



# Locally Owned Renewable Energy Facilities

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This publication discusses locally owned renewable energy facilities—the benefits they provide to local economies and potential challenges of developing such a facility. It describes common business models, profiles several successful facilities, and provides resources for more information.

## Contents

Introduction.....	1
Economic Benefits.....	2
Business Models.....	3
Challenges.....	5
Recommendations.....	7
Case Studies.....	8
References.....	10
Resources.....	11

## Introduction

Farmer-owned renewable energy facilities—such as ethanol and biodiesel plants and wind energy farms—are cropping up more and more frequently across the United States, as farmers look for ways to add value to their crops and increase their income.

Ethanol, a renewable alternative to petroleum-based transportation fuels, is a type of alcohol produced by fermenting and distilling simple sugars from biological sources. While ethanol can be made from sugarcane, sugar beets, wheat, barley, potatoes, and many other crops, over 90 percent of U.S.-produced ethanol is currently made from corn.

Biodiesel is a versatile, clean-burning fuel made from renewable, biodegradable sources. It can be blended with petroleum diesel in any proportion and used in diesel engines without modification, especially at low blends. Biodiesel can be made from almost any vegetable oil or animal fat, through a process that is neither difficult nor prohibitively expensive. Using biodiesel instead of petroleum diesel reduces emissions of most air pollutants and greenhouse gases. Biodiesel is biodegradable and essentially non-toxic. The demand for renewable fuels is steadily increasing, providing a good opportunity for farmers interested in a locally owned production facility.

For example, the Renewable Fuels Association (RFA) estimates that U.S. production of ethanol reached 5 billion gallons in 2006, an increase of about 28 percent over 2005. As of April 7, 2007, there were



Ethanol plant. Photo: Warren Gretz.

115 ethanol plants in production, compared to 35 plants in 1995; 79 under construction; and seven under expansion. And the growth is expected to continue.

However, farmer-owned renewable energy facilities are increasingly giving way to corporate ownership. According to RFA, nearly 40 percent of existing U.S. ethanol plants were farmer-owned as of September 2006, but farmer ownership accounted for only five percent of those under construction at that time. According to industry experts, this change can be attributed in large part to very high oil prices combined with the Renewable Fuels Standard included in the 2005 Energy Policy Act, which together provided high returns with

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## Related ATTRA Publications

Keys to Success in Value-Added Agriculture

Evaluating a Rural Enterprise

Adding Value to Farm Products: An Overview

Renewable Energy Opportunities on the Farm

Biodiesel: The Sustainability Dimensions

Ethanol Opportunities and Questions

Wind-Powered Electric Systems for Homes, Farms, and Ranches



Photo: Charles Bensinger.

low risk and allowed investment capital to flow into the ethanol industry. Those funds allowed project developers to develop projects faster than those developed under the slower cooperative framework.

Less than one percent of installed U.S. wind energy capacity was owned by farmers in 2004. This is largely the result of high costs of energy production facilities and “discriminatory” tax incentives, structured to disqualify most locally owned wind projects (discussed in more detail later).

While local ownership of renewable energy facilities is shrinking, there are important reasons to preserve it: Locally owned renewable energy facilities allow rural communities to control and profit from local agricultural resources, hedge energy cost increases, and help reduce pollution and dependence on foreign oil.

## Economic Benefits

Local ownership is one of the cornerstones of any value-added rural enterprise, and many ATTRA publications discuss the importance of local ownership to farmers and rural communities. (See, for example, *Keys to Success in Value-Added*

*Agriculture, Evaluating a Rural Enterprise, and Adding Value to Farm Products: An Overview.*)

Farmer-owned renewable energy facilities offer numerous economic benefits to the farmer-members and the larger community. Such facilities:

- Provide a return to farmers on their investment
- Create a stronger market for farmer commodities, such as soybeans and corn
- Increase local expenditures
- Create a stronger infrastructure for renewable energy
- Improve local acceptance of renewable energy projects
- Create jobs

Farmer-owned renewable energy facilities enable farmers to pool their resources to meet startup capital requirements and other costs, while producing an energy source that is largely non-polluting and thus less damaging to the environment. Cooperatively owned biodiesel and ethanol plants offer other benefits too: They tend to increase local prices for soybeans (in the case of biodiesel) and corn (in the case of ethanol). Grower-owners can sell their own commodities to the plant, and are eligible to receive annual dividends. Moreover, biofuel plants provide a hedge against volatile commodity prices. When corn or soy prices drop, so do the production costs of ethanol or biodiesel, increasing the potential profits from biofuel production. This is not to deny, of course, that there are very substantial financial risks for farmers investing in bioenergy production facilities. Energy markets are volatile and unpredictable.

