






*And as I looked and wept, I saw that there stood on the north side of the starving camp a sacred man who was painted red all over his body, and he held a spear as he walked into the center of the people, and there he lay down and rolled. And when he got up, it was a fat bison standing there, and where the bison stood a sacred herb sprang up right where the tree had been in the center of the nation's hoop. The herb grew and bore four blossoms on a single stem while I was looking – a blue, a white, a scarlet, and a yellow, and the bright rays of these flashed to the heavens*

*I know now what this meant, that the bison were the gift of a good spirit and were our strength, but we should lose them, and from the same good spirit we must find another strength.*

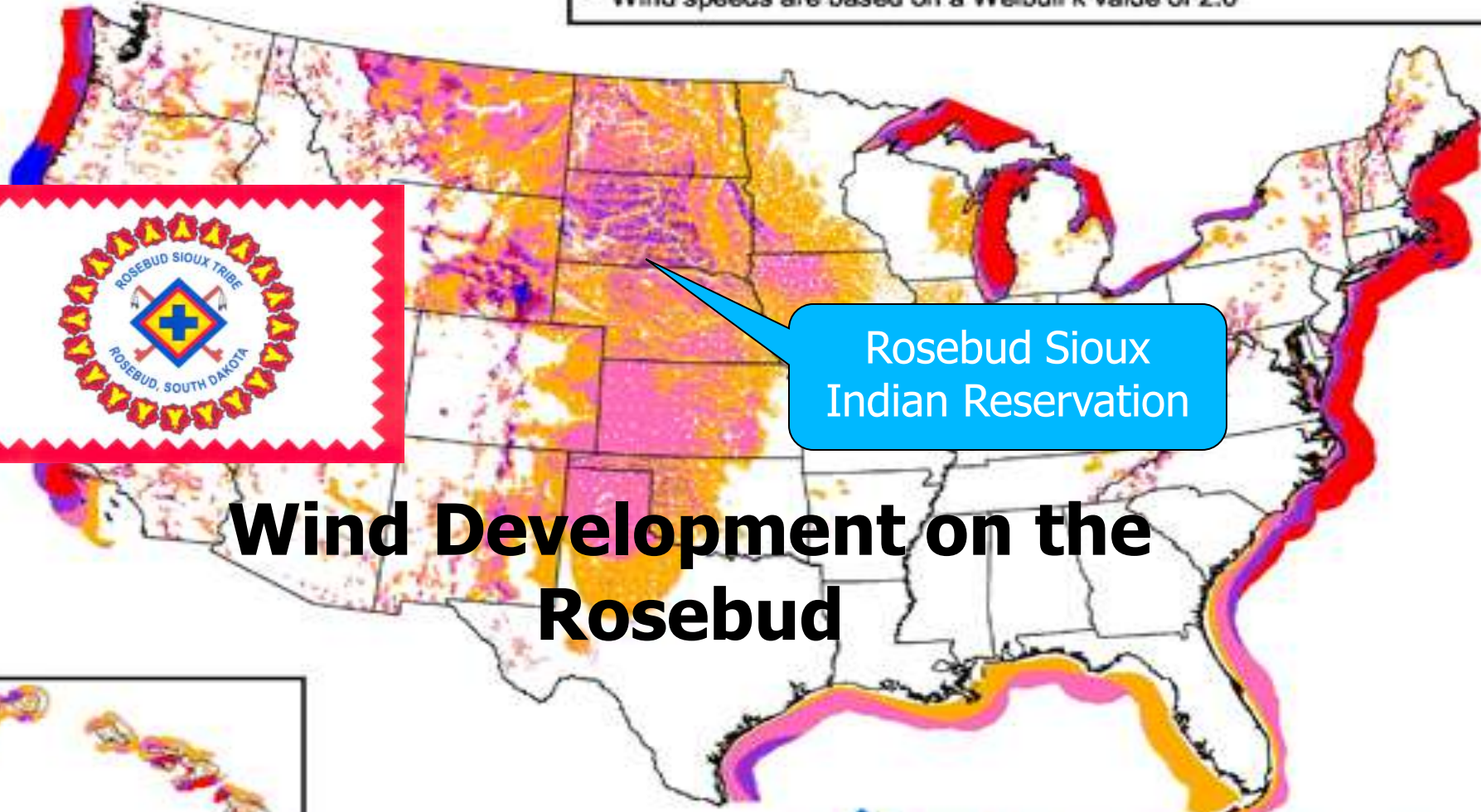
**From the book, Black Elk speaks, 1932**



