

PPL Electric Utilities

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Stakeholder Meeting
Act 129 EE&C Phase 3
October 29, 2015

Agenda

- **Welcome/Housekeeping/Agenda** – 5 min
- Recap of Previous Meeting – 10 min
- Phase 3 Program savings and cost by end use – 20 min
- Phase 3 Program measures and incentives
 - Residential – 20 min
 - Low Income – 20 min
 - **Break** – 10 minutes
 - Non-Residential – 30 min
- Structure, format, and schedule for EE&C Plan – 5 min
- **Q&A and Next Steps** – 20 min

Previous Meeting - Recap



- Estimated savings and costs for each customer sector
- Common costs
- Program acquisition costs
- Proposed program offerings

Phase 3 Estimated Direct Costs

(Excludes \$43,100 common costs)



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	Est. Phase 3 Costs (\$1000)	Phase 2 Cost (\$1000)	% of Ph 3 Direct Cost	% of Ph 2 Direct Cost	% of 2006 Revenue
Residential Direct EE	\$96,400	\$52,800	36%	36%	
Low-income Direct EE	\$47,200	\$21,000	17%	14%	
Total Res & LI Direct EE	\$143,600	\$73,800	53%	50%	45%
Sm C&I Direct EE	\$60,400	\$35,800	22%	24%	
Lg C&I Direct EE	\$35,900	\$14,400	13%	10%	
GNE Direct EE	\$14,200	\$24,200	5%	16%	
Non-Res Direct DR*	\$15,300	N/A	6%	N/A	
Total Non-Res Direct	\$125,800	\$148,200	47%	50%	55%
Total Portfolio Direct (EE/DR)	\$269,400	\$148,200			

Minor changes compared to September information

* Sector allocation is under review. ~50% Lg C&I, 40% GNE, 10% Sm C&I

Phase 3 Estimated EE Savings



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	Estimated Ph 3 Savings (MWh/yr)	% of Ph 3 Portfolio Savings	% of Ph 2 Portfolio Savings	% of Market Potential Savings*
Residential	656,500	41.5%	36.5%	
Low-income	88,100 (79,367 target)	5.5%	4.1%	
Total Residential & LI	744,600	47.0%	40.6%	55.1%
Sm C&I	460,400	29.1%	30.3%	27.5%
Lg C&I	297,000	18.8%	16.2%	17.4%
GNE	81,000 (50,507 target)	5.1%	12.9%	incl
Total Non-Residential	838,400	53.0%	59.4%	44.9%
Total Portfolio	1,583,000 (1,443,035 target)			

Minor changes compared to September information

* Statewide, not PPL specific

Phase 3 Summary by Customer Sector

	Est. Savings (MWh/yr)	% of Portfolio Savings	Est. Cost (\$1000)	% of Total Portfolio Cost	Est. Ph 3 EE PAC (\$/annual kWh)	Est. Ph 2 EE PAC (\$/annual kWh)
Residential	656,500	41.5%	\$111,800	36%	\$0.17	\$0.28
Low-income	88,100*	5.5%	\$54,800	17%	\$0.62	\$1.01
Total Res & LI	744,600	47.0%	\$166,600	53%	\$0.22	\$0.36
Sm C&I	460,400	29.1%	\$70,200	22%	\$0.15	\$0.23
Large C&I	297,000	18.8%	\$43,400	13%	\$0.15	\$0.18
GNE	81,000**	5.1%	\$17,000	5%	\$0.21	\$0.37
DR	N/A	N/A	\$15,300#	5%	N/A	N/A
Total Non-Res	838,400	53.0%	\$145,900	47%	\$0.16	\$0.25
Total Portfolio	1,583,000*		\$312,500		\$0.20	\$0.29
Common Costs (allocated above)			\$43,100	14%	\$0.03	\$0.06

