

# PPL Electric Utilities

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Act 129 Energy Efficiency & Conservation Plan  
Stakeholder Meeting  
May 27, 2009



# Agenda & Purpose of the Meeting

- Morning Session:
  - Report on PPL's progress in developing its EE&C Plan
  - Summarize proposed programs
  - Review the implementation strategy
  - Provide a preliminary summary of expected portfolio savings, impacts and costs
  - Seek feedback on the plan

# Afternoon Session- Breakout Groups

- Open Discussion and More Feedback:
  - Residential and Low-Income Sector
  - Small Commercial & Industrial and Institutional Sectors
  - Large Commercial & Industrial Sector

# Status of EE&C Plan

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- On target to file the EE&C Plan on July 1
- PUC issued the final EE&C Plan template last week
- PUC issued the draft TRC on 5/21
  - PPL will revise costs & benefits of measures and rebalance the portfolio accordingly
  - No major changes to portfolio expected
- Final TRM expected this week
- MV&E protocols and procedures will not be available before the July filing
- Need to finalize the portfolio numbers by mid-June
- After today's meeting, we need to decide if a final stakeholder meeting is required in mid-June

# Act 129- Basic Requirements

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- File an EE&C Plan by 7/1/09. \$100,000/day penalty if late
- 1% energy reduction by 5/31/11. 44 average MW for PPL
- 3% energy reduction by 5/31/13. 132 average MW for PPL
- 4.5% peak load reduction by 5/31/13. ~300 MW for PPL
  - Average of the 100 summer hours (June – Sept.) of highest demand
- EE&C Plan must provide “equity” among customer classes and must maximize cost-effectiveness
  - 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 (PPL’s interpretation of low-income set-aside requirement based on stakeholder input)
  - Program costs must be allocated to customer classes who incur the benefit
- PPL’s cost 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



# Likely Programs

Program Name	Residential	Low Income	Small C&I	Large C&I	Govt. & Non Profit
1 Efficient Equipment Incentive Program	Primary	Eligible	Primary	Primary	Primary
2 Residential Audit and Weatherization	Primary				
3 Compact Fluorescent Lighting Campaign	Primary	Primary	Eligible	Eligible	Eligible
4 Appliance Recycling Program	Primary	Eligible		Eligible	Eligible
5 ENERGY STAR New Homes Program	Primary				
6 Direct Load Control	Primary	Primary	Primary		Primary
7 Time of Use Rates	Primary		Primary	Eligible	Primary
8 Low-Income WRAP		Primary			
9 E Power Wise Program		Primary			
10 C&I Custom Incentive Program			Primary	Primary	Primary
11 HVAC Tune-Up Program			Primary	Eligible	Primary
12 Curtailment Program			Eligible	Primary	Eligible
13 Renewable Energy Program	Primary	Primary	Primary	Primary	Primary
14 Customer Awareness and Education Program	Primary	Primary	Primary	Primary	Primary

Key	
<span style="display: inline-block; width: 15px; height: 15px; background-color: #002060; border: 1px solid black;"></span>	Primary customer target (savings and demand impacts)
<span style="display: inline-block; width: 15px; height: 15px; background-color: #4169E1; border: 1px solid black;"></span>	Eligible customers (no impacts)



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# Efficient Equipment Incentive Program

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- Expected launch: March 2010
- Targets 4,000,000 installed measures by 2013
- All PPL customers
- Prescriptive rebates on sector-appropriate measures
  - All major end uses: HVAC, lighting, water heating, appliances
- CSPs provide customer intake, routing, application verification, and rebate processing
- TAs provide diagnostics and installation
- Cross promotion with Keystone Help



# Residential Audit & Weatherization

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- Expected launch: March 2010
- Targets 6,000 audits by 2013
- Residential customers in single family housing
- Comprehensive track:
  - Full, diagnostic audit by BPI-trained, free market auditors
  - Customer rebate: \$250 all electric; \$150 w/ AC and non-electric heat
- Walk through audit track:
  - Basic audit 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 PPL customers
- Upstream buy down component
  - Customers save ~50% “at the register”
  - Turnkey CSP
- CFL give away component
  - Delivery specifics TBD



# Appliance Recycling Program

- Expected launch: December 2009
- Targets 80,000 appliances recycled by 2013
- All PPL customers with working, residential-grade appliances
- Free pick up, disposal and \$35 rebate for refrigerators & freezers
- Free drop off events, disposal and \$35 rebate for room air conditioners
- Turnkey CSP to be under contract by July 1



# ENERGY STAR® New Homes

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- Expected launch: January 2011
- Targets 2,000 participants by 2013
- Single family, new construction projects
- Possible incentive for HERS testing and meeting post-construction HERS threshold
- Final incentives and structure TBD based on discussions and coordination with other utilities and stakeholders
- CSP to provide training, HERS support, etc.



# Direct Load Control Program

- Expected launch: February 2010
- Targets 45,000 participants by 2013
- Any customer with central AC or heat pump
- Cycles AC/heat pump during peak summer season
  - DLC receiver installed free
  - \$32 end-of-season bill credit
- Turnkey CSP to deliver program
  - CSP must deliver firm load to PPL



# Time of Use Rate Program

- Expected launch: January 2010
- Targets 84,000 participants by 2013
- All customers
- TOU rates vary based on electricity costs in different time periods
  - On-peak=higher rate
  - Off-peak=lower rate
- Customers save energy by reducing energy use during peak periods
- PPL will manage/deliver the program



# Low Income WRAP

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- Expected launch: November 2009
- Targets 16,000 customers by 2013
- All PPL customers at or below 150% of poverty level (single and multifamily)
- Expansion of existing program
  - 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)
- CBOs continue to administer and deliver program



# E Power Wise

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

# 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



# Custom Incentive Program

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- Expected launch: January 2010
- Targets 263 customers by 2013
- C&I customers, new & existing facilities
- Incentives for measures not included in equipment program, process improvements, 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
- CSP processes program applications; confirms technical analysis, scope, cost, and potential savings; and conducts field verification of completed projects.



