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May 11, 2015

VIA ELECTRONIC FILING

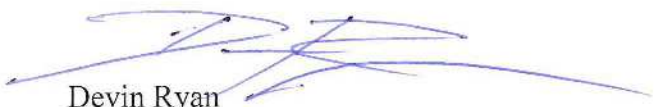
Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor North
P.O. Box 3265
Harrisburg, PA 17105-3265

**Re: Implementation of the Alternative Energy Portfolio Standards Act of 2004:
Standards for the Participation of Demand Side Management Resources - Technical
Reference Manual 2016 Update - Docket No. M-2015-2469311**

Dear Secretary Chiavetta:

Enclosed for filing are the comments of PPL Electric Utilities Corporation in the above-referenced proceeding. Copies will be provided as indicated on the Certificate of Service.

Respectfully submitted,


Devin Ryan

DTR/jl
Enclosures

cc: Certificate of Service
Megan G. Good (via e-mail - megagood@pa.gov)
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CERTIFICATE OF SERVICE
(M-2015-2469311)

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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Date: May 11, 2015



Devin T. Ryan

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Implementation of the Alternative Energy :
Portfolio Standards Act of 2004: Standards :
for the Participation of Demand Side : Docket No. M-2015-2469311
Management Resources - Technical :
Reference Manual 2016 Update :

**COMMENTS OF
PPL ELECTRIC UTILITIES CORPORATION**

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

I. INTRODUCTION

By Tentative Order entered March 26, 2015, the Pennsylvania Public Utility Commission (“Commission”) requested comments on the proposed 2016 update of the Commission’s Technical Reference Manual (“TRM”).¹ PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) has actively participated in all of the proceedings instituted by the Commission to implement Act 129 of 2008, P.L. 1592, 66 Pa.C.S. §§ 2806.1-2806.2 (“Act 129”). The Company appreciates this opportunity to comment on the Commission’s proposed 2016 revisions to the TRM (“Proposed 2016 TRM”).

PPL Electric generally agrees with most of the changes proposed in the Proposed 2016 TRM. However, as detailed in the comments below, the Company has identified some areas that it believes require technical modification, clarification, or both.

¹ *Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources – Technical Reference Manual 2016 Update*, Docket No. M-2015-2469311 (Order Entered Mar. 26, 2015) (“TRM Tentative Order”).

II. COMMENTS ON THE TRM TENTATIVE ORDER AND PROPOSED 2016 TRM

In the following sections, PPL Electric provides its technical comments on proposals contained in the TRM Tentative Order. Most of the comments are suggestions to improve the clarity of a TRM protocol or are corrections. However, PPL Electric does not provide technical comments on every Commission proposal. PPL Electric has organized its technical comments in accordance with the sections of the TRM Tentative Order.

A. APPLICATION OF THE TRM

PPL Electric supports the proposed change to have the 2016 TRM remain in effect for the entirety of Phase III. However, the following statement was removed from the 2015 TRM: “Any newly approved measure, whether in the TRM or approved as an interim protocol, may be applied retrospectively consistent with the EDC’s approved plan.” Proposed 2016 TRM – Redlined Version, p. 10.

PPL Electric recommends adding this statement back into the 2016 TRM so that electric distribution companies (“EDCs”) can implement new measures during the phase and have a clearly-defined method to determine their savings. Otherwise, new measures such as smart thermostats cannot be implemented in Phase III even though their savings potential is included in the SWE’s Energy Efficiency Market Potential Study (“SWE’s EE Study”) and the compliance targets, and customers may strongly desire these measures.

B. GENERAL IMPROVEMENTS

4. Line Loss Guidance

TRM Section 1.14 – Transmission and Distribution System Losses

PPL Electric recommends re-instating the following paragraph, which was removed from the Proposed 2016 TRM but provided useful guidance on the application of line loss factors:

The electric energy consumption reduction compliance targets for Phase III of Act 129 are established at the retail level (i.e. based on forecasts of sales). The energy savings must be reported to the Commission at the customer meter level, which is used to determine if EDCs have met their statutory targets for Phase III. For the purpose of calculating cost-effectiveness of Act 129 programs, the value of both energy and demand savings shall be calculated at the system level. The TRM calculates the energy savings at the customer meter level. These savings need to be increased by the amount of transmission and distribution system losses in order to determine the energy savings at the system level. The electric line loss factors multiplied by the savings calculated from the algorithms will result in savings at the system level.

