Discussion Objectives

- Overview of EcoCombustion Energy Systems
- Overview of the Elimanure™ process

EcoCombustion Energy Systems Corp (EcoCom)

- Founded 2004 — Office in Kaukauna, WI, USA (originally Skill Associates)
- Mission is “Environmental Solutions for Sustainable Agriculture”
- Principle Product is Elimanure™ — a waste to energy product
- First sale (Prototype) to Wiese Brothers’ Farm - startup 2006
- Technology Development 2007/08
  - IPPC Grant — new burner technology developed
  - Permitting finalized with DNR/EPA

2009 Focus — gear up for commercial expansion!

Disruption of Balance = Opportunity

- Agriculture — farms are getting bigger and bigger
- Alternative Energy — how do we decouple from fossil fuel energy?

EcoCom is uniquely positioned to take advantage of both of these disruptive trends...

Elimanure™ Overview

- **Animal Manure** → Elimanure™ Process → Green Electricity or Green Steam
- Elimanure converts waste to energy

Manure Challenges facing Animal Agriculture

- **LAND** conservation:
  - More land required for manure than for feeding cows
  - Manure storage & removal
  - Erosion control
  - Soil nutrient management
- **EPA mandated rules for large farms**:
  - Reduce phosphorus in/on land
  - Pressure to eliminate pathogens, e.g. E coli
  - Reduce pollution of ground water, streams and lakes
  - Reduce green house gas — Methane 20x more potent than CO2
- **ODOR**
  - Conflicts with urban expansion
What goes in & out of a cow?

- Feed: 55+ #/day
- Drinking Water: 25+ gal/day
- Wash Water: 10+ gal/day
- Milk: ~11 g/d
- Manure: ~30 g/d

1. Data taken from various sources and is approximate for a high output adult Holstein cow
2. Gas output does not take into account respiration

Ratio 1 : 3

Elimanure™
Bio-Energy & Nutrient Management Process

How does it work?

- Dry It
- Burn It
- Use It

One patent issued, several pending

Customer Alternative Option A
Utilize “Dry” Bio-Mass (<70% moisture)

Customer Alternative Option B
Harvest “manure water” for irrigation

Step 1
Dry the liquid manure
Make dry fuel

Step 2
Combust (Burn) Manure & Make Steam

Step 3
Utilize steam for another process

Elimanure™
Bio-Energy & Nutrient Management Process

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Elimanure™
Bio-Energy & Nutrient Management Process

Step 1
Dry the liquid manure
Make dry fuel

Step 2
Combust (Burn) Manure & Make Steam

Step 3
Utilize steam to make electricity

Elimanure™
Bio-Energy & Nutrient Management Process

- Fuel
- Steam
- Electricity

Condensate

Ash

Elimanure™
Bio-Energy & Nutrient Management Process

- Fuel
- Steam
- Electricity

Condensate

Ash
Elimanure™ Design Principles

- Modular system
  - Standardized modules
  - Standardized construction approach
  - Flexible adaptation to individual farms
  - Water utilization a big variable (evaporate vs. irrigate)
- Accommodate site specific revenue/cost savings opportunities
- Process Principles
  - Simple to Operate 24/7
  - Maximize BTU utilization
- Cost effective/Fast ROI

Applications for Elimanure™

- Large Farms — make manure go away
  - Concentrated Animal Feeding Operations (CAFO)
- Large Farms/Small Industry — “green” electricity
- Small Process Industry — “green” steam
  - Offset natural gas usage
  - Bio-Fuels (Ethanol or Bio Diesel) — good candidates
  - Often located close to animal feed lots

Strong Interest in Elimanure™

prior to any marketing activity……

- Over 100 tours
- Inquires from 150 qualified prospective customers
- Customer interest from dairy, feed lots, ethanol, hog
- International inquiries from Australia, Austria, Bulgaria, China, France, Germany, Holland, Japan, Korea and U.K
- WI Farm 2008 Technology Days tours in July 2008

The interest is real, the need is tremendous

Elimanure™ Benefits

- Self sustaining Bio-Energy: converts large animal waste to Green energy
- Provides cost effective, significant and quick ROI for customers
- Eliminates manure hauling
- Prevents formation of methane (21x environmental impact vs. CO₂)
- Improves land conservation & eliminates environmental pollutants
- Improves farm operational efficiency & flexibility
- Significant financial incentives from a broad range of support improves financial payback

Elimanure Grant & Tax Supported

Customer Eligible Grants

- USDA – EQIP NRCS Grant: $100,000
- USDA / EPA - Renewable Energy Systems: $500,000
- USDA – Value added producer Grant: $150,000

Customer Eligible Tax Credits

- Federal Renewable Energy Tax Credit: $80k/yr
- Ag Modernization & Expansion Tax Credit: $50k/yr

$0.019/KWh produced
EcoCom Broadly Supported

Renewable Energy:
- Focus on Energy
  - CleanTech Partners (CTP – $300,000 debt financing)

Agriculture:
- Chair U.S. House Ag. Committee visit
- Under Secretary of Ag visit
- Farm Pilot Project Corp (FPPC – $400,000 grant & Congressional Video)
- USDA – $485,000 Grant
- NRCS

Others:
- WI Dept of Commerce and Consumer Protection
  - Agricultural Development and Diversification Grant Program
- WI Development Program
- NE WI Development Program
- WI Public Service Utility
- Public Service Commission of WI
- Michael Best & Associates
- WI Dept of Natural Resources
- Brown County Planning Commission
- Glacierland Resource Conservation and Development Inc.

Discussion

- What are your objectives for Manure Management?
  - What problems do you have?
  - Neighbors?
  - Nutrient Management Plan?
  - Other?

