PRAIRIE'S EDGE DAIRY FARM, LLC

GOAL: SUSTAINED SUSTAINABILITY

EARLY
DAIRY MANURE DIGESTERS

MODERN MANURE DIGESTERS

DIGESTER BENEFITS

ENVIRONMENTAL BENEFITS

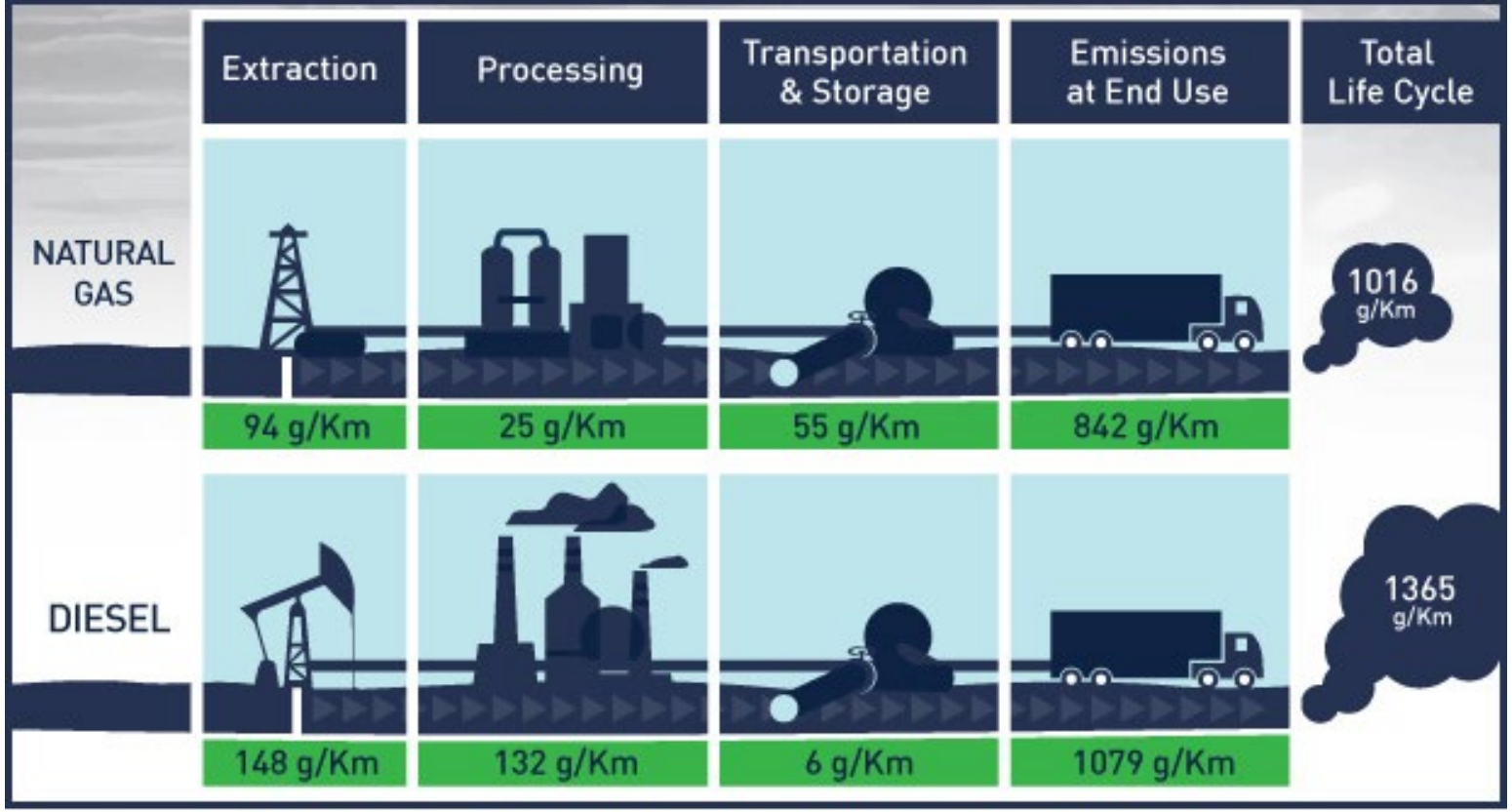
- **Pathogen reduction:**
- Salmonella
- Generic Escherichia coli
- Escherichia coli O157:H7
- Mycobacterium paratuberculosis (Johne's)
- Bovine enterovirus (BEV)
- Enterovirus
- Fecal coliform
- Cryptosporidium
- Anaerobic digestion of manure has been shown to reduc

