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REPORT NAME: RE## AMI OPERATIONAL SAVINGS REPORT
COMPANY NAME: PORTLAND GENERAL ELECTRIC
DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? No Yes If yes, please submit only the cover letter electronically. Submit confidential information as directed OAR 860-001-0070 or the terms of an applicable protective order.
If known, please select designation: RE (Electric) RG (Gas) RW (Water) RO (Other)
Report is required by: OAR Statute Order No. 08-245 Other
Is this report associated with a specific docket/case? No Yes If Yes, enter docket number: UE 189
Key words: AMI CONDITIONS
If known, please select the PUC Section to which the report should be directed:
Corporate Analysis and Water Regulation
☐ Economic and Policy Analysis
☐ Electric and Natural Gas Revenue Requirements
☐ Electric Rates and Planning
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Consumer Services Section

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July 31, 2012

Via Email

vikie.malkasian@state.or.us

Vikie Malkasian Administrator 550 Capitol Street, N.E., Ste 215 PO Box 2148 Salem, OR 97308-2148

RE: AMI Operational Savings Report

Commission Order No. 08-245 (Docket No. UE 189) approved PGE's advanced metering infrastructure (AMI) program and adopted certain conditions as part of that approval (see Appendix A, pages 10-21). One condition requires that if PGE "does not file a general rate case within 12 months of the termination of the UE 189 tariffs, PGE will provide Staff and any interested party a report showing final capture of O&M savings so that the comparison of 'before' and 'after' states does not become too difficult."

On July 19, 2011, the OPUC Staff, the Citizens' Utility Board, and PGE agreed to change the time period of the AMI Operational Savings Report from the 2011 calendar year to two semi-annual reports: the first covering July 2011-December 2011, and the second covering January 2012-June 2012. Pursuant to this agreement and Order No. 08-245, PGE provides the attached AMI Operational Savings Report for the half-year ending December 31, 2011. (The spreadsheet and work papers are provided in electronic format only.)

If you have any questions or require further information, please call Alex Tooman at (503) 464-7623. Please direct all formal correspondence and requests to the following email address: pge.opuc.filings@pgn.com.

Sincerely

Parrick G. Hager

Manager, Regulatory Affairs

PGH:ilt

cc: UE 189 Service List



AMI Operational Savings Report

(July 1, 2011 to December 31, 2011)

Introduction

Commission Order No. 08-245 (Docket No. UE 189) approved PGE's advanced metering infrastructure (AMI) program and adopted certain conditions as part of that approval (see Appendix A, pages 10-21). One condition requires that if PGE "does not file a general rate case within 12 months of the termination of the UE 189 tariffs, PGE will provide Staff and any interested party a report showing final capture of O&M savings so that the comparison of 'before' and 'after' states does not become too difficult." PGE did not file a general rate case in 2011, and thus provides this report.

If all aspects of AMI had been completed by December 31, 2010, as originally scheduled, calendar year 2011 would have been the first full year after completing AMI deployment. However, due to certain delays related to implementing IT process improvements, the AMI project close-out did not occur until June 30, 2011. Thus, many operational savings were not available until the second half of 2011.

On July 19, 2011, the OPUC Staff, the Citizens' Utility Board, and PGE (the Parties) agreed to change the time period of the AMI Operational Savings Report from the 2011 calendar year to two semi-annual reports: the first covering July 2011-December 2011 and the second covering January 2012-June 2012. For the purpose of comparison and savings calculation, the Parties agreed that calendar year 2007, escalated to 2011 for known cost increases, provides the appropriate baseline for establishing AMI project savings. Pursuant to this agreement and Order No. 08-245, PGE provides the following AMI Operational Savings Report for the half-year ending December 31, 2011.

