Key Phase Underway in $120 Million Manure to Energy Project

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RAE Project Progress

Installation of Biogas Technology Will Create Renewable Natural Gas at Smithfield Foods' Ruckman Farm by Mid-2016

Albany, MO (October 30, 2015) – Roeslein Alternative Energy announced the turnkey facility to create and inject large quantities of Renewable Natural Gas (RNG) into the national grid system, created from one of the largest concentrations of finishing hogs in the Midwest, will be operational by mid-2016. The announcement took place during an event at Ruckman Farm, one of the nine Smithfield Foods Missouri hog production facilities involved in the largest livestock manure-to-energy project of its kind.

"The technology we have developed is ready to be deployed commercially in a project that makes both economic sense and environmental sense," said Rudi Roeslein, founder and President of Roeslein Alternative Energy. "This is not just about converting the manure from almost two million pigs into renewable energy. It's about taking environmental sustainability to a new level."

"This project will show how farmers can do more than produce food. We can make energy, we can reduce waste, and we can be good stewards for our most important resources – land and water," said Blake Boxley, Director of Environmental Health and Safety, Smithfield Hog Production.

Construction on the $120 Million Project Began in 2014; Continues on Schedule

Phase One, which is nearly 50 percent complete, involves installation of impermeable covers and flare systems on the 88 existing manure lagoons at Smithfield Foods hog finishing farms in Northern Missouri.

- The covers reduce greenhouse gases by preventing methane from escaping to the atmosphere, keep rainfall from entering the lagoons and reduce odor.

Phase Two involves fabricating and installing technology to purify the biogas captured by the impermeable covers and developing an inter-connection to a natural gas pipeline operated by ANR, which transverses Ruckman Farm. RNG is projected to enter the pipeline in the Summer of 2016.

- Duke Energy in North Carolina has agreed to purchase a portion of the RNG to help meet clean energy requirements for power generation.

Key Impacts of the Project When Completed

- The hog manure from the project will produce approximately 2.2 billion cubic feet of pipeline quality RNG, or the equivalent of 17 million gallons of diesel fuel annually.
- Approximately 850,000 tons of CO2 equivalent methane will be prevented from reaching the atmosphere.
- The project is providing $120 million in new work for Missouri supply chain, manufacturing, and construction companies and their employees.

"Since the partnership with Roeslein, we've been able to re-stock some farms that had been idle. With their help and their technology, we have since created more than 100 jobs for our grow-finish hog operation in Missouri," Boxley said.

Next: Horizon Two Adds Biomass from Native Prairie Grasses to Create More RNG

Roeslein Alternative Energy intends to supplement the hog manure feedstock with biomass harvested from restored prairie grasslands to produce additional RNG. The intent of Horizon Two is to provide an economic incentive to convert highly erodible or marginal land, currently used for commercial agriculture production, to environmentally beneficial prairie.

- RNG production will double under Horizon Two with the addition of prairie grass biomass to supplement the hog manure feedstock.

"We are developing a mixture of grasses and native species that provide ecological services, wildlife habitat and biomass that will be co-digested with manure," Roeslein said. We hope to demonstrate the concept on a small scale at Ruckman, move it to other farms and then hopefully across the Midwest."

"With the introduction of native grasses, we not only produce more energy, but we provide habitat for our wildlife here at the farms. Habitat is something near and dear to our hearts," Boxley said.

Roeslein believes the project can be emulated in farms across the United States and that it has applications for developing countries around the world seeking ways to sustainably manage natural resources and energy production.

About Roeslein Alternative Energy, LLC

Roeslein Alternative Energy (RAE) is the owner, operator and developer of renewable energy production facilities that convert agricultural and industrial wastes, along with renewable biomass feedstocks to renewable natural gas and sustainable co-products. RAE engages in these business operations with a focus on incorporating native prairie restoration. RAE is a limited liability company with its principal offices located in St. Louis, Missouri. RAE was launched in 2012 by Rudi Roeslein, co-founder and CEO of St. Louis-based Roeslein and Associates, Inc. (a global leader in engineering, modular fabrication, and construction of industrial plant facilities).

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