

**PECO Default Service Program - RFP Data Room
Data Series Overview: General Descriptions and Assumptions
August 16, 2019**

TABLE OF CONTENTS

1. Description of Supply to be Procured	2
2. General Information	3
3. Descriptions of Data Series	10
4. PJM Billing Information.....	14
5. Use of Data	15

1. Description of Supply to be Procured

Default Service Load, also known as **Provider of Last Resort (POLR) Load**, is the load associated with PECO's retail customers who have not elected to receive service from an Electric Generation Supplier ("EGS") in PECO's territory. A PECO customer who does not select an EGS is a default service customer. The PECO Default Service load is calculated by subtracting the load served by EGSs from the retail load served within the PECO zone. PECO currently does not have "wholesale customers" such as municipal or cooperative electric utilities serving load within the PECO service territory. The only other Load Serving Entities within the PECO service territory at present are EGSs.

Prospective suppliers will have the opportunity to serve PECO Default Service Load by bidding in solicitations under the current Default Service Plan ("DSP").

All data in the Data Room is provided for informational purposes only. PECO has compiled the data in good faith from sources believed by PECO to be reliable but does not warrant the accuracy of the data.

It is the responsibility of prospective suppliers as well as all other parties that use the posted data to determine whether and how to apply the data. Prospective suppliers as well as all other parties assume all risk associated with utilizing the data.

PECO is only able to provide Default Service Load data to which it has access.

The daily peak load contribution ("PLC") and network transmission service peak load ("NSPL") data for the Residential class are not adjusted for the NYPA allocation. Hourly load data for the Residential Class, which is broken down by load related to PECO's default service customers ("Default Energy") and load related to customers who have elected to be supplied by an Electric Generation Supplier ("EGS Energy"), is handled differently. In regards to the hourly load data for the Residential class, PECO subtracts the NYPA allocation from the Default Energy (MWh) column and adds a corresponding amount to the EGS Energy (MWh) column.

2. General Information

a. Report Formats and Period Covered

PECO aims to post a minimum of three years of history for time series data and will update most files on a monthly basis.

Please note that all energy (system load) reported represents energy including PECO's 60-day 'energy reconciliation service' settlement with PJM, and therefore PECO will post all energy reports with a two-month lag.

Hourly reports align with Eastern Prevailing Time. For instance, Hour 1 pertains to the hour between 12:00 a.m. EPT and 1:00 a.m. EPT. Daylight Savings Time (DST) is treated as follows:

- Hourly reports spanning the Fall DST period contain 25 consecutive hours.
- Hourly reports spanning the Spring DST period contain 23 consecutive hours.

Data files will be posted to the Data Room as zip, Excel spreadsheet and comma-delimited Excel file formats.

b. Customer Load Profile Assumptions

PECO currently applies static load profiles (kW vs. weather response functions, that are fixed) to unmetered customer classes, AMR metered customers, and AMI customers that do not have interval data that is "bill quality" (on a bill by bill basis for Settlement B).¹ Prior to March 2015, these load profiles were used to develop hourly load responsibilities related to customers served by EGSs and default service customers for the purpose of performing unaccounted-for energy calculations.

In 2010, PECO conducted a load study that was used to develop updated static load profiles for monthly-metered customers. PECO used these updated load profiles beginning on January 1, 2011. For data prior to 2011, PECO developed hourly load data by customer group for monthly metered customers using older static load profiles. PECO is not able to retrofit the updated load profiles to the historic hourly load data (2006 – 2010) that is provided.

c. Customer Procurement Classes

A "Procurement Class" or "Class" is a grouping of customers on PECO's existing rate schedules for purposes of procuring Default Supply. For Default Supply prior to May 31, 2017 (under DSP I through DSP III), there are four Procurement Classes: Residential ("R"), Small Commercial ("SC"), Medium Commercial ("MC"), and Large Commercial and Industrial ("LC&I"). The specific rate schedules for each Procurement Class are shown in Table 1 with a brief description of the customers included within each Class. PECO will group all customers in this manner, regardless of whether they are default service customers or customers

¹ PECO is required to install interval metering for their Large Commercial & Industrial customers. AMI metering is currently in the process of being installed for other classes that are metered. For more information regarding interval metering please see PECO's Smart Meter Universal Deployment Plan available on the Company's website.

served by an EGS.

