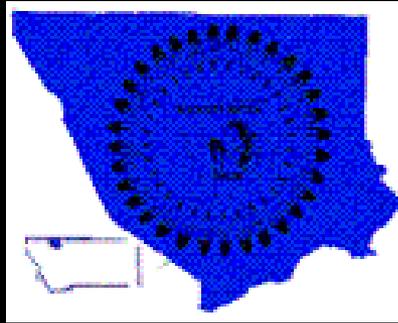


Blackfeet Nation Energy Organization Development



First Steps to Renewable Energy
Grant Awarded by Department of Energy
Presented by Jeri Lawrence
Blackfeet Renewable Energy Director

Introduction

- The Blackfeet Reservation is located in Glacier and Pondera Counties of Montana.
- Northwestern part of the state at the eastern base of the Rocky Mountains
- 1, 525, 671 acres, Measuring 52 miles at its longest point and 58 miles at the widest,
- Shares its western boundary with Glacier National Park and its northern boundary with the province of Alberta, Canada.

Introduction

- The unemployment rate of the Blackfeet Reservation averages roughly 63%.
- Total population of the entire reservation is approximately 10,100.
- 15,355 enrolled members, 8,000 of whom are living on the reservation.
- 4,500 descendants of enrolled tribal members living on the reservation.



Blackfeet Tribal Business Council

Executive Committee:

Earl Old Person, Chairman

Roger Running Crane, Vice Chairman

Willie Sharp, Secretary

Ken Augare, Acting Treasurer

Paul McEvers

Bette Cooper

Pat Thomas

Ronald Kittson

Rodney Gervais

Edwin Little Plume

DOE First Steps to Renewable Energy

\$100K Grant-

Energy Organization Development

- To enter the arena of commercial energy supply and marketing contracts, it is necessary for the Blackfeet Nation to be a recognized energy development organization.
- In order to make profitable large-scale power arrangements, the energy development organizational entity must maintain stability outside of tribal policy variations and turnovers in Tribal politics.
- It is necessary to develop new organizations or institutions to effectively implement our tribal energy plans and projects.

Progress to Date

- Several Meetings held
- Professional Consultant hired
- Explored Energy Organization Alternatives
- Drafted Energy Organization Articles of Inc. for Blackfeet REI
- Program Director hired
- Established Renewable Energy Program
- Renewable Energy Committee formed
- Assembled Blackfeet wind resource data, publications, documents
- Assessing various Funding and Financing Strategies for securing a stable Energy Organization
- TEPA for environmental review in development

THE BLACKFEET RENEWABLE **ENERGY INC. (BREI)**

BACKGROUND

- Blackfeet Tribal Business Council passed by resolution development of BREI
- Articles of Incorporation for BREI presented to Secretary DOI for approval for federal charter
- BREI is a wholly owned development corporation vested with sufficient autonomy to make effective and prudent business decisions regarding certain Blackfeet resource developments.
- Federally chartered economic development corporation that has been developed under Section 17 of the Indian Reorganization Act.
- The Blackfeet Tribal Business Council has empowered the corporation to make business commitments and has granted limited waivers of immunity for development projects which may be necessary to attract outside financing and talents.
- BREI facilitates major economic development projects that require complex financing, including public funding sources.
- Our mission is to create economic development for all members of our community.

Blackfeet Renewable Energy Inc.

- Five (5) member board of directors

An unbelievably experienced and knowledgeable Team is working myopically on maximizing the Tribe's value

- Working with consultants Western Community Energy, LLC Mike Constanti (Bozeman, MT) & Brian Jackson, (Boise, ID)
- Team Members:
- WCE- Mike & Brian
- Jeri Lawrence, RE Director
- NREL- Scott Haase, Renewable Energy
- Office of Indian Energy & Economic Development, Roger Knight (Lakewood, CO)
- Whiteing & Smith Law, **Jeanne Whiteing**, Attorney
- Schaff-Clark-Deschesne, LLC, **Margie Schaff**, Esq.
- Blackfeet Legal Attorney- **Sandra Watts**

Blackfeet Renewable Energy Inc.

