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February 11, 2016

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. 23 – October to December 2015 (Report)**

BC Hydro writes in compliance with Commission Order No. G-67-10, to provide its Report. The SMI Program will be complete in March 2016. With the SMI Program's completion, BC Hydro will not be filing any further quarterly progress reports. A final report for the SMI Program is planned for submission in summer 2016.

For further information, please contact Geoff Higgins at 604-623-4121 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Tom Loski
Chief Regulatory Officer

st/rh

Enclosure

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

Smart Metering & Infrastructure Program

Quarterly Update Report No. 23

F2016 Third Quarter

October 2015 to December 2015

Table of Contents

1	Introduction	1
2	Meter Choices Program	3
3	Project Status	5
4	Project Schedule	5
5	Project Costs: F2016 Q3 and Program to Date	10

List of Tables

Table 1	Measurement Points from System Devices Breakdown – As of December 31, 2015	3
Table 2	Meter Choices Program Participation Breakdown – As of December 31, 2015	4
Table 3	Project Schedule F2016 Q3	6
Table 4	Project Schedule F2016 Q4	7
Table 5	Customer Mass Meter Deployment – June 2011 Schedule and Actuals	9
Table 6	SMI Program Operating and Capital Expenditures – F2016 Q3 and Forecast at Completion	10
Table 7	SMI Program Operating and Capital Expenditures – F2016 Year to Date	11
Table 8	SMI Program Operating and Capital Expenditures – SMI Program to Date	11
Table 9	SMI Program Operating and Capital Expenditures by SMI Program Component – F2016 Q3	12
Table 10	SMI Program Operating and Capital Expenditures by SMI Program Component – F2016 Year to Date	13
Table 11	SMI Program Operating and Capital Expenditures by SMI Program Component – SMI Program to Date and Forecast at Completion of Program	14

Appendices

Appendix A	SMI Program Contracts and Commitments – Executed in F2016 Q3
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1 Introduction

2 This Smart Metering & Infrastructure (**SMI**) Quarterly Report No. 23 covers the Third
3 Quarter of Fiscal 2016 (**F2016 Q3**), the period from October 1, 2015 to
4 December 31, 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 6](#) and [Table 11](#) 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 Q3 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 December 31, 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 December 31, 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 have focused 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, Check Meters, transformer rebate meters and other distribution
15 equipment and their associated applications.

16 As of December 2015, the SMI Program completed the requirements of the Smart
17 Meters and Smart Grid Regulations under *The Clean Energy Act*, Section 17 by
18 putting in place a program for theft detection using more than 9,000 measurement
19 points from system devices, implementing energy analytics software to perform
20 energy balancing and implementing a network of WiMAX base station sites and
21 Subscriber Units which are successfully transporting data from nearly one million
22 smart meters throughout BC Hydro's service territory.

23 [Table 1](#) shows the composition of measurement points from system devices as of
24 December 31, 2015.

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Table 1 Measurement Points from System Devices Breakdown – As of December 31, 2015

System Devices	Number of Measurement Points from System Devices
SCADA Devices (Reclosers, Relays, Bus Voltage, Switches, Voltage Regulators and Capacitor Banks)	4,414
Transformer Rebate Meters (1212 Rate Class)	3,045
Check Meters for Temporary Rotational Purposes	1,000
Check Meters Deployed in Fixed Locations	548
First Generation Device Measurements (Feeder Meters and Transformer Meters, Field Metrics)	109
Total	9,116

4

2 Meter Choices Program

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

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

20 The composition of Meter Choices Program participants as of December 31, 2015 is
 21 identified in [Table 2](#).

1
 2

Table 2 **Meter Choices Program Participation
Breakdown – As of December 31, 2015**

Option	Number of Accounts
Legacy Meter	12,669
Selected Radio-off	652
Total	13,321

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

11 BC Hydro is continuing to work with these customers and as of December 31, 2015,
 12 of the approximately 2,600 customers who refused access, 1,810 customers have
 13 had their meter replaced. Out of the remaining 790 customers, 360 have consented
 14 to replacement of the legacy meter with another legacy meter, and 430 customers
 15 still require a resolution.