# Curtailment Program

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- Expected launch: January 2010
- Targets 150 customers by 2013
- C&I customers with monthly demand at least 100 kW and able to curtail 15% or 30 kW
- Turnkey CSP(s) to deliver program and contract with participants
- Participants commit to level of curtailment
  - When notified of peak events, must reduce or shift load per agreed level
  - Cost to PPL and payment to participants TBD by curtailment CSP(s)

# Renewable Energy Program

- Customer-sited renewable generation
- Details TBD
- Measure does not appear to be cost-effective but can be included since the recently issued draft TRC requires cost-effectiveness only at the portfolio level, not by measure or program

# Customer Awareness & Education Program

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- Expected launch: April 2010
- Target participation: TBD
- All PPL customers
- Energy education on low cost/no cost energy efficiency and demand reduction actions
- May include: general awareness marketing & outreach, community presentations & events, grassroots activities, school curriculum & demos
- Expect one or more CSPs to deliver various program activities



# PHFA Multifamily Program

- This changed very recently, after we issued information to you on 5/20
- This will not be a stand-alone program
- PHFA will be a trade ally and marketing ally for the Efficient Equipment Incentive Program and the C&I Custom Incentive Program



# Implementation Strategy

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- Coordination with other utilities on program structure, delivery mechanisms, & incentive levels
  - Consistent program design elements where it makes sense
  - May use same CSPs for some programs
  - Joint sponsorship of education and training initiatives
  - Some things may take time to sort out
- Plan uses combination of CSPs, TAs and other market partners (e.g., CAAs, PHFA, Keystone HELP) for delivery or cross promotion of programs
  - Some CSP roles distributed across programs and functions
- Where possible, use existing market mechanisms, TAs, and Market Partners to deliver programs
- Some implementation planning work has already begun and much more will be done *before* approval of the Plan

## PPL PROGRAMS

Program Function	Efficient Equipment Incentive	Audit & Weatherization	New Construction	Custom Incentives	HVAC Tune-Up	Time of Use Rates	CFL Lighting Campaign	Appliance Recycling	Direct Load Control	Curtailment	Low Income WRAP	E Power Wise	PHFA MF
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	CAA	CSP-10/ CAA	PHFA
Technical Assessment	TA-1	CSP-3/ TA-2	CSP-4	TA-4	TA-1								
Project Development			TA-3										
Implementation/Installation	CSP-1		CSP-4	CSP-5	CSP-6								
Application Review and Approval			CSP-1	CSP-1									
Payment Processing	CSP-1		CSP-4	CSP-5	CSP-6								
Participant Relations Management			CSP-1	CSP-1									
Participant Relations Management	PPL/CSP-1					PPL/CSP-8		PPL/CSP-9	PPL/CAA		PPL/PHFA		
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													
Customer Service													
Corporate Communications													
Rates													
Finance													
Purchasing													
Meter Operations													
IT													
Reporting and analysis	PPL												
Internal													
External													
External	PPL/CSPs (all)												

# Building & Balancing the Portfolio of Programs

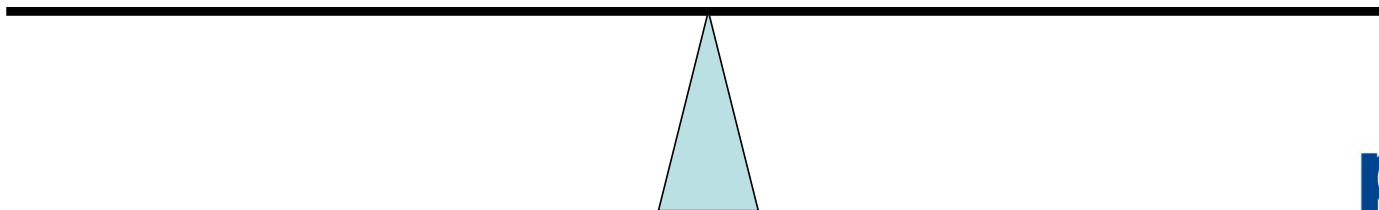
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## INPUTS:

- Hundreds of measures
- Estimated # of participants per measure
- Estimated savings per measure
- Estimated cost per measure

## OUTPUTS:

- Total cost is within cap
- Maximum cost-effectiveness of portfolio
- Meets total MWh & MW targets
- Institutional and low-income customer MWh & MW reductions meet targets
- Equity among customer segments- programs, savings, & costs