- **WAPA Wind Hydro Feasibility Study**

- Mike Costanti, Principal Engineer
- Nominated & Selected for team
- The Energy Policy Act of 2005, Sec. 2606, required a study be performed by the Department of Energy (DOE) involving wind-hydro integration.
- Western Area Power Administration (Western) was tasked by DOE to perform a study of cost and feasibility to develop a demonstration project that uses wind energy generated on Indian Tribal lands and Federal hydroelectric power generated on the Missouri River to supply firming power to Western to meet its contractual obligations.
- Blackfeet Wind Project Nominated

Blackfeet Renewable Energy Inc.

- Secretary of the Interior Dirk Kempthorne named 22 individuals to serve on a special Wind Turbine Guidelines Advisory Committee, formed under the Federal Advisory Committee Act.
- The members will advise the Secretary and the U.S. Fish and Wildlife Service on measures to avoid or minimize impacts to wildlife and their habitats from land-based wind energy facilities
- Members of the Committee represent the varied interests associated with wind energy development and wildlife management
- Blackfeet Nation RE Director was nominated and selected to represent tribal governmental agencies

Blackfeet Renewable Energy Inc.

- Requested Anemometer NREL-denied
- Purchased 6m anemometer from NRG Systems- better for us, own data after monitoring, relocate
- **Two Wind Projects under development**
- **Small Wind Project:** BREI would like to site a 20-25 MW wind project on Tribal land just outside of Browning. Such a Project will require ~1-2 sections of land depending upon wind direction, site topography, access, transmission, etc
 - WCE has reviewed the proposed site location, and believes at this point it is a workable site
- BREI erected a 6m met tower to begin collecting data, WCE will verify/certify data
- BREI has had preliminary discussions with Glacier Electric Co-op regarding how to move the power and who possible purchasers of the Project outputs might be
- Hopefully online by 2010

Blackfeet Renewable Energy

Inc.

Who will own the Project?

- The ultimate ownership strategy needs to optimize the Tribe's Project objectives with the anticipated Project financial returns
- There are many tax incentives for wind projects, but they are only available to taxable entities
- Subsequently, these tax incentives need to be used differently by the Tribe to realize their value
 - e.g. Tax Equity Flip Project
 - Partner with taxable entity in years 1-10: They receive tax credits (and maybe some of the energy/green tag revenue)
 - In year 11 project ownership will "flip" to Tribe
 - Tribe can maximize value by pre-developing the project

BREI will pre-develop the Project

- Goal: Create a project on paper
 - e.g. wind data, transmission agreements, power purchase agreements, design and specifications, permitting, turbines/other equipment, debt financing, operations & maintenance agreements, etc
 - Doing more = more value: Any pre-developed project has value
 - Need to decide on picking a good equity partner

