



PPL Electric Utilities

Energy Efficiency Programs for Multi-family Buildings

Housing Alliance of Pennsylvania
October 19th, 2016

Housekeeping

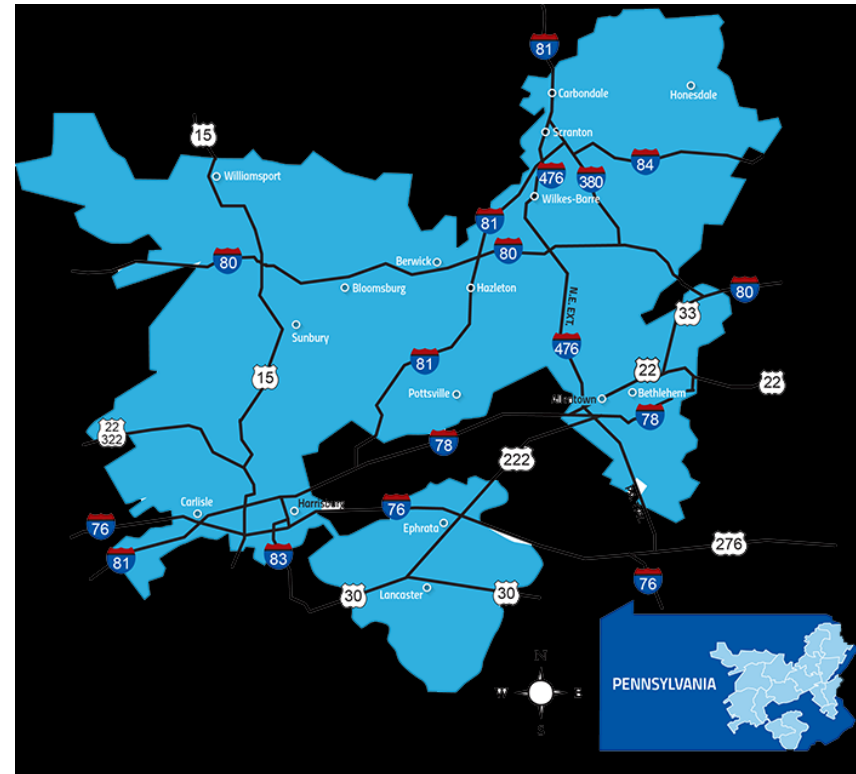
- Safety and Logistics
 - Sign-In Sheet
 - Evacuation Route
 - Safety Tips
- Introductions
 - Housing Alliance of PA
 - PPL Electric Utilities
 - Energy Efficiency Program Implementers
- Audience/Participants

Objectives for Today

- PPL background
- Overview of PPL's current multi-family energy efficiency programs
- Case studies
- Lessons learned from previous multi-family programs
- PHFA component
- Input to improve programs

PPL Background

- PPL Electric Utilities delivers electricity to 1.2 million residential customers and 200,000 non-residential customers in Eastern & Central PA
- PPL has offered residential and non-residential energy efficiency programs since 2010 to help customers save energy & money
- PPL's Energy efficiency program budget is ~\$62 million/year
- From 2010 until May 2016, PPL's energy efficiency programs:
 - Saved customers more than 2.25 billion kWh per year, enough to power about 200,000 homes each year. > 6% reduction in PPL's load.
 - Saved customers more than \$250 million per year in electricity costs
 - More than 12 million CFLs and more than 2 million LED light bulbs
 - Recycled more 86,000 appliances
 - More than \$180 million in incentives/rebates



Multi-Family Program Eligibility



- All multifamily (MF) buildings in PPL Electric Utilities' territory are eligible for PPL's energy efficiency programs
 - Some programs provide direct-install services by PPL at no cost
 - Some programs provide rebates to offset the owner's cost:
 - The owner hires their own contractor or self-installs
 - Living units and common areas are eligible
 - Single point of contact for multifamily building owners/managers:
 - 1-888-232-6302 or pplwrap@cmcenergy.com
- Help customers reduce their electricity costs
- Lower operating cost & increased value for building owners
- Increased comfort for building occupants

Low-income Living Units in MF Buildings



- \leq 150% of Federal Poverty Income Guidelines
- Energy audit and eligible measures provided by PPL **at no cost**
- Eligible measures include LED light bulbs, HVAC, weatherization, refrigerator replacement, heat pump water heaters, advanced thermostats, low flow shower heads and faucet aerators
- Energy efficiency education provided to the building operator and residents
- Individually metered and master metered living units are eligible
- Landlord approval required for rental units
- Included in the \$42 million budget (2016 - 2021) for PPL's WRAP Program. \$2.5 million cap for master metered living units
- Call 1-888-232-6302 for more information or to apply

Non-Low-income Living Units in MF Buildings- Individually Metered



PPL Electric Utilities

- Covered through PPL's residential energy efficiency program rebates and incentives
- Eligible measures include in-home and online energy audits, LED light bulbs, advanced thermostats, air source and ductless heat pumps, insulation, air sealing, refrigerators, recycling of refrigerator/freezer/window air conditioner, heat pump water heaters, new home construction
- 5-year budget is > \$80 million
- Resident submits the rebate application
- Instant rebate (no forms) for LEDs at the point of sale
- Landlord approval required for rental units
- If appliance/equipment is owned and replaced by the landlord, resident can assign the rebate to the landlord
- See www.pplelectric.com/savings to apply. For more information, call 877-486-9204