“Since a farmer-owned cooperative ethanol plant is literally a member of the community, the full contribution to the local economy is likely to be as much as 56 percent larger than the impact of an absentee owned corporate plant.” —*Economic Impacts on the Farm Community of Cooperative Ownership of Ethanol Production*

A locally owned renewable energy facility can generate economic benefits to a community that are as much as 56 percent higher than facilities owned by absentee companies. The biggest component of this 56-percent increase is the *multiplier effect*—a term that refers to the way that money circulates within a community. Increased local income encourages spending on local goods and services. Similarly, when locally owned businesses spend money in the community for payroll, member dividends, operations, supplies, etc., those dollars have a multiplier effect because they are re-circulated within the community several times.

In general, direct labor needs in renewable energy projects are comparable, regardless of whether the facility is locally or remotely owned. However, locally owned facilities can create more indirect jobs in local communities. A September 2004 U.S. Government Accountability Office report studied the relative economic impacts of locally owned and remotely owned wind systems. The study found that locally owned wind systems generated an average of 2.3 times more jobs and 3.1 times more local dollar impact than wind systems financed by non-local interests. This increase in jobs results from accumulation of wealth within the local economy—the multiplier effect.

A July 2006 report from Iowa State University found that an ethanol plant in Iowa would create—either directly or indirectly—133 jobs in the regional economy with no local ownership. For each 25-percent increase in local ownership, 29 more jobs are created.

The report was based on a study conducted by two ISU economists, in which four Iowa plants were studied to demonstrate the region-wide economic impact of these plants, given their actual local ownership amount. One plant was completely externally owned; local ownership of the other three was 25 percent, 50 percent, and 75 percent, respectively. Researchers arrived at the following conclusions:

- The plant with 25 percent local ownership created 162 jobs.

- The plant with 50 percent local ownership created 191 jobs.
- The plant with 75 percent local ownership created 220 jobs.

“Communities have a strong, sustainable economic life when money and resources are retained within the community. Cooperatives help increase a community’s resources because they are often locally owned and controlled. Jobs, profits, and resources stay in the community longer because the cooperative members who control the cooperative are community members.” —*Building Sustainable Communities*

## Business Models

Locally owned renewable energy facilities are structured under several business models, including cooperative, limited liability company (LLC), and franchise.

*Cooperative business model.* A cooperative exists to serve its member-owners, and the benefits to cooperative member-owners depend on how much they use or patronize the cooperative, rather than on how much they have invested in it.

A common example of this structure is a food cooperative: equity capital is raised by selling shares to members. In exchange, members can purchase food and related items at a lower cost through the cooperative. The co-op is governed by a board of directors and operates as a non-profit, with profits returned to members based on patronage. Earnings are taxed once, either as income of the corporation when earned or as income of the members when allocated to them.

A cooperative is a state-chartered business, organized and operating as a corporation under applicable state laws. Cooperatives are controlled by a board of directors elected by members. Equity comes from members, rather than outside investors. If a cooperative fails, the liability of each member is limited to his/her investment. Earnings are allocated to members based on use of the cooperative during the year, not on equity held, and the allocations may be distributed in cash or retained as additional equity. Members usually receive a combination of cash and an allocation of equity.

Many of today's cooperatives are structured as *new generation cooperatives* (NGC). An NGC is not a legal structure, but rather a specific way the cooperative operates, primarily regarding the relationship between the firm and its members and how the firm is financed. Compared to traditional cooperatives, an important advantage of an NGC is that membership shares include delivery rights. In the case of an NGC ethanol plant, for example, members have the right to deliver and sell a certain amount of corn to the cooperative. This delivery right is only available to members, providing them with a built-in market for their products. Nearly all NGCs are democratically controlled through one member/one vote.

**C**o-ops offer a larger combined market presence than individual owners can obtain. Membership benefits can be distributed on the basis of system productivity and level of investment.

Fuel-sharing cooperatives operate differently—they are small-scale and non-commercial. Biodiesel, for example, is often produced by a cooperative and then shared among members for their personal use. Since members don't purchase fuel, there are no profits to distribute. These types of cooperatives exist solely to supply members with biodiesel, not to sell it in the open market. As in any cooperative, member-owners also enjoy a high degree of control over how and where their fuel is made.

