



Trends in Renewable Biogas

ASERTTI Fall 2008 Meeting



Presentation Overview

- Business Overview
- Process Overview
- Types of Biogas
- Market Drivers
- Trends in Biogas
- Advantages of Biogas
- Summary



Business Overview

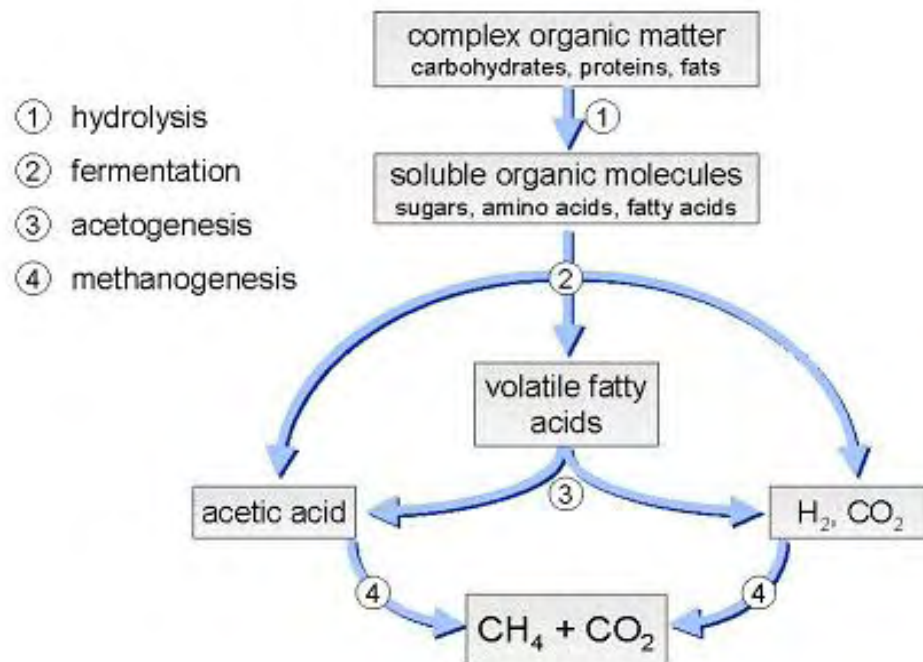
Microgy, a subsidiary of EPG, owns and operates proven commercial scale renewable energy facilities producing methane-rich biogas from waste products agricultural livestock and organic wastes

Our process harnesses uncontrolled methane emissions and therefore results in greenhouse gas offset allowances

Biogas is versatile and can be used to produce pipeline-grade methane (Huckabay Project); renewable energy-electricity (3 Wisconsin facilities) or thermal (JBS Swift); or transportation fuel (CNG/LNG)

