energy solutions for a changing world

CUSTOM DISTRIBUTED INTELLIGENCE APPLICATIONS FOR MANAGING PEAK LOAD

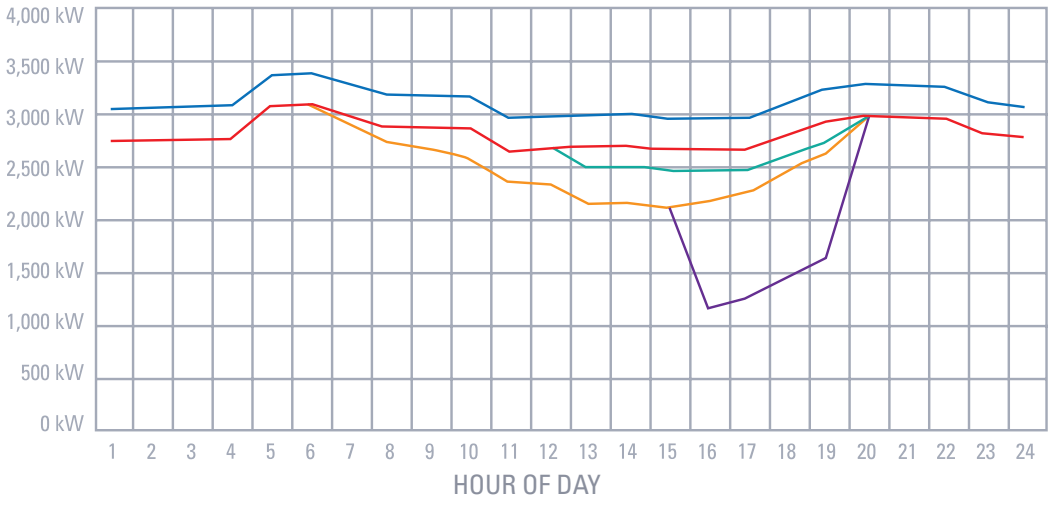
INTELLIGENT AGENT TECHNOLOGY

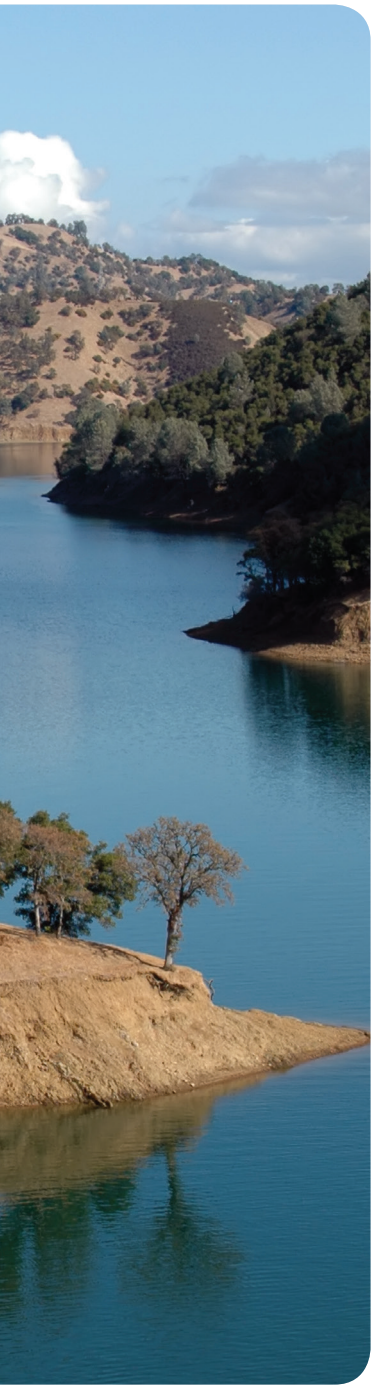
Intelligent Agent Technology by AESC was developed with funding from the California Energy Commission (CEC) Public Interest Energy Research (PIER) Project; Smart*DER Research, with follow-on studies in cooperation with the California Independent System Operator (CAISO) and the support of U.S. Department of Energy Small Business Innovative Research (SBIR) Grants.

APPLICATION

AESC intelligent agents efficiently manage the energy assets and peak loads at single and multi-station facilities or previously unconnected "power neighborhoods". Using distributed decision making intelligence combined with real time price signals, weather data, and site specific performance requirements, energy assets are optimized in a complex Critical Peak Pricing (CPP) environment.

FEATURED PROJECT:
NORTHERN CALIFORNIA MUNICIPAL WATER DISTRICT





INTELLIGENT AGENT TECHNOLOGY

FEATURED APPLICATION – PEAK LOAD MANAGEMENT
MUNICIPAL WATER DISTRICT

- Case – Northern California Multi-Site Water District
- 1 Main Pumping Station
- 1 Water Treatment Plant
- 1 Storage Reservoir
- 1 Hydroelectric 325 kW Power Plant
- 14 Substations
- 19 Major Storage Tanks
- 65 Pumps Total More Than 10,000 HP
- Up to 25 Million Gallons Processed and Distributed Daily

PROJECTED ANNUAL ENERGY SAVINGS – 800,000 KWH

PROJECTED COINCIDENT PEAK DEMAND REDUCTION – 300 KW

PROJECTED AUTO DEMAND RESPONSE CAPACITY – 1.3 MW

SUMMARY

AESC's Intelligent Agent Technology will account for the requirements of each station individually and all assets as a collective entity, using prescribed reliability and safety standards to inform next-day energy distribution schedules. Schedules will allow for real-time demand response event participation, and the efficient use of energy both from the grid and from on-site generation sources during times of peak load. This will reduce energy costs and usage across all 15 stations, while easing grid strain.

UPGRADES INCLUDE:

- Reducing pump use during times of peak demand
- Maximizing hydroelectric turbine production during times of peak demand
- Optimizing variable flow pumps to operate at maximum efficiency

ABOUT AESC

Alternative Energy Systems Consulting (AESC) is an energy engineering practice headquartered in Carlsbad, CA. AESC specializes in utility incentive programs, technology assessments, demand side audits and applying smart grid technology to energy transmission and distribution. Founded in 1994, AESC provides program design and implementation, measurement and verification, and corporate sustainability services to utilities, regulators and private enterprise throughout the United States. AESC's practical experience and customer base positions the firm at the intersection of public and private efficiency interests.

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