Proposed 2016 TRM – Redlined Version, pp. 12-13.

C. ADDITIONAL RESIDENTIAL EE&C MEASURE PROTOCOLS

The Proposed 2016 TRM introduced two residential insulation measures: crawl space wall insulation and rim joist insulation. PPL Electric agrees with the general form of the energy savings algorithm. However, PPL Electric recommends changes to the baseline R-value for rim joist insulation and crawl space insulation. PPL Electric believes that 2009 ASHRAE Fundamentals, Section 26 provides better citations and support for R-values than currently listed in the TRM (data source 1, pages 207 and 212, ORNL Builders Foundation Handbook).

TRM Section 2.6.7 – Crawl Space Wall Insulation

PPL Electric recommends updating the baseline R-value from 1.00 to 1.73, which includes: interior air film = 0.68, 7” concrete or CMU wall = 0.88, exterior air film = 0.17, consistent with 2009 ASHRAE Fundamentals, Section 26. This update should be made for parameter R_{base} in Table 2-118: Assumptions for Residential Crawl Space Insulation. *See* Proposed 2016 TRM, Table 2-118, p. 205.

TRM Section 2.6.8 – Rim Joist Insulation

PPL Electric recommends updating the baseline R-value from 1.00 to 2.50, which includes: interior air film = 0.68, 1.5” wooden rim joist = 1.65, exterior air film = 0.17, consistent with 2009

ASHRAE Fundamentals, Section 26. This update should be made for parameter R_{base} in Table 2-124: Default values for algorithm terms, Residential Rim Joist Insulation. See Proposed 2016 TRM, Table 2-124, p. 210.

D. ADDITIONAL C&I EE&C MEASURE PROTOCOLS

PPL Electric has no comments with regard to this proposal.

E. EXISTING RESIDENTIAL EE&C MEASURE PROTOCOLS AND PROCESSES

1. TRM Section 2.1.1 – ENERGY STAR Lighting

In regards to hours of use (“HOU”) and coincidence factors (“CF”), PPL Electric recommends clearly defining “Efficient HOU” and “Efficient CF,” as referenced in Table 2-5 on page 21 of the proposed TRM. Proposed 2016 TRM, Table 2-5, p. 21.

2. TRM Section 2.2.1 – Electric HVAC

PPL Electric recommends adding a heating baseline for New Construction Ground Source Heat Pump in Table 2-11: Residential Electric HVAC Measure Baseline Conditions, because one is provided for the other residential HVAC measures in Table 2-11. See Proposed 2016 TRM, Table 2-11, p. 34.

Additionally, PPL Electric recommends deleting footnote 53 on page 34, which states, “When calculating Net savings, EDCs should review the approach laid out in the Pennsylvania Evaluation Framework.” Proposed 2016 TRM, p. 34 n.53. The TRM provides algorithms and methodologies for calculating gross savings only. As such, this is not the appropriate forum for addressing net savings. Furthermore, footnote 53 does not apply to the statement to which it refers – “De Facto Space Heating: Electric space heaters used as the primary heating source when an oil furnace or boiler has failed beyond repair.” Proposed 2016 TRM, p. 34.

Lastly, PPL Electric recommends that the SWE review the value for “EDSH, Fixed savings per desuperheater” in Table 2-12: Residential Electric HVAC References. Proposed

2016 TRM, Table 2-12, p. 40. In Table 2-12, the EDSH value of 567 kWh/yr is described as the fixed savings per desuperheater; however, this value does not match the energy savings calculated using the algorithm on page 36, which results in a value of 534 kWh/yr. Furthermore, the EDSH value is multiplied by “ETDF,” which is described as the “Fixed Energy to Demand Factor per desuperheater.” Proposed 2016 TRM, Table 2-12, p. 40. This implies that the EDSH value should be equivalent to the annual kWh savings from the algorithm on page 36.

