

Summary/Abstract for Public Release

Applicant: Lincolnway Energy LLC

Project Title: Reduced Carbon Intensity Ethanol via Biogas from Stillage & Other Feedstocks

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Lincolnway Energy (LWE) built, owns and operates a 90 million gallon per year (90 MMGY) dry mill corn ethanol plant located in Nevada, Iowa. LWE has been processing corn into fuel grade ethanol and distillers grains at the ethanol plant since May 2006. LWE plant has expanded capacity from 50-MMGY original design with a goal of reaching 100 MMGY in the next 2 years through debottlenecking and integration of new technologies.

This project will evaluate the feasibility of deploying biogas (anaerobic digestion) technology using various forms of stillage and/or corn stover in a site-specific design to provide an integrated analysis to scale-up biogas technology with corn-ethanol production. The Project design and learnings can be applied across the entire US corn ethanol industry upon successful commercialization of this technology, as well as future ethanol derivatives like sustainable aviation fuels (SAF).

This project focuses on the environmental, business, and technical feasibility of implementing biogas as a bolt-on facility co-located with existing ethanol plants. Utilization of the stillage and/or corn stover is expected to lower carbon intensity (CI) score and benefit the overall economics of ethanol production.

This project will integrate a cross-disciplinary team that has the necessary experience and capabilities to conduct a full feasibility of biogas integration with operating corn ethanol plants. With two corn ethanol plants involved, the analysis will leverage actual plant data, designs, samples, and operating procedures to create an industry-ready, biogas platform.

Biogas production within existing corn ethanol plants has the potential to reduce carbon intensity for 1st gen corn ethanol facilities and future derivatives like SAF products. Ethanol plants like Lincolnway will be evaluated utilizing organic biomass to produce biogas which is then used for process energy, which could further reduce the lifecycle carbon intensity of ethanol towards zero.