Non-Low-income Living Units in MF Buildings- Master Metered



PPL Electric Utilities

- Measures available through PPL's residential and non-residential energy efficiency programs
- LED light bulbs, advanced thermostats, refrigerators, insulation, air sealing, LED exit signs, ductless heat pumps, air source heat pumps, lighting other than LED bulbs, lighting controls, building management systems, recycling of refrigerator/freezer/window air conditioner
- 5-year budget > \$100 million
- Restriction on maximum number of eligible units (such as refrigerator recycling) can be waived for MF buildings
- Landlord/owner submits the rebate application for master metered units and can assign a rebate to the resident
- "Whole building" approach is encouraged
- Work in living units can be coordinated with work in common areas
- Call 1-888-232-6302 for more information or to apply

Common Areas in MF Buildings

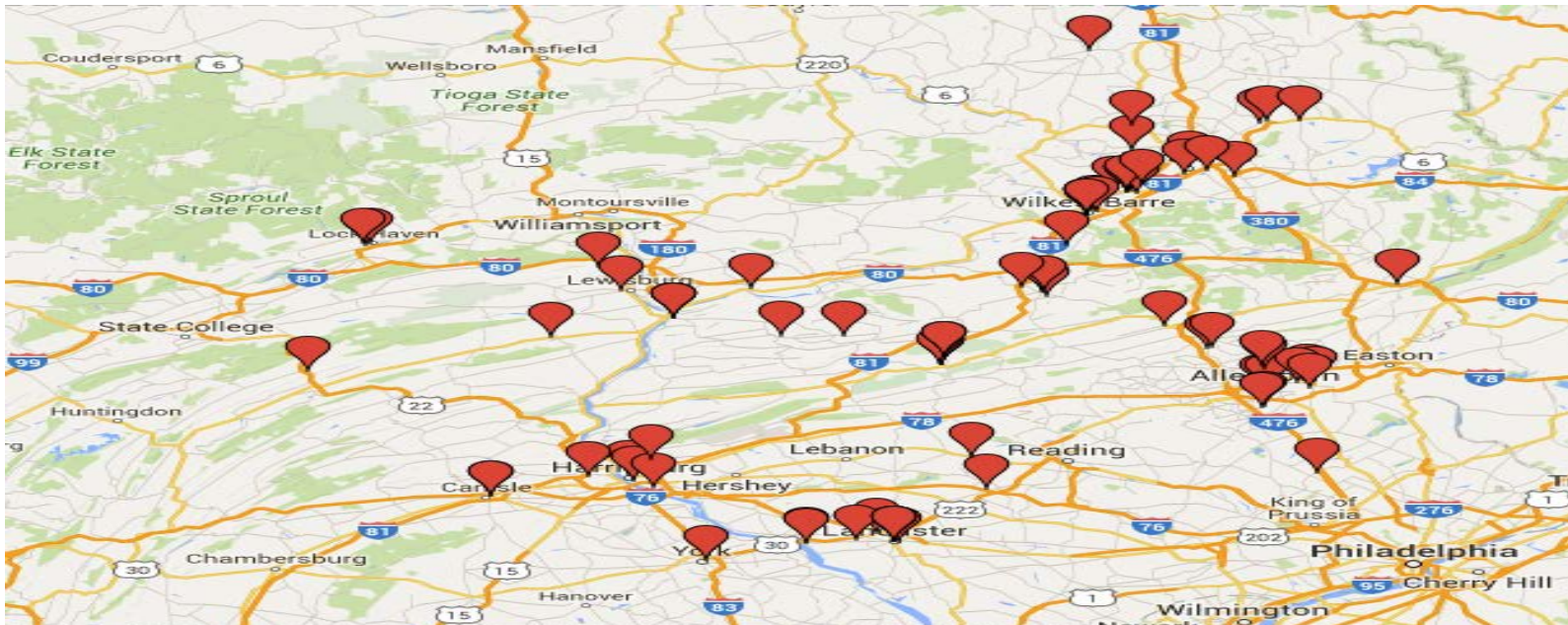
- Rebates for interior and exterior lighting, lighting controls, building energy management systems, insulation, air sealing, LED exit signs, ductless heat pumps, air source heat pumps, variable speed drives, chillers, geothermal heat pumps, combined heat and power, custom measures, and more
- Landlord/owner submits the rebate application
- “Whole building” approach is encouraged
- Work in common areas can be coordinated with work in living units
- Call 1-888-232-6302 for more information or to apply

Multi-Family Projects (2013 - 2016)



PPL Electric Utilities

- Master-Metered, Government & Non-Profit Owned/Managed
 - 139 buildings, throughout the service area
 - Average savings per facility: 46,042 kWh/year
 - Estimated Financial Savings/yr: \$6,200
 - Average value of services provided at no cost to the building = \$2,750/building