Whether the cooperative business model is a good fit for wind energy projects can be debated. For example, according to Heather Rhoads-Weaver and Jennifer Grove, of Northwest Sustainable Energy for Economic Development, the cooperative business model can “provide significant benefits for wind projects, from aggregating hardware purchases and negotiating discounts with suppliers, to increasing clout and credibility in the marketplace, to building community support. Additionally, co-ops offer a larger combined market presence than individual owners can obtain. Membership benefits can be distributed on the basis of system productivity and level of investment. Members can also leverage experience from early pioneers, saving money and time by being better equipped to tackle unforeseen challenges.”

However, in *A Comparative Analysis of Business Structures Suitable for Farmer-Owned Wind Power Projects in the United States*, authors Mark Bolinger and Ryan Wiser maintain that the cooperative business model is not suitable for wind projects. Says the report:

“The primary reason is that cooperatives are organized around the concept of patronage – the cooperative exists to serve its member-owners, and the cooperative member-owners benefit based on how much they *use* or *patronize* the cooperative, rather than how much they have invested in it. In the case of a farmer-owned wind project organized as a cooperative, cooperative members would invest in the wind project, and benefit by patronizing the project through purchasing its energy at cost. Patronage would require either cooperation from the local utility or distribution company (to deliver the wind power to members on behalf of the cooperative), or the cooperative to act as a competitive energy service provider, delivering power to its members. The latter is not possible in the many parts of the country that lack retail electricity choice, while the former – utility cooperation in matters concerning wind power – is perhaps an unlikely prospect anywhere in the United States. Furthermore, since it distributes its earnings among its members (according to their patronage), a cooperative itself generally has little or no tax liability, and thus little or no appetite for tax credits. While taxation of cooperative distributions may occur at the individual member level, very few individuals have a sufficient amount or type (e.g., passive) of taxable income needed to benefit from the PTC [a federal per-kilowatt-hour tax credit for electricity generated with wind turbines over the first ten years of a project's operations] and accelerated depreciation.”

**LLC Business Model.** An LLC is a business structured as a partnership but having liability protection similar to a corporation. In this corporate structure, shareholders of the company have a limited liability to the company's actions.

LLC members (who are similar to corporate shareholders) invest money, property, or services in exchange for interest in the LLC. An LLC stands alone as a separate legal entity, and each state has its own set of statutes governing LLCs. It has the tax benefits of a partnership and does not

require many of the legal formalities of a corporation, such as annual reports, director meetings, and shareholder requirements. Profits of an LLC are passed through and taxable to its owners.

LLCs can provide ownership opportunities to non-farmers, providing a means of raising startup capital. More and more locally owned renewable energy facilities are formed as LLCs.

## Challenges

Locally owned renewable energy facilities face several challenges. Among the most common are:

1. *Cost.* The energy business is extremely capital-intensive. The high cost has often caused renewable energy facilities to revert from being solely farmer-owned to accepting outside investors. Outside investors can help raise necessary start-up capital. As local ownership of these facilities shrinks, however, so too do the economic benefits afforded to local communities.

Financing can be a significant challenge in developing a farmer-owned renewable energy facility. Educating and acquiring enough investors to meet the high equity requirements (often 45 percent) to qualify for funding is no small task, particularly for facilities that cost millions of dollars.

However, farmers seem willing in many cases to invest in such projects. A national survey of farmers by the American Corn Growers Foundation found that half of respondents were willing to invest their own money in wind power projects. Thirty-one percent of respondents believe that farmer-owned wind co-ops are the best way for farmers to capitalize on wind energy.

There are various ways to raise capital for a locally owned renewable energy facility, such as selling shares in the facility, recruiting investors, tapping government grant and loan programs, or through private lenders. Financial benefits can also come in the form of tax credits. A few financing resources are described on page 9.

### The Minnesota Model

In the mid-1980s, Minnesota redesigned its ethanol incentive to encourage farmer ownership and provide economic benefits to the state and local communities. Half of the new incentive was a direct payment to ethanol producers. To qualify for the incentive, the production facility: 1) had to be located in the state; 2) could only receive payments for the first 15 million gallons of ethanol produced each year; and 3) could receive the incentive for only 10 years.

The legislation, which came to be known as the Minnesota Model, was immensely successful. Today, 12 of the state's 15 biorefineries are majority-owned by Minnesota farmers. Taxpayers benefit from the incentive as well: A 1997 state audit concluded that the incentive created jobs, assisted rural communities, and returned more to the state in taxes than it cost in expenditures.