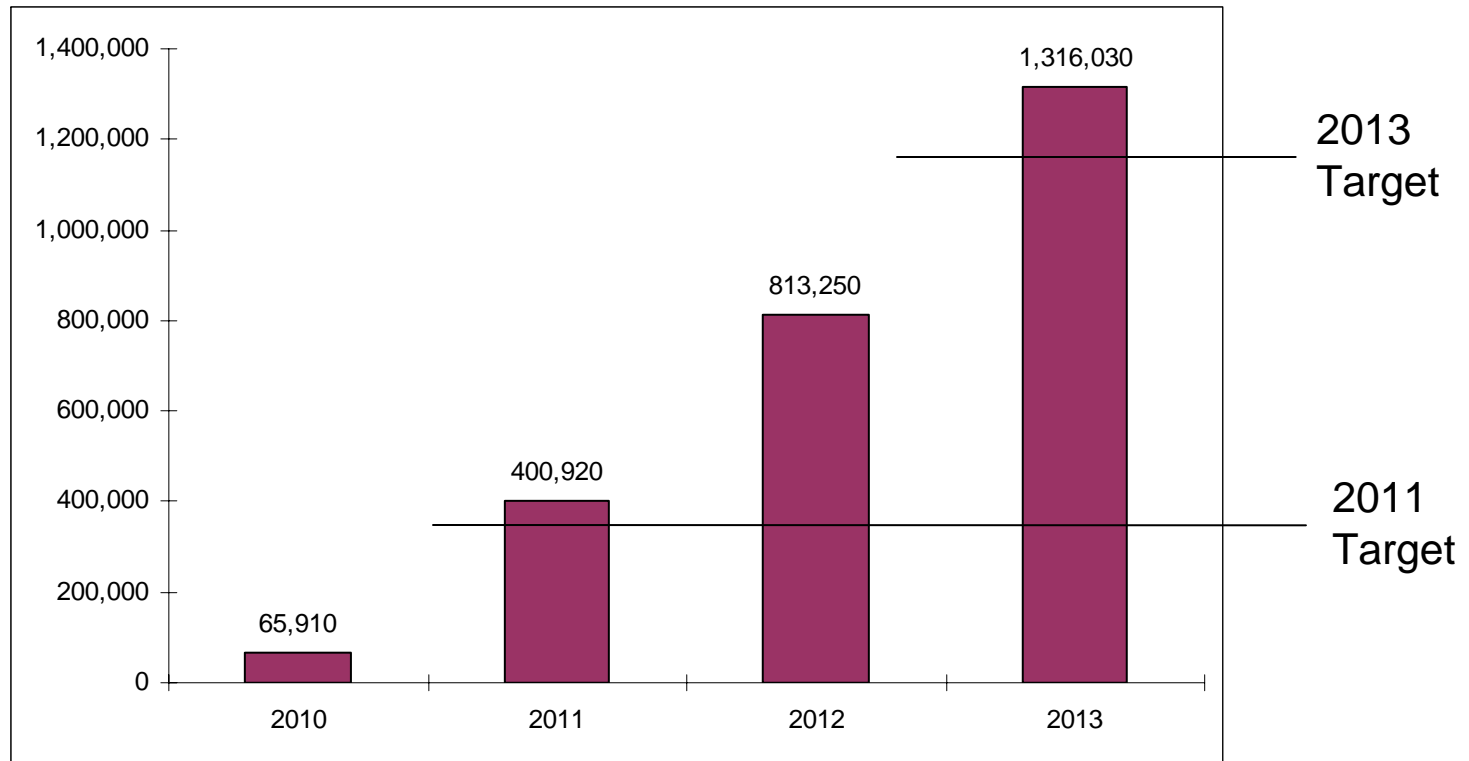
# Preliminary Portfolio Results

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- Development of the portfolio was based on a bottom-up process using a large number of measures to create programs
- The process is iterative and there are many possible combinations of programs, measures, participant levels, etc. to reach the targets within the cost cap and other constraints.
- We are seeking the best balance of often competing objectives such as:
  - Maximizing cost-effectiveness
  - Equity among customer classes
  - Likelihood of achieving the targets
  - Flexibility to change over time
- Portfolio outcomes are dependent on a large number of technical, economic and market assumptions – these are likely to change due to:
  - Revisions to TRM
  - New TRC guidelines per 5/22/2009 Secretarial Letter
  - Additional refinement to measures and programs based on stakeholder input and other factors
  - State of the economy