Table 1. Rate Schedules and Procurement Class Descriptions (through May 31, 2017)

Class	Customers Included	Rate Schedule	Description
Residential	All residential customers	R	Residence Service
		RH	Residential Heating Service
Small Commercial	Non-residential customers in rate schedules GS, HT, and PD with Peak Load Contribution < 100kW and customers in rate schedules AL, TLCL, POL, SLE, and SLS	GS	General Service
		HT	High-Tension Power
		PD	Primary -Distribution Power
		AL	Alley Lighting
		TLCL	Traffic Lighting Service
		POL	Private Outdoor Lighting
		SLE	Street Lighting Customer-Owned Facilities
SLS	Street Lighting in City of Philadelphia		
Medium Commercial	Non-residential customers with Peak Load Contribution Between 100kW and 500kW	GS	General Service
		HT	High-Tension Power
		PD	Primary -Distribution Power
Large Commercial & Industrial	Non-residential customers with Peak Load Contribution > 500kW	GS	General Service
		HT	High-Tension Power
		PD	Primary -Distribution Power
		EP	Electric Propulsion

On June 1, 2016, Medium Commercial Class transitioned from Default Service on a fixed-price basis to Default Service on an hourly price basis with energy priced to the PJM day-ahead spot market. Starting June 1, 2017, these customers will be merged with PECO’s Large Commercial & Industrial Class, non-residential customers with a Peak Load Contribution greater than 500kW, to form the Consolidated Commercial & Industrial Class (“CCI”). Thus, from that date, there are three Procurement Classes as shown in Table 2. In June 2019, PECO introduced a new street lighting rate schedule (SL-C) for the Small Commercial Class.

Table 2. Rate Schedules and Procurement Class Descriptions (starting June 1, 2017)

Class	Customers Included	Rate Schedule	Description
Residential	All residential customers	R	Residence Service
		RH	Residential Heating Service
Small Commercial	Non-residential customers with Peak Load Contribution up to and including 100kW	GS	General Service
		HT	High-Tension Power
		PD	Primary -Distribution Power

	and lighting customers	AL	Alley Lighting in City of Philadelphia
		TLCL	Traffic Lighting Constant Load Service
		POL	Private Outdoor Lighting
		SL-C ²	Smart Lighting Control Lighting Customer Owned Facilities
		SL-E	Street Lighting Customer-Owned Facilities
		SL-S	Street Lighting-Suburban Counties
Consolidated Large Commercial & Industrial	Non-residential customers with Peak Load Contribution greater than 100kW	GS	General Service
		HT	High-Tension Power
		PD	Primary -Distribution Power
		EP	Electric Propulsion

PECO does not currently aggregate customer data based upon Procurement Class. To ensure that existing commercial and industrial customer load is assigned to the proper Class for the purposes of the RFP, PECO has aggregated the data provided for periods from January 2006 through December 2010 in order to map commercial and industrial loads to the appropriate Classes.

Strictly for the convenience of bidders, prior to May 27, 2017, the customer count, hourly load, PLC and NSPL data for the CCI Class data has been constructed by summing the data for the MC and LC&I classes. Starting from May 27, 2017, the customer count, hourly load, PLC and NSPL data for the MC and LC&I classes will not be reported separately and only the CCI Class data will be provided.

d. Strata Descriptions

PECO defines a “strata” as a load profile existing within a particular rate schedule. Table 3 shows PECO’s current strata, the rate schedules to which each strata maps, and a brief description of each strata. These strata have been in effect as of January 1, 2011. Table 4 shows PECO’s historical strata, the rate schedules to which each strata maps, and a brief description of each strata. These strata were in use through December 31, 2010.

² In June 2019, PECO introduced a new street lighting rate schedule (SL-C) for the Small Commercial Class.

