Case Study – Anaerobic Digestion – Potato Processing

ConAgra Foods’ Lamb Weston is one of the largest producers of frozen potatoes in the world. The process to transform whole Irish potatoes and sweet potatoes into french fries and other potato products generates organic waste in the form of potato peel and other small potato pieces (fines). While the majority of potato peel is captured and redirected for use as animal feed, some of the residual potato matter is carried out of our facilities in the waste water stream. To ensure the maximum value is captured for this by-product, four of our facilities have adopted the use of anaerobic digestion (A/D) to generate biogas.

Of the four ConAgra Foods Lamb Weston facilities with on-site A/D, three locations use organic matter in the form of residual potato fines in the waste water stream to generate biogas for use back in the processing facilities. The fourth, and newest, location in Delhi, LA incorporates the residual sweet potato matter from the waste water stream as well as the sweet potato peels. Due to the nature of sweet potatoes, the peels are not suitable for animal feed, so the anaerobic digester was designed at that site to handle both materials streams.

The Delhi, LA facility was the first frozen potato facility in the world designed specifically to make sweet potato products. Because of the unique attributes of both the plant design - LEED® Platinum Certified, and the sweet potatoes themselves, the company turned to anaerobic digestion as the method to ensure the diversion of approximately 10,000 tons of sweet potato matter per year from landfill. Being able to utilize the entire sweet potato as part of Delhi’s vertically integrated process offsets about 20% of the facility’s annual energy demands, as well as prevents methane from entering the atmosphere.

Resulting biogas generated across all four ConAgra Foods Lamb Weston locations averages approximately 2.5 million therms each year, which is consumed at our facilities and offsets equivalent natural gas requirements, thus resulting in a greenhouse gas emissions savings of 13,000* metric tonnes per year, which is like parking 2,700 passenger vehicles annually.

* Source – http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results

Link to Delhi’s website http://www.lambweston.com/Delhi/the-Delhi-plant.jsp
Images from Delhi

Image from Taber, Alberta
Corporate Responsibility at Lamb Weston
A farm-to-plant-to-customer philosophy more than 60 years in the making.

Delhi, Louisiana
More than 250 people employed at our Delhi plant create more than 100 million pounds of french fries and other food products every year. Lamb Weston’s newest 165,000 sq. ft. operation opened in 2010.

Highlights

• Our Delhi plant is the world’s first frozen food operation to earn LEED Platinum certification, the highest possible green building designation.

• In addition to LEED platinum certification, the plant earned a special ConAgra Foods Sustainability Development Award of Excellence in 2010.

• The plant is expected to save 396,000 gallons of water yearly compared to similar plants.

• Energy-saving equipment—which identifies and recovers potential wasted energy within the building systems and processes—is also expected to save 40% of the annual energy consumed at comparable plants.

• Biogas, produced by treating process waste water, is piped back to the plant boilers to generate steam, reducing natural gas use by approximately 20%. The use of biogas also prevents methane, a harmful greenhouse gas, from entering the atmosphere.

• Landscaped with native and adopted species, more than 100 acres of the property will be maintained as open space, including ponds, protected wetland areas and restored native vegetation.

Additional Points

• The Delhi plant is our first operation designed with sweet potato production in mind, and it was purposely built near prime sweet potato growing regions.

• Employees nourish our community by participation in and sponsorship of the Grin and Bear It and Delhi Fun Run for Richard PANSH Medical Center; sponsorship of the Louisiana Ag Center Livestock show; and membership in the Delhi recycling program, which enables employees to recycle materials from home at the plant.