The Evolution
From Rendering to Energy

Presented by:
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Who is Sanimax?

- In the rendering business since 1881
- **1,100** employees across North America
- USD **$500 Million** in annual sales
- Collection and processing of more than **one million tons** per year of:
  - Animal by-products
  - Food by-products
  - Used Cooking Oil
  - Hides & Skins
- Our global customers include:
  - Feed companies
  - Chemical manufacturers
  - Tanneries
  - Soap producers
  - Pet food manufacturers
  - Fuel Blenders
Our Business Units

**Energy**
Production of clean-burning biodiesel and other renewable fuels

**Restaurant Services**
Professional collection of used cooking oil and grease

**Rendering**
Transformation of animal by-products into high quality fats and proteins

**Hides • Skins • Leather**
Preparation of hides and skins for leather production

**Ingredients**
Premium ingredients and custom blends for a variety of industries
Our presence in North America

Sanimax Locations

- Abbotsford, Wisconsin
- Calgary, Alberta
- Charny, Quebec
- Cleveland, Ohio
- Columbus, Ohio
- De Forest, Wisconsin
- Detroit, Michigan
- Durant, Oklahoma
- Evansville, Wisconsin
- Green Bay, Wisconsin
- Guelph, Ontario
- Hamilton, Ontario
- Ingersoll, Ontario
- Kendallville, Indiana
- Leon, Mexico
- Montreal, Quebec
- Ottawa, Ontario
- South St. Paul, Minnesota
- Ste. Rosalie, Québec
- Toronto, Ohio
What we do...

- Operate a 20 million USG biodiesel refinery in DeForest, WI
- Own a share of a 10 million USG biodiesel refinery in Wisconsin
- Market and trade biodiesel through partnerships (USA, Canada & International)
- Market by-products to new applications
  - **Biodiesel** – wood preservative carrier, solvent
  - **Glycerin** – anti-freeze, paints
Our refinery in De Forest, WI

- 20 million gallon per year capacity
- Continuous dry processing using distillation
- Uses unique chemical pre-reaction to enable processing of animal tallow, yellow grease and other inedible feedstocks
- Operating 24 hours a day, 350 days a year
- Rail and road access
Huge environmental impact

- Re-use of our feedstock limits the carbon emissions from the production of virgin alternatives

- Significant impact producing energy from renewable stocks due to increasing levels of carbon emissions per unit of petroleum-based energy produced
Our Biogas Venture

- Large scale bio-gas projects
  - Production of electricity and natural gas from organic by-products
  - Plants operating by end of 2009 with goal of **25MW of electricity generation**
- Transforms organic by-products like…
  - DAF sludge
  - Food waste
  - Slaughterhouse by-products
  - Manure
- …into Methane gas and high grade fertilizer
Our Biogas Venture

Sanimax
The Biodiesel Market
Challenges and Updates
Biodiesel Markets...

- North American biodiesel industry produced 400 million USG last year against a capacity of 1.2 billion USG.

- Renewable energy will continue rapid growth, with increased emphasis on sustainability.
  - Canadian mandates (E-5, B-2 by 2010/2012)
  - Environmental concerns
  - USA energy independence
Challenges...

- Slowed growth in biodiesel due to high feedstock costs (although diesel pricing is high)
- Lack of mandates
- Yellow grease’s high FFA
- Tallow’s high cloud point
- Poor quality perception
Our Quality...

- Premium quality biodiesel
- Consistently exceeding ASTM and European standards
New oils update...

- **Algae**
  - Not produced yet on a commercial scale
  - Difficulty separating algae from water & cracking algae to access oil
  - Best system for growing not yet established, area needed to produce enough oil to be economically viable
  - Still researching what best algae steam is for optimum production
Jatropha

- Difficult to grow – takes many years for plants to establish
- By-product is poisonous
- Product is being developed in countries a large distance from North America, transportation costly
- Hardy, resistant to draught and pests can grow on very arid lands.
- No long term studies to understand what growing the product does to soil over long term.
- Seed contains approx 40% oil
New oils update...

Camelina

- Falls into the family with rapeseed, mustard, sometimes referred to wild flax.
- Contains very high levels of omega 3 fatty acids, high in antioxidants.
- Cheaper alternative to vegetable oil, can be used as a food oil.
- Oil content between 29-39% or 490 kg oil/hectare
The future of tallow and YG...

- **Biopyrolysis** – Production of renewable fuels and solvents from fats and oils
  - Production planned for 2012
Feed, Technology & Value Developments

- Current Oilseeds
- Tallows & Grease
- New Crops (Camelina, Sea Mallow)
- Algae

LiPIDS

- Esterification
- Renewable Refinery

1996 2011

Value

- Biodiesel
- Glycerin
- Diesel
- Gasoline
- Gases
- Solvents
- Chemicals

Renewable Resources
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