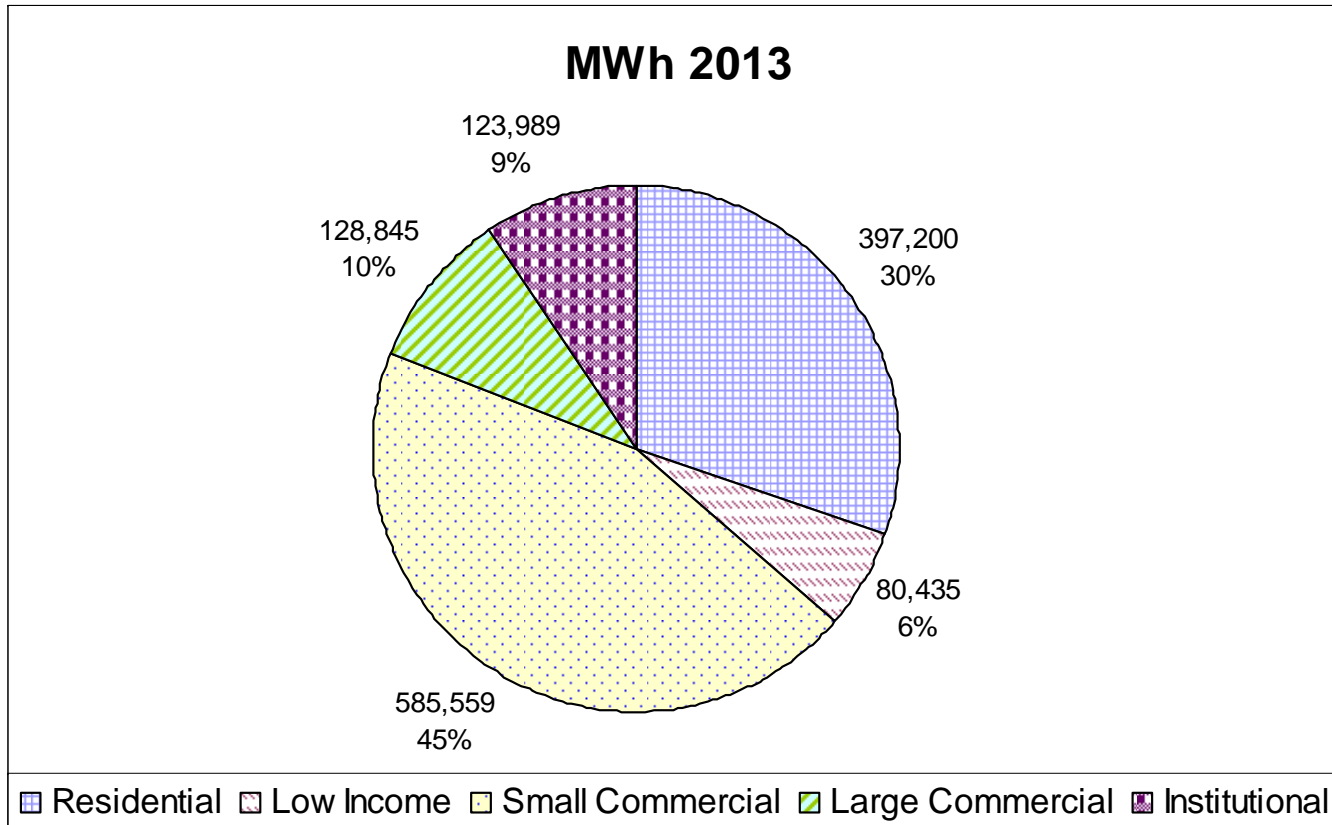
# Energy Savings by Year



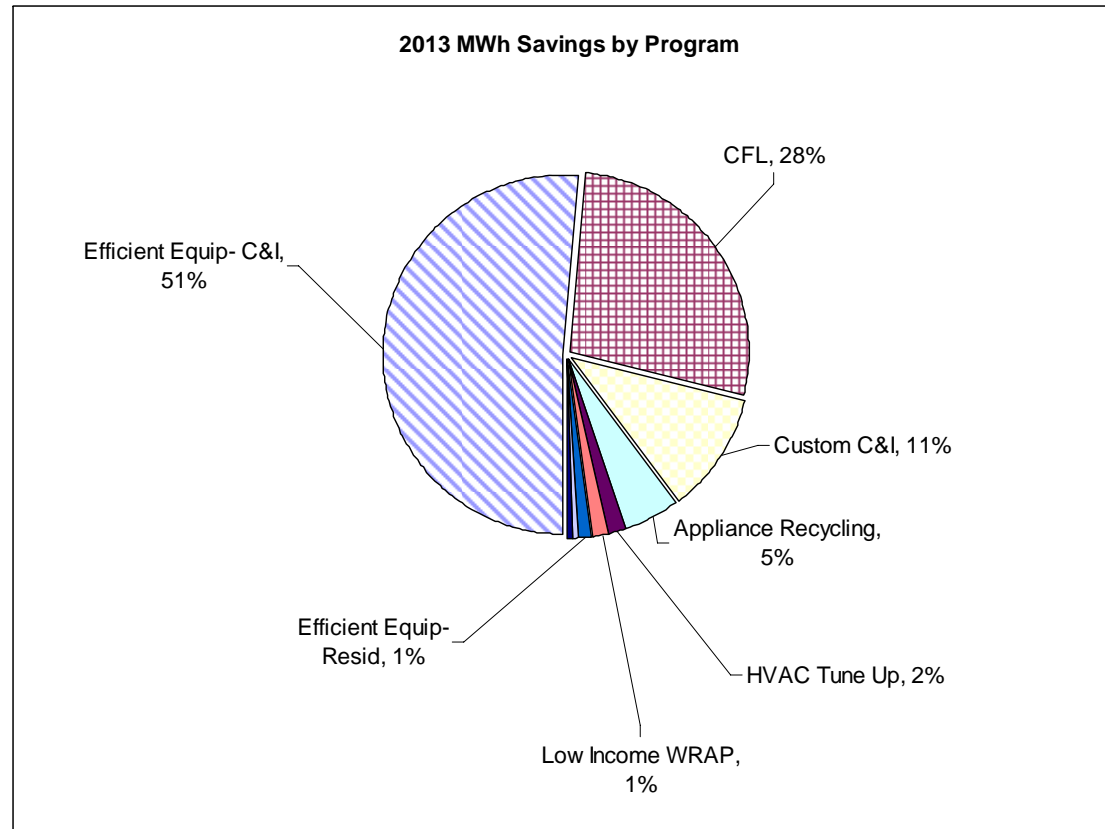
- Program years are 5/31 – 6/1
- We plan to overshoot targets to provide a reasonable cushion to address uncertainties



