Our vision is “healthy Kansans living in safe and sustainable environments”
What are these “organic-rich” wastes?

- Mixed municipal solid waste (60-80%)
- Dairy and feedlot manure, poultry litter
- Waste tires
- Packing plant paunch, etc.
- Food waste (grocery stores, institutions, mfg, etc.)
- Saw dust/wood scraps
- Agricultural crop residues
- Construction/demolition waste
- Septic tank liquids, porta-potty waste, etc.
WORKS! Conference Sessions on Energy Recovery from Waste

- Expanded from recycling, composting, and HHW management to include energy from waste in 2009
- Participants in Energy Sessions
  - Cargill Beef
  - Frito-Lay
  - Universities (KSU, NE, MO)
  - USDA
  - Western Plains Energy
  - Forget-Me-Not Dairy
  - KLA Dairy Council
  - Seaboard Foods
  - National Beef
  - Many consultants and others
Factors that Affect Project Feasibility

- #1 – Low current price of energy (natural gas and electricity)
- High capital costs of waste processing systems
- Limited interest of electric utilities
- High system maintenance cost
- Uncertain business future
- Tax incentives and grants

Most are waiting and watching
Waste-to-Energy Technologies

- Landfill gas generation and recovery
- Anaerobic digesters to produce methane
- Biomass gasifiers
- Wood waste boilers
- Cement kilns
Landfill Gas Systems

Collected and used

Collected and flared
Landfill Gas Management

Flares & Vents
Deffenbaugh Gas Plant
Johnson County
Waste Management Electricity
Rolling Meadows
Caterpillar, Electric Engine
Rolling Meadows - Topeka
An Example of Landfill Gas Recovery and Utilization

Waste Management/Rolling Meadows/Topeka Gas to Electricity Plant

- Startup – January 2010
- Gas consumed through October 31, 2012
  2.9 billion cubic feet
  1800 cubic feet per minute
- Electricity produced
  131 million kWh (expanding)
Liquids Addition to MSW Landfills to Enhance Gas Generation and Landfill Stabilization

- Seward County
- Deffenbaugh, Johnson County
- Waste Connections (Plumb Thicket), Harper County
- Waste Connections, Finney County

About 10 million gallons since began in 2011
50,000 tons
Seward County
Oil & Gas Drilling Waste
Waste Connections - Harper County
Waste Connections
Harper County
Ash Grove Cement - Chanute
Ash Grove Cement - Chanute
ICM Biomass Gasifier
Harvey County Landfill

Pilot Project
1000-2000 tons/yr
Wood chips
Wheat straw
MSW
Tires
Manure
Western Plains Energy (Ethanol Plant)
$40 Million Biogas Digester, Oakley

- $5 million USDA grant
- $15 million Kansas ARRA funds
- Primary waste-feed lot manure
  Also grain dust, food waste

Operational in 2013
Western Plains Ethanol Plant (Oakley)
Untapped Waste Resources

- Large Feedlots
- Large Dairies
- Waste Tire Piles and Monofills
- Beef Packing Plants
- Sawdust Piles