

The Largest Anaerobic Digester in the United States sets the Green Pace in Perris, California



Phase 1 construction of CR&R's Food Waste-to-Vehicle Fuel Project

Location:

1706 Goetz Rd
Perris, CA
92570

Partners:

CR&R Waste and
Recycling Services

J.R. Miller and
Associates

W M Lyles Co.

Contact:

Mike Silva
Project Manager
CR&R Incorporated
(714) 883-3777
MichaelS@ccrmail.com

Feedstock:

Organic Waste

(food scraps, green
waste, FOGs)

Vehicles Fueled:

200 trucks initially; 900
trucks at completion

Maximum Annual Fuel Production:

4,000,000 diesel gallon
equivalents (4 phases)

Received Funding:

Yes

Technology Providers:

Eisenmann Corporation
USA

Greenlane Biogas

Summary: The City of Perris has partnered with its waste hauler, CR&R to create the largest organic-waste eating machine in the world, so large it will consume 335,000 tons/year of organic waste and convert it to 260,000 tons of fertilizer and enough renewable natural gas (RNG) to displace four million gallons of diesel fuel.

Using Eisenmann "mixed plug-flow anaerobic digestion" technology, CR&R is able to produce biogas from a diversity of organic waste sources. Once produced, the "raw biogas" – approximately 60% methane and 40% carbon dioxide – is refined using Greenlane Biogas technology. This process involves removal of CO₂, moisture and other impurities to produce pipeline quality "renewable natural gas" (RNG). Additionally, the 260,000 tons/year of liquid and solid material ("digestate") that remain after gas extraction will be sold as nutrient-rich natural fertilizer.

"It's exciting to see California's climate change investments come to fruition," CalRecycle Director Scott Smithline said. "The ability of anaerobic digesters to connect to the pipeline distribution system is a key component of making many of these projects happen." Statewide, studies indicate that California could produce almost 300 billion cubic feet of renewable natural gas per year from organic waste, enough to replace 75 percent of all the diesel fuel used by motor vehicles in California.

The project's first of four phases began construction in the summer of 2014, with each phase designed to process 83,600 tons/year. In April of 2017 the organics digester was fully operational, and in June the SoCalGas pipeline extension has nearly completed construction. CR&R's solid waste transfer station and materials recovery facility, which is permitted for 3,000 tons/day of incoming material, will soon be combined with the SoCalGas project. CR&R is currently using carbon-negative RNG for 320 of its waste and recycling collection vehicles, and upon expansion, RNG will be designated to fuel CR&R's entire fleet of 900 vehicles.

City Councilwoman Rita Rogers called the project, "another example of the City of Perris leading the way on the technology needed to create an eco-friendly environment.... We are taking trash and remaking it into fuel and fertilizer. I am pleased that the City continues to set the standard for sustainable living."

The project is critical for California's lofty materials management and climate goals. SCAQMD executive officer, Wayne Nastri, commented that, "Coupled with near-zero emission engines, this [project] will help accelerate the transition to cleaner truck fleets in the South Coast region." Mayor Pro-Tem Tonya Burke said that locating the anaerobic digester in the City is "a sign that Perris is setting the pace as a green City."

Financing: The \$55 million in total capital costs includes the organics receiving and processing, digestion, gas conditioning and interconnection to the SoCalGas pipeline. The digester facility occupies 4.2 acres of CR&R's 52-acre solid waste transfer station and material recovery facility. Grants from the California Energy Commission, South Coast Quality Management District and CalRecycle partially funded the first two phases of the project. CR&R also signed contracts with 14 municipalities to provide organics collection to residents. CR&R will then charge \$2.00 to \$2.50 extra per household per week to collect and digest their organic waste. That new source of income will contribute funding toward the project.