MODELS FOR FUNNELING LOCAL INVESTMENT CAPITAL INTO BIOFUEL PRODUCTION

Prepared for

United States Department of Agriculture

Prepared by

January 2007

The positions expressed in this study do not necessarily reflect the official positions of USDA or the Administration.

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY 1

II. INTRODUCTION 3

III. THE RENEWABLE FUELS INDUSTRY 4

A. Background on Renewable Fuels Industry Volumes & Structure 4
B. Current Status & Emerging Structure of the Ethanol & Biodiesel Industries 4

IV. CURRENT INVESTMENT MODELS: THE CASE OF ETHANOL PLANT FINANCING 6

A. Capital Requirements 6
B. Equity Contribution 7
Types of Equity 7
C. Debt 8
Types of Debt 9

V. BARRIERS TO INVESTMENT IN THE RENEWABLE FUELS SECTOR BY FARMERS AND OTHER RURAL INVESTORS 11

A. Key Barriers 11
High Equity Investment Requirements 11
Complexities of the Project Development Process 12
Risky Nature of Renewable Fuels Investments 12
B. Resources Available for Additional Investments by Farmers and Other Rural Residents in Renewable Fuels 13

VI. FARM REAL ESTATE VALUES 14

A. Farm Indebtedness and Debt Capacity 15

VII. REVIEW OF FEDERAL AND STATE PROGRAMS AVAILABLE TO INVESTORS IN THE RENEWABLE FUELS INDUSTRY 20

A. List of Selected Investment Programs Available to Renewable Fuel Producers 21

VIII. NOVEL INVESTMENT MODELS FOR FACILITATING INVESTMENTS BY FARMERS AND OTHER RURAL RESIDENTS 35

A. Closed-End Renewable Energy Funds for Farmers and Other Rural Investors 35
Description 35
Eligibility 35
Mechanics of the Investment Model 36
Program Strengths 39
Program Weaknesses 40
Conclusion 41
B. Investment Model: Debenture Guarantees 41
Description 41

TABLE OF CONTENTS (Continued)

Program Strengths *42*
Program Weaknesses *42*
Program Modifications for the Biofuels Sector *44*
Conclusion *44*
C. INVESTMENT MODEL: BASED ON THE NEW MARKETS TAX CREDIT 44
Description *44*
Eligibility *45*
New Changes to the Program *46*
Program Strengths *47*
Program Weakness *47*
Program Modifications for the Biofuels Sector *47*
Conclusion *48*
D. INVESTMENT MODEL: SUBSIDIZED LAND LOANS 49
Description *49*
Program Strengths *50*
Program Weaknesses *50*
Other Potential Program Features *50*
Conclusion *50*
E. INVESTMENT MODEL: TAX CREDIT FOR PROJECTS WITH A MINIMUM SHARE OF FARMER/RURAL INVOLVEMENT 51
Description *51*
Program Strengths *51*
Program Weaknesses *52*
Conclusions *52*
F. POSTSCRIPT: THE OPTION OF NOT CREATING NEW INVESTMENT MODELS 52

IX. CONCLUSIONS 54

LIST OF FIGURES

Figure 1: Average Equity of Corn Farm Businesses 11
Figure 2: U.S. Total Farm Business Real Estate Value 1990-2006 14
Figure 3: U.S. Net Farm Income and Farm Real Estate Values 15
Figure 4: U.S. Farm Businesses Sources of Real Estate Debt 1990-2005 16
Figure 5: U.S. Farm Businesses Sources of Non-Real Estate Debt 1990-2005 17
Figure 6: Total Farm Business Debt Ratios 18
Figure 7: Farm Operators Debt Repayment Capacity Based on Debt Payment Requirements 19

LIST OF TABLES

Table 1: Selected Financial Statistics for Farm Operator Households Having at Least $100,000 in Gross Sales in 2005 38
Table 2: Historical SBA-Guaranteed Debenture Interest Rates and Spreads 43
Table 3: Interest Rate Comparison: Traditional Debt and RBIC Debentures 44

I. EXECUTIVE SUMMARY

The high level of growth and profitability of the renewable energy sector in recent years has created significant investment opportunities, providing great potential for catalyzing growth in rural communities. Historically, farmers and other rural investors have participated extensively in the industry, owning 50 out of the 107 operating ethanol facilities and 37% of capacity as of late 2006. However, the scale and profitability of the industry have been attracting interest from a range of investment sources that are not linked to local communities, and only a small share of the capacity of new plants under construction and existing plants being expanded is owned by farmers and other rural investors. Given this background, the United States Department of Agriculture's (USDA) Rural Development agency commissioned Informa Economics, Inc. ("Informa") to conduct a study identifying models through which local investment participation in renewable energy operations can be fostered and profits can be retained and recirculated in local communities in order to promote rural development.

There are three main barriers to investment in the renewable fuels sector by farmers and other rural investors:

- High equity investment requirements. The size of new-build renewable fuels facilities has increased significantly in recent years. A medium-sized ethanol plant with a capacity of 50 million gallons per year (mmgy) involved $1.65 in plant-and-equipment costs per gallon of installed capacity as of late 2006; total project costs, including land acquisition, land preparation, financing fees and other "soft costs" could run roughly $1.95 per installed gallon. Typically, the capitalization of a plant involves 40% equity and 60% debt. Thus, the equity investment required for a 50-mmgy plant is $39 million. With a number of new facilities having capacities of 100 mmgy, the required equity investment can be nearly twice as high. Such levels of equity can be difficult to raise solely from farmers and other rural investors.
- The complexities of the project development process. Farmer/rural groups that do not have previous experience developing a renewable fuels facility can face a substantial learning curve. This, and the large number of farmers and other rural investors who must be convinced to contribute equity to a project, can cause the project development process to be long and sometimes inefficient.
- The risky nature of renewable fuels investments. Renewable fuels operations have a high degree of risk primarily driven by the fact that the cost of inputs (i.e., corn or vegetable oils) has not historically been correlated with the price of the outputs (i.e., ethanol or biodiesel). Farmers tend to be relatively conservative investors whose assets are composed mainly of the value of their land and other farm assets, and the risks involved in renewable fuels production can dissuade farmers from drawing more heavily on their assets.

There are a wide variety of government programs that are have been designed to foster the development of agricultural enterprises, help farmer and rural communities and advance specific industries. For the renewable fuels industry, there are a large number

of programs that can applied directly or indirectly to ethanol or biodiesel investments. Generally, these programs can be placed in the following categories:

- Direct-to-farmer federal programs;
- State producer programs;
- Federal or state programs that provide consumption/distribution incentives;
- General business creation programs;
- Programs that facilitate financing and investments for individuals; and
- Programs that are designed to help farmers start a business or finance an operation.

Groups of farmers and other rural investors that have not previously developed a renewable fuels facility are often aware of only a small portion of the available government programs. Moreover, the amount of assistance provided by many of the programs (often $50,000 to $100,000) is modest compared to the equity required for an investment in a renewable fuels facility. Still, such amounts can be very helpful when a renewable fuels investor group is just starting.

Given the modest impact of most existing government programs, Informa formulated several investment models that may be utilized to facilitate investment by farmers and other rural residents in the renewable energy sector. These models were based on the analysis conducted by Informa and interviews carried out during the course of this project. The following models were developed and are explained in detail in Section VIII of this report:

- Closed-end renewable energy funds for farmers and other rural investors;
- Debenture guarantees;
- A model based on the New Markets Tax Credit;
- Subsidized land loans; and
- A tax credit for projects with a minimum share of farmer/rural investment.

In summary, the government can allow the private sector to continue to determine the future ownership of the renewable fuels industry, with farmers and other rural investors accounting for a decreasing share of industry capacity, or it can undertake initiatives if it wants to accomplish the objective of fostering a more substantive role for farmers and other rural investors and the accompanying retention of industry profits in rural communities. The initiative can be incremental, or the government can take a more activist approach.

The incremental approach could involve enhancing existing government programs and improving community awareness of the programs. A more activist approach would involve implementing new investment models that can be utilized by farmers and other rural investors. Such models could range from adaptations of existing community investment models to the creation of new types of funds that would facilitate large-scale investment of capital raised from a sizable number of farmers and other rural investors.

II. INTRODUCTION

The high level of growth and profitability of the renewable energy sector in recent years has created significant investment opportunities, providing great potential for catalyzing growth in rural communities. However, the same highly profitable conditions that have spawned the rapid growth in the industry have been attracting investment interest from Wall Street, overseas, and other investment sources without linkage to local communities, potentially squeezing local investors out of the most lucrative investment opportunities emerging within their own communities.

There is potential investment capital within rural America that, if utilized, could give rise to a rebirth in rural communities while enhancing the economic wellbeing of rural owners of land and other assets. To foster economic development, it is useful for a large share of the profits arising from renewable energy investments be retained for recirculation in local rural communities. To meet this rural development objective, it is critical to ensure that farmers and other local investors are not denied access to participation in rural growth industries. It should be noted, however, that with these potential rewards come risks to the capital invested.

Given this background and objectives, the United States Department of Agriculture's (USDA) Rural Development agency commissioned Informa Economics, Inc. ("Informa") to conduct a study identifying and detailing a range of investment models through which local investment participation in renewable energy operations can be fostered and rural development objectives can thereby be met. This study describes how the structure of the renewable fuels industry is changing, how in turn the ability of farmers and other rural investors to participate in the industry is changing, and what financial resources and government programs are currently available to such investors; it then provides a set of potential new investment models developed by Informa for consideration by the USDA. These investment models are designed to meet the objectives of farmer/rural investment and rural development, though it should be recognized that the extent to which farmers and other rural residents will be willing to contribute equity and the returns from those investments are not assured.

III. THE RENEWABLE FUELS INDUSTRY

A. Background on Renewable Fuels Industry Volumes & Structure

The ethanol industry is by far the largest component of the renewable transportation fuels sector, with 3.9 billion gallons produced in 2005, worth nearly $7 billion. It is expected that ethanol production in 2006 will grow by another billion gallons. This represents dramatic growth from 1990, when production was 900 million gallons, and even from 2000, when production was 1.6 billion gallons.

In 1990, Archer Daniels Midland ("ADM") held 55% of industry capacity, and other corporations such as Pekin Energy (now owned by Aventine Renewable Energy), A.E. Staley (Tate & Lyle) and High Plains Corp. (Abengoa Bioenergy) accounted for most of the other significant-sized facilities, then defined as having a capacity of at least 10 million gallons per year. That same year, two pieces of legislation that have been key to the growth and structure of the ethanol industry were passed by Congress. Amendments to the Clean Air Act established programs that required the use of oxygenates (i.e., oxygen-rich fuel additives, such as ethanol) to make fuel burn cleaner and thereby combat carbon monoxide and ground-level ozone (i.e., smog) in many metropolitan areas. The second key legislative development was the inclusion of the Small Ethanol Producer Tax Credit (SEPTC) in the Omnibus Budget Reconciliation Act of 1990.

The programs established under the Clean Air Act Amendments took effect in the first half of the 1990s and resulted in an increase in ethanol demand, and farmer-owned operations participated in this growth. By 2000, 18 of 44 operating ethanol plants were farmer owned, with capacity of over 400 million gallons per year (mmgy), accounting for 22% of total industry capacity, according to statistics from the Renewable Fuels Association.

At the time, the SEPTC was limited to producers with capacity of less than 30 mmgy, and many state governments that offered producer incentives also capped the number of gallons on which payments were made. As a result, all but three farmer-owned facilities (two Minnesota Corn Processors plants, which have since been acquired by Archer Daniels Midland, and an AGP plant) had capacity of 30 mmgy or less.

The biodiesel industry is only a fraction of the size of the ethanol industry, with 2006 production estimated at 250 million gallons. Additionally, whereas the ethanol industry has established its position in the motor fuels market and has expanded considerably over almost 30 years, the biodiesel industry was quite small until the Federal Bioenergy Program (CCC-850) was established in 1999, and substantive growth did not begin until an excise tax credit for biodiesel was included in the JOBS Act of 2004.

B. Current Status & Emerging Structure of the Ethanol & Biodiesel Industries

During the current decade, ethanol industry growth has accelerated as a result of a rise in petroleum prices and the banning of the competing oxygenate methyl tertiary butyl ether (MTBE) in a number of states. Farmer-owned facilities have participated in this

growth to an even greater extent than in the 1990s. Plants owned by farmers and other rural investors represented 50 out of the 107 operating ethanol facilities and 37% of capacity as of November 17, 2006, according to the Renewable Fuels Association. The capacity of this segment of the industry has more than quadrupled since 2000, to a total of 1.9 billion gallons per year (bgy). With relatively high profit margins during this time period, farmers and other rural investors have participated greatly in the success of the industry.

Approximately 46% of industry capacity is in the hands of firms structured as limited liability companies (LLCs). Including other limited-liability business structures, such as limited liability partnerships, the share of capacity increases to 50%. Considering that Archer Daniels Midland still has 20% of industry capacity and that there are other major corporations such as Cargill and Abengoa Bioenergy in the industry, it is clear that the LLC has become the business structure of choice among producers that are not major corporations. Notably, 29% of industry capacity is accounted for by operations that the Renewable Fuels Association designates as being owned by farmers and other local investors and that are organized as LLCs or similar structures, out of the total 37% of capacity having farmer/rural ownership (i.e., nearly 80% of the capacity owned by farmers and other rural investors is organized as LLCs or similar structures).

Only five of the 49 new ethanol facilities under construction as of November 17, 2006, are owned by farmers and other rural investors, although six of eight plants being expanded fall into this segment. Such plants account for only 15% of the capacity being added. This diminution of participation by farmers and other rural investors is likely a result of the increase in the minimum size of a new plant to 40-50 mmgy, with the costs of engineering, procurement and construction (EPC) often exceeding $75 million, not including site preparation and business start-up costs. Although the definition of a small producer was increased to 60 mmgy in the Energy Policy Act of 2005, minimum equity-to-capitalization ratios are 35-40% for new plants – and traditional lenders to the industry can have even higher requirements – and farmers and other rural investors can struggle to raise $30 million in equity.

Moreover, many plants under construction have a planned capacity of 100 mmgy, involving EPC costs of $165 million and equity of $60 million or more. The investment size and profit margins in recent years have been attracting equity from mainline U.S. investors, including private equity funds. Given the size of the investment and the efficiencies of larger facilities, the loss of the SEPTC payment of $1.5 million per year (i.e., 10 cents/gallon on the first 15 million gallons of production) is not a prohibitive opportunity cost.

