

PPL Electric Utilities

Act 129 Energy Efficiency & Conservation Plan

NAESCO Mid-Atlantic Regional Meeting
June 11, 2009



Act 129- Basic Requirements

- All Pa Electric Distribution Companies with > 100,000 customers must file an Energy Efficiency & Conservation Plan by 7/1/09
 - \$100,000/day penalty if late
- 1% energy reduction by 5/31/11
 - Baseline = forecasted load for 6/1/09 - 5/31/10
 - 382,000 MWh/yr reduction for PPL
 - 44 average MW reduction around-the-clock
- 3% energy reduction by 5/31/13
 - 1,146,000 MWh/yr reduction for PPL
 - 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
 - ~300 MW reduction for PPL

Act 129- Basic Requirements, cont'd

- 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
 - 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



The Act Is Consistent with PPL's Vision

- Consumers will save money and have more choices for the wise use of electricity.
- Excellent customer service
- PPL is the customer's trusted energy advisor
- Reducing energy consumption is environmentally wise



Likely Programs

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

Key	
■	Primary customer target (savings and demand impacts)
■	Eligible customers (no impacts)



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Efficient Equipment Incentive Program

- 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

- 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/retail discount 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

- 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

- 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

- 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

- 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.



Load Curtailment Program

- 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

Customer Awareness & Education Program

- 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



Implementation Strategy

- Where possible, use existing market mechanisms, Trade Allies, and Market Partners to deliver programs
- PPL will not get any direct ARRA funding for Act 129 but we must find ways to leverage energy efficiency projects that are taking advantage of ARRA and other funding opportunities
- Plan uses combination of Conservation Service Providers, Trade Allies, and other Market Partners (e.g., Community Action Groups, PHFA, Keystone HELP) for delivery or cross promotion of programs
 - CSPs are hired by the utility, must be competitively bid, and must be registered with the Pa PUC
 - Trade Allies are hired by the customer (participant)
 - Market partners deliver existing energy efficiency programs or services



Conservation Service Provider Roles

- Turnkey CSPs for appliance recycling program, firm demand response aggregation, and the CFL program. These CSPs will be responsible for all aspects of their program.
- Other CSPs are needed for the following roles. Some of these will span multiple programs.
 - Customer intake, routing, enrollment, customer care, eligibility verification, application and rebate processing.
 - Measurement, verification, and evaluation.
 - Quality assurance.
 - Tracking system.
 - Walk-through audits.
 - HVAC tune-up.
 - Marketing & advertising.

Trade Allies

- Trade allies are hired by the customer but play an important role
 - Educate the customer about energy efficiency opportunities, costs, and benefits
 - Inform the customer about PPL's programs and incentives
 - Delivery energy efficiency measures to the customer
- ESCOs
- HVAC and appliance dealers and contractors
- Comprehensive audit contractors
- Builders, architects, engineers
- Technical engineering and energy services firms



Building & Balancing the Portfolio of Programs

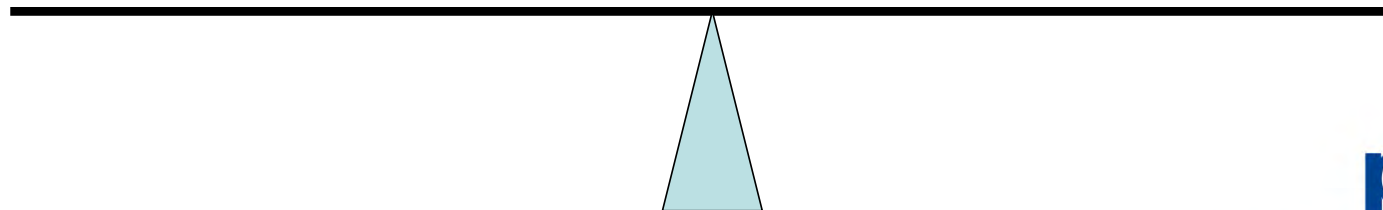
Balancing is more difficult than expected

INPUTS:

