

Wind Power for Rural Landowners and Communities

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Missouri Webcast

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Outline

- About Windustry
- What makes a good wind project
- Wind energy options for landowners
- Community wind in the US
- Benefits
- A few success stories

Who is Windustry?

- Empowers communities to develop wind energy as an environmentally sustainable, community-owned asset
- Non-profit organization based in Minneapolis, MN - work locally, regionally and nationally
- Focus on landowner/community options
- www.windustry.org



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Wind Power Basics: Why Wind Energy?

■ Benefits of Wind Projects

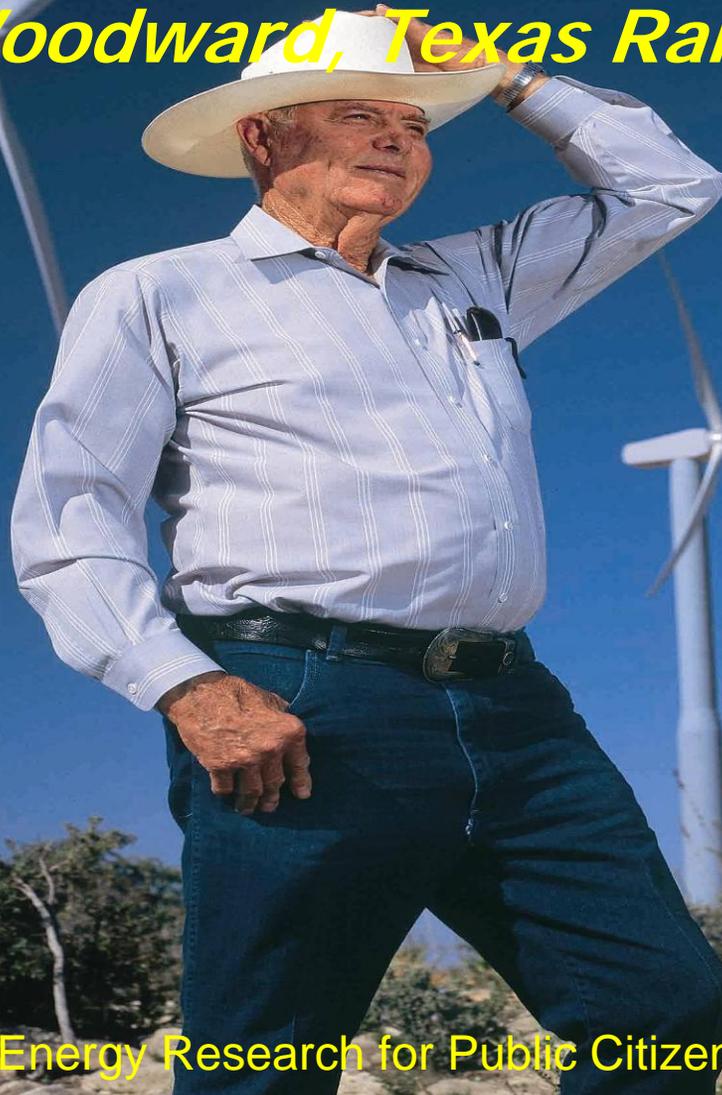
- Reduces Air Pollution and Global Warming
- Clean, Domestic Energy
- Revitalizes Rural Economies
- Creates Jobs
- Promotes Cost-Effective Energy Production
- Supports Agriculture and Compatible Land Use
- Ensures a Sustainable Energy Future

Wind Power Basics: What makes a good wind project?

- Average wind speed
- Proximity/access to the grid
- Cost of capital
- State and Federal incentives
- Market for the power



***"Yep, they make some noise, but it's the soothing sound of money being made."
Louis Woodward, Texas Rancher, Landowner***



Prepared by Virtus Energy Research for Public Citizen and the SEED Coalition



**Large wind power plant
Power needs
transmission lines to get
to market.**

**Dispersed Wind
Development
and Distributed
Generation**



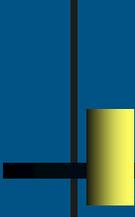
Woodstock, Minnesota





Residential, Farm &
Small Business Scale
Wind


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Landowner Options

- Lease your land to a wind project
 - Local project
 - External developer
- Be a partner in a community wind project
- Put up a residential or farm size wind turbine for your own power



Easements and Leases are typical components of most wind energy projects, large and small.



Wind Energy Leases and Easements

- Main way for landowners to participate in wind energy development
 - No cash outlay
 - Low financial risk
- Few standards: range from good to bad to ugly.
- Compensation varies widely based on turbine size, wind resource, price of energy and many other factors.
- Long term commitments – usually last 20 to 40 years.
- Best results when landowners make informed decisions.

Windustry's Package of Lease/Easement Resources

Materials include: (all currently being updated)

- 1) Easements and Lease Agreements – What might appear in these contracts and what to watch out for. An updated version of Windustry's original "Wind Energy Easements: Legal Issues."
- 2) Compensation – Compilation of compensation packages from real wind projects.
- 3) Policy and Best Practices – Recommendations and Proposals to facilitate sustainable wind development.
- 4) Bibliography of additional resources.

