DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

CIRCUIT RIDER PROGRAM

Energy Efficiency in Local Government Operations

Strategies to Save Money and Energy in Street Lighting

A DVRPC—PECO Roundtable

Introduction

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September 19th, 2012

Introductions

Anyone seen one of these??

PECO
An Exelon Company

Emergency and Repairs: 1-800-841-4141. This is the number to call to report power outages, gas leaks or odors, and safety hazards related to PECO equipment. For all other business, call 1-800-494-4000.

Name: SWARTHMORE BOROUGH

Account Number: 06249-00204

Lighting Information

Size	No. of Luminaires	Wattage per Luminaire
20000M	9	429
12000M	13	275
09500S	3	131
04000M	446	115
000LED	30	50
	501	

Street Lighting Customer Owned Service - Current Period Detail	Service 06/04/2012 to 07/03/2012 - 29 days				
Service Location Distribution Charge	501	Locations	X	$7.33000	3,672.33
Generation Charges	20,672	kWh	X	0.05920	1,223.78
Alt. Energy Portfolio Standard	20,672	kWh	X	0.00110	22.74
Transmission Charges	20,672	kWh	X	0.00130	26.87
Distribution Charges	20,672	kWh	X	0.00500	103.36
State Tax Adjustment					-1.89
Total Current Charges					**$5,047.19**

Decoding the Lighting Information

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Code	Lamp Technology
M	Mercury Vapor
S	High Pressure Sodium
H	Metal Halide
L	Incandescent
LED	Light Emitting Diode

Size	No. of Luminaires	Wattage per Luminaire	Watts	
20000M	9	429	3,861	
12000M	13	275	3,575	
09500S	3	131	393	
04000M	446	115	51,290	
000LED	30	50	1,500	
Total	**501**		**60,619**	Total watts
			4,092	Hrs per year (11¼ hrs/day)
			12	Months per year
			1,000	Watts per kW
			20,672	**Total kWh**

Decoding the Charges

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Transmission Charges	20,672	kWh	X	0.0013	26.87	Variable ("Demand")
Distribution Charges	20,672	kWh	X	0.005	103.36	Variable ("Demand")
State Tax Adjustment					-1.89	
Total Current Charges					**$5,047.19**	
Total Fixed ("Customer")	3,672	73%				
Total Variable ("Demand")	1,377	27%				

Note: Service Location Distribution Charge of $7.33 = $6.87+$0.46 “Energy Efficiency Program Charge”

Street Lighting – in the wild

http://www.seattle.gov/light/images/d-cobraheadstrlt.jpg

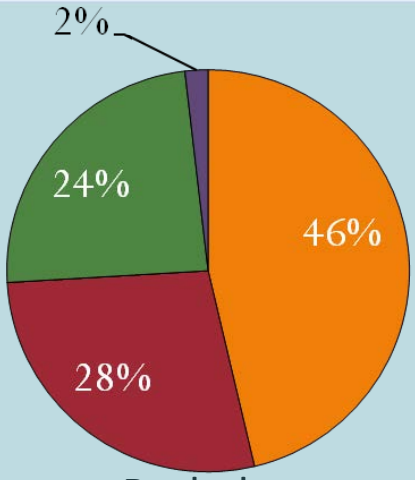
Municipally-owned pole with municipally-owned street light ←