IV. CURRENT INVESTMENT MODELS: THE CASE OF ETHANOL PLANT FINANCING

Since the capacity of the ethanol industry at the end of 2006 was more than ten times the size of the biodiesel industry, and since the structuring of deals involving ethanol operations has evolved over nearly 30 years, this section of the report focuses on the financing of ethanol plants. The emerging biodiesel industry is looking to these deal structures as investment models that can be emulated in financing biodiesel plants, and the investment models serve as useful case studies for operations entering production of other types of renewable energy as well.

A. Capital Requirements

Estimates of the total capital requirements for an ethanol plant vary with the capacity of the facility. Until the year 2000, few dry mill ethanol plants were built with individual capacities in excess of 50 mmgy. However, many of the plants that have recently been constructed and those currently in the construction phase have nameplate capacities of around 100 mmgy. It is estimated that, for a medium-sized plant with capacity of 50 mmgy, plant-and-equipment costs are approximately $1.65/gallon of nameplate capacity. For a larger plant with capacity of 100 mmgy, some efficiencies can be gained, plant-and-equipment costs may be as low as $1.47/gallon of capacity. Thus, a 50-mmgy facility would cost approximately $82.5 million and a 100-mmgy facility would cost $147 million to construct. In addition to these plant-and-equipment costs, other costs such as land acquisition, land preparation, financing fees and other “soft costs” can bring total project costs up to $1.95/gallon of installed capacity.

The equity share of project capitalization rarely falls below 30%, at which point the terms of the debt tend to become significantly more burdensome. It is more common to for equity to comprise 40% of capitalization (and levels closer to 50% result in even more favorable lending terms). Therefore, the minimum viable equity investment for a 50-mmgy facility is approximately $29 million with approximately $39 million being more typical. A 100-mmgy facility would likely require a minimum equity investment of around $53 million with a typical investment of around $71 million.

Because of the significant amount of capital required to build a large-scale ethanol facility, the financing of even a single plant often requires multiple funding sources. The equity can be held by a number of different types of parties including corporations, investment funds, cooperatives or individual investors. Facilities typically issue debt instruments to finance the remainder of the plant. As long as the plant is able to generate sufficient cash flows to service its debt obligations, equity owners are paid dividends for their portion of ownership in the plant.

While ethanol facilities are constructed and owned by a number of different types of legal entities, this portion of the report will focus on equity ownership by a limited liability company (LLC) with partial debt financing, a common structure in recent “Wall Street” plant financing.

B. Equity Contribution

Equity investors contribute capital to the project in order to receive dividends and/or capital appreciation, although capital appreciation may be difficult to realize as most privately held ethanol facility shares are not traded on an organized exchange. However, during the last couple of years, some ethanol facility owners – particularly in cases where private equity firms hold a significant stake in the operation – have attempted to sell their ownership stakes through an initial public offering (IPO) on public stock markets, with varying levels of success. The return to the equity holders (dividends and appreciation) is dependent not only on the financial viability of the project as a whole, but also on the financial structure (i.e. the amount and types of debt and other interests) of the project.

There are a number of ways that the debt portion of the financing can be structured depending on how risky the project is perceived by the debt holders. For example, with a debt-to-equity ratio that is significantly higher than 1-to-1 and/or a less favorable market outlook for ethanol and input prices, debt holders often require that a portion of the net cash flows generated by the project be used to pay off the loan at an accelerated rate (referred to as a cash sweep). This can have a significant negative impact on the return to the equity holders in the project, as dividends are foregone early in the project in order to fund the larger debt repayments. However, under similar market conditions, plants with a relatively high proportion of equity financing relative to debt will generally be able to obtain more favorable debt terms, such as a lower percentage of cash flows being subject to the sweep.

Types of Equity

Equity can be contributed by a number of different parties in the financing of an ethanol plant. Historically, farmers and other rural investors provided equity to a number of small-to-medium sized individual plants, and agribusinesses owned one or a series of large-scale plants. In the last few years, as the sizes of plants (and the required equity) have increased and the returns have been sufficient to attract more investors outside of the agricultural community, equity has begun to flow in from large institutional investors and other interested parties such as grain supply and ethanol and distillers grains marketers. Types and terms of equity shares vary, but two common types in ethanol plant finance are common shares owned by private equity and preferred shares.

1. Private Equity (Common Shares)

   Private equity funds pool large amounts of money from pension plans, insurance companies, corporations and wealthy individuals. Private equity funds are usually structured as a limited liability partnerships (LLPs), in which the private equity firm acts as the general partner and the funding sources are limited partners. The private equity fund will generally hold a portfolio of investments rather than investing only in a single project.

   While private equity funds have often produced substantial returns for investors through their investments, there are some important negative aspects of this

structure. Investors in private equity firms are normally required to contribute a substantial amount of money to the fund (usually in excess of $100,000 each). Investment in a private equity fund is generally very illiquid, particularly compared to an equity investment in an exchange-traded security. For example, if a private equity fund were to invest in an ethanol facility, the pool's funds would likely be tied-up in the project for a number of years, leading such funds to look for an "exit strategy" after several years, such as selling the facility or aggregating assets with a sufficient size to permit an IPO. Limited partners generally do not have the ability to draw funds from the pool and may find it difficult to sell their stake to another investor. Also, some private equity funds are structured so that limited partners must continue to contribute equity over time in order to fully fund a project. Furthermore, like publicly traded common stock, the private equity fund's claim to the assets of the project in the case of financial distress and liquidation will generally be subordinate to all other debt and preferred stock interests in the project. Thus, the private equity fund is a "residual claimant" on the assets of the project.

On the positive side, however, private equity holders enjoy the "upside" of a successful investment though dividends and share value increases in contrast to debt holders that receive fixed payments regardless of financial success (except for the case of financial distress, when debt service payments and dividends cannot be paid in full).

2. Preferred Stock

While considered an equity security, the financial structure of preferred stock lies somewhere between a traditional equity security and a debt security. Similar to a coupon payment on a debt instrument, preferred stock usually has a specified dividend payment stated as a percentage of the face value of the instrument. The face value of the preferred stock share is equal to the original cash contribution of the investor; it is also equal to its liquidation value. Unlike a bond payment, however, the issuer is not required to make the dividend payment, though missed dividend payments normally accrue and are paid at a later date when funds become available, with preference given over dividends to common share holders. In the case of liquidation of the project's assets, preferred stock is generally subordinate to secured debt and senior to common shares. Furthermore, the dividend payment on a preferred share is senior to any dividend payments on common shares. However, preferred share holders generally do not have voting rights and they don't enjoy capital appreciation like common equity shareholders.

C. Debt

An ethanol project's debt financing can take on a number of different forms depending on the requirements of the project and the investors. In general, however, a debt instrument used to finance an ethanol plant is simply an exchange of cash by the investor in return for repayment of that cash plus interest over time. Most of the debt

instruments that are utilized are amortized over a number of years through fixed coupon payments. Additional covenants may be included in a debt instrument such as cash sweeps (i.e., a defined percentage of project cash flows automatically applied as early payment of principal) and various types of equity "kickers" that can be attached to the debt issue, such as warrants. These tools are all used to make the debt more attractive to potential lenders.

While traditional agriculturally oriented banks have provided term loans to the ethanol industry for years, more recently debt issued by projects without equity investment by farmers or agribusinesses has been arranged by an investment bank or syndicate of investment banks. The investment bank(s) facilitates the negotiation of debt structure and terms with lenders for a fee that is usually a percentage of the capital raised. The investment bank might also retain an equity or debt interest in the project.

Types of Debt

1. Senior Debt

   Senior debt normally takes the form of a term loan (similar to a mortgage or auto loan that amortizes over time) with a tenor of around six years; debt service payments are made at a regular interval, and they include an interest payment and a principal repayment component. However, many senior debt agreements include a provision for "cash sweeps" that pay down the principal balance on the loan at an accelerated rate based on the cash flows generated by the project. The amount of the cash sweep can vary depending on the covenants of the loan agreement, but are generally between 40% and 100% of cash flows (i.e. cash flow after all scheduled debt service payments, but before any dividends on equity shares). Thus, under positive financial conditions for the project, the senior debt is usually retired in a period of time significantly shorter than the tenor of the debt.

   Senior debt holders have the first claim on assets of the project in the case of liquidation. The amount of senior debt issued varies depending on the risk and capital needs of the project, but industry sources indicate that up to 65% of an ethanol project's total capital cost can be financed using senior secured debt. Furthermore, senior debt (sometimes also referred to as senior bank debt) is primarily sold to large banks. Because this senior debt is generally sold to a limited number of banks, it is not necessary for the issue to be rated by a debt rating agency such as Standard and Poor's, Moody's or Fitch.

2. High-Yield Debt

   Ethanol facilities can also be partially financed using high-yield bonds (also called non-investment-grade or "junk" bonds). A high-yield bond is a publicly traded bond that is rated below investment grade by the credit rating agencies because of a relatively high level of credit (default) risk. In cases of projects with low

equity-to-capitalization rates, ethanol plant debt usually falls into the high-yield category because of relatively small total capitalization and commodity (input/output) price volatility. In order to incentivize the purchase of these bonds, they are either issued with a high coupon payment or are sold at a significant discount to face value, or a combination of the two. High-yield debt instruments are senior to equity shares and are relatively liquid in secondary markets.

3. "B" Loans

   B Loans (also called institutional debt) are subordinated secured term debt instruments with a term of around seven years. In case of liquidation, holders of B Loans will generally only have a claim on the project's assets after the claims of the senior debt holders are met. B loans are usually arranged by an investment bank and sold to large institutional investors such as money market accounts, loan funds and hedge funds. B loans do not normally include provisions for cash sweeps and, in fact, will often include pre-payment penalties. Also, it is often necessary that B loans be rated by one or more of the credit rating agencies, which may be a costly process for the issuer. B loans for ethanol facilities often receive non-investment grade ratings.

4. Mezzanine Debt

   Mezzanine debt is used when there is a gap between the total capital requirements of the project and the equity and secured debt that could be raised to finance the project. Mezzanine debt is usually only senior to the equity shares. Because it is a subordinate instrument, mezzanine debt usually carries a high interest payment. In order to sell mezzanine debt, the issuer may also include an equity "kicker" along with the debt instrument in the form of a warrant (basically a call option on equity shares) or preferred stock.

As investment banks and large institutional equity investors have become more involved in financing ethanol facilities, and as plants have gotten larger and costlier, the arrangements to finance ethanol operations have become more complicated and diverse. A plant may have several sources of equity and debt financing in order to raise sufficient capital and satisfy investors.

V. BARRIERS TO INVESTMENT IN THE RENEWABLE FUELS SECTOR BY FARMERS AND OTHER RURAL INVESTORS

A. Key Barriers

There are three main barriers to investment in the renewable fuels sector by farmers and other rural investors:

- High equity investment requirements;
- The complexities of the project development process; and
- The risky nature of renewable fuels investments.

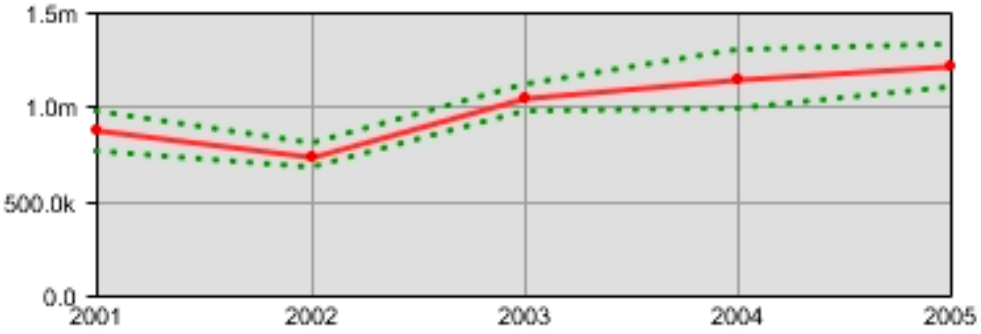
High Equity Investment Requirements

As stated above, a typical 50-mmgy ethanol facility involved $1.65 in plant-and-equipment costs per gallon of installed capacity, as of late 2006; total project costs, including land acquisition, land preparation, financing fees and other "soft costs" could run roughly $1.95 per installed gallon. Typically, the capitalization of a plant involves 40% equity and 60% debt. Hence, the minimum equity investment for a medium-sized plant of 50 mmgy is $39 million.

In the case of biodiesel investments, plants are typically smaller, but in geographic areas where soybeans area produced and the crushing industry is concentrated (i.e., feedstock origination areas), there is a trend towards larger plants of at least 30 mmgy. Biodiesel capital costs are from $1.00 to $1.25 per installed capacity; accordingly, a 30 mmgy plant will require minimum equity of at least $13 million.

Thus, the equity requirements to develop and build modern-scale biofuels facilities can be difficult to raise solely from farmers and other rural investors, particularly for ethanol. For example, if a group of 250 farmers and other rural investors came together to build the medium-sized ethanol plant mentioned above, each would have to invest just over $150,000, which is high relative to the net worth of a typical corn farmer (see Figure 1). The financial resources of farmers are evaluated in Section VI of this report, and as shown in that analysis and additional statistics shown in Section VIII, a substantial share of the net worth of farmers is tied up in farm-based assets, particularly land.

Figure 1: Average Equity of Corn Farm Businesses



* Based on information of farm businesses with sales higher than $1,000. Survey based on 58,000 corn farmers.
Source: USDA Agricultural Resource Management Survey (ARMS)

Complexities of the Project Development Process

Establishment of a renewable fuels project is a complex operation that requires leadership and a good understanding of the technical, economical and policy environment. If they do not have members or advisors who have previously been involved in developing renewable fuels facilities, farmer/rural groups can face a substantial learning curve and this along with the large number of investors that must be convinced to contribute equity to the project can cause the project development process to be long and sometimes inefficient.

The initial process can involve organizing a steering committee, raising money (or finding grants) for a feasibility study, selecting a consultant to conduct the feasibility study. If the study indicates the operation is expected to be feasible, then additional money must be raised for the next step of the process, which can involve hiring an attorney, selecting the appropriate legal structure for the organization, conducting the necessary legal filings, purchasing land, applying for the necessary permits (e.g., air and building permits) and conducting at least preliminary discussions with an engineering and construction firm/consortium and possibly with third-party grain supply and product-marketing companies (if the operation is not going to be structured as a cooperative). The group must then raise the full equity for the investment and, if not done previously, enter into final agreements with an engineering, procurement and construction ("EPC") contractor and any third-party supply/marketing providers.

