
PPL Electric Utilities Corporation

Summary of Final Act 129 Energy Efficiency & Conservation Plan

July 1, 2009



Status of EE&C Plan

- PPL Electric filed its Act 129 Energy Efficiency and Conservation Plan (“EE&C Plan” or “the Plan”) on July 1, 2009.
- No significant changes from the draft Plan reviewed with stakeholders on May 27, 2009
- PPL Electric will revise the cost-benefit calculations of programs to reflect the final Total Resource Cost (TRC) test, issued by PaPUC on 6/23, as an 8/1/09 amendment to the filing
 - No major changes to programs or portfolio expected
- Hearings expected in August
- Approval expected November 1, 2009
- After approval of Plan, customers can begin to enroll as each program launches.
- Programs generally will launch Nov 2009 – Apr 2010
- PPL Electric will provide public information in late 2009 about how to enroll in programs
- The filing requests customer eligibility retroactive to July 1, 2009 for many programs



Executive Summary

- The Plan meets all targets and other requirements of Act 129 and the Commission's Implementation Order
- Customers will save over 1.3 billion kWh/yr by May 2013
- Portfolio of 14 energy efficiency and demand response programs; customer participation is voluntary
- Many measures available within the programs
- No less than 5 programs available to each customer segment
- The Plan reflects significant stakeholder input



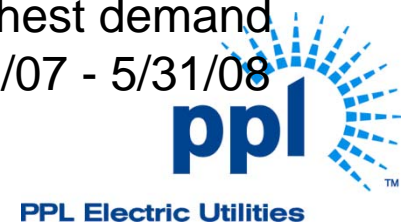
The Plan Meets Requirements

- The plan meets the energy and peak load reduction targets, institutional and low-income customer set-asides, customer equity, cost-effectiveness, and other requirements within the cost cap
- The plan includes a cushion of approximately 10% in the projected energy and peak load reductions to provide a reasonable margin for uncertainty
- Creating a portfolio to meet the targets was more challenging than expected within the number of constraints



Act 129- Review of Basic Requirements

- All Pa Electric Distribution Companies (EDC) with > 100,000 customers must file an EE&C Plan by 7/1/09. The Plan must specify how the EDC will meet the following reduction targets:
- 1% energy reduction by 5/31/11
 - Baseline = forecasted load for 6/1/09 - 5/31/10
 - 382,000 MWh/yr reduction for PPL Electric
 - 44 average MW reduction around-the-clock
- 3% energy reduction by 5/31/13
 - 1,146,000 MWh/yr reduction for PPL Electric
 - 132 average MW reduction around-the-clock
- 4.5% peak load reduction by 5/31/13
 - Average of the 100 summer hours (June – Sept.) of highest demand
 - Baseline = average of top 100 hourly peak loads for 6/1/07 - 5/31/08
 - 297 MW reduction for PPL Electric



Review of Basic Requirements, cont'd

- EE&C Plan must be cost-effective and must provide equity among customer classes
 - Portfolio must be cost-effective-- benefits > cost as determined by the TRC
 - 10% of the reductions from institutional customers-- government, schools, universities, & non-profits
 - Reductions for low-income customers in proportion to that group's share of total load
 - Program costs must be allocated to customer classes who incur the benefit
- The cost of the Plan is capped at an average of \$61.5 million/year -- 2% of 2006 utility revenues
- \$1 million to \$20 million penalty for not meeting targets



Stakeholder Input

- The Plan reflects significant stakeholder input and transparency
- A broad group of stakeholders participated, including representatives of consumer groups, environmental groups, conservation service providers (CSPs), trade allies (TAs), economic development groups, chambers of commerce, and government organizations
- Also received input from customers via surveys and market research
- The stakeholder process was valuable, well received by stakeholders and PPL Electric, and will continue throughout the implementation of the Plan



EDC Collaboration

- The Plan reflects EDC collaboration
- The objective was to identify opportunities for consistent programs, program design elements, and incentive levels to improve the likelihood of program success and to minimize customer confusion
- Generally, consistency was achieved
- Differences in geography, demographics, cost cap, and customer mix between EDCs mean that program emphasis, design and delivery elements will not be identical



Programs

Program Name	Residential	Low Income	Small C&I	Large C&I	Gov't. & Non-Profit	TRC
1 Efficient Equipment Incentive Program	■	■	■	■	■	2.5
2 Residential Energy Assessment & Weatherization	■					1.0
3 Compact Fluorescent Lighting Campaign	■	■	■	■	■	4.1
4 Appliance Recycling	■	■	■	■	■	7.9
5 ENERGYSTAR New Homes	■					1.1
6 Renewable Energy Program	■				■	0.9
7 Direct Load Control	■	■	■		■	1.0
8 Time of Use Rates	■	■	■		■	3.5
9 Energy Efficiency Behavior & Education	■	■	■	■	■	3.3
10 Low-Income WRAP		■				0.6
11 E-Power Wise Program		■				1.1
12 C&I Custom Incentive Program			■	■	■	2.5
13 HVAC Tune-Up Program			■	■	■	5.5
14 Load Curtailment Program			■	■	■	2.8