3. TRM Section 2.2.3 Ductless Mini-Split Heat Pumps

Similar to TRM Section 2.2.1 – Electric HVAC, PPL Electric recommends deleting footnote 69 on page 50, which states, “When calculating Net savings, EDCs should review the approach laid out in the Pennsylvania Evaluation Framework.” Proposed 2016 TRM, p. 50 n.69. The TRM provides algorithms and methodologies for calculating gross savings only. As such, this is not the appropriate forum for addressing net savings. Furthermore, footnote 69 does not apply to the statement to which it refers – “The baseline heating system could be an existing electric resistance heating, electric space heaters used as the primary heating source when fossil fuel (other than natural gas) heating systems failed (referred to as de facto heating)” Proposed 2016 TRM, p. 50.

8. TRM Section 2.3.3 – Fuel Switching: Electric Resistance to Fossil Fuel Water Heater and TRM Section 2.3.4 – Fuel Switching: Heat Pump Water Heater to Fossil Fuel Water Heater

PPL Electric recommends updating the default values for “Unit Energy Savings” and “Gas, Fossil Fuel Consumption Increase” in the measure summary table on page 95 to match the “Energy Savings” in Table 2-54 and “Fossil Fuel Consumption” in Table 2-55. *See* Proposed 2016 TRM, pp. 95, 97-98. The same change was already made to the 2015 TRM through the errata process.

Likewise, PPL Electric recommends updating the default values for “Unit Energy Savings” and “Gas, Fossil Fuel Consumption Increase” in the measure summary table on page 99 to match the “Energy Savings” in Table 2-60 and “Gas Consumption” in Table 2-61. *See* Proposed 2016 TRM, pp. 99, 103. The same change was already made to the 2015 TRM through the errata process.

11. TRM Section 2.4.3 Refrigerator/Freezer Recycling With and Without Replacement

PPL Electric observes that the default “PART_USE” values listed in the Proposed 2016 TRM are based on Program Year 3 (“PY3”) data for all EDCs, were calculated prior to the release of the Department of Energy’s Uniform Methods Project (“UMP”), and reflect only historical usage rather than prospective usage, as outlined in the UMP. *See* Proposed 2016 TRM, pp. 141, 145; “The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures,” National Renewable Energy Laboratory, Ch. 7, pp. 13-14 (April 2013), *available at* <http://energy.gov/sites/prod/files/2013/11/f5/53827-7.pdf>. Therefore, PPL Electric recommends updating the “PART_USE” values as appropriate.

F. COMMERCIAL AND INDUSTRIAL EE&C MEASURE PROTOCOLS

1. TRM Section 3.1.1 – Lighting Fixture Improvements

In the TRM Tentative Order, the Commission states the following:

The SWE has reviewed sampled PY5 projects and determined that only 54 C&I projects above 500,000 kWh were recorded statewide. Only a subset of these 54 projects were lighting projects. The Commission sees no evidence that the thresholds for site-specific data collection are overly burdensome to EDCs or their contractors.

In order to justify a sampling precision requirement of 15% at the 85% confidence level and the relatively low resulting sample sizes, the Commission believes that verification approaches used for high-value projects within the sample should be rigorous and meaningful. Therefore, the Commission proposes to maintain

current thresholds and to continue monitoring evaluation results and review thresholds annually.

TRM Tentative Order, p. 24.

PPL Electric agrees that the thresholds for site-specific data collection (i.e., metering thresholds) were not burdensome in PY5. However, the Company recommends instituting a cap on the number of projects that must be metered per Program Year for the reasons cited below.

