Demand-Side Management (DSM) Programs

- Background
- Current Programs
- 2005-2007 Results
- Plans for 2008-2010
What is DSM?

Demand-Side Management

Energy Efficiency (EE)
- Reduce energy usage
  - high efficiency equipment
  - new construction efficiency standards
  - energy use information

Load Shifting
- Shift energy usage to off-peak times
  - time of use rates

Demand Response (DR)
- Reduce peak demand
  - direct load control
  - critical peak pricing
  - standby generation
  - thermal storage
Why Do Energy Efficiency?

Delivered Cost of New Resources
Lifetime Levelized w/ 2007 In Service Date

- Energy Efficiency
- Geothermal
- Wind
- Solar Thermal
- Nuclear
- Coal
- CC
- IGCC

Costs: $10 - $50 / LT MWh
History of DSM Spending at APS
Current DSM Portfolio Milestones

- April – Settlement Agreement → $48 million spending 2005-2007 ($16M/yr.)
- July – filed 10 programs for approval by ACC
- August – first program approved by ACC → Res. Consumer Products

- February – interim approval by ACC of all 6 Non-Residential programs
- April – approval by ACC of all 3 remaining Residential programs

- March – filed for final approval of Non-Residential programs
- June – ACC approved DSM Performance Incentive
- August – ACC approved addition of $3.5 million to annual portfolio budget
Criteria for EE Programs

Program development guided by stakeholders in DSM Collaborative Group

- Something for everybody
  - Residential / Non-Residential
  - Desert area / High country
  - All size customers
- Cost effective
  - Total Resource Cost (TRC) test > 1.0
- Easy to participate in
  - Pay up to 50% of incremental cost in incentives
- Efficiently administered
  - Program administration costs < 10% of total program costs
Current EE Programs

Residential
- Consumer Products
  - CFLs
- Existing Home HVAC
  - Rebates (SEER)
  - Quality install
  - Duct test & repair
- New Construction
  - Energy Star
- Low Income
  - Bill assistance
  - Weatherization

Features
- 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
Current EE Programs

Non-Residential
- Large Existing Facilities
  - > 200 kW
- Small Businesses
  - <= 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
# Current DSM Portfolio Results*

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<tr>
<th>Year</th>
<th>ANNUAL</th>
<th>CUMULATIVE</th>
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<td>2,356,000 MWh</td>
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* Subject to final MER verification  
** Includes Performance Incentive
Current DSM Portfolio

Summary of Results*
2005-2007

- $33.2M total spending (0.6% of revenue in ‘07)
- 3,276 Lifetime GWh energy reduction
  - Approx. cost of $11/LT MWh
- Over $250M savings on customer bills during lifetime of measures installed
- 64 MW peak demand reduction
- $84M of Net Benefits
- 1.5M tons of GHG emission reductions

* Subject to final MER verification
Current EE Program Achievements

Awards / Recognition:

- **Consumer Products Program (CFLs)**
  - 2007 EPA/DOE Energy Star Partner of the Year Award
  - 2007 ACEEE Exemplary Program Award

- **Energy Star Homes Program (New Construction)**
  - 2008 EPA/DOE Energy Star Partner of the Year Award
  - 2008 EPA Leadership in Housing Award

- **Solutions for Business Program**
  - Acknowledged by AESP for quick startup and significant impacts

- **Overall Program Portfolio**
  - Recognized by local media and national trade publications for contributions to Sustainability
Current DSM Portfolio
Reporting of Results

- Semi-annual reports
  - March 1 and September 1

- Measurement, Evaluation, Research (MER)
  - Preliminary results under review
  - Will be incorporated into Sept. 1 reporting

- 2008-2010 Program Budget
  - Filed Dec. 28, 2007 for ACC approval
Future EE Plans  
2008 - 2010

- **Spending:**
  - $76M over 3-yr. period
    - $19.5M/yr. commitment X 3 yrs. $60M
    - Est. make-up of ’05–’07 shortfall $16M
    - Total 3-yr. spending $76M

- **Expected Savings:**
  - 657,000 MWh cumulative annual savings
  - 6,814,000 MWh lifetime savings

- **Flexibility in program management**
Current Questions ??

- How much Energy Efficiency savings can APS achieve?
- What impact does increased Energy Efficiency have on APS earnings?
  - Cost recovery
  - Lost sales
  - Earnings on investment / performance incentive
Future Market Potential for Energy Efficiency

- Depends on ...
  - Baseline level of energy usage
  - Incremental cost of efficiency and % paid by utility
  - Customer willingness to take action
  - New technologies

- Savings potential can be achieved by ...
  - Utility incentive programs
  - Higher building efficiency codes
  - Higher appliance efficiency standards
Summary

- Current programs very successful in short time and continue gaining momentum
- Potential for more MWh savings from Energy Efficiency exists
- Amount of future savings depends on continued cost effectiveness to APS and impact on APS’ earnings
- Energy Efficiency plays a key role in future resource planning