Table 3. Current Strata / Rate Schedule Mapping and Descriptions

Strata	Rate Schedule	Strata Description
101	GS	GS demand metered
107	GS	GS non-demand metered and unmetered
111	R	Residential monthly avg use = 0 - 450 kwh
112	R	Residential monthly avg use = 451 - 800 kwh
113	R	Residential monthly avg use > 800 kwh
121	RH	Residential Electric Heating monthly avg use = 0 - 930 kwh
122	RH	Residential Electric Heating monthly avg use = 931 - 1580 kwh
123	RH	Residential Electric Heating monthly avg use > 1580 kwh
151	HT	High Tension
157	PD	Primary Distribution
161	EP	Electric Propulsion
169	SLC	Smart Lighting Control Lighting Customer Owned Facilities
170	SLE	Street Lighting (includes previous strata 172 - rate schedule SLP)
171	SLS	Street Lighting
173	POL	Private Outdoor Lighting
175	TL	Traffic Lighting Constant Load (Rate TLCL from tariff)
176	TL	Traffic Lighting Constant Load (Rate TLCL from tariff)
177	AL	Alley Lighting

Table 4. Historical Strata / Rate Schedule Mapping and Descriptions

Strata	Rate Schedule	Strata Description
001	GS	With peak demands between 0-7.0KW
002	GS	With peak demands between 7.1-10.0KW
003	GS	With peak demands between 10.1-15.0KW
004	GS	With peak demands between 15.1-25.0KW
005	GS	With peak demands between 25.1-40.0KW
006	GS	With peak demands greater than 40.0KW
007	GS	W/o demand measurement - annualized avg monthly usage between 0-300KWH
008	GS	W/o demand measurement - annualized avg monthly usage between 301-600KWH
009	GS	W/o demand measurement - annualized avg monthly usage greater than 600KWH
010	OP	Cycle 1 Restricted and Unrestricted (5-day radio, 7-day mechanical)
011	R	Annualized average monthly usage between 0KWH and 300KWH
012	R	Annualized average monthly usage between 301KWH and 450KWH
013	R	Annualized average monthly usage between 451KWH and 600KWH
014	R	Annualized average monthly usage between 601KWH and 800KWH
015	R	Annualized average monthly usage between 801KWH and 1000KWH
016	R	Annualized average monthly usage greater than 1000 KWH

Strata	Rate Schedule	Strata Description
041	RH	Heat Pumps with Electric Resistance Back-up <i>As of January 1, 2008, PECO eliminated strata 042 and strata 043 (below) and consolidated both within this strata (041).</i>
042	RH	Electric Resistance <i>This strata existed until January 1, 2008, at which time it was eliminated and consolidated with Strata 041.</i>
043	RH	Heat pumps with Fossil Fuel Back-up <i>This strata existed until January 1, 2008, at which time it was eliminated and consolidated with Strata 041.</i>
051	HT	Philadelphia Industrial Customers with Peak Demand Over 2000KW Annually
052	HT	Philadelphia Commercial Customers with Peak Demand Over 2000KW Annually
053	HT	Suburban Industrial Customers with Peak Demand Over 2000KW Annually
054	HT	Suburban Commercial Customers with Peak Demand Over 2000KW Annually
055	HT	Industrial Customers with Peak Demand Under 2000KW Annually
056	HT	Commercial Customers with Peak Demand Under 2000KW Annually
057	PD	Commercial Customers With High Load Factor
058	PD	Commercial Customers With Low Load Factor
059	PD	Industrial Customers With High Load Factor
060	PD	Industrial Customers With Low Load Factors
061	EP	Electric Propulsion / Railroads
070	SLE	Street Lighting
071	SLS	Street Lighting
072	SLP	Street Lighting
073	POL	Private Outdoor Lighting
075	TL	Traffic Lighting
100	GS	GS flat load shape
110	OP	Off Peak

e. Mapping of Procurement Classes to Strata

The PECO system for using load profiles and developing data for PJM settlements does not associate monthly energy settlement data by strata and rate schedule with Classes as there is no need to do so under the current supply arrangements. To provide load data broken down by customer supply group (Class) for periods prior to January 2011, PECO developed Class Factors for each strata and rate schedule to allocate each rate schedule/strata combination to the four Classes. Table 5 below displays the results of this mapping and the associated factors applicable for all historical data provided in PECO's energy (system load) reports within the Data Room through December 2010. For example, historic energy associated with Schedule GS/Strata 004 is .9900 (99.0%) allocated to the SC Class; .0060 (0.6%) allocated

to LC&I; and .0040 (0.4%) allocated to MC. We note that as of 1/1/2011, there is a one-to-one mapping of rate code to procurement class.