* Exceeds target by ~ 10%

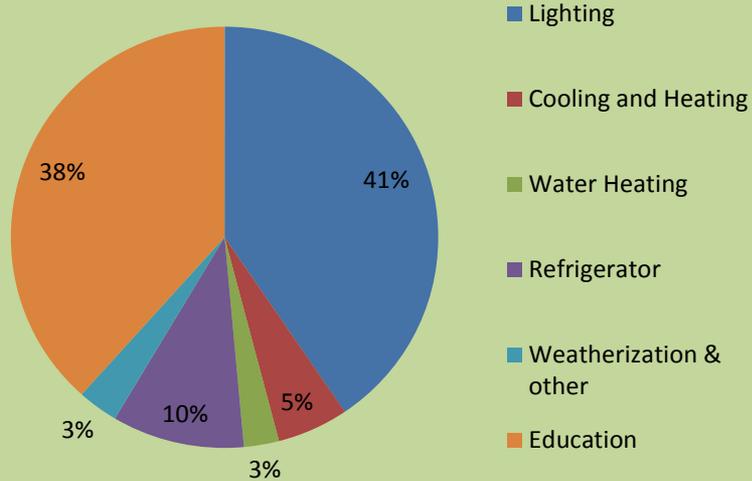
** Exceeds target by ~ 60%

Sector allocation is under review ~50% Lg C&I, 40% GNE, 10% Sm C&I

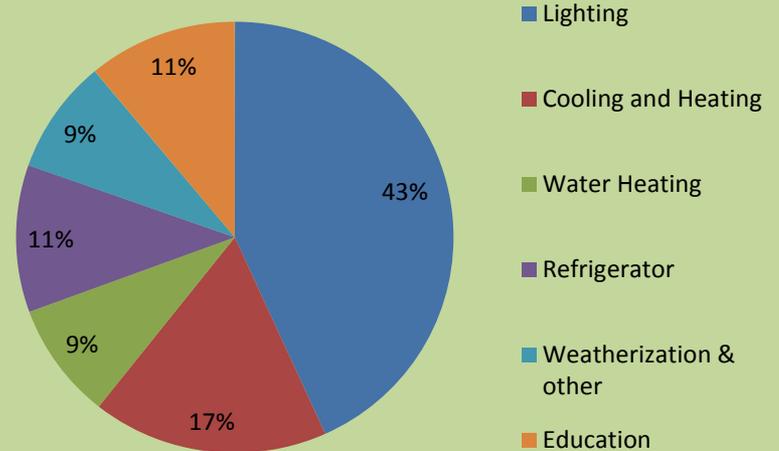
Significant reduction in program acquisition costs