This process can cost well over $100,000 and, once the feasibility study is completed, can require a full-time employee. There are grants and other government programs (e.g., the Value Added Producers Grant) that can provide funding for a group's initial capital needs, but farmer/rural groups that do not have experience in the development of renewable fuels operations sometimes are not aware of these grants, or if they are aware of the major federal grants, they still might not be aware of the full range of federal and state programs available to them; additionally, the time from application for these grants/programs to receiving the funds can be several months.

Risky Nature of Renewable Fuels Investments

Renewable fuels operations have a high degree of risk primarily driven by the fact that the cost of inputs (i.e., corn or vegetable oils) has not historically been correlated with the price of the outputs (i.e., ethanol or biodiesel). Hence, the margin of an operation can vary significantly from one year to the other. Furthermore, the margin of an operation is driven by factors that are outside the control of a single company: crude oil price, weather and government policy. For example, biodiesel margins eroded during 2006 as vegetable oil prices increased. Other issues such as technology risk and quality issues cause additional investment uncertainty for biodiesel. These risks can dissuade farmers from drawing more heavily on their assets, which are mainly composed of land and other farm-related assets and have relatively modest changes in value from year to year, to invest in renewable fuels operations.

B. Resources Available for Additional Investments by Farmers and Other Rural Residents in Renewable Fuels

Farmers have three main resources that can be leveraged for participation in a renewable fuels project:

- Farm income;
- Feedstock production; and
- Equity from land and equipment.

It is noteworthy that framers have benefited broadly from the growth in the biofuels industry, even for farmers they are not directly involved in production of ethanol or biodiesel. Average farm income has increased as result of increases in prices of corn and soybeans. Ethanol growth has also provided incentives to expand production of corn to more acres. Finally, greater farm income per acre is being capitalized into higher land values, thereby increasing the land equity of the average farmer (at least in the Corn Belt). Trends in farmer assets and financial conditions are evaluated in the next section of this report.

In addition to the resources owned by farmers themselves, the government also offers a variety of tools and programs that farmers and other rural investors can use to participate in the renewable fuels operations. These include the following:

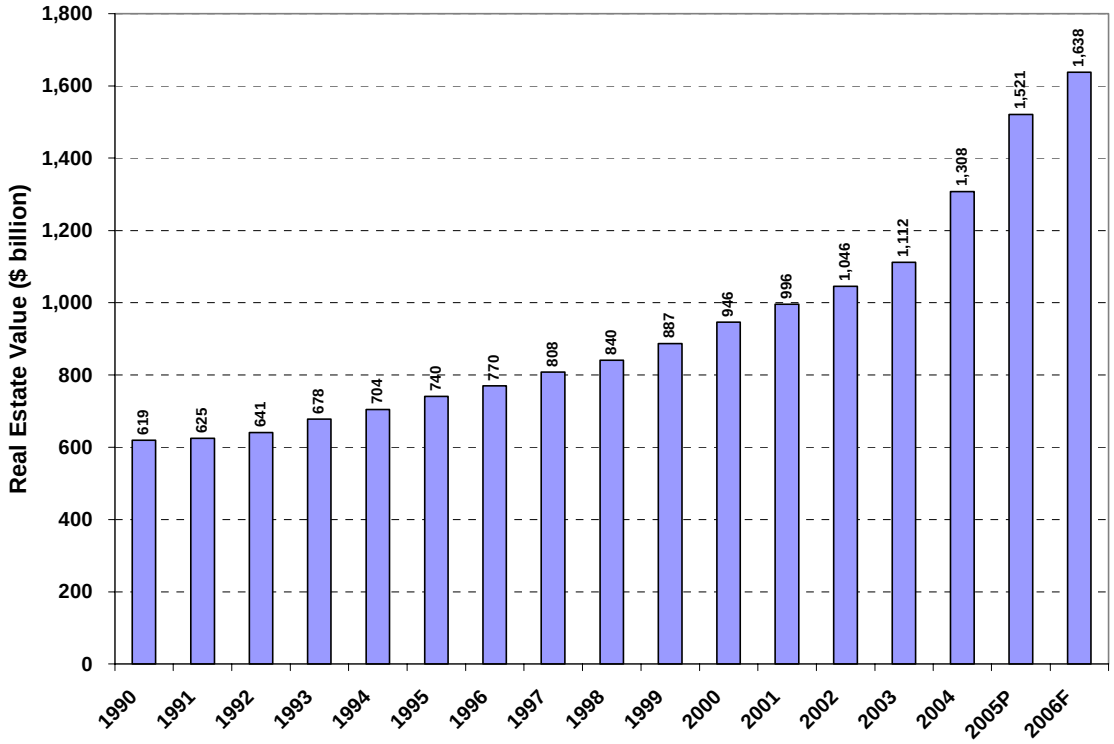
- Grants for renewable fuels project development, production or research;
- Federal and state tax credits;
- Loan guarantees;
- Direct subsidies; and
- Legislation to encourage/mandate the consumption of biofuels.

A review of existing government programs is provided in Section VII of this report, and proposals of potential new investment models are made and elaborated on in Section VIII.

VI. FARM REAL ESTATE VALUES

The total value of U.S. farm business real estate has grown substantially since the early 1990's, reaching a projected $1.6 trillion by the end of 2006 (see Figure 2). The total value of farm real estate increased modestly between 1990 and 1999, increasing from $619 billion to $887 billion. The value of farm real estate has experienced more rapid growth recently, growing by 38% between 2002 and 2005.

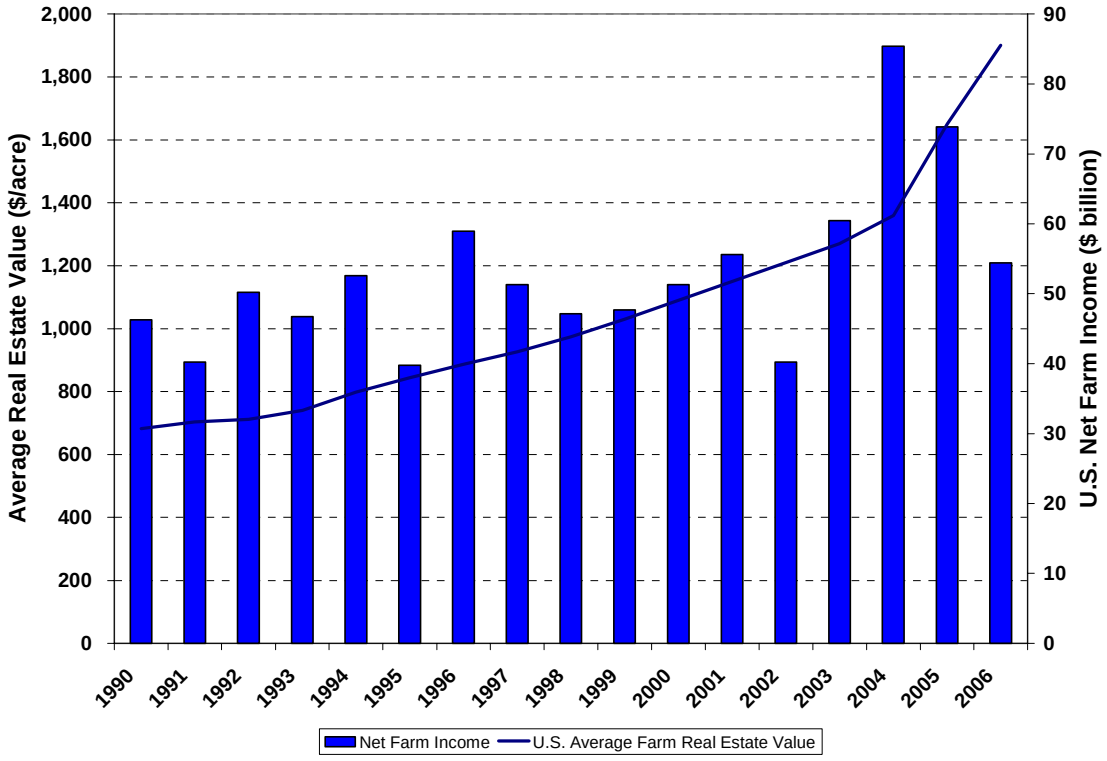
Figure 2: U.S. Total Farm Business Real Estate Value 1990-2006



Source: ERS Farm Business Balance Sheets

As shown in Figure 3, increases in farm real estate values (per acre) have generally followed the upward trend of net farm income (a measure of farm profitability), although net farm income has been significantly more variable than U.S. average real estate values over the last 15 years. Of particular interest, significant decreases in net farm income occurred in 1995 and 2002, but real estate values maintained their long-term upward trajectory, suggesting that short-term fluctuations in income don't significantly affect real estate values year-to-year. This is consistent with a fundamental land value outlook in which land prices are derived from expected long-term financial returns and are not necessarily significantly affected by short-run income fluctuations.

Figure 3: U.S. Net Farm Income and Farm Real Estate Values

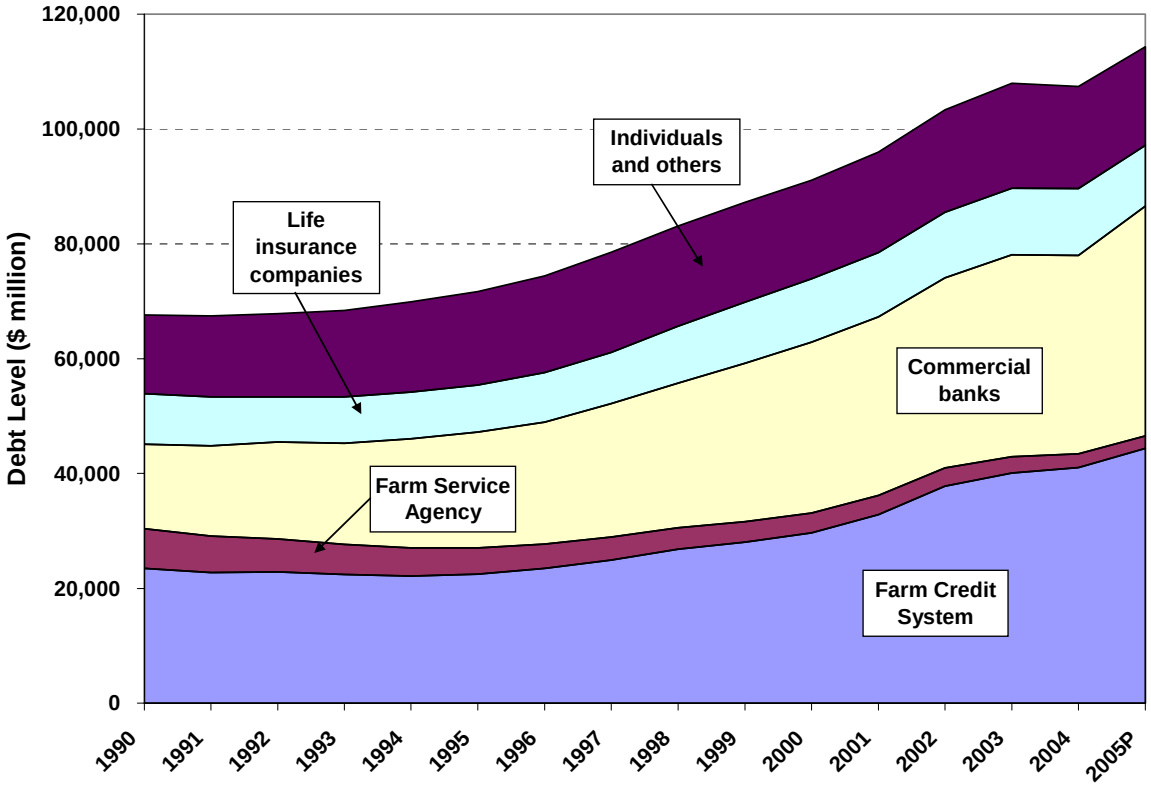


Source: ERS Farm Business Balance Sheet

A. Farm Indebtedness and Debt Capacity

While there is significant value in the land held by farmers, it is also important to determine to what extent that land is already leveraged. Farm operations utilize a number of different types of debt instruments to finance land and capital purchases and operational cash requirements. Real estate debt for farm businesses has steadily increased over the last fifteen years, growing from $67.6 billion in 1990 to $114.3 billion in 2005, a 170% non-compounded increase (see Figure 4).

Figure 4: U.S. Farm Businesses Sources of Real Estate Debt 1990-2005

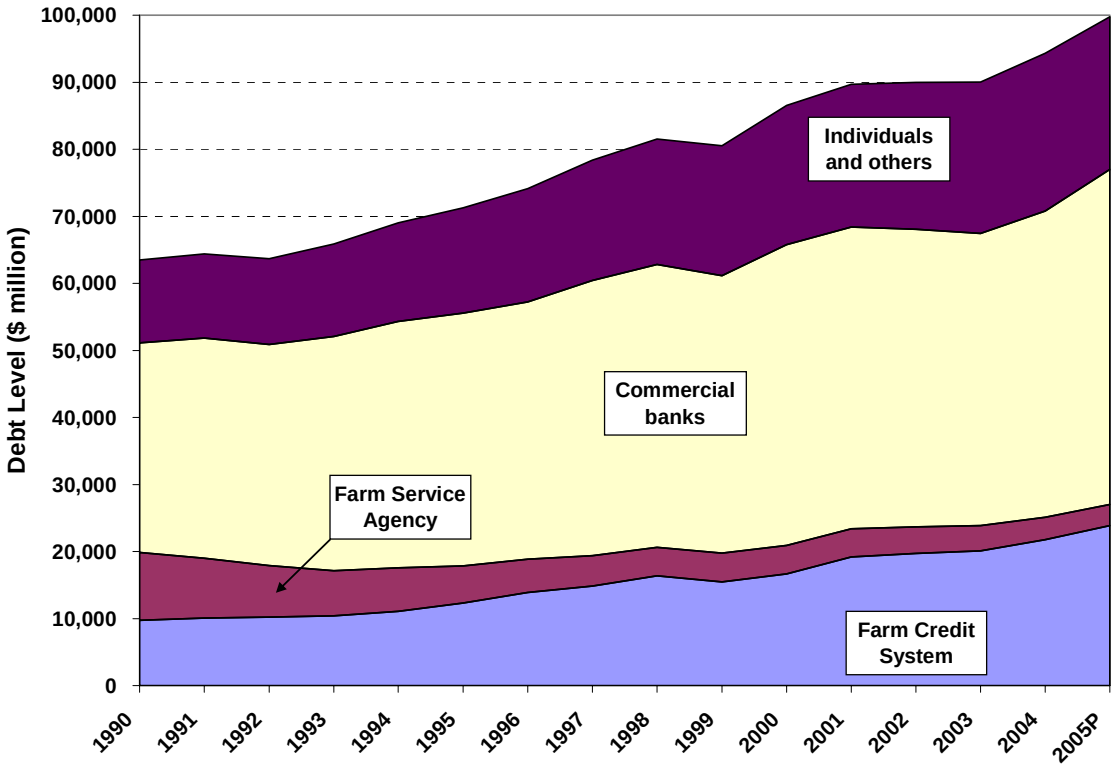


Source: ERS Farm Business Balance Sheets

The largest sources of real estate debt have historically been the Farm Credit System and commercial banks. Combined debt from these two sources has driven the increase in total debt over the last 15 years, increasing from approximately 56% of the total real estate debt in 1990 to 74% in 2005.

