

# Arizona Public Service Co. DSM Update

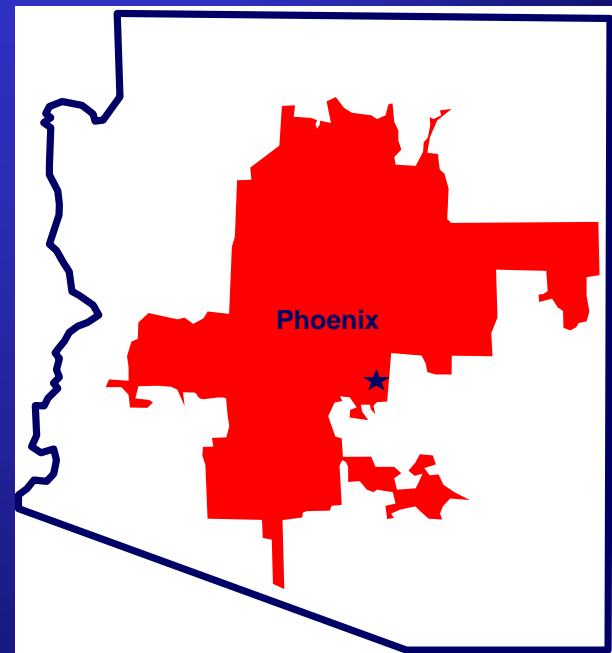


Jim Wontor  
Manager, DSM Programs

Presented to SWEEP Workshop  
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# Profile: Arizona Public Service

- Largest electric utility in Arizona
- 1.1 million customers
- Peak demand of 7,500 MW
- Annual sales of 30,000 GWH
- Annual sales growth rate higher than national average – but slowed in 2008
- \$3.5 billion in annual revenue
- 0.7% of annual revenue spent on Energy Efficiency (\$25 M)



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# What's New Since Last Year?

- Regulatory filings
- Spending / Savings update
- Program evaluation results
- Program enhancements in 2008
- Demand response program



# Regulatory Filings

## 1. "13-month" filing

- Seeks final approval of Non-Residential programs
- Filed March 2007; still pending

## 2. 2008-2010 Portfolio Update filing

- Seeks budget approval by program
- Filed December 2007; still pending

## 3. Rate Case filing

- DSM portion seeks removal of financial disincentive for increasing spending in DSM
- Filed June 2008; still pending



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# Spending / Savings Update

## (\$MM) including Performance Incentive

	<u>Annual Spending</u>	<u>Cum. Spending</u>	<u>Annual * MWh Savings</u>	<u>Cum. * MWh Savings</u>
2005	\$ 3.2	\$ 3.2	24,000	
2006	\$ 10.6	\$ 13.8	104,000	
2007	\$ 19.4	\$ 33.2	260,000	388,000
2008 est.	\$ 23.4	\$ 56.6	201,000	
2009 est.	\$ 25.6	\$ 82.2	220,000	
2010 est.	\$ 27.5	\$109.7	235,000	656,000

- Spending and savings continue to increase each year
- Expect to have approx. 1 million MWh saved by 2010; after 6 years of program implementation



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# Current EE Programs

## Residential

## Features

- Consumer Products
    - CFLs
  - Existing Home HVAC
    - Rebates (SEER)
    - Quality install
    - Duct test & repair
  - New Construction
    - Energy Star
  - Low Income
    - Bill assistance
    - Weatherization
- ✓ Upstream buydown of retail price of bulbs
  - ✓ \$250 rebate for 14 SEER
  - ✓ \$400 rebate for 16 SEER
  - ✓ \$100 rebate for Quality Install
  - ✓ Up to \$250 for testing and repairing duct leaks
  - ✓ \$400 builder incentive to build home using at least 15% less energy than standard home
  - ✓ Provide free weatherization for limited income households and occasional bill assistance



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# Current EE Programs

## Non-Residential

- Large Existing Facilities
  - > 200 kW
- Small Businesses
  - $\leq 200$  kW
- Schools
- New Construction
  
- Building Operator Training
- Energy Information Services

## Features

- ✓ Prescriptive or custom incentives for installation of high efficiency ...
  - ✓ Lighting
  - ✓ Cooling
  - ✓ Refrigeration
  - ✓ Motors
  
- ✓ Education for facility managers on energy efficient operations
- ✓ Information on hourly usage patterns



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# Program Evaluation Results

- Measurement Evaluation Research (MER) completed for 2005-2007 program results
- Separate reports written for each program and filed with ACC in Sept.
- Both Impact and Process evaluation for each program
- Results used to adjust MW and MWh savings estimates going forward and to update benefit/cost ratios



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# MER Impact Results for 2005-2007 Programs

