"The Heartland Biogas LLC" Project

Presented by Ted Matthews
A-1 Organics

Heartland Biogas, LLC

- Solids separation building and digester tanks under construction in LaSalle, Colorado
- Another view of digester tanks

Site Overview

Heartland Biogas, LLC

- Parts & Pieces are Here
  - Digester feed stocks
    - Numerous food processors in the area
    - Large amount of meat processors and healthy supply of manure available
    - These waste streams can all go to "beneficial use" such as digestion and composting. It digested, the biogas is harvested and the resulting stabilized digester solids marketed
  - Land
    - Digester can be built on available land that is relatively close to the waste generators
    - Crop land nearby is available
  - Interstate Pipeline
    - Digestion of these materials will make biogas 24/7.
    - Interstate pipeline close (within feet).
    - Biogas will be "cleaned" to natural gas quality and injected into pipeline.

“EDF Renewable Energy” along with their wholly owned subsidiary “Heartland Biogas” are bringing these parts and pieces together.

Covered Lagoon Digester

- The biogas contract called for the generation of biogas, cleaned and injected into the interstate pipeline, by April of this year.
- Construction on 8,000,000 gallon covered lagoon started approx one year ago
- The covered lagoon digester was activated in December of this year.
- By gas contract obligations were met by the end of March.

Above-Ground Tank Digesters

- There will be six 1.7 million gallon above-ground tank digesters with supporting storage and dosing tanks.
- The digesters will be operated thermophilic.
- When the digester effluent exits the above-ground tanks, solids will be separated and will go to the covered lagoon for further digestion, then on to the storage lagoon and land application.
- Construction now underway.
Excavation

- Excavation in the digester island, containment area

Foundation

- Foundation for the operation building

Putting it all together

Biogas Take-Off Agreement

- 25 year gas Off-Take Agreement with SMUD (Sacramento Municipal Utilities District)
  - Very important to the economics of the project.
- Phase 1B of the project
  - Anticipated biogas production is 4800 MMBTU of biogas per day.
  - System designed for expansion by adding additional digestion tanks

Putting it all together

Digester Feed Stock

- A-1 Organics has entered into an exclusive digester feedstock procurement agreement with Heartland Biogas, LLC, a wholly owned subsidiary of EDF Renewable Energy.
- A-1 actively negotiating with and seeking new generators of digestible organic substrates that can be beneficially reused (recycled) via the Heartland Biogas project.
- Generators supplying feedstocks to this program may be nominated to and become a part of Colorado’s Environmental Leadership Program (ELP).
- A-1 Organics, along with Heartland Biogas, will be developing high-value organic soil amendments and fertilizer grade products from the 400 - 450 yds of digester solids generated each day.
- Another very important aspect of the A-1/Heartland agreement, any digester feedstocks which need to be diverted from the digester for any reason can be taken to one of A-1’s facilities for composting. This flexibility provides “comfort” to the waste generator and Heartland Biogas that the feedstocks will be properly managed 365 days a year.

DPS (Digester Processing System)

- The non-manure digester feedstocks procured by A-1 Organics which need additional dilution, particle size reduction, etc. will be delivered to the DPS for processing and pumped to digester system.
- The DPS system is designed to process a very wide variety of feed stocks.

DODA System

- A-1 has been operating the DODA food processing system for a few years at their Stapleton compost site.
- The DODA system removes plastic and paper contamination from various food waste making them more suitable for composting or digestion.
A-1 recently purchased a Tiger De-Packaging System, which is currently in operation at the Eaton facility.

- There are currently 40 - 50 Tiger De-Packaging Systems operating in Europe.
- This is the first installation in the United States.
- A-1 is excited about the operational simplicity and efficiency of the Tiger System to process and "clean" highly contaminated food waste and packaged materials - making them very suitable for digester feed stocks or composting.

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TIGER SYSTEM VIDEOS

- FOOD WASTE
- GROCERY STORE WASTE
- INDIVIDUALLY BOXED DRY ANIMAL FEED
- DE-PACKAGING SNACKS & EXPIRED POTATO CHIPS

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Thank you!