Table 5. Rate Schedule / Strata Mapping to Procurement Classes and Factors

Rate Schedule	Strata	Class	Class Factor
GS	001	Small Commercial	1.0000
GS	002	Small Commercial	1.0000
GS	003	Small Commercial	1.0000
GS	004	Small Commercial	0.9900
GS	004	Large Commercial and Industrial	0.0060
GS	004	Medium Commercial	0.0040
GS	005	Small Commercial	1.0000
GS	006	Small Commercial	0.3320
GS	006	Medium Commercial	0.5650
GS	006	Large Commercial and Industrial	0.1030
GS	007	Small Commercial	1.0000
GS	008	Small Commercial	0.9990
GS	008	Medium Commercial	0.0010
GS	009	Small Commercial	1.0000
OP	010	Residential	1.0000
R	011	Residential	1.0000
R	012	Residential	1.0000
R	013	Residential	1.0000
R	014	Residential	1.0000
R	015	Residential	1.0000
R	016	Residential	1.0000
RH	041	Residential	1.0000
RH	042	Residential	1.0000
RH	043	Residential	1.0000
OP	044	Residential	1.0000
HT	051	Large Commercial and Industrial	1.0000
HT	052	Large Commercial and Industrial	1.0000
HT	053	Large Commercial and Industrial	1.0000
HT	054	Large Commercial and Industrial	1.0000
HT	055	Small Commercial	0.0140
HT	055	Large Commercial and Industrial	0.6650
HT	055	Medium Commercial	0.3210
HT	056	Large Commercial and Industrial	0.5000
HT	056	Small Commercial	0.0100
HT	056	Medium Commercial	0.4900
PD	057	Large Commercial and Industrial	0.0970
PD	057	Small Commercial	0.0590

Rate Schedule	Strata	Class	Class Factor
PD	057	Medium Commercial	0.8440
PD	058	Large Commercial and Industrial	0.2270
PD	058	Small Commercial	0.0260
PD	058	Medium Commercial	0.7470
PD	059	Small Commercial	0.0130
PD	059	Large Commercial and Industrial	0.2690
PD	059	Medium Commercial	0.7180
PD	060	Medium Commercial	0.8670
PD	060	Small Commercial	0.0340
PD	060	Large Commercial and Industrial	0.0990
EP	061	Large Commercial and Industrial	1.0000
SLE	070	Small Commercial	1.0000
SLS	071	Small Commercial	1.0000
SLP	072	Small Commercial	1.0000
POL	073	Small Commercial	1.0000
SL	074	Small Commercial	1.0000
TL	075	Small Commercial	1.0000
AL	076	Small Commercial	1.0000

3. Descriptions of Data Series

a. Hourly Energy

i. Description

PECO zonal hourly energy (i.e. system load) associated with all PECO customers, total zonal hourly energy for default service customers and total zonal hourly energy for customers being served by EGSs. These same data are also provided for each Procurement Class.

Please note that all energy (system load) reported by PECO is energy following PECO's 60-day settlement (energy reconciliation service) with PJM. Therefore PECO provides all energy reports on a two-month lag.

ii. Available Reports

- a. Hourly Energy for PECO Zone (includes aggregated totals for all of PECO's Classes and contains totals for aggregate zone load, default service load, and EGS-supplied load)
- b. Hourly Energy for the R Class (contains totals for Class load, Class default service load, and Class EGS-supplied load)
- c. Hourly Energy for the SC Class (contains totals for Class load, Class default service load, and Class EGS-supplied load)
- d. Hourly Energy for the MC Class (contains totals for Class load, Class default service load, and Class EGS-supplied load). This report will not be updated starting from May 27, 2017.
- e. Hourly Energy for the LC&I Class (contains totals for Class load, Class default service load, and Class EGS-supplied load). This report will not be updated starting from May 27, 2017.
- f. Hourly Energy for CCI Class (contains totals for Class load, Class default service load, and Class EGS-supplied load). Prior to May 27, 2017, this data was constructed by summing the data provided for the MC and LC&I Class (d and e above) in each hour.

iii. Assumptions

All values are "fully loaded", meaning they include applicable distribution and transmission system losses. These hourly load values, post marginal loss implementation are not equivalent to PJM settlement volumes as, post marginal loss implementation, these values will be de-rated by PJM for marginal losses prior to energy settlement. PECO is also supplying hourly marginal loss deration factors.

