

POTENTIAL FOR BIODIESEL AS A COMMERCIAL ENTERPRISE

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Oregon agencies are active in supporting an infrastructure to develop a biodiesel industry with sufficient feedstocks, financing, processing equipment and public policies.

A BIODIESEL INDUSTRY in the Pacific Northwest (PNW) could improve rural economies, protect national security and decrease greenhouse gas emissions, says an overview report from the Oregon Department of Agriculture. In Oregon, canola, rapeseed, mustard and a few other crops are most applicable to production and conversion, along with waste grease from the food service or processing industry.

But right now, no biodiesel manufacturing facilities exist within the region; consumption is about 100,000 gallons/year and there are about one dozen retail fuel outlets handling biodiesel (all sourced from the Midwest.) The neighboring state of California is currently the largest market in the West, consuming about 25 percent of the national production. Notes the Oregon Agriculture Department: "Oregon is in a prime location to produce biodiesel for local markets and the California market."

State officials provide the following data on cost structure and current business enterprises that are helping to establish a commercial infrastructure for the biodiesel industry:

The major economic factor to consider for input costs of biodiesel production is the feedstock, which is about 80 percent of the total operating cost. It takes around 7.5 pounds of fat or oil to produce a gallon of biodiesel. If a feedstock (canola or mustard) is 13 cents per pound, the feedstock cost could be nearly \$0.98 per gallon. Other important costs including plant overhead, labor and methanol, which must be added to the feedstock. Waste grease is in the range of 5 to 10 cents/pound and would be the most economical for initiating a biodiesel firm.

Research and industry efforts in the Pacific Northwest, supported by state and federal policies and programs, are developing new strategies and technologies to overcome barriers to production. One focus is aimed at producing higher value coproducts and establishing optimized business models. Attention will be focused on more efficient uses of the seed meal, the crop fiber, and glycerin — a lower value by-product of biodiesel production that accounts for 20 percent of the total oil extracted from the seeds. Biolubricants and other biobased products are also the focus of development and marketing.

CURRENT BUSINESS LAUNCHES
Biodiesel enterprise development is underway in Oregon. Examples include:

A group of wheat growers in the Hermiston/Pendleton area have formed Columbia Crush, LLC, to examine the potential of a business model based on purchase of an oil-seed crusher for processing into biolubricants. A feasibility study and business plan have been developed and the group is evaluating options to finance the project.

Oregon Biofuels, LLC, is working on a plan to process yellow grease — spent vegetable and animal cooking oils — into biodiesel in the Portland area.

Sustainable Systems, LLC, based in Missoula, Montana, is considering The Dalles as a site to locate a complete biofuel business that would provide crushing and processing of oil-seeds into biodiesel and other biobased products, and custom blend feed for livestock operations from the seed millings. The company has three crushers and has already located one in Washington State. These are 3 to 5 million gallons/year facilities.

Harvest Moon LLC, associated with the Business Enterprise Center in Corvallis, hopes to get a profitable crushing plant started in the mid-Willamette Valley to assist farmers with a new crop and create jobs. The company is still in a formative stage of evaluating the project.

Treasure Valley Renewable Resources, LLC, is a bioproducts facility trying to locate in Malheur County. The site location is being appealed by neighboring landowners. The facility would process a variety of agricultural grains, including wheat, barley and oil seeds into consumer health products, biobased products, ethanol and biodiesel.

STATE RESOURCES AND GOALS
Oregon is one of the nation's leaders in developing energy efficiency and renewable resources. The Oregon Department of Energy manages tax credit and low-interest loan programs for all types of renewable resource projects. The Energy Trust of Oregon provides an estimated \$10 million each year through 2012 for above-market costs of renewable generating resources that benefit Pacific Gas and Electric and Pacific Power customers. Oregon public policy boosts renewable energy production (ORS 469.010). The State of Oregon presently buys B-20 (20 percent biodiesel blend) for most state fleet usage. The Governor has new initiatives on sustainability and global warming that support renewable energy generation and usage.

The Oregon Department of Energy is leading a drive to develop a renewable energy action plan for the state (some of which will require legislation) that includes the following goals:

- 1) Requiring a 2 percent blend of biodiesel (B-2) in all diesel sold in Oregon by the year 2006, growing to 5 percent (B-5) by 2010 and 20 percent (B-20) by 2025; 2) A goal of 15 million gallons of biodiesel produced from Oregon crops by 2006; 3) Develop public support for extending the 50 percent property tax exemption for ethanol production facilities through 2016 and expand the exemption to include biodiesel

facilities and biomass generation; and, 4) Develop public support for a new law that provides for a government approved voluntary labeling program to identify "lower CO2" fuels at pump stations.

Oil seed extraction methods vary depending on the type of commodity being processed and the desired end product. All known plants in Oregon would be using a cold press or other extraction method that does not rely on solvents. The resultant extraction is less (80 percent or so), but wider options are available for the end products and there is less plant cost related to handling of solvents and environmental concerns.

Concludes the Oregon Department of Agriculture report on the potential for biodiesel entrepreneuring:

"The primary obstacles or challenges to biofuels in Oregon include a lack of infrastructure, processing and manufacturing that relies on incentives that create market pull and provide price justification to cover costs of production; challenges in siting and permitting; and no standard legal framework or templates for growers to use in structuring ownership and financing.

"Putting these projects together takes significant management and coordination, along with technical expertise; diligent research into technologies and equipment applicable to specific projects; significant up front commitment to see the project through permitting, siting and financing — which can take years; and different forms of grower organizations — such as LLCs or other creative ways of raising capital, including new-age cooperatives — requiring adept legal guidance." — J.G.