Biodiesel

Background

North Dakota has a wide variety of feedstocks suitable for biodiesel production. Biodiesel enjoys a wide range of support from industry, environmentalists, farmers and elected officials, and biodiesel tax incentives are already in place in the state. With the stabilization of demand for renewable fuels via the federal renewable fuels standard and an anticipated increase in the use of diesel engines as a result of new, cleaner-burning diesel technology, biodiesel presents many opportunities for North Dakota and the nation.

There are, however, many challenges before biodiesel. High feedstock prices and inadequate distribution of blending infrastructure have hampered the industry. In addition, some state production incentives are limited, of questionable benefit, and not as attractive as production incentives offered in other states.

Other challenges include the lack of a state certified lab, trouble meeting the industry quality standard (ASTM D 675 1), lack of markets in ND for the meal, difficulty obtaining methanol, and public misperceptions.

Potential

North Dakota is a leading grower of soybeans and canola, the conventional feedstocks for biodiesel. The state is in a good position to grow its biodiesel industry in the coming years, creating jobs while lessening our dependence on foreign oil. The federal renewable fuels standard will help stabilize demand.

Renewable Fuel Standard

Congress passed a Renewable Fuel Standard (RFS) as part of the Energy Security and Independence Act of 2007 calling for the production of 36 billion gallons of biofuels by 2022. In addition, Congress placed a Low Carbon Fuel Standard on all new biofuels in order to qualify for the federal RFS. The law sets the following sustainability targets:

- Biodiesel must reduce lifecycle greenhouse gas emissions above 50 percent to qualify for inclusion in the RFS.
- Advanced biofuels, such as ethanol made from waste products or perennial prairie grasses, must reduce lifecycle greenhouse gas emissions by 60 percent.[15]

North Dakota Biodiesel Plants

Plant Name	Location	Size	Status
Archer Daniels Midland	Velva	85 mmgy	Operational 10/07
Northwood Mills/Northwood Agri-Biodiesel LLP	Northwood	5 mmgy	Operational 7/07
All American Biodiesel	York	5 mmgy	Idle
Northern Prairie EnviroFuels	Munich	30 mmgy	On hold
Renewable Commodities Group	Kindred	30 mmgy	Feasibility/ planning

Source: North Dakota Department of Agriculture

North Dakota's operational processing capacity for Canola was approximately 90 million gallons per year (MGY) in 2007, with another 30 MGY currently proposed. Most of this processing, at least 75 MGY, is for the export market.[1]

Soybean acreage in North Dakota has increased from 1.35 million acres in 1999 to 3.1 million acres in 2007. Processing facilities for soybeans are lacking. Other oilseed processing plants "crush" or process soybeans on what appears to be an ad-hoc basis. Soybean processing capability and its associated economic development is growing in other states more than it is in North Dakota.

A program similar to the Counter-Cyclical Ethanol Production Incentive that triggered current levels of ethanol production is needed in the oilseed community as an additional tool to attract oilseed processing capability to our state.

The North Dakota Department of Commerce estimates that current and projected biodiesel capacity in the state exceeds 160 MGY consuming approximately 23 million cwt of Canola and 25 million bushels of Soybeans, increasing local producers returns, and making available 84 biodiesel plants (based on NDSU, Agribusiness & Applied Economics estimates) for construction; utilities; retail trade; finance, insurance, real estate; business & personal services; professional/social service; households; and other benefactors a total impact of over $150 million. Currently only about half of this capacity is available, and 95% or more of it is exported.[2]

A number of farm scale and small community scale biodiesel producers are popping up around the country in response to the high cost of conventional diesel and farm inputs. These small operations can provide a symbiotic link between the region's grain producers, who can readily adapt to growing oilseeds, and range cattle producers, who can readily utilize the highly nutritious feed-meals produced as a byproduct of the fuel. Farmers can grow the seed, ranchers can feed the byproduct; both can utilize the clean, renewable fuel in production agriculture and they can collaboratively finance and produce it. Complying with IRS regulations and an expensive testing protocol prevent more small operators from considering small-scale use of biodiesel.[3]

Goals

Goals set by others in the region:

- Build new biodiesel plants in North Dakota to produce at least 135 million gallons by 2015. (EMPOWER Commission 2008)[4]
- By 2012: Advanced cellulosic and other low-carbon transportation fuels should be commercially produced in the region. (Midwestern Governors Association (MGA) 2007)

$81 Billion dollar industry

Biofuels achieved **$25.4 billion in revenues in 2007** from sales of **15 billion gallons of fuel worldwide**. The market is projected to grow to **$81.1 billion by 2017**.