16 In late March 2015, an additional 1,320 letters were sent to customers informing
 17 them that the Measurement Canada accuracy seal on the legacy meters at their
 18 premises would expire in 2015 and require meter exchange. Of these,
 19 165 customers were informed that because the stock of legacy meters for their
 20 service type has been exhausted, a radio-off meter or a smart meter at the
 21 Customer's election will need to be installed. As of December 31, 2015, of the
 22 1,320 customers to whom letters were sent, 955 customers have had the meter on
 23 their premises exchanged, 195 work orders have been issued to replace legacy
 24 meters with smart meters, 10 work orders have been issued to replace legacy

1 meters with radio off meters, and 160 legacy meters still require meter exchange
2 with another legacy meter.

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

6 **3 Project Status**

7 During F2016 Q3, BC Hydro took the following steps to advance and implement the
8 SMI Program:

- 9 • Continued deployment of customer meters;
- 10 • Continued transition of customers to automated billing;
- 11 • Completed deployment of advanced telecom equipment;
- 12 • Continued telecom network optimization;
- 13 • Continued work related to the Meter Choices Program including exchanges of
14 legacy meters with expired seals;
- 15 • Completed EAS functional deployment;
- 16 • Completed integration of SCADA capable devices; and
- 17 • Implemented Disaster Recovery Capability.

18 **4 Project Schedule**

19 [Table 3](#) shows the status of the major activities in F2016 Q3 as reported in
20 F2016 Q2 Quarterly Report No. 22.

1

Table 3 Project Schedule F2016 Q3

Date	Activity		
October 2015	In Field/Over the Air Meter Mitigation – Network Stability	Ongoing	
	Continue Network Stabilization and Optimization	Ongoing	
	Upgrade of Automated Data Collection System (ADCS), Meter Data Management System (MDMS) and Network Management System (NMS) to new software versions	Complete	
	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	
	Check Meter Device Testing and Soft Deployment	Ongoing	
	EAS 2b (SCADA and Check Meters) Functional Deployment	Complete	
	Disaster Recovery Capability Network Failover Design	Ongoing	
	Advanced Telecom: WiMAX	Ongoing	
	November 2015	In Field/Over the Air Meter Mitigation – Network Stability	Ongoing
		Continue Network Stabilization and Optimization	Ongoing
Operational Insights Build		Complete	
Meter Choices Program: Install Radio Off & Smart Meters		Ongoing	
Itron Cellular Solution Meter Deployment		Commenced	
SCADA Recloser Reconfiguration		Ongoing	
SCADA Infrastructure and Reclosers Field Upgrades		Ongoing	
SCADA Relay Resolution Reconfiguration		Ongoing	
Check Meter Device Testing and Soft Deployment		Ongoing	
EAS 2b (SCADA and Check Meters) Advanced Deployment		Ongoing	
Disaster Recovery Capability Failover Network Testing		Ongoing	
Advanced Telecom: WiMAX		Complete	
December 2015		In Field/Over the Air Meter Mitigation – Network Stability	Complete
		Continue Network Stabilization and Optimization	Ongoing
	Operational Insights Testing and Deployment	Ongoing	
	Meter Choices Program: Install Radio Off & Smart Meters	Transitioned to Sustainment	
	Itron Cellular Solution Meter Deployment	Ongoing	
	SCADA Recloser Reconfiguration	Complete	
	SCADA Infrastructure and Reclosers Field Upgrades	Complete	

Date	Activity	
	SCADA Relay Resolution Reconfiguration	Complete
	Check Meter Device Deployment	Ongoing
	Disaster Recovery Capability Production Turnover	Complete

1 [Table 4](#) shows the major activities included in the project schedule for the fourth
2 quarter of F2016.

