

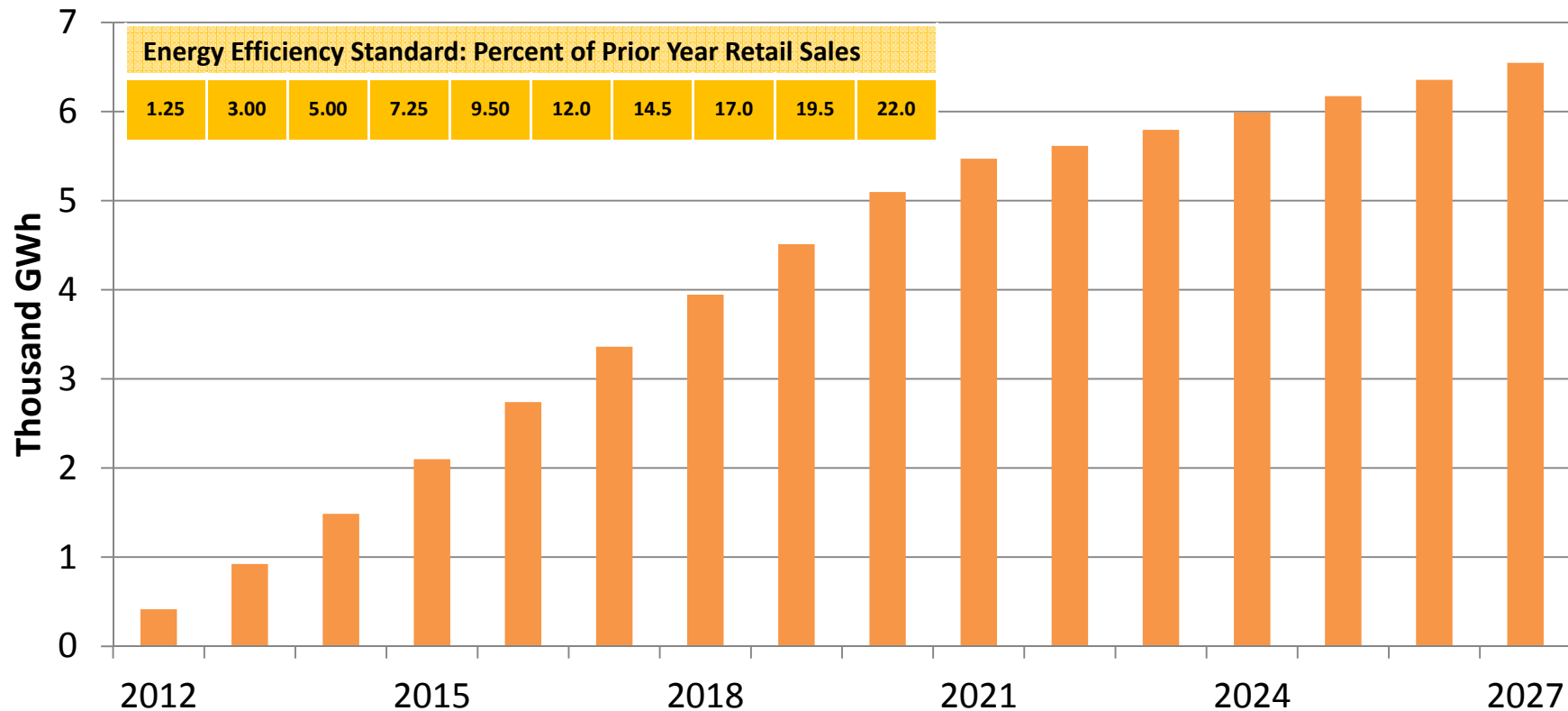
Energy Efficiency & Resource Planning

Jeff Schlegel & Ellen Zuckerman
Southwest Energy Efficiency Project
August 22, 2012



