



ACHIEVE ENERGY INDEPENDENCE

ENERGY EFFICIENCY AND ON-SITE RENEWABLE POWER CAN MAKE YOUR TREATMENT PLANT A ZERO-ENERGY FACILITY

Earn up to \$500,000 in cash incentives for energy efficiency

Energy Trust pays cash incentives for energy-efficiency improvements, such as:

- Premium-efficiency motors (until December 2010)
- Variable frequency drives on pump and blower motors
- Energy-efficient pumps, blowers, diffusers, compressors and mixers
- Automation of aeration processes
- HVAC equipment and controls
- Lighting and controls

Projects must be pre-approved and meet energy savings and other specifications. The maximum incentive per project is \$500,000. In addition, your project may be eligible for an Oregon Business Energy Tax Credit.*

Earn cash incentives for generating renewable power

Energy Trust can help fund projects that produce renewable power, allowing you to reduce your need for purchased electricity. We pay for a variety of renewable energy technologies that are highly cost-effective in wastewater facilities, including:

- Converting methane (digester gas) to electricity using IC engines, micro-turbines or fuel cells, including using fats, oils and grease to supplement digester gas
- Micro-hydroelectric power using a plant's outfall or flow of water
- Solar electric systems
- Small wind turbines

Combining our cash incentives with the Oregon Business Energy Tax Credit* could pay a sizable percentage of your project, allowing you to produce renewable energy that is competitive with nonrenewable energy from your utility.

**Government and nonprofit wastewater treatment facilities may be able to take advantage of the Oregon Business Energy Tax Credit pass-through option. See www.oregon.gov/energy for more information.*



To learn more about how we can help your facility, contact Energy Trust at **1.866.368.7878** or www.energytrust.org/wastewater.

Energy Trust is participating in a series of seven one-day workshops on best management practices for energy efficiency and renewable energy in wastewater treatment plants. Sponsored by Oregon Association of Clean Water Agencies (ACWA), the workshops bring together 10 Oregon wastewater utilities, U.S. Environmental Protection Agency—Region X, Energy Trust, Bonneville Power Administration and consulting engineers to discuss ideas and tools for achieving energy independence. Information from the sustainable energy management training workshops is available at www.oracwa.org.

ENERGY TRUST OFFERS SOLUTIONS THAT CAN HELP:

- Reduce operating costs and stabilize sewer rates
- Generate clean, renewable energy
- Earn generous cash incentives
- Help with load and growth management
- Meet public expectations for environmental stewardship
- Contribute to community sustainability goals and reduce your carbon footprint
- Move your wastewater facility closer to energy independence

Providing wastewater services requires energy, and a lot of it. Oregon wastewater utilities use approximately five percent of the state's electricity, and energy accounts for about 15 percent of a typical domestic wastewater treatment plant's operating budget. It's not uncommon for wastewater treatment to be one of the largest municipal energy loads in a community.

The good news is that energy represents the largest controllable cost of providing wastewater services to the public. And with today's technologies, it's feasible for your plant's annual energy budget to approach zero by optimizing energy efficiency and taking advantage of renewable resource opportunities.

Most wastewater facilities were designed and built at a time when energy costs were not a major concern. Energy Trust of Oregon can help bring your plant into the 21st century with pumps, drives, motors and other equipment that are designed with efficiency in mind.

After you trim energy use, consider putting your plant to work producing renewable energy. By taking advantage of digester gas or other renewable resources, you can substantially reduce your facility's dependency on purchased electricity.

Energy Trust offers innovative solutions, technical assistance and cash incentives that can help you control, and even eliminate, rising energy costs, allowing you to funnel energy savings back into core services. We can help your wastewater facility achieve energy independence.

Get a comprehensive energy feasibility study

Energy Trust pays for studies that identify and analyze energy-efficiency opportunities, and we co-fund feasibility studies for most renewable energy projects. After you have a better understanding of your energy opportunities, Energy Trust can help your projects qualify for cash incentives.



