

California Public Utilities Commission

D.03-06-032, Appendix A

California Demand Response: A Vision for the Future

Joint Statement by the California Energy Commission, Public  
Utilities Commission and Consumer Power and Conservation  
Financing Authority

Adopted June 5, 2003

## **California Demand Response: A Vision for the Future (2002-2007)**

Joint statement for consideration by the California Energy Commission, Public Utilities Commission, and Consumer Power and Conservation Financing Authority

*This vision is intended as a broad statement for encouraging demand responsiveness in California. It should be read in the context of maximizing the efficient use of resources, while maintaining the economic vitality of businesses in the state, as well as the health, welfare, and comfort of residential electricity users.*

*We acknowledge that demand response is one resource among many that may be procured by utilities on behalf of their electricity customers. We also seek to make the most cost-effective investments in demand response from an overall societal perspective.*

Finally, this vision is intended as a starting point, and should not be interpreted as prejudging the outcome of analysis and recommendations delivered by the working groups to the policymakers in this proceeding.<sup>1</sup> Further, we intend to use this vision as a guide to our efforts, will continue to reevaluate its validity and assumptions as we progress, and will make any modifications, as necessary and appropriate, when new information becomes available.

### **Definition**

DEMAND RESPONSE gives an individual electric customer the ability to reduce or adjust their electricity usage in a given time period, or shift that usage to another time period, in response to a price signal, a financial incentive, or an emergency signal.

### **Vision**

All California electric consumers should have the ability to increase the value derived from their electricity expenditures by choosing to adjust usage in response to price signals, by no later than 2007.

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<sup>1</sup> CPUC rulemaking R.02-06-001 on policies and practices for advanced metering, demand response, and dynamic pricing.

## **Objectives**

### ***Reliability***

- Timely demand response (within minutes or hours) from customers can offset the need for investment in generation, transmission, and/or distribution
- Demand response activities should be designed to achieve a target of 5% reduction in peak demand by 2007
- Cost-effective demand response should be used to meet a portion of reserve requirements
- Numerous and diverse customers voluntarily reducing or shifting their demand in response to economic signals is preferable to controlled outages during power system emergency situations

### ***Lower power costs***

- During high-cost periods, demand response can assist in bringing supply and demand into balance by signaling to the consumer the actual costs of buying power at the margin and/or investing in new power resources, thereby lowering overall wholesale electricity costs for all customers
- Timely demand response can, along with other wholesale market measures, help mitigate wholesale market power and ensure reasonable prices
- To encourage demand response, a long-term objective is designing retail rates that dynamically incorporate the marginal cost of providing electricity service
- Demand response activities and infrastructure should be designed to be cost-effective from a societal perspective

### ***Environmental protection***

- Reducing consumer electricity usage during peak periods can help reduce fuel use and therefore overall air emissions by reducing output from marginal generation units
- The agencies' definition of demand response does not include or encourage switching to use of fossil-fueled emergency backup generation, but high-efficiency, clean distributed generation may be used to supply on-site loads

## Goals and Principles

### *Customer Service*

- Electric consumers in California should be made aware of the time-variable nature of electricity costs and of general steps they can take to help lower those costs
- All customers that desire it should have greater access to information about their own electricity use, at least weekly or daily, with the option for hourly or more frequent data
- Technologies to enable demand response may also provide other customer service benefits including outage detection and management, power quality management, and other information capabilities
- Demand response programs and tariffs should be designed to be customer-friendly, simple, and easy to understand, as well as to minimize customer confusion and allow for continuity among options

### *Optionality*

- Customers should have the ability to choose voluntarily among various tariff options, including:
  - Very large customers (over 1 MW): Hourly real-time pricing (RTP), critical peak pricing (CPP), or Time-of-Use (TOU) Pricing
  - Large customers (200 kW to 1 MW): CPP, TOU or RTP
  - Residential and small commercial customers (under 200 kW): CPP, TOU or flat rate (the latter with an appropriate hedge for risk protection)
- Customers should also have the option to participate voluntarily in programs where they are paid to provide demand reduction as a dispatchable resource, including:
  - In ISO markets: real-time, hour ahead, day ahead, ancillary services, planning reserves
  - In retail markets: such programs as direct load control, including air-conditioner or water pump cycling, and controllable thermostats

### *Technologies*

- All customers should be provided an advanced metering system capable of supporting a TOU tariff or better, if cost-effective, and with minimal hardware upgrades necessary to choose among various dynamic tariffs

- All customers who choose to should be able to conveniently access their usage information using communications media (e.g., over the internet, via on-site devices, or other means chosen by the customer and respectful of potential privacy concerns)
- The broadest possible range of metering and communications technologies that can enable demand response should be encouraged (i.e., optionality), but all technologies should be compatible with utility billing and other back-office systems
- State building code (Title 24) updates provide a cost-effective opportunity to introduce demand response technologies during the construction of new buildings or renovation of existing buildings

#### *Investor-Owned Utility (IOU) Issues*

- IOUs should be reimbursed for all reasonable expenditures on infrastructure and administration to enable demand response
- IOUs should be required to procure demand response resources as a portion of their overall procurement portfolio (target of 5% of peak demand by 2007) and as a portion of their reserve requirements beginning in 2004
- IOUs should also be provided an incentive mechanism to encourage the best choices for ratepayers
- Operation of an IOU's overall demand response portfolio should be designed to collect the approved revenue requirement and be revenue neutral to the IOU (e.g., revenues stay consistent with costs), with periodic true-ups as necessary
- All IOU demand response efforts should be periodically evaluated to determine past performance and improve future effectiveness

#### *Coordination Issues*

- Effective demand response efforts will require coordination among the agencies promulgating this vision statement, as well as the California Independent System Operator (ISO) and the California Legislature
- Coordination will also be necessary related to:
  - IOU procurement planning
  - IOU rate design modifications, either in general rate cases, or separate venues
  - Energy efficiency (and other public purpose) programs
  - Other peak demand reduction programs
  - ISO efforts to develop transparent wholesale market pricing mechanisms

- Legislative reports such as required by SB1976 and Public Utilities Code Section 393
- Necessary legislative change to rationalize rate design structures

## **Timeframe**

### ***2003: Proof-of-concept phase***

- Policy decision including vision and implementation plan
- Dynamic pricing as a full program option to customers with advanced meters in place (>200 kW)
- Pilot programs implemented to gather further information on smaller customer demand response and tariff or program preferences
- Business cases for phased implementation of universal demand response capability (potentially with automated meter reading technology) developed and evaluated, including cost-effectiveness analysis

### ***2004: Phased implementation begins***

- Full menu of demand response programs and dynamic pricing tariffs implemented for large and very large customers
- Small commercial and residential pilot program information evaluated
- Vision and timeframe reevaluated
- Technological options reevaluated, based on pilot program results
- Small and medium commercial customer infrastructure deployment phase begins

### ***2005 and 2006: Residential implementation***

- Major mass-market education effort initiated
- Full menu of tariff and program options rolled out to residential customers by the end of 2006

**(End of ATTACHMENT A)**