APS Energy Savings Over the Next 15 Years

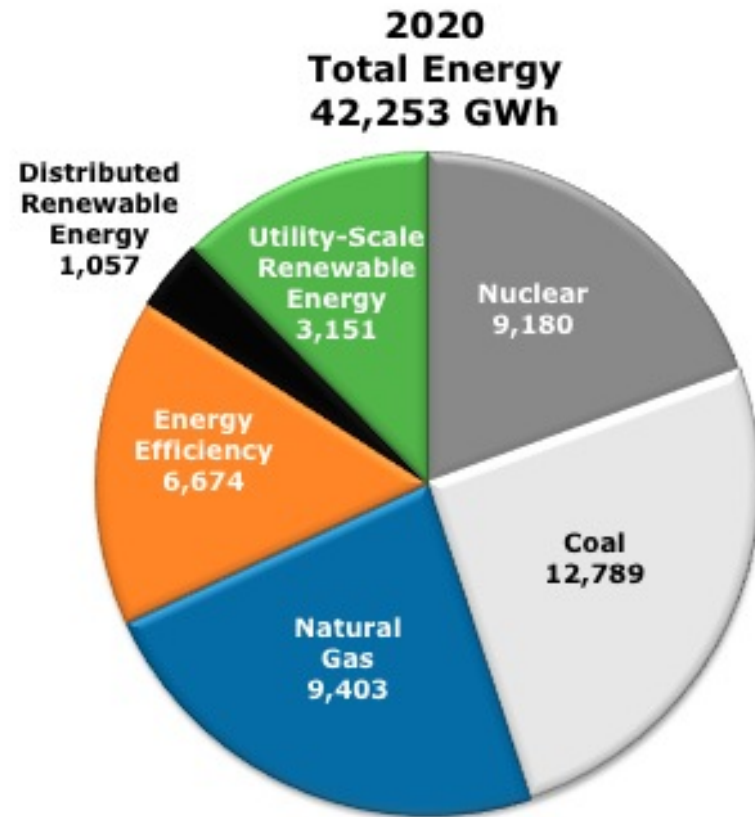
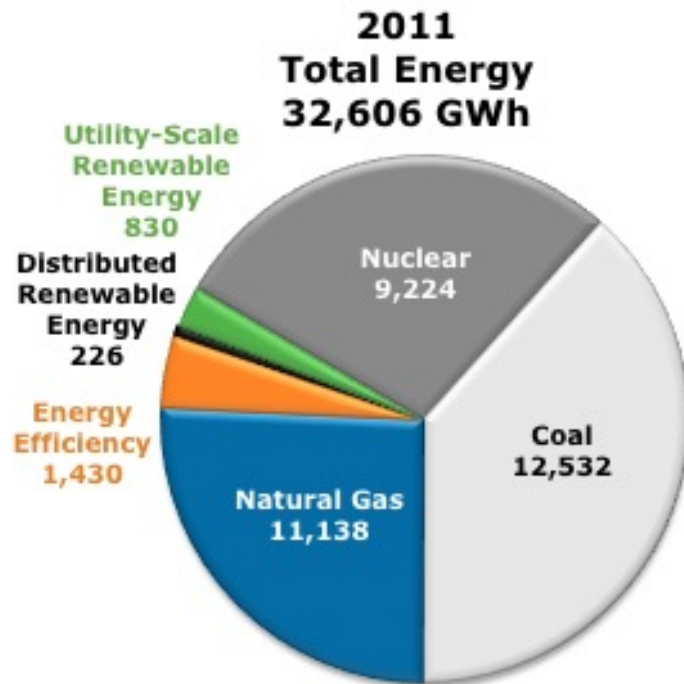
New APS Energy Efficiency Contributions, 2012-2027*



* New EE above does not include 1094.384 GWh from 2005 to 2010 programs

The Effect of Higher EE Savings Due to the Energy Efficiency Standard

Energy efficiency is the fastest growing resource at APS, reaching 16% of total resources and 19% of retail sales by 2020