■ Primary Customer Target
 ■ Eligible Customers

Portfolio benefit-to-cost ratio = 2.5



Efficient Equipment Incentive Program

- Prescriptive rebates on sector appropriate measures
 - All major end uses: HVAC, lighting, water heating, appliances
- Expected launch: March 2010
- Targets approximately 4,000,000 installed measures by 2013
- All customer sectors
- CSP provide customer intake, routing, application verification, and rebate processing
- TAs provide equipment sales, diagnostics, and installation (customer gets products and services from their normal sources)
- Cross promotion with Keystone Help



Residential Energy Assessment & Weatherization

- Home energy assessment or comprehensive diagnostic energy audit; direct install measures; and weatherization rebates
- Expected launch: March 2010
- Targets 6,000 audits by 2013
- Residential customers in single family homes with electric heat, electric water heating, and/or central air conditioning
- Comprehensive audit track:
 - Full, diagnostic audit by BPI-trained, free market auditors
 - Customer rebate: \$250 all electric; \$150 w/ AC and non-electric heat
- Walk through energy assessment:
 - Basic energy survey by auditor CSP
 - \$50 cost to customer
- Free direct installation measures
- Weatherization and duct sealing rebates
- Bonus rebates for installing more than 1 measure
- Cross promotion with Keystone HELP



Compact Fluorescent Lighting Campaign

- Expected launch: January 2010
- Targets 7,000,000 CFLs by 2013
- All customer sectors, with focus on residential
- Upstream buy-down/retail discount component
 - Customers save ~50% “at the register”
- CFL give-away events and activities
- Turnkey CSP for both components or one for each component



Appliance Recycling Program

- Expected launch: December 2009
- Targets approximately 70,000 appliances recycled by 2013
- All customers sectors with residential-grade appliances
- Free pick up, disposal, and recycling of old, inefficient refrigerators & freezers. \$35 rebate to customer
- Free drop off events, disposal, and recycling of room air conditioners. \$25 rebate to customer
- Turnkey CSP contract awarded in June 2009.



ENERGY STAR® New Homes

- Expected launch: January 2011
- Targets 2,000 participants by 2013
- Single family, new home construction projects
- Final incentives and structure TBD based on possible statewide standard program



Renewable Energy Program

- Prescriptive rebate for customer-sited renewable generation
- Focuses on PV and ground-source heat pump
- Targets approximately 1,000 projects
- Focuses on residential and institutional customer sectors



Direct Load Control Program

- Expected launch: February 2010
- Targets approximately 45,000 participants by 2013
- Any customer with central air conditioning or heat pump
- Cycles air conditioner/heat pump during peak summer season
 - DLC receiver installed free
 - Approx. \$32 end-of-season rebate (incentive level to be determined by CSP)
- Turnkey CSP to deliver program
 - CSP to deliver firm load to PPL Electric



Time of Use Rate Program

- Expected launch: January 2010
- Targets 140,000 participants by 2013
- Residential and small C&I (including institutional customers in this class) customer sectors
- TOU rates vary based on electricity costs in different time periods
 - On-peak = higher rate
 - Off-peak = lower rate
- Customers save money by shifting energy use from higher-priced peak hours to lower-priced off-peak hours
- PPL Electric will manage and deliver the program
- Separate TOU filing in late July



Energy Efficiency Behavior & Education Program

- Expected launch: April 2010
- Targets approximately 100,000 participants
- All customer sectors
- Educate customers about free or low-cost measures and behaviors that can reduce energy consumption or peak load.
- Could utilize educational material, in-home displays, portable electricity usage monitors, peer group comparisons, and other methods
- Expect one or more CSPs to deliver various program activities
- Outreach could include printed or other media, seminars, community events, promotions with CBOs and schools.



Low Income WRAP

- Expected launch: November 2009
- Targets 16,000 customers by 2013
- All PPL Electric customers at or below 150% of federal poverty level (single and multifamily)
- Expands PPL Electric's existing LIURP program by approximately 60%
 - Free audits, direct installation (CFLs, hot water measures), larger measures (building shell, HVAC, refrigerator, water heat), energy education
 - Target more customers, installation of more measures, and “gaps” in existing program (ex: will waive the 1 year residency requirement)
- Existing WRAP CBOs continue to administer and deliver program



E Power Wise

- Expected launch: November 2009
- Targets 7,000 customers by 2013
- All PPL Electric customers at or below 150% of federal poverty level
- Energy efficiency workshops
 - Train the trainer model
- Free energy efficiency kits
- CSP provides kits and training
- Delivered through CBOs



Custom Incentive Program

- Expected launch: January 2010
- Targets approximately 2,500 projects by 2013
- C&I customers, new & existing facilities
- Incentives for measures not included in equipment program, process & operational changes, comprehensive upgrades & technical studies
 - Projects must be cost-effective
 - Performance based incentive \$/kWh (or kW)
- TAs provide technical analysis, project development & installation on behalf of the customer. Customer obtains these products and services from their normal sources.
- CSP processes program applications; confirms technical analysis, scope, cost, and potential savings; and conducts field verification of completed projects