Summary

Table 1, below, summarizes the net actual AMI Operational Benefits for the six-month period of July 2011 through December 2011:

Table 1, Summary of AMI Net Operational Benefits Ju	ıl-Dec 2011
Category	\$
Operational Benefits	
FTE reductions - straight time	4,220,273
Other labor/contractor reductions	109,878
Overtime reductions	239,142
Material and supplies	176,358
Fuel and maintenance	381,842
Late pay fees	861,135
Load forecast adjustment from UE 215 to reflect remote disconnects	333,689
Additional billings from lost revenue protection	856,777
Meter accuracy	780,737
Subtotal	7,959,831
Additional benefits	
Currently unavailable due to power price decrease	393,174
Outage management (i.e., pinging the meter)	203,781
Business Energy Tax Credits (BETCs)	193,770
UE 215 stipulated benefit	219,058
Gross AMI Benefits	8,969,615
Other Incremental Costs	
Non-Labor IT costs	(153,404)
Non-Labor communication costs	(111,257)
Non-Labor network data operations	4
Net AMI Benefits (for six months, July-Dec 2011)	8,704,954
Annualized AMI Benefits (based on the July-Dec 2011 period)	17,409,908
Projected Benefits – 2012	
Forecasted benefits – additional FTE reductions in 2012	1,391,685
Projected Annualized AMI Benefits 2012	18,801,593

Operational Benefits

FTE Reductions – Straight Time

Overall, PGE realized approximately 113.2 FTE reductions directly related to AMI deployment by 2011. By taking the average salary for each department and multiplying by their respective FTE reductions or additions, a savings of approximately \$2.6 million in straight time labor was calculated. With the addition of labor loadings, FTE reductions accounted for approximately \$4.2 million in operational benefits between July and December 2011.

Other Labor/Contractors

In PGE's Billing Department, commitments were made to reduce straight-time Labor FTEs (incorporated in above FTE reductions) as well as contractors. Between the 2007 baseline year and 2011, the Billing Department realized approximately 4.5 contractor reductions directly related to AMI deployment. These reductions accounted for approximately \$0.110 million in operational benefits between July and December 2011.

Overtime

From the reductions in meter readers, there has been a corresponding reduction in overtime costs associated with meter reading. By comparing baseline 2007 overtime costs to 2011, PGE calculated that overtime reductions accounted for approximately \$0.239 million in operational benefits between July and December 2011.

Materials and Supplies

From the reductions in meter readers, there has been a corresponding reduction in materials and supplies cost in the Meter Reading Department. By comparing baseline 2007 materials and supplies costs to 2011, PGE calculated that materials and supplies costs accounted for approximately \$0.176 million in operational benefits between July and December 2011.

Fuel and Maintenance

With AMI fully deployed, there has been a corresponding reduction in fuel and automotive costs associated with meter reading. By escalating the baseline 2007 vehicle fuel and maintenance costs the benefits for fuel and maintenance reductions is determined. For the first six months AMI was fully deployed, reductions in fuel and maintenance costs accounted for approximately \$0.382 million in operational benefits.

Late Pay Fees

One of the significant qualitative benefits of AMI is the ability for customers to select their preferred billing cycle, so that their bill due date is more convenient. With the provision of this benefit, the Oregon administrative rules allow PGE to advance by approximately 30 days the date when customers are obligated to pay a late fee on past-due bills. By comparing the baseline 2007 Late Payment Fees to 2011, we determined that Late Pay Fees accounted for approximately \$0.861 million in operational benefits between July and December 2011.

Load Forecast Adjustment

In Docket No. UE 215, PGE's 2011 general rate case, we adjusted the residential load forecast by (20,411) MWhs to reflect the reduction in energy use that PGE would achieve from its remote disconnect meters. Because the expected reduction in arrearages has been obscured by the continued weakness in the Oregon economy, we cannot quantitatively establish this benefit from 2011 data. PGE has nevertheless maintained the load reduction to provide this benefit to customers. In UE 189, this benefit was estimated to be \$1.4 million with avoided energy costs priced at approximately \$66/MWh. In UE 215, when we applied the load reduction, energy costs had declined to approximately \$51/MWh, so that of the \$1.4 million energy-related benefit, \$0.3 million were based on "power prices ... beyond PGE's control, we note this aspect of energy-related benefits as being temporarily unavailable but in the future, it is fully achievable." (See PGE Exhibit 300, page 17.) In 2011, energy prices have declined further to approximately \$30/MWh. Consequently, the load reduction benefit is \$0.334 million between July and December 2011 and the temporarily unavailable component of this energy-related benefit is \$0.393 million for half year period.

