

Newsletter IEA Bioenergy Task 37: 3/2017

News from North America

Biogas-powered fuel cell in Connecticut

IKEA, the world's leading home furnishings retailer, recently announced for its first biogas-powered fuel cell system on the east coast at its store in New Haven, Connecticut. A year ago, IKEA completed installation of such a project at IKEA Emeryville, one of the Swedish company's two San Francisco-area stores. IKEA now plans to expand its fuel cell portfolio to 1.3 MW with a system at its other San Francisco-area store (in East Palo Alto), as well as three stores in Southern California (Costa Mesa, Covina and San Diego). Pending permits, the fuel cells will be installed, commissioned and operational by this Fall, 2016, complementing solar arrays already atop each of the four stores.

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Sioux City WWTP to upgrade biogas to renewable fuel

Since the plant's original construction in 1961, anaerobic digestion (AD) technology has served as an integral component of the facility to reliably stabilize biosolids and produce biogas. The facility consists of eight digesters. Biogas is used within the WWTP to heat buildings and the primary digesters. But even in winter, the total heat demand represents a small fraction of the biogas produced, the remainder is flared. During summer even more gas is flared. The city decided to modernize and optimize the plant and introduce a biogas upgrading system. Upon completion, this project will produce the equivalent of **3.97 gallons of gasoline** per minute, which amounts to just under **2.1 million gallons of gasoline** offset in a year. The engineers anticipating that the upgrading project will pay for itself within three years. The biomethane portion of the project is estimated to cost \$9.3 million. It's part of a larger \$25 million investment in upgrades over the next five years that will increase the capacity of the plant.

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Biogas advances in the US

The U.S. is currently home to over 2,200 operational biogas-producing sites, according to the American Biogas Council, including 171 on-farm digesters, 1,500 digesters at WWTP (only 250 of which use the produced biogas, 563 landfill sites (26 pipeline, 537 electricity). Some of the most notable biogas projects are the production of RNG at the Ruckman farm producing biomethane from its \$120 million swine waste-to-energy project near Albany, the \$27 million, 5.2-MW food waste-based biogas plant in Charlotte and the Stop & Shop Supermarket plant in Freetown, Massachusetts processing an estimated 34,000 tons per year of inedible food products from all of Stop & Shop New England's 212 stores that cannot be sold or donated to regional food banks or local farms into 1.25 MW of electricity. Vermont Technical College's anaerobic digester (AD) named "Big Bertha" began operating at full capacity, transforming 16,000 gallons of cow manure and organic matter from Vermont farms and brewery waste from the Alchemist and Long Trail Brewing Co. into 8,800 kWh of electricity daily.

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