

The first long-haul fleet in the US to be powered by renewable compressed natural gas (R-CNG) transports milk from Indiana to Michigan, Kentucky and Tennessee.

Location:

Fair Oaks Dairy

Fair Oaks, IN

Partners:

Fair Oak Dairy

AMP Americas (Renewable Dairy Fuels, LLC)

Contact:

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Project Engineer

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Feedstock:

Liquid manure

Maximum Annual Fuel Production:

1.5 million diesel gallon equivalents

Vehicles Fueled:

42 long-haul milk trucks

Pay Back

Period: <10 Years

Plant Cost:

\$18.5 million

Received Funding:

Yes

Technology Providers/

Partners: DVO, Inc.

Anaergia Services (UTS)

Greenlane Biogas (Flotech)

NIPSCO (Pipeline)

Cummins Westport (Engines)



Summary:

An anaerobic digester built in 2009 — using bacteria in an oxygen-free environment to convert organic waste to renewable compressed natural gas (R-CNG) — processes 500,000 gals/day of liquid manure from 11,500 dairy cows. In 2012, production exceeded 1.5 million diesel gallon equivalents of R-CNG. The biogas is upgraded for use as vehicle fuel at an on-site plant near the digester and subsequently sent via pipeline to two refueling stations, built by Clean Energy Fuels Corp. The R-CNG will fuel 42 long-haul milk trucks, operated by Ruan Transportation Services - one of the nation’s largest fleet operators, and powered by Cummins Westport 8.9- and 11.9-liter natural gas engines to deliver 53 loads (over 300,000 gallons) of milk per day. The digester technology is from DVO, Inc. (formerly GHD), a Chilton, WI based company, and Greenlane Biogas, an international leader in the field, provided a Totara+ biogas upgrading system. Anaergia Services (formerly UTS) has a “design-build-operate” contract for the entire system, including technology selection, installation and management, and the construction and maintenance of the fuel delivery and storage system (except for the fueling station). Use of R-CNG will result in close to \$2.5 million in annual fuel savings and CO₂ emissions reductions of more than 16,500 tons.

Financing:

The private financial partners are Fair Oaks Dairy and AMP Americas. Together they covered the majority of the total \$19 million investment. Public funds provided under the Obama Administration’s American Recovery & Reinvestment Act of 2009, through Clean Cities of Greater Indiana, totaled \$750,000 for the CNG stations. A grant from Indiana’s State Energy Program (SEP) of \$2 million covered the incremental cost of the CNG trucks equipped with extra gas tanks for extended range use.