2. *Finding a Market.* Wind energy and other renewable energy projects that generate electricity must find a utility to purchase that electricity. Finding such a market and successfully negotiating a power purchase agreement can be significant challenges. Mark Willers, project leader for Minnesota's wind energy cooperatives Minwind I–II, recalls that the most difficult part of developing the Minwind projects was not a lack of capital—since farmers were eager to invest in the projects—but rather negotiating a power purchase agreement. Finding a utility willing to purchase power generated by the Minwind projects took many months, but was a necessary step before the projects could move forward. Negotiations failed with the local utility because of interconnection requirements, cost, a long-term exclusive agreement the utility had in place with another power supplier, and other issues. Minwind officials finally reached a successful agreement with Alliant Energy, which resulted in a 15-year contract. Minwind has grown to nine projects. (For more information on Minwind projects, see **Case Studies**).

Market access can be difficult for biofuels producers, as well. For example, large-scale purchasers, such as big refiners, generally don't buy ethanol and other biofuels in small lots. Many farmer-owned projects must then rely on cooperative marketing companies to secure adequate volume to allow them to compete in the large-scale market.

3. *Risk.* As with any business, renewable energy facilities carry financial risk for investors, communities, and facility employees. For example, as mentioned above, projects that produce electricity must secure an agreement for a third party to purchase the electricity. A wind energy facility could spend tens of thousands of dollars without successfully securing such an agreement, posing significant risk to farmer owners. It is especially important that owners have a good understanding about when they should walk away, rather than continue to spend money in pursuit of a purchase agreement.

High commodity prices also pose a risk. For example, the price of corn—the major feedstock for U.S. ethanol—has increased by \$1.50 to \$2 per bushel (as of April 2007). Such high commodity prices reduce profitability of an ethanol plant and could even put the plant’s capital investment at risk, depending on other factors such as the prices of ethanol and gasoline.

Another risk is that it can be difficult for farmers to get their equity back out of a locally owned renewable energy facility. In the case of farmer-owned cooperatives, for example, owners are permitted to sell their shares only to farmers, which can be a difficult market. Minnesota Corn Processors (MCP) is perhaps the best known case of this challenge. When the 4,500 farmer-owners of MCP—the country’s oldest and, at the time, largest ethanol plant—looked for a way to cash in the equity they held, their options were rather limited. Ultimately, the owners sold out to Archer Daniels Midland, already a corporate ethanol giant, which took over the plant, erasing many of the benefits of local ownership, gaining yet more control of the ethanol industry, and positioning itself to impact supply and price of ethanol.

And, just as successful (i.e., profitable) facilities can generate significant economic benefits for their communities through the multiplier effect, economic losses of a plant will be felt throughout the community, as well. Employees of the plant could lose their jobs, and farmer owners could lose money

on their investment, both of which reduce capital circulating through the community.

Proper and detailed business planning can help minimize risk and the importance of doing so cannot be overstated.

4. *Competition from Corporate-Owned Plants.* Most renewable energy facilities coming online today are corporate owned and are much larger in scale than locally owned facilities. These giant plants can achieve better economies of scale than smaller plants, resulting in a number of economic advantages, such as lower production costs. These large plants also create stiff competition for available feedstocks. And, their higher level of production could lead to lower prices in the marketplace, making it difficult for farmer-owned facilities to capture a meaningful share of the market.

“It is a critical time for locally owned renewable energy projects to gain and maintain a strong foothold in energy markets right now. These industries are moving quickly, and without a growing capacity and infrastructure to develop and operate projects, it will be difficult for farmer or locally owned projects to remain engaged in the ag energy business... Without having cooperative and locally owned businesses well positioned, they will have a difficult time maintaining significant share over time.” —Midwest Ag Energy Network

5. *Business and Tax Structure.* While new generation cooperatives have evolved quickly over the past 20 years, the laws that support them have not. According to *Taking Ownership of Grain Belt Agriculture*, a report from the National Corn Growers Association, business structures that encourage development of large-scale, complex, and capital-intensive ventures are currently absent, presenting farmers with a significant challenge. Says the report:

“The co-op form can be a high-tax structure for value-added ventures since the entity pays corporate tax up to 40% on non-patronage source profits, then co-op members pay income tax and 15% Social Security tax on distributions.”