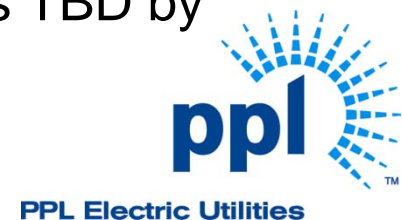
HVAC Tune-Up Program

- Expected launch: March 2010
- Targets 4,000 tune-ups by 2013
- Commercial customers with rooftop HVAC systems
- Incentives to contractors to diagnose & repair HVAC system inefficiencies: refrigeration, air distribution & controls
- CSP to administer & deliver program
- TAs provide diagnostics & repairs



Load Curtailment Program

- Expected launch: January 2010
- Targets approximately 300 customers and approximately 200 MW of curtailable load by June 1, 2012
- Large and small C&I customers
- Turnkey CSP(s) to deliver program, contract with participants, and deliver firm load reductions to PPL Electric
- Participants commit to level of curtailment
 - When notified of peak events, must reduce or shift load per agreed level
 - Cost to PPL Electric and payment to participants TBD by curtailment CSP(s)



Implementation Plan

- To achieve the objectives, the plan must be accepted by customers and must be implemented effectively
- Implementation relies on a broad range of CSPs, TAs, CBOs, and other entities in addition to PPL Electric to promote, deliver, and support the programs



Conservation Service Providers

- CSPs are individuals or firms under contract to PPL Electric to provide consultation, design, administration, management, and other services related to the delivery of Act 129 energy efficiency programs



CSP Roles

Program Function	PPL PROGRAMS													
	Efficient Equipment Incentive	Energy Assessment & Weatherization	Renewable Energy	New Construction	Custom Incentives	HVAC Tune-Up	Time of Use Rates	CFL Lighting Campaign	Appliance Recycling	Direct Load Control	Curtailment	Low Income WRAP	Low Income E-Power Wise	Energy Efficiency Behavior & Education
Portfolio Planning/Program Design	PPL/Consultant													
Research & Development	PPL/Consultant													
Manufacturer management	NA	NA						CSP-7	NA					
Retailer management	CSP-7	PPL/CSP-2						CSP-7	NA					
Marketing & advertising	PPL/CSP-2													
Customer Intake and Routing	CSP - 1				PPL/CSP-1	CSP-6	PPL	NA	CSP - 8	CSP-9	CSP-9	CBO	CSP-10/ CBO	PPL/CSP-2 other CSPs TBD
Technical Assessment	TA-1	CSP-3/ TA-2	TA-3	CSP-4	TA-5	TA-1								
Project Development				TA-4										
Implementation/Installation				CSP-1										
Application Review and Approval	CSP-1	CSP-1												
Payment Processing	CSP-1				CSP-4	CSP-5	CSP-6	PPL/CSP-8						
Participant Relations Management	PPL/CSP-1						PPL/CSP-5			PPL/CSP-9		PPL/CBO		
QA	PPL/CSP-5													
Measurement & Verification	PPL/CSP-11													
Program Tracking	CSP-12													
CSP Management and Coordination	PPL													
Internal PPL Coordination	PPL													
Legal and Regulatory Affairs	PPL													
Customer Service	PPL													
Corporate Communications	PPL													
Rates	PPL													
Finance	PPL													
Purchasing	PPL													
Meter Operations	PPL													
IT	PPL													
Reporting and analysis	PPL													
Internal	PPL													
External	PPL/CSPs (all)													

CSP Roles

- CSP 1- Administrative. Customer intake, routing, eligibility verification, enrollment, application and rebate processing, call center, and customer care for non-turnkey programs.
- CSP 2- Advertising and Marketing
- CSP 3- Residential Energy Assessments
- CSP 4- New Construction. Contractor training and certification, assessment and confirmation of HERS ratings, & compliance with the ENERGY STAR® New Homes Program
- CSP 5- Quality Assurance/Technical Review. Reviews customer's engineering and economic analysis for the Custom Incentives program. Develops oversees QA for all programs
- CSP 6- HVAC Tune-up. Administers and implement the HVAC Tune-up Program and trains contractors



CSP Roles, cont'd

- CSP 7- Turnkey CFL Program. Could be 1 CSP for buy-down and give-away program elements, or could be 2 CSPs
- CSP 8- Turnkey Appliance Recycling Program.
- CSP 9- Turnkey Demand Response programs. Could be 1 CSP for Load Curtailment and DLC programs, or could be 2 CSPs
- CSP 10- E-Power Wise. Provides energy efficiency kits to CBOs, trains CBOs, could deliver workshops
- CSP 11- EM&V. Provide evaluation, monitoring, and verification for all programs
- CSP 12- Energy Efficiency Management Information System vendor.