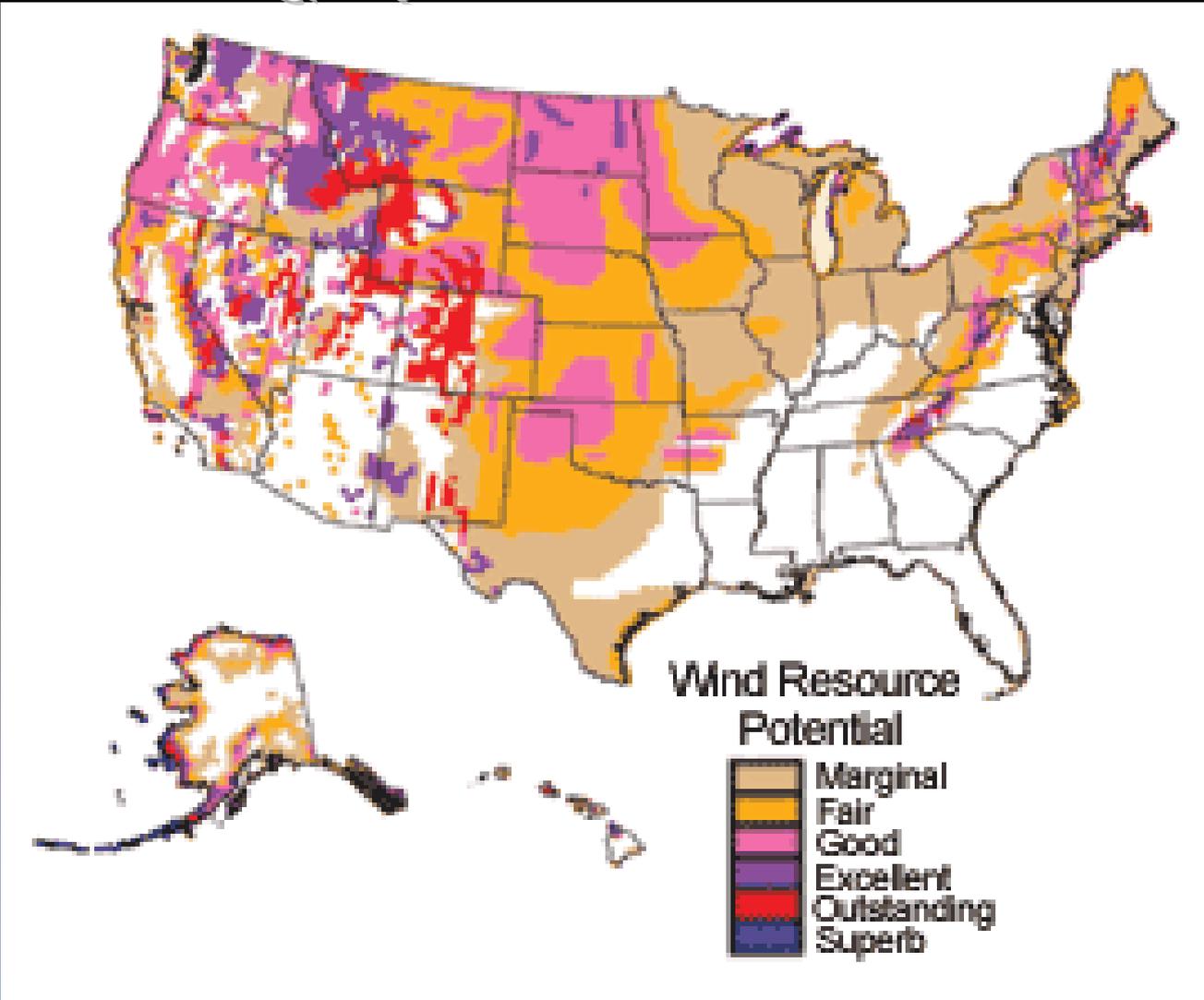


Large Commercial Wind Project

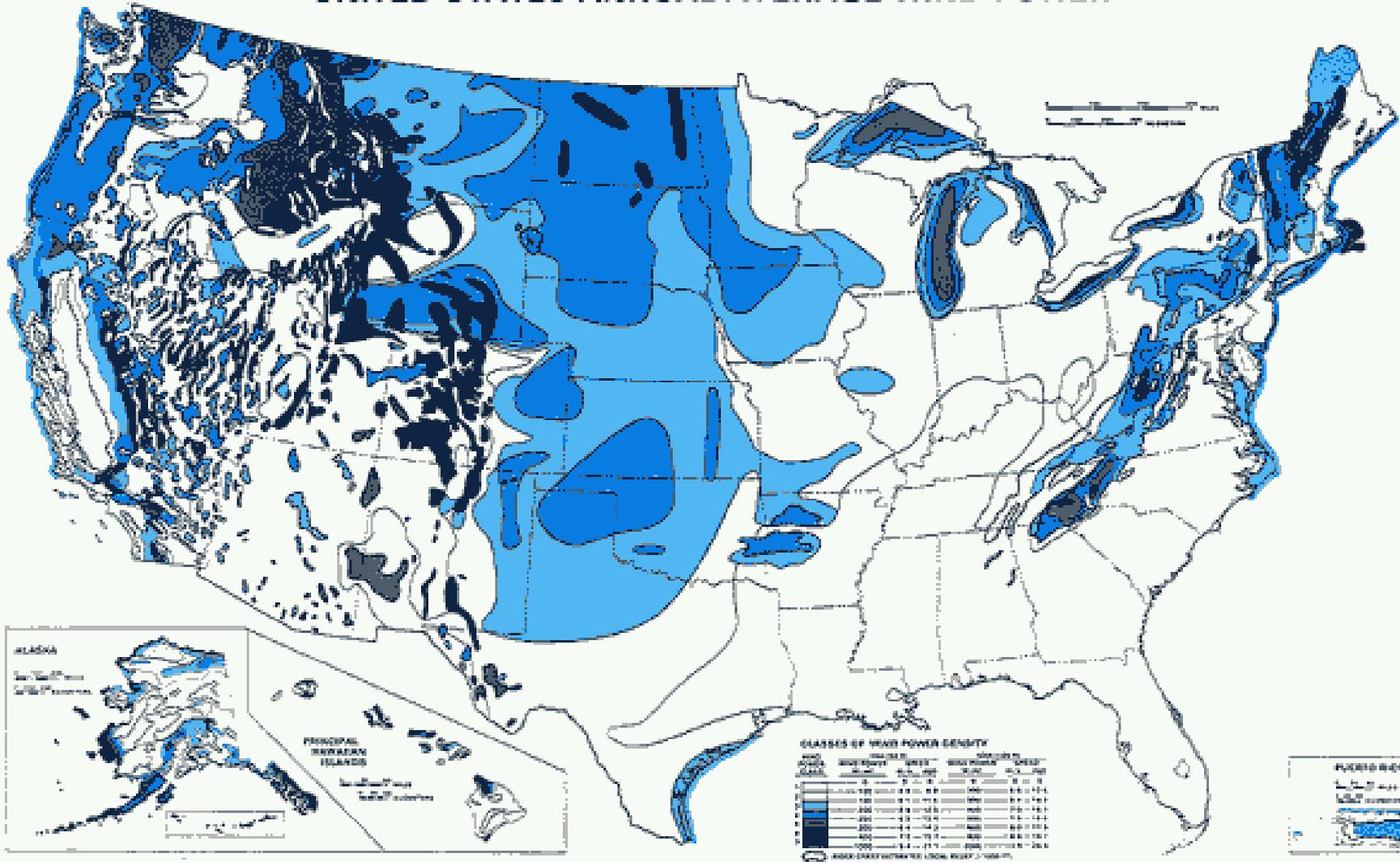
- Currently Developing a very Large Wind Project on Blackfeet Reservation with THE leading wind development group
 - Confidentiality Agreement Signed
 - Working out the terms of the Commercial Lease & Easement Agreements for Wind Project and Transmission
- 

Blackfeet Nation has Excellent,

Outstanding, Superb Wind Resource Potential



UNITED STATES ANNUAL AVERAGE WIND POWER



CLASSES OF WIND POWER DENSITY

WIND SPEED CLASS	WIND SPEED RANGE (mph)	WIND POWER DENSITY CLASS	WIND POWER DENSITY RANGE (W/m ²)
1	0 - 5	1	0.0 - 0.1
2	5 - 10	2	0.1 - 0.2
3	10 - 15	3	0.2 - 0.3
4	15 - 20	4	0.3 - 0.4
5	20 - 25	5	0.4 - 0.5
6	25 - 30	6	0.5 - 0.6
7	30 - 35	7	0.6 - 0.7
8	35 - 40	8	0.7 - 0.8
9	40 - 45	9	0.8 - 0.9
10	45 - 50	10	0.9 - 1.0
11	50 - 55	11	1.0 - 1.1
12	55 - 60	12	1.1 - 1.2
13	60 - 65	13	1.2 - 1.3
14	65 - 70	14	1.3 - 1.4
15	70 - 75	15	1.4 - 1.5
16	75 - 80	16	1.5 - 1.6
17	80 - 85	17	1.6 - 1.7
18	85 - 90	18	1.7 - 1.8
19	90 - 95	19	1.8 - 1.9
20	95 - 100	20	1.9 - 2.0