Utility-owned pole with municipally-owned street light →

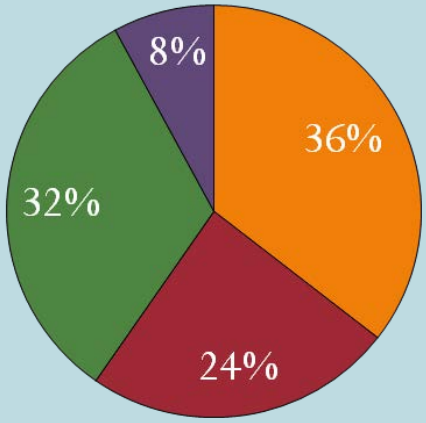
<u>Very different implications</u>

http://ops.fhwa.dot.gov/publications/telecomm_handbook/chapter8.htm

Municipal Operations by Sector

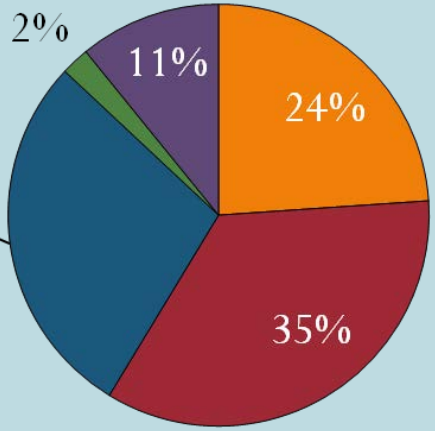


Rutledge

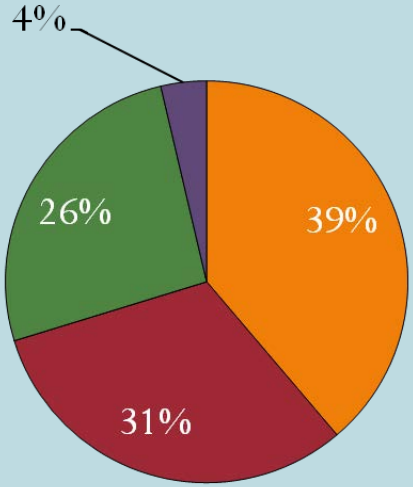


Nether Providence

- Buildings and Facilities
- Streetlights & Traffic Signals
- Vehicle Fleet
- Employee Commute



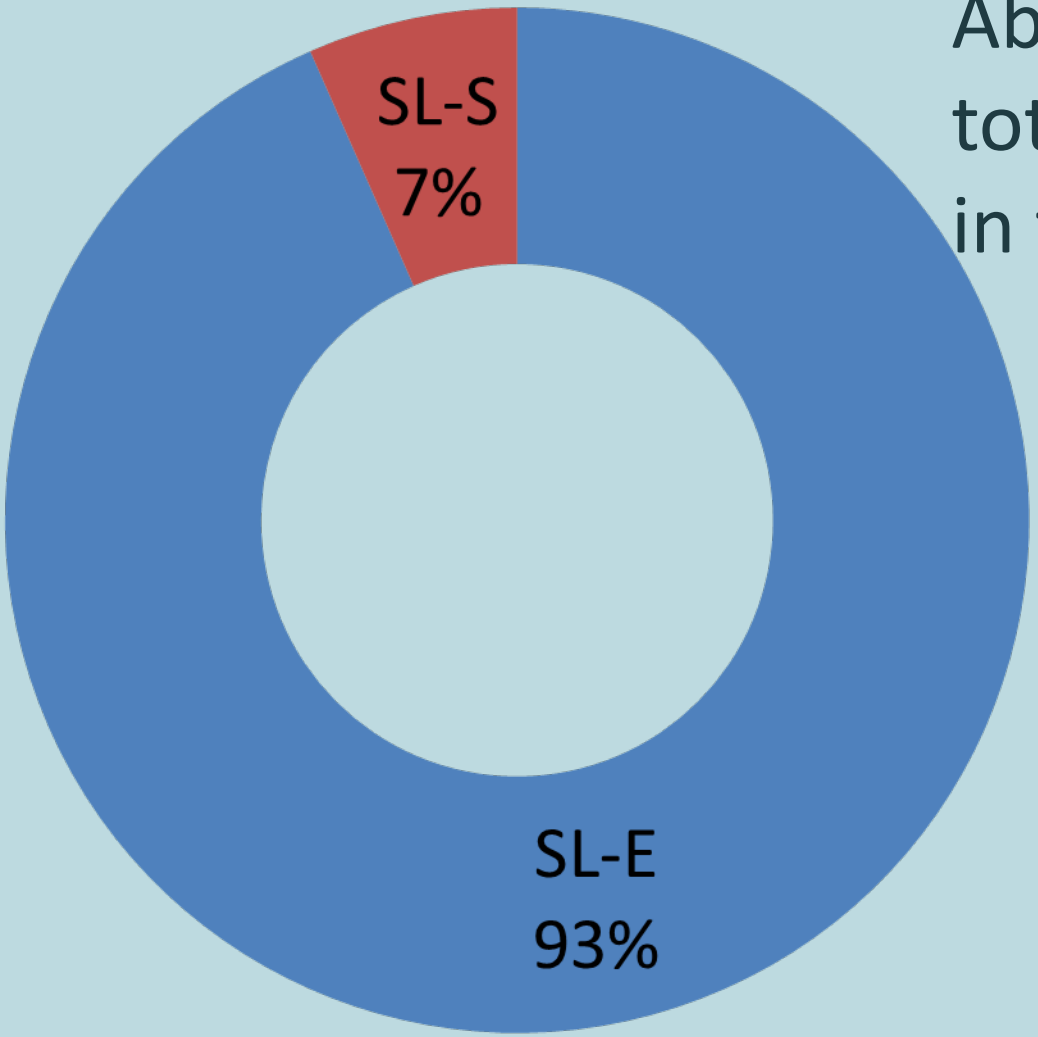
Rose Valley



Swarthmore

Courtesy Professor Bradley Flamm, Temple University, Preliminary results: April 2010

