

Wind Energy is Good, Community Wind is Better

Benefits, Pitfalls, and Lessons of Community Wind

Community Wind: Options and Benefits



The Minnesota Project

“Advancing the sustainable production and equitable distribution of energy and food in communities across Minnesota”

- Policy Development
- Demonstration Projects
- Education

www.mnproject.org

Community
Wind:
Options and
Benefits

Energy, Agriculture, and Food Information

- Programs
 - Sustainable Agriculture
 - Anaerobic Digester Consulting
 - Ecosystem Valuation
 - Clean Energy
 - CERTs
 - Community Energy
 - Local Foods
 - Heartland Food Network
 - Fruits of the City
- Information and Resources
 - *Transportation Biofuels in the United States: An Update*
 - Webinar: 90-Minute Introduction to the Biomass Crop Assistance Program
 - Centered on Sustainability Blog
 - *Conservation Planner*
 - *Lessons and Concepts for Advancing Community Wind* (Coming Soon!)

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Community
Wind:
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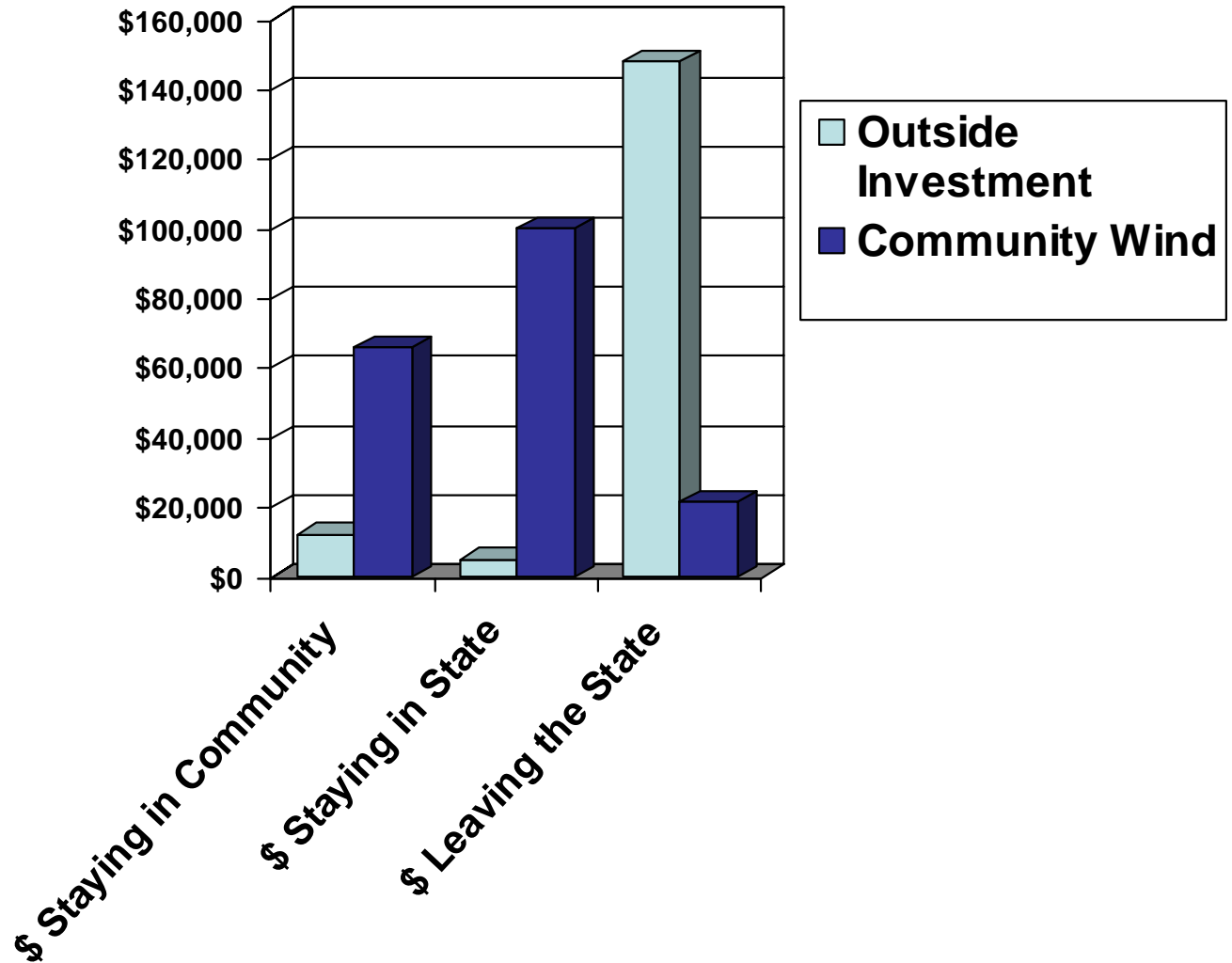
The Benefits of Community Wind