Residential Savings by end use

Phase 3 RES % of Saving By End Use

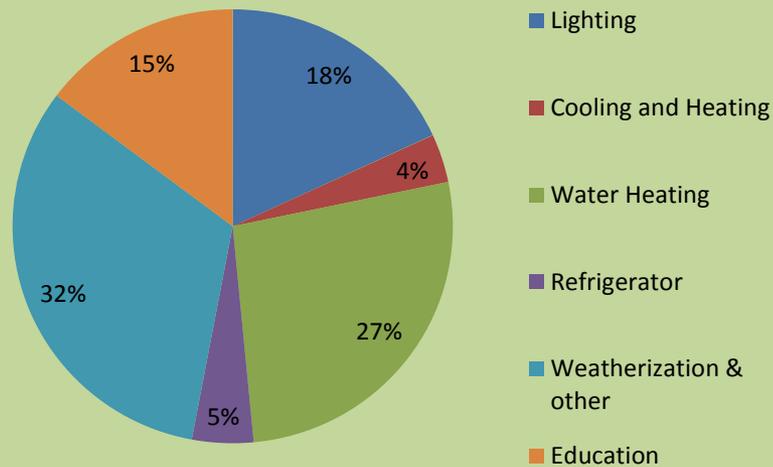


Phase 3 RES % of \$ By End Use

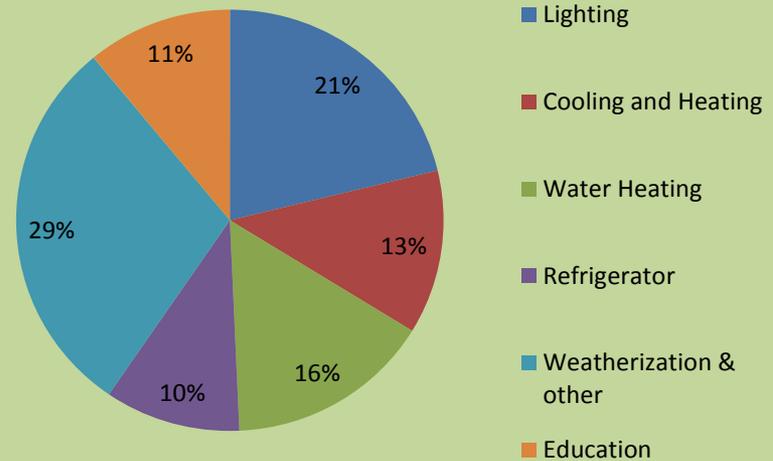


Low Income Savings by end use

Phase 3 LI % of Saving By End Use



Phase 3 LI % of \$ By End Use

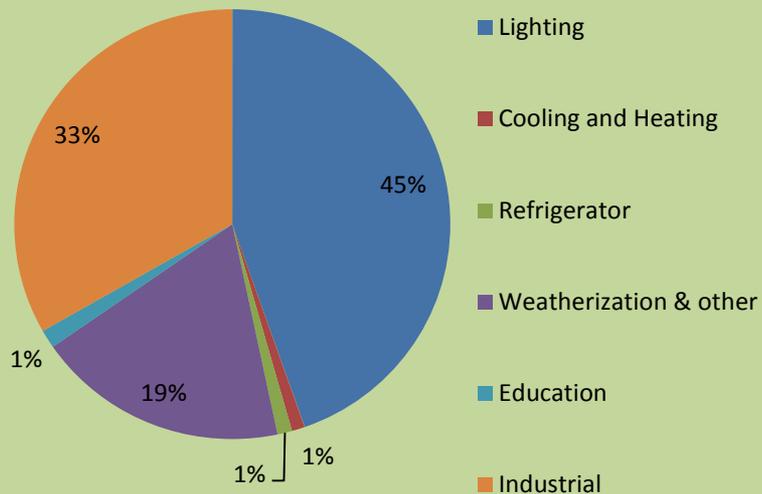


Non Residential Savings by end use

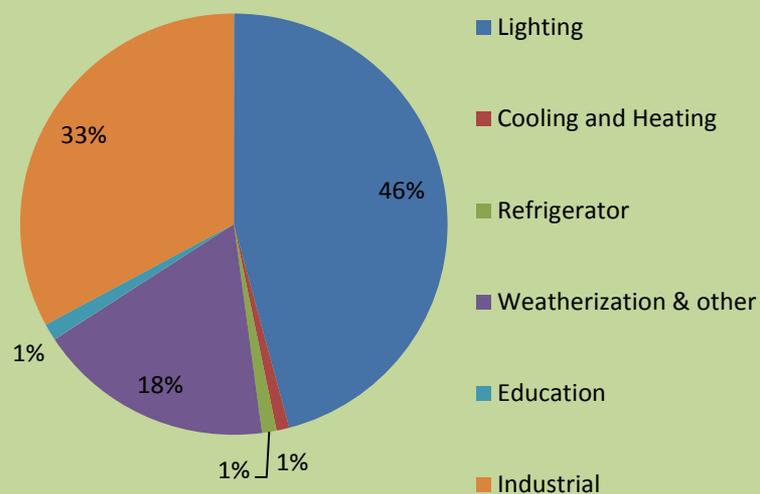


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Phase 3 Non Res % of Savings By End Use



Phase 3 Non Res % of \$ By End Use



- Any questions or comments on the estimated Phase 3 savings and costs for each customer sector?

Residential Program Status

- **Residential Status**
 - Continued contract negotiations with selected CSP
 - Expect to send the contract to the PaPUC for approval in November
 - Finalizing the detailed portfolio including: programs, measures, savings, and costs

Residential Costs by category



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Programs	Incentives	CSP (Variable/ Fixed)	Marketing	EDC Cost	Total Direct Costs	Common Cost	Total \$	Total MWh/yr (verified)
ARP	\$ 2,700	\$ 7,700	\$ 1,000	\$ 300	\$ 11,700		\$ 11,700	65,500
Efficient Lighting	\$ 26,000	\$ 4,900	\$ 1,000	\$ 600	\$ 32,500		\$ 32,500	265,300
Energy Efficient Home	\$ 17,000	\$ 15,800	\$ 1,400	\$ 600	\$ 34,800		\$ 34,800	73,700
Student Parent	\$ -	\$ 5,900	\$ 1,000	\$ 200	\$ 7,100		\$ 7,100	24,000
Home Energy Education	\$ -	\$ 8,700	\$ 1,300	\$ 300	\$ 10,300		\$ 10,300	228,000
RES	\$ 45,700	\$ 43,000	\$ 5,700	\$ 2,000	\$ 96,400	\$ 15,400	\$ 111,800	656,500
% of Direct Cost	47%	45%	6%	2%				

Proposed Residential Measures / Incentives

- **Appliance Recycling**

- Refrigerators, freezers, and window air conditioners like in Phase 2
 - Considering tiered incentives based on the age of the old appliance
 - Considering dehumidifiers (subject to inclusion in the TRM)
 - Considering free LEDs at the time of pick-up
 - Based on stakeholder feedback, we are no longer considering pick up of electronics or CFL bulbs.