Trade Allies

- Trade Allies are hired by customers to provide products and services related to energy efficiency.
- HVAC equipment and appliance dealers and installers
- Comprehensive energy auditors
- Renewable energy system providers and installers
- Residential and commercial builders, developers, remodelers, contractors, architects, engineers
- Engineering and energy services firms



Implementation Infrastructure

- PPL Electric must have its EE&C Plan infrastructure in place soon so it can implement the Plan upon approval and can meet the targets in time. “Infrastructure” includes:
 - New staff (approximately 20)
 - CSPs (approximately 10)
 - Trade Allies (thousands)
 - Computer systems
 - Business processes and controls
- Majority of it will be in place before November 2009, the remainder by January/February 2010



Updating the Plan Over Time

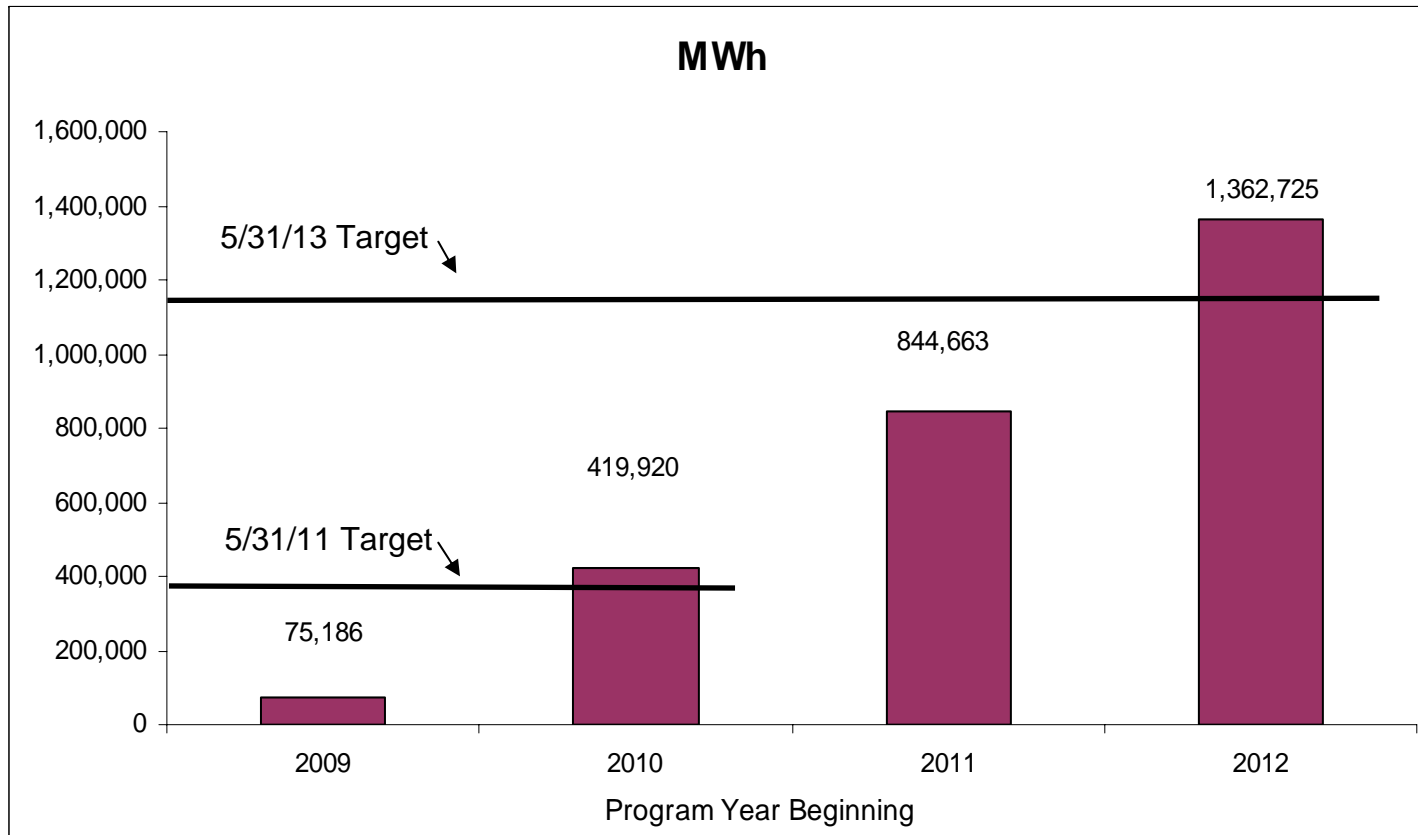
- A certain level of flexibility is desirable to quickly adjust the Plan over time for items such as:
 - Market conditions
 - Variations from the Plan's estimates
 - Customer preferences
 - Cost-effectiveness
 - New technologies and practices
 - New state or federal energy efficiency standards