Additional Billings from Lost Revenue Protection

With AMI, PGE's Energy Recovery Department has been able to use newly acquired interval data to increase their success in the identification of energy theft and unaccounted for energy losses (i.e., lost revenue protection or LRP). By comparing the baseline 2007 "lost MWh avoided" to 2011, PGE identified an increase of approximately 8,605 MWh of energy loses that were avoided due to AMI. This accounts for approximately \$0.857 million in energy-related savings between July and December 2011.

Meter Accuracy

In conjunction with AMI deployment, PGE performed a study to estimate the improvement in meter accuracy between old mechanical meters and new solid state meters. The purpose of the study was to evaluate the new meters' ability to read lower levels of consumption and to correct for older mechanical meters running slower over time. From the study, PGE calculated an operational benefit of approximately \$0.781 million.

Additional Benefits

Currently Unavailable due to Power Price Decrease

As noted above, the decline in power prices has increased the amount of currently unavailable energy-related benefits associated with the UE 215 load forecast adjustment. For the July through December 2011 period, this totals \$0.393 million.

Outage Management

One of the benefits of AMI is the ability for PGE's repair and line dispatchers to "ping" the meters. Pinging the meter allows PGE to determine whether or not a meter has power without the need for a repair or line dispatcher to dispatch a crew. By comparing the average non-dispatch cost savings from 2007-2010 to the non-dispatch cost savings in 2011, we determined that pinging the meter accounted for approximately \$0.204 million in operational benefits between July and December 2011.

Business Energy Tax Credits (BETCs)

In UE 215, PGE's revenue requirement reflected \$1.0 million in state tax credits for BETC's associated with AMI. Based on the Oregon Dept. of Energy's preliminary approval, the BETCs were expected to total \$3.5 million and be available over five years as follows:

2011 \$1,000,000

2012 \$1,000,000

2013 \$500,000

2014 \$500,000

2015 \$500,000

Because PGE did not receive final approval of the BETCs until 2012, customers will receive the \$1.0 million tax credit benefit for at least three years and until PGE's next rate case goes into effect. By calculating the levelized, net present value of the BETC revenue requirement, we identify approximately \$0.194 million in operational benefits between July and December 2011.

UE 125 Stipulated Benefit

In UE 215, PGE stipulated to provide customers with an additional \$1.7 million reduction to O&M costs (see Commission Order 10-478, Appendix A, page 3). PGE customers will therefore receive this benefit until January 1, 2014, which is the earliest a new general rate case could go into effect. By calculating the levelized, net present value of the O&M reduction revenue requirement, we identify approximately \$0.219 million in operational benefits between July and December 2011.

Other Incremental Costs

Non-Labor IT Costs

The incremental Non-Labor IT costs reflect an increase in network and server infrastructure, annual Oracle support and maintenance licensing, and storage to cover the availability requirements for Meter Data Consolidator (MDC). The incremental Non-Labor IT costs between July and December 2011 are approximately \$0.153 million.

Non-Labor Communication Costs

The incremental Non-Labor Communication costs reflect the regulatory requirement that PGE perform outbound calls to customers that PGE remotely disconnects. PGE contracts with a third party vendor to perform outbound calls to meet the regulatory requirement. The incremental Non-Labor Communication costs between July and December 2011 were approximately \$0.111 million.

