



Energy Efficiency

Attachment 5

Savings Adjustments & Responses to SBW's Discrepancy Tables

June 1, 2012



PUGET SOUND ENERGY

The Energy To Do Great Things

Attachment 5
Part 1

2011 Savings Adjustments
Reconciled for 2012 Biennial Savings Report

Electric

Index	Sector	Channel	Program	UOM	Adjustment reason	Consequence	Adjustment Type (Addition or subtraction of savings)	Adjustment Approved date (approved by B&A)	Savings Adjustment Entered date (month adjustment is input)	Savings date affected	kwh adjustment amount (Positive amount = addition; negative amount "(nn)" = subtraction)
1	Residential	Retail	Lighting	kWh	Two CFL lamps and CFL fixtures savings values were transposed when entered into the tracking database. This was noted during a random database audit.	The data was repaired in the CS Tracking Database system. This was a 2011 error, discovered after 2011 Annual Report was filed. The corresponding adjustment will be noted in the 2012 biennial report, filed with the Department of Commerce & WUTC	subtraction	March, 2012	June, 2012	July, 2011	(102)
2	Business	Commercial Rebates	HVAC	kWh	A High-efficiency HVAC rebate was entered into CSY prior to the project completion. When the project was actually completed, the data was counted twice.	The second project was reversed out of CSY. This was a 2011 error, discovered after 2011 Annual Report was filed. The corresponding adjustment will be noted in the 2012 biennial report, filed with the Department of Commerce & WUTC	subtraction	March, 2012	June, 2012	July, 2011	(3,314)
Running total of 2011 adjustments											(3,416)

During its ongoing standard process reviews and internal reconciliations, PSE discovered two 2011 savings discrepancies; one (102 kilowatt hours [kWh]) in the Residential Energy Management sector, Retail Lighting, and the other (3,314 kWh, or 3.3 Megawatt-hours [MWh]) in the Business Energy Management sector, Business Rebates. PSE forwarded those to SBW during SBW's 2011 data review, prior to the publication of its final 2010-2011 report. The aggregate adjustment is -3.4 MWh .

Adjustments noted in SBW final report

BEM Discrepancy Resolution

	Measures	Reference Number	SBW On-site Observation Comments	PSE Comments	Original kWh savings	Savings Correction	Final Claimed Savings
Projects with SBW-Classified Discrepancy (ies)	\$50 lamp for lamp F32T8 lamps LBF	82---6	Fixture type and quantity is correct but only about 75% of the fixtures have been retrofitted to T8s. The contractor fired/walked off of job and took materials with him.	PSE re-inspected the site on 5/4/12 & 84 unused new high-efficiency ballasts were discovered on site. Assuming these ballasts were left behind by the contractor, and that the contractor had a sufficient quantity of ballasts on site to complete the project prior to stopping work, the maximum number of fixture retrofits that could have been performed is: 134 total fixtures - 84 uninstalled ballasts = 50 fixtures retrofitted. This is 37% of the proposed fixtures, which is less than the 75% completion rate indicated by SBW. To be conservative, PSE will adjust analysis to this "worse case" scenario and only claim savings for 50 fixtures.	35,215	-22,075	13,140
	\$225 new 6 lamp F32T8 fixture EB \$40 Occupancy Sensor or Timer C 100 to 199W \$50 lamp for lamp F32T8 lamps LBF	825---	Quantity is 17 not 19 for measure described as HID to 6 lamp T8.	PSE re-inspected with the contractor on 5/4/12. Installed fixture count was consistent with SBW findings (2 fewer than reported), but occupancy sensor installations exceeded reported quantity by 9. Savings will be adjusted accordingly. Contractor accepted responsibility for inaccurate count and indicated additional emphasis has been placed on exactness/accuracy in the time elapsed after completion of this project.	14,860	1,425	16,285
	\$190 New 6 lamp F32T8 fixture EB	830---	Instead of there being nine 6-lamp F32T8 fixtures as per the rebate form there were sixteen 4 lamp fixtures.	PSE re-inspected on 5/4/12. The customer requested additional lighting at time of installation, so contractor installed nine 8-lamp fixtures (constructed of two 4-lamp fixtures mounted end-to-end) rather than the proposed nine 6-lamp fixtures and did not report the modification to PSE. PSE will adjust the savings analysis to account for this difference. The additional seven fixtures counted by SBW (for a total of 32 "4-lamp" fixtures or 16 "8-lamp" fixtures) were not part of the rebate project & were installed under separate invoice.	7,758	-2,408	5,350
	\$130 new CFL fixture >80 input watts \$50 lamp for lamp F32T8 lamps LBF \$6 screw-in CFL, 26-40W E Star \$70 Kit four F32T8 lamps 1 EB \$70 Kit lamps reduced to 2 or 3 F32T8 LBF \$90 kit four F32T8 lamps EB	82---5	I could not find the 12 compact fluorescent fixtures claimed on the rebate sheet and invoice. But the T8 fluorescent fixtures measures were all verified.	PSE re-inspected on 5/4/12 and confirmed none of the 12 CFL measures were installed. PSE will adjust savings accordingly.	29,730	-3,466	26,264
	\$85 2 F32T8 lamps, 1 EB	839---	The two 8' lamps in each fixture were replaced with four 4' lamps, not two as described in the paperwork. This looks like a paperwork error.	PSE conducted site visit to reinspect on 5/4/12. Business was closed, but fixtures were viewed through a window. Contractor was contacted by phone to inquire about the discrepancy & speculated that the customer likely requested more light at time of installation. The installation crew would have then used 4-lamp kits instead of the proposed 2-lamp kits, but likely failed to report the change to the billing department, in which case PSE was never notified of the change. PSE will adjust claimed savings accordingly.	3,285	-1,752	1,533
	\$85 2 F32T8 lamps, 1 EB	837---	Measure described as 8' 2 lamp T12 retrofitted to 4' 2 lamp T8 is incorrect the correct description is 8' 2 lamp T12 retrofitted to 4' 4 lamp T8. Quantity is 11 not 12 for the measure.	PSE conducted a site visit to reinspect on 5/4/12 and concurs with SBW reported site conditions. Final contractor invoicing was correct & coincided with site conditions, but information was entered on the wrong PSE Application line (5d rather than 5e) resulting in an incorrect final savings analysis. PSE will adjust claimed savings accordingly.	2,040	-258	1,782