# Energy Savings by Sector



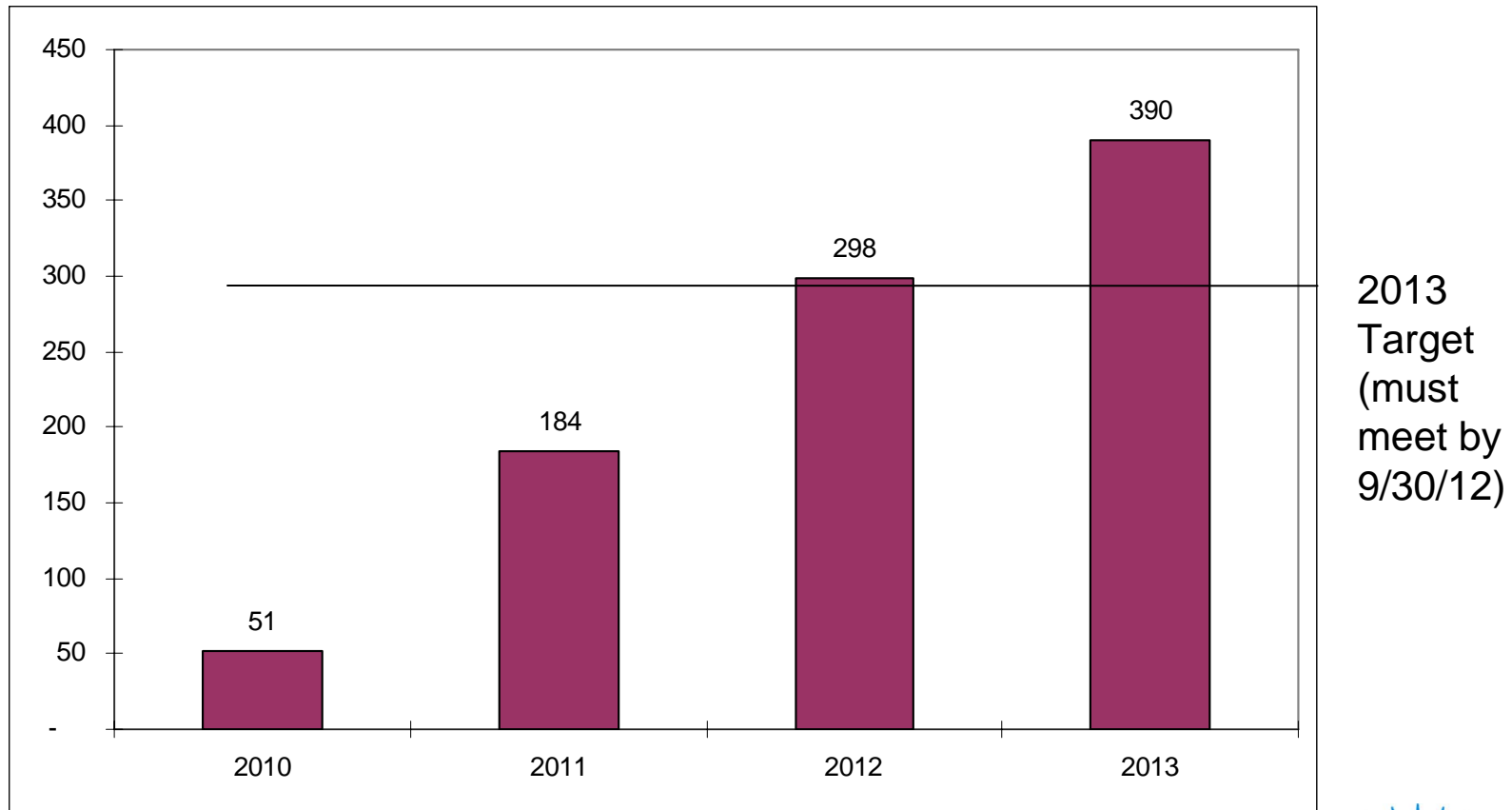
# Energy Savings by Program



Approximately 80% of the energy savings are from 2 programs-- Efficient Equipment C&I and CFL



