

PRESENTATION TITLE:

**Our Wind Co-op: Exploring Joint Green Tag Financing and Marketing
Models for Energy Independence**

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Our Wind Co-op: Exploring Joint Green Tag Financing and Marketing Models for Energy Independence

ABSTRACT

This paper highlights new strategies intended to expand markets for distributed generation projects, utilizing Green Tags, a cooperative business model, and leveraged funding for capital costs.

Our Wind Co-op utilizes the cooperative business structure along with financing and Green Tags investments to reduce financial barriers and generate revenue streams for rural landowners who are often discouraged by the front-end costs of renewable energy systems.

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 providing an ongoing revenue stream to help cover O&M and financing costs.

This paper concludes with lessons learned and recommended strategies for using cooperative models for financing and marketing Green Tags from small-scale wind projects

1.0 SMALL WIND ECONOMICS IN THE NORTHWEST

With an abundance of inexpensive hydropower and some of the lowest utility rates in the country, the Pacific Northwest has traditionally been a poor market for grid-connected small-scale renewable energy technologies. However, much has changed within the past few years. The Northwest has been threatened with power shortages due to both growth in demand and reduced hydropower resources. Some publicly-owned utilities have recently raised rates as much as 40 percent, and there have been substantial spikes in natural gas prices. Many in the Northwest are anticipating further energy and water crises and are becoming more concerned about the costs and availability of energy.

At the same time, recurrent media coverage has been creating more interest in energy conservation and renewable energy. With the region’s numerous wind farms making headlines, the public is getting the clear signal that wind is an important part of the region’s energy future.

The combined effect of these emerging influences is a surge in interest in customer-owned wind systems. Despite long payback periods, Northwesterners are installing systems for environmental, religious, “good citizen,” energy independence, hobby and other reasons.

2.0 COOPERATIVE BUSINESS MODELS FOR RENEWABLE ENERGY PROJECTS

In a recent national survey of farmers sponsored by the American Corn Growers Foundation, more than half of the respondents reported that they would be willing to invest their own money

in wind power projects. Nearly a third of those polled – 31% percent – favor farmer-owned wind co-ops as the best way for farmers to realize financial rewards from wind energy.

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.

2.1 Our Wind Cooperative

Our Wind Co-op (OWC) was launched as a project of Northwest Sustainable Energy for Economic Development (NW SEED), BEF, the Northwest Cooperative Development Center, the Last Mile Electric Cooperative, U.S. Department of Energy's National Renewable Energy Laboratory (NREL) and other partnering organizations in 2002 to help reduce barriers to distributed customer-owned wind energy development in the Pacific Northwest.

OWC is the first co-op to begin with small-scale wind turbines and to coordinate numerous sites dispersed across a large geographic area. At least 10 of the OWC host sites will install 10 kW Bergey Excel wind turbines. OWC is a model project that we foresee being replicated across the United States. Not only does the project take advantage of new technology, but it offers increasing economic returns to Co-op member-producers.



FIGURE 1: OUR WIND CO-OP MEMBER, EAST GLACIER, MT

The primary initial goals of OWC are to:

- Establish a cooperative model for achieving energy independence, rural economic development and community ownership.
- Build familiarity with small-wind turbine technology in rural communities.
- Explore the regulatory, financial and technical needs of a dispersed, inter-tied small-wind turbine network.

- Link rural, small-wind power producers with urban consumers through aggregated Green Tag sales.
- Collaborate on innovative financing opportunities, including public and private grants and loans, utility programs, and manufacturer discounts.

With five turbines already operating in Washington and Montana, OWC is half-way towards reaching the initial ten turbine, 100 kW goal. The process of selecting the remaining five sites is underway with prospects in Oregon, Idaho and Washington.

To sustain future development and allow for direct member control and management, OWC was recently incorporated as an independent non-profit business in the State of Washington.

BEF and NW SEED have fielded numerous requests by current and prospective small wind turbine owners looking for a way to sell their Green Tags. OWC members are discussing how to expand the Co-op's marketing activities to include such members.