ENVIRONMETAL BENEFITS CONTINUED

- Odor Reduction:
  - Most "Smell" originates from a conventional lagoon, and land application. Digesters consume volatile solids.
- Methane reductions:
  - Methane is many times more potent of a greenhouse gas than CO2
  - https://www.epa.gov/sites/production/files/2018-06/documents/epa430r18006agstarmarketreport2018.pdf

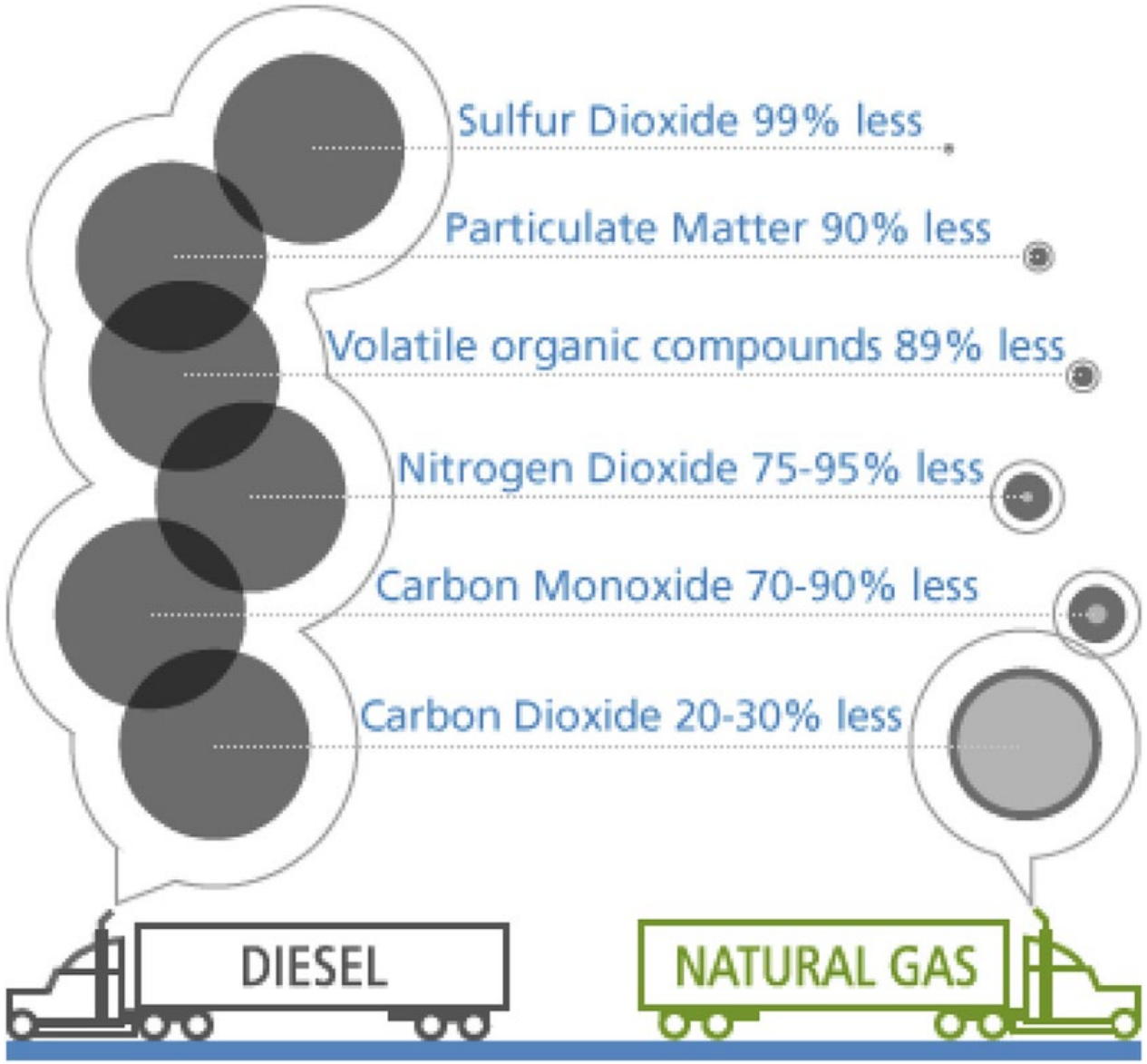
GHGenius 'Well-to-Wheels' lifecycle modelling

Natural Gas is Realistic Because it Costs Less, Not More, than the Status Quo



Based on Natural Resources Canada's well-to-wheels"lifecycle model 3.15
GHGenius. Assumes use of Wesport Innovations 15 litre HD Engine System

CleanEnergyFuels.com/Compression


Sulfur Dioxide 99% less
Particulate Matter 90% less
Volatile organic compounds 89% less
Nitrogen Dioxide 75-95% less
Carbon Monoxide 70-90% less
Carbon Dioxide 20-30% less
DIESEL
NATURAL GAS

FINANCIAL BENEFITS ANAEROBIC DIGESTION

- Energy Production: Electricity/ rCNG
- Nutrient Harvest/Upcycling into all Markets, i.e. conventional cropping systems, Lawn and Garden, Municipalities etc.
- Tipping Fees ***
- Renewable Energy credits, Greenhouse reduction credits etc.