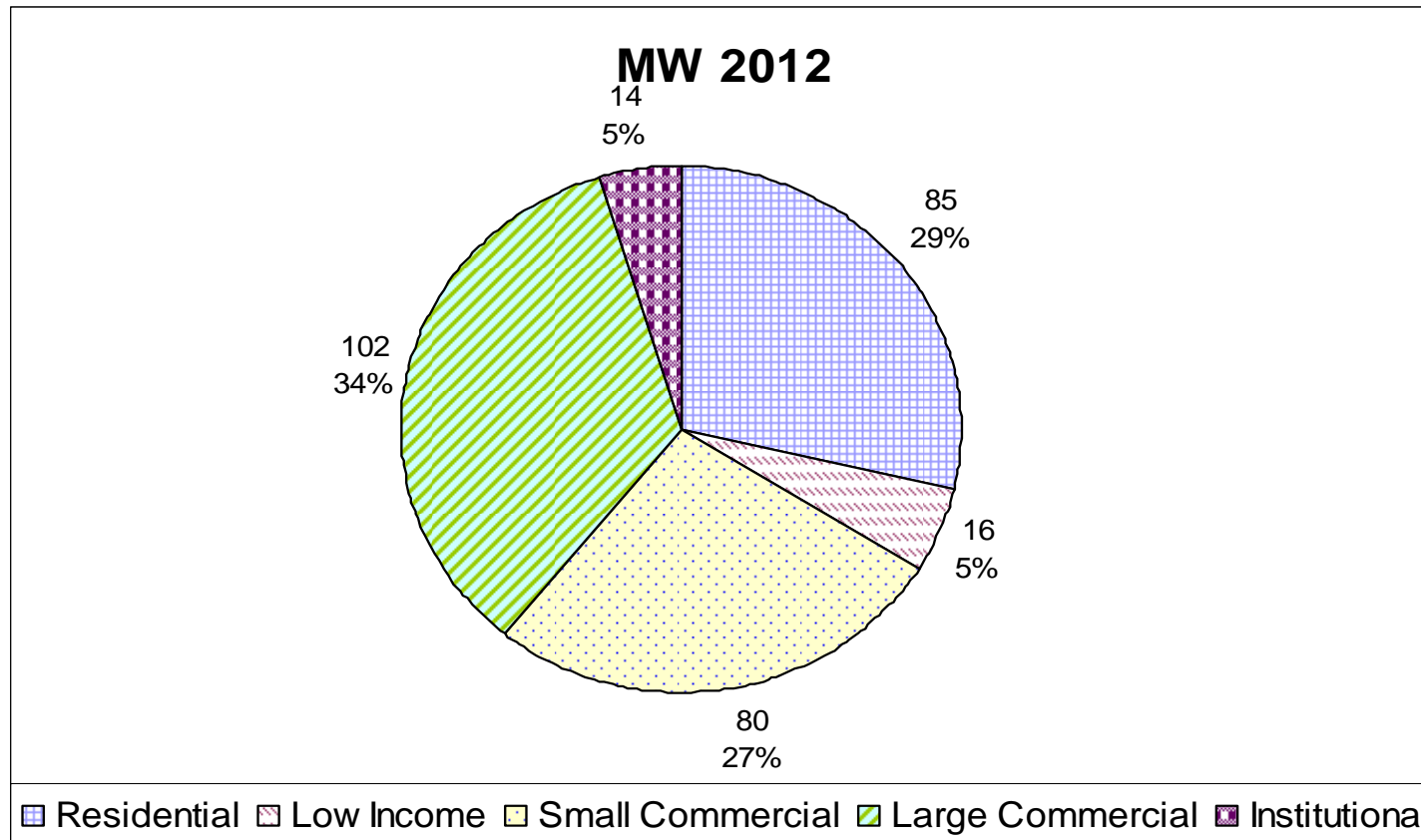
# Demand Savings by Year



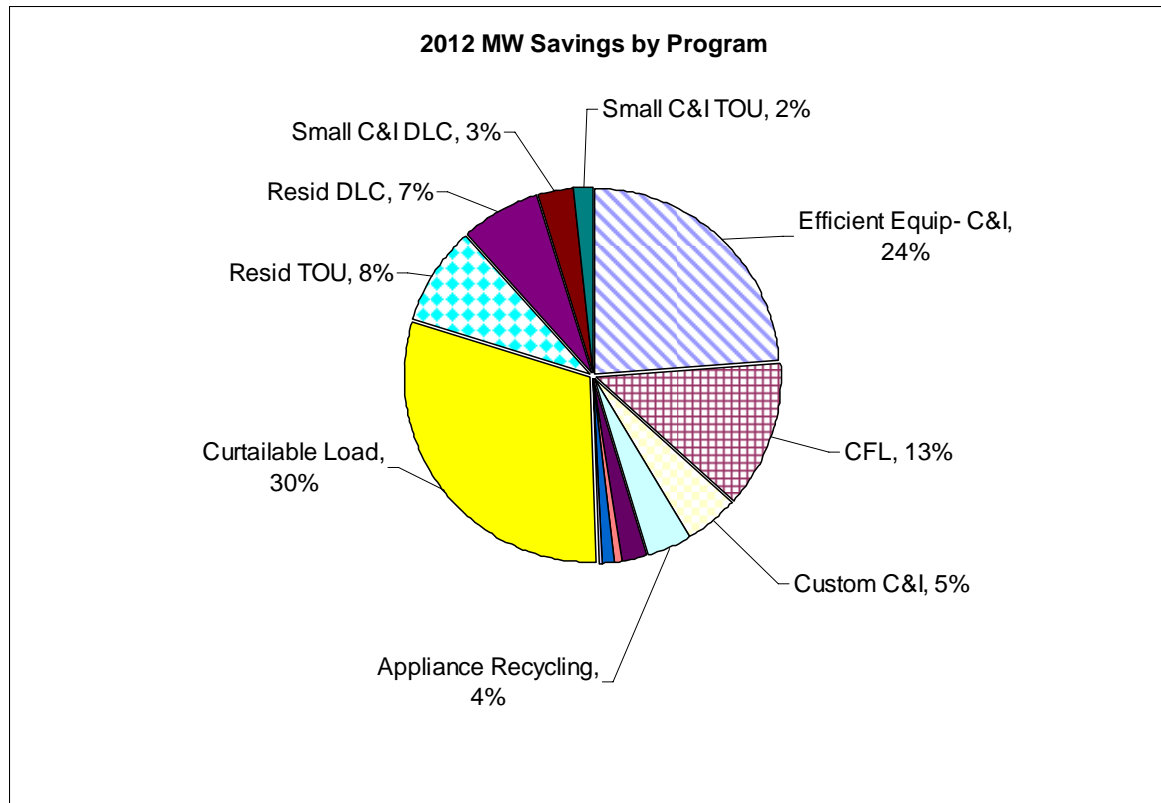
We are not comfortable with the lack of a “cushion” in 2012.



# Demand Savings by Sector



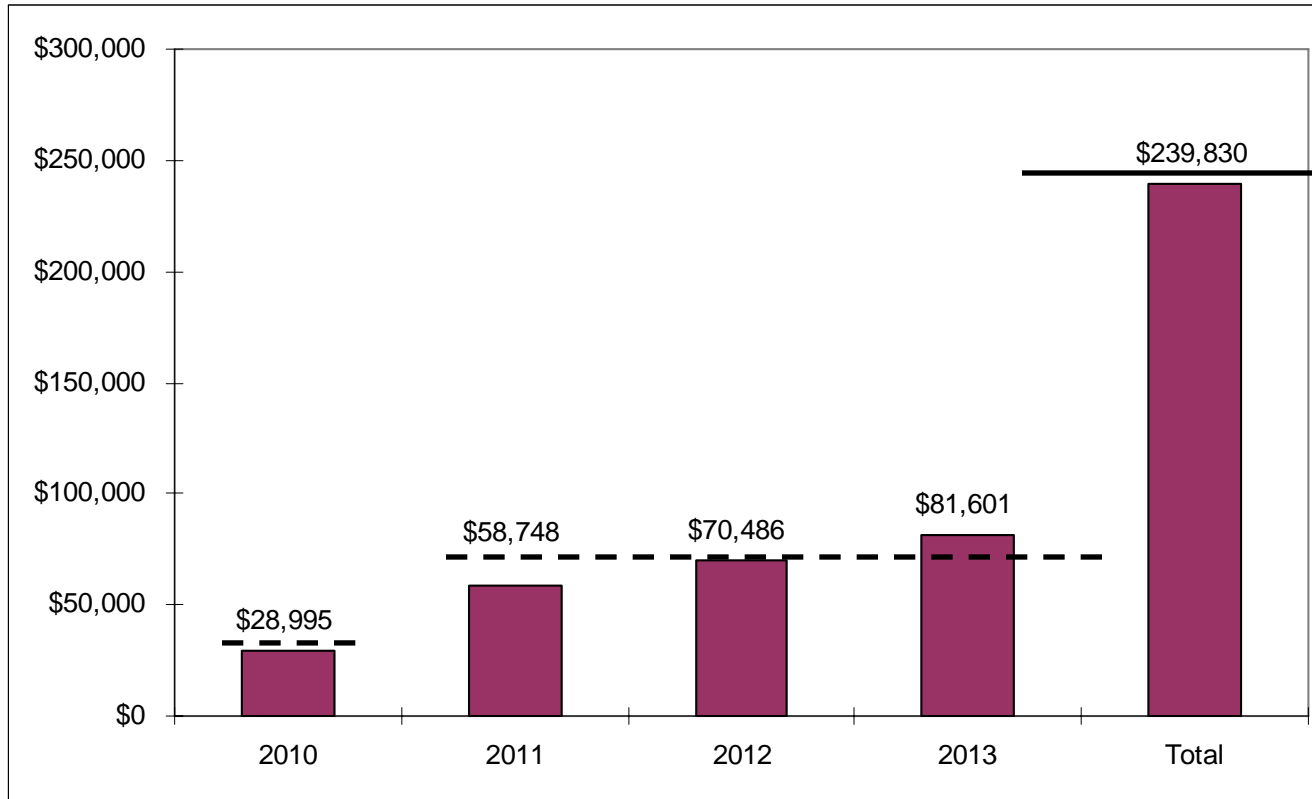
# Demand Savings by Program



Approximately 70% of the demand savings are from 3 programs– Large C&I Curtailable Load, Efficient Equipment C&I, and CFL