Suburban Street Lights by Tariff Type

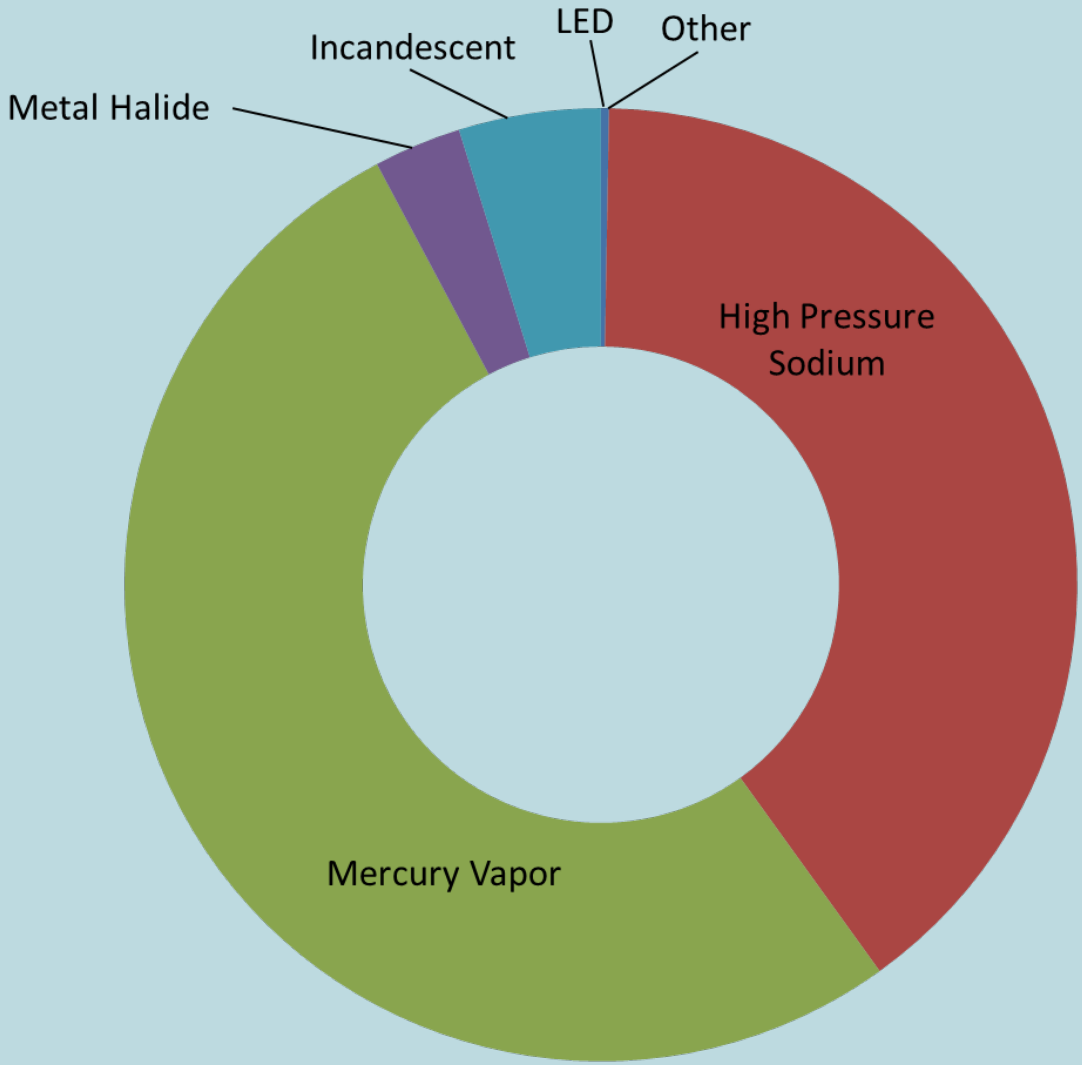


About 100,000 total streetlights in the suburbs.