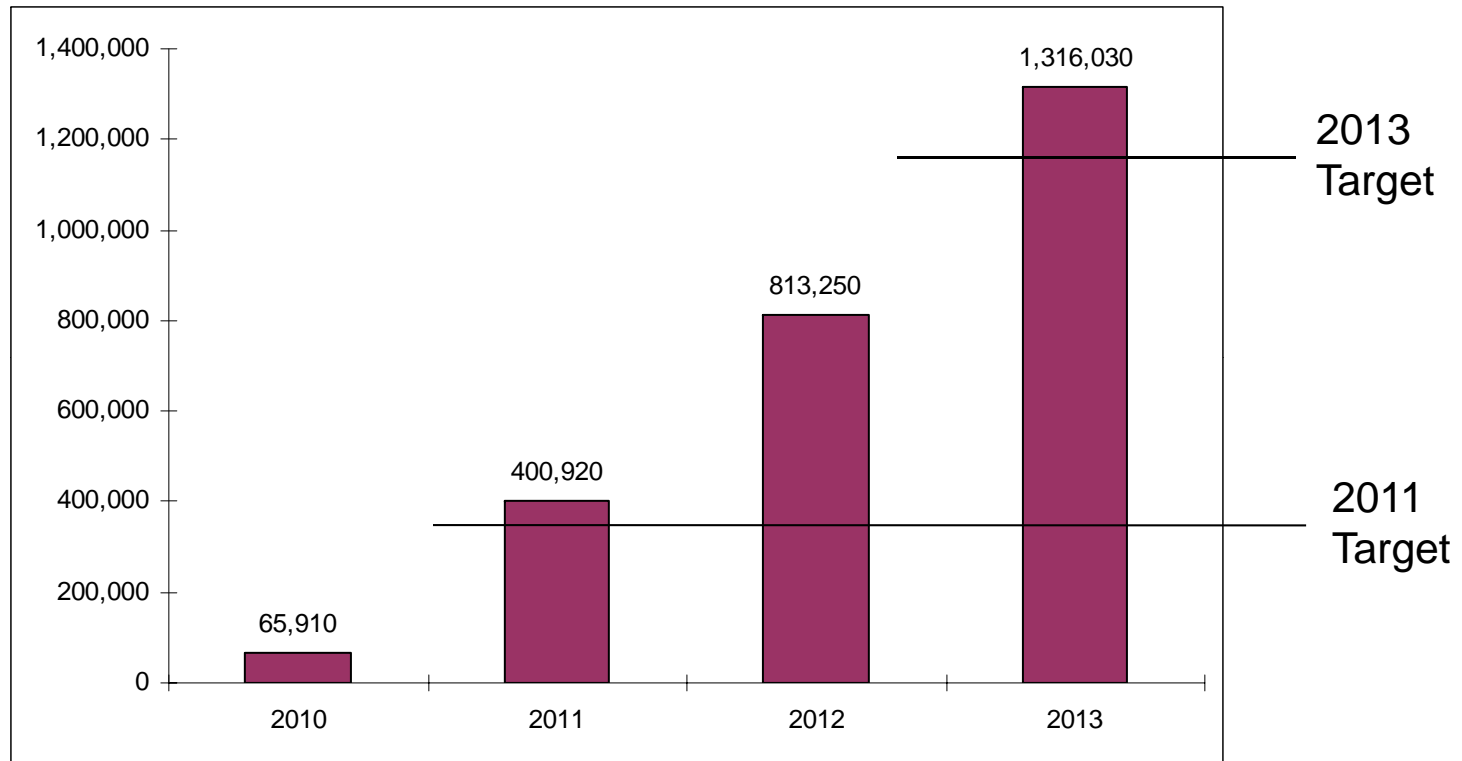
- Hundreds of measures
- Estimated # of participants per measure
- Estimated savings per measure
- Estimated cost per measure