Portfolio Overview



PPL Electric Utilities

Energy Savings by Year

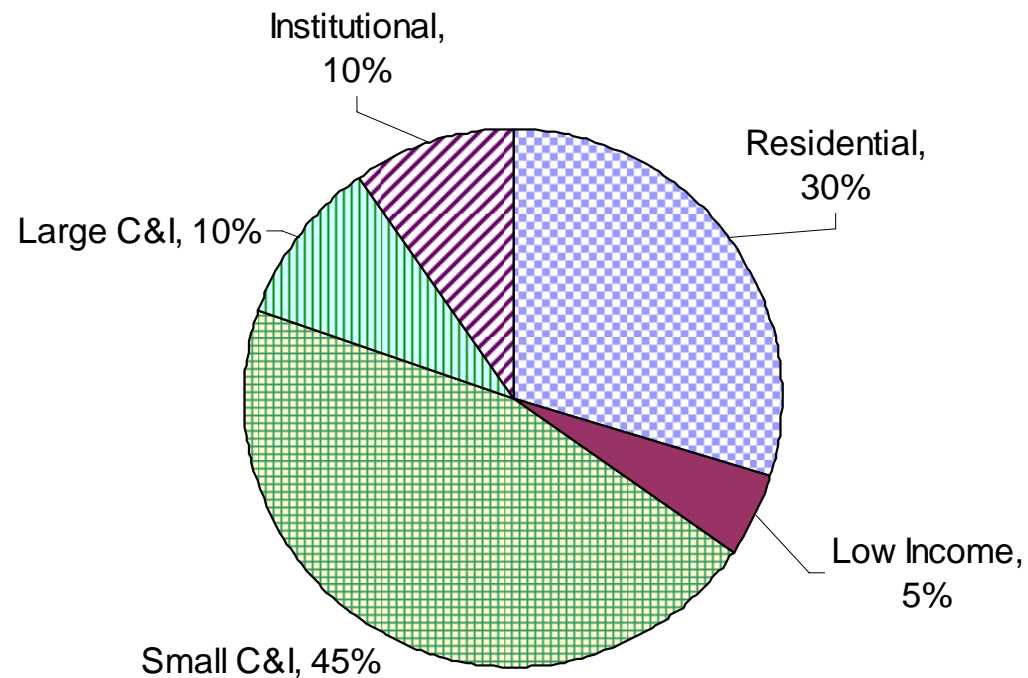


- Program years are 6/1 – 5/31
- PPL Electric plans to overshoot targets to provide a reasonable cushion to address uncertainties