Before you sign on the dotted line...

- How much of my land will be tied up and for how long?
- How much will I be paid and how will I receive payments?
- Are the proposed payments adequate now and will they be adequate in the future?
- How will a wind project impact my other land uses?
- Have I considered all of my other options and is this the best one for me?

We strongly recommend:

See An Attorney before signing any wind energy contracts.

Bring the Windustry Easement Guidelines if wind is new to the region or your attorney.



Community Wind Energy Defined

- Simple and flexible concept
 - Any number of turbines
 - Connected either side of the meter
-
- **KEY: Local ownership and local benefits**

Who qualifies as local?

- We have seen several definitions
- States
 - Various definitions
- Federal side - often uses geography -
 - i.e. local owners must live within 200 miles of project

What is not in the Community Wind Definition?

- Size of project
 - ❖ The size of a community wind project varies from state to state
 - ❖ It is often dependant on other legislation such as net metering

Benefits of Community Wind



All the benefits of wind development, plus:

- Greater stimulation of local economies
- Increased local energy independence
- Increased competition in energy markets
- Greater acceptance of wind power
- Benefits of distributed generation to the power grid

Minnesota Supports Community Wind Through Public Policy

- Utility resource acquisition requirements
- Renewable Energy Objective
- Renewable Development Fund
- Production Incentives
- Small Wind Energy Tariff
- Department of Commerce and USDA Grants
- Community-Based Energy Development Tariff

More Diverse Policy Needed

- Major: PTC (Production Tax Credit needs Congress to renew - expires 12/31/08)
- Other policy
 - USDA Farm Bill - Energy Title
 - CREBS
 - New Markets Tax Credits (1st project in progress)
- New Policy Coming up
 - "Renewable Energy Payments" - styled after European Feed-In Tariffs - US Rep. Jay Inslee
 - Several states (2008 Bills introduced CA, MN, VT, RI, MI, and others in the works)

How do state policies stack up?

- **Low or no Interest Loans (IA, NY):** Ideal for community wind when combined with good value for kWh and green tag
- **Infrastructure Development (WI, MA, OR):** Reduces transaction costs of development, which can otherwise kill a community wind project
- **Grants (IL):** Structure so that do not reduce value of PTC
- **RPS (various states):** Philosophically at odds with feed-in tariffs, community wind may require specialized policy (like in Minnesota C-BED)
- **Performance Based Incentives - CA and several other states very effective;** rewards technology that works

Characteristics of Good Community Wind Policy

- Build a market
- Address access to financing
- Facilitate good business model
- Pair well with other incentives
- Not too prescriptive
- Stable and consistent long term

Community-Based Energy Development (C-BED)

Markets for
Viable C-BED

Improved
Economic
Benefits for the
State

Rate Payers
Don't Pay Too
Much

Clear Definition
of Eligibility &
Pathway to
Viable Projects

Incentives for:
Diversity of
Projects &
Benefits to
Communities

Range of Local
Economic
Impact

Encourage
Local
Economic
Benefits

Local
Ownership to
Local Control

European Style Feed-In Tariffs

Renewable Energy Payments

- Renewable Energy technologies are guaranteed interconnection to elec. grid
- Premium rate paid for power sold is designed to provide a reasonable profit for investors over a 20 year term
- Rates are different for each technology (wind, solar, biomass, geothermal etc)
- Keep watch on our website for more info and links, www.windustry.org

Community Wind Energy Success Stories

- Farmer/Local Investors
- Local Utilities: Municipal Utilities and Rural Electric Cooperatives
- Schools
- Tribal Communities
- Community Institutions
- New Models for Wind Industry and Community Partnerships



Kas Brothers Plant 25-Year Cash Crop

- First farmer-owned, commercial-scale project in U.S.
- Two 750 kW NEG Micon turbines installed in 2001.
- Financed with local banks
- Dozens of farmers in MN now following this model.
 - Some with an equity partner, some without.



Richard and Roger Kas— Woodstock, MN

Minwind Energy, Luverne, Minnesota



Farmer Ownership:

- Nine LLCs, 11 wind turbines owned by 200+ local investors.
- Installed in 2002 and 2004.
- Goals: local economic dev., maximize return on investment, diversify local economy.