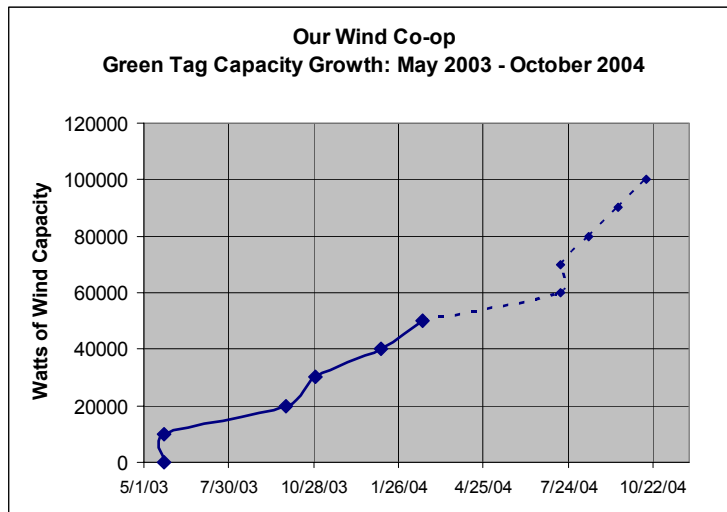


FIGURE 2: OUR WIND CO-OP GREEN TAG CAPACITY GROWTH

3.0 BONNEVILLE ENVIRONMENTAL FOUNDATION AND GREEN TAGS

3.1 Bonneville Environmental Foundation

The Bonneville Environmental Foundation (BEF), a non-profit organization, was established in 1998 to restore watershed ecosystems and further the development and use of new renewable energy resources. Through revenues generated from the sales of green power products, BEF funds projects that restore damaged watersheds and support new renewable energy projects from solar, wind and biomass.

BEF pioneered the sale of Green Tags in 2000 and has helped establish national standards for certification and trading. Created by regional environmental groups and the Bonneville Power Administration, the Foundation operates collaboratively with, but independent of both.

3.2 What are Green Tags?

In a Green Tag sale, the power from the renewable energy facility is not physically delivered to the customer, but the environmental benefits created by the facility are attributed to that customer, directly offsetting the environmental impact of the customer's conventional energy use. BEF's "Green Tag" or "green certificate" is based on the premise that there are at least two distinct products produced by a renewable energy facility.

The first product is electricity. How the electricity is treated in a Green Tag transaction is discussed below. The second is a package of environmental benefits created by displacing the output from conventional, polluting power plants with the output from a new, non-polluting renewable power plant. These environmental benefits can be "stripped" away from the electrical power, quantified (e.g. 150 tons of CO₂ displaced) and packaged into a Green Tag. The Green Tag then represents those collective environmental benefits, and creates a property right in them. Green Tags can also be packaged to help meet the requirements of renewable portfolio standards or other legislative or regulatory mandates. The electricity generated by the wind or solar system is net-metered or sold separately from the Green Tag, as generic power. No environmental claims can be made for this energy because the Green Tag now represents the entire package of environmental benefits associated with the generation of the electricity. The distinction between the two products is created by enforceable contractual agreements.

It is our experience that a segment of the market of Green Tag buyers is, for a variety of reasons, particularly interested in supporting solar and small wind installations. These customers recognize that the cost of energy from small wind and solar technologies is currently higher than that of larger renewable energy facilities such as utility-scale wind and most biomass. Accordingly, BEF pays a higher Green Tag premium to these facilities and then charges a higher premium when those Green Tags are sold.

4.0 GREEN TAGS FOR FINANCIAL SUPPORT

Our Wind Co-op and Northwest SEED have collaborated with BEF to establish innovative payment structures for Green Tag sales. BEF has made milestone payments for Our Wind Co-op based on production forecasts.

Our Wind Co-op is utilizing up-front Green Tag payments of \$600 per kW from BEF – representing production forecasts for 10 years at 3.5 cents/kWh – to reduce upfront small wind turbine equipment costs. NW SEED executed an agreement with BEF for milestone payments toward the initial ten 10 kW systems and to repay the initial \$60,000 interest-free "grant" over a period of 10 years. NW SEED has applied \$6,000 per system toward down payments on equipment orders with Bergey Windpower. In exchange for this and other financial support gained through the Co-op, the individual wind turbine hosts have agreed to market and sell their Green Tags through the Co-op.

Northwest SEED has differentiated OWC's Green Tag product from large-scale, commercially produced wind power tags by marketing them as "value-added" Green Tags derived from small-

scale, locally owned wind turbines. Revenue from the sale of Tags directly benefits farmers, rural landowners and low-income communities across the Northwest.

Northwest SEED has had initial success in selling OWC's first ten Tags (1,000 kWh each) to an individual buyer at 10 cents/kWh. OWC aims to sell the remaining Tags to buyers at this price, and is also negotiating bulk sales with utilities. Selling the Tags at a higher price will allow for a greater margin after the BEF payment is made creating an ongoing revenue stream to help turbine hosts offset system costs, turbine operations and maintenance, insurance, accounting, administration, and marketing expenses.

5.0 LEVERAGING FEDERAL, STATE & UTILITY FUNDING THROUGH CO-OPS

5.1 Federal Funding

Our Wind Co-op was initially launched with a contract award from NREL of \$300,000 to support site development, permitting, turbine foundation and shipping costs, wiring, and field data collection to verify wind turbine performance and operation and to showcase a variety of ownership structures. NREL is particularly interested in supporting the involvement of LMEC's numerous rural electric cooperatives and public utility districts with net metered installations. NREL's ongoing contributions include substantial technical support and loaned data collection equipment.