“Legal and tax obstacles also impede farmers’ ability to join forces in capital-intensive

businesses...Some 35 states retain co-ops laws first drafted in the 1920s, and they are largely inadequate for today's new generation cooperatives that are neither supply nor crop marketing ventures. Growers desperately need business entities that are tax-efficient and raise capital with ease and offer investors liquidity."

While an important financial vehicle for wind energy projects, the Production Tax Credit—a per-kilowatt-hour tax credit for electricity generated with wind turbines over the first ten years of a project's operation—creates barriers, too, according to industry experts. For example, according to the Midwest Ag Energy Network (MAEN), the PTC has contributed to unstable wind energy markets as a result of being extended for short periods and then being allowed to periodically lapse.

Some community wind projects have found ways to take advantage of the PTC, but this has been extremely difficult for most farmers and average citizens since the law requires either tax liability attributable to "passive income" or else "material participation" in wind power production. According to the Windustry Web site, "passive income" is generally income from a business in which a person participates only as an investor, and does not include income from a farmer's active farming business, wage income, or interest and dividend income. IRS Publication 925 generally defines "material participation" in a trade or business activity as more than 500 hours of participation during a tax year.

Since many farmers and other individuals do not have passive income and do not materially participate in wind power pro-

duction, MAEN concludes that "the [PTC] is discriminatory to many potential sources of capital, particularly community-based investment capital. This is a barrier that is difficult and frustrating to locally owned development projects. It often limits the amount of local equity that can flow into projects, and increases the reliance on external capital."

## Recommendations

Although there are many risks associated with investing in the energy business, locally owned renewable energy facilities can create important benefits for farmers and rural communities. Still, absentee and corporate ownership is rapidly becoming the norm in many parts of the country. MAEN identifies three essential components to protect and encourage local ownership of renewable energy facilities:

1. Entrepreneurial commitment to making projects happen;
2. Strong leadership and vision from rural agricultural leaders and institutions; and
3. Smart public policy.

Specifically, MAEN calls for state and national policies that would serve to create stable and growing markets, create access to markets, allow fair competition and access to technical expertise, and allow access to capital and appropriate incentives. For a full discussion of these recommendations, see the report *Locally-Owned Ag Energy: An American Energy Solution* at [www.midwestagenergy.net/pdf/local%20ownership%20whitepaper.pdf](http://www.midwestagenergy.net/pdf/local%20ownership%20whitepaper.pdf)

### Financing Resources

Financing a renewable energy facility can be a challenge, but there are resources that can help. A few are identified here.

#### Federal Resources

**Farm Bill Section 9006: Renewable Energy and Energy Efficiency Program**  
Provides grants and loan guarantees

to agricultural producers and rural small businesses for assistance with purchasing renewable energy systems and making energy efficiency improvements. [www.rurdev.usda.gov/rbs/farmbill](http://www.rurdev.usda.gov/rbs/farmbill)

**Value-Added Producer Grant Program**  
The VAPG program provides grants of up to \$100,000 for business planning or feasibility studies, or up to \$300,000

for working capital for any value-added agricultural activity, including renewable energy projects. Eligible applicants are independent producers, farmer and rancher cooperatives, agricultural producer groups and majority-controlled producer-based business ventures. In the past few years, many ethanol, biodiesel and wind

*Continued on next page*

## Financing Resources, continued from page 7

energy projects have received funding through this program. Details for this program can be viewed at [www.rurdev.usda.gov/rbs/coops/vadg.htm](http://www.rurdev.usda.gov/rbs/coops/vadg.htm)

### Tax Credits

#### Energy Policy Act of 2005

Allows a 10-cents-per-gallon tax credit for each gallon of ethanol produced and sold by small ethanol producers, including cooperatives, up to a maximum of 15 million gallons of ethanol per year. Small producers are defined as those with a production capacity that does not exceed 60 million gallons of ethanol per year. This law allows cooperatives to pass some or all of the small ethanol producer credit through to their patrons.

The law also extended the wind energy *Production Tax Credit* (PTC), providing a per-kilowatt-hour tax credit for electricity generated with wind turbines over the first ten years of a project's operations.

#### State and Local Financing

A number of states and communities have programs to provide funding that could apply to renewable energy facilities. For example:

The AgriFIRST program in Illinois is a grant program designed to help provide planning and construction funds to expand the number of value-added

agricultural businesses in Illinois. The grants fund feasibility studies to expand Illinois' ethanol, biodiesel and biomass industries, help open markets for Illinois products, and find new uses for the state's top commodities.

