



Turn Waste Biogas into a Fiscal and Environmental Win

The Wastewater Treatment Dilemma

Wastewater treatment plants are in a bind. They need to operate as efficiently and safely as possible, while dealing with outdated infrastructure and increasingly stringent environmental regulations. But their budgets have no room for much needed modernization projects, and many municipalities are reluctant to further increase utility rates. OPTERRA Energy Services (OPTERRA) offers a solution that leverages a resource most plants are currently wasting: the raw biogas emitted from biosolids digesters.

Wastewater treatment plants use a lot of energy. Together with water treatment plants, these facilities make up 25% of the average city's total energy consumption.¹ An OPTERRA biogas utilization solution can either reduce the need to purchase energy from the grid, substantially lowering costs, or create a new revenue stream to reinvest in other facility upgrades. Best of all, the turnkey OPTERRA solution does not require upfront capital, expertise, or bandwidth, from internal plant staff.

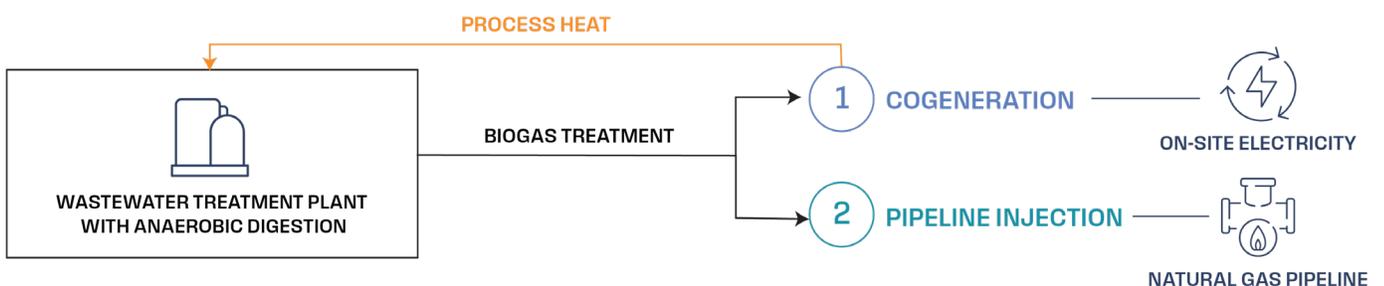
How Biogas Utilization Works

OPTERRA's solutions turn the waste output from a biosolids digester facility into a sustainable fuel source – biogas. The biogas can be treated in order to:

1. Generate heat and electricity via an onsite cogeneration system, or
2. Sell and inject into a nearby pipeline.

With either option, OPTERRA designs, builds, and owns the biogas compression and treatment assets on the premises of the partner wastewater treatment plant. OPTERRA will operate and maintain these assets for the next 10 to 20 years.

- 1 **With cogeneration**, when the biogas treatment process is generating electricity onsite, OPTERRA sells that electricity to the municipality, offering an affordable and resilient supply of energy.
- 2 **With pipeline injection**, OPTERRA shares with the municipality the revenue generated by monetizing this renewable resource – e.g., RNG sales, renewable identification number (RIN) credits.



Benefits: Sustainability, Reliability, and Financial Returns

OPTERRA's turnkey biogas utilization solutions can:



Unlock new revenue or cost-saving opportunities that can fund other needed plant upgrades



Ensure reliability and financial benefits of biogas treatment systems through contractual performance guarantees



Minimize chance of catastrophic equipment failure, while improving plant efficiency and compliance, through infrastructure modernization and automation



Transfer to OPTERRA both financial and operational risk around the utilization of biogas



Boost resiliency in energy production and gain a buffer against rising electricity prices while also providing process heat



Reduce waste and emissions, introducing decarbonization to plant processes



Capitalize on recent changes in regulations and incentives, including Inflation Reduction Act funding

A Long-term Partner

OPTERRA has served thousands of municipalities, manufacturers, schools, healthcare facilities, and many other types of organizations around the world. In addition to biogas utilization, we work with wastewater treatment plants to build and upgrade aeration systems, biosolids handling, biosolids production, demand reduction (including pumping and process optimization), and disinfection.

We work with plant managers to determine which biogas utilization option makes the most sense in terms of technical viability, resiliency, environmental impact, and financial payback. This process leverages our market-proven expertise in sustainability and wastewater treatment management. And because we take responsibility for design, deployment and ongoing operations - plant staff can focus on their core competency of wastewater treatment, while benefiting from a biogas utilization system.



West County Wastewater, which serves several communities in California's Richmond area, collaborated with OPTERRA on modernization and sustainability improvements, including installation of a 450 kw cogeneration system powered by biogas from two new digesters. The initiative is projected to result in:

- **\$83 million net electricity cost savings** over the 20-year program
- **4.2 million kWh reduction** in plant energy use per year
- **New revenue stream** for West County Wastewater through production and sale of "Class A" biosolids for agricultural and other reclamation uses
- **93% reduction in greenhouse gas emissions** over the life of the program

Contact OPTERRA to learn how a biogas utilization solution can help your plant maximize economic value for your city: info@opterraenergy.com

¹ M. Ha, G. Gutenberger, L. Ou, and T. Hawkins, "Energy Systems and Infrastructure Analysis," U.S. Department of Energy Argonne National Laboratory, July 1, 2022.