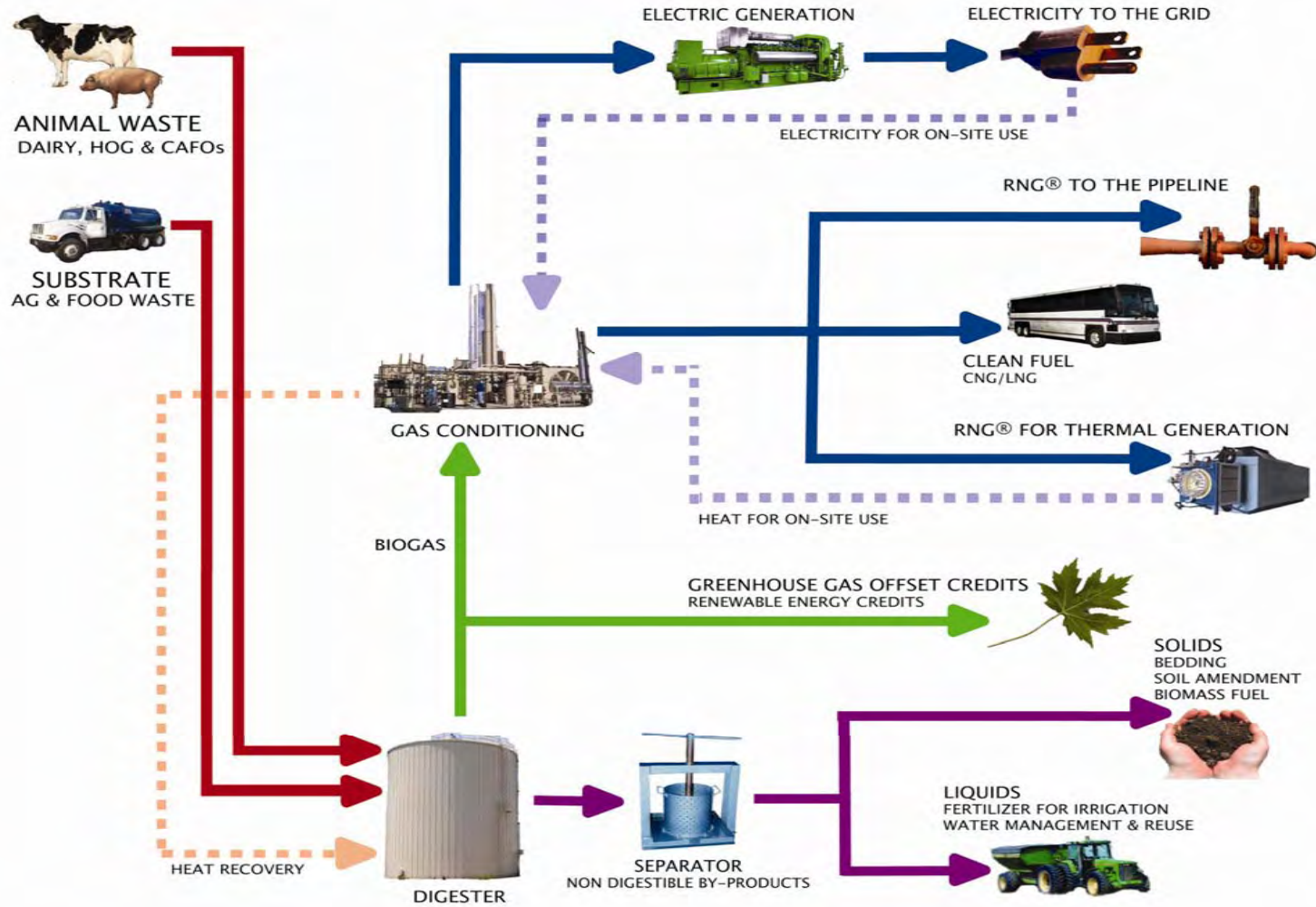
Technology combined with process knowledge and proprietary operational data forms “our intellectual capital”

Anaerobic Digestion 101



Microgy Harnesses and Enhances a naturally occurring process

Process Overview



Huckabay Ridge, TX

Five Star Facility – Elk Mound, WI



Wild Rose Facility – La Farge, WI



Norswiss Facility – Rice Lake, WI



- Largest RNG® facility of its kind in North America
- Commercial Operation: January 14, 2008
- 635,000 MMBtu/yr gas production targeted

Biogas Produced From

Digesters

Animal manure (dairy cows, swine) and other organic residuals

Waste water treatment facilities

Landfills

Degradation of organic residuals that were land filled

Gasification

Biogas produced from thermal chemical processes like gasification utilizing renewable feed-stocks including forest residues and agricultural wastes



Market Drivers for Biogas

Higher Energy Prices and Growing Energy Demand

Clear focus on renewable sources of energy as an efficient substitute for energy from traditional sources

Federal and state mandates/incentives have been established to further production of renewable energy, including tax credits, price support, and other incentives to produce biomass, biogas, and other renewable energy resources

Increasing Environmental Concerns

A number of states are implementing a cap and trade system for greenhouse gases (California, RGGI, etc.)

Congressional efforts to pass national federal legislation to mandate reduce greenhouse standards have increased in pace and scope

Increasing Regulation of Agricultural and Landfill Waste

Concentrated animal feeding operations face new regulations that can be costly and difficult to implement

Landfills are being closed and additional regulations are being put in place to reduce organics



Trends in Renewable Biogas

Renewable Natural Gas - condition biogas to pipeline grade

**Contract path to existing natural gas fired power generation facility
(greater efficiencies)**

Renewable energy credits, or
GHG credits (carbon neutral fuel)