	<u>GWh Savings</u>		Realization <u>Rate</u>	<u>TRC</u>
	<u>Reported</u>	<u>MER Adj.</u>		
<u>RESIDENTIAL</u>				
Consumer Products:				
Lifetime Savings	1,467	1,123	77%	4.10
New Construction:				
Lifetime Savings	135	155	115%	2.75
HVAC:				
Lifetime Savings	260	100	38%	0.87
<u>NON-RESIDENTIAL</u>				
Solutions for Business:				
Lifetime Savings	1,367	1,304	95%	2.14



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# Key Findings – MER Reports

- Generally positive findings; programs largely achieving reported results; most still cost effective
- Overall portfolio TRC of approx. 2.4
- Some program modifications needed:
  - Residential HVAC program – TRC < 1.0
  - Small Business program – need Direct Install due to low participation
  - Other programs should improve after start-up phase is over and costs come down
- Customers satisfied with program participation; some process improvement needed



# Program Enhancements in 2008

- CFL recycling program kick-off
- Duct test and repair measure added
- Home Performance with Energy Star introduced
- Residential HVAC program revisions
- Planning to file Energy Star Plus program



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# CFL Recycling

- Kicked-off on April 17 with media event
- Over 30 Ace Hardware, True Value Hardware, and Home Depot stores participating
- Partnership with Veolia Recycling Services to recycle 99% of all materials in CFLs, including mercury
- Customer drops burned out CFL in bin at participating store; store sends bulbs to Veolia center in Phoenix for recycling
- Lots of positive press regarding recycling of CFLs
- Over 2,000 CFLs collected to date



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# Duct Test and Repair

- Added measure to HVAC program starting 1/1/08
- On average, 15% of cooling energy is wasted due to duct leakage
- Customer pays BPI certified contractor to do test and perform repairs
- APS rebates 75% of job cost up to \$250 per system
- Savings can be as high as \$200 per year for customers who have repairs done
- Have had over 350 customers participate so far, with positive testimonials of savings and comfort improvements



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# Home Performance with Energy Star

- Introduced October 4 as new program delivery channel in HVAC program
- Customer gets referral from APS for contractor who is qualified to conduct whole house energy audit
- Contractor charges customer for audit and report with recommended energy saving actions
- Customer takes action and saves on energy bill, may take advantage of any APS rebates
- Fewer than 50 customers have participated so far, plan to expand marketing in 2009



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# Residential HVAC Program Revisions

- Changes currently being considered:
  - Combine Quality Install (QI) and AC Equipment rebates to improve cost/benefit ratio for program & reduce free-riders
  - Limit program to APS Qualified Contractors who are trained on Quality Installation
  - Continue to place greater emphasis on Duct Test and Repair (DTR) rebate
  - Re-examine overall incentive structure and put greater emphasis on paying incentives for QI and DTR measures, due to larger savings
  - Include other benefits in results, such as gas savings, societal benefits, A/C tune-up, and remaining equipment life



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# Energy Star Plus

- A second-tier energy efficient new home that produces more energy savings than current Energy Star standard home
- For builders looking to differentiate themselves in difficult sales market
- Can be coupled with renewable technologies (e.g. solar water heating or photovoltaic) to further reduce or replace nearly all current energy use
- Stays ahead of increasing IECC standards



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# The Path to “Zero Energy”

- Terms
  - Near zero energy homes
  - “Net zero” energy homes
  - Zero emission/Carbon neutral homes
  - “Renewable ready”
- Clear hierarchy
  - Energy efficiency first – “get the building right”
  - Add renewables second – hot water and PV
- DOE Building America program and “Builders Challenge” initiative launched Feb 2008



# Path to Zero Energy



Current new home built to 2006 IECC code

ENERGY STAR standard – at least 15% better than current code (2009 IECC standard)

ENERGY STAR PLUS  
Same as DOE Builder's Challenge level

30% represents feasible limit of energy efficiency improvement?

Net Zero Energy Home with renewable energy



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# APS "ENERGY STAR Plus" Potential Program Design

- Based on DOE Builder's Challenge efficiency level –
  - HERS score of 70
  - 30% more efficient than 2006 IECC code
  - Must meet all APS ENERGY STAR requirements (e.g. thermal bypass checklist, etc.)
  - Builders can choose to participate in DOE program or not, but must meet 70 HERS score to get APS incentive
- APS would pay a higher incentive
  - Perhaps \$1000 per home or more
- Program design and incentive levels currently being evaluated for ACC filing



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# Demand Response Program

- Program filed with ACC on November 6; Commission approval required for implementation
- First DR program for APS
- C & I customers only; direct load control
- 100 MW of peak load reduction by 2012; ramp up beginning in 2010
- Callable in summer season; up to 80 hours per year
- Implemented by Alternative Energy Resources (AER -- aka Comverge)
- Cost recovery through DSM Adjuster



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# Summary

- Programs continue to grow
- Enhancements to programs ongoing; new programs subject to approval by ACC
- MER results provide finding of cost effectiveness and recommendations for some changes
- Goal is to give all customers various cost effective energy efficiency options to help manage bills
- Continued program expansion dependent on equitable financial treatment of DSM in rate case



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