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



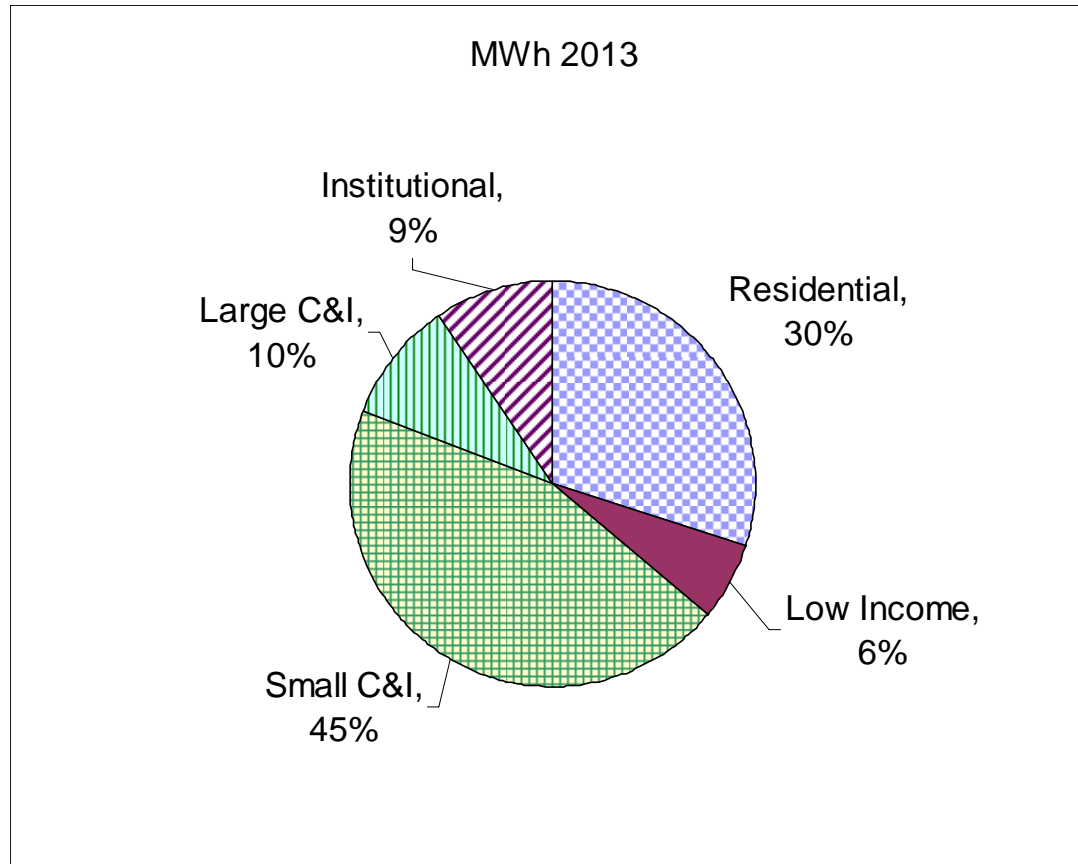
Energy Savings by Year



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

