

Feasibility Study Guide for a Biodiesel Plant Specifics for the Study

State of the Biodiesel industry

- What is the current demand status of the Biodiesel Industry?
- How much growth can we reasonably expect in the next 5 years? 10 Years?
- What will drive demand?
- Who are my competitors and what is their capacity? Both current and future?
- What sources of objective data are being used in the growth projection charts? (Use of objective data and sources can help provide some validity to the projections)

Business Structure

- Which business structure (LLC, Coop, etc.) would best fit our scenario? How would various investor types (producers, local agri-businesses, local non-ag businesses, groups, etc.) fit into this structure regarding government assistance?
- Which business structure has the most favorable tax advantages?
- How will business structure affect government subsidies and what structure is the most favorable regarding the CCC program and any other available funding opportunities?
- When you get to a real capital drive you'll want some local/regional impact figures.

Production Process

- Provide a list of engineering and design firms and discuss the pro/cons of a turn key vs. a design only path.
- What is initial cost and operating cost of pre-treatment for usage of animal fats versus vegetable oils?
- What are alternative uses for glycerin and what can we do to enhance this marketing opportunity for the plant?
- Can we effectively alter glycerin properties enough to warrant changes in marketing opportunities?
- What is estimated cost of production for biodiesel and what do sensitivity tables look like regarding changes in input costs?

Feedstock

- What feed-stocks are available? (Give price history and projections for a wide array of feedstock, especially in the fats and grease.)
- What are the current uses of these feed-stocks and what are the current pricing factors? How will greater demand affect this? (Assuming more demand from the biodiesel industry.)
- What are the economic differences of processing vegetable oils vs. animal fats?
- What are the pre-treatment process differences and costs of using pork fat, beef tallow and poultry fat?
- What is shelf life of pre-processed animal fats compared to shelf life of vegetable oils?

- What form can animal fats be purchased in and how is each form handled?
- When pre-treating animal fats, is there any significant odor?
- Can animal fats and vegetables be used together and how does this affect cloud points and mixing abilities?
- What quantity and quality of each feedstock is available? (Considering vegetable oils, animal fats, and yellow grease.)
- What will be feedstock price sensitivity based upon current and historical prices?
- Are there large producers of feedstock that may become competitors and cut you out of that side of the market?
- What is the sensitivity analysis of the feedstock over a period of ten years and how would it affect the production price of biodiesel?
- What are some of the non-traditional feedstock sources that might be explored and are available in the regional area?

Marketing

- Where are greatest marketing risks?
- What opportunities are out there for specialty products? (Eg. Kosher glycerin)
- What is the potential market for B2? B20? B100?
- How much will quality of end product affect marketing and future profitability?
- Will the greatest demand for bio-diesel be in local, national or international markets?
- Who are the major players currently and what are their future plans?
- What criteria do we need to establish in determining who will do the marketing? How can we validate capability in this critical function? If there is a three cents per gallon marketing fee, is this a reasonable number or should there be a volume based slide in the deal? How does brokerage work in this business?

Physical Plant

- What is the most economical size plant from an engineering and construction basis?
- What factors will location and infrastructure play in location selection?
- How much does cost vary between construction firms and how will this affect long-term profitability?
- How much does current cost of production vary between different plants?

Environmental issues

- What environmental concerns and challenges will be faced during construction of a new plant?
- What long term environmental challenges will be present?
- How long will permitting take and what challenges will this present?
- Waste treatment concerns.

Risk Factors

- Identify major risk factors of both marketing and production operations and how do these affect potential profitability of plant?

Financial

- Sensitivity analysis.
- Cash flow case scenarios.
- Provide comparative pro-forma looking at alternative feedstocks and plant sizes, while testing the difference in subsidy, input cost, volatility, etc. has on the financial analysis.
- State the method used for arriving at the price of biodiesel which was used in the pro-forma.
- Provide in-depth detail and well organized detail about the assumptions that go into the pro-forma?
- Provide an analysis that can help us understand those assumptions within our reality?
- Provide a relationship between soy oil pricing and soybean pricing to help you see the correlation and hopefully answer the questions related to determining the direction to take on feedstocks.
- Provide a break even analysis and pro forma with and without any incentives.
- Provide a realistic ramp up period to production and sales. What are the market affect on our financials based on competitors coming on line in the next year?
- How much working capital is sufficient? What scenarios would we use to test that number?
- Explain the assumptions used for loan amortization and depreciation?
- What would the P&L (Profit and Loss statement) look like if the equity invested were 50% or 40%?
- Provide local pricing both in and out for the feedstock and by products, to the extent possible.

Site Selection

- Considerations only.
- If a site is in mind, provide any significant comparative advantage in the proposed general location or specific locations.

In the end, the group ordering the feasibility study needs to ask themselves and each person involved in the decision making process need to answer these questions:

- ✓ Does the study give us the means to make a decision?
- ✓ Are there other things we need to sort through in order to make a decision?
- ✓ Can we write a business plan with the information from the feasibility study?