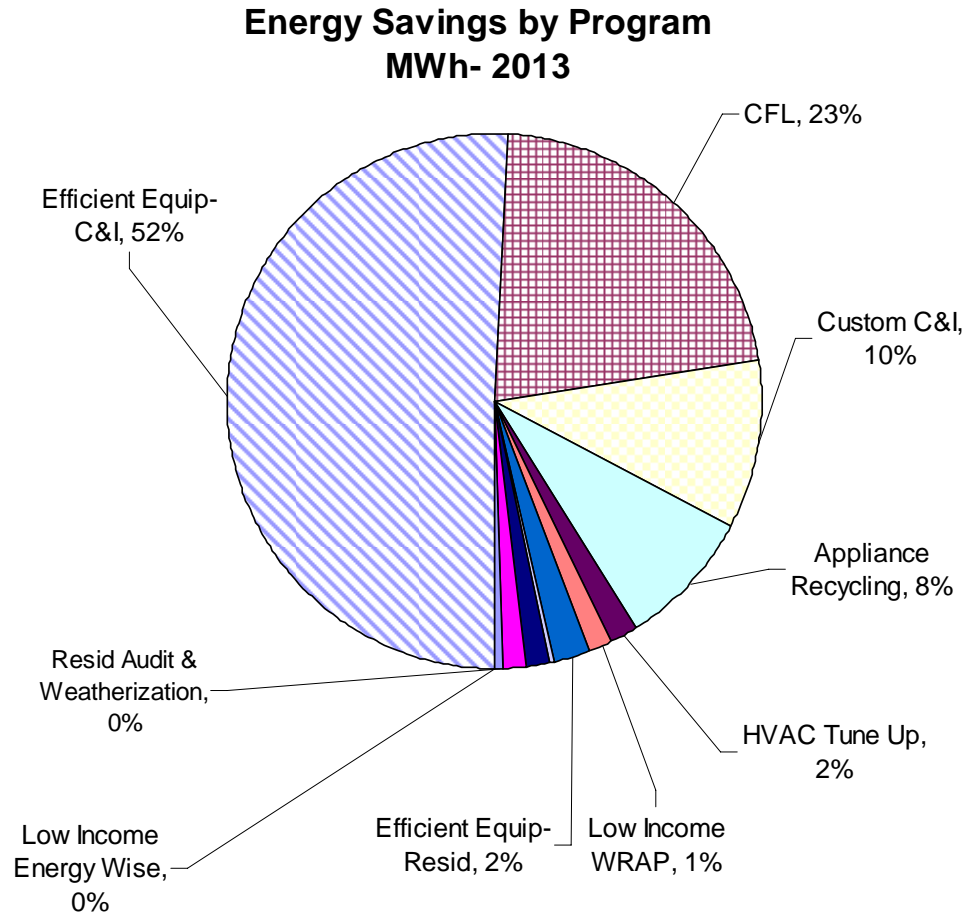


Energy Savings by Sector

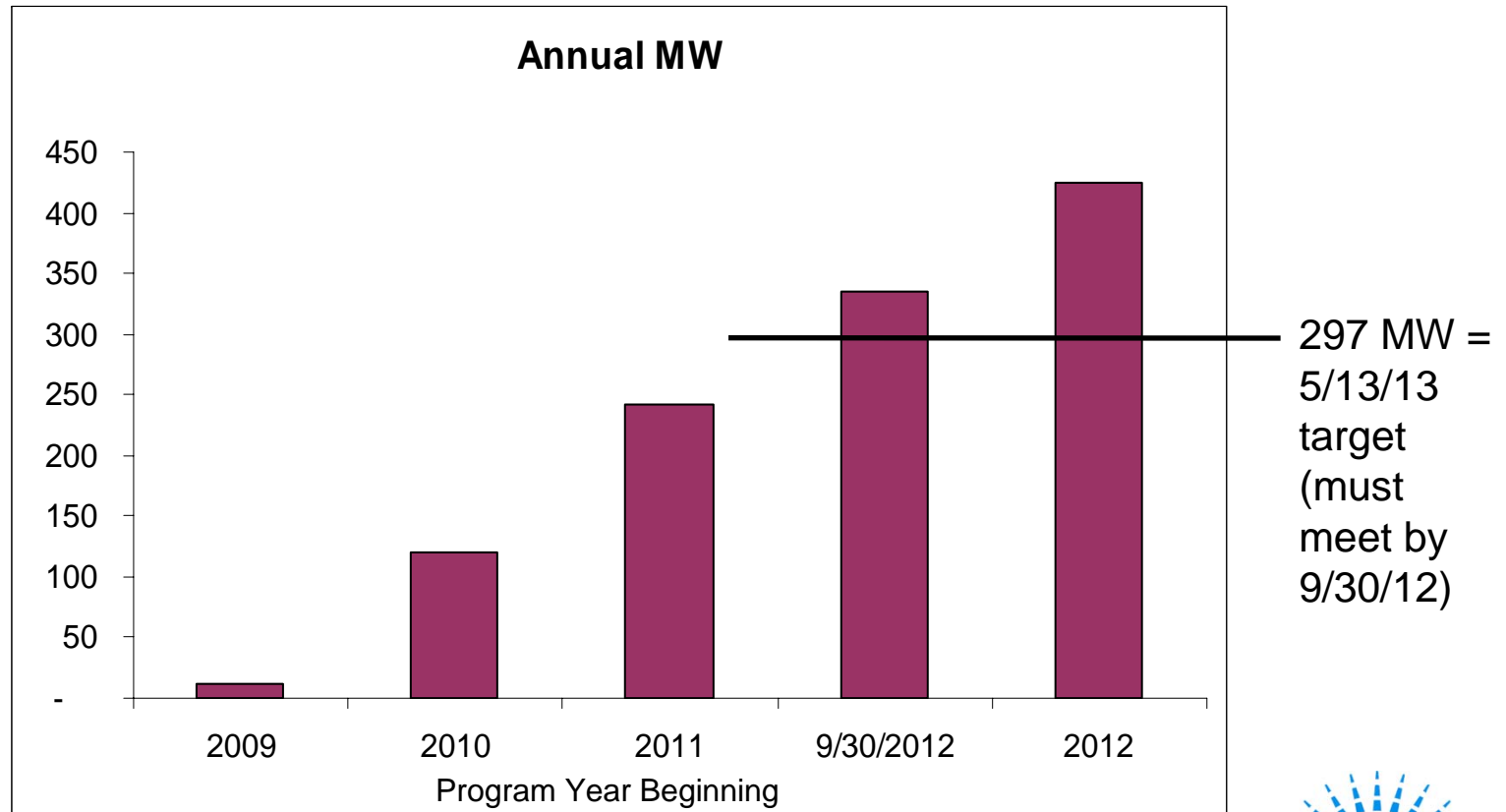
**Energy Reductions By Customer Segment
(MWh as of May 2013)**



