
Strategies for Clean Energy – Clean Air:

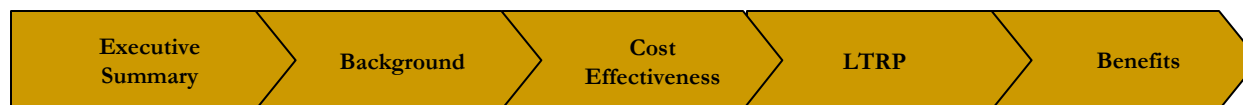
Energy Efficiency as a Clean Resource Option: A Utility Perspective

2006 Air Innovations Conference

September 6, 2006

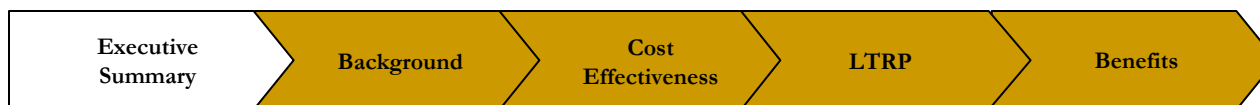
Presentation Overview

- Executive Summary
- Background
 - What is Demand-Side Management (DSM)?
 - DSM in California
 - DSM at SCE
- DSM Resource Cost Effectiveness
- DSM in SCE's Long-Term Resource Plan
- Benefits Of DSM In Resource Planning



Executive Summary

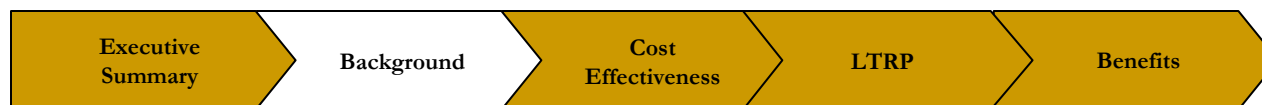
- There are sound business reasons for a utility to use DSM as part of a portfolio of reliable resource options
 - ❑ Is used when the cost is less than the avoided cost of generation
 - ❑ Hedges against price risk of market generation resources
 - ❑ Diversifies fuel mix of utility resources
 - ❑ Can be implemented in shorter timeframes than constructing new generation
 - ❑ Helps mitigate climate change impacts
 - ❑ Generates positive economic benefits for our customers
- SCE's use of DSM is part of its overall resource planning process and environmental strategy
 - ❑ Cost-effective results
 - ❑ Greenhouse Gas Reductions



What is Demand-Side Management (DSM)?*

- Demand-Side Management (DSM) encompasses several energy and demand-reducing activities: energy efficiency, conservation, and demand responsive actions such as load management or load shifting.
 - DSM programs are designed to achieve two basic objectives
 - Reduce overall energy consumption without a reduction in customer comfort or value by promoting high-efficiency equipment and building design, and
 - Achieve load reductions by changing the patterns of energy use, primarily at times of peak demand.
- Both energy efficiency and conservation programs can achieve energy savings, but in different ways.
 - Energy efficiency typically refers to the permanent installation of energy efficient technologies or the elimination of energy losses in existing systems. The aim of energy efficiency is to maintain a comparable level of service, but reduce energy usage.
 - Energy conservation typically involves using less of a resource, usually by making a behavioral choice or change. The change may last for a short duration or may be incorporated into a habit or lifestyle.

*These explanations draw heavily from “Energy Efficiency and Conservation: Trends and Policy Issues,” California Energy Commission Staff Workshop Paper, May 2003.

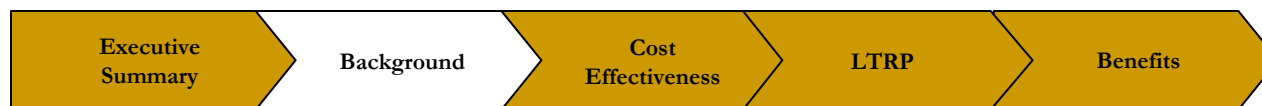


What is Demand-Side Management (DSM)?*

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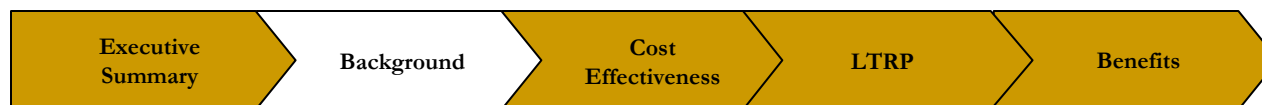
- DSM also can take the form of load management and demand response, in which a customer reduces or curtails load just during certain time periods or events.
- Load management or load shifting seeks to consistently reduce on peak demand or shift demand from peak periods to off-peak periods.
- Demand response programs seek to reduce demand specifically just on critical peak days or during system emergencies.
- Most current demand response programs in California fall into two categories
 - Reliability programs: customers agree to reduce load when triggered the day of a system emergency to contractually determined levels in exchange for an incentive, usually a bill discount
 - Price response programs: customers choose how much load reduction they can provide when triggered the day-ahead of a critical peak day based on the price of electricity or load reduction incentive (“pay-for-performance”)