About 100,000 total streetlights in Philadelphia

Source: PECO 2009

Street Lighting Technology in PECO Territory



Source: PECO 2009

Challenge of Street Lighting Retrofit Projects in PECO Territory

- Service Location Charge represents a high “fixed” cost
  - Typically 60-70% of a municipal street lighting bill

Issues identified by municipalities:

- Achieving a reasonable payback is difficult with this tariff.
- Limited fiscal staffing capacity to support project scope.
- Choosing a technology: Inundated by vendors and solicitors selling products and services.
- Communicating with PECO: What is the process for having PECO update bill to reflect retrofit?
- Unclear rules and regulations: What is the process for removing service location charges?

Key Questions

- What can a municipality do to reduce SL costs?
- Why are fixed fees such a large portion of SL-E tariff?
- How is the SL-E tariff set?
- How can municipalities work with PECO to assure the bill reflects what is installed?

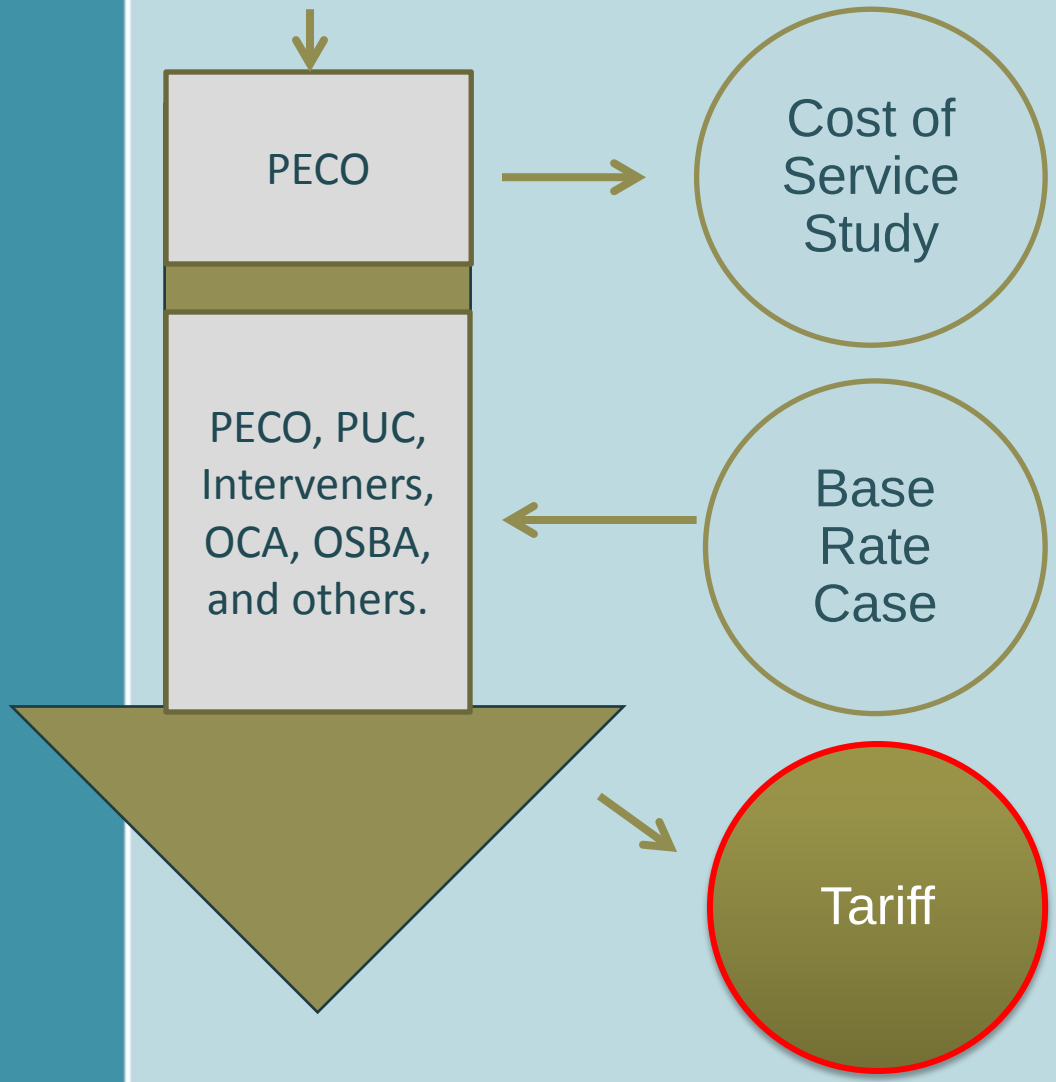
Agenda

- PECO Presentation on SL-E Tariff
  - Scott Neumann, Rate Engineer
- Working with PECO
  - Marie Hoey, Account Manager, Suburban Streetlights
- What municipalities are doing
  - Warminster
  - Phoenixville
  - Others
- Next Steps

