

Burbank Landfill

Landfill

The Challenge

As a not-for-profit organization owned by the residents of Burbank, Burbank Water and Power (BWP) has a strong commitment to providing reliable, affordable, and sustainable water and electric services to its community. In the early 2000s, the organization was faced with a need for greater power reliability. They also had a keen interest in reducing emissions from their power generation, and so they worked with Capstone's distributor for California, Capstone California, to embark on an onsite power system that converts landfill gas collected at the Burbank Landfill into electricity (hereto referred to as the landfill gas-to-energy system).

The project was a unique partnership between BWP and the South Coast Air Quality Management District (SCAQMD). A strategy detailed in the adopted "Burbank 2035 General Plan," under the "Air Quality and Climate Change" element, which includes a goal for the City to reduce air pollution and dependency on fossil fuels. The Policy also requires projects that generate potentially significant levels of air pollutants, such as landfill operations, to incorporate best available air quality and greenhouse gas mitigation in project design. The Burbank landfill gas-to-energy project is a modernization of part

Power Profile

Customer

Burbank Water and Power

Location

Burbank, California

Commissioned

Original system - 2001

New system - 2020

Fuel

Methane Gas

Technologies

2001 System:

- 10 C30 Microturbines

2020 System Upgrade:

- 1 C800S Microturbine

Capstone Green Energy

Distributor

Cal Microturbine



The landfill gas-to-energy project is a great example of BWP's commitment to providing reliable, affordable and sustainable services to the citizens of Burbank. With increasing costs to produce electricity, we are confident that this technology will continue provide benefits for the City of Burbank for years to come."

— Sean Kigerl, Landfill Gas-to-Energy Project Manager
Burbank Water and Power



**Smarter Energy
for a Cleaner Future**



One C800S microturbine converts methane gas collected at the Burbank landfill into clean, reliable and cost effective power.

of City's infrastructure that reduces unhealthful emissions, so it is consistent with Burbank's strategy of investing in facilities that create and promote a healthy environment, and it provides an environmentally responsible level of municipal services in a sustainable manner.

Today, the site is Capstone's largest microturbine project running on landfill gas in California.

The Solution

The original system, built around ten C30 microturbines, was installed in 2001, followed seven years later by the installation of an R250. The power generation process starts at the Burbank Landfill where waste from the community is collected and delivered. As the waste is compacted, it decomposes, and methane gas is produced. Once the gas is conditioned to remove impurities, a portion of it is flared off, while the rest is directed to the microturbines where it is used as a renewable fuel to make electricity.

In 2020, BWP worked with Capstone's Western U.S. distributor, Cal Microturbine, to replace the original system with a new C800 configuration. In total, the system produces 800 kW of renewable generation and sends it back to the grid, supplying enough power for approximately 500 homes.

The new contract also includes a 15-year Factory Protection Plan (FPP), which covers the cost of all parts and labor for both planned and unplanned maintenance, providing BWP with power reliability assurances and predictable maintenance costs.

The Results

As one of over 90 Capstone systems used in biogas applications across North America, the Burbank system is highly efficient, reliable, cost effective, and environmentally beneficial.

The operation allows the Burbank system to fall well below emission standards set by the SCAQMD. Further, the conversion of landfill methane gas, which would otherwise be released into the atmosphere, is free fuel. This application eliminates approximately 10,000 pounds of greenhouse gas emissions annually, which is roughly the equivalent of removing 500 cars from California's highways.

The project was a success on other levels, too, having been completed on-schedule and under budget.

Capstone C800S Microturbine



A C800S Microturbine provides 800 kW of reliable electrical power in one small, ultra-low emission, and highly efficient package.