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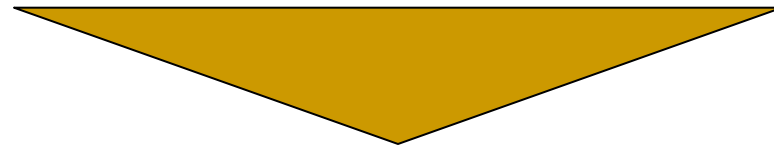
California Policy Supports DSM

- The California Energy Action Plan, first adopted in 2003, specifies California's energy policies; energy efficiency and demand response are first in the resource loading order
 - The critical role of DSM in maintaining system integrity was demonstrated during California's 2001 energy crisis
- DSM supports the diversification of California's resource mix, reducing exposure to any single resource type, such as natural gas
- Investor-owned utilities (IOUs) have energy efficiency and demand response goals ordered by the California Public Utilities Commission (CPUC)
 - DSM goals are based on CPUC analysis of DSM potential and estimated program ramp-up rates
 - The CPUC has approved major increases in funding to achieve these DSM goals
- The CPUC has approved \$2 billion in IOU EE funding for 2006 to 2008 - - expected to result in 7 billion kWh per year in savings
- DSM has enabled California to slow the growth of energy consumption per capita
 - In 2001 California had the lowest per capita electricity consumption of the 50 states at 53% of the national average
 - An April 2004 study by the American Council for an Energy-Efficient Economy (ACEEE), determined that California has the highest annual EE program funding and resulting energy savings of any state (\$240 million and 933 million kWh in 2003)

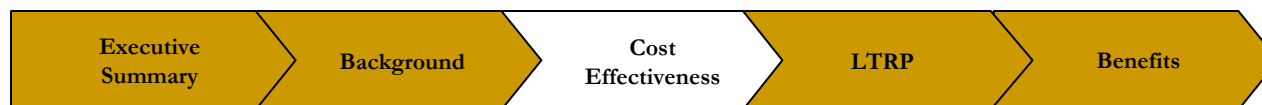


DSM Cost Effectiveness in SCE Long-Term Resource Planning

- **Cost Effectiveness:** analysis which determines whether the benefits (avoided costs) of a project outweigh the actual costs of that project
 - California regulations requires that SCE's EE portfolio is cost effective, i.e., that the benefits derived from the programs outweigh the costs
 - California's Energy Action Plan requires that utilities implement all cost effective energy efficiency
- **Avoided costs:** the incremental savings associated with *not* having to produce or purchase additional energy and/or capacity while meeting demand requirements
 - Avoided costs are *real* costs and represent the cost of supply-side alternatives avoided through the use of DSM



- The cost of SCE's DSM Portfolio is less than the avoided cost of generation



Public Policy Perspective: Emerging Environmental Policies

- ❑ **California Public Utilities Commission
Opens Rulemaking Proceeding into
Regulatory Approaches for Addressing
Global Warming**
 - Scope of OIR being discussed
 - ✓ Procurement incentive framework, including cap-and-trade mechanisms
 - ✓ Performance standards for generation resources
 - Foundational issues being identified
 - ✓ Compatibility with national policy
 - ✓ Timing of policy determinations
 - ✓ Reach of regulation into geographic and market sectors



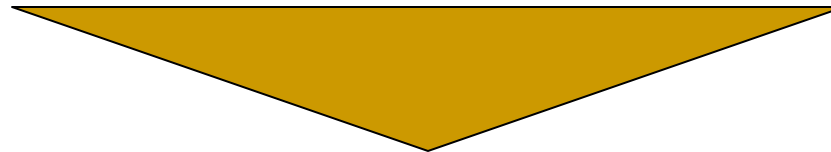
Public Policy Perspective: Environmental Plan

- **Environmental Benefits of California Investor-Owner Utilities' 2006-08 EE Programs**
 - “[T]he lifetime electricity savings that result from measures installed during that period will reduce global warming pollution by an estimated 3.4 million tons of carbon dioxide in 2008, equivalent to taking about 650,000 cars off the road.”



DSM Investments are Expected to Reduce the Need for New Supply Side Resources

- The EE and DR programs that SCE has proposed for 2006 to 2008 will have net annual impacts over 2,200 MW of demand reduction and nearly 3,500 GWh of energy savings
 - These savings are roughly equivalent to 4 mid-size power plants, with the capacity to provide power to over 1.8 million households.
- The energy efficiency levels included in SCE's 2004 long-term procurement plan will satisfy approximately 10 percent of SCE's future energy needs in 2014
- DSM will meet SCE's energy needs at a cost lower than generation resources
 - Customers benefit through lower bills and ultimately through lower rates



DSM produces a “winning” situation for our customers