The Minnesota Community-Based Energy Development (C-BED) legislation provides higher production payments to community wind projects for the first ten years in exchange for lower production payments after ten years. This structure allows project developers to profit and pay off capital costs within the first 10 years of their contract without the need for the state incentive payment.

In Missouri, only majority farmer-owned ethanol and biodiesel production plants are eligible to receive discretionary state tax incentives.

For more information on tax credits and incentives by state, see the Database of State Incentives for Renewable Energy (DSIRE) at [www.Dsireusa.org](http://www.Dsireusa.org).

#### Private Lenders

When shopping for a private lender, look for those who understand and support agricultural projects. Local lenders will provide a greater impact on the local economy than non-local lenders. Farm Credit Services ([www.farmcredit.com](http://www.farmcredit.com)), for example, is a

network of independently owned and operated credit and financial services institutions that serve farmers, ranchers, agribusinesses of every size and income range across the country. CoBank, one bank within the Farm Credit Service, provides financing to the majority of the nation's agricultural cooperatives. CoBank itself is cooperatively owned by its customers.

#### Green Tags

For wind and solar energy projects, farmers can generate capital by selling green tags. Green tags are created when renewable energy is substituted for traditional power, representing the real savings in carbon dioxide and other pollution that occur as a result of the substitution. A variety of utilities and organizations market green tags to businesses and individuals who wish to purchase electricity from renewable, non-polluting resources. The money paid by these customers is then used for projects that reduce fossil-fuel electric generation. For example, Our Wind Co-op has used the capital raised from the sale of green tags for down payments on wind energy systems for member-owners who agree to sell their green tags through the co-op. For information on green tag marketers in your area, see Center for Resource Solutions.

## Case Studies

### Minwind Energy

*Project type:* Wind

*Location:* Minnesota

*Business structure:* LLC

*Funding:* Ownership shares, state production incentive, federal production tax credit, USDA Farm Bill grants, private financing

*Overview:* Minwind began as two farmer-owned wind energy projects, Minwind I and II, with a goal of generating income for farmers while also providing

economic benefits to the local community. The projects were structured as two separate LLCs that required farmer ownership of at least 85 percent—leaving some room for local non-farmers to also invest—and also required that all shareholders be Minnesota residents. The group sold shares to 66 investors, raising \$3.5 million in equity capital for the two companies in only 12 days. Once the projects were up and running, the owners successfully negotiated a contract with Alliant Energy to purchase the wind energy. Minwind has been highly successful—seven additional projects (Minwind III-IX) were added to the project



Photo: Minnesota Project.

roster in 2004. All nine projects operate as separate LLCs.

For more information:

- Minwind I & II: Innovative farmer-owned wind projects  
[www.windustry.org/newsletter/2002FallNews.htm](http://www.windustry.org/newsletter/2002FallNews.htm)
- Case Study: Minwind III-IX  
[www.windustry.org/community/casestudyMinwind.htm](http://www.windustry.org/community/casestudyMinwind.htm)

## Mid-Missouri Energy

*Project type:* Ethanol

*Location:* Missouri

*Business structure:*  
Cooperative

*Funding:* Ownership shares, state grant funds, tax credits, private financing

*Overview:*

Mid-Missouri Energy began with a 15-member farmer steering committee interested in exploring ethanol production as a means of adding value to local corn production, improving local economies, and producing a renewable fuel that both protected the environment and reduced dependence on foreign oil. Three years later, after a feasibility study and an equity drive that raised more than \$22 million from 729 area producer-members, the plant began producing ethanol at its Malta Plant. The plant produces 52 million gallons of ethanol annually, using 17 million bushels of corn. The result, in addition to creating a market for corn, is the creation of some 1,800 jobs and nearly \$170 million in economic activity for the state. The plant exceeded its production expectations, and in March 2006, the company announced an expansion for the plant and a 5-to-1 stock split for owners. The expansion doubles annual production.

For more information:

- Mid-Missouri Energy  
[www.midmissourienergy.com](http://www.midmissourienergy.com)



*Photo: Mid-Missouri Energy.*

## SoyMor Biodiesel LLC

*Project type:* Biodiesel

*Location:* Minnesota

*Business structure:* LLC

*Funding:* Ownership shares, private financing

*Overview:* SoyMor Biodiesel began with a steering committee looking for ways to add value to soybeans. The committee eventually determined that a biodiesel plant would be feasible and would also benefit both soybean farmers and local economies. The project was initially structured as a cooperative, but when the initial equity raised less than what was necessary, it became an LLC to allow non-farmers to invest. Today, the plant—capable of producing 30 million gallons of biodiesel annually—is 72-percent farmer owned, representing 608 farmers. The facility purchases soybean oil from crush facilities to produce the biodiesel, which increases the value of soybeans for area farmers. The plant created 30 jobs, and has a \$2-million dollar annual impact on the economy—\$1 million in payroll and \$1 million in goods and services.