Measure	Range of Incentive
Refrigerators	\$25-\$75
Freezers	\$25-\$75
AC	\$10-\$25

Proposed Residential Measures / Incentives



- **Upstream Lighting**

- Variety of A-line, reflectors, and specialty bulbs (shapes, base sizes, etc.) in various lumens, wattages, colors, and manufacturers.
- May include other distribution methods such as free LEDs as part of a promotion, free LEDs in a new customer welcome kit, etc.

Measure	Range of Incentive
LED General service	\$1-\$6
LED Reflectors	\$2-\$8
LED Specialty	\$2-\$7
LED Fixtures	\$2-\$8

Proposed Residential Measures / Incentives

- **Efficient Equipment/Home Comfort - Existing Homes**
 - Broad mix of measures such as heating, air conditioning, water heating, appliances, and weatherization
 - Online survey participants will receive energy efficiency kits based on hot water type

End Use	Measure	Range of Incentive
Equipment	Refrigerators	\$10-\$75
	Refrigerators (most efficient)	\$50-\$100
	Pool pump	\$250-\$350
	Smart thermostats	\$50-\$250
Water Heating	HPWH \geq 2.3 EF	\$200-\$400
	HPWH \geq 2.7 EF	\$200-\$500
	Fuel switching water heaters	\$200- \$300
Heating	ASHP \geq 16 SEER	\$100-\$500
	Ductless Heat Pump \geq 15 SEER	\$100-\$300 / ton
Cooling	Central AC	\$150-\$400
Weatherization	Insulation (attic & wall)	up to \$750 each
	Air Sealing	upto \$150
	In-home audits (first 6 months)	\$125-250

Proposed Residential Measures / Incentives



- **Efficient Equipment/Home Comfort - New Construction**
 - HERs ratings homes
 - Energy Star rated homes
 - Strong trade ally network, including builders and real estate agents

Measure	Range of Incentive
New Homes	up to \$2,000
Manufactured home ASHP or DHP	\$1,000-\$1,500

- **Student and Parent Energy Efficiency Education**
 - Very similar to successful program in Phase 2
 - Primary, Intermediate, and Secondary kits
 - Take-home energy efficiency kits that could include items such as:
 - Tier 2 Smart Strip
 - LED Light Bulbs
 - LED Night Light
 - Showerhead
 - Kitchen Faucet Aerator
 - Furnace Whistle
 - Energy Education

New Technology and Pilots

- We will include approximately \$3M in funding for new technology and pilots, such as these:
 - Home Area Network applications
 - Distribution models for smart thermostats
 - Moving equipment incentives to a midstream model
 - Details of each pilot will be sent to commission staff and stakeholders before implementation

Low Income Program Status

- **Low Income Status**

- Continued contract negotiations with selected CSP
- Defining roles and processes between ACT 129 and LIURP programs
- Expect to send the contract to the PaPUC for approval in late November
- Finalizing the detailed portfolio including: programs, measures, savings, and costs

Low-Income costs by category



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Programs	Incentives	CSP (Variable/ Fixed)	Marketing	EDC Cost	Total Direct Costs	Common Cost	Total \$	Total MWh/yr (verified)
<i>WRAP DI</i>	\$ -	\$ 36,600	\$ 1,600	\$ 2,100	\$ 40,300		\$ 40,300	50500
<i>Non DI</i>	\$ -	\$ 5,900	\$ 800	\$ 200	\$ 6,900		\$ 6,900	37600
LI	\$ -	\$ 42,500	\$ 2,400	\$ 2,300	\$ 47,200	\$ 7,600	\$ 54,800	88,100
% of Direct Cost	0%	90%	5%	5%				

Low-Income Direct Install Programs



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- Direct-install (“WRAP”) for single family, multifamily, and manufactured homes
 - Fairly comprehensive measures, comparable to Phase 2
 - Offer two types of educational audits: Baseload and Heating
 - Everything provided at no cost to homeowner, tenant, or landlord