As shown in Figure 5, non-real estate farm business debt grew from approximately $63.5 billion in 1990 to $99.7 billion in 2005. Historically, around 50% of non-real estate debt has been supplied by commercial banks.

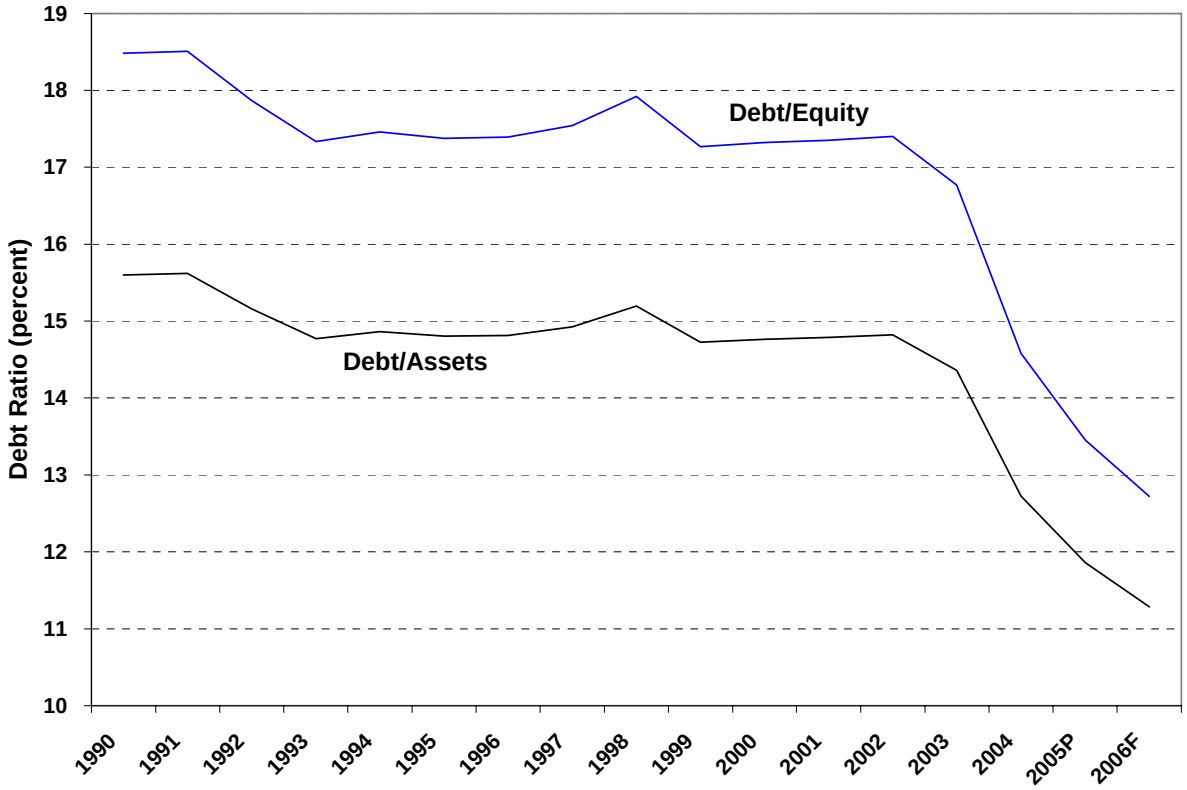
Figure 5: U.S. Farm Businesses Sources of Non-Real Estate Debt 1990-2005



Source: ERS Farm Business Balance Sheets

While total farm business debt has grown substantially over the last 15 years from $131 billion to $214 billion, the debt level relative to farm assets and equity (total farm business equity is projected at approximately $1.7 trillion at the end of 2006) has actually declined in recent years (see Figure 6). After remaining relatively constant between 1990 and 2002, the ratio of debt-to-equity fell from 17.4% in 2002 to 13.5% in 2005 and is expected to decrease further to 12.7% by the end of 2006. Similarly, the ratio of debt-to-assets fell from 14.8% in 2002 to 12.7% in 2005 and is expected to fall to 11.9% by the end of 2006. The moderate decline in farm business debt ratios over the last four years even as debt levels have increased is driven in large part by substantial increases in farm real estate values discussed previously.

Figure 6: Total Farm Business Debt Ratios

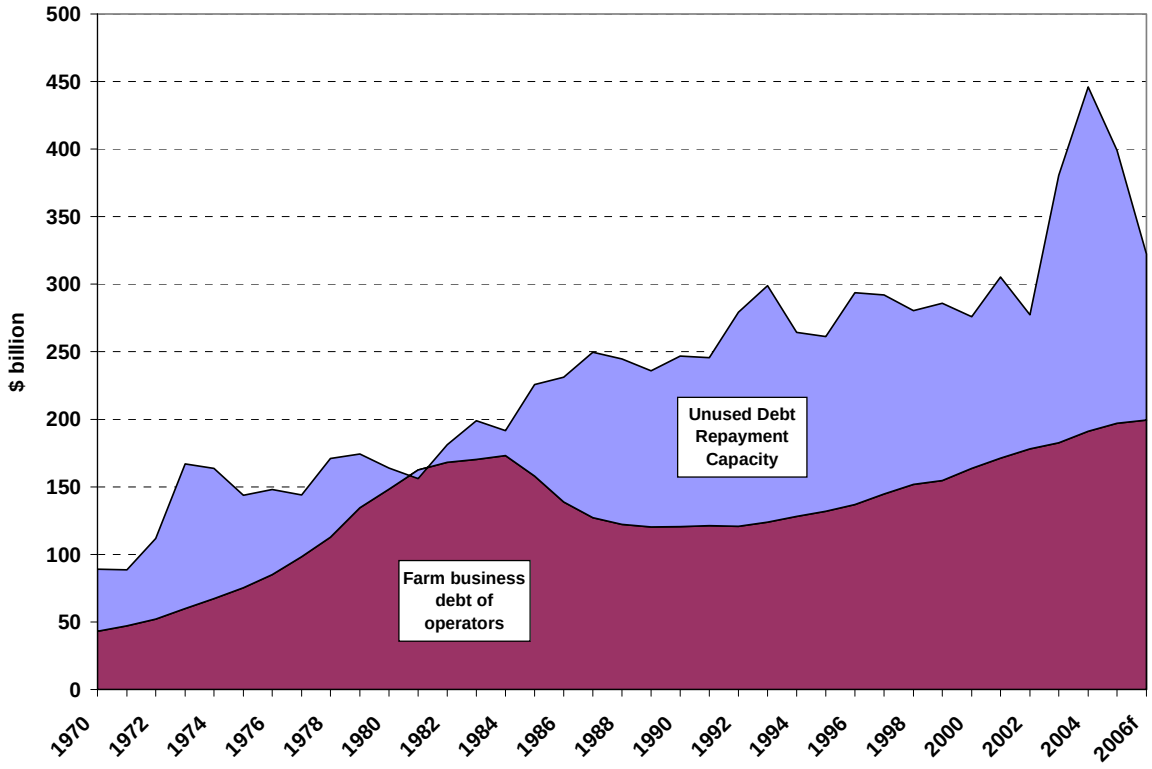


Source: ERS Farm Business Balance Sheets

While U.S. farmers hold a significant amount of assets and equity relative to debt, the ability to take on even higher levels of debt is largely dependent on the ability to generate enough income to service their debt obligations. As shown in Figure 7, farm operators generally have significant excess debt capacity based on income[1]. In the period since the mid-1980s, debt repayment capacity has significantly outpaced farm business debt. For 2006, it is estimated that debt capacity will exceed actual debt by approximately $123 billion (based on maximum debt service of 80% of income), suggesting that there is a significant unused financial resource available to farm operators. However, total debt capacity varies significantly based on farm income levels, which are driven primarily by commodity prices and operating costs. Additionally, investment in value-added agricultural businesses outside of the farm, such as a biofuel production facility, may help to boost the debt capacity of farm operators further if the enterprise is able to generate dividends for the farmer.

[1] Debt repayment capacity is based on the maximum debt service that operators would be able to pay given income and farm and non-farm expenses.

Figure 7: Farm Operators Debt Repayment Capacity Based on Debt Payment Requirements



Source: ERS Farm Business Balance Sheets

While the large amount of equity farmers hold in real estate does offer an opportunity for leveraged investment in other ventures, there are a number of risks associated with borrowing against the land. First, as shown in Figure 7, total debt capacity has fallen below actual debt in the past (in 1981). If income were to fall significantly in the future and debt levels were to rise, it is possible that this would occur again and some farmers would be unable to meet their additional debt obligations. A number of scenarios could occur that could affect the income available for debt coverage including falling (output) commodity prices, increased expenses, or crop failures, although some of these commodity price risks would be at least partially offset by insurance programs. However, the risk associated with commodity price fluctuations for the farm operator may be partially offset by his investment in a value-added operation that utilizes the same commodity such as a corn producer who invests in an ethanol facility. If for example, corn prices fall, the producer would receive lower prices for his crop, but the ethanol plant would likely experience higher returns because of lower operating expenses.

VII. REVIEW OF FEDERAL AND STATE PROGRAMS AVAILABLE TO INVESTORS IN THE RENEWABLE FUELS INDUSTRY

There are a wide variety of government programs that are have been designed and developed to foster the development of agricultural enterprises, help farmer and rural communities and advance specific industries. For the renewable fuels industry, there are a large number of alternatives that can applied directly to ethanol or biodiesel investments (e.g. the SEPTC) or can be used indirectly (e.g., Value Added Producer Grants). Generally, these programs can be placed in the following categories:

- Direct-to-farmer federal programs;
- State producer programs;
- Federal or state programs that provide consumption/distribution incentives;
- General business creation programs;
- Programs that facilitate financing and investments for an individual; and
- Programs that are designed to help farmers start a business or finance an operation.

Based on interviews with a number of renewable fuel producers, financial institutions and other service providers to the industry, the following findings were developed regarding the use and role of government programs available to the industry:

- There are a large number of small-to-medium size investment programs that can be used by farmers (and in most cases rural residents) to facilitate investments in the biofuels sector.

- The amount of assistance provided by many of the programs (e.g., $50,000 to $100,000) is modest compared to an ethanol investment that will require at least $39 million in equity and a biodiesel investment that will require at least $13 million in equity. Still, such amounts can be very helpful when a renewable fuels operation is just starting and is still in the stage of conducting a feasibility study and getting the legal structure of the organization put in place.

- Some of the farmers interviewed found out about certain programs only after they had already raised a large part of their equity and when the potential and impact of the limited funds available were no longer as great. Farmers generally had a "difficult time" getting enough funds to jump-start the project; that is, to pay for feasibility studies, permitting, etc. After they got past the first phase of development, they were able to raise the "first millions" from their local communities. Hence, a program that can, for example, provide $50,000 will have more influence in the first stage of development when these funds can help move the project to a second stage.

- Farmer groups, individual farmers, or even agricultural trade organizations are not fully aware of all these "potential sources" of investment capital. Hence, this

group does not take full advantage of programs designed to fund part of their initial development efforts.

- Large companies or agribusiness have placed more emphasis on incentives from cities, counties, utilities and other local entities that can over time represent a significant dollar amount to the operation.

- While there is plenty of information available about investment incentives and programs, there is not a single and comprehensive source that can help an average farmer group to be aware of and take advantage of these programs when they can be most influential (i.e., during the initial phases of development).

- Many of the farmer groups that have successfully funded an ethanol or a biodiesel operation have had one or more people fully dedicated to handling the project.

A. List of Selected Investment Programs Available to Renewable Fuel Producers

As part of the project, Informa reviewed a number of programs and examined their main strengths and weakness. It is important to keep in mind that the list compiled does not include all the available programs; it simply provides a wide variety of alternatives that already exist.

Program: Federal Empowerment Zones

Description

- A program that uses economics incentives, primarily tax breaks, to bring investments to poverty-stricken areas of the country.
- The current round, Round III, has no grant funds appropriated.
- The Round III rural zones can each issue up to $60,000,000 in “new bonds” to finance zone facilities in addition to Round I type tax-exempt bonds.
- The program offers a 20% tax credit for the first $15,000 in wages paid to a qualified employee, which yields a tax credit of up to $3,000 per employee.
- There is up to $35,000 of additional Section 179 expensing available, however, the property in question must be on the parcels qualified under the poverty rate criteria.

Strengths

- The tax breaks definitely encourage investors to build bioenergy operations in locations that would not have been considered.
- The program can be combined with other state and/or local incentives.
- The $60,000,000 incentive is a substantial amount of capital to build a facility.

Weaknesses

- The programs do not help the poor and middle class invest in the facilities.
- The money rarely goes to local investors.

Program: State and Local Producer Incentives

Description

- This program gives grants; raises capital through bond issuances, tax breaks and improves the infrastructure to encourage investment.

Strengths

- When a community wants a facility but the infrastructure cannot handle the extra strain caused by the facility, these programs can eliminate the problem of who pays for the upgraded infrastructure. For example, for an ethanol plant that requires an upgraded waste treatment system or better access to a port, could be what enables the capital needed for the construction of the plant to be raised.
- Can be combined with other programs.

Weaknesses

- The programs are directly aimed at helping bioenergy development. If a group cannot raise the money through traditional means, these programs probably will not help.

Program: Federal Bioenergy Program (CCC-850)

Description

- Designed to encourage the construction of bioenergy facilities by paying for the incremental increase in the agricultural input cost.

Strengths

- The program effectively lowers the amount of capital needed to build an ethanol plant. The program pays for all the corn for the first year. This means the owner of the plant will not need to borrow money for the initial corn purchase.
- Can be combined with other programs.

Weaknesses

- This program is being discontinued.