The U.S. Department of Agriculture is also supporting the co-op through two different funding programs, with a Value Added Development Grant (VADG) and a Renewable Energy Systems Grant (RESG). OWC's VADG has helped fund feasibility studies on Co-op development, Green Tags distribution models and mechanisms, data logging equipment, Co-op formation, outreach and marketing efforts. The recently awarded RESG, created under Section 9006 of the 2002 Farm Bill, added additional funding for nine sites to further offset capital costs. Funding from this grant will amount to approximately \$9,000 - \$10,000 per site.

5.2 State Incentives and Funding

Washington state has a sales tax exemption for renewable systems, worth 7% of system costs. Publicly-owned utilities are also providing incentives and encouragement for small wind systems in Washington State. In both Oregon and Washington, systems installed for business applications can yield tax benefits from accelerated depreciation and Federal Investment Tax credit, both of which can be substantial.

Montana's Department of Environmental Quality supplemented two of Our Wind Co-op's Montana sites, one with a low interest loan and another with a \$5,000 contribution.

5.3 Manufacturer Cost Share & Rebates

Bergey Windpower Company (BWC) is supporting Our Wind Co-op by offering a discount on equipment orders of approximately \$7,000 per system. BWC is also supporting the co-op by extending a 5-year parts guarantee in addition to their standard 5-year warranty to ensure turbine

performance for the 10-year Green Tag delivery period. NRG Systems offers a substantial discount on the data logging equipment installed on each turbine. Manufacturer discounts are used to both offset the capital costs and to provide essential matching funds for federal grants.

5.4 Utility Programs

Several utilities have provided financial support for Our Wind Co-op installations with funding from green power programs, universal systems benefit funds and the Bonneville Power Administration's Conservation and Renewables Discount program. Through Northwestern Energy's Universal System Benefit fund, the National Center of Appropriate Technology awarded three of the Montana sites a total of \$35,000. Klickitat Public Utility and Seattle City Light contributed more than \$20,000 in funding to support five Our Wind Co-op's Washington State turbine installations.

6.0 PAYBACK PERIOD

The average total cost of each of Our Wind Co-op's 10 kW systems including turbine hardware and labor before cost-sharing and excluding data collection equipment is expected to be about \$39,000. Based on an estimated capacity factor of 13.5% (11,800 kWh per year), the average "payback period" without cost-sharing would be 55 years. As a result of the numerous funding sources provided through Our Wind Co-op, including BEF's up-front payment for 10 years worth of Green Tags, the turbine host cost share for the initial 10 sites has been reduced by an average of almost 80% to about \$8,000, thereby reducing the actual average "payback period" to 7 years. NW SEED will continue to aggregate funding sources, discounts, and in-kind cost sharing to build Our Wind Co-op and achieve affordable installations for as many hosts as possible.

7.0 CONCLUSIONS

7.1 Benefits of the Cooperative Business Model

Our Wind Co-op is demonstrating that the cooperative business structure can play an essential role in building the market for small wind systems and reducing installation and financing barriers. It is proving to be a successful model showcasing the benefits of aggregation and collaboration which is ripe for expansion and replication.

Co-op members become more competitive not only in gaining access to new opportunities for federal, state, utility, and foundation funding for capital costs, but also in marketing their Green Tags to potential buyers. In pooling their resources, they can leverage knowledge, experience, and technical skills of other members and industry experts to reduce costs and implementation time.

7.2 Lessons Learned and Recommendations

Initial Our Wind Co-op members are pioneers engaged in all aspects of the cooperative development process with a deep desire to "make it happen." Northwest SEED has screened more than 250 applications to identify the first 10 hosts. NW CDC and LMEC have been

instrumental fiscal hosts for the federal funding contracts, as the processes for obtaining funds are often complex.

Our Wind Co-op host contracts include liability provisions and requirements for adequate insurance to protect against natural disasters and unforeseen events. Ease of permitting and state funding greatly accelerated and simplified developments of sites in Montana.

8.0 RESOURCES

For more information, visit:



www.ourwind.org

Northwest Sustainable Energy for Economic Development

www.nwseed.org

Bonneville Environmental Foundation

www.b-e-f.org

Northwest Cooperative Development Center

www.nwcdc.coop

Energy Atlas

www.energyatlas.org

Last Mile Electric Cooperative

www.lastmile.coop

U.S. Department of Energy's National Renewable Energy Laboratory

www.nrel.gov

U.S. Department of Energy's Wind Powering America Program

www.windpoweringamerica.gov

U.S. Department of Agriculture's Renewable Energy and Energy Efficiency Program

www.rurdev.usda.gov/rbs/farbill/index.html