▲ ADDITIONAL WIND SPEED CLASSES

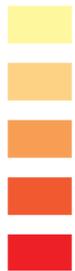


Wind Energy Development

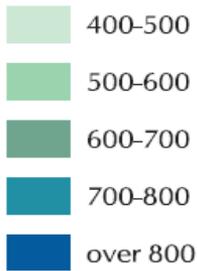
Wind Energy

Wind Power, Watts/Sq Meter

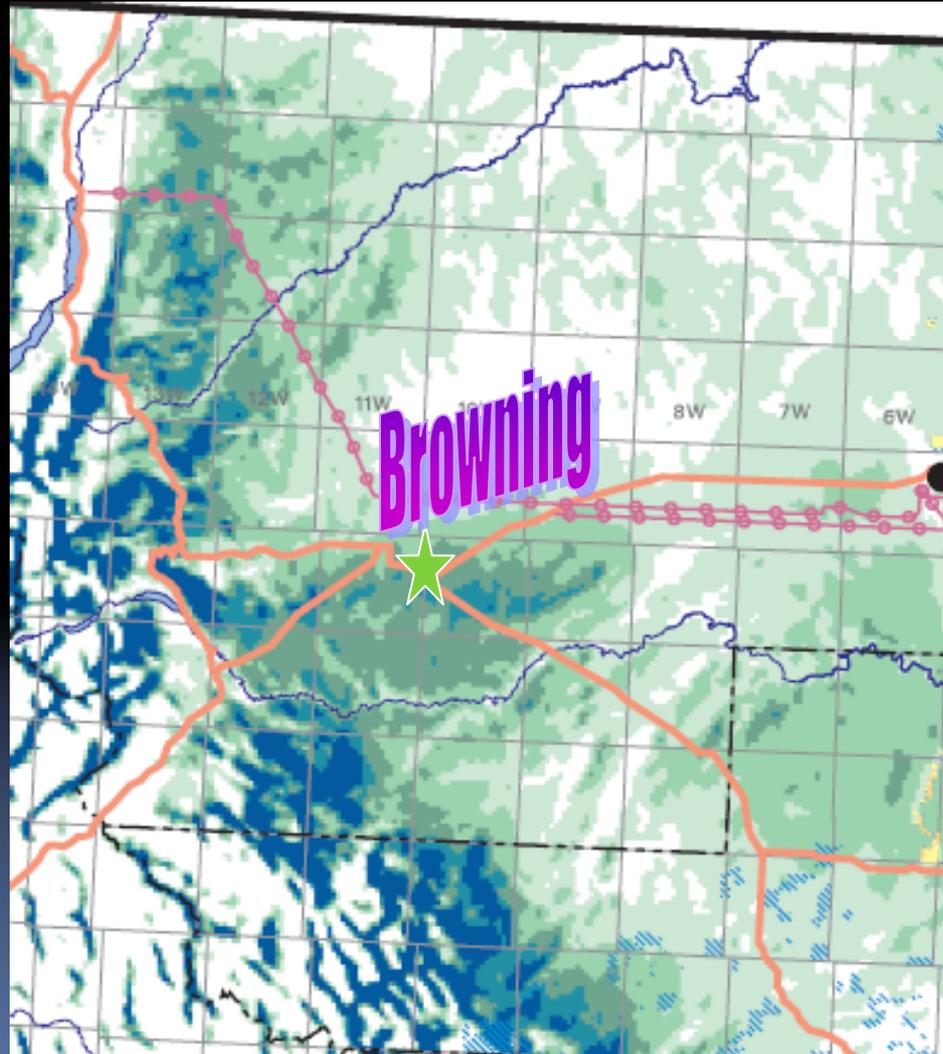
On Qualified
State Land



On Other
Lands

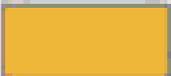
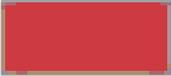
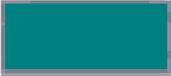