Program: Value-Added Producer Grants (VAPG)

Description

- This program is to encourage the construction of farmer owned facilities that add value to farm products.
- Eligible applicants are independent producers, farmer and rancher cooperatives, agricultural producer groups, and majority-controlled producer-based business ventures.
- Last year, 185 grants were issued for a total of $21,203,723. No grant was larger than $300,000.

Strengths

- Effectively lowers the amount of capital needed to build an ethanol plant.

- Helps large medium size farmers build value-added plants.

Weaknesses
- Bioenergy plants cost much more than $300,000, so the farmers involved must generally have enough capital to build the facility.

Program: Small Producer Minority Grant
Description
- To encourage the construction of minority farmer owned facilities that add value to farm products.
- Eligible applicants are independent producers, farmer and rancher cooperatives, agricultural producer groups, and majority-controlled producer-based business ventures that meet certain criteria as a minority.
- No grant in this program was larger than $300,000.

Strengths
- Effectively lowers the amount of capital needed to build an ethanol plant.
- Helps large medium size farmers build value-added plants.

Weaknesses
- Bioenergy plants cost much more than $300,000, so the farmers involved must generally have enough capital to build the facility.

Program: Rural Cooperative Development Grant Program (RCDG)
Description
- Rural Cooperative Development grants are made for establishing and operating centers for cooperative development for the primary purpose of improving the economic condition of rural areas through the development of new cooperatives and improving operations of existing cooperatives.
- The U.S. Department of Agriculture desires to encourage and stimulate the development of effective cooperative organizations in rural America as a part of its total package of rural development efforts.

Strengths
- Helps large medium size farmers get organized into larger groups that should be better able to raise capital.

Weaknesses
- Bioenergy plants cost millions of dollars; therefore, the main farmers involved must have enough capital to build the facility.

Program: Business and Industry Guaranteed Loans (B&I)

Description

- The Business and Industry (B&I) Guaranteed Loan Program provides guarantees up to 80% of a loan made by a commercial lender
- Loan proceeds may be used for working capital, machinery and equipment, buildings and real estate, and certain types of debt refinancing.
- B&I loan guarantees can be extended to loans made by recognized commercial or other authorized lenders in rural areas (this includes all areas other than cities of more than 50,000 people and the contiguous and urbanized area of such cities or towns). Generally, authorized lenders include Federal or State chartered banks, credit unions, insurance companies, savings and loan associations, Farm Credit Banks or other Farm Credit System institutions with direct lending authority, a mortgage company that is part of a bank holding company, and the National Rural Utilities Finance Corporation. Other Loan sources include eligible Utilities Program electric and telecommunications borrowers and other lenders approved by Business and Cooperative Programs who have met the designated criteria.
- The maximum aggregate B&I Guaranteed Loan(s) amount that can be offered to any one borrower under this program is $25 million.
- A maximum of 10% of program funding is available to value-added cooperative organizations for loans above $25 million to a maximum aggregate of $40 million.
- Total funds available are $913.96 million.

Strengths

- This program lowers the standards to receive loans from a lending institution.
- The program can be combined with other programs.

Weaknesses

- The farmers' balance sheets must be strong enough to meet the requirements to receive the loan guarantees.

Program: Intermediary Relending Program (IRP)

Description

- The purpose of the Intermediary Relending Program (IRP) is to finance business facilities and community development projects in rural areas.
- This is achieved through loans made by the Rural Development, Business and Cooperative Programs (BCP) to intermediaries. Intermediaries re-lend funds to ultimate recipients for business facilities or community development.
- Intermediaries establish revolving loan funds so collections from loans made to ultimate recipients in excess of necessary operating expenses and debt payments will be used for more loans to ultimate recipients.
- Intermediaries may be private non-profit corporations, public agencies, Indian groups, or cooperatives.
- Ultimate recipients may be private or public organizations or individuals.

- Loans from intermediaries to ultimate recipients must be for the establishment of new businesses, the expansion of existing businesses, creation of employment opportunities, saving of existing jobs, or community development projects.
- The interest rate on loans to intermediaries is 1% per annum. The intermediary and the ultimate recipient negotiate the interest rate charged to ultimate recipients.
- Total funds available are $33.87 million.

Strengths
- Allows local lending institutions to have the funds to loan money.

Weaknesses
- The total amount is not enough to build an ethanol plant.

Program: Rural Economic Development Loans
Description
- Zero-interest loans can be made, at the discretion of the Administrator of the Business and Cooperative Programs, to any Utilities Program electric or telephone utility that is not delinquent on any Federal debt or in bankruptcy proceedings.
- The Utilities Program utility is required to re-lend, at zero-percent interest, the loan proceeds to an eligible "third-party recipient" for the purpose of financing job creation projects and sustainable economic development within rural areas. A rural area is any area of the United States not included within the boundaries of any urban area, as defined by the Bureau of the Census.
- The Utilities Program utility receiving the zero-interest loan is responsible for repaying the loan to Business Programs in the event of delinquency or default by the third-party recipient.
- Zero-interest loans will be provided to third-party recipients to finance projects that promote economic development and job creation in rural areas. Examples include but are not limited to:
  1. Business expansions and business startups, including cost of buildings, equipment, machinery, land site development, and working capital.
  2. Community infrastructure necessary for economic development and job creation purposes.
  3. Community facilities and services necessary for economic development and job creation purposes.
  4. Medical facilities and equipment to provide medical care to rural residents.
  5. Educational facilities and equipment to provide training and job enhancement skills to rural residents to facilitate economic development.
  6. Business incubator projects to assist in developing emerging enterprises.
- A minimum requirement of 20% of the amount of the Business Programs zero-interest loan must be raised to qualify, and priority will be given to third-party recipient projects with greater than 20% financing.
- Total funds available are $24.75 million.

Strengths
- Zero interest loans would lower the interest costs and raise the returns.
- Improving the balance sheet should make it easier to raise the rest of the capital.

Weaknesses
- The total amount is not enough to build an ethanol plant.
- The investors must have a strong enough balance sheet to raise the rest of the money.

Program: Rural Economic Development Grants

Description
- Grants can be made, at the discretion of the Administrator of the Business and Cooperative Programs (BCP), to any Utility Programs electric or telephone utility that is not delinquent on any federal debt or in bankruptcy proceedings.
- The Utility Programs utility is required to operate and administer a revolving loan fund program using the grant proceeds. The fund will be operated by the Rural Utility Programs utility in accordance with a BCP approved revolving loan fund plan.
- To establish the revolving loan fund, the Utility Programs utility is required to contribute to the fund an amount equal to 20 percent of the grant. This contribution will be provided by the Utility Programs utility from its own sources and will remain as part of the fund until the fund is terminated.
- Minimum requirement of 20% of the amount of Business Programs zero-interest loan must be raised to qualify and priority will be given to third-party recipient projects with greater than 20% financing.
- Total funds available are $10.00 million.

Strengths
- Such grants lower the cost structure of recipient operations.
- Improving the balance sheet should make it easier to raise the rest of the capital.

Weaknesses
- The total amount is not enough to build an ethanol plant.
- The investors must have a strong enough balance sheet to raise the rest of the money.

Program: Renewable Energy Systems and Energy Efficiency Improvements Grant

Description
- In fiscal year 2005, the U.S. Department of Agriculture Office of Rural Development made available $22.8 million in competitive grant funds and guaranteed loans for the purchase of renewable energy systems and energy improvements for agricultural producers and small rural businesses.
- The project must occur in a rural area and implement pre-commercial or commercially available and replicable technology. Research and development does not qualify.

- The applicant must provide at least 75% of eligible project costs, and grant assistance to a single individual or entity cannot exceed $750,000.
- Eligible projects include biofuels, hydrogen, and energy efficiency improvements, as well as solar, geothermal, and wind.

Strengths
- The money is targeted for renewable fuels.
- The grants lower the amount of capital needed to be raised.

Weaknesses
- The total amount is not enough to build an ethanol plant.
- The investors must have a strong enough balance sheet to raise the rest of the money.

Program: Small Agri-Biodiesel Producer Credit

Description
- Section 1345 of the Energy Policy Act of 2005 allows a tax credit of $.10 per gallon to small agri-biodiesel producers for up to 15 million gallons.
- To be eligible, a producer must make less than 60 million gallons of biodiesel per year.
- Total funds available are $22.8 million in competitive grant funds and guaranteed loans.
- The money must be spent on renewable energy systems and energy improvements for agricultural producers and small rural businesses.

Strengths
- The money is targeted for renewable fuels and small size operations.
- The credit improves the income statement that is used to raise capital.

Weaknesses
- The investors must have a strong enough balance sheet to raise the money required to build the facility.

Program: Small Ethanol Producer Credit

Description
- Section 1347 of the Energy Policy Act of 2005 changes the definition of a "small ethanol producer" to include a production capacity of up to 60 million gallons (instead of the up to 30 million gallons originally established by Congress in 1990).
- Small ethanol producers are allowed a $0.10 per gallon production income tax credit for up to 15 million gallons of production annually.
- The credit is capped at $1.5 million per year per producer.

Strengths
- The money is targeted for renewable fuels and small size operations.

- The credit improves the income statement that is used to raise capital.

Weaknesses
- The investors must have a strong enough balance sheet to raise the money required to build the facility.

Program: Alternative Fuel Infrastructure Tax Credit

Description
- Section 1342 of the Energy Policy Act of 2005 provides a tax credit equal to 30% of the cost of an alternative refueling property, up to $30,000 for business property.
- Qualifying alternative fuels are natural gas, propane, hydrogen, E85, or biodiesel mixtures of B20 or more.
- Buyers of residential refueling equipment can receive a tax credit for $1,000.
- For non-tax-paying entities, the credit can be passed back to the equipment seller.
- Almost every state has implemented some kind on Alternative Fuel Infrastructure Tax Credit.

Strengths
- The money can be used for construction of E-85 station pumps.

Weaknesses
- Does not directly assist the biofuels producer in raising capital, and has the potential to increase revenues only slightly.

Program: Arkansas Biodiesel Income Tax Credit

Description
- An income tax credit is available to biodiesel suppliers for up to 5% of the costs of the facilities and equipment used in the wholesale or retail distribution of biodiesel fuels.
- The Alternative Fuels Commission may provide grants for the production of biodiesel of up to $0.10 per gallon, up to 5 million gallons per producer per year, for a period not to exceed five years.

Strengths
- The tax credit lowers the tax bill.
- A producer can receive a subsidy of $500,000 per year for 5 years. The extra $0.10 margin greatly increases the profitability of a proposed plant.

Weaknesses
- The operation has to be making money to benefit from the tax credit. As a result, existing operations that are expanding benefit the most from this program.
- Does not directly assist the biodiesel producer in raising capital to build the facility.

Program: Delaware Biodiesel Production Facility Grants

Description

- The State Energy Office will administer moneys in the Green Energy Fund through a program of environmental incentive grants and loans for the development, promotion and support of energy efficiency programs and renewable or alternative energy technology in the State.
- The Technology Demonstration Program provides grants equal to 25% of the cost of a project, which demonstrates the market potential of Renewable Energy Technology in Delaware, including biodiesel plants.
- Cash grants for biodiesel manufacturing facilities shall not exceed 25% of the project cost and no one project may receive more than $300,000.

Strengths

- Lowers the cost of building a biodiesel plant by $300,000.

Weaknesses

- $300,000 is not enough money to enable small and medium size farmers to be able to build a plant.

Program: Florida Hydrogen and Biofuels Investment Tax Credit

Description

- A credit against the state sales and use tax is available for costs incurred between July 1, 2006, and June 30, 2010 for the following:
  1. 75% of all capital costs, operation and maintenance costs, and research and development costs incurred in connection with an investment in hydrogen-powered vehicles and hydrogen vehicle fueling stations in the state, up to a limit of $3 million per state fiscal year for all taxpayers, and
  2. 75% of all capital costs, operation and maintenance costs, and research and development costs incurred in connection with an investment in the production, storage, and distribution of biodiesel (B10-B100) and ethanol (E10-E100) in the state.
- This includes the costs of constructing, installing, and equipping such technologies, up to a maximum of $6.5 million per state fiscal year for all taxpayers; gasoline refueling station pump retrofits for ethanol (E10-E100) distribution also qualify.
- Credits may be used in tax years beginning January 1, 2007, and ending December 31, 2010. If the credit is not fully used in any tax year because of insufficient tax liability on the part of the corporation, the unused amount may be carried forward and used in tax years beginning January 1, 2007, and ending December 31, 2012.

Strengths

- Greatly reduces the tax bill.

Weaknesses

- Reducing the tax bill is only helpful if the organization is making money. Existing operations that are currently making money will benefit from this program.

- The aggregate amount budgeted is small relative to the capital that would be required if multiple biofuels production facilities were built.

Program: Hawaii Ethanol Production Incentive

Description

- An ethanol production incentive equal to 30% of nameplate capacity is available for facilities producing between 500,000 and 15 million gallons per year.
- The facility must produce at least 75% of its nameplate capacity in order to be eligible to receive the tax credit in that year.
- The tax credit may be taken for up to eight years. The credit shall only be available to the first 40 million gallons of ethanol produced per year.
- Facilities must be in production before January 1, 2012.

Strengths

- Reduces the tax bill.

Weaknesses

- Reducing the tax bill is only helpful if the organization is making money. Existing operations that are currently making money will benefit from this program.

Program: Louisiana Biodiesel Equipment and Fuel Tax Exemption

Description

- Certain property and equipment used in the manufacture, production, or extraction of unblended biodiesel, as well as unblended biodiesel used as fuel by a registered manufacturer, are exempt from state sales and use taxes.
- Unblended biodiesel is defined as B100, which meets the D6751 standard of the American Society of Testing and Materials (ASTM).
- These provisions are effective July 1, 2006 through June 30, 2012.

Strengths

- Reduces the tax bill.

Weaknesses

- Reducing the tax bill is only helpful if the organization is making money. Existing operations that are currently making money will benefit from this program.

Program: Maine Biofuels Production Incentive

Description

- The Agriculturally Derived Fuel Fund was developed to provide direct loans and subsidies to a business or cooperative for the design and construction of a facility to produce agriculturally derived fuel, such as methanol and ethanol.
- It is a non-lapsing fund, which is controlled by the Finance Authority of Maine.

Strengths

- Reduces the cost of building an ethanol plant.

Weaknesses
- The bill has not been appropriated any funds.