Case Study #1

- **Property Owner:** Allentown Ventures
- **Building Name:** Townhouse Apartments
- **Building Type:** 12-story high-rise apartment building with 160 individually metered units
- **Customer Type:** Low-income housing
- **Direct Install Measures at no cost to the tenants or building owner:**
 - Approximately 1,600 CFLs (we only install LEDs now)
 - Replaced many refrigerators and air conditioners with new, energy efficient models
 - Replaced faucet aerators and water heaters in some instances
 - Blower-door tests conducted
 - Thermostat replacement
 - Air sealing
 - Insulation
- **Total electricity savings = 245,000 kWh/year** or 6% decrease in total annual electric usage
 - Total Estimated Financial Savings/year: \$33,000*
- **Value of services provided by PPL Electric: \$400,000**
 - Individual Units: \$2,500
 - Common Space: \$0
- **Customer Contribution: \$0**

*Based on \$0.135/kWh

Case Study #2

- **Property Owner:** Housing Development Corporation – Mid–Atlantic
- **Building:** Ruoff Towers (11 Story master metered facility with 150 single units)
- **Customer Type:** Senior and low-income housing
- **Direct Install Measures at no cost to the tenants or building owner:**
 - 479 LED light bulbs in living units
 - 39 LEDs in common areas and exterior
 - 37 Occupancy Sensors
 - Replaced all linear fluorescent lighting fixtures with more-efficient lighting
 - 5 LED Wall Packs
- **Total electricity savings = 66,800 kWh/year or 8.1% decrease in total annual electric usage**
 - Total Estimated Financial Savings/year: \$9,000*
- **Value of services provided by PPL Electric: \$25,000**
 - Individual Units: \$11,000
 - Common Space: \$14,000
- **Customer Contribution: \$0**

*Based on \$0.135/kWh

Case Study #3

- **Property Owner:** Diocese of Scranton
- **Building Name:** St. Luke's Villa
- **Building Type:** 2 story master metered facility with 126 units with different levels of care
- **Customer Type:** Private low-income nursing home
- **Direct Install Measures at no cost to the tenant or building owner:**
 - Over 400 LED light bulbs in tenant units
 - Approximately 200 LEDs in common areas and outside
 - 27 Occupancy Sensors
 - Replaced all linear fluorescent lighting fixtures with more-efficient lighting
- **Total electricity savings = 157,000 kWh/year or 12.1% decrease in annual usage**
 - Total Estimated Financial Savings/year: \$21,000*
- **Value of services provided by PPL Electric: \$49,000**
 - Individual Units: \$9,000
 - Common Space: \$40,000
- **Customer Contribution: \$870**

*Based on \$0.135/kWh

Lessons Learned and Barriers



- Difficulty reaching the decision maker
- Customers want higher incentives but PPL does not have the budget to increase incentives
- No capital funding available for building
- Unable to take on additional loans (interest free or low-interest)
- Long budget cycles and protracted decision-making process with building's owner, especially HUD
- Cost savings from energy efficiency are withheld from future years' operating and capital budgets, not made available to building operator for other things
- Facilities with existing or pending energy performance contracts are reluctant to take on additional energy efficiency projects because the savings may effect the existing contract
- "Split incentive"-- owner pays for energy efficiency but tenant/occupant pays the electric bill and gets the benefit

PHFA Rules and Guidelines



- PHFA Awards Low Income Housing Tax Credits (“LIHTCs”) for Multifamily Affordable Housing competitively through an Allocation Plan which provides energy efficiency standards which include:
 - Must meet MANDATORY measures of 2015 Enterprise Green Communities Criteria (New Construction & Rehabs) including:
 - New Construction:
 - Energy Star® label is required
 - Rehabs:
 - 3 stories or less: HERS of 85 or less
 - 4 or 5 stories with individual heating, cooling & domestic water heating: HERS of 85 or less
 - 6 stories and higher + 4 or 5 stories w/ central systems: Energy performance of ASHRAE 90.1-2010
- All Applications must identify available Energy Rebates

PHFA Rules and Guidelines

- Developments that exceed mandatory energy efficiency measures receive more points:
 - Reduced Home Energy Rating System (HERS)HERS Rating:
 - New Construction: 100% electric dwellings/buildings: HERS Index of 60 or less
 - Substantial Rehab: 100% electric dwellings/buildings: HERS Index of 70 or less
 - Moderate Rehab: 100% electric dwellings/buildings: HERS Index of 75 or less
- Incorporate Passive House Design Standards

Questions and Suggestions

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Contact Information



PPL Electric Utilities

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CMC Energy Contact Information

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Appendix

| Federal Poverty Income Guidelines (FPIG) | 150% of FPIG Guidelines (\$) |
|---|-------------------------------------|
| 1 | \$17,820 |
| 2 | \$24,030 |
| 3 | \$30,240 |
| 4 | \$36,450 |
| 5 | \$42,660 |
| 6 | \$48,870 |
| 7 | \$55,095 |
| 8 | \$61,335 |
| Each Additional Person | \$6,240 |