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Argonne National Labs and NGO Energy Vision Release Case Studies Demonstrating Success of Renewable Natural Gas as a Transport Fuel

NEW YORK, Feb. 1, 2018 -- The US Department of Energy's Argonne National Laboratory and the sustainable energy NGO Energy Vision today released two case studies of successful projects that were among the first to produce Renewable Compressed Natural Gas (R-CNG) vehicle fuel using anaerobic digesters to capture biogases from decomposing organic waste.

Energy Vision and Argonne produced the studies jointly. One study looks at Fair Oaks Farms, an Indiana dairy cooperative with roughly 36,000 cows. It converts manure to R-CNG using a large anaerobic digester, and uses the fuel to power its milk tanker trucks. The other study assesses the Sacramento BioDigester, the first food-waste digester in California to turn commercial organic waste into R-CNG vehicle fuel using anaerobic digestion.

"These projects are trail blazers, and their experience bodes well for the future of renewable natural gas," said Matt Tomich, president of Energy Vision. "Their success can serve as models for other places with large organic waste streams, which is virtually every urban and rural setting in the country."

"R-CNG can achieve the greatest GHG reductions of any transportation fuel today -- 70% or more as compared to gasoline or diesel," said Marianne Mintzof Argonne National Laboratory's Energy System Division.

Mintz and Tomich co-authored the case studies.

R-CNG derived from organic waste is chemically similar to geologic compressed natural gas (CNG), and can be used in the same applications: heating/cooling, generating electricity, or fueling vehicles. But unlike fossil CNG, it's a renewable fuel. According to Argonne National Labs GREET model, R-CNG from anaerobic digestion of food waste is net-carbon negative over its lifecycle, including production, use and avoided emissions. That means making and using it results in lower atmospheric GHG than if the fuel were never made or used. R-CNG derived from a food waste digester meets or exceeds international goals of reducing GHG emissions 80% from 2005 levels by 2050.

Nationwide, renewable natural gas has grown over 70% annually in recent years -- facilitated by inclusion in the EPA's Renewable Fuel Standard (RFS2), which sets a minimum volume for the amount of renewable fuel that must be used in the transportation sector. Renewable natural gas production for transportation totaled 151 million gasoline gallon equivalents (GGEs) in 2017, up from 125M GGEs in 2016 and 90M GGEs in 2015.