

The background of the slide features a large, semi-transparent seal of Catawba County. The seal is circular and contains a central shield with a red cross on a white background. Above the shield, the words "CATAWBA COUNTY" are written in a circular path. Below the shield, there is a depiction of a plow and a sheaf of wheat. The entire seal is set against a dark blue background with a faint aerial view of a landscape.

Catawba County  
Regional EcoComplex  
*and* Resource Recovery Facility

*Using Existing Landfill Gas Project to  
Produce Additional Renewable Energy*

# Catawba County, North Carolina:

- Approximately 155,000 citizens
- Waste stream is 78% industrial
- Producing electricity since 1999
- 3 Gen-Sets (GE Jenbacher), 1 Megawatt each
- Since 1999, facility has sold 123,463,650 kilowatt hours of renewable electricity to Duke Energy

# Landfill Gas-to-Energy Facility





# LFG Energy Produces Valuable Heat Energy

- Biodiesel Research & Production Facility
- Algae Research
- Biosolids Management Facility
- Solid Waste Digester

# Biodiesel Research & Production Facility





# Biodiesel Research & Production Facility

Partnership with Appalachian State University

Gen-Set Heat employment:

- Warming of Facility
- Splitting Feedstock Seed
- Conversion Catalyst
  - Preheating Oil
  - Separating Solids
  - Dehydration
  - Methanol Recovery

# Algae Research, Bio-Solids Management, and Solid Waste Digester

Algae and Food Crop Production



Biosolids (Sludge) Management Facility



Solid Waste Digester



The background of the slide features a large, semi-transparent watermark of the University of North Carolina seal. The seal is circular and contains the text 'UNIVERSITY OF NORTH CAROLINA' around the perimeter. In the center, there is a shield divided into four quadrants, each containing a different symbol: a book, a plow, a sheaf of wheat, and a wheel. Above the shield, the word 'TRINITY' is visible. The entire slide has a dark blue background with a faint image of a building on the left side.

# Algae Research

Partnering with University of North Carolina at Charlotte

Gen-Set Heat employment:

- Injecting CO<sub>2</sub> into Algae ponds to facilitate growth
- Blending Algae with oilseed meal to enhance livestock feed
- Algae used as soil amendment in Greenhouse
- Possible gasification in Bio-Energy Facility

# Bio-Solids Management Facility

Gen-Set Heat employment:

- Used to dry Wastewater Sludge
  - Dehydrated bio-sludge is co-gasified with wood waste

## Solid Waste Digester

Gen-Set Heat employment:

- Infusion of heat allows microorganisms to perform at optimal state

# Visit the EcoComplex

Utilities and Engineering site:  
[www.catawbacountync.gov/depts/u&e](http://www.catawbacountync.gov/depts/u&e)

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