PECO allocates UFE to all Load Serving Entities in the PECO zone (i.e., to EGS and default service Load Serving Entities) each month based on load-ratio share. Note that PECO only allocates UFE in the following manner: Prior to March 2015 UFE is allocated to monthly-metered customers and not to hourly/interval metered customers. Hourly energy values developed from interval or recorder meters do not include UFE. For non-interval metered customers, UFE amounts do not need to be added to the historical hourly loads posted to the

Data Room since they already include UFE. Starting in March 2015 UFE is allocated to all customers, including hourly/interval metered customers.

PECO has adjusted all aggregate zone load values to account for PJM meter corrections.

b. Peak Load Share (Capacity)

i. Description

Daily Capacity Peak Load Contributions (“PLCs”) for the total retail load, including load for default service customers as well as customers being served by an EGS, for default service customers and for customers served by EGSs.

ii. Available Reports

- a. Daily PECO PLC (for PECO zone – includes aggregated totals for all Classes and contains totals for aggregate zone load, default service load, and EGS-supplied load)
- b. Daily PECO PLC for the R Class (contains totals for all customers, default service customers, and EGS-supplied customers)
- c. Daily PECO PLC for the SC Class (contains totals for all customers, default service customers, and EGS-supplied customers)
- d. Daily PECO PLC for the MC Class (contains totals for all customers, default service customers, and EGS-supplied customers) . This report will not be updated starting from May 27, 2017.
- e. Daily PECO PLC for the LC&I Class (contains totals for all customers, default service customers, and EGS-supplied customers) . This report will not be updated starting from May 27, 2017.
- f. Daily PECO PLC for the CCI Class (contains totals for all customers, default service customers, and EGS-supplied customers). Prior to May 27, 2017 this data was constructed by summing the data provided for the MC and LC&I Class (d and e above) in each day.

iii. Assumptions

PECO calculates PLCs by first assigning each account an individual PLC and then totaling all account PLCs for a given day to produce aggregate PLC results; this is also known as a “bottom-up” calculation.

Prior to January 1, 2008, PLCs were submitted by Electric Distribution Companies (EDCs) to PJM effective from January 1 through December 31st of a calendar year. Beginning in 2008, PJM made a change for PLCs to be effective for June 1 through May 31, coincident with the PJM planning year.

c. PJM Reliability Pricing Model (RPM) Daily Zonal Scaling Factors

In order to calculate PECO's daily Unforced Capacity (UCAP) obligation on a daily basis, PJM adjusts the daily PLCs submitted by PECO to a zonal RPM load target by calculating and applying a daily scaling factor. This report provides a list of these scaling factors by day.

PJM implemented RPM in June 2007. As such, PECO is able to provide PJM RPM scaling factor data as far back as June 1st, 2007.

Please note that PLCs are also adjusted by other scaling factors. Those scaling factors can be found at: <http://pjm.com/markets-and-operations/rpm/rpm-auction-user-info.aspx>.

d. Peak Load Share (Transmission)

i. Description

Daily Network Transmission Service Peak Loads ("NSPLs") for the total retail load, including load for default service customers as well as customers being served by an EGS.

ii. Available Reports

- a. Daily PECO Zone NSPL (for PECO zone – includes aggregated totals for all Classes and contains totals for aggregate zone load, default service load, and EGS-supplied load)
- b. Daily PECO NSPL for the R Class (contains totals for all customers, default service customers, and EGS-supplied customers)
- c. Daily PECO NSPL for the SC Class (contains totals for all customers, default service customers, and EGS-supplied customers)
- d. Daily PECO NSPL for the MC Class (contains totals for all customers, default service customers, and EGS-supplied customers) . This report will not be updated starting from May 27, 2017.
- e. Daily PECO NSPL for the LC&I Class (contains totals for all customers, default service customers, and EGS-supplied customers) . This report will not be updated starting from May 27, 2017.
- f. Daily PECO NSPL for the CCI Class (contains totals for all customers, default service customers, and EGS-supplied customers). Prior to May 27, 2017, this data was constructed by summing the data provided for the MC and LC&I Class (d and e above) in each day.

iii. Assumptions

PECO calculates NSPLs by first assigning each account an individual NSPL and then totaling all account NSPLs for a given day to produce aggregate NSPL results; this is also known as a “bottom-up” calculation.