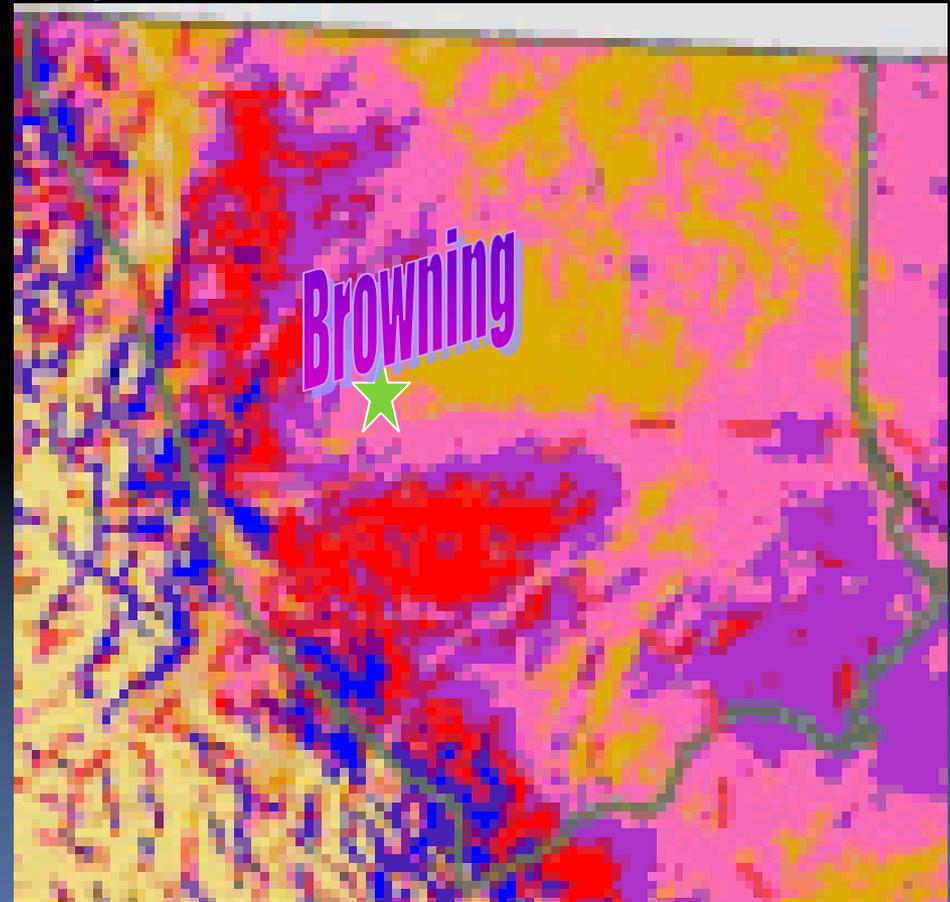
400-500
500-600
600-700
700-800
over 800



Wind Energy Development

Wind Energy

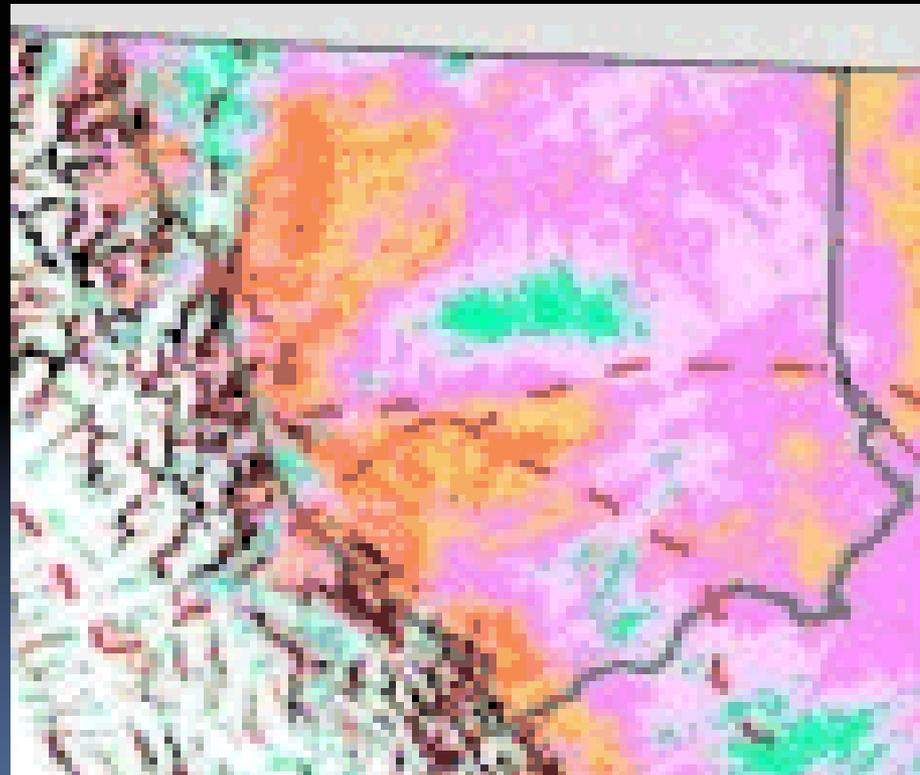
	Wind Power Class	Resource Potential
	Class 1	Poor
	Class 2	Marginal
	Class 3	Fair
	Class 4	Good
	Class 5	Excellent
	Class 6	Outstanding
	Class 7	Superb



