

PECO Default Service Program - RFP Data Room
Data Series Overview: General Descriptions and Assumptions
August 23, 2016

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I. DESCRIPTION OF SUPPLY TO BE PROCURED IN PECO RFP

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 Program.

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 data series in the data room are not adjusted for the NYPA allocation and suppliers are responsible for making these adjustments.

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. 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 served by an EGS.

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.

Table 1. Current Rate Schedule and Procurement Class Descriptions

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

PECO does not currently aggregate customer data based upon the above Classes. 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.

D. STRATA DESCRIPTIONS

PECO defines a “strata” as a load profile existing within a particular rate schedule. Table 2 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 3 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.

Table 2. Current Strata / Rate Schedule Mapping and Descriptions

| Strata | Rate Schedule | Strata Description |
|--------|---------------|---|
| 100 | GS | GS flat load shape (no longer available, updated through 12/30/2012 for SC) |
| 101 | GS | GS demand metered |
| 107 | GS | GS non-demand metered and unmetered |
| 110 | OP | Off Peak (no longer available, updated through 12/30/2012 for RES) |
| 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 |
| 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 3. 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 |

| Strata | Rate Schedule | Strata Description |
|--------|---------------|--|
| 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 |
| 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 |

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 4 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 4. 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 |

| Rate Schedule | Strata | Class | Class Factor |
|----------------------|---------------|---------------------------------|---------------------|
| PD | 057 | Small Commercial | 0.0590 |
| 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 |

II. DESCRIPTIONS OF DATA SERIES

A. HOURLY ENERGY

1. 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.

2. Available Reports

- a. Hourly Energy for PECO Zone (includes aggregated totals for all four 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)
- e. Hourly Energy for the LC&I Class (contains totals for Class load, Class default service load, and Class EGS-supplied load)

3. 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)

1. 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.

2. 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)
- e. Daily PECO PLC for the LC&I Class (contains totals for all customers, default service customers, and EGS-supplied customers)

3. 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)

1. 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.

2. Available Reports

- a. Daily PECO Zone NSPL (for PECO zone – includes aggregated totals for all Customer Supply Groups 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 Network Service Peak Load (NSPL) for the MC Class (contains totals for all customers, default service customers, and EGS-supplied customers)
- e. Daily PECO NSPL for the LC&I Class (contains totals for all customers, default service customers, and EGS-supplied customers)

3. 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 (a) 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

1. 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.

2. Available Reports

- a. Monthly Counts for the R Class
- b. Monthly Counts for the SC Class
- c. Monthly Counts for the MC Class
- d. Monthly Counts for the LC&I Class

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:

$$\begin{aligned} \text{Derated aggregate PECO zone load} = \\ \text{Fully loaded aggregate zone load} * (1 - \text{Deration Factor}) \end{aligned}$$

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.

H. 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>

1. Available Reports and Descriptions

- a. **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.
- b. **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.

2. 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.

III. 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.