First, PPL Electric believes that PY5 was an anomaly for all EDCs, resulting in a smaller number of projects, based upon historical Program Year data. The SWE reviewed sampled PY5 projects and determined that 54 Commercial and Industrial (“C&I”) projects were metered statewide. Of those 54 C&I projects, PPL Electric had 11 lighting projects alone, which was over 20% of the total projects metered statewide. Since then, PPL Electric has seen a significant increase in the number of jobs that require metering and has had 47 projects² to-date in PY6 that required metering. It is reasonable to assume that (at a minimum) 30 lighting projects would be subject to metering over the course of a typical Program Year. The total cost associated with that metering would be approximately \$210,000,³ which translates to \$1.05 million over a five-year phase. By applying a cap of 15 projects, however, the annual cost would be reduced to \$105,000. Therefore, PPL Electric believes it would be more prudent to apply the resultant five-year cost savings of \$525,000 to other customer incentives, especially when considering that the increase in the savings accuracy from that additional metering would be *de minimus*.

Second, PPL Electric observes that the change in HOU due to metering based upon site-specific HOU has been less than 5% on average, which is well within the tolerance range of

² The SWE approved PPL Electric to meter a sample of one retail (grocery) customer’s projects due to similarity. This reduced the number of jobs expected to be metered to 35 even though 47 qualified.

³ Approximate cost per job is \$7,000 and is based on 3 people x 8 hours (including travel time) x 2 site visits (install & remove) x \$100/man-hour = \$4,800 for the site visits alone. The costs of the meters, preparation time, and analysis of results by the implementer and the evaluator are additional costs that should be considered.

certainty. This demonstrates that the evaluation process is already rigorous and meaningful without the need for significant metering. The Company also notes that it has experienced a realization rate adjustment of less than 3% when comparing standard evaluation of customer interview hours of use kWh/yr savings to metering hours of use kWh/yr savings due to the thresholds. This further supports the Company's recommendation that the evaluation process is sufficiently rigorous and that the number of jobs to be metered in a given Program Year should be capped to reduce unnecessary costs.

Third, setting a threshold higher (such as 750,000 or 1,000,000 kWh/yr) could reduce the number of projects metered. However, the number of projects metered still has the potential to be a burden, considering that 33 projects in PY6 alone were over 1,000,000 kWh/yr for PPL Electric.

Given these observations, PPL Electric would like to propose that each EDC's independent evaluator annually meter a sample of up to 15 lighting projects with reported savings of 500,000 kWh/year or more. If there are 15 or fewer projects in a Program Year, all projects will be metered. If there are more than 15 projects, the evaluator will select a random sample of 15 projects. The estimated HOU will be reported at the 90/10 confidence/precision level. The error ratio will be the value calculated for the previous year's ex-post kWh/year savings. The sample size will be increased during the Program Year, if needed, to meet the 90/10 criteria.

Utilizing the Company's recommended metering process will produce accurate and reliable results. In fact, an analysis of the metered HOU for 20 PPL Electric PY6 lighting projects concluded that the HOU was estimated with approximately 2% precision. Therefore, PPL Electric expects to exceed the 10% precision with a sample cap of 15 projects. The attached Exhibit 1 compares PY5 and PY6 and provides a breakdown of metering impact.

In addition, in Table 3-2: Assumed T-8 Baseline Fixtures for Removed T-12 Fixtures on page 223, it is unclear how the values for “Assumed T-8 Baseline Wattage” were derived. Proposed 2016 TRM, Table 3-2, p. 223. Given the impact that C&I lighting savings have on EDCs’ portfolios, PPL Electric requests that the Commission identify the source of these assumed wattages. Also, the 2014, 2015, and proposed 2016 TRM provide that standard T-8s will become the baseline for all T-12 linear fluorescent retrofits beginning June 1, 2016 (i.e., PY8). However, in the SWE’s EE Study, different baseline lamp types and wattages for commercial linear fluorescent lighting were assumed. For instance, in offices, the SWE’s EE Study considered three baselines for the “Premium Efficiency T-8 Lighting Replacements (28W w/LBF)” measure including:

- “One 4’ 40W T-12 w/ Magnetic Ballast” (early replacement only);
- “One 4’ 28W T-5 w/ Normal Ballast Factor” (early replacement, new construction, and replace on burnout); and
- “One 4’ 32W T-8 w/ Normal Ballast Factor” (early replacement, new construction, and replace on burnout).

