

## CASE STUDY



# Community Medical Centers Demand Response (DR)



“The Demand Bidding program experience got us thinking. After seeing our success this summer, we’re sure there is much more we can do. We’re looking forward to even more savings next year.

And while we can now roll out significant Demand Response, we are also reducing energy use every day as a result of the Demand Response planning process.”

**Stan Zulewski,**  
Director of Facilities Management



## COMMUNITY MEDICAL CENTERS TEAMWORK MAKES DEMAND RESPONSE A SUCCESS

When Stan Zulewski, Director of Facilities Management at Community Medical Centers, recommended participating in a Pacific Gas and Electric Company (PG&E) Demand Response (DR) program, the assembled facility managers were skeptical. The consensus was “We’ve already done everything.” The hospitals, located in California’s Central Valley, were honored in 2005 by the state’s Flex Your Power program for substantial kWh savings resulting from energy efficiency measures.

“Nevertheless,” says Stan, “we’re a community health organization, and using less energy at critical times seemed like a good thing to do from a community perspective.” A group was formed and began to identify measures that would reduce demand without having any impact on patient health, comfort, or care.

## PLANNING

### Planning Sets Expectations and Builds Trust

The planning process brought together facility managers of the five largest Community Medical Centers facilities and corporate level representatives of marketing, security, food service, housekeeping, administration, and information systems.

A PG&E representative helped participants identify measures that would reduce demand and showed them how PG&E’s online monitoring and usage analysis service (Interact II) measures usage patterns. Participants then became familiar with the interval meters already installed at their sites.

By the summer of 2006, they were ready for their first experiment with DR. Three of the centers agreed to participate in Demand Bidding, a PG&E program that allows customers to trade kilowatts for dollars during DR events. When event alerts were received, each facility determined independently whether and how many kilowatts (kW) to bid.

## COMMUNICATION

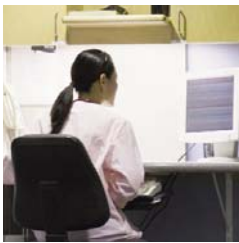
### Ongoing Communication Helps Participants Feel Successful

The company shared information about DR with employees, and even visitors, in a variety of ways:

- A kickoff lunch meeting for all non-medical departments to explain the DR program goals and solicit suggestions
- An Intranet story about PG&E’s Energy Orb (a device that, on receiving a wireless signal, changes color to indicate a DR event), which proved to be an internal awareness builder
- Energy Alerts on each center’s Intranet, e-mail messages, signs in building lobbies, and overhead announcements during DR events asking employees to turn off non-essential equipment
- Feedback on accomplishments was solicited and distributed

This inclusive planning and communication approach resulted in enthusiastic buy-in at all levels throughout the hospitals.

# Community Medical Centers Demand Response (DR)



Energy Efficiency (EE) measures are permanent and reduce the facility's annual energy consumption (kWh) and/or electrical demand. Demand Response measures are temporary and reduce a customer's demand (kW) during brief, infrequent periods.

## ACTION AND RESULTS

The centers identified these measures for the summer's first DR event:

- Raise chiller temperature 5° F
- Shut down the redundant chiller water loop
- Shut off redundant water pumps
- Shut down some visitor elevators
- Use EMS systems to turn off 50% of non-essential lights
- Shut off booster pumps for outdoor watering
- Shut off one boiler in order to turn off associated fans
- Turn off cooking equipment and serve cold food (sandwiches and salads) in the Visitor Cafeteria

Three hospitals submitted bids for four to seven DR events in the summer of 2006 and often exceeded their 50 kW to 150 kW bids. The largest hospital, whose typical summer peak demand is between 4578 kW and 4664 kW, dropped more than 500 kW over two to six hour periods on three event days. Not all bids were met by all centers, but the process became smoother and more effective with repetition. They expect an even more successful response in 2007.

What's more, the initial positive experience with DR has been a catalyst for identifying energy-saving measures that can be adopted year-round. Facility managers are receiving management support in the form of budget allocations for new energy retrofit projects.