RENEWABLE DAIRY FUELS

Fleet of 42 long-range CNG trucks—one of the largest CNG fleets in the US

Built two CNG fueling stations for trucks—fueling 120k+ DGE's a month

On-farm anaerobic digester provides 1.5M DGE of gas a year to station.

NIPSCO

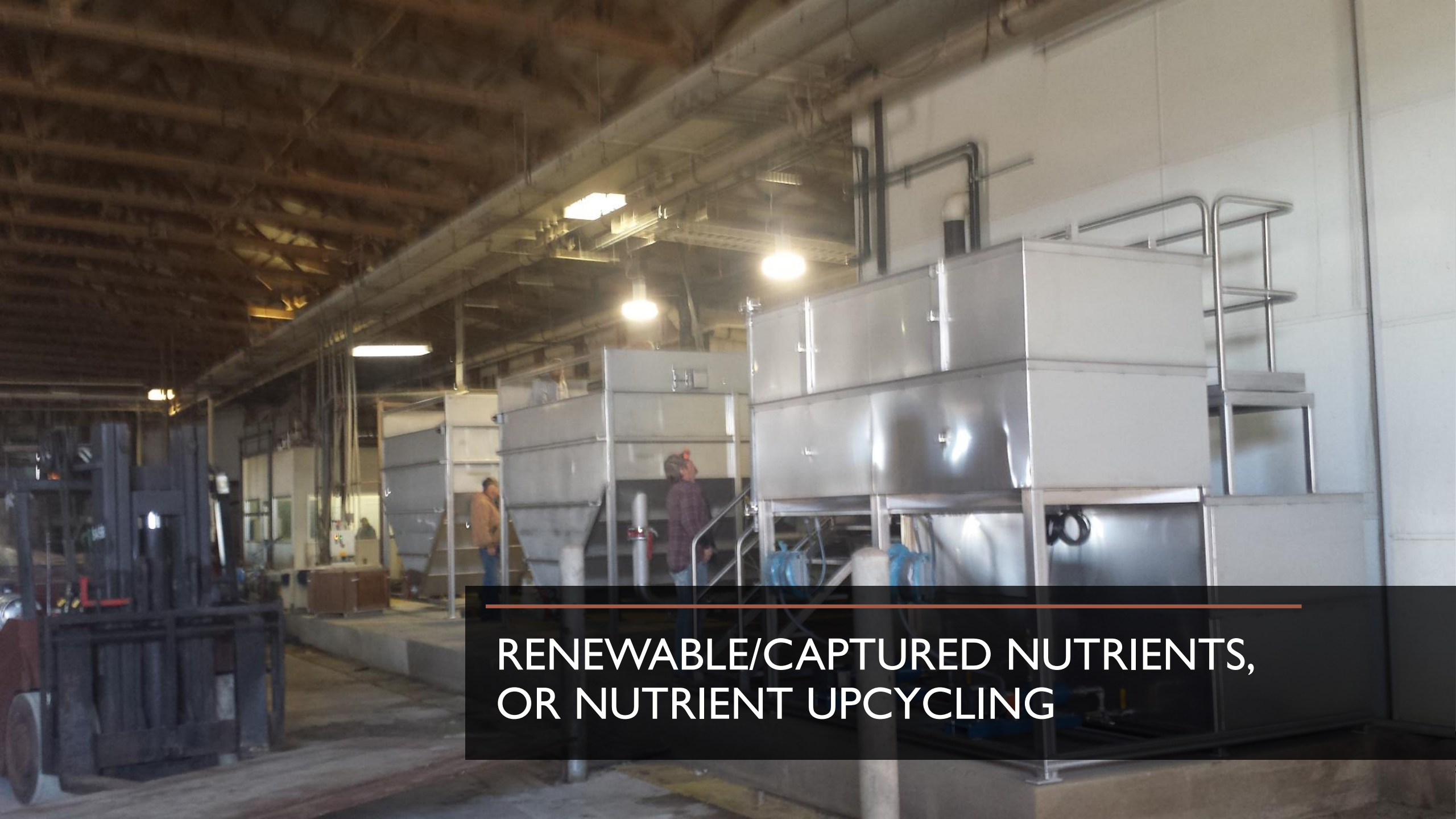
Renewable Dairy Fuels

Project can source gas from local utility when renewable is not available.