Non-Labor Network Data Operations

The incremental costs in Non-Labor Network Data Operations that reflect the annual support payments for Tower Gateway Basestation (TGB) maintenance, Regional Network Interface (RNI) software, and Radio Frequency licensing are zero because they are covered by credits received from PGE's meter vendor.

Conclusion

In UE 189, PGE estimated that the AMI operational benefits would be approximately \$18.2 million in 2011 (the final UE 189 estimate was filed in November 2007). After six months (July 2011 to December 2011) of AMI being fully deployed, PGE has accounted for approximately \$8.7 million in actual operational benefits. On an annualized basis, this equals \$17.4 million, which is \$0.8 million less than the estimate developed in 2007. Looking forward, however, PGE has achieved additional AMI-related reductions of 8 FTEs by June 30, 2012 and we expect to reduce an additional 7 FTEs by year-end 2012. At fully-loaded, average wages these FTEs are expected to produce an additional \$1.4 million benefit, which would raise the annualized benefit total to \$18.8 million.

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CERTIFICATE OF SERVICE

I hereby certify that I have this day caused the foregoing AMI OPERATIONAL SAVINGS REPORT: JULY 2011 -- DECEMBER 2011 to be served by electronic mail to those parties whose email addresses appear on the attached service list, and by First Class US Mail, postage prepaid and properly addressed, to those parties on the attached service list who have not waived paper service for OPUC Docket No. UE 189.

DATED at Portland, Oregon, this 31st day of July, 2012.

Patrick G. Hager

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Summary of Actual AMI Operating Savings Jul-Dec 2011

Operational Savings 4,220,273 FTE Reductions - Straight Time 4,220,273 Other labor/Contractors Reductions 109,878 Overtime Reductions 239,142 Material and Supplies 176,358 Fuel and Maintenance 381,842 Late Pay Fees 861,135 Load forecast adjustment from UE 215 to reflect remote disconnects 333,689 Additional Billings from Lost Rev Protection 856,777 Meter Accuracy 780,737 Subtotal 7,959,831 Additional benefits 203,781 Currently unavailable due to power price decrease 393,174 Pinging the Meter 203,781 BETCs (levelized) 219,058 Gross AMI Benefits 8,969,615 Other incremental costs (153,404) Non-Labor IT costs (111,257) Non-Labor network data operations - Net AMI Benefits (for six months, July-Dec 2011) 8,704,954 Annualized AMI Benefits (based on the July-Dec 2011 period) 17,409,908 Projected Benefits - 2012 1,391,685 Projected Annualized 2012 AMI Be	Category	\$
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Projected Annualized 2012 AMI Benefits 18,801,593	Forecasted benefits - additional FTE reductions in 2012	1,391,685
	Projected Annualized 2012 AMI Benefits	18,801,593

FTE to Labor Reductions

2011 Status Quo

	FTEs
RC 451 Meter Readers	127.6
RC 452 Field Collections	33.8
RC 928 Network Data Operations	13.0
RC 207 Meter Services	36.8
RC 922 Res & Business Services	3.0
RC 929 Advanced Metering Infrastructure	
Total 2011 Status Quo	214.2

	2011 Jul-Dec FTE	Delta FTEs	Average Pay Jul- Dec 2011	2011 Labor Savings
RC 451 Meter Readers	-	(127.6)	23,824	(3,039,814)
RC 452 Field Collections	47.2	13.4	28,609	384,608
RC 928 Network Data Operations	17.4	4.4	38,168	168,765
RC 207 Meter Services	37.4	0.5	40,310	21,569
RC 922 Res & Business Services	-	(3.0)	57,172	(171,515)
RC 929 Advanced Metering Infrastructure	1.0	1.0	49,188	48,668
Additional FTEs				
RC 432 Call Center		1.0	23,282	23,282
RC 455 Energy Recovery		1.0	34,651	34,651
RC 757 IT Architecture		1.0	47,006	47,006
RC 747 IT Voice and Data Systems		1.0	40,579	40,579
RC 437 Billing		(2.0)	23,828	(47,657)
RC 332 Routine MX		(4.0)	28,210	(112,839)
Assilinate la se ANN		(442.0)		(0.000.007)
Attributable to AMI		(113.2)		(2,602,697)
Labor Loadings				(1,617,576)
Total Labor Savings			_	(4,220,273)