Source: Clean Edge, a clean tech research firm www.cleanedge.com [16]

- By 2025: Average fossil fuel inputs in the production of conventional biofuels in the region will be reduced by at least 50 percent. (MGA 2007)
- By 2025: At least 50 percent of all transportation energy consumed in the region will be supplied by regionally produced biofuels and other low-carbon advanced transportation fuels, with the expectation that a significant and additional portion of the region's biofuel production will help the U.S. meet a national 25 x 25 goal. (MGA 2007)[5]

Best Practices

Montana: Establishment of a tax credit of $0.10 per gallon for each yearly increase in gallons of biodiesel produced for the first three years of production.

In addition, special fuels tax rate is $0.2775 per gallon; canola seed oil processing facilities are exempt from property tax; and oilseed crush facility income tax credit is up to 15 percent of the cost of the oilseed crush facility.[6]

Minnesota: 2001 biodiesel legislation:
- Required that all diesel must include 2 percent biodiesel (B2), but only after in-state biodiesel production capacity reached 8 million gallons/year.
- In 2005 Minnesota reached their in-state requirement and has now implemented the B2 requirement.[7]

Minnesota drivers:
- Increasing public awareness regarding ethanol and biodiesel, including MTBE replacement pressures.
- Economic development in rural areas.
- University of Minnesota's role of state champion because of the amount of research and development it is undertaking; and
- Innovative state agencies including the Department of Commerce have created a listserv for available biomass resources to be listed publicly.

Iowa: Establishment of:
- Tax credits for cooperative's producing "valued-added agricultural products". Credit may be claimed up to 10 percent of a new investment that involves the creation of new jobs.
- Income tax credit for Point-of-sale retailers: $0.03 credit on each gallon of B2 or higher. To qualify: 50 percent of distributor or retailer's sales must be B2 or higher.
- Small retailer exceptions.[8]

Kansas: Requirement that all state agency fleets purchase and use B2 where the price differential is less than ten cents per gallon. In addition the Kansas Qualified Biodiesel Producer Incentive Fund pays $0.30/gallon for each gallon of biodiesel sold by producers whose principal place of business and facility is within state.[9]

Biodiesel Rankings

1. Iowa, 256.5, 95, 351.5
2. Texas, 152, 113, 265
3. Illinois, 94, 105, 199
4. Alabama, 95, 60, 155
5. New Jersey, 74, 60, 134
6. Indiana, 90, 40, 130
7. Washington, 116, 0, 116
8. Nevada, 4, 105, 109
9. Missouri, 76, 31, 107
10. **North Dakota, 85, 8, 9**

Total Biodiesel Production, Fall 2007 (State, Mgy in production, Mgy under construction/expansion, Mgy total) [17]

Source: BBI International

South Dakota: Biodiesel tax at $0.22 per gallon until the state capacity reaches 10 million gallons, following which the tax drops to $0.20 per gallon until 35 million gallons is reached.[10]

Oregon: A tax credit of $0.50/gallon available only for blends of B99 or higher. In addition: property used to produce biofuels may be eligible for a property tax exemption if it is located in a designated Renewable Energy Zone; and a business energy tax credit is available for up to 50 percent of the construction cost of a biodiesel production facility.[11]

Indiana: Biodiesel blends of at least 20 percent that are used for personal, noncommercial use by the individual that produced the biodiesel content of the fuel are exempt from the $0.16 per gallon license tax.[12]

North Dakota Policy in Place

Tax Incentives - Biodiesel Equipment. The sale of equipment not installed by the seller to a facility licensed under N.D.C.C. § 57-43.2-05 to enable the facility to sell diesel fuel containing at least 2% biodiesel fuel by volume is exempt from sales tax.[13]

Income Tax - Biodiesel Tax Credits. Corporate income tax credits equal to 10 percent per year for five years of the direct costs incurred to establish, adapt, or retrofit a facility to produce or blend at least 2 percent biodiesel fuel. The credit is first allowed in the year the facility begins producing or blending biodiesel fuel. An unused credit may be carried forward five taxable years.[14]

Biofuels Loan Program. (See State Policy under ethanol section.)

25 x 25. (See State Policy under ethanol section.)

Federal Policy in Place

See Appendix A

Photo: Fargo-Moorhead MAT Bus ND Soybean Council

NDARE Policy Background Document

Wisconsin funds biodiesel

Madison, Wis.-based Best Energies Inc., which operates a 10 MMgy biodiesel plant in Cashton, Wis., has been awarded $1 million in grants and loans from the Wisconsin Energy Independence Fund to commercialize its process for producing biodiesel from crude corn oil extracted at ethanol plants. In addition, Sun Power Biodiesel LLC, a 3 MMgy biodiesel plant in Cumberland, Wis., has been awarded a $25,000 state Agriculture Development and Diversity grant to promote planting canola and sunflower crops in northern Wisconsin.[18]

Source: Biodiesel Magazine