All EDCs within PJM are required to update annual NSPL data by January 1, with those NSPLs effective from January 1 through December 31 of a calendar year.

e. Hourly PECO Zone Unaccounted for Energy (UFE)

The hourly MW variance between PECO’s total retail hourly energy (system load) and the sum of (i) the estimated hourly customer loads (both interval metered and profiled) and (ii) electrical losses. The report contains the aggregate zone load total.

f. Customer Counts

i. Description

Total number of PECO customers in a particular Class by rate schedule and strata combination as of the last calendar day of the previous month, including counts for default service customers and customers served by EGSs. Each report contains several records per day based on the number of rate schedules and strata that map to each Class. Each report also contains totals for aggregate zone load, default service load, and EGS-supplied load.

Prospective suppliers can use this as a source of switching data, or data indicating the number of customers that have switched to or from retail EGSs.

ii. Available Reports

- a. Monthly Counts for the R Class
- b. Monthly Counts for the SC Class
- c. Monthly Counts for the MC Class. This report will not be updated starting from May 2017.
- d. Monthly Counts for the LC&I Class. This report will not be updated starting from May 2017.
- e. Monthly Counts for the CCI Class (Prior to May 2017, this data was constructed by summing the data provided for the MC and LC&I Class (d and e above) in each month.)

g. Hourly PJM Deration Factors for PECO Zone

Hourly state-estimated factors applied to the PECO zone by PJM to adjust fully loaded energy schedules for those marginal losses that are already accounted for in PJM’s Locational Marginal Prices (LMPs). Deration factors are applied to the energy (system load) in the above energy reports as follows, using fully loaded aggregate zone load as an example:

Derated aggregate PECO zone load =

*Fully loaded aggregate zone load *(1 – Deration Factor)*

PJM began applying marginal loss deration factors in June 2007 with its implementation of “Marginal Losses”. Therefore, PECO does not have deration factor data prior to that date.

4. PJM Billing Information

Please note that this data is only available through 2010 and is now located on the archive page of the RFP website:

<http://pecoprocurement.com/admin/index.cfm?s=background&p=archivesAdditionalData>

a. Available Reports and Descriptions

- i. **Historical PJM Billing Data for PECO.** Selected historical monthly PJM billing data for PECO default load, including inadvertent energy and ancillary services. This report includes the PJM billing line item description, the total dollars charged or credited to PECO for the associated line item in a given month, and the associated default load (in megawatt hours) for the month associated with the monthly dollar amounts. Data for this report is available as of June of 2007, coincident with PJM’s implementation of its Reliability Pricing Model (RPM). PECO will provide data for periods from June 2007 up to and including December 2010.
- ii. **PJM Billing Statement Line Items.** This report lists all PJM billing line items that currently appear on PECO’s monthly PJM billing statement. For each charge and credit, the report includes the PJM line item ID number and description as well as a notation assigning responsibility for the charge – either PECO or the Default Supplier. Items allocated to a Default Supplier will appear either on that supplier’s PJM monthly billing statement or on the supplier’s monthly default service invoice from PECO, dependent upon the ability of PJM to allocate each particular item on PECO’s behalf. This report will be updated approximately two months prior to each procurement, rather than on a monthly basis like the above report.

b. Assumptions

As mentioned previously, PECO only has access to its own data and does not have access to any other data from other entities like EGSs, which means it can only provide PJM Billing data associated with its own Default Service Load.

PECO expects that PJM billing line item descriptions will change over time, as has been the case historically. As a result, the line items appearing in all of the above reports reflect PJM billing line items as of report publication and do not necessarily correspond to the line items referenced in any sample PJM invoice from PECO’s Default Service Supplier Master Agreement.

5. Use of Data

These data items are provided by PECO for informational purposes only. PECO has compiled the data in good faith from sources believed by PECO to be reliable but does not warrant the accuracy of the data. Further, there is no representation that this data is indicative of future outcomes.

By use of these data, prospective suppliers as well as other parties agree to assume all risks associated therewith. Without limitation of the foregoing, prospective bidders and other parties should carefully assess the uncertainty associated with future load obligations, including variations in customer usage and migration to Electric Generation Suppliers.