CITY OF PENDLETON SOLAR ELECTRIC

A 200-kW, ground-mounted, solar electric system at the Pendleton Wastewater Treatment Plant is producing an estimated 263,179 kilowatt-hours per year. To make the project affordable, the City of Pendleton entered into a third-party ownership agreement with Honeywell International, which owns and operates the system and sells the power back to the plant. In exchange, Honeywell applied for the project's federal and state tax credits. Energy Trust provided a cash incentive totaling \$200,000.



CITY OF COTTAGE GROVE ENERGY-EFFICIENCY IMPROVEMENTS

Cottage Grove is saving about \$23,325 annually from energy-efficiency upgrades recommended in an Energy Trust-funded study of the city's wastewater treatment plant. The city upgraded the plant's aerobic solids digestion system by modifying aspirating mechanical aerators to increase the efficiency of oxygen transfer. New dissolved oxygen probes and accompanying software allow efficient scheduling of the four aerators. The city received an Energy Trust incentive of \$101,475.



CLEAN WATER SERVICES DURHAM ADVANCED WASTEWATER TREATMENT FACILITY ENERGY-EFFICIENCY IMPROVEMENTS

Clean Water Services is saving more than \$76,750 annually from energy-efficient equipment in the new influent pump station at its Durham Advanced Wastewater Treatment Facility in Tigard. An Energy Trust-funded feasibility study recommended premium-efficiency motors throughout the facility and VFDs on all influent sewage pumps to adjust the pumping rate according to wastewater flow. A VFD-controlled fan pulls odorous air from the two wet wells and delivers it to a biofilter for treatment. A new air handling unit with VFD keeps the motor control room at the optimal temperature and pressure, and automated pressure sensors control return air fan speeds. With a \$413,299 Energy Trust cash incentive and an Oregon Business Energy Tax Credit pass-through payment, Clean Water Services will recover its investment cost through energy savings in approximately four years.



CITY OF PORTLAND COLUMBIA BOULEVARD WASTEWATER TREATMENT PLANT BIOPOWER-IC ENGINE USING DIGESTER GAS

At the Columbia Boulevard Wastewater Treatment Plant, two 850-kilowatt reciprocating engines use methane gas to generate enough power to meet approximately one-half of the plant's daily power needs. The generators use about 70 percent of the plant's biogas and also produce heat for plant operations. The remaining biogas is used by micro-turbines to generate additional electricity. Any surplus biogas is sold to a nearby business. On-site electricity generation also serves as a back-up system during power outages. In addition to an engineering feasibility study, Energy Trust provided a cash incentive of \$362,000 toward the cost of the reciprocating engines. An Oregon Business Energy Tax Credit pass-through payment further reduced the cost.



CITY OF MOSIER ENERGY-EFFICIENCY IMPROVEMENTS

The City of Mosier approached Energy Trust with an existing study of potential energy-efficiency improvements to its wastewater treatment plant's aeration system. With Energy Trust's help, Mosier installed new fine-bubble diffusers, new aeration blowers with VFDs and a computerized dissolved oxygen (DO) control system that adjusts blower output according to DO demand in the aeration basins. These energy-efficiency upgrades are saving the city an estimated \$2,408 per year. Mosier received a \$9,962 cash incentive from Energy Trust.

+ Wastewater treatment plants that use anaerobic digestion produce methane—a source of renewable energy. Methane can be used to directly offset the plant's use of natural gas or through cogeneration—the production of both electricity and heat to meet facility energy needs.

Energy Trust may be able to offer financial assistance to help you apply for federal or state grants related to studying or developing renewable energy projects. In addition, to make solar electric more affordable, we may be able to arrange for a third-party owner who would install, own and operate your solar electric system, selling the power back to you. Typically, the third-party company provides a turn-key installation and claims all tax credits and incentives.