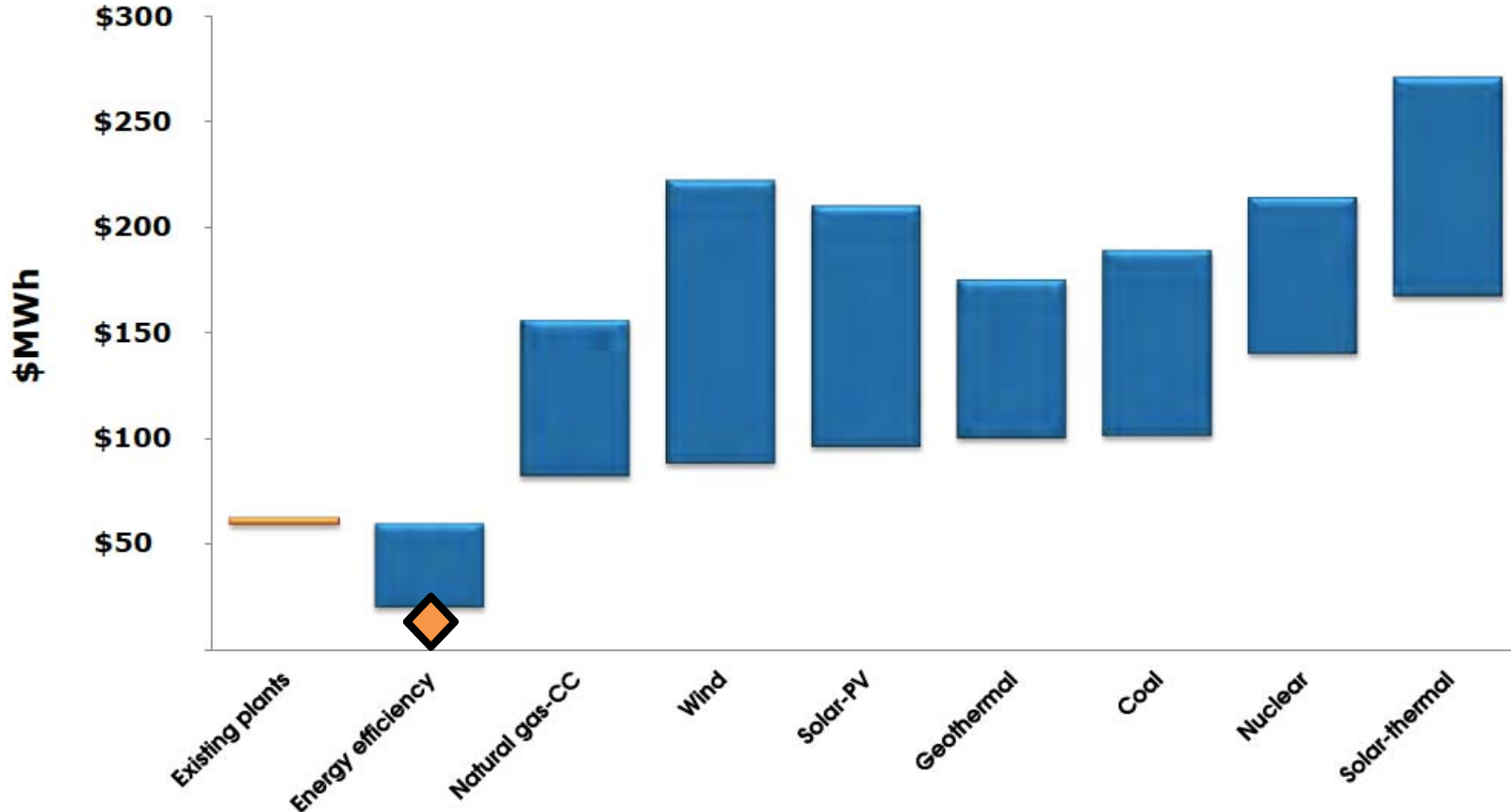


Customer energy growth of ~9,650 GWh *without EE impacts*, nearly 30% above current levels