SWE’s EE Study, Appendix E, p. E-1065. PPL Electric seeks clarification on whether the treatment of baselines for this linear fluorescent measure in the 2016 TRM is consistent with the assumptions in the SWE’s EE Study. It is not clear whether, or what share of lamps, the SWE’s EE Study assigned to T-12s. In the Company’s opinion, if the SWE’s EE Study included T-12s in the baseline, the SWE’s EE Study may be overstating potential.

Furthermore, the language regarding site-specific versus default CF on page 225 is inconsistent. *See* Proposed 2016 TRM, p. 225. One sentence on page 225 aligns with SWE’s previous guidance on this matter: “In addition, the site-specific CF must also be used to calculate

savings if actual hours are used.” Proposed 2016 TRM, p. 225 (emphasis added). However, the last sentence in the same paragraph appears to make site-specific CF optional: “To the extent that operating schedules are known based on metered data, site-specific coincidence factors may be calculated in place of the default coincidence factors provided in Table 3-5 and Table 3-6.” Proposed 2016 TRM, p. 225 (emphasis added). PPL Electric recommends resolving this inconsistency by changing the words in the latter sentence from “may be” to “must be.”

Finally, the Company seeks clarification on Table 3-8: Interactive Factors for All Bulb Types. *See* Proposed 2016 TRM, Table 3-8, p. 227. A new category was added in Table 3-8 for “Comfort Cooled,” which has its Interactive Factors listed in Table 3-9. *See* Proposed 2016 TRM, Tables 3-8 and 3-9, pp. 227-28. However, the previous category of “Cooled space” still exists with its own Interactive Factors. Further, “Cooled space” no longer appears in Appendix C. Thus, PPL Electric requests clarification on whether “Cooled space” should be removed from Table 3-8.

II. ADDITIONAL COMMENTS

PPL Electric provides these additional changes to the Proposed 2016 TRM that were not addressed in the TRM Tentative Order.

A. UPDATE WEBSITE LINKS

PPL Electric recommends updating any website links that have expired in the Proposed 2016 TRM, such as:

- The link to the “Measure Life Report” in Source 1 on page 70;
- The link in footnote 107 to “Verifying ACCA Manual S Procedures” on page 91;
- The link in footnote 134 to an Aquacraft, Inc. study on page 114; and

- The link to “AO Smith New Product Notification” in Source 3 on page 325.

B. TRM SECTION 3.4.5 – FUEL SWITCHING: HEAT PUMP WATER HEATER TO GAS/OIL/PROPANE

PPL Electric recommends updating Table 3-82: Minimum Baseline Energy Factors Based on Tank Size with the new Federal standards incorporated into the other water heating protocols. *See* Proposed 2016 TRM, p. 358.

C. TRM SECTION 6.1 – APPENDIX A: MEASURE LIVES

PPL Electric recommends adding ENERGY STAR Ceiling Fans to the “Appliances End-Use” section for the Residential Sector on page 515. *See* Proposed 2016 TRM, p. 515. The same change was already made to the 2015 TRM through the errata process.

D. REMOVAL OF APPENDIX F: ELIGIBILITY REQUIREMENTS FOR SOLID STATE LIGHTING PRODUCTS IN COMMERCIAL AND INDUSTRIAL APPLICATIONS

PPL Electric requests confirmation that there will no longer be restrictions on C&I LED eligibility, considering that Appendix F, as titled in the 2015 TRM, was removed.

E. TRM SECTION 2.6.3 – RESIDENTIAL NEW CONSTRUCTION

PPL Electric recommends updating values and corresponding sources in Table 2-111: Energy Star Homes – User Defined Reference Home, where necessary, to align with the most recent codes and standards (e.g., the EF algorithms for “Domestic WH Efficiency”). *See* Proposed 2016 TRM, Table 2-111, p. 191.