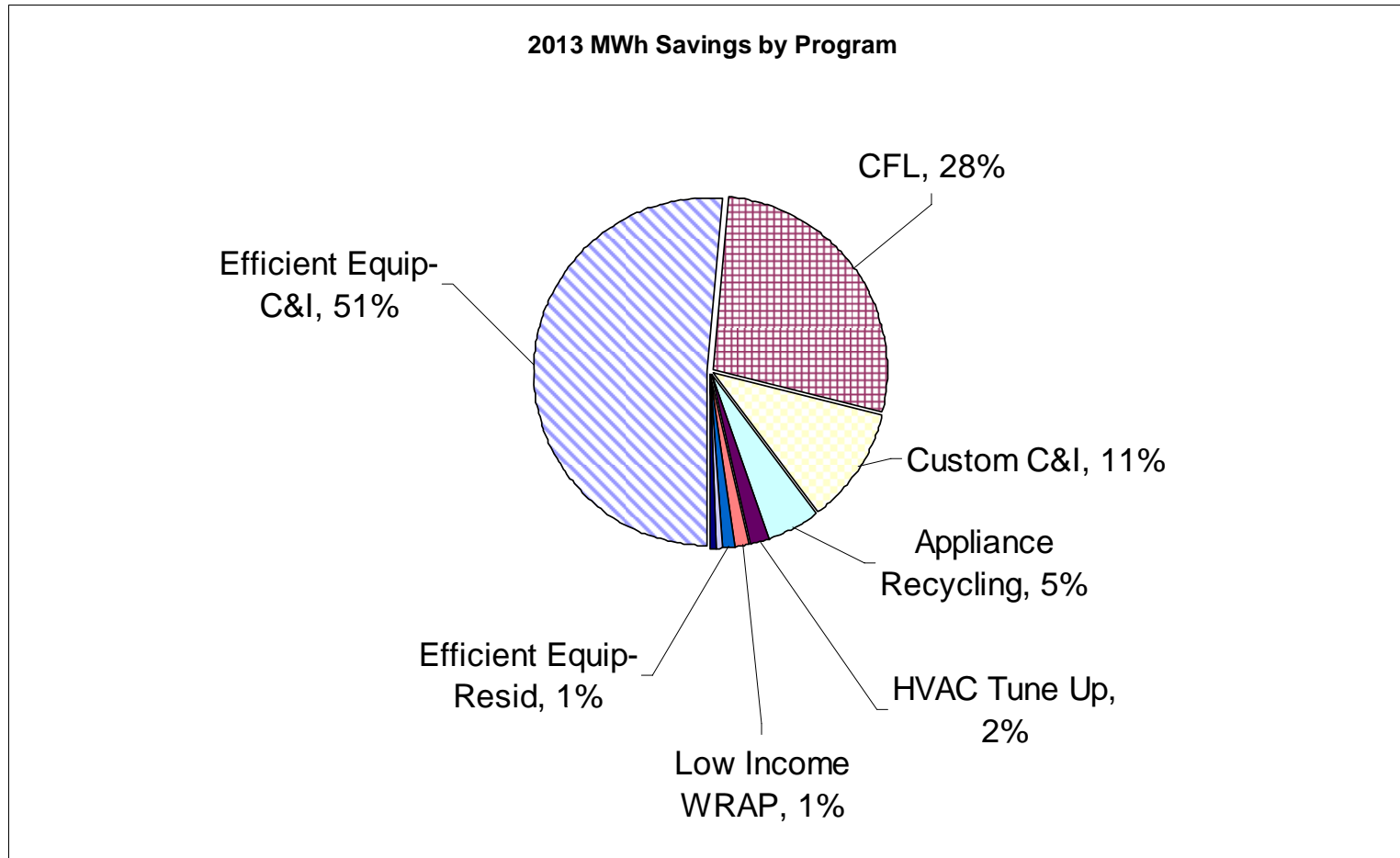


Energy Savings by Sector



Approximately 65% of the reductions are from the C&I sector, including Institutional