Energy Efficiency: The Most Cost-Effective Energy Resource

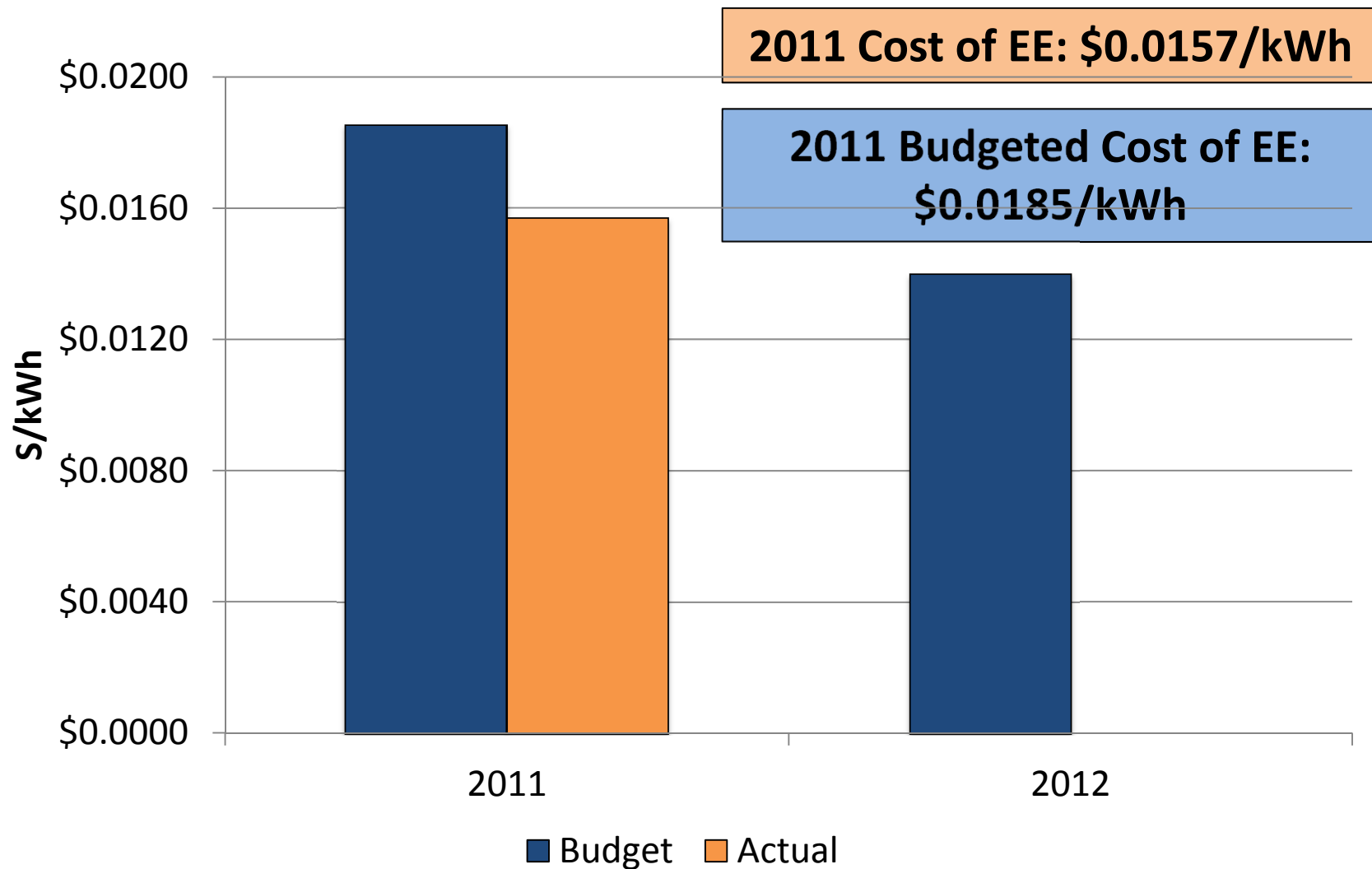
New Resource Costs

◆ ACTUAL 2011 COST OF EE



Source: Arizona Public Service Company, 2011.

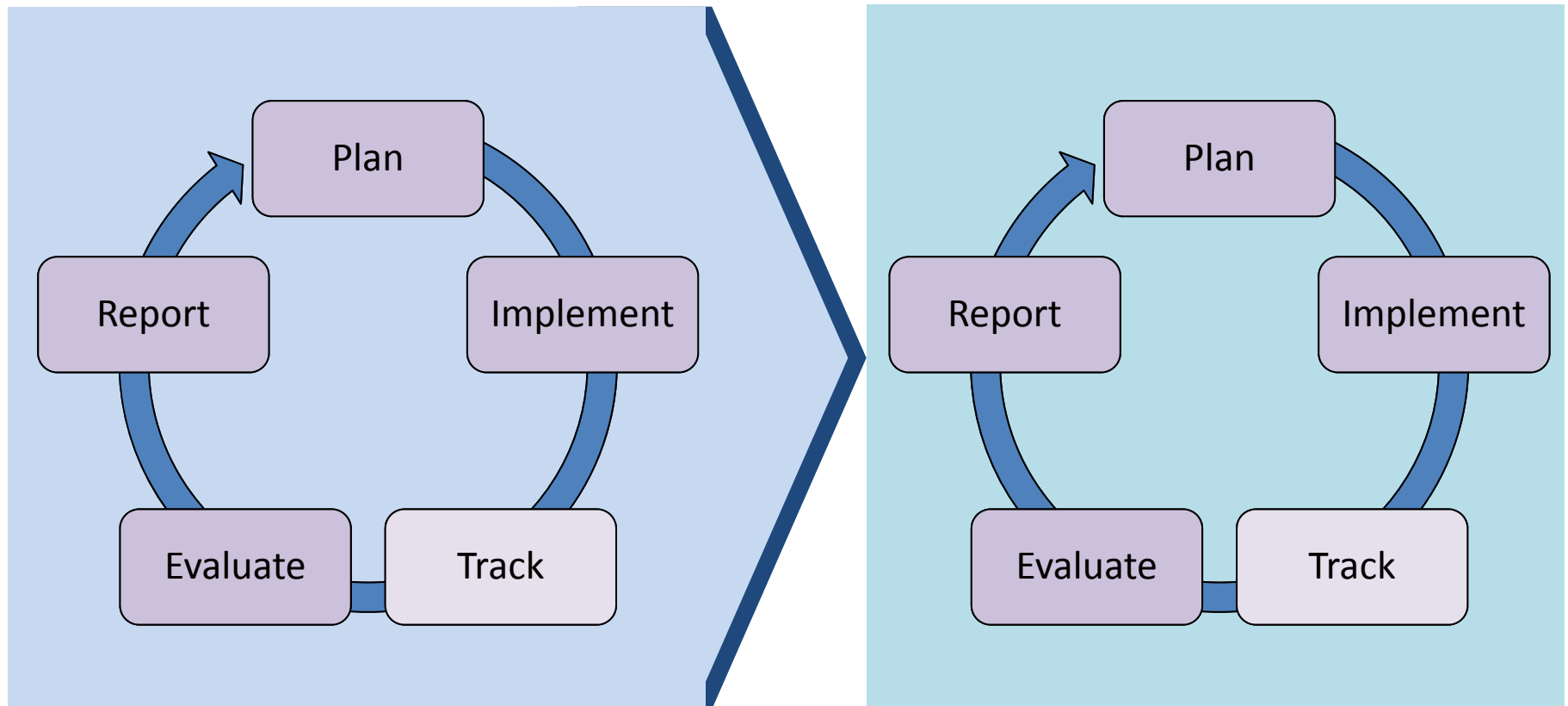
APS Energy Efficiency Portfolio: Less Expensive than Budgeted