# Portfolio Spending by Year



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

— \$246 MM spending cap for entire program

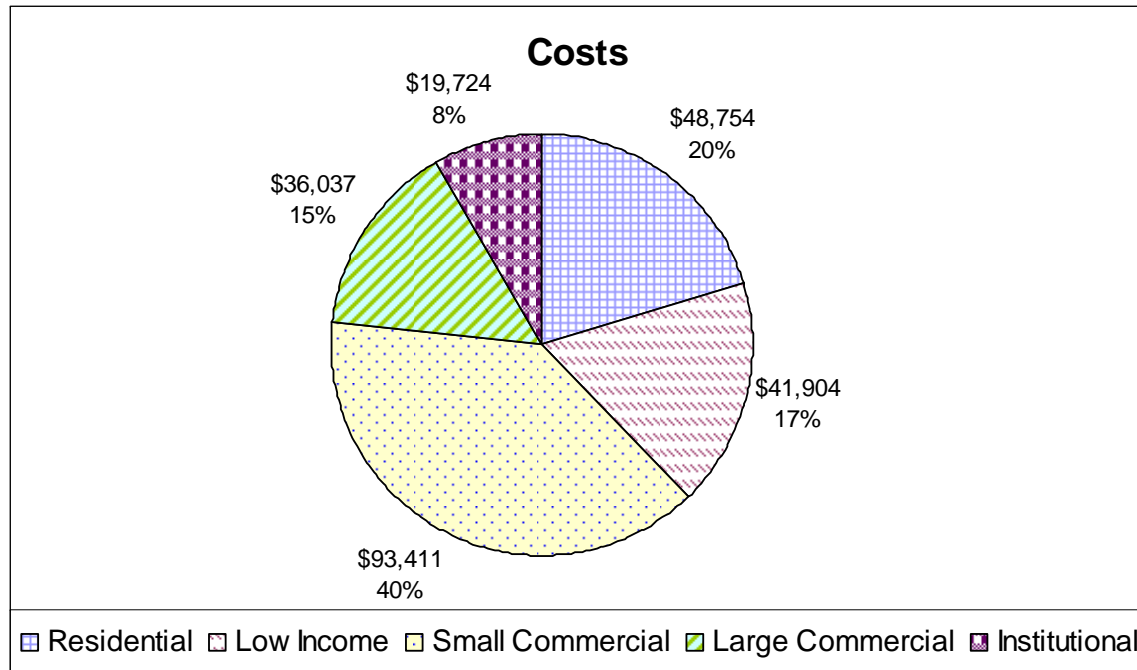


# Need Consensus on 2% Cost Cap Issue

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- Yearly spending that averages 2% of 2006 annual revenues
  - Allows for ramping of programs, normal fluctuations and spending uncertainties, and it minimizes the likelihood that PPL would need to stop a program mid-year if it was trending oversubscribed or over budget
  - Significantly changing the annual spending assumptions will jeopardize meeting the targets and will require significant effort to revise the portfolio
- Levelized yearly cost recovery
  - Method could differ by class (ex: ¢/kWh for residential and customer charge and/or demand charge for C&I)
- Reconciliation at the end of the program unless there are significant differences that should not wait until 2013
  - Total projected cost at completion
  - Project cost allocation between customer sectors

