Financial Considerations of Biodigester Projects for Indiana Producers

The financial feasibility of a biodigester project is dependent on the goals of the producer. A biodigester can address issues of manure and waste management resulting in cost avoidance as well as producing energy, fertilizer and byproducts to provide additional diversified sources of income. A biodigester may also reduce odor and increase nutrient value in the manure by-products. The project may also generate income as a carbon offset project or a renewable biogas project. Carbon offset credits can be sold on regulated markets under the California cap and trade system and renewable biogas projects can generate RIN certificate income under the federal renewable portfolio standards.

The AgStar project at the EPA is a program that provides online tools to assess initial viability, technical and financial feasibility of proposed biodigester projects. It also lists developers and other vendors providing information, goods and services in this area. *See www.epa.gov/agstar*.

Third Party Owner Operator Systems

While biodigester projects would appear to be natural business fits for producers, the complexity of developing a financially feasible project paired with ongoing maintenance and repair costs are resulting in a move towards third party owner operator systems ("Owner Operator"), with the producer receiving power, lower costs of manure management, fertilizer, and reduced odor complaints. While third party owner operators may reduce the potential income to the farmer, it also reduces the risks to the producer. Some third party owner operator systems may be structured as sale lease back systems so that after a certain number of years, the system's ownership will revert to the producer. Different tax advantages accrue to different types of ownership/lease models and the producer will want to confer with tax advisors familiar with the producer's operations.

Under most third party owner operator agreements, the producer will provide the ground and manure and the Owner Operator may secure the financing, develop the project and run the biodigester. The Owner Operator may be an individual, a project developer/operator, or an equipment leasing entity paired with an operator. The producer will provide the manure and the ground and in return may receive ground lease payments, use of some of the electricity or gas produced, and some or all of the fertilizer and solids produced depending on the contract negotiations. If the producer intends to be more involved in the actual power production and share the risks with the Owner Operator, a share of income from the power production or the sale of carbon credits or RIN certificates could be included.

When seeking out an Owner Operator to work with, the producer will want to investigate the following items:

1. The experience of the Owner Operator and track record on other projects.
2. The type of financing the Owner Operator will be seeking and any requirements of the financing entity that may affect the land or the operations.
3. What, if any, other waste streams the Owner Operator may intend to add to the onsite waste and how the Owner Operator will ensure no contamination of the project site or facilities.

4. The kind of energy to be produced and the length of any power agreements.
5. Performance guarantees by the Owner Operator and the retirement or contingency plan for the project in the event of insolvency of the Owner Operator.

The agreement negotiated between the producer and the Owner Operator should be carefully reviewed to make sure that the producer is protected from adverse events by the Owner Operator carrying sufficient insurance, including business interruption insurance, and that the financial planning of the project shows an adequate revenue stream exists to support the project.

Producer Operator Systems

Even though biodigesters have been around for a long time, their adoption has been slow, in part due to the capital costs of the systems and the difficulty in securing financing. In addition, power production is not the usual business of livestock producers and as an add-on project, a biodigester may consume time and resources that are better used for the primary business purpose of livestock production. Financing a biodigester project will require a capital investment by the producer and will likely result in other assets of the producer being used to secure the repayment of the biodigester financing.

Developing a biodigester project comes in three stages: planning and design, construction, and operation. If the producer will be seeking bank financing, early coordination with the financing community is very important. The usual time line is about two years from business plan to operation, with construction taking about 9 months.

Potential positive income streams from a biodigester project include:

- Energy production – biogas and/or electricity sales
- Fertilizer
- Bedding and/or composting solids (dairy)
- Fiber Board (dairy)
- Tipping fees (if accepting off-farm waste)
- Carbon Offset Credits (*see discussion below*)
- Renewable Energy Credits
- Renewable Identification Number (RIN) credits if biogas is the end product and sold for use in making vehicle fuels

Potential avoided costs realized from a biodigester project include:

- Reduced waste management costs
- Reduced legal costs
- Electricity and/or heating and cooling costs
- Fertilizer

Potential Investment and Financing Incentives

- REAP (Rural Energy for America) – grants (25% eligible costs up to $500,000), loan guarantees (60-80% eligible costs)
- EQIP (maximum $300,000)
- Small Business Administration Loans and guarantees
- Industrial Revenue Bonds

Planning and Design Costs and Financing

This portion of the project is often self-financed by the producer with the assistance of planning grants available from private, state and federal sources, however it is important to bring the expected construction/operation financing entity into the planning process early. The lender can provide valuable feedback on the project's ability to be financed and whether certain considered options will affect the project's ability to secure the right financing. This early involvement will also increase the lender's knowledge of the project and familiarity with the industry if the lender is new to this type of project.