## BUSINESSES SAVE MONEY AND ENERGY WITH DEMAND RESPONSE

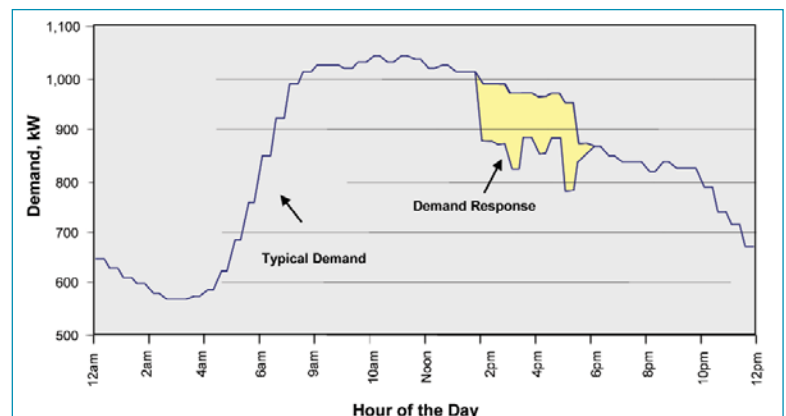
Forward-looking businesses and institutions are increasingly incorporating DR preparedness and participation in their facility management toolkits. This advance planning enables managers and staff to maximize their costs and energy savings, as well as their incentive earnings from PG&E.

DR participants agree to reduce electrical load when PG&E or the California Independent System (grid) Operator issues a demand signal in response to system price or reliability triggers. Since prices are typically higher during demand events, customers who reduce or shift load save money. Their participation often earns them incentive payouts.

## HOW IT WORKS

DR load reductions are of short duration and are made either the day before or the day of a DR program event. In contrast to energy efficiency and traditional time-of-use measures, DR represents the "need of the hour"—the critical period when businesses can mitigate adverse pricing or power system conditions.

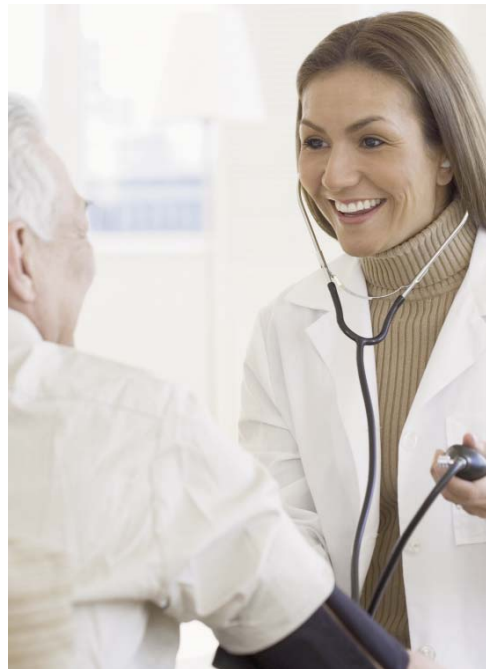
For instance, DR is most likely to be requested for a few hours between 12 P.M. and 6 P.M., on a hot summer afternoon, when electric demand is generally highest. The figure below illustrates the performance for an example facility participating in a DR event during the period between 2 P.M. and 6 P.M.



# Community Medical Centers Demand Response (DR)



Earn incentives with PG&E's Technical Audit/Technology Incentive program for the identification and installation of Demand Response enabling equipment.



## HOW DO CUSTOMERS BENEFIT?

DR benefits PG&E customers — and the state as a whole — through monetary savings (from the receipt of incentives or advantageous rate schedules), increased operational control of energy-consuming equipment, and improved power system reliability.

Who Benefits	SOURCE OF BENEFIT
DR program participants	<ul style="list-style-type: none"> <li>• Bill savings (through programs that offer lower rates)</li> <li>• Incentive payments (incentive-based DR programs)</li> <li>• Better understanding of energy use patterns; increased control over energy-consuming equipment</li> <li>• Reduced exposure to forced outages</li> <li>• Public relations benefits associated with helping avoid system blackouts</li> </ul>
All customers	<ul style="list-style-type: none"> <li>• Reduced emissions from the avoided use of inefficient "peaking" power plants/units.</li> </ul>

Source: Based on "Demand Response Program Design Preferences for Large Customers: Focus Group Results from Four States," Nexant, Inc. and FSC Group, Lawrence Berkeley National Lab report LBNL-60610, 2006.

## HOW DOES PG&E HELP?

PG&E offers six DR programs, including time-sensitive interruptible tariffs, direct load control programs, dynamic pricing schedules, and "demand bidding." The best fit for each customer depends on its energy use profile, business operations, and risk tolerance.

DR programs do not offer design or installation incentives; however, incorporating DR into the front-end design of a retrofit project or new construction can generate significant operational savings. In addition, PG&E offers participating customers Technical Assistance and Technical Incentives (through the TA/TI program).

To learn more about how DR programs can complement your company's energy efficiency efforts, please visit [www.pge.com/demandresponse](http://www.pge.com/demandresponse) or call your local PG&E representative or the **Business Customer Service Center** at **1-800-468-4743**.



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