- The Case for Wind:
 - Clean, safe, renewable power
 - Economic development
 - Part of energy sustainability and independence
- The Case for Community Wind:
 - All of those plus:
 - Increased economic benefits
 - Increased sense of community
 - Increased sense of autonomy

Community Wind Adds Up

Community
Wind:
Options and
Benefits

Dollars per Installed Megawatt



The Economics Keep Adding Up

- Community Wind Projects Have:
 - Over twice as many jobs per megawatt
 - Jobs average 42% higher wages
 - State and local tax revenue increases 8%
 - Local, nonrelated businesses see 53% higher income impacts

Community
Wind:
Options and
Benefits

Communities Must Do Their Homework First

- Zoning and Permitting
- Planning and Visioning
- Project Leadership
- Feasibility
- Power Purchase Agreement and Interconnection
- Land Leases and Wind Rights
- Business Models
- Engineering, Procurement and Construction

There are a lot of steps, but the journey of a thousand miles begins with a first step.

Community
Wind:
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Visioning and Planning

- The wind project is not the end goal, but a means to an end.
- Establish a community vision and strategic plan
 - Seek community input
 - Record the process
 - Form documents to guide community thinking on subsequent issues

Visioning and Planning: Key Points

- A Community Vision and Strategic Plan help residents see the larger purpose of individual projects
- This community support can yield dividends later

Community
Wind:
Options and
Benefits

Zoning and Permitting

- Issues to Address:
 - System definition and zoning applications
 - Setbacks
 - Property rights (both land and wind access)
 - Health and safety
 - Ice
 - Noise
 - Lighting and visual appearance
 - Operational safety
 - Enforcement and penalties

Zoning and Permitting: Key Points

- Clarity necessary on definitions, permit applicability and process, and setbacks
- Establish regulations before pursuing a project; it will come up

Model Ordinances, a Few Examples

Community Wind: Options and Benefits

- Defining permitted locations and turbine sizes
 - Ex: commercial size turbines permitted only on agriculture and industrial areas
- Minimize Infrastructure Impacts:
 - Road or drainage system damage
 - Interference with telecommunications
 - Bury power lines
- Setbacks for each permitted size
 - Many different types: from homes, property lines, conservation lands
- Available at www.mnproject.org:
 - Model Ordinances
 - Companion to Model Ordinances

Project Development

- Establish a business model for financing
 - Minnesota Flip
 - Most common model, with many types
 - Outside investor participation
 - Trimont Area Wind Farm in Jackson and Martin Counties
 - C-BED
 - Uses a front-loaded rate structure to improve debt financing opportunities while ensuring lower rates for utilities over the life of the contract
 - CREBs-Clean Renewable Energy Bonds: for non-profit entities. Provide 0% interest, but stipulations placed on fund usage

Project Development: Key Points

- Check for state production incentives and loan programs
- Rarely will communities have enough financing on their own to build a project
- Determine project income stream to determine financing needs