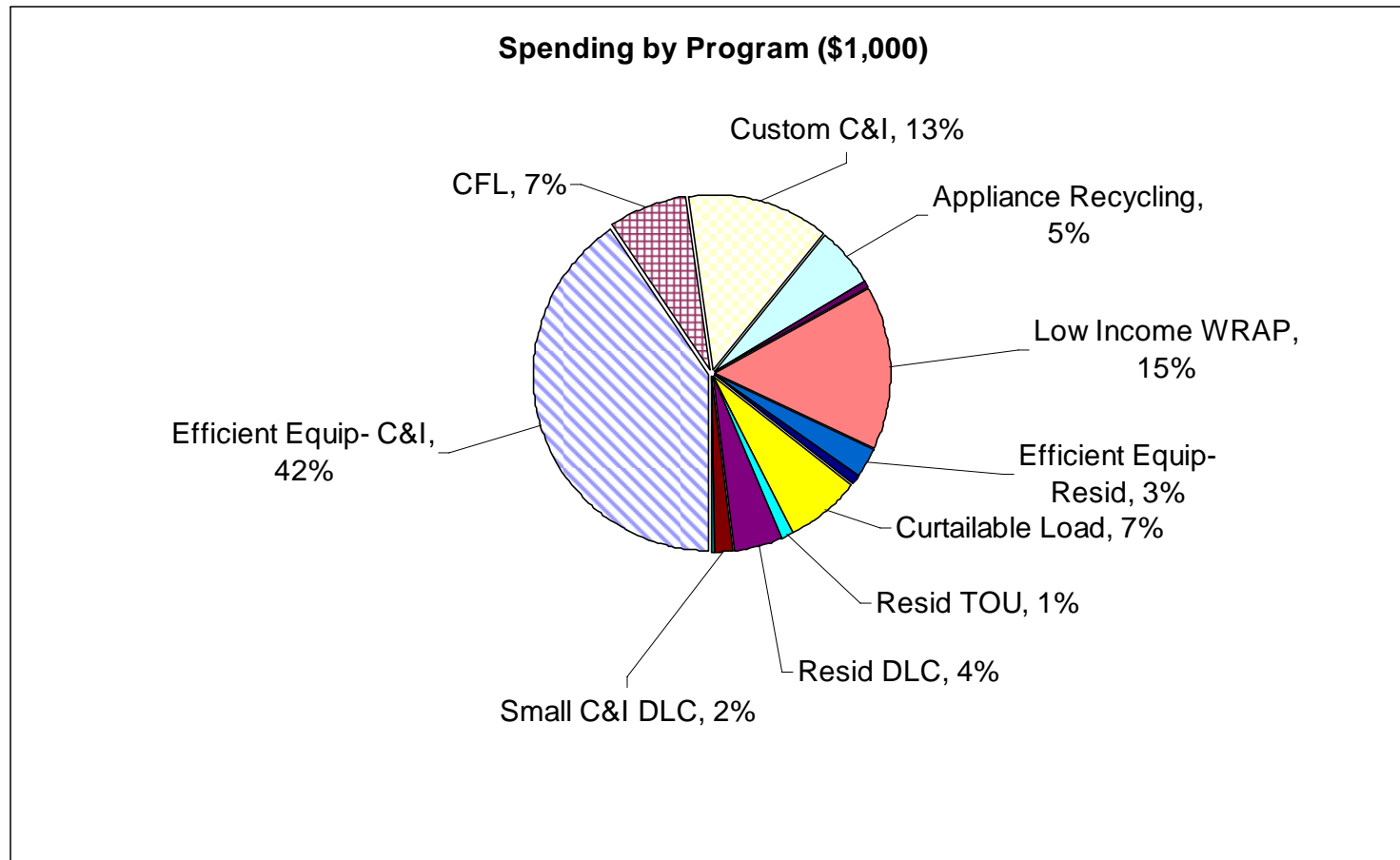
# Spending by Sector



Levelized Program Cost Per Customer by Rate Class:

- Residential including low-income 0.195 ¢/kwh
- Small C&I 0.235 ¢/kWh
- Large C&I 0.114 ¢/kWh
- Average for all customers 0.190 ¢/kWh

# Spending by Program



## Benefit-to-Cost Ratio By Program

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Large C&I Curtailable Load	18.5 (incorrect– Will be approximately 1)
Small C&I HVAC Tune-up	6.0
CFL	4.6
Residential Time of Use Rates	3.2
Appliance Recycling	3.1
Small C&I Time of Use Rates	2.9
C&I Efficient Equipment	2.3
C&I Custom Incentives	2.0
E Power Wise	1.9
EnergyStar New Construction	1.6
Residential Efficient Equipment	1.2
Residential Audit & Weatherization	1.0
Residential Direct Load Control	1.0
Small C&I Direct Load Control	1.0
WRAP	0.4
<b>TOTAL PORTFOLIO</b>	<b>2.3</b>



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These are preliminary values and do not reflect the recently issued draft Total Resource Cost Test procedures.

# 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	2012 MW Reduction (total)	% of 2012 Total MW Reduction	Act 129 Program Cost \$MM	% of Total Act 129 Portfolio Cost	# of Customers	Annual Usage of Sector (MWh)	Act 129 Program Cost Per Customer ¢/kwh
<b>Residential</b>	32.0%	36.0%	395,993	30.1%	85	28.6%	\$54.3	22.1%	1,216,628	14,560,303	0.195
<b>Low-Income</b>	6.0%	7.0%	79,640	6.1%	16	5.34% <sup>(4)</sup>	\$42.7	17.3%	incl in resid	incl in resid	0.195
<b>Small C&amp;I</b>	26.0%	24.0%	585,559	44.6%	80	27.0%	\$93.4	38.0%	174,572	14,093,904	0.235
<b>Large C&amp;I</b>	30.0%	27.0%	128,845	9.8%	102	34.3%	\$36.0	14.6%	1,254	9,275,530	0.114
<b>Institutional</b>	6.0%	5.0%	123,989	9.4%	14	4.84% <sup>(1)</sup>	\$19.7	8.0%	sm C&I	sm C&I	sm C&I
<b>Total</b>			1,314,026		297		\$246		1,392,454	37,929,737	0.190



# Remaining Challenges

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- Economic conditions are not conducive to spending by customers
- Limited time to design and implement programs
  - Infrastructure (staffing, systems, and processes) needed to implement, manage, and track programs is significant and must start now to be prepared to implement the Plan upon approval and to meet the savings targets by the compliance dates
  - We need to complete the competitive bidding process and contracting for most of the CSPs in the next several months
  - “Rules of the road” (TRM, TRC, MV&E, data protocols, etc.) have not been issued or finalized

# Remaining Challenges, cont'd

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- Significant portion (65%) of savings must come from C&I and Institutional Sector
  - General economic conditions are not conducive to participation due to required upfront investment by customers
  - Measures generally have the highest benefit-to-cost ratio; Shifting to other sectors will further challenge the spending cap and jeopardize requirement to maximize cost-effectiveness of portfolio
  - Disconnected costs & benefits if the customer is a landlord or property manager who does not pay the electric bill (paid by tenant)
  - Longer lead time than residential sector to identify, justify, budget, and implement measures, especially for customers with budget cycles and lengthy funding or procurement processes
  - Challenging to reach and connect with many small C&I customers

## Remaining Challenges, cont'd

- The peak load reduction target is challenging and logistically complex
  - 100 peak hours are more than typical
  - Hours will not be known until after-the-fact
  - May have to obtain more MW over more than 100 hours to ensure we hit the target (average over 100 peak hours)
  - May be prohibitively expensive given the current budgets
  - Customer behavior, acceptance, and expected incentive level are uncertain at this time
  - Must reach the target by 9/30/12 (8 months earlier than specified) because there are no summer months between 9/30/12 and the 5/31/13 compliance date

## Next Steps

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- Questions or comments?
- Is the portfolio an acceptable balance between:
  - Maximizing cost-effectiveness
  - Equity among customer classes
  - Flexibility to change over time
  - Likelihood of achieving the targets
- Do we need another stakeholder meeting before filing the EE&C Plan on 7/1/09?



## Contact Info

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