



RENEWABLE NATURAL GAS PROJECT COMMISSIONING
JANUARY 21, 2022 • VICTORVILLE, CA

RAISING THE BAR: THE FORWARD THINKING OF VVWRA'S RNG PROJECT



As municipalities across California pass organic waste diversion ordinances required by Senate Bill 1383, the Victor Valley Wastewater Reclamation Authority's facility in Victorville offers a first-of-its-kind resource recovery solution that may be widely emulated.

Though the project was conceived before SB 1383 requirements were outlined, this cutting-edge approach demonstrates a progressive way to manage landfill-diverted organic waste under the new regulations and eliminate thousands of tons of climate-changing methane emissions.

Waste not, want not

At its core, the VVWRA facility is a smart example of how wastewater treatment facilities can be transformed into resource recovery centers—extracting valuable energy and byproducts from not only wastewater but also food waste, yard clippings, and other organics that would otherwise be landfilled. In doing so, VVWRA is the first wastewater-RNG project in the state.

The project was delivered through a public-private partnership (P3), allowing VVWRA to receive important infrastructure upgrades while preserving public funds for other community needs. The upgrades were designed, supplied, and installed by Anaergia, a global company committed to creating renewable energy from waste. Anaergia arranged financing from North Sky Capital, meaning there was no cost to VVWRA or its ratepayers.

The P3 model also allowed for the improvements to be delivered in record time, proactively addressing many of the plant's capital improvement funding needs. Anaergia, which offers end-to-end systems for creating value from waste, provided their unique technology solutions to upgrade digesters and upgrade biogas to pipeline quality renewable natural gas (RNG) for pipeline injection. Importantly, Anaergia retrofitted VVWRA's anaerobic digestion equipment with its high-solids Omnivore digester, a patented system that uses intelligent mixing and robust thickening to triple digester capacity within existing tank volumes. The added capacity provided VVWRA with the flexibility to take on the digestion of food waste collected by the region's waste haulers, in addition to municipal wastewater.





VVWRA RNG PROJECT

This simple idea has many benefits, says VVWRA General Manager Darron Poulsen. “Now there’s less food waste going to landfill, which means reduced landfill methane emissions. “It also means we are able to produce more biogas, so we can send RNG to the gas grid, replacing the fossil fuel with a carbon-negative fuel.”

What’s more, VVWRA benefits from new revenue streams from tip fees and sales of RNG to the region’s gas utility, Southwest Gas - without bearing any of the risk associated with notoriously volatile energy markets.

Distributing renewable energy and cleaning the air

The VVWRA facility is one of the very few plants that has gone beyond energy-neutrality to become a net energy exporter - the first WWTP in California to export RNG to the utility gas grid. According to Southwest Gas President and CEO John Hester, the facility adds more than 320,000 MMBTU of renewable natural gas (RNG) to the pipeline each year, enough to offset the emissions of more than 2,000 homes.

Hester says Southwest Gas is thrilled to have the additional fuel. “There’s great demand for this carbon-negative fuel, especially for heavy-duty trucks, and that results in far cleaner air for San Bernardino County’s transportation corridors.”

Importantly, that’s RNG that can be used for the very trucks responsible for transporting the organic waste to VVWRA - helping to “close the loop” on resource recovery and further reduce carbon footprint.

As awareness of the environmental impact of organic waste and methane emissions expands, communities around the world may increasingly look to solutions like the one created in San Bernardino County by VVWRA and its partnerships with Anaergia, Southwest Gas, and North Sky Capital.

RNG Overview

Location: VVWRA, Victorville, CA

- Phase 1 Start-Up: 2016
- Phase 1 Scope: Design, Build, Finance
- Phase 2 Start-Up: 2021
- Phase 2 Scope: Design, Build, Own, Operate, Finance

Key Technologies

- High-Solids Omnivore™ TM Digestion
- Biogas Conditioning
- CHP Power Generation
- RNG Upgrading and Pipeline Injection

Inputs

- 140,000 gpd sludge (primary and waste activated)
- 85,000 gpd external organic waste

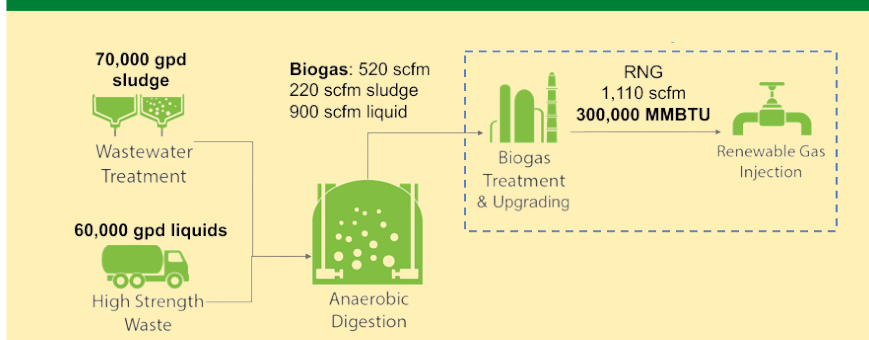
Outputs

- Electricity to VVWRA: 1.6 MW
- Heat to VVWRA: 3.24 MMBTU/h
- RNG to Pipeline: 320,000 MMBTU/year

Results

- 3x digester capacity
- >100% of energy demand generated onsite
- 20-year revenue from lease, tip fees, and gas sales
- Carbon negative fuel generation

VVWRA RNG Process





PROGRAM

Renewable Natural Gas Commissioning Ceremony

January 21, 2022, 9:00 am

- Welcome, Introductions
 - VVWRA General Manager Darron Poulsen
- VVWRA Project Overview and Vision
 - VVWRA Board Chairman Bill Holland
- The Value and Importance of RNG
 - John Hester, President, and CEO, Southwest Gas
- P3 Value and Environmental Benefits
 - Yaniv Scherson, COO of Anaergia
- Local Representatives
 - Assemblyman Thurston "Smitty" Smith
- Richard Corey, CA Air Resources Board Executive Director
- Ribbon Cutting
- Facility Tours
- Lunch served.