Attachment 5

Part 2

BEM Discrepancy Resolution

	Measures	Reference Number	SBW On-site Observation Comments	PSE Comments	Original kWh savings	Savings Correction	Final Claimed Savings
Projects with SBW-Classified Discrepancy (ies)	\$60 reduce lamps to 2 F32T8 lamps EB	841---	Nothing was installed, and also, there are 11 fixtures, not 12. Building engineer will follow up with contractor. The work seems to have been done in other units, though not very well.	PSE conducted site visit to reinspect on 5/4/12. The 12th fixture not observed by SBW is a 2x2 fixture in the restroom. During project review, PSE identified incorrect wattage was entering for baseline fixtures on project application. Adjusting this minor discrepancy will slightly increase claimed savings.	2,184	507	2,691
	\$60 reduce lamps to 2 F32T8 lamps EB \$70 new lamps reduced to 2 or 3 F32T8 LBF	810---	The project included 2 measures-1st measure was to be the retrofit of 11 4 ft. 4 lamp T12 fixtures to 11 4 ft. 2 lamp T8 fixtures the 11 4 ft. 4 lamp fixtures were retrofitted to 4 ft. 4 lamp T8 fixtures but no lamp reduction was done. The 9 fixtures mentioned in the 2nd measure were not found. It did look like a 2nd measure had been done but it was a retrofit of 2 8 ft. 2 lamp T12 fixtures to 2 4ft 4 lamp fixtures.	PSE conducted a site visit to reinspect on 5/4/12 and discussed project with contractor & customer. PSE concurs with SBW findings that 1st measure was retrofit to 4L rather than 2L fixtures & will adjust savings accordingly. Per both contractor & customer, the 2nd unfound measure was installed on an awning that has since been replaced. Since this measure appears to have been installed correctly and was in existence & delivering energy savings at time of project completion, no savings adjustment will be made for this measure.	6,720	-1,584	5,136
	\$55 lamp for lamp F32T8 LBF \$6 screw-in CFL, 26-40W E Star \$90 kit four F32T8 lamps EB	815---	Not all fixtures were found. There has been a tenant change and the space was split in two, so some fixtures may have been removed.	Due to tenant changes subsequent to project completion, site conditions at time of project completion rebate processing can not be assessed. PSE believes project was completely accurately and without discrepancies, therefore no savings adjustment will be made to this project.	25,227	0	25,227
	\$130 new CFL fixture >80 input watts \$3 screw-in CFL, >26 watts, E Star \$50 Kit 1 or 2 F32T8 LBF reqd \$50 new LED exit sign (not kit) ES \$70 Kit lamps reduced to 2 or 3 F32T8 LBF	821---	65-F32T8 fixtures still have 4 lamps, they were not reduced to 3 lamps as indicated in the documentation. The site contact said they were told they could reduce the number of lamps, but they opted to keep all 4 in the interested of keeping the room brightly lit.	PSE conducted a site visit to reinspect on 5/4/12 and concurs with SBW's finding that 65 fixtures were retrofit with 4 lamps rather than 3 lamps. Savings will be adjusted accordingly. Quantity of CFL measures installed is 26 (vs. 17), the additional CFL measures will be included in the savings adjustment.	24,666	-970	23,696
	\$40 lamp for lamp F32T8 lamp(s) LB factor reqd \$40 Occupancy Sensor, controlling 100 to 199W \$70 Lamps reduced to 2 or 3 F32T8 LB factor	837---	Tenant did not know what the device (occupancy sensor) was, so she never called anyone to fix it since she didn't realize it was broken.	Measure was installed and reported correctly at time of rebate processing, since this measure was in existence & delivering energy savings at time of project completion, no savings adjustment will be made to this project.	3,668	0	3,668
	\$130 new CFL fixture >80 input watts \$225 new 6 lamp F32T8 fixture EB \$50 lamp for lamp F32T8 lamps LBF \$60 reduce lamps to 2 F32T8 lamps EB \$95 Kit four F32 lamps with reflector 1 EB	83---9	All found except item IIIc (1 unit). HID conversion to CFL - could not verify that it was done, since they are at the top of the building exterior, and it appears that the original enclosures are still in use. But since most everything else was done, and the work is shown on the contractor's invoice, I assumed these were too.	PSE conducted a site visit to reinspect on 5/4/12 and contacted the contractor to confirm the installation. Item IIIc was done, it was a 4 to 2 lamp reduction in what was a 4 Lamp Wrap outside of restrooms in the rear part of the building. (4) new exterior CFL lighting fixtures were installed on all four sides of the building, PSE observed CFL lamps inside these fixtures. No adjustment to claimed savings is necessary.	13,523	0	13,523
	\$60 reduce lamps to 2 F32T8 lamps EB \$90 kit four F32T8 lamps EB	812---	Two 8' fixtures were not changed because access was blocked at the time.	PSE conducted a site visit to reinspect on 5/4/12. Per this inspection, actually (4) 8' fixtures were not changed because access was blocked at the time of installation. (57) 8' 4LT8 fixtures were on the original invoice, but (58) retrofitted fixtures were observed during the PSE reinspection, so savings are at least what was reported, and likely greater. No savings adjustment will be made.	17,316	0	17,316