Energy Efficiency Portfolios: Screened to Ensure Cost-Effective Programs are Implemented

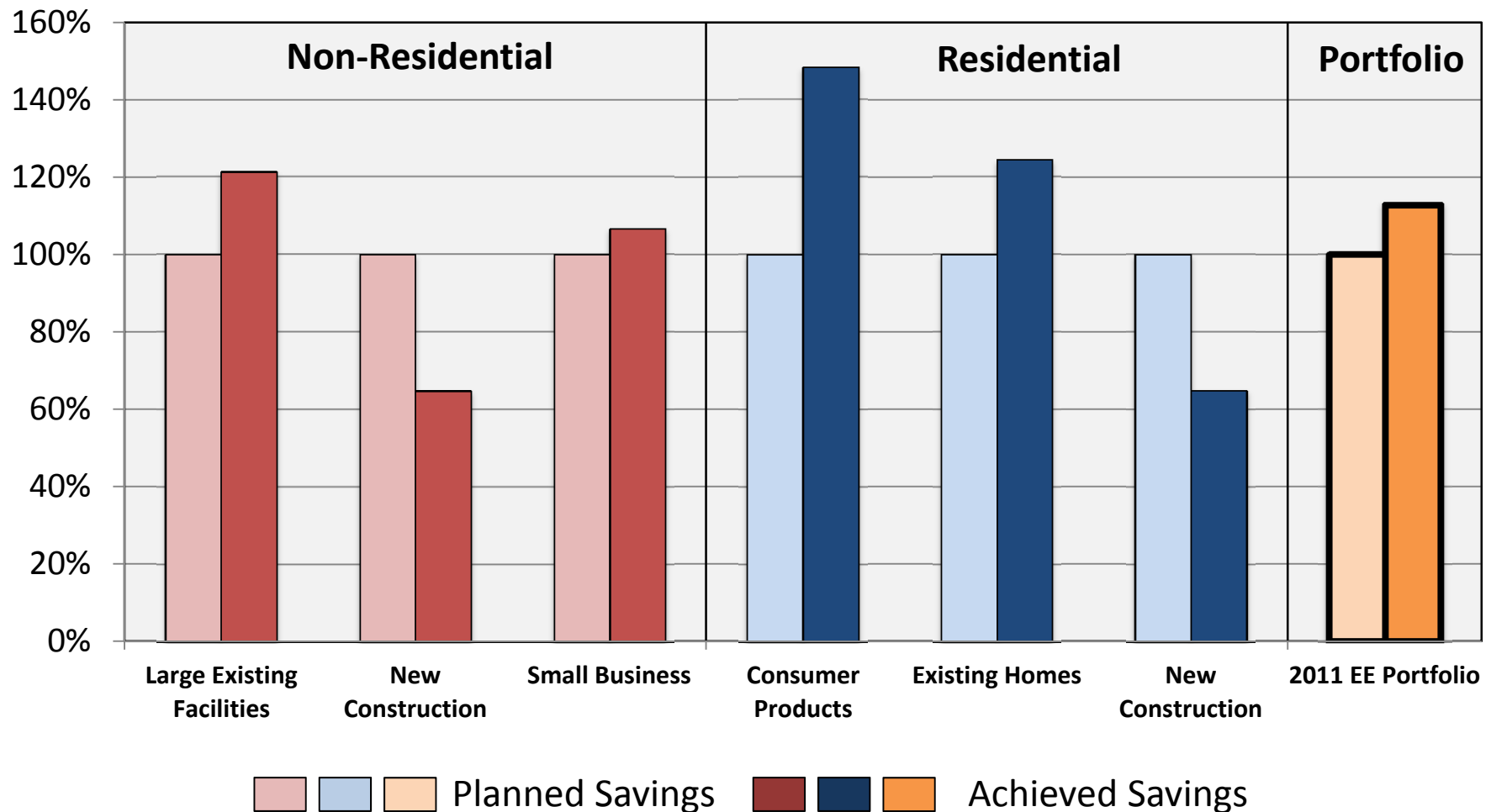
- All programs must be cost-effective (benefits must exceed the costs)
- Cost effectiveness assessment compares the benefits (avoided costs of energy and capacity) to the costs of the program (sum of program costs and customer costs)
- Independent review and analysis of cost-effectiveness by Commission Staff
- Commission review and approval