Lawyers

USDA

Elected
Officials

State
Energy
Office

Accountants

Contractors

Bankers

Minwind
Board

Equipment
Suppliers

Developer

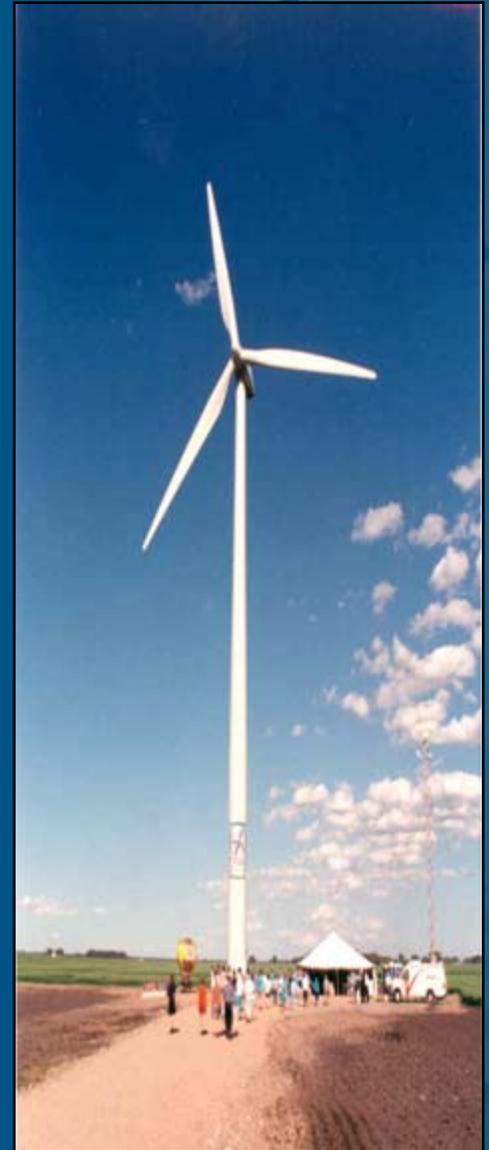
Minwind
CEO

Accountants

Investors

Moorhead Public Service Moorhead, Minnesota

- Two 750 kW turbines, installed in 1999 and 2001.
- Public utility- used their own funds to purchase the machine.
- Among the highest subscription rates in the nation and one of the early successful municipal projects.
- Several good Iowa examples as well, including Waverly, IA.



Illinois Rural Electric Cooperative

Pike County, Illinois

- Planning a spring 2005 ribbon cutting for a 1.65 MW turbine.
- Inspired by new IL wind maps that show some of the best wind in the state to be in IREC territory.
- Turbine will generate about 4% of IREC's power needs, close to the 5% limit in wholesale power contract.
- Project supported by 3 grants (USDA, IL state grant, and IL Clean Energy Foundation)



IREC Engineering Manager and project leader Sean Middleton.

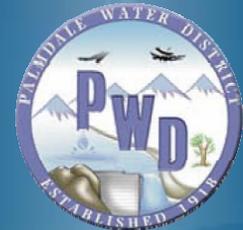
Palmdale Water District, Diverse Renewable Generation Portfolio

- 250 kW hydroelectric generator
- 250 kW digester gas-powered fuel cell that turns exhaust into electricity and heat
- 30 kW of solar PV
- 950 kW wind turbine
- PWD saves over \$250,000 per year in electricity costs



Photos courtesy of Palmdale Water District

Wind turbine, solar panels, and hydro electric dam



Methane gas digester system

School Wind Projects: K-12

Wind turbines can supply schools with clean energy, new revenue, and learning opportunities.

- 8 school districts in Iowa have wind turbine from 50 to 750 kW
- Spirit Lake Schools pioneered the idea in 1993 with a 250 kW turbine, followed by a 750 kW turbine in 2003.
- Other school projects in MN, IL, CO, PA, VT, MA, MI, tribal communities
- “Wind for Schools” programs great for educational and demonstration purposes



Spirit Lake, Iowa

SMI & Hydraulics, Inc.

Porter, Minnesota

Photos courtesy www.smihyd.com



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Lamar, Colorado

- Local project piggybacked on large wind project.
- Four 1.5 MW GE turbines less than 25 miles from CO Green, a 162 MW project in Lamar
- Municipal Utilities (Lamar Light & Power and Arkansas River Power Authority) timed their project to coincide with Colorado Green.
 - Coordinated with CO Green to lower development, construction and maintenance costs.



New Community Wind Business Structures



"Public" Developer

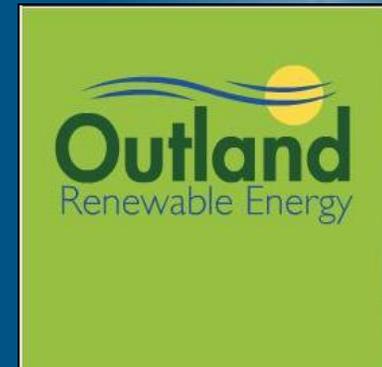
Power Prepay

White Creek



Public Offering

Private
Transmission

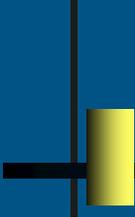


In Closing Community Wind

- Tremendous business opportunity that requires new thinking for bringing about a new clean energy system
- Growing diversity of policy incentives and thus business models
- Growing diversity of wind turbines to serve a diverse market
- Engaging local support is critical to almost every aspect of this business
- Community wind benefits have a vital role and will become increasingly important.

In Closing - Outcomes of Community Wind Conference 2008

- Closing comments of Jim Walker, '07-'08 President AWEA
- Vision:
 - Wind Energy 20% of US electricity; and
 - Community Wind 20% of wind projects
- Roadmap
 - Help deal with transmission, access to the market and financing
- New and innovative business models
- "There is a huge future for Community wind."



Thanks and Questions?

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www.windustry.org