Program: Michigan Alternative Fuel Development Property Tax Exemption
Description
- Certain property tax exemptions apply to industrial property that is used for, among other purposes, high-technology activities or the creation or synthesis of biodiesel fuel.
- High-technology activities include those related to advanced vehicle technologies such as electric, hybrid, or alternative fuel vehicles and their components.
- In order to qualify for the tax exemptions, an industrial facility exemption certificate for the property must be obtained from the State Tax Commission.

Strengths
- Reduces the tax bill.

Weaknesses
- Existing operations that are currently making money will benefit from this program.

Program: Missouri Biodiesel Production Incentive
Description
- Provides a monthly grant to qualified Missouri biodiesel producers, provided that
  1. at least 51% of the production facility is owned by agricultural producers who are residents of the state and who are actively engaged in agricultural production for commercial purposes or
  2. at least 80% of the feedstock used by the facility originates in-state. All of the feedstock must originate in the U.S.
- The 80% feedstock requirement may be waived on a month-to-month basis if the facility provides verification that adequate in-state feedstock is not available.
- The value of the grant is $0.30 per gallon for the first 15 million gallons produced in a fiscal year and $0.10 per gallon for the next 15 million gallons produced in a fiscal year, up to a total of 30 million gallons and for 60 months maximum per producer.
- This fund is administered by the Missouri Department of Agriculture. Biodiesel is defined according to ASTM Standard D-6751 or its subsequent standard specifications for biodiesel fuel (B100) blend stock for distillate fuels. This incentive expires December 31, 2009.

Strengths
- Farmers can use the program (or non-farmers, if they use feedstock produced in-state).
- $6 million per year for 5 years is a sizable amount of money.
- This program would be expected to assist cooperatives in raising capital.

- The program can be combined with other programs, like a Rural Development Grant, to further offset the cost of constructing a plant.

Weaknesses
- None apparent.

Program: Montana Biodiesel Production Facility Tax Credit
Description
- A tax credit is available to businesses and individuals for up to 15% of the cost of constructing and equipping a facility to be used for biodiesel production.
- The credit must be claimed in the tax year in which the facility begins production, and the facility must be in operation before January 1, 2010.
- There is also a tax incentive payable to biodiesel producers for increases in annual production the first three years of production in the amount of $0.10 per gallon for each gallon of increased production over the previous year.
- Additionally, a tax credit is available for property used to crush oilseed crops for purposes of biodiesel production.

Strengths
- Lowers the cost of building a biodiesel plant.

Weaknesses
- Most small and medium farmers will not be able to raise enough capital to build the plant.

Program: North Dakota Biodiesel Loan Program
Description
- A $1.2 million Biodiesel Partnership in Assisting Community Expansion (PACE) fund was established for the purpose of buying down the interest rate on loans made by a lead financial institution in participation with the Bank of North Dakota.
- The fund monies may be used to participate in an interest rate buydown on a loan to a biodiesel production facility for the following eligible uses: purchase of real property and equipment; expansion of facilities; working capital; and inventory.

Strengths
- Lowers the cost of operating a biodiesel plant.

Weaknesses
- Wealthier investors and existing operations will benefit from this program.

Program: South Dakota Biodiesel Production Facility Tax Refund

Description

- A tax refund is available for contractors' excise taxes and sales or use taxes paid for the construction of a new agricultural processing facility, which includes an expansion to an existing soybean processing facility if the expansion will be used for the production of biodiesel.
- The project cost must exceed $4.5 million in order to qualify for the refund

Strengths

- Helps new biodiesel plant have an option to secure its supply of vegetable oil.

Weaknesses

- Will not help to build the biodiesel plant.

Program: Virginia Biofuels Production Grants

Description

- The Biofuels Production Fund is established to provide grants to producers of biofuels, specifically ethanol and biodiesel.
- A biofuels producer is eligible for a grant of $0.10 per gallon of neat biofuels sold in the Commonwealth from January 1, 2007 to January 1, 2017.
- To qualify, a biofuels producer must produce at least 10 million gallons of neat biofuels in the calendar year in which the incentive is taken.
- If a producer began selling neat biofuels prior to January 1, 2007, the producer is eligible for a grant only if its production of neat biofuels for the given calendar year exceeds its production in the 2006 calendar year by at least 10 million gallons and is maintained at a minimum of that level in future years.
- Each producer is only eligible for six calendar years of grants.

Strengths

- Increases the profitability of new ethanol and biodiesel plants.

Weaknesses

- The program will benefit larger biodiesel producers

Program: Washington Biofuels Production Incentive

Description

- The Energy Freedom Program includes the Energy Freedom Loan Account, funded by $100 million from the State General Fund and managed by a 13-member Energy Freedom Board, which will be staffed by the Department of Community, Trade, and Economic Development (DCTED).
- The Board will establish a competitive process for awarding low-interest loans and grants in research and development of new and renewable energy sources, including infrastructure, facilities, technologies and research and development that will advance Washington's move towards energy independence.

Strengths
- The program is large enough to fund a major increase in biofuels production.
- Is even more effective when the Washington Biofuels Production Tax Exemption is considered (see following description).
- In addition, it can be combined with other Federal programs.

Weaknesses
- The program will benefit larger biofuel producers.

Program: Washington Biofuels Production Tax Exemption

Description
- Until July 1, 2009, investments in buildings, equipment and labor for the purpose of manufacturing biodiesel, biodiesel feedstock or alcohol fuel are eligible for the deferral of state and local sales and use taxes.
- Qualifying buildings, equipment and land used in the manufacturing of alcohol fuel, biodiesel, or biodiesel feedstocks are also exempt from state and local property and leasehold taxes for a period of six years.
- Additionally, a reduced Business & Occupation tax rate of 0.138% applies to persons engaged in manufacturing of alcohol fuel, biodiesel fuel, or biodiesel feedstock. (Reference Revised Code of Washington (RCW), 82.04.260, 82.12.955, 82.29A.135, and 84.36.635)

Strengths
- The program will lower the operational costs of operating a biofuel plant.
- The program is even more effective when the Washington Biofuels Production Incentive is considered.
- In addition, it can be combined with other Federal programs.

Weaknesses
- The program will benefit larger biodiesel producers.

VIII. NOVEL INVESTMENT MODELS FOR FACILITATING INVESTMENTS BY FARMERS AND OTHER RURAL RESIDENTS

Based on the analysis conducted by Informa and interviews carried out during the course of this project, Informa formulated several investment models that may be utilized to facilitate investment by farmers and other rural residents in the renewable energy sector.

A. Closed-End Renewable Energy Funds for Farmers and Other Rural Investors

Description

As documented in Section II, 37% of ethanol industry capacity is accounted for by operations that the Renewable Fuels Association designates as being owned by farmers and other local investors, but only 15% of the capacity being added through new construction and plant expansions is owned by such investors. A key reason for this shift is the large amount of equity that must be raised to build a modern-scale plant, which can be difficult to obtain from farmers and other rural investors in close proximity to a proposed facility. It is often necessary for locally-owned facilities to line up 250 or more investors, and with the increasing scale of ethanol investments it is not uncommon for 500 or more investors to be involved, which necessitates the public filing of documents and more rigorous fiscal reporting. The government assistance programs reviewed in Section VII provide incremental benefits to groups investing in renewable fuels facilities, but the dollar amounts involved are often small compared to the capital required for a renewable fuel facility. If the government were to adopt the objective of facilitating a new infusion of equity from farmers and other rural investors on a large scale in order to ensure that such investors own a significant share of renewable fuel production capacity in the future, the government could foster the creation of large closed-end funds that would pool equity from across a broad swath of farmers and rural investors.

Eligibility

Investment would be limited to farmers and other residents of rural areas (i.e., those with a primary residence outside of an urban area, as defined by the Bureau of the Census). Only individual farmers, legal entities that own or manage family farms (e.g., an LLC established by the members of a family who own and mange a farm) and other individual investors living in rural areas would be eligible. While financial vehicles established by wealthy individuals or families who are rural residents to invest their wealth could be allowed to participate, private equity funds and institutions that are above a certain capitalization level and that raise money from accredited individual investors (i.e., those with a net worth over $10,000,000 or an income over $250,000), corporations, endowments, pension funds and such organizations without regard to whether they have farm or rural “roots,” would be excluded on the premise that they have ready access to ownership in even large-scale renewable fuels facilities.

Mechanics of the Investment Model

The government would not directly manage the investment fund, but rather it would review and approve suitable applications from financial institutions that want to launch closed-end funds that are formed for the sole purpose of raising money from farmers and other rural investors to invest in renewable energy operations. By making the funds closed-end and allowing multiple managers to launch funds, the government would foster competition for investor dollars, resulting in the funds offering competitive fees and attracting competent management, and would avoid creating a single fund that could exercise undue market power or harm a number of farmers and other rural investors simultaneously if it performed poorly. Still, fund sizes should be large enough to invest across multiple facilities (e.g., a fund with a $300 million capitalization could own all the equity in three 100 mmgy ethanol facilities and four 30-mmgy biodiesel facilities).

Funds could be established that focus their investments only in a particular industry segment or geographic area (e.g., cellulosic ethanol), or funds could invest across a wide range of renewable energy projects; the objectives and limitations of each fund would be spelled out in its prospectus. Financial institutions that build a successful track record in running a fund could be permitted to launch additional series of funds.

Since the per-person investments by farmers and other rural investors tend to be small in relative terms (reportedly, often in the range of $10,000 to $50,000) and more than 500 investors might need to be attracted to participate in each fund, the cost to the financial institution to run each fund could be burdensome, given bookkeeping, public financial reporting requirements and the mailing of statements and prospectuses. The government could subsidize the difference between the fees such a fund would have to charge and those that are routine and customary for other classes of funds, such as private equity funds or perhaps even equity mutual funds. In order to entice financial institutions to offer the funds and farmers and other rural investors to invest in the funds, and to enhance the competitiveness of the funds against purely financial investors that can “write a single check” for the equity needed for a new facility, the government could also subsidize the interest rate on the debt of facilities in which the farmer/rural fund owns all of the equity (or in a case where the fund does not own all the equity in a facility, the interest rate could be subsidized on a portion of the debt equivalent to the percentage of the total equity held by the farmer/rural fund).

Although this investment model may involve government subsidies, it is farmers and other rural investors who provide the equity and thereby bear the risks and reward from the performance of the assets; the government would not hold any equity (or associated voting rights in the funds). Similarly, while the government might provide interest rate subsidies for the debt utilized by the funds in financing renewable fuels facilities in which they invest, the government would not provide loan guarantees, so banks and other financial institutions would decide whether to offer the debt based on the creditworthiness they judge the funds to have. By taking this approach, the government would neither have initial ownership of renewable energy production assets, nor would it face the possibility of eventually taking ownership in case of default. The private market

would make investment decisions and bear the associated risks and rewards, and the government would be fostering the creation of a vehicle to allow farmers and other rural investors to continue having access to participation in renewable energy deals.

While it cannot be foretold how much money farmers and other rural investors would be willing to invest through such funds, some parameters can be placed around the potential contribution, and thus the funds' role in the renewable energy sector. In order to keep the number of participants in the funds manageable, a minimum investment level might have to be specified. For purposes of this analysis, it is assumed that each unit (share) in the fund would be priced at $10,000; of course, an individual could purchase multiple units. Given this minimum investment, it is likely that participation would be mainly by farmers with a certain level of financial resources.

Information on the financial condition of farm operations is colleted by the USDA, and the USDA has developed a typology of farm operations according to their sales and whether farming is a major occupation for the owners. The USDA has calculated financial statistics for each category of farm operations in the typology.

Within the USDA's typology, only three categories of farms had gross sales of $100,000 or more, a mean net worth of a least $1,000,000 per household and a debt coverage margin of at least $50,000 in 2005 (this margin is defined as the difference between the amount of income available for debt service and the amount of principal and income actually paid by the business during the year). Given these resources, farmers within these categories are the most likely candidates for participation in a renewable energy fund. The three categories of farm operator households are defined by the USDA as follows:

- Occupational farms with higher sales. The farm has $100,000 to $249,999 in gross sales (revenues, not net profit), and farming is a major occupation for the owners. There were 134,072 such operations in the U.S. in 2005.

- Large farms. Such farms have $250,000 to $499,999 in gross sales. There were 85,773 such operations in the U.S. in 2005.

- Very large farms. There were 71,609 very large farms in the U.S. in 2005, defined as having gross sales of $500,000 or more annually.

A summary of the financial condition of farms in these categories is shown in Table 1.

Table 1: Selected Financial Statistics for Farm Operator Households Having at Least $100,000 in Gross Sales in 2005

	Farm Category		
	Farms w/ Higher Sales, Where Farming Is Major Occupation	Large Farms	Very Large Farms
Farms by Category:			
Number of Farms	134,072	85,773	71,609
Percent of Farms	6.5%	4.2%	3.5%
Household Net Worth:			
Mean Farm Net Worth	$1,020,678	$1,357,832	$2,372,122
Mean Non-Farm Net Worth	$148,082	$163,637	$278,155
Mean Household Net Worth	$1,168,760	$1,521,469	$2,650,277
Median Household Net Worth	$846,859	$1,049,687	$1,620,975
Financial Ratios & Statistics:			
Debt-to-Asset Ratio	9.3%	12.1%	16.8%
Debt Repayment Capacity Use 1/	37.9%	36.0%	31.7%
Debt Coverage Margin 2/	$50,921	$101,874	$369,312

Sources: USDA Agricultural Resource Management Survey (ARMS); USDA-ERS, "Agricultural Income and Finance Outlook," AIS-84, November 2006.
1/ Debt repayment capacity that is used; it is calculated as a percentage of the maximum feasible debt for debt repayment, based on current income, assuming a 10% interest rate.
2/ Difference between the amount of income available for debt service and the amount of principal and interest actually paid by the farm business during the year.

Nearly 300,000 farms fall into the financial categories described above. Although it is highly unlikely that all of these farms will participate in a renewable energy fund, it is illustrative to show the results of a scenario in which each of the farms purchases one unit in a fund.

In this case, the total equity in renewable energy funds would be $3 billion. At the end of 2006, the U.S. ethanol industry was roughly ten times the size of the U.S. biodiesel industry; additionally, U.S. gasoline consumption is roughly three times diesel consumption, and ethanol is commonly used at a 10% blend rate which biodiesel is most commonly used in a 2% blend. Accordingly, it is assumed for this illustration that 90% of the value of investments by renewable energy funds (i.e., $2.7 billion) would be invested in ethanol and 10% (i.e., $300,000) would be invested in biodiesel.