Sources of planning and design funding include:

- Local Livestock Trade Associations
- REAP

Construction -- Bank Financing

The traditional bank lending community is in substantial part unfamiliar with these kinds of projects and not comfortable considering them for financing. However, there are banks that finance these projects and for the most part the financing criteria are not substantially different from other types of financing. It is important to understand that a lender will evaluate the project without considering the contribution of any grants, though loan guarantees will be considered. A lender will focus on the following:

- Strength and completeness of the business plan
- Experience, knowledge and capability of the project principals
- Cash flow and debt service coverage ratios
- Collateral value

Unlike most lending that focuses on having sufficient hard collateral to secure repayment of the debt, biodigester facilities are not easily resold and cannot be moved if the loan goes into default. This causes a lender to look more closely at the business plan and the experience and knowledge of the owners/operators and the construction contractor because the lender must have a high degree of confidence that the project will be completed and provide sufficient cash flow to make the debt payments.

The lender will examine the cash flow of the project to make sure that the income source or sources are secure and sufficient to cover the projected debt payments. This means that third party contracts to buy the power or other products should be part of the business plan. The term

of the lending may be dependent on the length of the offtake contract, although the current regulatory capital requirements of banks have caused a reluctance to finance longer than five years. If the project is dependent on multiple sources of feedstock, including off-farm sources, the lending decision may also take into consideration the terms of the off-farm feedstock contracts in determining the term of the loan. From conversations with waste brokers, the ability to get multiple year contracts of these other feedstocks is difficult and the income from tipping fees is getting less as businesses become familiar with the potential value of their waste streams.

The value of the facility and the equipment will need to meet the collateral requirements of the lender's regulators. As part of the lending decision, the lender will have the facility appraised. The lender will also have the construction contract evaluated to make sure that the estimated costs to construct the project are reasonable and provide for reasonable contingencies.

The lending will usually require that the owner provide at least 20% of the project costs and that these monies be expended first. The 20% owner funding may be in addition to the monies spent in planning and feasibility studies. The remaining costs of construction may be funded solely by the lender, but in many instances SBA lending or guarantees makes up part of the project financing. An SBA loan reduces the total exposure of the traditional lender by financing 30 to 40% of the project by paying down the construction lending. For example, if the project's total cost is $10 million, the funding will be split 20% by owner, 30% by SBA, and 50% by lender. At the end of the project, the owner will be paying on two loans – one to the SBA and one to the Lender. The SBA 504 program has been used to finance biodigester projects in Indiana.

Operating and Maintenance Costs

The business plan will have modeled the continuing operation and maintenance costs of the biodigester and the income necessary to cover such costs. It is important to build into the model certain contingency costs that may include shut down and restart costs to account for any disruption in the waste stream or mechanical breakdown. The cash flow must cover the expected debt payments.

A Few Words About Carbon Offset Credits and RINs Income

California has created a market place for non-California based projects that result in reduction of greenhouse gases to monetize and sell those reductions (Carbon Offset Credits) in California to entities that are required by California law to reduce carbon emissions. The Air Resources Board of California is responsible for hosting and regulating the market for these Carbon Offset Credits and auctions are held twice yearly. The most recent auction in 2015 resulted in a price per ton of $12.10. For projects to qualify and be able to sell Credits, the project must be certified and adhere to a protocol published for that type of entity. A livestock protocol has been published and is available. Certifying and selling these credits is complicated and due to the inherent risks involved in any market process, this part of the project is likely best accomplished by hiring an entity that specializes in these kinds of commodity sales.

RINs offer another potential income stream for the project. RINs are specific identification numbers that are issued for every gallon on renewable fuel produced in the US. The Renewable

Fuels Portfolio Standard (RPS) is group of mandatory quotas set by the US for the production of fuels from renewable energy sources. If not enough renewable fuel galloons are produced, fossil fuel companies are required to purchase sufficient RINs to meet the mandate. In 2014, biogas used for vehicle fuels was added as an eligible renewable source for RINs. In July 2015, the trading price for a D3 RIN (the one applicable to biogas fuels) was $.99. This new source of potential income is driving renewed interest in the development of digester projects and may spark new interest by equity investors in larger projects. There are additional issues with generating and realizing on RINs from a biodigester project, some of which may add costs to the project such that only the largest projects may be able to take advantage of this program, or projects that are close to a pipeline or are able to negotiate an offtake agreement with an entity subject to the RINs mandate. Falling gasoline and diesel prices may affect this as well as the markets for CNG and LNG are being affected. Recently, projects to use biogas in the production of gasoline are being explored due to the inclusion of RINs in the equation.

The markets for selling carbon reduction attributes are subject to forces that are outside the control of producers and could be strengthened or disappear based on political decisions.