AutoGrid Systems Helps the City of Palo Alto Utilities Launch Demand Response Program

AutoGrid Systems’ Demand Response Optimization and Management System (DROMS), a cloud based software, provides a reliable, cost-effective, low-risk way for utilities, grid operators, aggregators and end customers to implement a variety of demand response and dynamic pricing strategies.

Innovation and Technological Leadership

Working closely with AutoGrid Systems, CPAU launched their first commercial and industrial demand response programs in 2011 and 2012. Seven customers, including SAP, PARC and Veterans Hospital, agreed to reduce their power consumption by at least 50 kilowatts up to 15 times a year, on CPAU’s request. In return, the utility provided them an incentive. The seven customers represented 26MW of CPAU’s 180MW total peak load. DROMS was deployed in less than 30 days of the start date. By leveraging existing interval meters the program incurred no site enablement costs to either CPAU or the program participants. By July 2012, CPAU was using the system to shed an average of 1.2 MW per event, or reduce 3.5MWh of total energy per event. The program demonstrates how DROMS can extract new value from existing infrastructure. Based on the success of the program, CPAU plans on more than doubling customer participation in 2013.

City of Palo Alto Utilities (CPAU)

The City of Palo Alto Utilities provides Utility Services to Palo Alto, California, the epicenter of Silicon Valley. CPAU is the only municipal utility in California that operates city-owned utility services that include electric, fiber optic, natural gas, water and wastewater services.

The CPAU history began over one hundred years ago, in 1896, when the water supply system was first installed. Two years later, in 1898, the wastewater collection system came on line. In 1900, the municipal electric power system began operation, followed by a natural gas distribution system in 1917. In 1996, Palo Alto ventured into a new endeavour with the construction of its 31-mile dark fiber loop.

AutoGrid and CPAU worked together to implement Palo Alto’s first demand response program.

“InAutoGrid’s technology will become an extremely important part of grid management in the future. At CPAU, we are starting with peak load reduction on hot summer days, but the potential for this kind of ability to manage loads goes far beyond."

— Karla Dailey, CPAU Senior Resource Planner

Palo Alto Municipal Services Center

PROGRAM FACTS

PROGRAM NAME: City of Palo Alto Demand Response Program
PROGRAM PERIOD: May through September
DISPATCH DURATION: 2-5 hours
DEMAND RESPONSE STRATEGIES: 100% load curtailment only
No generators allowed
RESPONSE METHODS: Automatic and Manual
DEMAND RESPONSE PLATFORM: AutoGrid Systems’ Demand Response Optimization Management System (DROMS)
PROGRAM TYPE: Peak Day Rebate

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Program Benefits

**A Highly Predicable and Reliable Demand-Side Resource**

AutoGrid’s DROMS helps address summer system peak demand and emergency grid conditions. Supported by a unique predictive analytics engine, DROMS provides CPAU with a resource that is equivalent to a generator.

“AutoGrid has helped CPAU implement our pilot DR program over the past 2 summers. We used DROMS for all of our communication with our customers regarding DR events. We have been able to provide user-friendly graphic information to our customers about their use and what demand reductions they are able to achieve, and we were able to do all the back-end financial calculations to figure out what we owe our customers. AutoGrid played a critical role in our being able to implement a Demand Response program in Palo Alto.”

— Karla Dailey, CPAU Senior Resource Planner

**Individualized Branding**

All marketing materials and program information are branded clearly as CPAU’s Demand Response Program, including the DROMS portals.

“We wanted the City of Palo Alto Utilities to maintain the intimacy with their customers at every touch point. With DROMS, utilities can launch their own demand response programs and maintain the relationship and service standards with their customers.”

— Carlos Bravo, AutoGrid Systems Senior Director of Client Solutions

**End-to-End DR Management Functionality**

AutoGrid’s DROMS includes customer enrollment, program management, load-shed forecasting, portfolio optimization, customer notification, automated signals, and post event reporting. By providing all essential functionalities in one, DROMS makes the entire process of planning, implementing and managing DR programs seamless.

**Cost-Effective, Low-Risk**

Because DROMS integrates directly into existing meter infrastructure, requires no additional hardware or software and was in this case accessed as a subscription service, program deployment costs were reduced by 90%.

CPAU uses a traditional MV-90 interval meter system, periodically read through a dial-up phone connection. DROMS interfaces directly with CPAU’s existing meter system to visualize, predict, forecast, and optimize, in real-time, the entire demand response portfolio. All post-event reports and billing determinants are provided by DROMS.

**Rapid Deployment**

As compared with traditional IT systems that can take months or years to implement, CPAU was able to deploy AutoGrid DROMS, complete with an interface to their meter data management system, in less than 30-days. DROMS provides a web-based portal to CPAU program managers, customer services representatives, as well as designated users within the program participants organization.

“AutoGrid is well positioned to help utilities address many challenges, as they provide a highly scalable and flexible web-based technology platform that can be easily upgraded as needed.”

— Shiva Swaminathan, CPAU Emerging Energy Technologies & Smart Grid Project Manager

**Highly Scalable Solution**

AutoGrid utilizes modern cloud architecture, which allows programs to seamlessly scale as the number of participants grow and new types of programs are added. CPAU is also using DROMS to manage electric vehicle charging stations deployed in public parking garages in the city.

“CPAU’s program provides a model for other municipal and public utilities across the nation to implement cost effective and innovative pricing and demand side management programs. DROMS provides the lowest risk option for utilities and service providers of all sizes. We are grateful to the CPAU team for their invaluable feedback.”

— Amit Narayan, AutoGrid CEO

“AutoGrid played a critical role in our being able to implement a Demand Response program in Palo Alto.” — Karla Dailey, CPAU Senior Resource Planner