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BEM Discrepancy Resolution

	Measures	Reference Number	SBW On-site Observation Comments	PSE Comments	Original kWh savings	Savings Correction	Final Claimed Savings
Projects with SBW-Classified Discrepancy (ies)	VSD HVAC Fans	829---	The application listed 24 drives on the 10-hp motors, should be 12 drives on the 10-hp motors. Other motor hp drive counts were correct.	The "Number of Units" listed on the application does not refer to the quantity of drives, it refers to the quantity of motors. The drives were installed such that one drive serves two motors. Application lists four 10 hp supply fan motors per each of the six HVAC units, for a total of 24 motors. As the rebate is based on total hp, not the number of drives, the rebate was process correctly based on twenty-four 10-hp motors. No adjustment will be made.	412,448	0	412,448
	\$80 Lighting controls rebate	845---	The lighting control expected to be observed in the custodian's office was removed recently. The Site Contact had personal knowledge of the controller previously being used in this location. The controller is now replaced with a simple light switch. There were two controls listed for the library AV Center and only one observed. Additionally, there doesn't seem to be an obvious location to install a second lighting controller in this space. The controller does not appear to have been installed.	Measure is believed to have been installed and reported correctly at time of rebate processing, since this measure was in existence & delivering energy savings at time of project completion, no savings adjustment will be made to this project.	2,010	0	2,010
TOTALS					157,297	30,581	126,716

In its report, "Independent Third Party Review of PSE's 2010-2011 Electric Conservation Energy Savings", SBW indicated that "The review team periodically uncovered small documentation discrepancies,".

PSE requested a comprehensive list of all indicated discrepancies subsequent to SBW's review of its draft final report with CRAG members on April 24, 2012. As detailed in the above table, there were 15 Business sector notations, and 10 Residential sector notations. SBW indicated in its report that "Discrepancies that turned up in the file reviews and on-site visits tended to be infrequent and minor, and in our estimation, did not materially affect the overall savings claim." However, PSE's standard practice of reconciling all known savings anomalies merited a complete examination of each discrepancy.

The above table represents the results of this research. Although SBW recommended no savings adjustment based on the indicated discrepancies, PSE will make an aggregate adjustment of -30,581 kWh, or -31 MWh to its biennial claim, in keeping with its standard practice of complete transparency.