F. TRM SECTION 2.6.5 – ENERGY STAR MANUFACTURED HOMES

The reference to “Table 2-111” on page 198 is incorrect and should be replaced with a reference to “Table 2-114.” PPL Electric also recommends updating values and corresponding sources in Table 2-114: ENERGY STAR Manufactured Homes - User Defined Reference Home, where necessary, to align with the most recent codes and standards (e.g., the EF algorithms for

“Domestic WH Efficiency”). *See* Proposed 2016 TRM, Table 2-114, p. 199. This is the same recommendation made for TRM Section 2.6.3 – Residential New Construction.

III. CONCLUSION

For all of the reasons stated above, PPL Electric Utilities Corporation recommends that the Pennsylvania Public Utility Commission proceed with development of the 2016 TRM consistent with PPL Electric Utilities Corporation's comments.

Respectfully submitted,

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Date: May 11, 2015



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Attorneys for PPL Electric Utilities Corporation

Exhibit 1

Category	PY5	PY6*	Total	Average Change
# of Jobs Metered	11	47	58	NA
Cost/ Metered job	\$7,000	\$7,000	N/A	\$7,000
Total Metering Cost per year	\$77,000	\$329,000	\$406,000	\$203,000
Total Metering Cost per year (with 750,000 kwh lighting threshold)	\$49,000	\$301,000	\$350,000	\$175,000
Total Metering Cost per year (with 1,000,000 kwh lighting threshold)	\$49,000	\$238,000	\$287,000	\$143,500
Total Metering Cost per year (with 15 project per EDC lighting cap)	\$77,000	\$105,000	\$182,000	\$91,000
Total Metered HOU	61,336	243,962	305,298	NA
Total Interview HOU	64,251	248,921	313,172	NA
Total TRM HOU	47,255	169,458	216,713	NA
Total Interview HOU vs. Metered HOU Δ	(2,915)	(4,959)	(7,874)	(3,937.12)
Interview HOU vs. Logging HOU % Δ	-4.54%	-1.99%	N/A	-3.26%
Total TRM HOU vs. Logging HOU Δ	14,081	74,504	88,585	44,292
TRM HOU vs. Logging HOU % Δ	29.80%	43.97%	NA	36.88%
Total Savings From Metering (MWH)**	9,953	73,769	83,722	41,861

Note:

*PY6 data is still being processed and is based upon the available information to date which includes 30 of the 47 projects.

**1 project from PY5 was removed from the Total Savings Category as it was not statistically relevant and had a 75% adjustment to HOU

**1 project from PY6 was removed Total Savings Category as it was not statistically relevant and had a 50% adjustment to HOU