- How many animals?
  - What types/ages

- Layout?
  - All on one site?
  - Multiple sites?

- How is manure handled now?

Next Steps

Typical Process:
1. General Summary of your needs and objectives
2. Elimanure™ Proposal for Your Specific Needs
   - Lab testing of manure
   - Precise summary of existing animals, flows, layouts, etc.
   - Collaborative process with your input
   - Formal Elimanure™ Proposal:
     - Customer Benefit Estimate (can be done collaboratively with financing source)
     - Cost Estimate (including some optional equipment to include/exclude)
     - Timeline
     - Detailed scope of supply and project execution plan
   - Layout & 3D View — key connections with existing layouts & processes
3. Proceed with Project when authorized

Discussion Break

If time allows……

….following slides outline the problems and the solution in more details
Bio Dryer Bin

Feed tank and mixer

Bio Dryer Auger and Tram used to mix the dried manure

Auger System

Bio Dryer Feed Tank With Liquid Manure

Bio Dryer Tank With Safety Rails
Mixing wet manure and dry manure

Bio Dryer in Operation

Moisture From Bio Dryer Mechanism

Supply Air at 180 Degrees Drying Manure

Bio Dryer Harvester

Bio Dryer Harvesting 40% Dried Manure/Fuel
Environmental Solutions for Sustainable Agriculture

Boiler and Combustor Building

Feed Bin and Conveyor to Boiler

Conveyor to Bio-Mass Burner Hopper

Boiler and Bio-Mass Burner

Turbine/Generator Set used to create Electricity

Measuring Amount of Green Energy Generated and Sold to Power Company
Steam Heat Exchanger Diverting Heat to Bio-Dryer

Excess Heat Diverted to Bio-Dryer

What is Manure?

<table>
<thead>
<tr>
<th>Solids %</th>
<th>Solids/Day</th>
<th>Dry Pack</th>
<th>Dry Cow</th>
<th>Milking Cow</th>
<th>Scrape Dairy</th>
<th>Flush Dairy</th>
<th>Feedlots range from to Solid Manure</th>
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</thead>
<tbody>
<tr>
<td>10.3</td>
<td>13%</td>
<td>16.0</td>
<td>16.4</td>
<td></td>
<td></td>
<td></td>
<td>~25% to 50% Solids</td>
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Alternative Pro’s Con’s

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Pro’s</th>
<th>Con’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue Land</td>
<td>Current Practice</td>
<td>Not an option</td>
</tr>
<tr>
<td>Spreading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anaerobic Digester</td>
<td>Electrical Generation</td>
<td>• Expensive</td>
</tr>
<tr>
<td>Methane</td>
<td></td>
<td>• Needs to land spread 90% of incoming manure volume</td>
</tr>
<tr>
<td>Elimanure™</td>
<td>No other technology meets requirements</td>
<td>Key advantage is eliminating the volume of manure</td>
</tr>
</tbody>
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Anaerobic Digesters

- Concept has been around for a long time
  - 40-50 years running in U.S. on farms (est.)
  - Currently has support because of lack of alternatives

- Biological process
  - Bugs consume <5% of manure and excrete methane and other gases
  - Bugs only access 40% of carbon vs. 100% in combustion
  - Gas is burned in diesel engine which turns a generator (less efficient than turbine)
  - 95% of volume remains for disposal

- Cost/cow higher, payback much longer than for Elimanure
Customer Benefits

- **Cash-flow positive year 1**
  + Cost Savings (manure management)
  + Revenue (electricity)
  + Capital & Operating Costs
- **Other Significant Benefits (customer specific)**
  + Land and operational flexibility (~$150/cow/year if rented land)
  + Environmental (phosphorus & nitrogen benefits)
  + Carbon Credits
  + Ash sales (or internal use)
  + Bedding
  + Hot Water
  + Grants & Tax Credits

### Carbon Credits

- "Carbon Credit" equivalent to 1 tonne/yr CO₂ offset
- U.S. non-signatory of the Kyoto accords, no mandatory CO₂ caps
- U.S. carbon credits traded on the Chicago Climate Exchange (CCX)
- CCX part of a global trading network
- U.S. prices tend to be significantly lower than global prices

### Locations of principal global carbon exchanges

#### Business Plan
- **1,000,000,000 Tons/Yr** Accessible Bio-Mass
- ... and selling fewer than 40 systems achieves the EcoCom business plan and 5 year pro-forma’s
- **1,000,000,000 Tons/Yr** Accessible Bio-Mass
EcoCom Competitive Position

1. EcoCom has the technology that can deliver all of the benefits
2. EcoCom has developed the know-how and trade secrets to burn manure in large quantities
3. EcoCom has patented the Bio-Dryer and several pending
4. EcoCom has experience in agriculture

EcoCom poised to exploit untapped market opportunity

EcoCom Resource Model

- Establish leadership and core internal resources
- Leverage virtual company model
- Outsource key elements to strategic suppliers

EcoCom Strategic Resources...... Excellence in Execution

EcoCom Leadership

Paul Schneider - President
- Director Level Manager Capital Equipment
- 30 years experience in Paper Industry in key management positions
- Agricultural family background & Ag Supplier
- B.S. Marketing Management/Associate degrees Chemistry/Biology

Dan Clarahan - Chief Operating Officer
- Fortune 100 Company Officer
- $300 million P&L management
- Product & Technology Development
- 29 years of management & process industry experience @ Procter & Gamble and Kimberly-Clark
- B.S. Chemical Engineering ------ University of Illinois
- Kellogg School of Management ---- Advanced Exec Program