Thermal energy

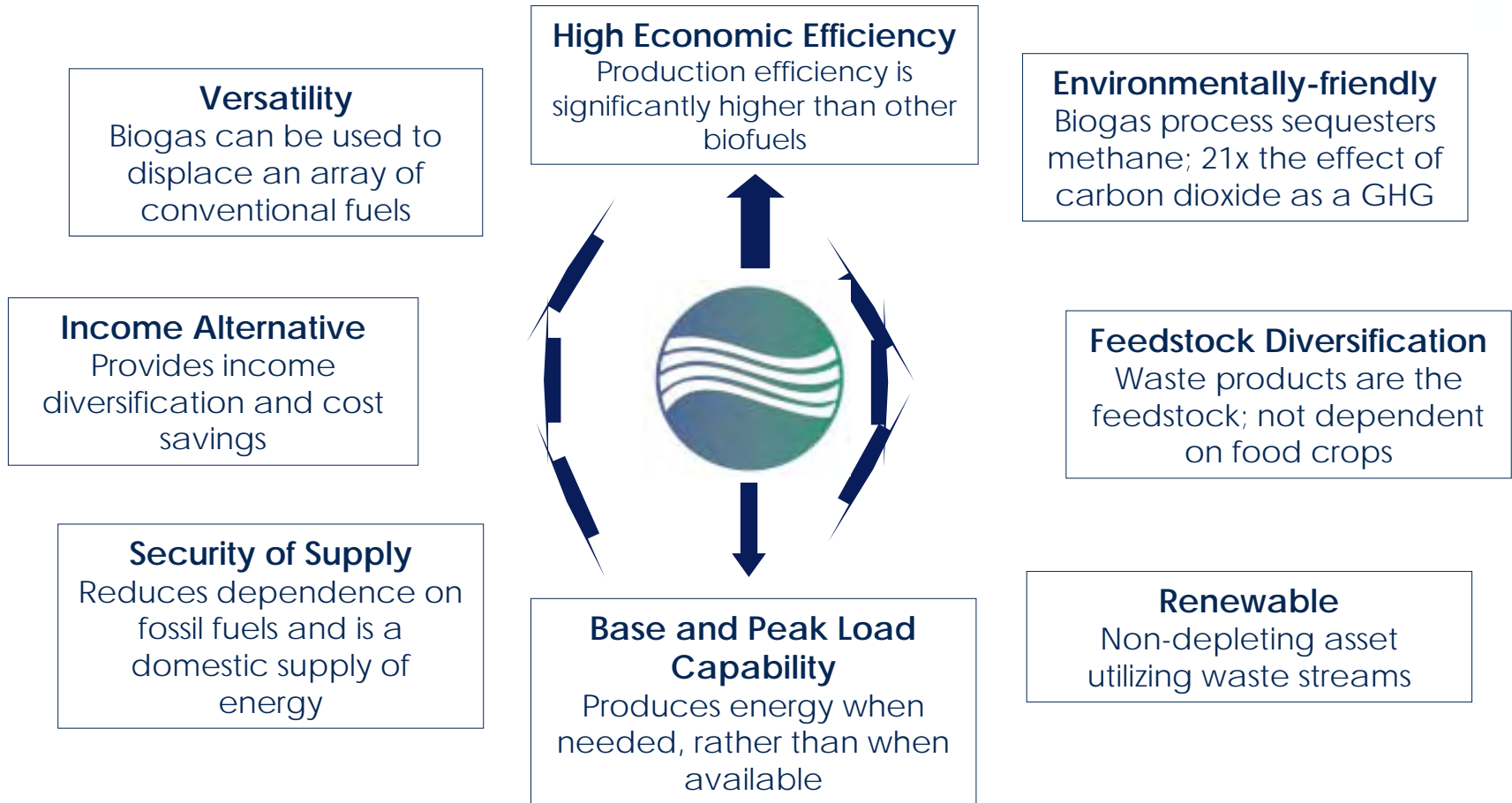
State buildings
Residential and commercial businesses
Industry – process steam or heat

Renewable transportation fuel

RNG qualifies a renewable transportation fuel under the Energy Independence and Security Act (EISA) of 2007, now Public Law 110-140

Direct Biogas to thermal load – typically process steam or heat

Advantages of Biogas



Summary

Market Drivers for New Trends in Biogas

- Higher Energy Prices and Growing Energy Demand
- Increasing Environmental Concerns
- Increasing Regulation

Biogas Trend – Conversion to Renewable Natural Gas

- Enhances value of forest and other organic by-products by providing additional markets through existing natural gas pipeline infrastructure
- More efficient conversion options available
- Considered a carbon neutral fuel
- Can be used as a transportation fuel (ie: compressed natural gas)

Questions?

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