PPL uses site-specific HOU for all jobs above 500,000 kwh

Job Id	Metered HOU	Interview Stated Run Hours	TRM HOU	Percent change in HOU (Interview vs Logging)	Estimated kWh	Comments (easy or difficult issues please describe)	Status of Logging (reserved, logging ongoing, analysis not done, etc)
TBD				#DIV/0!	-		JUST ARRIVED WILL REQUIRE PRE LOGGING
PPL-13-07908	5300	6120	6631	13.40%	402,134.00	NEW CONSTRUCTION -	PAID / SKN'S PROJ DETAILS ESTIMATED
PPL-13-11042				#DIV/0!	568,010.20		
PPL-13-11555	NOT KNOWN	NOT KNOWN	6631	#VALUE!	618,848.98	EXPLOSION WHERE LOGGERS WERE INSTALLED KEPT US FROM ANALYZING DATA YET, OTHERWISE LOGGING PLAN TOOK TIME TO DEVISE DUE TO WAY IT WAS SUBMITTED BY CUSTOMER	PRE ANALYSIS NOT COMPLETED
PPL-13-11779	4120	4120	2316	0.00%	718,738.73		Project not complete
PPL-13-08183	8349	8760	6631	4.69%	761,458.56		
PPL-13-09248	8283	8760	6631	5.45%	791,439.00		
PPL-13-10888	8760	8760	6631	0.00%	825,670.41	RELATIVELY EASY CT LOGGER INSTALL/ HOLD UP ON PAYMENT DUE TO 1 LED SUBSTITUTED NOT DLC LISTED BUT SUBMITTED FOR DLC NOW	POST ANALYSIS NOT COMPLETE YET
PPL-13-11353				#DIV/0!	879,091.84		RESERVED - WAITING ON FINAL TO BEGIN LOGGING
PPL-13-10853	0	0	0	#DIV/0!	903,957.14	NEW CONSTRUCTION - RESERVED / NOT Metered YET	SKN'S PROJ. DETAILS ESTIMATED
PPL-13-07691				#DIV/0!	904,680.00		
PPL-13-11682	NOT KNOWN	NOT KNOWN	6631	#VALUE!	916,556.12	EXPLOSION WHERE LOGGERS WERE INSTALLED KEPT US FROM ANALYZING DATA YET, OTHERWISE LOGGING PLAN TOOK TIME TO DEVISE DUE TO WAY IT WAS SUBMITTED BY CUSTOMER	PRE ANALYSIS NOT COMPLETED
PPL-13-11575	NOT KNOWN	NOT KNOWN	2316	#VALUE!	918,207.14	EASY PRE LOGGER INSTALL HOWEVER EXPECT CUSTOMERS STATED RUN HRS TO DECREASE DRAMATICALLY DUE TO EXISTING OCCS NOT CLAIMED ON SUBMITTAL	PRE ANALYSIS NOT COMPLETED
PPL-13-09193	8664	8760	4600	1.10%	953,086.73	See below	logging on going
PPL-13-00090	8664	8760	4600	1.10%	956,927.14	See below	logging on going
MULTIPLE	8664	8760	4600	1.10%	930,587.21	One large retailer submitted 18 projects, SWE approved a logging of the sample of the projects due to similarity. 6 of the 18 projects are being Metered and are documented about. The remaining 12 projects fall under this line item. Assumptions for the savings and HOU are based on the averages for the 6 Metered projects	Analysis not done
PPL-13-10483	UNKNOWN	NOT KNOWN	2316	#VALUE!	1,030,372.45	NEW ANALYSIS TOOL CREATED FOR NEW CONSTRUCTION W/ SENSORS FOR BASELINE HR AND CONTROL FACTOR.	POST ANALYSIS NOT COMPLETE YET
PPL-13-10780	8750	8760	6631	0.11%	1,030,466.33	PRE LOGGING COMPLETED	SKN'S PROJ. DETAILS ESTIMATED
PPL-13-09216	8664	8760	4600	1.10%	1,032,074.49	Lighting design did not translate to PALF layout. Removed fixtures do not translate to 1 for 1 PALF design. Multiple variations of "Cut Sheets" used. Complete redesign of PALF based off of contractor Audit required for all applications. Inaccurate customer contact. Trade ally contact on medical leave. Space constraints for logging equipment due to customer, health and safety concerns. New wireless lighting controls means no physical lighting panel within the store.	logging on going
PPL-13-09212	8664	8760	4600	1.10%	1,179,347.96	See below	logging on going
PPL-13-12086	NOT KNOWN	NOT KNOWN	6631	#VALUE!	1,179,354.08		Project In pre review
PPL-13-09200	8664	8760	4600	1.10%	1,252,600.20	See below	logging on going
PPL-13-09209	8664	8760	4600	1.10%	1,321,940.82	See below	logging on going
PPL-13-07637				#DIV/0!	1,424,200.00		
PPL-13-09032	4500	4664	2316	3.52%	1,475,026.07		PAID / SKN'S PROJ DETAILS ESTIMATED
PPL-13-1174#	NOT KNOWN	NOT KNOWN	2567	#VALUE!	2,105,236.73	2000 LINE ITEM PALF WITH 100+ PRE LOGGERS INSTALLED FOR RES AMOUNT. 1 PRE MEETING BEFORE LOGGING. SPENT A LOT OF TIME TAKING THEIR AUDIT AND TRANSLATING TO PALF. EXPECT ANALYSIS OF LOGGING RESULTS TO BE CUMBERSOME TO APPLY CORRECTLY TO 2000 LINE PALF	PRE LOGGING TO BEGIN MID MAY
PPL-13-09248	8671	8760	6552	1.02%	2,160,510.20	STRAIGHT FORWARD. HOLD UP ON PAYMENT DUE TO CHANGE IN LOGGING FOR POST CONTROL FACTOR & COLD WEATHER W/ CT LOGGERS.	PAID IN NEXT WEEK
PPL-13-11236	5643	6237	2316	9.81%	2,259,676.53	Project not complete	
PPL-13-11931	NOT KNOWN	NOT KNOWN	2316	#VALUE!	2,484,023.47	EASY PRE LOGGING	PRE LOGGERS COMING OUT TODAY
PPL-13-11009				#DIV/0!	3,300,343.88		
PPL-13-07831	8386	8760	2316	6.55%	3,323,385.13		
PPL-13-11109	8760	8760	2316	0.00%	3,354,268.37	PRE AND POST Metered BEFORE WE KNEW CONTROL FACTOR WAS NO LONGER NECESSARY/ MASSIVE SITE, TIME CONSUMING TO LOG AND DIFFICULT ACCESS TO SITE, PLANS, RUN HRS, AUDIT 1 LINE FOR THOUSANDS OF FIXTURES	PAID IN NEXT WEEK
PPL-13-08248				#DIV/0!	4,806,280.61		
PPL-13-11731	NOT KNOWN	NOT KNOWN	2567	#VALUE!	5,575,367.35	3000 LINE ITEM PALF WITH 100+ PRE LOGGERS INSTALLED FOR RES AMOUNT. 1 PRE MEETING BEFORE LOGGING. SPENT A LOT OF TIME TAKING THEIR AUDIT AND TRANSLATING TO PALF. EXPECT ANALYSIS OF LOGGING RESULTS TO BE CUMBERSOME TO APPLY CORRECTLY TO 3000 LINE PALF	PRE LOGGERS INSTALLED AND COMING OUT NEXT WEEK
PPL-13-07733	8688	8760	2316	0.82%	11,147,729.16	EXTREMELY COMPLEX PROJECT W LED & MT CONTROLS. NEW ANALYSIS TEMPLATE FOR MT CONTROLS OF DIGITAL LUMEN SYSTEM CREATED FOR ANALYSIS. LARGEST LIGHTING REBATE EVER PAID \$900,000. MIKE LUTTE SPENT ADDITIONAL TIME NOT NOTED HERE.	PAID
Totals	243,962	248,921	169,458	1.99%	73,768,842		

