



Load Management Standards OII/OIR Policy Overview for **Enabling Technologies**

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Load Management Standards

- Order Instituting Investigation/Order Instituting Rulemaking approved 1/2/08
- Docket number 08-DR-01
- Purposes:
 - (1) assess which rates, tariffs, equipment, software, protocols, and other measures would be most effective in achieving demand response, and
 - (2) adopt regulations and take other appropriate actions to achieve a responsive electricity market.



Purpose of the Load Management Standards Proceeding

- Obtain public input on the possible formation of new load management standards.
- Explore the potential of peak load reduction and load shifting strategies.
- Explore the coordination of regulatory authority of demand response efforts across investor owned and publicly owned utilities in the state.



Workshop Schedule

April 29, 2008	Workshop on the Smart Grid Activities and Technology
May 6, 2008	Comments due from public on April 29, 2008 Workshop
May 27, 2008	Workshop on Advanced Meter Infrastructure (AMI)
June 3, 2008	Comments due from public on May 27, 2008 Workshop
June 10, 2008	Workshop on Rate Design, Incentives and Market Integration
June 17, 08	Comments due from public on June 10, 2008 Workshop
June 19, 2008	Workshop on Enabling Technologies and Communications
June 26, 2008	Comments due from public on June 19, 2008 Workshop
July 10, 2008	Workshop on Customer Education and Needs
July 17, 2008	Comments due from public on July 10, 2008 Workshop
Early August	Staff Report and Recommendations for Load Management Standards
Late August	Committee Hearing on Staff Report and Standards Recommendations



Objectives of today's Enabling Technologies Workshop

- Understand the policy implications of different types of communications systems and enabling technologies.
- Discuss the capabilities of currently-available and near-term enabling technologies and communications platforms.
- Obtain public input on the potential use of the Energy Commission's load management authority to further adoption of enabling technologies.



State Policy Context for Demand Response and Enabling Technologies

- The Energy Action Plan identifies several key Demand Response action items:
 - Adopt Load Management Standards to establish a demand-response infrastructure
 - Obtain legislative authorization for time-varying pricing for residential customers
 - Progress on dynamic pricing rate design reform for all customers
 - Approve programs that utilize advanced metering, tariff, and other automated demand response infrastructure
 - Modify retail programs so that they can more fully participate in the CAISO's new wholesale market structure
 - Develop a load impact and cost-effectiveness protocol for demand response programs



Three Necessary Components for Demand Response

- **Advanced Metering Infrastructure**
 - Digital meters
 - Communications
- **Dynamic Tariffs**
 - Creates incentive to respond and—if properly designed—more equitable pricing by reducing costs to customers with lower-than-average peak usage
 - Communicates actual system costs more clearly
- **Price and Event Communication**
 - Information makes action possible and provides motivation to respond
 - **Enabling technology** allows residential and small commercial/industrial customers to respond to price easily
 - Larger customers with energy management systems linked to pricing signals over the internet or through other communication channels



Underlying Logic of Demand Response Policy 1

– Reliability

- Voluntary price response reduces probability of emergency events
- DR Products in ISO markets
- Emergency Response

– Efficiency

- Improve system load factor over the long term
- TOU and dynamic prices improve customer awareness
- Attention to shed strategies reveals potential for efficiency improvements

– Cost Reduction and Bill Control

- Including demand-side options creates downward pressure on supply prices
- Reduction in peak load growth rate delays or eliminates need for generation and transmission investments *solely to meet peak load growth*



Underlying Logic of Demand Response Policy 2

– Energy Conservation

- Price differentials drive changes in consumption behavior and customer expectations
- Experience of peak reduction leads to “spillover” conservation

– Greenhouse Gas Benefits

- Peak kWh reduction
- Reduced demand for energy from the dirtiest peakers
- Secondary impact from increased efficiency and conservation
- Potential for using dispatchable DR to help balance renewable generation



Underlying Principles for the future of Demand Response

- **Customer Choice**
 - Dynamic rates—accompanied by adequate education—give individual customers the opportunity to choose which end uses to shift or avoid, implicitly expressing the value they place on those specific end uses
- **Economic efficiency**
 - Curtail the lowest value loads *first*
 - Initially, the “lowest value load” may well be waste
- **Small amounts of response from large numbers of customers**
 - may well be the best way to achieve economic efficiency, cost reductions and customer choice
- **Automation makes response easier**
 - The cost of “paying attention”
 - The cost of taking the action