Project Highlight

City of Pendleton, OR

AMERESCO

Multiphase Infrastructure Project Boosts Resiliency and Advances City's Ambitious Net Zero Goals

Technology Type:

Energy-as-a-Service (EaaS) | Battery Energy Storage Systems (BESS) | LED Streetlighting | Microgrid Conrols | Solar PV | Energy Savings Performance Contract (ESPC)

Solar Canopy System Size

240 kW

BESS Capacity

500 kWh / 1,376 kWh

LED Streetlights Replaced

1,005

Combined Emissions Reduction

~460 metric tons annually

Summary

Looking to enhance its operational sustainability and advance net zero goals, the City of Pendleton partnered with Ameresco on a multiphase infrastructure and renewable energy project. In the first two phases of work, Ameresco replaced 1,005 existing streetlights with light-emitting diode (LED) technology and installed a solar PV canopy system for the City's Wastewater Treatment and Resource Recovery Facility (WWTRRF). The third phase includes implementing a microgrid to integrate a battery energy storage system (BESS) to the WWTRRF, enabling the facility to use clean power even during grid outages.

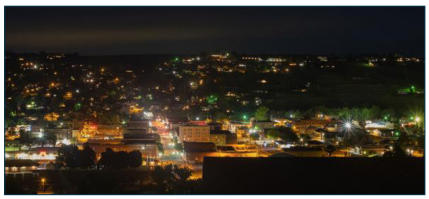
Solution - Phase One: LED Streetlight Replacement

The City of Pendleton chose Ameresco to deliver a multiphase energy infrastructure and renewable energy project to reduce costs, maintenance, and carbon emissions. In the first phase of project, Ameresco worked with the City's utility, Pacific Power & Light, Ameresco helped to develop a new standard for warm-white color temperature LED fixtures as part of an LED replacement project. The LED lights may appear brighter and more white or blue in color compared to the existing yellow, high pressure sodium lights, while producing less than half the lumens. The project included:

- 1,005 LED lighting fixtures
- Fixtures rated 3,000 Kelvin correlated color temperature (CCT)
- EaaS financing structure, where Ameresco owns and maintains the lighting fixtures

"Our citizens are very happy with the new streetlights. The new LEDs have a slightly different color appearing more white than yellow, and direct light differently, enhancing visibility for drivers. The projected energy and maintenance savings will fully fund the project resulting in no cost to taxpayers and no up-front capital."

Bob Patterson
Public Works Director, City of Pendleton, OR



Benefits

This LED replacement project advances the City's goal of reducing Pendleton's energy costs, maintenance, and carbon emissions while seeking out more sustainable infrastructure funding for buildings, roads, and utilities. Additional benefits of the project include:

- Reduced streetlight infrastructure energy consumption by more than 50%
- Annual total energy savings of nearly 500,000 kWh
- Carbon emissions reduced by 310 metric tons per year
- Lower maintenance costs as LED fixtures do not have disposable components requiring regular replacement
- Improved illumination and enhanced peripheral vision for drivers to improve detection of obstacles in the road
- Budget-neutral financing requiring no upfront capital by the City

Solution - Phase Two: Solar Canopy Installation

To extend its journey toward sustainability and energy resilience, the City of Pendleton collaborated with Ameresco in a second phase of work to install an innovative 240 kW solar canopy system at its Wastewater Treatment and Resource Recovery Facility (WWTRRF). Through an ESPC, the project is funded by a combination of state grants, Federal and utility incentives, and city resources.

The state-of-the-art canopy system, the first of its kind in the region, is designed to generate ~325,000 kWh of electricity annually, offsetting approximately 30% of the WWTRRF's energy use and reducing the facility's reliance on non-renewable energy sources. The project is part of a broader initiative at the City's WWTRRF, aimed at implementing renewable energy and efficiency upgrades to lower the facility's carbon footprint and operational costs. In addition to the solar canopy, future plans include integrating a BESS to further enhance the facility's energy management capabilities.

> **"This has been an idea for about 10 years, so it feels awesome to be here. We really try to focus on recovering as many resources as we can, and this project will cut about 30% off our power bill annually."**
>
> Kyle Willman
> *Superintendent, Wastewater Treatment Resource Recovery Facility*

Benefits

This solar system demonstrates a novel application of solar technology - the integration of renewable energy with a wastewater treatment process - and demonstrates the City's commitment to sustainability, climate resilience, and innovation in environmental stewardship. The project is designed to deliver benefits including:

Environmental:

- Provides 325,000 kWh of onsite generation
- Shades the Chlorine Contact Chamber to enhance water treatment processes and improve water quality
- Reduces effluent temperature to the receiving stream, benefiting aquatic life by maintaining a more stable ecosystem
- Decreases contaminants, contributing to overall environmental health

Sustainability:

- Offsets energy consumption by ~30% annually
- Advances net zero goals

Financial:

- Designed to reduce utility costs by over 50%
- Long-term ROI of less than 15 years
- ESPC guarantees price and performance of the project

Leadership in the Community:

- Demonstrates leadership in sustainable practices
- Showcases commitment to supplier diversity

Solution - Phase Three: Battery Energy Storage System

To further strengthen the City of Pendleton's energy resilience and sustainability, Ameresco is integrating a 500 kW / 1,376 kWh battery energy storage system (BESS) at the Wastewater Treatment and Resource Recovery Facility (WWTRRF). As part of a site-wide microgrid, the BESS will store excess energy from the facility's solar systems and biogas microturbines. Unlike grid-tied systems that export surplus energy and rely on diesel during outages, the microgrid allows the facility to retain and use its clean energy onsite—both during normal operations and emergencies. This reduces dependence on grid electricity and fossil fuels, ensuring renewable and recovered energy sources are fully utilized to power the plant.

Benefits

The BESS enhances the WWTRRF's energy management capacbilites, efficiency, and reliability while supporting the City of Pendleton's net zero goals. The project is designed to deliver the following benefits:

Resiliency:

- Provides backup power during extended outages
- Enhances onsite energy control and flexibility
- Enables microgrid operation with lower emissions

Sustainability:

- Maximizes use of onsite solar, biogas, and future renewables
- Reduces fossil grid and generator use and clean energy export
- Advances the City's net zero goals
- Supports future renewable energy expansion

Financial:

- Cuts utility costs and peak demand charges
- Reduces diesel fuel and maintenance expenses
- Increases ROI by using stored clean energy
- Enables participation in demand response and grid services revenue programs

AMERESCO

Ameresco's team of energy experts can assist you in identifying the solution that fits your needs.

For more information about Ameresco and our full-range of energy solutions, please call **1-866-AMERESCO** or visit **ameresco.com**.