First agriculture-based CNG projects to be registered with the US EPA's Renewable Fuel Standard.

RENEWABLE NUTRIENTS/ RENEWABLE FUELS

OBSTACLE VERSUS OPPORTUNITY



RENEWABLE/CAPTURED NUTRIENTS, OR NUTRIENT UPCYCLING

CONVENTIONAL NUTRIENTS VS. UPCYCLED/CAPTURED NUTRIENTS

- Commodity Nutrients like those mined or mined/manufactured.
  - Anhydrous Ammonia, DAP, MAP, UAN, 0-0-60 all consume large amounts of energy to create.
  - The above are mined or harvested from the earth, creating there own environmental concerns.
  - Intense high yield cropping programs may lead to Organic Matter depletion.
  - Upcycled/ Captured Nutrients exist mostly in natural forms, just difficult and costly to capture!

TRIDENT PROCESSES NUTRIENT CAPTURE

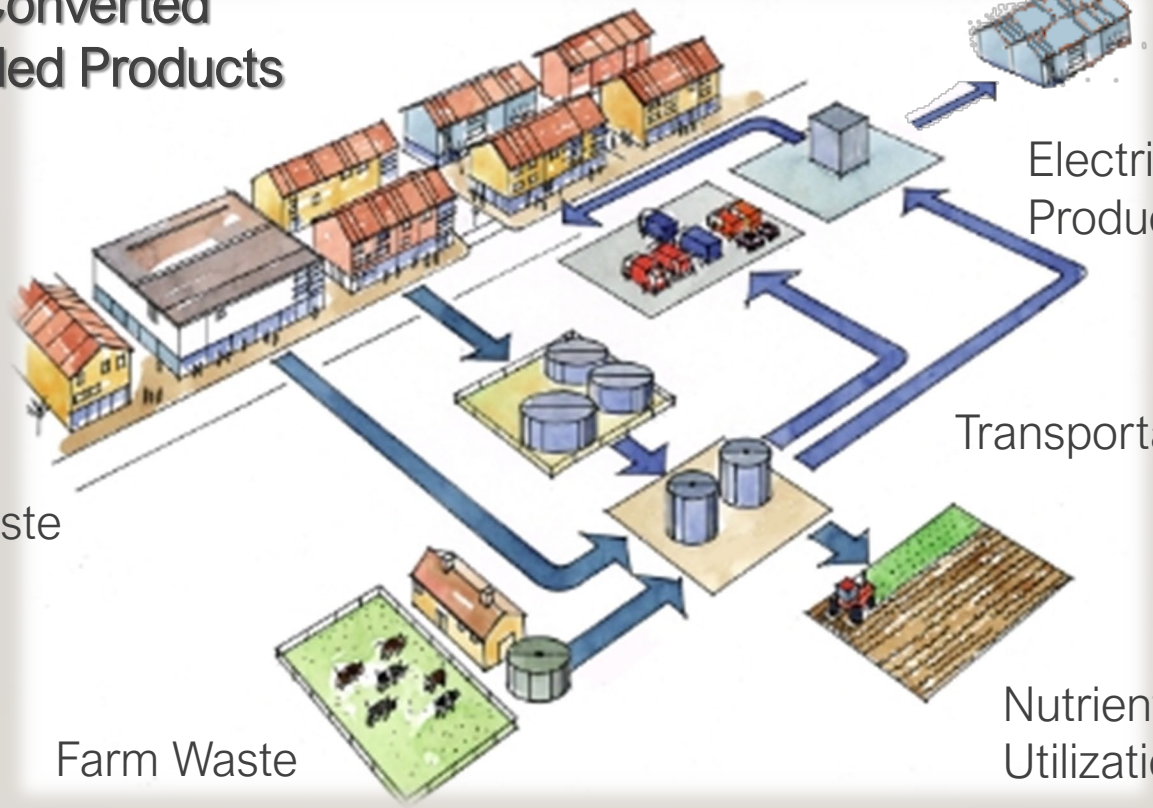
PRAIRIE'S EDGE DAIRY FARM/ MIDWESTERN BIOAG

- Digester
- Trident Nutrient capture technology
- Nutrient cake used in the creation of TerraNu Products
- Calcium
- Micropak
- Ignite

WWW.TERRANU.INFO.COM

INTEGRATED PRODUCTION

Wastes Converted to Value Added Products



Retail Store Solid Waste

Greenhouse Products (Heat & CO2)

Electrical Production

Transportation Fuel

Industrial Food Processing Waste

Farm Waste

Nutrient Utilization