Wind Energy Development

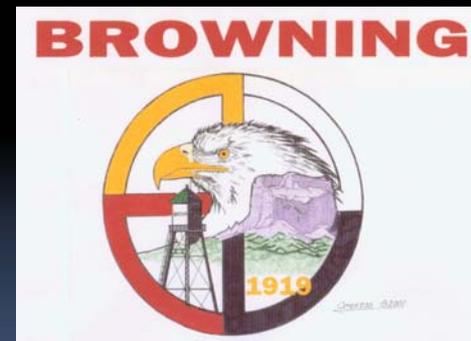
Wind Energy

Wind Speed at 50 meters		
	m/s	mph
	0 - 5.0	0 - 11.2
	5.0 - 5.5	11.2 - 12.3
	5.5 - 6.0	12.3 - 13.4
	6.0 - 6.5	13.4 - 14.5
	6.5 - 7.0	14.5 - 15.7
	7.0 - 7.5	15.7 - 16.8
	7.5 - 8.0	16.8 - 17.9
	8.0 - 8.5	17.9 - 19.0
	8.5 - 9.0	19.0 - 20.1
	9.0 - 9.5	20.1 - 21.3
	9.5 - 10.0	21.3 - 22.4
	>10.0	>22.4



Wind Power for the Wastewater Treatment Plant

- In late 1999, the Town of Browning, Montana and the Blackfeet Nation installed four **Bergey Excel** 10-kilowatt (kW) wind turbines adjacent to the Town's sewage treatment plant.
- Turbines provided about one-quarter of the plant's electricity, displacing energy bought from the grid.



Wind Power for the Wastewater Treatment Plant

- This project was funded primarily with a DOE grant (\$180,000 cash). Other project participants also made cash and in-kind contributions (Blackfeet Housing Authority, \$25,000 cash; Town of Browning, \$25,000 cash; Siyeh, \$5,000 in-kind).
- Browning has a significant wind resource. Because the project objective is to displace grid electricity, the site had to be located adjacent to the treatment plant.
- **Installation:** Siyeh, Town of Browning & a consultant coordinated the construction of the civil works.
- **Community Involvement:** Local manpower was used to construct the civil works and install the turbine.

Wind Power for the Community

Small-Scale Utility Grade Wind Turbine Demonstration & Feasibility Study (1994-1996) |

- The project included measurement of wind resource at several sites on the reservation, and the installation and operation of a utility-grade 100-kilowatt wind turbine.
- The turbine supplied electricity to the tribal community college, and excess power was sold to the local utility.



Renewable Energy Development Opportunities

Hydropower

- Firming & Reserve Power to support Blackfoot Wind Energy Generation
- St. Mary Canal Rehabilitation Project
 - Power from Pumped Hydro Power, Canal Drops, Sherburne Dam
 - Feasibility Study for canal drops done
 - Feasibility Study for Pumped Hydro Power needed
- Design & Engineering plans are conducive for producing Hydropower

Renewable Energy Development Opportunities

BIOMASS

- Fuels for Schools Project –coordinating with the Browning Public School District & Blackfeet Forestry Development Program to provide wood chips to new school
- Biodiesel Project (small scale) currently assessing our opportunity

Renewable Energy Development Opportunities

"Biofuels, made from crops such as camelina will help America solve its energy supply problems while bolstering agriculture."

~ Montana Governor
Brian Schweitzer



Camelina can be used to make biodiesel, an environmentally friendly alternative to diesel fuel. Camelina grows well in Montana, can be planted on marginal land and uses little water and fertilizer.

Renewable Energy Development Opportunities

SOLAR POWER

Hydrogen Power

Contact

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