



A Commercial Perspective

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Presented by

Galveston Bay Biodiesel

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Presentation Outline

- Introduction of Galveston Bay Biodiesel L.P.
(d.b.a BioSelect Fuels)
- Biofuels: The Winning Formula
- Policy

STANDARD

Renewable Energy Group



NewPoint Energy Solutions, L.P., a high-quality innovator and service provider of renewable technologies for residential and commercial customers.



Galveston Bay Biodiesel, L.P. (DBA BioSelect Fuels), is a developer and operator of biodiesel facilities. The first BioSelect plant, located on Galveston Island, TX, will begin operations later this year, as additional sites are being identified nationwide. The company is partially owned by Chevron Technology Ventures LLC and plans to produce 140 million gallons of fuel by 2008.



Gridpoint, provides intelligent energy management (IEM) products to protect against power outages, efficiently manage energy and increase the adoption of renewable energy sources. GridPoint products also offer demand response, energy conservation, and load shaping solutions to utilities.



Trulite, Inc., a company that develops clean, indoor and outdoor portable generators that generate electricity using its proprietary hydrogen technology as a fuel source.

Profile: Galveston Bay Biodiesel



Overview

- Galveston Bay Biodiesel LP is a developer and operator of biodiesel facilities; flagship site located in Galveston, TX.
- Strategic investment from **Chevron**.
- Characterize ourselves as a renewable **fuel** producer.
- Terminal with full logistics capability.

Production Capability

- First unit, 20 MM gallons per year, is scheduled to come on stream in mid-November.
- With additional sites and current expansion plans to >100 MM annual gallons per site, will be one of the largest biodiesel producers in the U.S.
- Pilot facility is in operation
- Team has a **strongest technical capability** of any biodiesel manufacturer with over 100 years background in refining and chemicals and quality assurance.
- Unit operation team provided by Kirby (Marine) Logistics Management. Partnership with AMSPEC for Quality Assurance.

Biodiesel Market Overview

Overview of Biodiesel Fuel

- Biodiesel can be produced from most types of vegetable oil (refined, crude or waste) or animal fat (collectively “feedstocks”)
 - Soybean oil preferred in U.S., rapeseed oil primarily used in Europe
 - 2005-2006 U.S. Soybean production: 2.9 BN bushels¹
 - Enough to produce 4 BN gallons of biodiesel

Current Accepted Blends

- Pure biodiesel (B100): Currently used in pristine environments (National Parks, U.S. Ports and Major Waterways)
- Blended biodiesel (B20): Current use in proactive fleets (U.S. military, various State DOT, commercial users, bus fleets, boat applications)
- Low blends (B2, B5): Premium diesel fuel used primarily in Midwest; also becoming mandated in several U.S. states such as Washington, Louisiana, and Minnesota.

Biodiesel Pricing

- Biodiesel moves on a competitive basis to heating and diesel fuels. Eventually will sell at parity to low sulfur or ultra-low diesel in the fuels market.
- Prices vary slightly depending on end use (market segment), availability, mandates, and renewable green image. Discounts may be needed initially to drive acceptance.

1) Source: USDA.

Biodiesel Market Overview (Cont'd.)

European Market

- Approx. 960 MM gallons produced in 2005¹
- Up 60% in 2004

U.S. Market Growth Potential

- 2005 production: 75MM gallons²
- Estimated production:
 - 2006: 150MM gallons²
 - “Run rate” by Q4 2006: 300MM annual gallons
- U.S. Department of Energy estimates biodiesel could account for 10% of U.S. petroleum diesel market by 2015³
 - Would amount to just over 6BN gallons based on 2004 figures
- National 2% mandate alone would result in a market demand of 2BN gallons annually⁴

Current Infrastructure (U.S.)

- Average US biodiesel plant size is small at 4MM gallons annually vs. 40MM gallons annually for ethanol.
- Over 45 biodiesel plants exist in the U.S. today, with many more planned.
- >1400 petroleum distributors make biodiesel available to farmers and other consumers
- >700 retail pumps²
- >600 major fleets use biodiesel commercially²

1) *European Biodiesel Board.*

2) *Source: National Biodiesel board, May 2006.*

3) *Source: www.eid.doe.gov.*

4) *2% biodiesel blend mandate currently exists in Minnesota and Washington, and is pending in California (See Appendix C).*