RC 452 FTEs	2011	2012	
Coordinators	6	5	1 cross training
Field Connect Reps	24	19	As of 6-30-12
Meter readers	14	7	By year end 2012
Supervisors	2	1	As of 6-30-12
Lead specialist	1	-	As of 6-30-12
Total FTEs	47	32	•
Delta FTEs		(15)	
Average pay		57,218	
2012 labor improvement (annualized)		(858,270)	
Labor Loadings		(533,415)	
Estimated 2012 improvement from RC 4	52	(1,391,685)	-

July - Dec 2011 Other Savings

Operating Area	Reduction	\$Savings (Jul-Dec)
Other Labor		
	Contractors	08 567
Jul-Dec 2007 RC 437	Contractors	98,567
Escalate to 2011		109,878
2011 Actuals		
Savings 2011		109,878
Overtime Benefit		
RC451	2007 Costs	179,419
RC452	2007 Costs 2007 Costs	64,130
Subtotal 2007	2007 Cosis	
		243,549
Escalate to 2011		271,497
2011 Actuals (Jul-Dec)		32,355
Savings		239,142
Materials and Supplies		
RC 451 based on 2007 Pre-AMI	Non-Labor	159,418
Escalate to 2011		177,712
2011 Actuals (Jul-Dec)		1,353
Savings		176,358

Fuel & Vehicle Maintenance Cost (Meter Reading)	2007 Actuals	2011
2011 Status Quo (Allocated vehicle costs)	962,764	1,073,243
2011 Status Quo (miles driven)	955,471	982,542
Allocated per mileage rate	_	1.09
Actual 2011 (miles driven)		283,398
Allocated per mileage rate*		1.09
Actual 2011 (prorated allocation)	_	309,559
2011 Reduction due to AMI		\$ (763,684)
	-	

^{*} Because 2011 no longer has an allocation specific to meter reading, we use the status quo allocated mileage rate times actual 2011 meter-reading miles to determine the comparable 2011 meter reading vehicle costs.

Energy Related benefits

Remote Disconnect (RDC) Estimated MWh savings 20,411 At the meter 22,133 At the bus bar Flat average Mid-C price per MWH 30.18 (a) Savings at the meter 616,004 Line Loss Factor 8.34% Energy savings at the bus bar 667,379 Power Price Delta
Flat average Mid-C price per MWH Savings at the meter Line Loss Factor Energy savings at the bus bar 30.18 (a) 616,004 8.34% 667,379
Savings at the meter 616,004 Line Loss Factor 8.34% Energy savings at the bus bar 667,379
Line Loss Factor 8.34% Energy savings at the bus bar 667,379
Energy savings at the bus bar 667,379
Power Price Delta
Estimated price per MWH in Final UE 189 Work Papers 65.74
Flat average Mid-C price per MWH 30.18 (a)
Unavailable power price benefit 35.56
MWH Savings for RDC 22,113
Unavailable power price benefit for RDC 786,348
Note:
(a) Based on forward curve from 2011 GRC Nov 15 Final Filing
Lost Revenue Protection (LRP)
Estimated status quo baseline MWh 31,912
Actual 2011 Lost MWh avoided 49,122
Incerement due to AMI 17,210
Weighted average retail rate/MWh 99.57 (b)
LRP Savings 1,713,554
Note:
(b) 2011 Weighted average retail rate (Schs 7 and 32) excluding customer component

Meter Accuracy

Benefit based on meter-accuracy study 1,561,473

Operating Area	\$ Benefit
Lata Baymont Foos	
Late Payment Fees	4
2007 Actuals (Jul-Dec)	(364,721)
Escalate to 2011	(375,055)
2011 Actuals (Jul -Dec)	(1,236,190)
Benefit	861,135

