



**San Diego County  
Water Authority**

*“This partnership allows us to extend the reach of water conservation programs that generate energy savings and helps us effectively manage the region’s water supply and reduce energy costs and the GHG emissions associated with transporting and treating water.”*

**JASON FOSTER**  
DIRECTOR OF PUBLIC  
OUTREACH AND CONSERVATION  
SAN DIEGO COUNTY  
WATER AUTHORITY

**Energy audits provided a comprehensive water facility analysis of equipment, operations and maintenance to identify potential energy conservation opportunities.**

## Highlights

- Eight participating water agencies
- Over 100 audited facilities
- 258 energy conservation opportunities
- Demand management opportunities greater than 1.5 MW
- Estimated consumption savings up to 8%

## Energy audits pour out savings

The water-energy savings connection has long been a focus of the 20-year collaboration between SDG&E® and the San Diego County Water Authority and its member agencies to promote conservation among end-users. But in 2010, the energy-saving focus shifted from the consumer to the water agencies themselves. SDG&E was at the forefront of California utilities pursuing a progressive pilot program of energy audits initiated by the California Public Utilities Commission. Funded by the Local Government Partnership Program, the audits assessed 103 facilities consuming nearly 54,000 megawatt hours annually to identify potential energy savings related to water delivery, treatment, disposal and reuse. Overall, 258 energy conservation opportunities were identified, with the potential to affect significant savings. Given the project illustrated trends from a district-wide perspective, the Water Authority will use the audits of its facilities to develop an energy management strategy.

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## About the San Diego County Water Authority

A public agency formed in 1944 by the California State Legislature, the Water Authority's mission is to provide a safe and reliable supply of water to its 24 member agencies serving residents and businesses in San Diego County. In addition to its role as a wholesale supplier of water, the Water Authority takes a leadership role in resource management, working with its member agencies to diversify the region's water supply sources and to promote water and energy efficiency.

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### Save water and you'll save energy

Water takes energy to move. In fact, water-related energy use in California consumes approximately 20% of the state's electricity and 30% of the state's non-power plant natural gas according to the California Energy Commission. The purpose of the energy audits was to assess the energy-consuming processes at selected facilities, provide the water agency with energy use and cost metrics, and identify potential energy conservation opportunities (ECOs). Facilities were assessed for energy, conservation, demand reduction and solar opportunities. Program goals included equipping agency staff with a better understanding of energy consumption trends to make more informed decisions regarding future energy use.

### How the audits flowed

The comprehensive audit process began with a utility analysis to capture historical data and analyze trends. Usage patterns, average costs and actual costs were captured and the potential savings calculated and benchmarked with comparable building energy-use databases. High-energy loads and anomalies in energy-use patterns were identified, and utility rate schedules were reviewed to make sure that the facilities were on the most advantageous schedule. The audit team then conducted interviews with facility personnel to determine plant operations, equipment type, energy and utility concerns, future construction plans, equipment malfunctions and previous or planned energy-using equipment changes. Energy baseline and benchmarking identified facilities with high-energy use and prioritized them for auditing. Projections for energy-efficiency reduction, renewable energy generation, and alternative clean energy generation at each facility were developed.

### Making a big splash in energy efficiency

While San Diego's water agencies are markedly energy savvy, the fine-tuning of the audits created pathways to even higher performance. Collectively, more than 1.5 megawatts of potential savings were identified through "demand response" (reducing energy use during peak time when demand is highest). Further consumption savings are estimated to achieve 1 to 3% at booster stations, 2 to 8% at treatment plants and 3 to 7% in other structures.

Of the 258 recommended ECOs, 66 were operational, 67 specified maintenance activities, 49 suggested capital improvements and 61 identified better rate structures. Each ECO detailed cost-benefit information, available rebates, finance and funding options, and savings from electricity, natural gas and greenhouse gas (GHG). A high-level cost-benefit analysis identified total up-front (capital) costs, total lifecycle costs, return on investment and payback period. ECOs ranged from no- and low-cost to investment-grade measures. The program also provided implementation assistance, including identifying various incentives, rebates or other financial assistance available for retrofits.

"The value of this utility partnership was the collaboration with an expanded team of professionals who provide a new toolkit of trends and innovations," said Gary Eaton, director of operations and maintenance, at the Water Authority. "Being specifically focused on energy consumption and plugged in to the latest utility rate structures, rebates and innovations made this an incredibly effective, low-cost, turn-key initiative."

California's Long Term Energy Efficiency Strategic Plan is a roadmap to integrate cost-effective, energy-efficiency practices through 2020 and beyond. The Local Government Partnership Program (LGP) is a collaboration between regulated utilities and numerous organizations to help our local governments become leaders in reducing energy use and emissions. The San Diego County Water Authority is part of this energy solution through its partnership with SDG&E. Working together we lead by example by fostering an environment of sustainability through new initiatives.

P.O. Box 129831 | San Diego, CA 92112-9831 | Connect at [sdge.com](http://sdge.com)

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