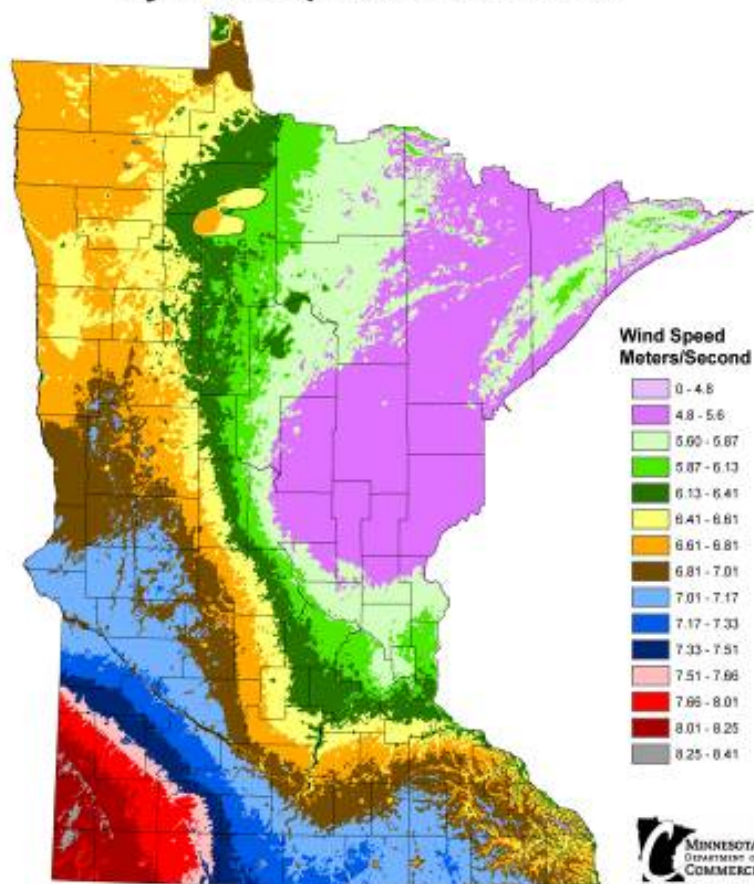
Revenue Streams

- Power Purchase Agreement
 - Begin discussions with utility during first steps
 - #1 factor in determining financing requirements
- Renewable Energy Credits
 - Don't always go with the electricity
- Federal and State incentives
 - Production tax credits
 - Investment tax credits
 - Cash grants: USDA REAP, Rural Development, Department of Energy
 - Easy to use resource: www.dsireusa.org
 - Useful guide: *Community Wind Financing: A Handbook* by the Environmental Law and Policy Center: www.elpc.org

Revenue Streams: Key Points

Community Wind: Options and Benefits

**Minnesota's Wind Resource
by Wind Speed at 70 Meters**



The Department of Commerce prepared this map using the WindMap program, which takes into account wind data, topography, and land use characteristics. Data is averaged over a 140 meter 100 meter square, and while any one cell there could really be features that could increase or decrease the results shown on this map. Regions with the greatest concentrations of wind farms should be the most accurate results. This map shows the general variation of Minnesota's wind resource and should not be used to determine the performance of specific projects.

June 2002

- Don't get discouraged with a low initial PPA offer
- Conduct wind resource analysis
- Hire consultants or a project developer
- Be prepared for grant and loan applications to take time and effort

Feasibility



www.rediresources.org

- Tasks include:
 - Wind resource study
 - Interconnection study
 - Equipment and installation estimates
 - Financing costs
 - Revenue estimates

Community
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Feasibility: Key Points

- Get as accurate of estimates as possible
- And then budget for higher costs



Community Wind: Key Points

- The project is not an end, but a means to an end.
- Keep communications open throughout the process
- Persistence pays

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Also, look for our new report, *Lessons
and Concepts for Advancing Community
Wind*