

Gas Upgrading Case Study

Guymon, Oklahoma- High Plains Bioenergy/Seaboard Foods



Gas Upgrading Reference

High Plains Bioenergy (HPB), a subsidiary of Seaboard Foods and major North American food processor, installed a Carbotech Pressure Swing Adsorption (PSA) gas upgrading plant from BIOFerm™ Energy Systems to generate renewable natural gas (RNG) for pipeline injection.

HPB traditionally fueled boilers with the gas generated from anaerobic digestion of pork processing waste, but identified gas upgrading and grid injection as a sustainable, alternative use for their gas to enable the highest return.

Project Background

- **Customer:** HPB/Seaboard Foods
- **Seaboard Foods:** Processes 5.5 million hogs/year
- **Gas source:** Covered anaerobic digestion lagoons
- **Location:** Guymon, Oklahoma
- **Gas upgrading tech:** Carbotech PSA
- **Operational:** End of July 2017

Fuel Output

- **RNG:** ~400 million scf/year
- **Gas gallon equivalent:** 3,371,500 (GGE)/year

Project Gas Upgrading Specifications

- **Carbotech PSA:** BUP2000
- **Footprint (L x W):** 5,000 ft²
- **Gas utilization:** Pipeline injection
- **Energy content:** >950 BTU/scf
- **Pipeline reqs:** Exceeds DCP pipeline specs
- **Raw gas capacity:** 1,200 scfm
- **Raw gas:** 68% CH₄, 24% CO₂, >4,000 ppm H₂S
- **Product gas:** 850 scfm

Complete, Skid-Ready, Carbotech PSA Gas Upgrading System Installation Includes

- Comprehensive control system over entire upgrading plant
- Performance guarantee
- Biogas filtration
- Biological Sulfur Removal Unit
- Biogas compression
- Upgrading to pipeline requirements
- Deoxygenation to a level of <10 ppm O₂

About BIOFerm™

Based in Madison, Wisconsin, BIOFerm™ Energy Systems is a North American provider of turnkey gas processing and anaerobic digestion systems.

We additionally offer a spectrum of services, such as: gas marketing, financing, project development, regulatory and financial oversight, power purchase agreement assistance, and consulting engineering.

Our company has experience from the installation of over 900 PSA systems (including ~80 Carbotech PSA biogas processing plants) and over 450 anaerobic digestion facilities worldwide.

Carbotech

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