Energy Savings by Program

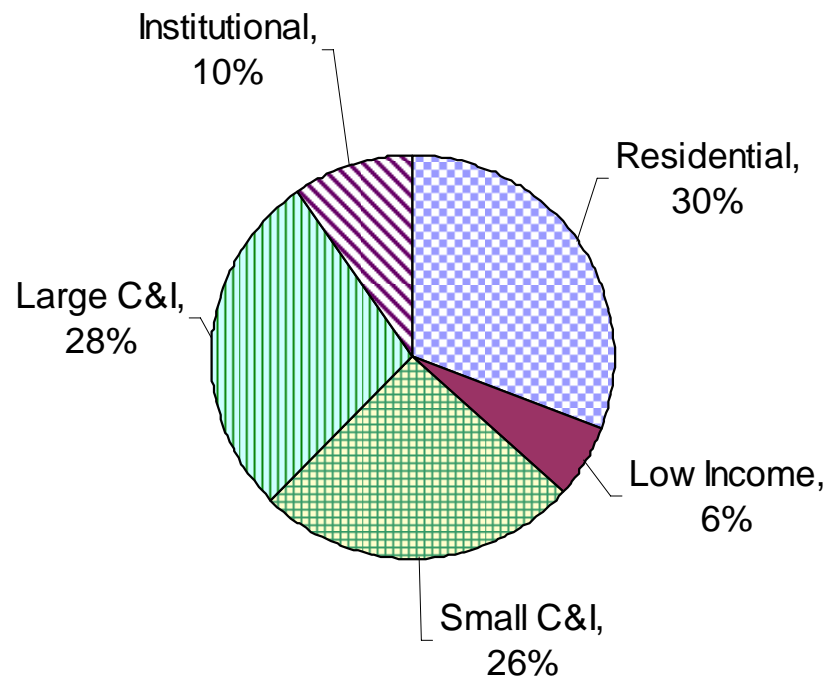


Demand Savings by Year



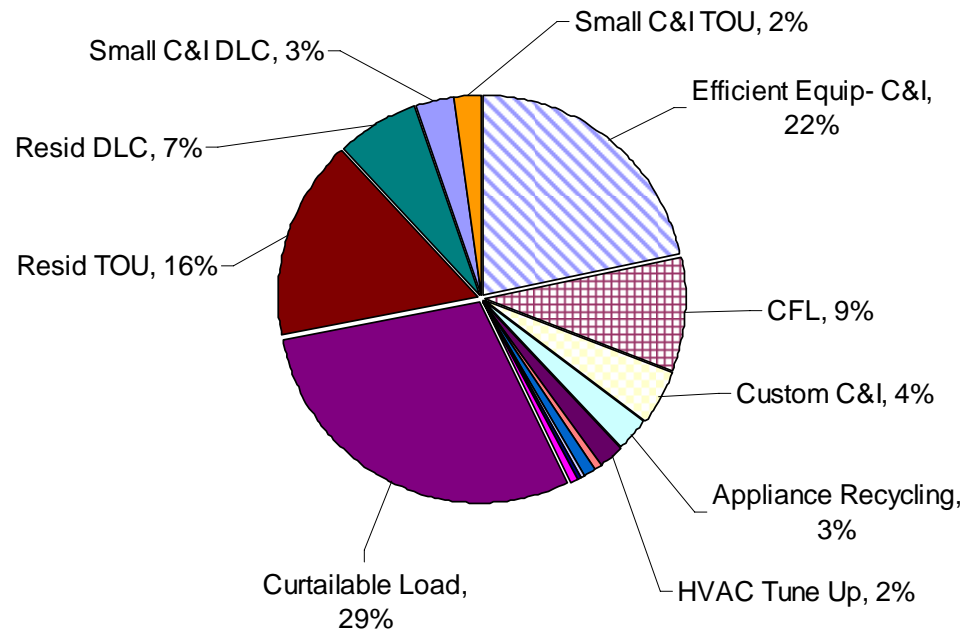
Demand Savings by Customer Sector

Peak Load Reductions by Customer Segment
(MW as of 9/30/12)



Demand Savings by Program

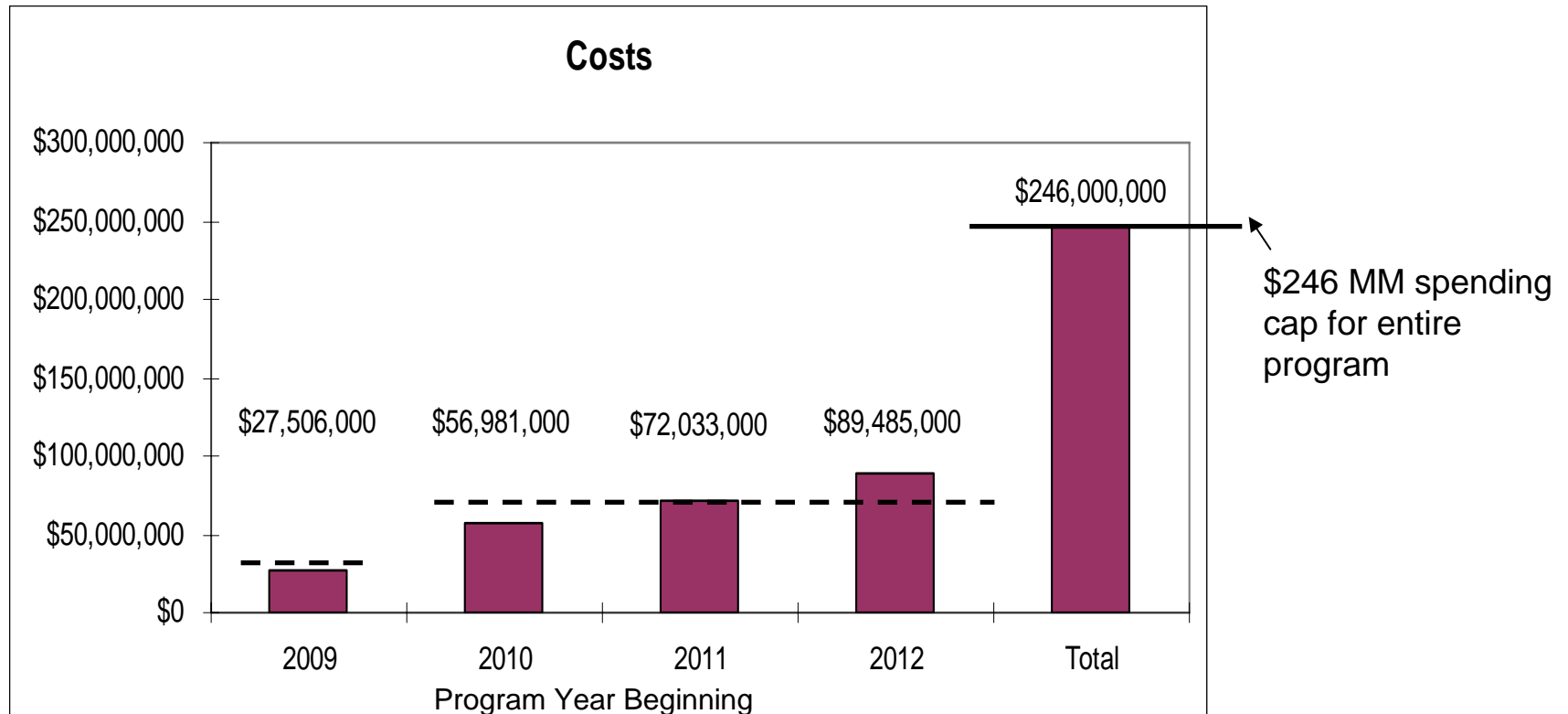
**Peak Load Reductions by Program
MW- 2012**