GBB BioSelect: Value Proposition

- A fuels vision for biodiesel as a fungible fuel competing effectively in the heating oil and traditional high growth diesel markets.
- Achieve high growth leadership position via scale, low cost logistic platforms and a focus on fuel quality and assurance.
- Flexible feed capability to choose the low cost grade of vegetable oil to maximize profit. Pilot plant tested process.
- Transportation advantaged sites with initial location in Galveston Bay (Houston/Galveston Metro Area):
 - Located in the Refining and Transportation center of the U.S. Access to traditional distribution systems.
 - Logistics include rail, barge and deep water transportation (for both feedstock and fuel produced) as well as local access for large pipelines moving products throughout the Eastern half of the U.S.
- Large facilities generating significant economies of scale with sales to high volume accounts
- Expansion at Galveston to 100MM plus gallons/year providing additional cost dilution.
- In discussions to secure other strategic sites that will represent an additional 200MM plus gallons/year.

Biofuels-*The Winning Formula*

✓ **Compatible as an extender to traditional fossil fuels.**

- No one silver bullet alternative to traditional fuels.
- Must fit in to the fuel with respect to quality and fuel characteristics.

Note: Biodiesel blends easily into diesel fuels. Biodiesel yields 3.2 units of fuel product energy for every unit of fossil energy consumed in its lifecycle.

✓ **Fungible from the “Producer to the end user”.**

- No quality issues when moved via traditional distribution channels.
- Traditional channels provide a degree of cost efficiency.

Note: Biodiesel is currently undergoing acceptability tests in a major pipeline. Preliminary results are good.

Biofuels-*The Winning Formula*

✓ **Feedstock is available to satisfy demand.**

- Gaps in supply and demand are “ok” as part of the normal business cycle.
- As a renewable there is always a solution but it may require a “push” to make it happen. Improved oil yields, improved acreage yields, new feedstocks.

Note: The preferred feedstock for biodiesel in the U.S. is soy oil due to its flow characteristics and availability in the U.S.

✓ **Acceptable as a fuel in all commercially available engines.**

- No engine warranty issues.
- Does not increase wear and repair frequency.
- Similar performance characteristics to traditional fuels.

Note: In blends Biodiesel has a wide acceptance but there is variance from manufacturer to manufacturer. Biodiesel provides approximately 94 % of the btu content of diesel and chassis tests indicate similar performance characteristics.

Biofuels-*The Winning Formula?*

✓ **Cost effective from a mature and scaled business**

- Low cost technology, scale and production costs in the full value chain required. “From Dirt to Fuel”
- Highly dependent on traditional energy pricing.
- Infant stage of development will require a “push” to make it happen.

Note: Biodiesel is in its infant stage. Incentives assist in making “current production” competitive with traditional fossil fuels. These incentives are needed.

✓ **Value added potential**

- Byproducts can be made or tweaked to provide additional value.

Note: For Biodiesel, technologies and applications are being developed to enhance the value of it's Glycerin byproduct.

Biofuels-*The Winning Formula?*

✓ Improves the environment

- Biofuels provide a life cycle improvement in emissions.
- Often provides oxygenate impact to improve tailpipe.

Note : Biodiesel used as B100 reduces net CO2 emissions by 78 % compared to petroleum diesel. Reduces lifecycle emissions of total particulate matter (32 %), CO (35 %), and SOx (8 %) (May 1998 NREL Life Cycle study sponsored by the U.S. Department of Agriculture and the U.S. Department of Energy).

NOx emission levels from traditional engines depend on the study but are neutral to slightly positive when blends below 20 % are compared to diesel. Recent chassis tests indicate neutral NOx Impact.

Policy Considerations

In the beginning and infant stages incentives will be required as an initiator to jump start technology and production of renewable feedstocks and oils.

Agricultural

- Incentives for alternative and genetically modified feedstock development to increase feedstock availability and yields.
- Increased use of open land for new crop production.

Environmental

- Environmental improvement must be a constant in any policy based on science.
- Need for well understood lifecycle emission benefits for biofuels compared to traditional fuels.

Biofuels

- Maintain incentives for developing technology and producing biofuels
 - Mandates can be effective in overcoming acceptance issues but production capability must match any mandate.
 - Foster cost effective production platforms as competition seeks lowest cost solution.
- Engine manufacturers and producers must work together to drive acceptance of biofuels.
- Defined quality standards and assurance requirements.
- Traditional user and low cost distribution systems may need a push to speed acceptance.