Utility Rate Setting
(the Elementary School Version)
[Grad School to Follow]

CIRCUIT RIDER PROGRAM

utility decides to file for a base rate increase when projected costs exceed projected revenues



Develop total revenue requirements.

In 2010, this was $4.9B.

Classify (demand, customer, energy), and allocate among classes (residential, commercial, industrial, **street lighting, etc.**)

My understanding of the SL-E tariff

[it's actually quite a bit more complicated]

- PECO establishes service locations and delivers electricity to each from the generator the customer selects.
  - Service Locations: your house, your business, each traffic signal intersection, each streetlight connection to their system.
- Imagine all PECO customers had a single 1 watt LED—what would they have to provide? Fixed "customer" charges
  - Poles, transformers, wires, maintenance crews, tree trimming service, vehicles, billing infrastructure, etc.
- What varies with increased energy use? Variable "demand" charges.
  - Wire size, transformer size, system size in general
- Street Lights have a higher portion of fixed costs than most other service locations because their energy use is low. Each SL is in some ways a single customer. They are billed together because they are all paid by the municipality.

Seminar Series

CIRCUIT RIDER PROGRAM

Seminar 1 (April 11, 2012): LED Traffic Signal Conversion Program

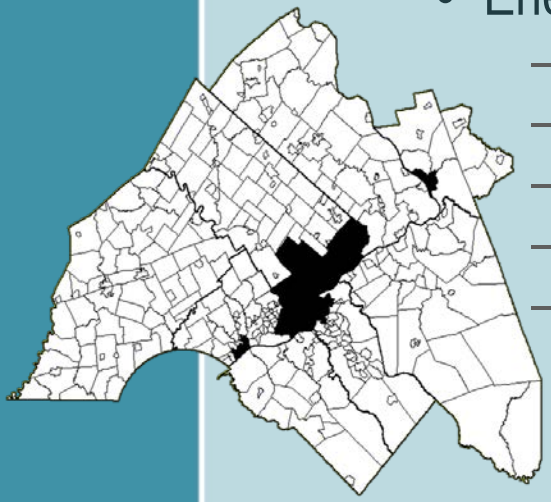
Seminar 2 (June 13, 2012): Energy Management Best Practices

Seminar 3 (Sept. 19, 2012): DVRPC/PECO Roundtable: Strategies to Save Money and Energy in Street Lighting

Seminar 4 (Dec. 2012): Project Financing and Budgeting

Delaware Valley Regional Planning Commission

- MPO for Greater Philadelphia Region
- Region is bi-state, nine counties surrounding and including Philadelphia
- Planning areas
  - Transportation Planning, Air Quality, Smart Growth Planning, Environmental Planning, Housing and Economic Development, Population and Employment forecasts, Long Range Planning, and…
  - Energy and Climate Change Initiatives:
    - Regional greenhouse gas inventory
    - Sea level rise planning
    - Preparing the region for alternative energy
    - Electric Vehicle Readiness Plan
    - Municipal energy management assistance



CIRCUIT RIDER PROGRAM

DVRPC Circuit Rider Program

- Focus on energy efficiency in municipal operations
  - Provide smaller municipalities with easy access to the resources and tools they need to prioritize projects for cost-effectively reducing energy costs in their operations.
- Targeting small- and medium-size municipalities in southeastern PA
  - 228 municipalities, median population of 6,275
- Funded by a U.S. EPA Climate Showcase Communities Grant
  - ~$364K over 3 yrs

Circuit Rider: “any professional who travels a regular circuit of locations to provide services”

CIRCUIT RIDER PROGRAM

DVRPC Circuit Rider Program

1. Reducing Energy Costs in Municipal Operations seminar series
2. LED Traffic Signal Conversion Program (or other bulk purchasing)
3. Direct Technical Assistance
4. Workshops and training for Water and Wastewater Treatment Facilities
5. Tools, training, and advice

CIRCUIT RIDER PROGRAM

Thank You!

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