End Use	Measures
Heating	SEER 16 ASHP
	Ductless Heat Pump
	Programmable thermostats
Lighting	Variety of LEDs
Water	HPWH
	Solar water heaters
	Aerators, showerheads, water heater insulation and wrap
	Fuel Switching
Insulation	Air sealing, duct sealing
	Floor, wall, attic, and rim joist insulation
Appliances	Refrigerators , freezers, dehumidifiers, AC units
	Smartstrips
	Refrigerator Recycling
Safety	Smoke alarm and carbon monoxide detectors

- Energy Efficiency kit measures for distribution through CBO's and direct mail, will include items such as:
 - Tier 2 Smart Strip
 - LED Light Bulbs
 - LED Night Light
 - Showerhead*
 - Kitchen Faucet Aerator*
 - Furnace Whistle
 - Energy Education

* Measures might be provided separately based on water heating type

Non-Residential Program Status



- **Non-Residential Status**

- Continued contract negotiations with selected CSP
- Expect to send the contract to the PaPUC for approval in November
- Finalizing the detailed portfolio including: programs, measures, savings, and costs

Proposed Non-Residential Programs

- **Efficient Equipment Program**
 - Very similar to successful program in Phase 2
 - Comprehensive list of measures including:
 - Lighting
 - HVAC
 - Motors
 - Commercial Appliances/Refrigeration
 - Small C&I, Large C&I, and GNE
 - Incentives and measures offered will vary to control the pace of programs within approved EE&C Plan budgets (cost and savings by sector)

Proposed Non-Residential Programs

- **Efficient Equipment includes two delivery channels for lighting**
- **Midstream Lighting**
 - Lighting measures (LEDs; no CFLs) discounted at the point of sale
 - Distributors throughout PPL EU service territory
 - Capture additional savings opportunities
 - Highly efficient process that accelerates market transformation
 - Expect increased participation from trade allies
 - Incentives designed to reduce incremental cost by 25% to 50%
- **Downstream Lighting**
 - Prescriptive rebates for lighting paid to the customer or trade ally
 - Incentives in the range of \$0.03 - \$0.17 per annual kWh saved

Proposed Non-Residential Programs

- **Custom Program**

- Projects with measureable and verifiable savings which pass TRC screening
- Covers measures not included in other programs
 - TRM listed measures will not be excluded
 - Change from Phase 2 based upon customer feedback
- CHP is eligible
- Includes several initiatives within program
- Incentives will range from \$0.03 to \$0.10 per annual kWh saved
- Incentives will vary to control the pace of programs within approved EE&C Plan budgets (cost and savings by sector)

Proposed Non-Residential Programs

- **Custom Program marketing initiatives:**
 - PC Power Management
 - Small Business Direct Install
 - Lighting and Non-Lighting measures
 - Data centers
 - Continuous Energy Improvement
 - K-12 School Districts
 - Including Low Income districts
- **We will include approximately \$3M in funding for new technology and pilots**

Proposed Transition from Phase 2 to Phase 3

- Waitlisted projects will receive comparable incentives if their project is completed early in Phase 3
 - Comparable is defined as the Phase 2 rebate, up to \$0.10/kWh, and subject to per project or per customer caps
 - Completion will be required by September 30th, 2016 for most measures
- Projects approved (funds reserved) in Phase 2 that slip into Phase 3 will get the approved Phase 2 rebate

Demand Response

- Contract negotiations with selected CSP ongoing
- CSP contract will be sent to the PaPUC for approval
- Savings and costs within budget
- Load curtailment for non-residential customers

Non-Residential costs by category



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Programs	Incentives	CSP (Variable/ Fixed)	Marketing	EDC Cost	Total Direct Costs	Common Cost	Total \$	Total MWh/yr (verified)
<i>Small</i>	\$ 44,000	\$ 14,200	\$ 1,500	\$ 700	\$ 60,400		\$ 70,200	460,400
<i>Large</i>	\$ 18,300	\$ 15,100	\$ 1,700	\$ 800	\$ 35,900		\$ 43,400	297,000
<i>GNE</i>	\$ 6,800	\$ 6,200	\$ 500	\$ 700	\$ 14,200		\$ 17,000	81,000
<i>DR</i>	\$ 9,300	\$ 4,400	\$ 800	\$ 760	\$ 15,300	\$ -	\$ 15,300	-
Non Res	\$ 78,400	\$ 39,900	\$ 4,500	\$ 2,960	\$ 125,800	\$ 20,100	\$ 145,900	838,400
% of Direct Cost	62%	32%	4%	2%				

Questions or Comments



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