Pinging the Meter (Jul-Dec 2011)

Estimated Non-Dispatch Cost Savings		Amount
2007 - 2010 Average 2011	\$ \$	566,438 974,000
Savings (Jul-Dec 2011)	\$	203,781

Labor Loadings - 2011

Total Loadings	62.15%
Employee Support	3.44%
Net periodic pension cost	4.46%
Incentives (PGE Only)	4.84%
PGE I&D (PGE Only)	6.62%
Payroll Taxes	10.65%
Employee Benefits	32.14%

Escalation

Factor	2006	2007	2008	2009	2010	2011
Inflation Annual Rates		2.90%	3.80%	-0.30%	1.60%	3.10%
Compound to 2011	111.55%	108.40%	104.44%	104.75%	103.10%	
Customer Growth						
Average Customers	789,069	800,567	811,316	815,861	820,266	823,249
Annual Rates		1.46%	1.34%	0.56%	0.54%	0.36%
Compound to 2011	104.33%	102.83%	101.47%	100.91%	100.36%	
2011 status quo FTEs per UE 189 Stipulation	1					
RC 451 Meter Readers	127.6					
RC 452 Field Collections	33.8					
RC 928 Network Data Operations	13.0					
RC 207 Meter Services	36.8					
RC 922 Res & Business Services	3.0					
RC 929 Advanced Metering Infrastructure						
Total	214.2					

Other Incremental AMI Costs (2nd half 2011)

Task	RC	Cost	
IT Estimates for On-Going O&M			
RNI Network Maintenance (from RNI est)	741	8,538	
IT MDC Server & Storage maint full year	747	37,065	
Server hardware and software maint.	747	-	
Oracle database maintenance	747	20,765	
AMI Application Development	757	47,006	
AMI Application Development	757	-	
IT Communication O&M Support	741	40,579	
Backhaul (Pots) costs @ 42 towers	741	30,156	
Tower lease costs @ 42 towers	741	56,880	
Labor Totals		87,586	
Non-Labor IT Totals		153,404	
RC 433 Estimates for On-Going O&M Contract for automated system to call customers before remote disconnect	433	111,257	
RC 928 Estimates for On-Going O&M			٦
TGB Maintenance costs (NDO host job)	928	-	
Sensusr software mainteneance	928	-	ļ (
Radio frequency license RC 928 Totals	928	-	J

Costs covered by Sensus' vendor credits

BETC Rev Req (\$000)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Annual RevReq	(1,109)	(1,109)	(1,109)	(554)	(554)	(554)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Net Present Value	(4,396)																
Annualized Benefit	(388)																

UE 215 Stipulated Benefit Rev Req (\$000)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Annual RevReq	(1,767)	(1,767)	(1,767)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Present Value	(4,970)																
Annualized Benefit	(438)																

Status Quo - 2011	Es	t Wage	Est FTEs	Total W&S	Average
Manager	\$	56.93	1	118,874	118,874
Supervisors (> \$25/hr)		45.54	5	510,617	95,080
Junion Readers (\$14-\$25 /hr)		21.70	118	5,326,443	45,139
Admin (< \$14/hr)		18.46	3	123,695	38,388
		•	128	6.079.629	47.649

Note: Calcuation of Estimated Wages provided in UE 189 Confidential Work Paper Attachment A i.e., 2011 RC average wages not representative and 2007 already affected by plans for AMI

Status Quo - 2011	Est W	age	Est FTEs	Total W&S	Average		
Manager	\$ 9	0.63	1	189,240	189,240		
Analysts	5	3.93	1	112,605	112,605		
Specialists	3	2.29	-	-	-		
Admin	1	9.80	1	41,185	41,185		
		-	3	343,029	114,343		

Note: Calcuation of Estimated Wages provided in UE 189 Confidential Work Paper Attachment A i.e., 2011 RC average wages not representative