Energy Efficiency Portfolios: Continuous Review and Improvement to Maximize Performance



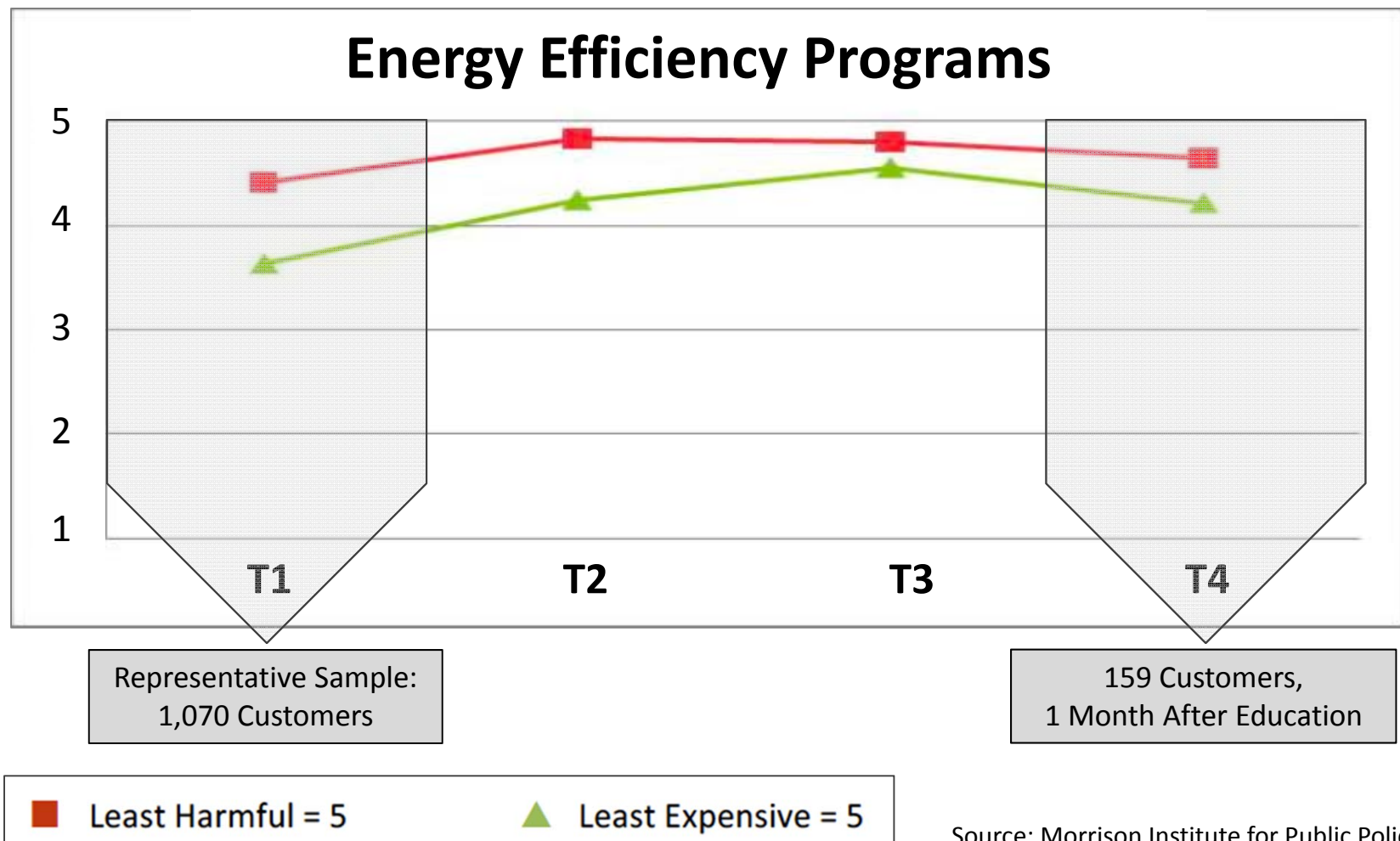
The Portfolio of Programs Exceeds the Goals Even Though Individual Program Performance May Vary

APS: 2011 Planned & Achieved Savings for Portfolio & Select Programs



Customers' Views on Energy Efficiency: Least Expensive, Least Harmful Resource

Results from the APS Informed Perception Project



Source: Morrison Institute for Public Policy, 2011.