3 **Table 4 Project Schedule F2016 Q4**

Date	Activity
January 2016	Continue Network Stabilization and Optimization
	Operational Insights Testing
	Itron Cellular Solution Meter Deployment
	EAS Defect Resolution Release
	Check Meter Device Deployment
February 2016	Continue Network Stabilization and Optimization / Transition to Sustainment
	Operational Insights Final Deployment
	Itron Cellular Solution Meter Deployment
	EAS Defect Resolution Release
	Check Meter Device Deployment
March 2016	Operational Insights Transition to Sustainment
	Itron Cellular Solution Meter Deployment / Transition to Sustainment
	EAS Warranty and Transition to Sustainment
	Check Meter Device Deployment / Transition to Sustainment
	Final Asset Capitalization
	Finalize Project Completion and Evaluation Report
	Project Closure

4 Meter deployment continued throughout F2016 Q3, increasing the total number of
5 smart meters installed by 9,130 during the quarter, none of which were installed by
6 Corix, as shown in [Table 5](#).

7 On December 31, 2015, there were 1,937,836 smart meters in the field, and
8 2,706 conventional meters remaining in the field (excluding 12,669 legacy meters
9 remaining under the Meter Choices Program).

- 1 During the third quarter of F2016, two Field Area Network (**FAN**) collectors (Cisco
- 2 Connected Grid Routers) were installed, bringing the total number installed to 1,852
- 3 by the end of F2016 Q3. Six Range Extenders were installed during the quarter,
- 4 bringing the total number in the field at the end of the quarter to 5,264.¹

¹ Total number of Range Extenders installed as at September 30, 2015 was 5,258. Quarterly Report No. 22 incorrectly reported this number as 5,242.

Table 5 Customer Mass Meter Deployment – June 2011 Schedule and Actuals

Smart Metering and Infrastructure Program
June 2011 Customer Meter Deployment Plan 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	Q3		
Corix Installations (June 2011 Plan)																					
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
Planned Corix Installations (June 2011 Plan)	1,848,924	112,610	412,960	432,586	429,667	354,641	106,460														1,848,924
To End of Q3 F2016																					
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	168,207 *																				
Total Smart Meter Installations	1,937,836																				
Conventional Meters Remaining in Field (Excl. Meter Choices Program)	2,706																				

* Includes smart meters installed due to growth in the number of customer accounts during the deployment.

5 Project Costs: F2016 Q3 and Program to Date

Actual operating expenditures during F2016 Q3 were \$1.4 million, which is \$0.9 million more than planned due to delayed transition to sustainment activities related to Smart Grid. Actual capital expenditures during F2016 Q3 were \$10.3 million, which is \$5.7 million less than planned primarily due to program savings related to Smart Grid. Forecast operating and capital expenditures at the completion of the program have been adjusted downward from \$848.7 million to \$777.0 million. The reduction in forecast is primarily composed of \$71.5 million of contingency that will not be required.²

Operating and capital expenditures related to the SMI Program incurred by BC Hydro in F2016 Q3 and for the SMI Program to date are shown in [Table 6](#), [Table 7](#) and [Table 8](#) respectively.

Table 6 SMI Program Operating and Capital Expenditures – F2016 Q3 and Forecast at Completion

(\$ million)	Operating Expenditures			Capital Expenditures			Forecast at Completion (\$)	
	Actual	Plan	Variance	Actual	Plan	Variance	Operating	Capital
Labour	0.1	0.4	0.3	1.0	0.6	(0.4)	28.3	53.2
Consultants and Contractors	1.3	0.1	(1.2)	4.8	16.0	11.2	43.7	356.5
Materials/Other	0.0	0.0	0.0	4.2	(1.0)	(5.2)	(8.3)	291.6
Interest	n/a	n/a	n/a	0.3	0.4	0.1	n/a	12.0
Sub-total SMI Program	1.4	0.5	(0.9)	10.3	16.0	5.7	63.7	713.3
Interest on Deferral	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total	1.4	0.5	(0.9)	10.3	16.0	5.7	777.0	

² In Table 5 (SMI Program Operating and Capital Expenditures – F2016 Q2 and Forecast at Completion) of the SMI Quarterly Update Report No. 22, the full amount of the Contingency (\$71.5 million) was erroneously allocated in the 'Materials/Other' category as Capital under Forecast at Completion. Contingency should have been divided between Operating and Capital under Forecast at Completion; subtotaling in 'Sub-total SMI Program' row as \$64 million and \$784.7 million respectively.