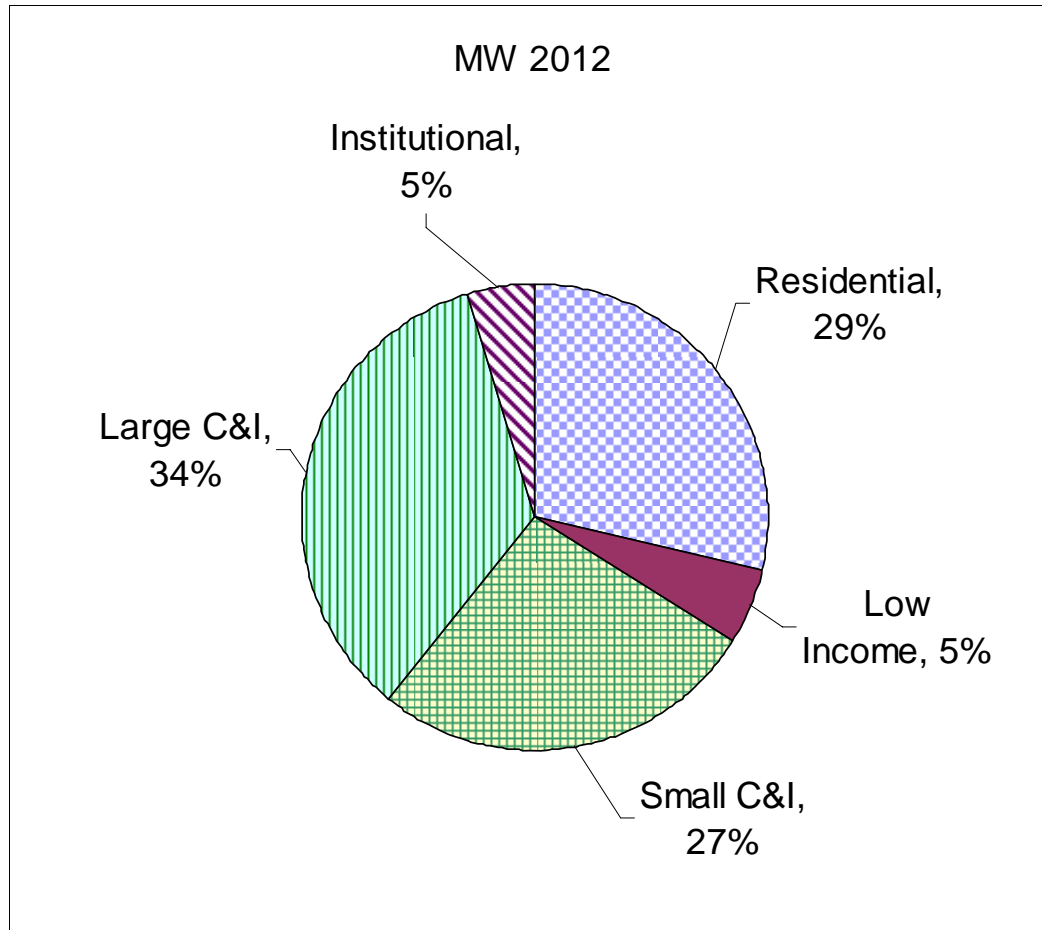
Energy Savings by Program



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

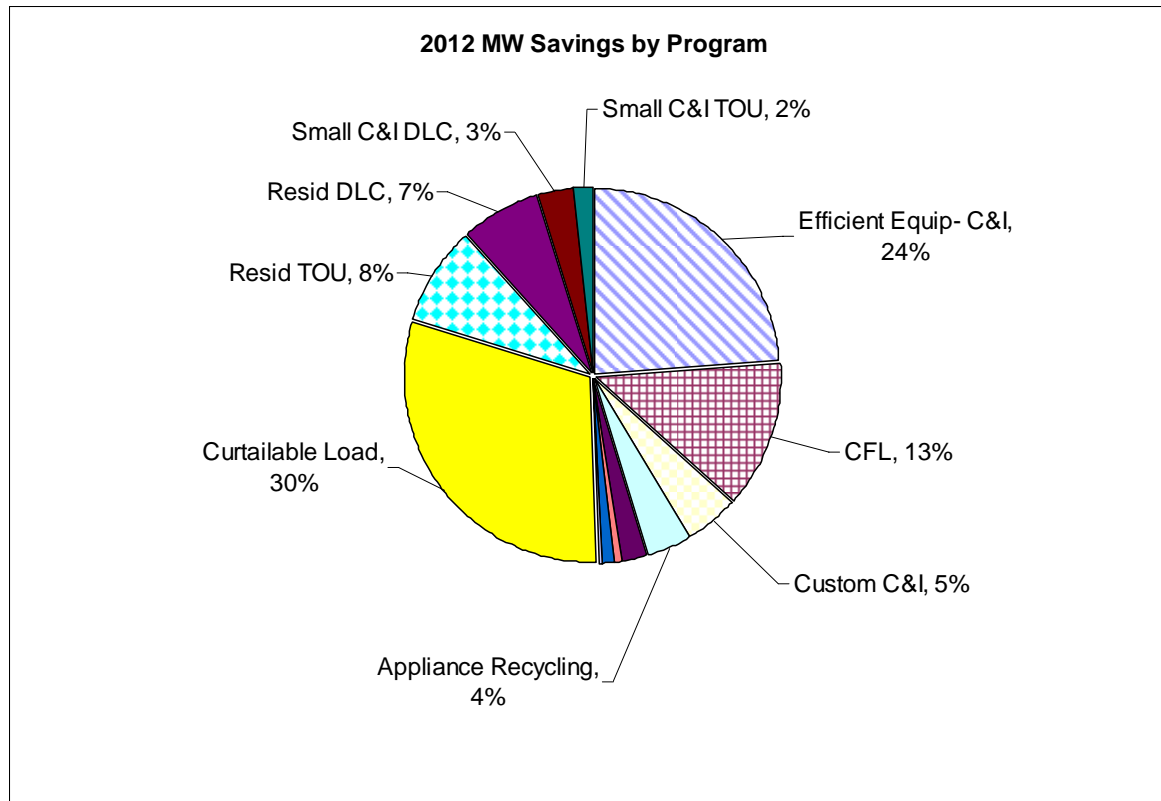


Demand Savings by Sector



Approximately 65% of the reductions are from the C&I sector, including Institutional

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



Benefit-to-Cost Ratio By Program

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
Large C&I Curtailable Load	1.0
Residential Audit & Weatherization	1.0
Residential Direct Load Control	1.0
Small C&I Direct Load Control	1.0
WRAP	0.4
TOTAL PORTFOLIO	2.3



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

Remaining Challenges

- 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

- 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
 - Customers must reduce or curtail load. The capability to interrupt (i.e. “voluntary”) is not enough. Interruptions during mild weather are likely, especially in a mild summer.
 - Hours will not be known until after-the-fact and are probably impossible to predict exactly
 - 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 cost cap
 - 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

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