Job Id	Facility Type	Metered HOU	Interview Stated Run Hours	Change in HOU (Meter vs. Interview)	Percent change in HOU (Interview vs Logging)	Annual kWh Savings	TRM HOU	Change in HOU (Meter vs. TRM)
PPL-13-07386	Retail	8,679	8,712	-33	0.38%	657,202	2,829	5,850
PPL-13-07557	Industrial Manufacturing-3 Shift	7,570	7,571	-1	0.01%	723,991	6,631	939
PPL-13-07601	Parking Garages	5,603	5,937	-335	5.63%	1,008,511	6,552	-949
PPL-13-07709	Dusk-to-Dawn / Exterior Lighting	1,701	1,701	0	0.00%	1,021,621	3,833	-2,132
PPL-13-07887	Warehouse	5,440	5,451	-11	0.20%	1,360,868	2,316	3,124
PPL-13-08053	Industrial Manufacturing-3 Shift	6,916	7,835	-919	11.73%	422,004	6,631	285
PPL-13-08074	Warehouse	8,760	8,760	0	0.00%	552,966	2,316	6,444
PPL-13-08208	Lodging - Common Spaces	6,884	8,492	-1,608	18.94%	1,092,484	7,884	-1,000
PPL-13-08408	Industrial Manufacturing-3 Shift	7,462	7,633	-171	2.23%	1,839,231	6,631	831
PPL-13-08762	Education – School	2,321	2,160	161	-7.47%	1,274,334	1,632	689
Totals		61,336	64,251	-2,915	4.54%	9,953,213	47,255	14,081