New ethanol plants typically involve $1.95/gallon in total costs and are structured using 40% equity and 60% debt. Thus, the aggregate $2.7 billion infusion by renewable energy funds would be sufficient to provide the equity for 3.5 billion gallons of ethanol capacity. This is equivalent to two-thirds of industry capacity that was online at the end of 2006, although a substantial amount of new construction was taking place. (If the $2.7 billion were to finance facilities solely through equity, with no debt raised as part of the capital structure of the facilities, the investment would be sufficient to build 1.4 billion gallons of capacity.)

Assuming that biodiesel plants have a total cost of $1.25/gallon of capacity and utilize a similar 40% equity/60% debt capital structure, an infusion of $300 million would be sufficient to provide the equity for 600 million gallons of biodiesel capacity. This is moderately larger than the level of biodiesel capacity that was in actual use at the end of 2006, although as with ethanol, a significant amount of construction of new capacity was underway. (If the $300 million were used to finance facilities solely through equity, it would be sufficient to build 240 million gallons of biodiesel capacity.)

Of course, it is unrealistic to expect that every farmer with gross farm sales of $100,000 or more would invest in a renewable energy fund. However, some proportion of farmers outside of the three highest-grossing farm categories would likely have the resources to invest in a fund; an example would be a successful businessman whose primary occupation is not farming but who chooses to live on a farm or own a farm in addition to his principal residence as a "lifestyle" choice (e.g., to farm on weekends). Moreover, while the example above focused on farmers since there is ample information about their financial condition, it is possible that other rural residents also would want to invest in the funds. Finally, some proportion of farmers and other rural investors would have the resources and willingness to buy multiple units in renewable energy funds. Considering these factors, it is clear that such funds, if structured properly, could raise hundreds of millions or billions of dollars in aggregate, allowing continued participation by farmers and other rural investors in the renewable energy sector in a substantive manner.

Program Strengths

1. The program, if successful, would achieve the objective of allowing farmers and other rural investors to continue to participate in the renewable energy sector in a substantive manner.

2. The private market would make investment decisions, and private investors would bear the risks and rewards.

3. Even though government subsidies might be needed, the government would not have equity ownership in renewable energy facilities, nor would it be obligated to take ownership on the event of default.

4. A competitive system of multiple fund offerings could be fostered, resulting in lower fees and the migration of capital toward managers with a track record of performance.

5. Investment in multiple facilities by the fund would provide a farmer or other rural investor with substantially more diversification than an investment in a single local facility. With a fund, an individual investor could participate in a number of

ethanol and biodiesel facilities, which is moderately more diversified than investing in a single facility, through the money would still be concentrated in a single sector. Another form of diversification is geographic; only a nationwide drought could affect all facilities, whereas localized/regional droughts are more common and could affect an individual facility that is the only operation in which a farmer is invested in the industry. The investor would not have "all his eggs in one basket" by investing in a fund rather than an individual plant.

6. Any profits would be recirculated mainly in the farm/rural community.

Program Weaknesses

1. Liquidity could be an issue. In order to allow original shareholders in a fund to be able to sell their units, but at the same time ensure that only farmers and other rural investors were allowed to purchase those units (since the fund is subsidized by the government), the fund probably could not be traded on a stock exchange, as closed-end equity funds typically are. Rather, there would need to be a separate mechanism for simultaneously trading units and verifying the farmer/rural status of the new investors. A market-maker could be utilized – a function that could be performed by the financial institution that sponsors the fund or that could be provided under contract by another institution that already has such capabilities. Again, this would be an added cost that the government might need to offset.

2. Government subsidies would be required, and there might be a commitment for subsidies over an indefinite period.

3. Financial institutions might not be attracted to launch funds, considering that they would have to be offered to a large number of potential participants who are known to be conservative investors and have relatively modest capital to invest, and considering that there would likely be significant government oversight to go along with the subsidies.

4. There would not be a crop supply linkage between farmers and the renewable fuels facilities they own. This differs from a farmer cooperative-owned plant, in which farmers who are members in the co-op would typically have obligations to deliver corn to the facility, which can be an advantage in the event of a drought or other time of tight supplies.

Conclusion

Closed-end renewable energy funds for farmers and other rural investors would be a means for such investors to continue to participate in a substantive way in the growth of the renewable energy sector. Unlike typical equity drives targeted at such investors, such funds would be an efficient way to raise equity from farmers and other rural investors and an especially efficient way to invest that equity, as such funds would be able to "write a single check" to plants that meet their investment criteria – a capability that is seen as an attractive characteristic of private equity funds and other institutional investors that have entered the market. Issues such as the subsidization of fund expenses and the creation of a mechanism for fund shares to be traded would have to be worked out, but the use of such funds has the potential to deploy billions of dollars of equity from farmers and other rural investors in the renewable fuels industry.

B. Investment Model: Debenture Guarantees

Description

As part of the 2002 Farm Bill, the Rural Business Investment Program (RBIP) was established to promote economic development and job creation in rural areas. The program offers debenture guarantees backed by the federal government for Rural Business Investment Companies (RBIC's) that fund investment projects in rural areas. The program does not supply direct project funding. Instead, the program offers a source of debt financing at lower interest rates than may prevail in the market.

The program is managed jointly by the USDA and the Small Business Administration (SBA) and follows the guidelines established for the creation of Small Business Investment Companies (SBIC).

The debentures issued by an RBIC are pooled with other issues and sold to outside (institutional) investors. The debentures have a term of ten years and are guaranteed under the program for five years. Furthermore, the debentures are callable within five years of issue with a penalty; after five years, they are callable without penalty. The debentures are in the form of zero-coupon (discount) or coupon debt instruments.

There are a number of financing restrictions on the operation of an RBIC including the following:

1. At least 75% of a RBIC's investment must be in enterprises that are located in a rural area.

2. Fifty percent of a RBIC's investments must be in enterprises with a maximum net worth or $6 million and net income of $2 million in the prior two years.

3. The compensation of the RBIC's management team is subject to USDA/SBA review with a maximum of 2.5% of the companies' total private equity and debenture funding.

4. At the time of issue, the RBIC pays a "leverage fee" of 3% of the face amount of the debentures to the USDA. An additional 1% fee is levied on the outstanding debenture amount each year.

5. The RBIC must receive approval from the USDA to issue additional debt and may not issue debt that places a "blanket lien" on all of the RBIC's assets.

6. In the event that distributions (dividends) are paid to other stakeholders (such as equity holders), the RBIC is required to make a prepayment to the holders of the debentures equal to the debenture's share of the total capital of the RBIC.

Program Strengths

1. The market-determined interest rates on government-guaranteed debt will likely be significantly lower than for debt instruments issued directly by the enterprise because the program would limit credit risk on the instruments. However, as shown in Table 2, the interest rates on debentures offered under the SBA program have, on average, been at an 86 basis point spread to the 10-year treasury rate. (One basis point is equivalent to 0.01%.) This spread is likely due to the callability and illiquidity (it may be difficult for the holder of the instrument to sell on demand) of the instruments.

2. Because the debentures could displace some equity investment fewer equity investors (or less investment per investor) may be needed to fund a project, increasing the likelihood that a project will get adequate funding.

Program Weaknesses

1. Such a program would likely result in relatively large debenture issues if ethanol plant economics remain favorable. In the event of deteriorating plant economics after issue, however, the program may be liable for a considerable amount of capital repayments.

2. The mandatory prepayment requirements of the program may make it difficult for the RBIC to make regular dividend payments to equity shareholders, particularly in the early years of the project. This may create a barrier to investors who require significant cash flows from the project. This, however, is similar to the situation in many privately funded biofuels projects in which debt holders require large cash sweeps in the early years of the project in order to pay debt principal quickly.

Table 2: Historical SBA-Guaranteed Debenture Interest Rates and Spreads

Funding Date	Trust Certificate Rate	10-year Treasury rate	Rate Spread (basis points)
02/22/95	8.20%	7.52%	68.0
05/31/95	7.25%	6.59%	65.5
08/30/95	7.35%	6.59%	76.0
11/29/95	6.70%	5.93%	77.0
02/28/96	6.67%	5.90%	77.0
05/22/96	7.44%	6.65%	79.2
08/28/96	7.35%	6.60%	75.0
11/26/96	6.90%	6.18%	72.0
02/26/97	7.08%	6.29%	78.7
05/28/97	7.31%	6.72%	59.0
08/27/97	6.85%	6.24%	61.0
11/25/97	6.51%	5.81%	70.0
02/25/98	6.12%	5.45%	67.0
08/26/98	6.25%	5.42%	83.0
02/24/99	6.10%	5.03%	106.6
08/25/99	7.54%	6.14%	140.0
02/23/00	8.02%	6.57%	145.0
08/30/00	7.45%	5.73%	172.0
02/21/01	6.64%	5.09%	155.5
08/29/01	6.34%	5.00%	134.0
02/27/02	6.03%	4.97%	106.0
08/28/02	5.20%	4.31%	89.0
02/26/03	4.52%	3.87%	65.5
08/27/03	5.14%	4.46%	67.5
02/25/04	4.50%	4.02%	48.3
08/25/04	4.75%	4.22%	53.3
02/23/05	4.64%	4.16%	47.8
08/24/05	4.94%	4.23%	71.5
02/22/06	5.41%	4.58%	82.5
Average	6.39%	5.53%	86.0

Source: SBA

3. Total borrowing costs for an RBIC under the debenture program are significantly higher that the Trust Certificate Rates listed in Table 2 because of leverage fees levied by the program. While data on lending market lending rates for biofuels projects is not published, market sources indicate that rates are generally around LIBOR (London Interbank Offered Rate) plus 350 basis points for a new ethanol plant with 50% debt financing. The one-year LIBOR rate has recently averaged approximately 60 basis points above the 10-year U.S. Treasury rate. As shown in Table 3, the resulting market interest rate for debt financing on a new ethanol facility is estimated at around 8.80%. (The effective interest rate for traditional financing, however, may be different than this market rate because most projects include significant cash sweeps.) Under the RBIC program, after taking the leverage fee into account, the effective interest rate is significantly higher than the market rate for traditional financing. Thus, the existing RBIC program would

not offer a competitive alternative to traditional debt financing for an ethanol facility.

Table 3: Interest Rate Comparison: Traditional Debt and RBIC Debentures

Traditional Financing			RBIC Program	
One-Year LIBOR	5.30%		10-Year U.S. Treasury Rate	4.70%
Risk Premium	3.50%		Average Trust Cert. Spread	0.86%
			Leverage Fee (annualized)	6.41%
Market Interest Rate	8.80%		Effective Interest Rate	11.97%

Note: The annualized leverage fee, which is a combination of a 3% up-front fee and 1% annual fee, is estimated assuming annual debt service payments on a term debt instrument for ten years. The up-front fee is significantly higher than 3% on an annualized basis because of the time-value of money.

Program Modifications for the Biofuels Sector

A similar program could be utilized for biofuel investment projects, but the following program modifications would likely be necessary:

1. Because of the relatively large amount of total capital required to finance the construction of a new ethanol plant (around $185 million for a 100-mmgy facility) for an entity established expressly for the purpose of finding ethanol plants, a program similar to the RBIP would have to relax the maximum $6 million net worth restrictions of the existing program.

2. Debenture prepayment requirements in the case of dividends may need to be relaxed in order to generate more cash flows to equity holders.

3. Leverage fees for debentures would have to be significantly lower to be competitive against market interest rates.

Conclusion

While a program similar to the RBIP could be used to help drive local investment in biofuels production facilities under certain financial conditions, it would likely only be necessary in the case of large risk premia in the debt market for ethanol projects unless significantly smaller leverage fees were levied under the program.

Currently, because of the relatively high margins enjoyed by ethanol producers and short debt payback periods, the debt market does not demand a high risk premium for debt issued by ethanol producers. Furthermore, ethanol plants with a high probability of financial success are able to secure adequate debt financing in the market.

C. Investment Model: Based on the New Markets Tax Credit

Description

The New Markets Tax Credit (NMTC) Program is funded and managed by the U.S. Treasury Department's Community Development Financial Institutions (CDFI). The

program permits taxpayers to receive a credit against Federal income taxes for making qualified equity investments in designated Community Development Entities (CDEs).

Substantially all of the qualified equity investment must in turn be used by the CDE to provide investments in low-income communities. The credit provided to the investor totals 39 percent of the cost of the investment and is claimed over a seven-year credit allowance period. In each of the first three years, the investor receives a credit equal to five percent of the total amount paid for the stock or capital interest at the time of purchase. For the final four years, the value of the credit is six percent annually. Investors may not redeem their investments in CDEs prior to the conclusion of the seven-year period.

Throughout the life of the NMTC Program, the Fund is authorized to allocate to CDEs the authority to issue to their investors up to the aggregate amount of $16 billion in equity as to which NMTCs can be claimed, including $1 billion of special allocation authority to be used for the recovery and redevelopment of the Gulf Opportunity ("GO") Zone.

Eligibility

An organization wishing to receive awards under the NMTC Program must be certified as a CDE by the Fund. To qualify as a CDE, an organization must:

- Be a domestic corporation or partnership at the time of the certification application;
- Demonstrate a primary a mission of serving, or providing investment capital for, low-income communities or low-income persons; and
- Maintain accountability to residents of low-income communities through representation on a governing board of or advisory board to the entity.

A CDE organization can be any duly existing entity that is treated for federal income tax purposes as a domestic corporation or partnership. For-profit and non-profit organizations may be certified as CDEs. The Fund cannot accept a CDE Certification Application from an applicant unless the Internal Revenue Service has assigned a valid Employer Identification Number (EIN) to the entity as of the date the Authorized Representative has signed the application.

Investment funds provided by the CDEs are typically made either in the form of equity, or in the form of debt that is at least 25% below market and/or is characterized by multiple concessionary features. Such features include, among other things, equity-equivalent terms and conditions, subordinated debt, reduced origination fees, and higher than standard loan-to-value ratios.

New Changes to the Program

Traditionally, CDEs have been required to invest NMTC proceeds solely in low-income communities, characterized by either high poverty rates or low median family incomes. As of July of 2006, over $4.5 billion of NMTC investments have been made by CDEs in distressed urban and rural communities throughout the country. The American Jobs Creation Act of 2004 requires Treasury to issue regulations that would allow NMTCs to be invested in non low-income communities, provided that the projects would benefit "Targeted Populations." As indicated in the IRS guidance, targeted populations will be defined as low-income persons, generally individuals with family incomes at or below 80% of area median family income, and certain individuals who otherwise lack adequate access to loans or equity investments.