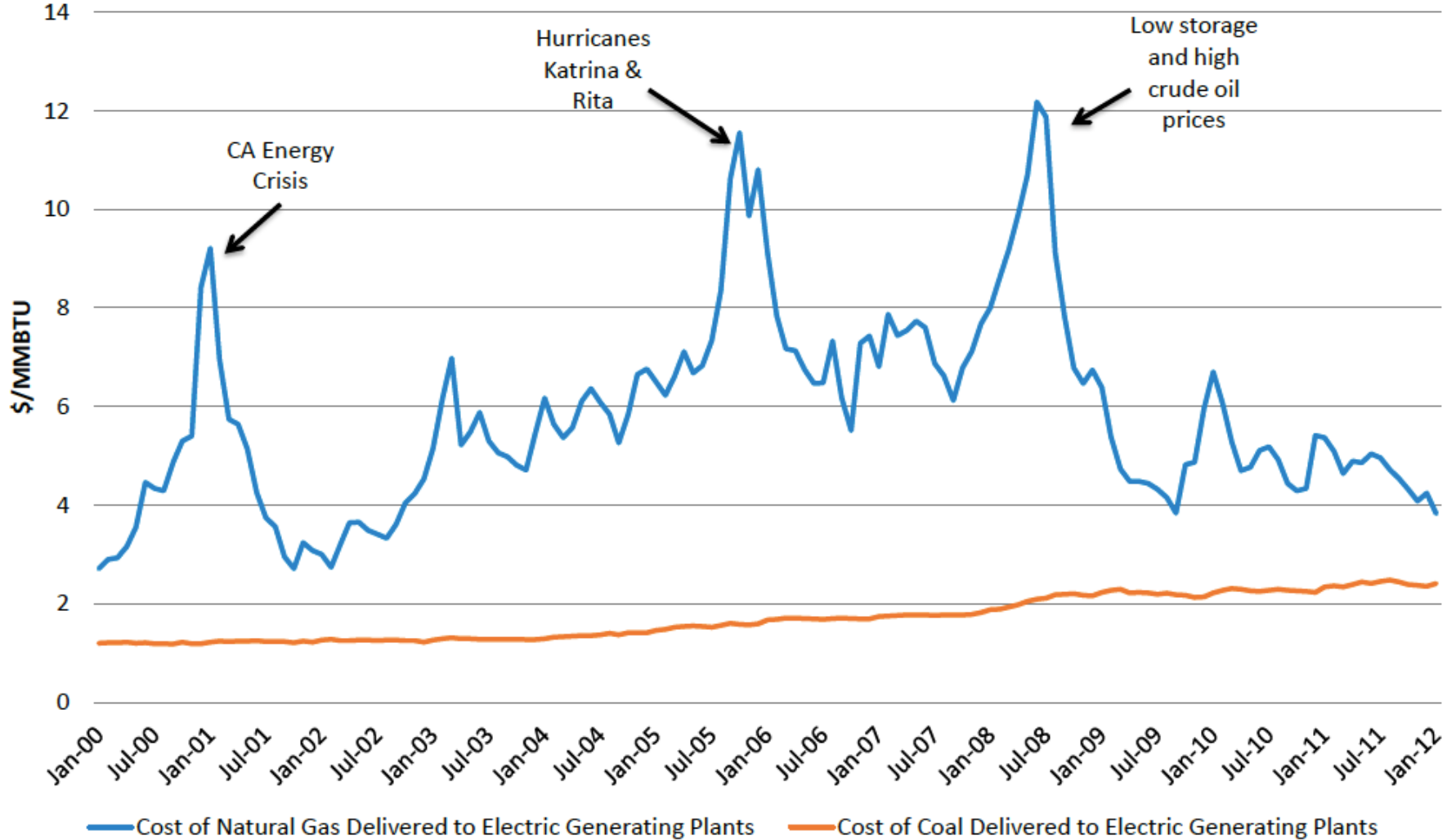
Other Benefits of Energy Efficiency

- Reliability Through Diversity (many small resources instead of all the eggs in one basket)
- Less Water Usage
- Less Air Pollution
- Local Job Creation