For more information:

- SoyMor  
[www.soymor.com](http://www.soymor.com)

## Our Wind Co-op

*Project type:* Wind

*Location:* Northwest U.S.

*Business structure:* Cooperative

*Funding:* Federal grants, utility funding, green tags, foundation funding

*Overview:* A unique cooperative of small-scale wind turbines on farms, ranches and public and private facilities across the Northwest. Through this collaborative effort, 10-kW turbines were installed at ten rural sites serviced by publicly owned utilities. Initially supported by grants from the U.S. Department of Energy's National Renewable Energy Laboratory and the U.S. Department of Agriculture's Rural Development program, Our Wind Co-op created low-risk opportunities to explore on-farm green power production,



*SoyMor Biodiesel plant under construction. Photo: SoyMor Biodiesel.*



*Photo credit: Our Wind Cooperative.*

distribution, ownership and marketing models to meet local energy needs. The Bonneville Environmental Foundation (BEF) provided a Green Tags down payment of \$600/kW, representing estimated production for 10 years at 3.5¢/kWh. The environmental attributes of the energy generated from Our Wind Co-op turbines are aggregated, marketed and sold as value-added Green Tags at 10¢/kWh, recouping the front-loaded BEF payment and

allowing Our Wind to use the capital raised from the sale green tags for down payments on wind energy systems for member-owners who agree to sell their green tags through the co-op. This structure provides income for local owners and benefits to local economies.

For more information:

- Our Wind Co-op  
[www.ourwind.org/windcoop](http://www.ourwind.org/windcoop)

## References

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Anon. June 1997. Co-ops 101: An Introduction to Cooperatives, USDA Rural Business-Cooperative Service, Cooperative Information Report 55. [www.rurdev.usda.gov/rbs/pub/cir55/cir55rpt.htm](http://www.rurdev.usda.gov/rbs/pub/cir55/cir55rpt.htm)

Anon. January 2007. "Distillery Demand for Grain to Fuel Cars Vastly Understated." Earth Policy Institute.

Anon. December 2006. "Ethanol Takes Center Stage in 2006." Renewable Fuels Association, [www.ethanolrfa.org/objects/documents/919/yearend2006.pdf](http://www.ethanolrfa.org/objects/documents/919/yearend2006.pdf)

Anon. "How Do Co-ops Help Build Sustainable Communities?" Cooperative Life. Downloaded January 2007. [www.cooplif.com/sustainable.htm](http://www.cooplif.com/sustainable.htm).

Anon. Locally-Owned Ag Energy: An American Energy Solution. Midwest Ag Energy Network. [www.midwestagenergy.net/pdf/local%20ownership%20whitepaper.pdf](http://www.midwestagenergy.net/pdf/local%20ownership%20whitepaper.pdf)

Anon. 2002. "Minwind I & II: Innovative farmer-owned wind projects." Windustry newsletter. [www.windustry.org/newsletter/2002FallNews.htm](http://www.windustry.org/newsletter/2002FallNews.htm)

Anon. Taking Ownership of Grain Belt Agriculture. National Corn Growers Association. [www.ncga.com/public\\_policy/takingOwnership](http://www.ncga.com/public_policy/takingOwnership)

Borst, Al. September 2006. Bring It on Home: Local Ownership of Renewable Energy Helps Keep It On the Farm. USDA Rural Development, Co-op Programs. [www.rurdev.usda.gov/rbs/pub/sep06/bring.htm](http://www.rurdev.usda.gov/rbs/pub/sep06/bring.htm)

Cook, Michael and Constantine Iliopoulos. Beginning to Inform the Theory of the Cooperative Firm:

Emergence of the New Generation Cooperative. [www.pellervo.fi/finncoop/material/cook.pdf](http://www.pellervo.fi/finncoop/material/cook.pdf)

Estill, Lyle. October 2006. "Why Biodiesel Takes a Coop." Off-Road Adventures. [www.oramagazine.com/pastIssues/1006-issue/index.asp?article=biodiesel](http://www.oramagazine.com/pastIssues/1006-issue/index.asp?article=biodiesel)