However, The U.S. Treasury Department's Community Development Financial Institutions (CDFI) Fund and the Internal Revenue Service (IRS) announced the issuance of a notice regarding the designation of certain targeted populations under the New Markets Tax Credit (NMTC). The Notice announces that the IRS will amend section 1.45D-1 of the Income Tax Regulations to grant flexibility to permit CDEs to invest in certain businesses located outside of low-income communities, provided the businesses serve designated targeted populations. As specified in the Notice, CDEs that receive NTMC allocations will be permitted to invest in certain businesses located in moderate-income census tracts, provided that the businesses are owned by low-income persons, hire significant numbers of low-income persons, or predominantly serve low-income persons. These businesses may be located in a census tract with a median family income at or below 120% of the area median family income.

What is the distribution of allocations in the 2006 round?

- 254 CDEs applied for allocations, requesting a total of $28.3 billion in allocations.
- 63 CDEs (or 25% of the total applicant pool) will receive $4.1 billion of allocation authority, of which $600 million will be specifically dedicated for use in the GO Zone.
- 13 CDEs will receive the $600 million of allocation authority dedicated to the GO Zone.
- The average allocation award is approximately $65 million per allocatee.
- Allocation awards range in size from $2 million to $143 million. The median allocation award amount is $60 million.

What are some of the characteristics of the 63 allocatees?

1. Twenty-four of the allocatees (or 38%) are non-profit organizations or subsidiaries of non-profit organizations. They will receive allocations totaling $1.41 billion.
2. Twelve of the allocatees (or 19%) are certified CDFIs or subsidiaries of certified CDFIs. They will receive allocations totaling $851 million.
3. Fourteen of the allocatees (or 22%) are non-CDFI banks or bank holding companies; publicly traded institutions; or subsidiaries of such entities. They will receive allocations totaling $1.26 billion.
4. Four of the allocatees (or 6%) are governmentally controlled entities. They will receive allocations totaling $269 million.

5. In all, 28 of the allocatees (or 44%) are CDFIs, non-profit organizations, governmentally controlled entities, or subsidiaries of such organizations. They will receive allocations totaling $1.65 billion.

Program Strengths

1. The tax credit program can provide sufficiently large funds to partially finance via equity or debt multiple ethanol/biodiesel operations.

2. Geographic and income limitations favor farmer/rural group investment.

3. Local/county and even state economic development offices can potentially become Community Development Entities (CDEs).

4. Changes to the 2007 NMTC program will make new geographic areas and larger farmers eligible to receive equity or debt funds.

5. The program has already been used to indirectly financed wind energy farms; hence, a biofuels project is likely to qualify.

6. The program not only can provide a source of capital but also provide more competitive financing terms (e.g., lower interest rates) for the investors.

7. The list of eligible undertakings is unusually broad, and the funds are surprisingly flexible for a federal program.

Program Weakness

1. Transaction costs per deal are high; hence, the program should not be used for projects under $5 to $10 million.

2. The application process and timing can be a limiting factor for certain deals.

3. The program involves a sophisticated and somewhat complex financial transaction (e.g., lending terms vs. tax liability benefits) and hence may likely require a trained individual or group to assist both the investor and the CDE.

4. Program requires that the subsidy funds remain invested during the seven-year compliance period.

Program Modifications for the Biofuels Sector

There are two alternatives that can be applied for biofuels investment models:

1. Create a Community Development Entity (CDE) that pledges to invest on a portfolio of qualified biofuels projects in farmer communities.

2. Create a new tax credit model that will mirror the investment mechanism of the New Markets Credit, but be targeted specifically for biofuels and renewable industry investments in which there is substantial equity from farmers and other rural investors, and be administrated by the USDA.

   Case 1: Create a Biofuels Community Development Entity (CDE)
   This case will be the simpler alternative because federal funds have been allocated for the overall program and biofuels projects are not restricted. Because income levels and geographic restrictions will limit the number of eligible projects, the CDE should be at least regional in scope- if not nationally.

   Many of the existing ethanol and biofuels investments have been spearheaded by local economic business development offices across the country. Rural Business-Cooperative Development or another agency within the USDA can help group several economic development offices (e.g., Iowa, Illinois, and Missouri) along with trade associations, agricultural banks or other to form a qualified CDE entity.

   Allocations in 2006 ranged from $2 million to $143 million. Hence, a single CDE entity dedicated to biofuels could potentially receive for example $100 million, which in turn can help start four to six medium size ethanol plants (depending on the amount of equity the farmers provide for the initial investment) or a combination of ethanol and biodiesel projects.

   In this case, the key success factor will be to form a representative CDE that can efficiently allocate the federal tax credit incentives.

   Case 2: Create a New Federal/USDA New Markets Tax Credit
   An alternative investment model will be to develop a new tax credit program similar to the New Markets Tax credit but tailored for the renewable fuels companies and instead of targeting low income communities target directly farmer/rural investor owned (partially or totally) projects.

   Federal tax credits to investors will provide the incentives to include a minimum farmer share in many biofuels investments, which in turn will help maintain or improve the share of farmer owned biofuels facilities.

Conclusion

The New Markets Tax Credit could become a model to help finance a few farmer-owned biofuels facilities. The federal tax credit provides a subsidy that if structured correctly can provide some economical incentives for investors to finance farmer owned operations. While the there are some limitations it is worth pursuing the formation of a Community Development Entity targeted for biofuels that could potentially administer $60 to $140 million for biofuels investments.

D. Investment Model: Subsidized Land Loans

Description

As discussed previously, farmers have a significant amount of leveragable capital in the form of real estate holdings. Farm operators hold approximately $1.5 trillion in equity in the form of real estate. Only approximately 7% of the value of farm land is currently leveraged directly by real estate debt.

The ability of a farm operator to leverage his/her real estate equity, however, is not only dependent on the level of equity, but also on the amount of income the operator is able in generate from the farm operation and other investments. While a farmer's equity can be used to collateralize a loan, the farmer must have sufficient cash flow to service all of his/her debt obligations. It is estimated by the Economic Research Service (ERS) that, based on farm income, farm operators have approximately $123 billion of excess debt capacity at the end of 2006. This estimate is based on the cash income that farmers have available for debt service after farm and non-farm expenses. However, the level of debt capacity is variable over time, depending on commodity prices, input prices, and interest rates, among other factors.

A rural investment program likely can not rely upon the high levels of owner equity in farm business, but, rather, must be based on farmers' ability to service additional debt obligations incurred by leveraging land. Incentivizing farmers to utilize their land equity for rural investment would most effectively be in the form of interest rate subsidies. If, on the other hand, the federal government were to directly guarantee land loans, the farmers' land equity would not be utilized. Instead, the debt obligations would, in effect, be uncollateralized and backed by the federal government. Under such a program, the land equity becomes irrelevant and all of the financial risk is borne by the government. Instead, the envisioned program would consist of loans from private institutions at market interest rates with a portion of the interest offset by a federal government subsidy. The amount of the subsidy would be calculated as the market interest rate on the loan less an interest rate benchmark such as the ten-year U.S. treasury plus a spread. (The spread can be set at such a level as to affect the borrowing decision of the farmer as desired under the guidelines of the program.) However, the government would not guarantee repayment of the loans. Thus, the farmers' land equity is still at risk, but they have favorable access to capital for investment.

Although the program would primarily be market-driven, it would likely be necessary to implement a maximum spread between the ten-year treasury rate and the market rate for the loans in order to eliminate the possibility of an exceptionally high government liability and the writing of exceptionally high risk loans. In other words, if lending to farmers under the program becomes very risky, the program would be suspended. This would also act to disqualify individual farmers from over-leveraging their land because, as they borrow more, the market interest rate on their marginally borrowed funds would increase, thus widening the spread to the interest rate benchmark.

Program Strengths

1. Under a subsidized interest rate program, lenders would be able to assess the market risk of the loan, and price it accordingly. Thus, there would likely be an adequate supply of loans and the burden of information collection and analysis is on the financial institution.

2. Because farmers would pay a low interest rate on borrowed funds, they would be incentivized to leverage land and make investments.

3. Because farmers' land is at risk under the program, the risk of the investment and the potential reward are not borne completely by different parties.

Program Weaknesses

1. The farmer's land equity is at risk.

2. Because the farmer would be able to obtain a below-market interest rate, he/she would have an incentive to over-borrow. However, the restrictions on the maximum rate spread on the loans would help control this.

3. In the event of increased financial risk in biofuels production (i.e., input or output price volatility) or in farm income, market interest rates on the loans would increase, increasing the cost of the program to the government.

Other Potential Program Features

1. In order to alleviate the problem of potential over-borrowing by farmers, the interest rate subsidy could be indexed to the size of the loan relative to the farmer's income and/or assets. Thus, while the interest rate would be subsidized, as the loan gets bigger, the cost of borrowing would increase for the farmer. This would act to re-align the borrowing decision and the interest rate. For example, the effective interest rate charged the farmer on the loan (market rate minus the subsidy) would increase as the debt coverage ratio (income available for debt coverage/debt service obligation) decreases. This would be accomplished by decreasing the subsidy as the debt coverage ratio decreases.

2. Instead of working through private lenders to provide loans to landholders, the federal government could act directly as the lender. Under such a program, the government could offer an interest rate that would incentivize farmers to take loans. In this case, however, the government would be forced to perform the due diligence on the project and the borrower in order to avoid making risky loans. Furthermore, in the case of foreclosure, the government would then be forced to dispose of the land.

Conclusion

While the leveraging of land by farmers for investment in value-added ventures is limited by the amount of income generated by the farm and the investment project,

there is a potential to use it as a tool to encourage rural investment. The program outlined above incentivizes the borrower as well as the lender, but at a significant cost to taxpayers.

E. Investment Model: Tax Credit for Projects With a Minimum Share of Farmer/Rural Involvement

Description

In many cases examined, farmer groups and rural residents can raise $5 to $10 million from a limited number of investors and in a short period of time. However, moving beyond this has proven to be a difficulty task for many groups and at some point the costs and time to get additional inventors is too high, especially when compared to a private equity company which can fund a project with "a single check." Hence, a program that can facilitate the acquisition of investment funds may help increase overall rural investment.

The proposed program would use the expected tax payments of a biofuels project to help finance a minimum ownership share of farmer/rural resident investment. A federal tax credit of, for example, 20% of the project's expected taxable income liability will be provided for a project that maintains a minimum of, for example, 25% farmer ownership for a number of years after operation starts. The tax credit would provide economic incentives to agribusiness, energy companies and others to include farmers-investors in new projects and would be funded by future tax revenues and not from the current federal or USDA budget. The government will have a very limited risk exposure; the risk of the operation will remain with the farmers and other investors.

An possible feature that could be layered over this arrangement would be to require the principal private investor, such as a large agribusiness, to provide matching financing for the farmer investors in exchange for the project's tax credits. The dividends payable to the farmers would initially be used to repay this loan, and once the loan is repaid, farmers would receive dividends on their full equity share (i.e., the original equity contribution plus the portion that was initially financed). This could help maximize the equity stake for the finite number of farmers that would be willing to participate.

The tax credit can be a fixed share of the project's taxable income or can change according to the share of farmer participation. In either case, the key is to ensure that an economic benefit can be obtained when a project incorporates a minimum share of farmer ownership.

Program Strengths

1. The program allows farmers and rural investors to participate in the ownership of a facility.

2. Farmers are afforded the opportunity to increase their equity share by borrowing funds from a private investor and using the expected cash flows from the project to pay back the debt.

3. The tax credit will be funded by future tax revenues that otherwise may not be realized.

4. The farmer and the private investor share the project's risk exposure (and rewards). The government would have a very limited risk exposure.

Program Weaknesses

1. While a minimum share of farmer ownership will be required to qualify for the tax credit, the share can decline after the project's tax credit expires.

2. Projects that do not have farmer equity investment may argue that such tax credits make them less competitive and hence, be opposed the initiative.

3. Some type of project tax credits might have to be provided for ethanol and biodiesel plants that are already owned by farmer groups.

4. A system will need to be developed to ensure a standard process to categorize potential inventors as a qualified farmer or rural resident.

5. Restrictions related to the use and distribution of shareholder dividends (e.g., cash sweep to pay off farmer debt) may limit the attractiveness of a project for certain investors or debt financing institutions.

Conclusions

Using project tax credits for a minimum share of farmer/rural resident involvement is potentially a viable mechanism to maintain or increase the farmer participation in the biofuels sector.

F. Postscript: The Option of Not Creating New Investment Models

It should be noted that a significant number of the people interviewed as part of Informa's survey voiced the opinion that the government should not create new programs for investment in renewable energy. They indicated that there is already a substantial amount of equity flowing into renewable fuels projects, that there are a number of individual plants that have outstanding prospectuses and are willing to take farmer investors, and that farmers and other rural residents can buy shares in any of the several publicly traded ethanol companies. While these are paths farmers and other rural residents can use to invest in ethanol, this would not accomplish the objective of stanching the trend toward such investors owning a receding share of renewable fuels production capacity, and it also might not accomplish the objective of keeping the earnings from renewable fuels facilities recirculating in rural communities in a

substantive manner. Still, given that there were a number of people who responded to the survey in this way, it merits mentioning in this report.

IX. CONCLUSIONS

While farmers and other rural investors still have opportunities to invest in renewable fuel operations, the share of growing industry capacity that is owned by such investors is well below their traditional role in the industry. This raises the prospect that the profits from this additional capacity will not accrue to rural areas and be recirculated within rural economies. The government can allow the private sector to continue to shape the renewable fuels industry in this way, or it can undertake initiatives if it wants to accomplish the objective of fostering a more substantive role for farmers and other rural investors in industry growth. The initiative can be incremental, or it can take a more activist approach to implementing new investment models.

The incremental approach could involve enhancing existing government programs. For example, the government could create a centralized Web site providing comprehensive information on federal and state programs available to renewable fuel producers. This should be targeted especially at start-up operations, where the finding can have the greatest impact. Additionally, the USDA's Rural Business Cooperative Service can provide assistance to farmer groups by helping them move through the initial steps of project development, where the learning curve is the steepest.

A more activist approach would involve designing and implementing new investment models that can be utilized by farmers and other rural investors. Such models could range from adaptations of existing community investment models to make them applicable to the renewable fuels industry, to the creation of new types of funds that would facilitate large-scale investment of capital raised from a sizable number of farmers and other rural investors. In the end, the USDA must decide the extent to which rural development objectives are threatened by ongoing trends and the whether incremental or activist measures are merited and would be supported by stakeholders – mainly those within government, the farm community and the renewable fuels industry.