EE Uncertainties for Resource Planning and How the Uncertainties are Addressed

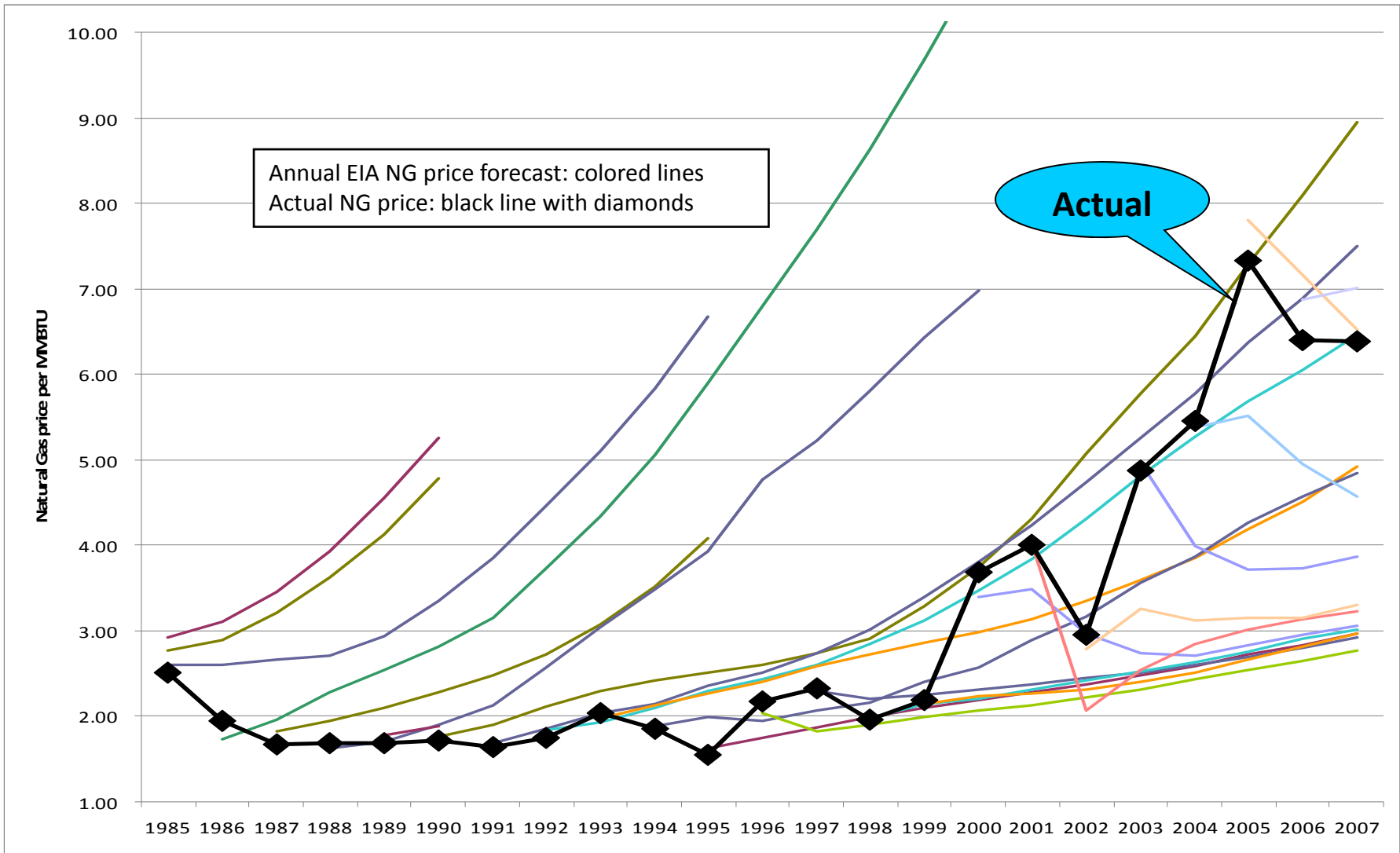
- Some uncertainty about what actions customers will take and when (and this can be influenced by programs and offerings)
- But once EE measures are installed:
 - Virtually no cost uncertainty (you know what it cost)
 - Very small uncertainty about performance (the actual energy savings are achieved or exceeded in most years, at portfolio level, documented in many studies)
- Flexible and responsive resource; under-performance in any one year can be addressed in the next year or future years

Historical Fossil Fuel Prices 2000-2012



Source: Arizona Public Service Company, 2012; Data from: EIA Monthly Energy Review.

Unknowable Future Natural Gas Prices



Source: Massachusetts Office of Energy and Environmental Affairs