Table 7 SMI Program Operating and Capital Expenditures – F2016 Year to Date

(\$ million)	Operating Expenditures			Capital Expenditures		
	Actual	Plan	Variance	Actual	Plan	Variance
Labour	0.3	0.9	0.6	2.6	1.9	(0.7)
Consultants and Contractors	1.8	1.0	(0.8)	21.4	46.1	24.7
Materials/Other	0.0	0.0	0.0	7.1	(3.9)	(11.0)
Interest	n/a	n/a	n/a	1.0	1.1	0.1
Sub-total SMI Program	2.1	1.9	(0.2)	32.1	45.2	13.1
Interest on Deferral	n/a	n/a	n/a	n/a	n/a	n/a
Total	2.1	1.9	(0.2)	32.1	45.2	13.1

Table 8 SMI Program Operating and Capital Expenditures – SMI Program to Date

(\$ million)	Operating Expenditures	Capital Expenditures	Total Expenditures
Labour	27.9	52.8	80.7
Consultants and Contractors	42.5	345.3	387.8
Materials/Other	(8.3)	290.4	282.1
Interest	n/a	11.8	11.8
Sub-total SMI Program	62.1	700.3	762.4
Interest on Deferral	7.5	n/a	7.5
Total	69.6	700.3	769.9

Operating and capital expenditures by program component³ for F2016 Q3, F2016 Year to Date, and SMI Program to date are presented in [Table 9](#), [Table 10](#) and [Table 11](#) respectively.

³ 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 9 SMI Program Operating and Capital Expenditures by SMI Program Component – F2016 Q3

(\$ million)	Operating Expenditures			Capital Expenditures		
	Actual	Plan	Variance	Actual	Plan	Variance
Smart Meters	0.2	0.0	(0.2)	0.1	0.3	0.2
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	0.2	(0.7)
In-Home Display/In-Home Feedback	0.0	0.0	0.0	0.1	0.0	(0.1)
Conservation Based Rates	0.0	0.0	0.0	0.0	0.0	0.0
Smart Grid ¹	0.9	0.1	(0.8)	9.3	11.7	2.4
Other						
Procurement	0.0	0.0	0.0	0.0	0.0	0.0
Program Management	0.0	0.0	0.0	0.0	0.2	0.2
Facilities	0.2	0.0	(0.2)	0.4	0.0	(0.4)
Finance	0.0	0.0	0.0	0.2	0.5	0.3
Human Resources	0.0	0.4	0.4	0.0	0.0	0.0
Contract Management	0.0	0.0	0.0	0.2	0.1	(0.1)
IT Infrastructure	0.0	0.0	0.0	0.0	0.0	0.0
Security	0.0	0.0	0.0	0.0	0.0	0.0
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	0.0	(0.1)	0.0	0.0	0.0
Interest During Construction ²	0.0	0.0	0.0	0.0	0.0	0.0
Total Other	0.3	0.4	0.1	0.8	0.8	0.0
Contingency	0.0	0.0	0.0	0.0	3.0	3.0
Total	1.4	0.5	(0.9)	10.3	16.0	5.7

¹ Smart Grid includes theft detection and other advanced telecom infrastructure related expenditures.