Attachment 5

Part 3

REM Descrancy Resolution

	Measures	SBW Proxy Number	SBW On-site Observation Comments	PSE Follow-up Comments	Original kWh savings	Re-inspected kWh Savings	Final Claimed Savings
Projects with SBW-Classified Descrancy (ies)	Heat Pump Tier 2	A	Customer complained that his furnace was damaged by a power surge in the recent storm and he had to pay \$1300 to have the circuit board and fan motor replaced. York refused to cover it under warranty due to the power surge.	Verification confirmed equipment is functioning to qualifying specifications.	755	755	755
	MH Arra-UCONS Duct Sealing L1	B	The duct sealing installation was done sparsely and probably is not performing well.	Verification confirmed work was performed within acceptable guidelines	600	600	600
	Floor Insulation R-0 to R-30 - FAF	C	Yes, but very thin application of mastic for duct sealing.	Verification confirmed work was performed within acceptable guidelines	0	0	0
	attic (r11-r38) Windows Single to Double (1.2 to.30	D	I found all insulated windows to be installed. From the one available attic access hole I could see no blown insulation, just two courses of R-11 batts that probably were there before. The landlord will take this up with the contractor.	Eligibility for window upgrades require that R-19 or greater be installed in each attic area. In this case, R-22 was existing in one attic area so customer was eligible for window upgrades for that building without installing additional attic insulation. If needed, PSE can confirm additional 4 attic ares but need 48 hour notice to tenants. Existing R-22 in one attic.	47,011	47,011	47,011
	CFL In unit pipewrap showerhead	E	The pipe wrap was not favored by the development staff because it disguises pipe leaks, so the residents don't notice leaks. Thus, the staff remove the wrap whenever they have to work on the pipes, and they don't replace it. Showerheads are universally disliked by residents due to flow being too low. I found none of them still in place. Staff complained bitterly about the quality of the work as well as the quality of the products.	There are 24 buildings with 238 units at this campus. Based on the direct install tally sheets completed by the installers, there were 71 showerheads installed. SBW may have gone into units where showerheads were not installed. Without bringing these tally sheets to the SBW site audit, it is difficult to check if the showerheads were not installed or were removed. Pipe wrap was not installed in 115 units. It is difficult to determine which units were verified by SBW and had pipe wrap either not installed or removed. Water heater pipe wrap and Showerheads installed in qualifying units.	140,827	140,827	140,827
	CFL In unit pipewrap showerhead	F	One unit did not have CFLs and low flow showerhead.	All showerhead flows are tested at the site level. If a showerhead is below 2.0 GPM it is not replaced. Also, a tenant is allowed to opt out of the installations per the property manager. Without having the unit number it is difficult to confirm if this customer opted out of the installations. Showerheads/CFLs/pipewrap at water heater.	290,255	290,255	290,255
	Common Area Lighting	G	Everything was found except that only 58 of the 65 office lamps were found.	Spoke to contractor and actually 69 PAR 30 LED lamps were installed and were verified by PSE. Locations of installed lamps include 65 in lobby area, 2 @ walkway near pool and 2 in the entry to offices. 69 PAR 30 LED fixtures installed.	34,174	34,174	34,174

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Part 3

REM Descrrepancy Resolution

	Measures	SBW Proxy Number	SBW On-site Observation Comments	PSE Follow-up Comments	Original kWh savings	Re-inspected kWh Savings	Final Claimed Savings
Projects with SBW-Classified Discrepancy (ies)	Energy Star hard-wired CFL Fixture - TCt 61, Energy Star Refrigerator, Showerhead - Max 2.0 gpm EWH 2010-2011, Windows U-0.30 or better ESH	H	No low flow showerheads seen. May have been replaced by renters.	The showerheads installed were Moen 6307 showerhead at 1.75 gpm and is the make/model/gpm verified as installed by PSE on August 2, 2010. What the 3rd party verification likely found installed was the Moen 6307 showerhead but with no gpm information printed on the showerhead. This is common with Moen showerheads. Our current practice is to have the PSE verification team take photographs of all measures during verification visits. I have cut sheet of product that indicates 1.75 GPM. 1.75 GPM showerhead installations.	14,794	14,794	14,794
	Attic Insulation R-11 to R-38 - FAF	I	Attic insulation and duct insulation were good. Duct sealing not great. Checked sealing at 3 seams. 1 spot was complete, 1 spot was partially done, and 1 spot was completely missed.	Verification confirmed work was performed within acceptable guidelines	2,158	2,158	2,158
	MH Arra- CFL (DI Exterior) MH Arra- CFL (DI Interior) MH Arra- Pipewrap MH Arra- Showerheads (Leave Behind) MH Arra-UCONS Duct Sealing L1	J	Examination of duct sealing at floor registers showed evidence of work, but little to no mastic to seal gap between duct edges and floor.	Verification confirmed work was performed within acceptable guidelines	785	785	785
TOTALS					531,359	531,359	531,359

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