

El Dorado County Water Systems Energy Generation Project

May 2011

Fact Sheet

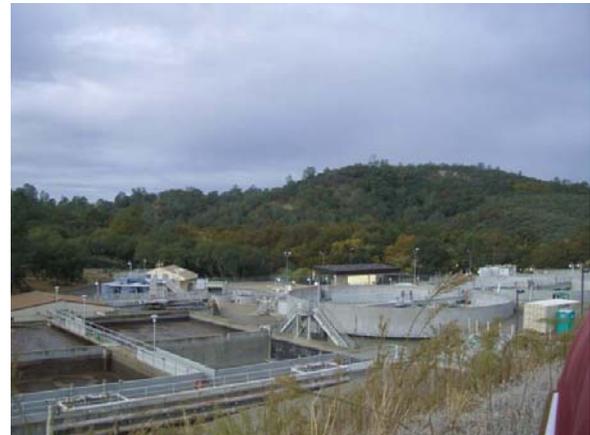
The Issue

The water supply, conveyance, treatment, and hydroelectricity generation industry is technologically mature, using durable and proven equipment and methods. However, within most of these water systems, there is significant room for improvement in energy management, efficiency, and reducing demand on the electricity grid.

Opportunities for meeting peak energy demands through storage in gravity systems and the potential for integrating other renewable energy sources into existing facilities are underexplored. Some newer developments, such as variable-speed pumps used as turbine units with regenerative power converters, promise the capability of adding energy generation to existing water systems that have highly variable flows. This includes potable water, treatment plant, and recycled water distribution systems.

Project Description

The project will build upon existing infrastructure in El Dorado County, focusing on efficiency, conservation, peak demand reduction, and water storage improvements via upgraded best management practices. It will seek ways to incorporate newer technologies by analyzing technology, engineering, operational methods, and potential equipment upgrades in selected existing treated and raw water systems within the El Dorado Irrigation District and the Georgetown Divide Public Utility District service areas. The



Deer Creek Wastewater Treatment Plant
Source: El Dorado Irrigation District

project will evaluate the ability to integrate energy and water management operations, load management, and renewable energy options in supporting the electric grid.

PIER Program Objectives and Anticipated Benefits for California

This study is thought to be unique and pioneering, and results are expected to be widely applicable throughout California, given that most water systems are similar in design and operation.

The objectives of this research include:

- Assessing existing and future water and energy demands, as well as use patterns in the project area.
- Identifying options for demand management during utility peak periods.
- Inventorying existing equipment for improved energy efficiency.

- Analyzing the recommendations from a recent El Dorado County Hydroelectric Options Study for integration into existing water systems for electricity grid support.
- Evaluating solar opportunities at several facilities.
- Preparing preliminary engineering, economic, and environmental analyses of recommended near- and mid-term system alternatives.
- Identifying long-term energy efficiencies and generation opportunities.

Project Specifics

Grant Agreement Number: PIR-08-040

Recipient: El Dorado Irrigation District

Location: El Dorado County

Application: Regional

Amount: \$197,950

Cofunding: \$90,987 from El Dorado Irrigation District and Georgetown Divide Public Utility District

Term: June 29, 2009 through March 31, 2014

For more information, please contact:

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