² 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 – F2016 Year to Date

(\$ million)	Operating Expenditures			Capital Expenditures		
	Actual	Plan	Variance	Actual	Plan	Variance
Smart Meters	(0.3)	(0.4)	(0.1)	1.4	1.3	(0.1)
Telecommunications Systems	0.0	0.0	0.0	(1.9)	0.0	1.9
Meter Data Management System	0.0	0.0	0.0	0.0	0.0	0.0
Solution Integration	0.0	0.0	0.0	2.5	1.5	(1.0)
In-Home Display/In-Home Feedback	0.0	0.1	0.1	0.1	0.1	0.0
Conservation Based Rates	0.0	0.0	0.0	0.0	0.0	0.0
Smart Grid ¹	1.9	1.3	(0.6)	28.2	35.8	7.6
Other						
Procurement	0.0	0.0	0.0	0.0	0.0	0.0
Program Management	0.0	0.1	0.1	0.0	1.2	1.2
Facilities	0.2	0.0	(0.2)	0.7	0.0	(0.7)
Finance	0.0	0.0	0.0	0.6	1.5	0.9
Human Resources	0.0	0.6	0.6	0.0	0.0	0.0
Contract Management	0.0	0.0	0.0	0.4	0.4	0.0
IT Infrastructure	0.0	0.0	0.0	0.0	0.3	0.3
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	0.2	0.1	(0.1)	0.0	0.0	0.0
Interest During Construction ²	0.0	0.0	0.0	0.0	0.0	0.0
Total Other	0.5	0.9	0.4	1.8	3.5	1.7
Contingency	0.0	0.0	0.0	0.0	3.0	3.0
Total	2.1	1.9	(0.2)	32.1	45.2	13.1

¹ Smart Grid includes theft detection and other advanced telecom infrastructure related expenditures.

² 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 11 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	11.4	359.2	370.6	11.9	359.3
Telecommunications Systems	0.4	39.5	39.9	0.4	39.5
Meter Data Management System	0.2	8.1	8.3	0.2	8.1
Solution Integration	0.0	53.7	53.7	0.0	53.7
In-Home Display/In-Home Feedback	7.3	19.2	26.5	7.3	19.3
Conservation Based Rates	0.0	3.9	3.9	0.0	3.9
Smart Grid ¹	12.3	144.3	156.6	13.0	156.6
Other					
Program Management	4.6	20.3	24.9	4.6	20.5
Facilities	2.3	4.9	7.2	2.3	4.9
Finance	2.7	4.9	7.6	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	2.2	2.2	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	1.2	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 ²	7.3	0.0	7.3	7.3	0.0
Interest During Construction ³	0.0	0.0	0.0	0.0	0.2
Total Other	30.5	72.4	102.9	30.9	72.9
Contingency	0.0	0.0	0.0	0.0	0.0
Total	62.1	700.3	762.4	63.7	713.3
				777.0	

¹ Smart Grid includes theft detection and other advanced telecom infrastructure related expenditures.

² 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).

³ 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

Quarterly Update Report No. 23

Appendix A

SMI Program Contracts and Commitments – Executed in F2016 Q3

Supplier/Vendor	Contract Value (\$)	Description
A.T. maintenance Plus Contracting	40,296	Smart Meter Installation Services
Annex Consulting Group Inc.	250,704	IT Resources
BellTech Systems Ltd.	100,000	Network Equipment Installation
Blackcomb Helicopters LP	16,594	Helicopter Use for Advanced Telecom Network Enhancement
Brainhunter Systems Ltd.	30,080	IT Resources
Capgemini Canada Inc.	151,384	IT Resources
Compugen Inc.	51,658	Disaster Recovery Consulting Services
Corix Utilities Inc.	3,036,902	Smart Meter Installation Services
EMC Corporation of Canada	68,503	Energy Analytics Solution Services
Fred Thompson Contractors	2,105	Advanced Telecom Services
HD3 Networks Inc.	56,160	IT Resources
Howe Sound Consulting Inc.	43,375	DSMD Resource
Hwoiken Consulting Services	25,000	DSMD Resource
JTS Consulting Inc.	224,680	IT, Accounting and Procurement Resources
Modis Canada Inc.	7,040	IT Resource
Oracle Canada ULC	19,124	Technology Equipment
Procom Consultants Group Ltd	17,280	Security Services
Quartech Systems Ltd.	231,420	IT and Project Management Resources
Robert Half Canada Inc.	27,500	Project Accountant
Smart Meter Deployment Consulting	78,000	Deployment Consultant
Teema Solutions Group Inc.	43,210	IT Resource
Teksystems Canada Inc.	365,638	IT and Project Management Resources
Telus Communications Company	281,413	Telecom Infrastructure Services
Valley Power Line Contracting Ltd.	6,801	DSMD Services
West Pacific Consulting Group	148,356	IT Resources
Yuitech Solutions Ltd.	38,700	IT Resource
Total	5,361,923	