

2015

Tracking biodiesel profitability

Don Hofstrand

Iowa State University, dhof@iastate.edu

Follow this and additional works at: <http://lib.dr.iastate.edu/agdm>



Part of the [Agribusiness Commons](#)

Recommended Citation

Hofstrand, Don (2015) "Tracking biodiesel profitability," *Ag Decision Maker Newsletter*: Vol. 13 : Iss. 9 , Article 2.

Available at: <http://lib.dr.iastate.edu/agdm/vol13/iss9/2>

This Article is brought to you for free and open access by the Ag Decision Maker at Iowa State University Digital Repository. It has been accepted for inclusion in Ag Decision Maker Newsletter by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

Default yields available for ACRE program, continued from page 2

shown for different price levels, assuming both the farm and the state have average yields in 2009. Prices are national marketing year cash prices. The payments also include direct payments from USDA. When prices are at \$4 for corn and \$10 for soybeans or higher, only direct payments are received. Under ACRE, direct payments are reduced by 20 percent compared to the current CCP option.

Under lower price scenarios, ACRE payments make up for lost revenue. Current projections

show that with average yields, marketing year prices would have to average under \$3.67 for corn and \$8.92 for soybeans to trigger ACRE payments. Under the current counter-cyclical program, however, payments do not begin until prices are below \$2.35 for corn and \$5.36 for soybeans.

Producers have until August 14 to enroll in the DCP program for 2009. If they do not elect ACRE this year, they still have the option to elect it in a future year, through 2012.



Tracking biodiesel profitability

Don Hofstrand, co-director, Ag Marketing Resource Center, Iowa State University Extension, dhof@iastate.edu

The profitability of biodiesel production is extremely variable. Due to the volatile price nature of biodiesel and soybean oil, its major feedstock, biodiesel profitability can change rapidly from month to month. In addition, price variations of its co-product (glycerine) and its energy source (natural gas) add to the variability of biodiesel profits.

To track the profitability of biodiesel production, an economic model of a typical northern Iowa¹ biodiesel plant was created. This is a 30 million gallon facility with construction costs similar to plants built in 2007. The costs and efficiencies are believed to be typical of northern Iowa biodiesel plants. The prices of biodiesel, glycerine, soybean oil and natural gas are updated monthly to compute the current profitability of biodiesel production.

Monthly price variables

- 1) **Biodiesel Price** – Weekly price F.O.B. (Free on Board) for the plant (converted into monthly average prices) as reported in the National Weekly Ag Energy Round-up by the USDA Ag Marketing Service.
- 2) **Soybean Oil Price** – Daily price converted

into monthly average prices as reported by the USDA Ag Market Research Service, Iowa Soybean Processors Report

- 3) **Methanol Price** – Monthly average regional posted contract price history reported by Methanex.
- 4) **Natural Gas Price** – Monthly Iowa natural gas price for industrial users as reported by the Energy Information Administration (official energy statistics of the U.S. government).

Although these prices are representative of northern Iowa biodiesel plants, they may not be representative of plants in other regions or states. In the economic model the user can increase or decrease any of the price series by a fixed amount to represent a special situation. An adjustment in a price series will be reflected in the analysis tables and graphs.

To show how this facility would have performed in the past, the monthly profitability time-series is started in January, 2005. Although this facility would not have been in production at this time (built in 2007), it provides a perspective on how this facility would have performed historically.

Tracking biodiesel profitability, continued from page 3

Revenue, costs and net returns (profitability) are shown monthly as per gallon of biodiesel and per 100 pounds of soybean oil. Also, biodiesel and soy oil price breakeven levels are computed.

Major assumptions and characteristics of the biodiesel plant model

- 1) Turnkey biodiesel production facility
- 2) Facility built in 2007
- 3) Nameplate capacity of 30 million gallons
- 4) Facility construction cost (including working capital) of \$1.57 per gallon of nameplate capacity
- 5) Lender finances 50 percent of the project
- 6) Equity financing of 50 percent of the project.
- 7) Plant operates at 100 percent of nameplate capacity
- 8) Conversion factor of 7.65 pounds of soybean oil per gallon of biodiesel
- 9) A gallon of biodiesel produces .9 pounds of glycerine.
- 10) Natural gas requirement of 6 cubic feet per gallon of biodiesel
- 11) Typical input costs for an Iowa soybean oil biodiesel facility

The monthly profitability of this hypothetical plant is computed by using the monthly market prices for biodiesel, soybean oil, methanol and natural gas. Each month the analysis is updated with the previous month's prices. If any of these price data series do not fit your situation, you can enter an adjustment factor that will increase or decrease the coefficients in the price data series. All other variables are held constant throughout the analysis.

Input coefficient adjustment. Although we believe the coefficients in this model are a good representation of a soybean oil biodiesel plant, the user has the ability to change any of the input coefficients in the economic model to fit a special situation. A change in an input coefficient will be reflected in the analysis tables and graphs.

The input prices for the profitability model are updated monthly and are available on the AgDM Outlook and Profitability page or at: <http://www.extension.iastate.edu/agdm/energy/xls/d1-15biodieselp Profitability.xls>.

¹ Northern Iowa is defined as Iowa north of Interstate 80.



Side-stepping SE tax on a trade?*

By Neil E. Harl, Charles F. Curtiss Distinguished Professor in Agriculture and Emeritus Professor of Economics, Iowa State University, Ames, Iowa

Ordinarily, transactions such as those involving trading in a used item of equipment for a new model are treated as “exchanges” but qualify as “like-kind” exchanges with little or no gain recognized. That is the case if the transaction involves a reciprocal transfer as distinguished from a transfer with money payment.

Relatively little thought is generally given to casting a transaction to avoid the often tax-free treatment of a reciprocal transfer. However, a practice

has developed in some areas of deliberately avoiding like-kind exchange treatment and characterizing a transaction as a sale of the used item traded in and a purchase of the replacement item. Such a strategy, if successful, reduces the taxpayer's 15.3 percent self-employment tax. The advantages, if successful, are magnified by the current higher levels of expense-method depreciation. The question is whether such a move is legitimate.

continued on page 5