Conservation Based Rates	0.0	3.9	3.9	0.0	3.9
Smart Grid <sup>1</sup>	11.5	135.0	146.5	12.2	156.8
Other					
Program Management	4.6	20.3	24.9	4.6	20.7
Facilities	2.1	4.5	6.6	2.1	4.7
Finance	2.7	4.7	7.4	2.7	4.9
Regulatory	(8.7)	0.0	(8.7)	(8.7)	0.0
Procurement	0.1	20.3	20.4	0.1	20.3
Contract Management	0.0	2.0	2.0	0.0	2.3
Customer	2.6	0.0	2.6	2.6	0.0
Business Transformation	2.0	0.0	2.0	2.0	0.0
Engineering, IT, Telecom, Security & Field Trials	3.4	0.0	3.4	3.4	0.0
Utility Operations	1.4	0.0	1.4	1.4	0.0
Human Resources	0.9	0.5	1.4	1.6	0.5
Communication & Stakeholder Engagement	11.3	0.0	11.3	11.3	0.0

	Actual Expenditures – Program to Date			Forecast Expenditures - Completion of Program	
Transition to Operations	0.6	0.0	0.6	0.7	0.0
Leasehold Improvements	0.0	0.4	0.4	0.0	0.4
Field Trial Equipment	0.0	0.0	0.0	0.0	0.0
Security	0.0	2.0	2.0	0.0	2.0
Infrastructure (IT)	0.0	16.9	16.9	0.0	16.9
Program Development <sup>2</sup>	7.3	0.0	7.3	7.3	0.0
Interest During Construction <sup>3</sup>	0.0	0.0	0.0	0.0	0.5
Total Other	30.3	71.6	101.9	31.1	73.2
Contingency	0.0	0.0	0.0	1.5	70.0
<b>Total</b>	<b>60.7</b>	<b>690.0</b>	<b>750.7</b>	<b>64.0</b>	<b>784.7</b>
				<b>848.7</b>	

<sup>1</sup> Smart Grid includes theft detection and other advanced telecom infrastructure related expenditures.

<sup>2</sup> Program Initiation and Identification includes expenditures of \$7.3 million incurred during F2006 and F2008 (inclusive). These amounts were expensed in the year in which they were incurred, although only \$0.6 million was recovered in rates (i.e., \$6.7 million was incurred ex-plan).

<sup>3</sup> Interest during construction is included in actual expenditures for each expenditure category, but not included in planned expenditures by category. Therefore, a separate line item is included in "Other".

# **Smart Metering & Infrastructure Program**

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## **Quarterly Update Report No. 22**

### **Appendix A**

#### **SMI Program Contracts and Commitments – Executed in F2016 Q2**

Supplier/Vendor	Contract Value (\$)	Description
0957362 BC Ltd.	108,360	Asset Design Consultant
Annex Consulting Group Inc.	93,348	IT Resources
Brainhunter Systems Ltd.	300,050	Check Meter Software and Services
Capgemini Canada Inc.	432,524	IT Resources
Engine Digital Inc.	10,000	HAN Device Order Fulfillment
Erroron Consulting Ltd.	41,600	SCADA Upgrade Services
Feinstadt Consulting Inc.	69,660	Business Transformation Resource
HD3 Networks Inc.	59,724	IT Resources
Hwoiken Consulting Services	30,000	DSMD Resource
JTS Consulting Inc.	350,900	IT Resources
Karma Midnight Ventures Ltd.	500,000	Smart Meter Installation Support
Leacy Consulting Services Limited	130,000	Business Transformation Resource
Long View Systems Corporation	7,440	Network Infrastructure Design Services
Nextgen Technologies Ltd	154,450	SCADA Upgrade Services
Oracle Canada ULC	81,276	Technology Servers and Licences
Procom Consultants Group Ltd	59,700	Advanced Telecom Engineering Resources
Quartech Systems Ltd.	88,000	Project Management Resource
Robert Half Canada Inc.	13,710	Project Accountant
Smart Meter Deployment Consulting	108,000	Deployment Consultant
Teema Solutions Group Inc.	7,040	IT Resources
Teksystems Canada Inc.	644,589	IT Resources
Telus Communications Company	153,657	Telecom Infrastructure Services
University of British Columbia	10,000	Check Meters Testing Services
West Pacific Consulting Group	3,520	IT Resources
<b>TOTAL</b>	<b>3,457,548</b>	