Approximately 40% of the peak load reductions are from energy efficiency measures and 60% are from demand response measures (DLC, curtable load, & TOU)



Portfolio Spending by Year

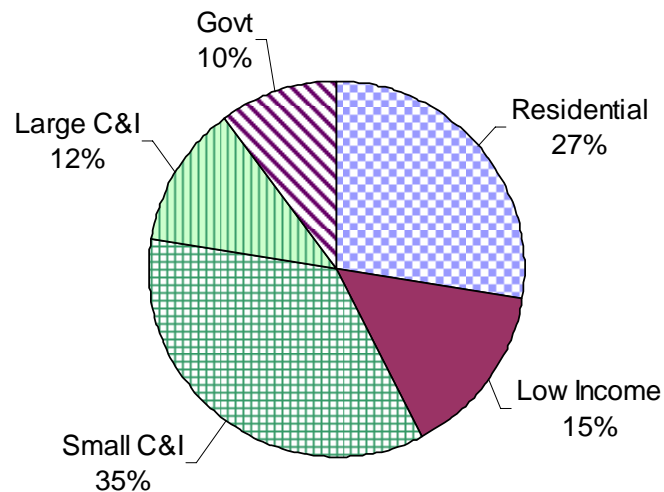


--- \$72 MM/yr levelized cost recovery in program years 2- 4;
\$30 MM in program year 1 (only 5 months)



Spending by Customer Sector

Portfolio Costs by Customer Sector



Levelized Program Cost Per Customer by Rate Class:

- Residential including low-income = 0.21 ¢/kWh (about \$25 per average customer per year)
- Small C&I = 0.23 ¢/kWh
- Large C&I = 0.38 ¢/kWh
- Act 129 costs are recovered via a rider from customers who receive distribution service from PPL Electric



Summary of Portfolio Results by Sector

Sector	% of Total Annual PPL Load	% of Total PPL Annual Revenue	2013 MWh Reduction	% of 2013 Total MWh Reduction	2013 MW Reduction (total)	% of 2013 Total MW Reduction	Act 129 Program Cost \$MM	% of Total Act 129 Portfolio Cost	Act 129 Program Cost Per Customer ¢/kWh	Act 129 Program Cost Per Customer \$/kW
Residential	32.0%	36.0%	406,164	29.8%	120	28.4%	\$67.4	27.4%	0.210	N/A
Low-Income	6.0%	7.0%	68,562	5.0%	23	5.4%	\$37.2	15.1%	0.210	N/A
Small C&I	26.0%	24.0%	617,389	45.3%	136	32.2%	\$85.8	34.9%	0.231	N/A
Large C&I	30.0%	27.0%	135,311	9.9%	102	24.1%	\$30.3	12.3%	N/A	\$0.38
Institutional	6.0%	5.0%	134,554	9.9%	42	9.9%	\$25.4	10.3%	sm C&I	N/A
Total			1,361,980	100.0%	423	100.0%	\$246	100.0%		

Note: Program cost per customer per year is based on a 41 month collection period (12/2009 - 5/2113) and total cost of programs for that sector.



Next Steps

- Work with the presiding Administrative Law Judge and all parties to facilitate an expedited and thorough review of PPL Electric's Plan
- Continue meeting with the Commission and stakeholders to review implementation progress and to improve the Plan over time



Questions & Comments?

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