"Green Tags," Bonneville Environmental Foundation. Downloaded January 2007. [www.b-e-f.org/GreenTags](http://www.b-e-f.org/GreenTags)

Hackman, Deanne. December 2001. "What is a New Generation Cooperative (NGC)?" Agriculture Innovation Center, Missouri Department of Agriculture. [www.extension.iastate.edu/agdm/wholefarm/html/c5-112.html](http://www.extension.iastate.edu/agdm/wholefarm/html/c5-112.html)

Morris, David. 2005. The Carbohydrate Economy, Biofuels and the Net Energy Debate. Institute for Local Self-Reliance, Minneapolis, MN. 24 pages. [www.neurules.org/agri/netenergyresponse.pdf](http://www.neurules.org/agri/netenergyresponse.pdf)

Morris, David. February 2006. Ownership Matters: Three Steps to Ensure a Biofuels Industry That Truly Benefits Rural America. Institute for Local Self-Reliance. [www.carbohydrateeconomy.org](http://www.carbohydrateeconomy.org)

Rhoads-Weaver, Heather and Jennifer Grove. March 2004. "Our Wind Co-op: Exploring Joint Green Tag Financing and Marketing Models for Energy Independence." [www.ourwind.org/windcoop/pdfs/AWEA\\_Paper.pdf](http://www.ourwind.org/windcoop/pdfs/AWEA_Paper.pdf)

Swenson, David and Liesel Eathington. July 2006. Determining the Regional Economic Values of Ethanol Production in Iowa Considering Different Levels of Local Investment. Iowa State University. [www.valuechains.org/bewg/Documents/eth\\_full0706.pdf](http://www.valuechains.org/bewg/Documents/eth_full0706.pdf)

Tordsen, Craig, Reg Caluse, Mary Holz-Clause. October 2002. "Key Considerations Points to Ensure a Successful Business Plan for Developing an Ethanol Manufacturing Business," Value-added Agriculture Extension, Iowa State University.

Urbanchuk, John M. September 2006. Economic Impacts on the Farm Community of Cooperative Ownership of Ethanol Production. LEGC LLC. [www.ncga.com/ethanol/pdfs/2006/FarmerOwnedEthanolEconomicImpact.pdf](http://www.ncga.com/ethanol/pdfs/2006/FarmerOwnedEthanolEconomicImpact.pdf)

## Resources

Building Better Rural Places  
[www.attra.ncat.org/guide/index.html](http://www.attra.ncat.org/guide/index.html)

Cooperative Feasibility Study Guide  
[www.rurdev.usda.gov/rbs/pub/sr58.pdf](http://www.rurdev.usda.gov/rbs/pub/sr58.pdf)

Cooperative Marketing Agencies-in-Common  
[www.rurdev.usda.gov/rbs/pub/rr127.pdf](http://www.rurdev.usda.gov/rbs/pub/rr127.pdf)

Cooperative Ownership of Ethanol and Biodiesel Production Facilities  
[www.newrules.org/agri/smalleth.html](http://www.newrules.org/agri/smalleth.html)

Institute for Local Self-Reliance  
[www.ilsr.org](http://www.ilsr.org)

The Minnesota Project  
[www.mnproject.org](http://www.mnproject.org)

National Council of Farmer Cooperatives (NCFC)  
[www.ncfc.org/info](http://www.ncfc.org/info)

Rural Cooperatives Magazine  
[www.rurdev.usda.gov/rbs/pub/openmag.htm](http://www.rurdev.usda.gov/rbs/pub/openmag.htm)

Windustry's Wind Farmers Network  
[www.windfarmersnetwork.org](http://www.windfarmersnetwork.org)

Understanding Cooperatives:  
Ag Marketing Cooperatives  
[www.rurdev.usda.gov/rbs/pub/cir4515.pdf](http://www.rurdev.usda.gov/rbs/pub/cir4515.pdf)

Understand Cooperatives: How to Start a Cooperative  
[www.rurdev.usda.gov/rbs/pub/cir4514.pdf](http://www.rurdev.usda.gov/rbs/pub/cir4514.pdf)

University of Wisconsin's Center for Cooperatives  
[www.uwcc.wisc.edu/links/altenergylinks.html](http://www.uwcc.wisc.edu/links/altenergylinks.html)

USDA Rural Development  
[www.rurdev.usda.gov/rbs](http://www.rurdev.usda.gov/rbs)

**Locally Owned Renewable Energy Facilities**

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