



Wastewater Treatment

WASTEWATER TREATMENT

Pacific Gas and Electric Company (PG&E) offers design assistance and financial incentives to wastewater treatment facilities that plan to design and construct energy-efficient, high-performance facilities.

Whether you are building a new plant, expanding existing capacity, or retrofitting old, inefficient equipment, PG&E's energy management solutions can be customized to meet the unique needs of your project.

Wastewater treatment, one of the most energy-intensive and expensive services for cities and counties, is expected to grow by 5%-8% annually over the next decade.

Design assistance is available. You can earn incentives at the rate of **\$0.09** per annualized kWh savings for the measures listed below.



“Energy is a major portion of our operating budget, so when we started planning our plant expansion from 11.5 to 17 mgd, we were eager to take advantage of PG&E’s energy management programs. As a result, we’re saving 1,253,375 kWh and \$213,000 per year in energy costs, are reducing peak demand, and received a check for \$37,597 in incentives.”

Mike Spowhn, Operations
Dublin San Ramon
Wastewater District

DESIGN ASSISTANCE AND INCENTIVES

FINE BUBBLE AERATORS

Fine bubble aerators consume 20%-40% less energy than coarse or medium bubble aerators.

DISSOLVED OXYGEN (DO) CONTROL

Continuous DO control is a cost effective energy efficiency strategy that can also provide wastewater treatment operators a higher level of aeration system control.

VARIABLE FREQUENCY DRIVES (VFDs)

VFDs provide continuous control, allowing motor speed to be matched to the specific demands of the work being performed. Incentive eligibility for this measure is determined on a case-by-case basis.

PREMIUM-EFFICIENCY MOTORS

Premium-efficiency motors should be included in any specification for wastewater treatment processing, if long operating hours are anticipated. Other benefits, such as decreased vibration and longer insulation and bearing lives, can increase reliability.

EFFICIENT AERATION BLOWERS

Single stage blowers with variable inlet vanes and variable discharge diffusers can allow for flow adjustments while maintaining constant impeller speed. VFDs may also be appropriate for application to aeration blowers.

EFFICIENT EFFLUENT PUMPING

Specifying premium-efficiency motors, appropriately applying VFDs and reducing head pressure are some of the recommended strategies for efficient pumping.

LOW-PRESSURE ULTRAVIOLET (UV) DISINFECTION

Low-pressure UV disinfection systems are generally 40%-50% more efficient than medium pressure systems. Self-cleaning UV lamps provide additional energy efficiency benefits.

SCREW PRESS

Sludge dewatering can be accomplished by using screw press instead of conventional belt press or centrifuge products for energy efficiency.



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"When a wastewater treatment plant is built or upgraded, proper design and configuration of these systems is essential for optimal performance and energy efficiency."

Rob Fowler, Plant Manager
Dublin San Ramon
Wastewater District



ENERGY-EFFICIENCY MEASURES	PROGRAM MEASURE BASELINE	MEASURE REQUIREMENTS	INCENTIVE RATE ANNUALIZED KWH SAVINGS
Fine Bubble Aerators	Coarse or medium aerators	An energy use comparison analysis from the designer should be provided	\$0.09
Dissolved Oxygen (DO) Control	Continuous dissolved oxygen control with manual control	Dissolved oxygen measurement must automatically control aeration blowers	\$0.09
Variable Frequency Drives (VFDs)	No VFDs	VFDs must be specified as an energy efficiency measure and not otherwise required for normal system operation	\$0.09
Premium-Efficiency Motors	The Federal Energy Policy Act (EPACT) standard-efficiency motors	Name plate efficiency must be higher than EPACT standard efficiency	\$0.09
High-Efficiency Aeration Blowers	Multi-stage centrifugal blowers and EPACT motors	An energy use comparison analysis from the designer should be provided	\$0.09
Efficient Effluent Pumping	EPACT motors and flow control valves. Other specific project baselines vary	Premium-efficiency motors and pumps and VFDs (see above) are eligible	\$0.09
Low Pressure UV Disinfection	Medium pressure UV disinfection	An energy use comparison analysis from the designer should be provided	\$0.09
Screw Press	Conventional Belt Press or Centrifuge products	An energy use comparison analysis from the designer should be provided	\$0.09

HOW DOES PG&E HELP?

PG&E offers a wide range of services to help you manage the energy at your wastewater treatment facility. Services include energy analyses of existing facilities, design assistance for planned projects, equipment rebates, project incentives, education, and training.

Contact your local PG&E Representative or call **PG&E's Business Customer Service Center** at **1-800-468-4743** for more information.

ADDITIONAL RESOURCES

- **California Energy Commission**
www.energy.ca.gov/process/water/index.html
- **Consortium for Energy Efficiency**
www.cee1.org/ind/mot-sys/ww/ww.php3
- **Energy Baseline Study for Municipal Wastewater Treatment Plans**
www.pge.com/includes/docs/pdfs/mybusiness/energysavingsrebates/incentivesbyindustry/bls_energybaselinestudymunicipalwastewatertreatment.pdf