## Wind Power Classification

Wind Power Class	Resource Potential	Wind Power Density at 50 m $W/m^2$	Wind Speed <sup>a</sup> at 50 m m/s	Wind Speed <sup>a</sup> at 50 m mph
	3 Fair	300 - 400	6.4 - 7.0	14.3 - 15.7
	4 Good	400 - 500	7.0 - 7.5	15.7 - 16.8
	5 Excellent	500 - 600	7.5 - 8.0	16.8 - 17.9
	6 Outstanding	600 - 800	8.0 - 8.8	17.9 - 19.7
	7 Superb	800 - 1600	8.8 - 11.1	19.7 - 24.8

<sup>a</sup> Wind speeds are based on a Weibull k value of 2.0

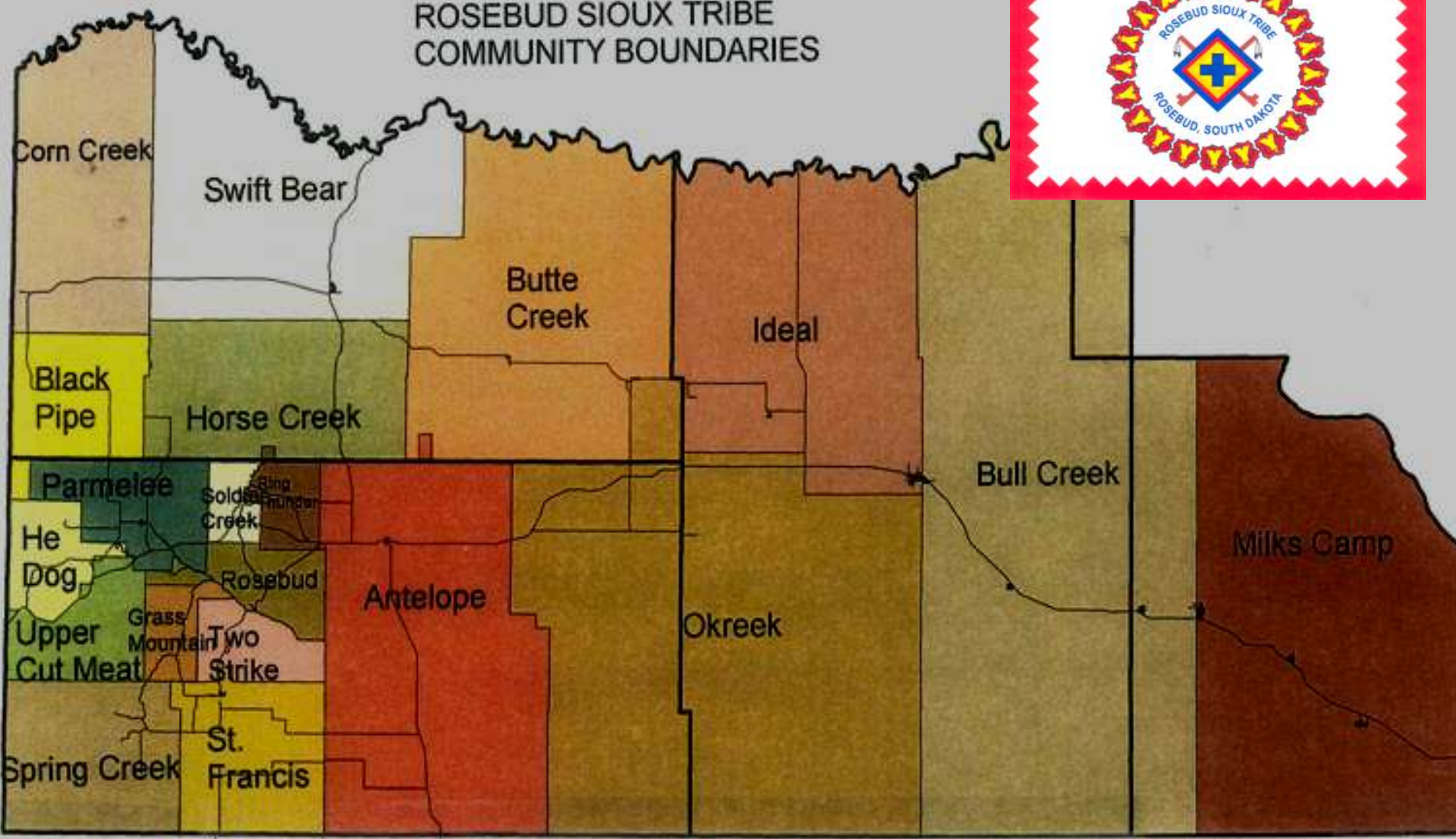


Rosebud Sioux Indian Reservation

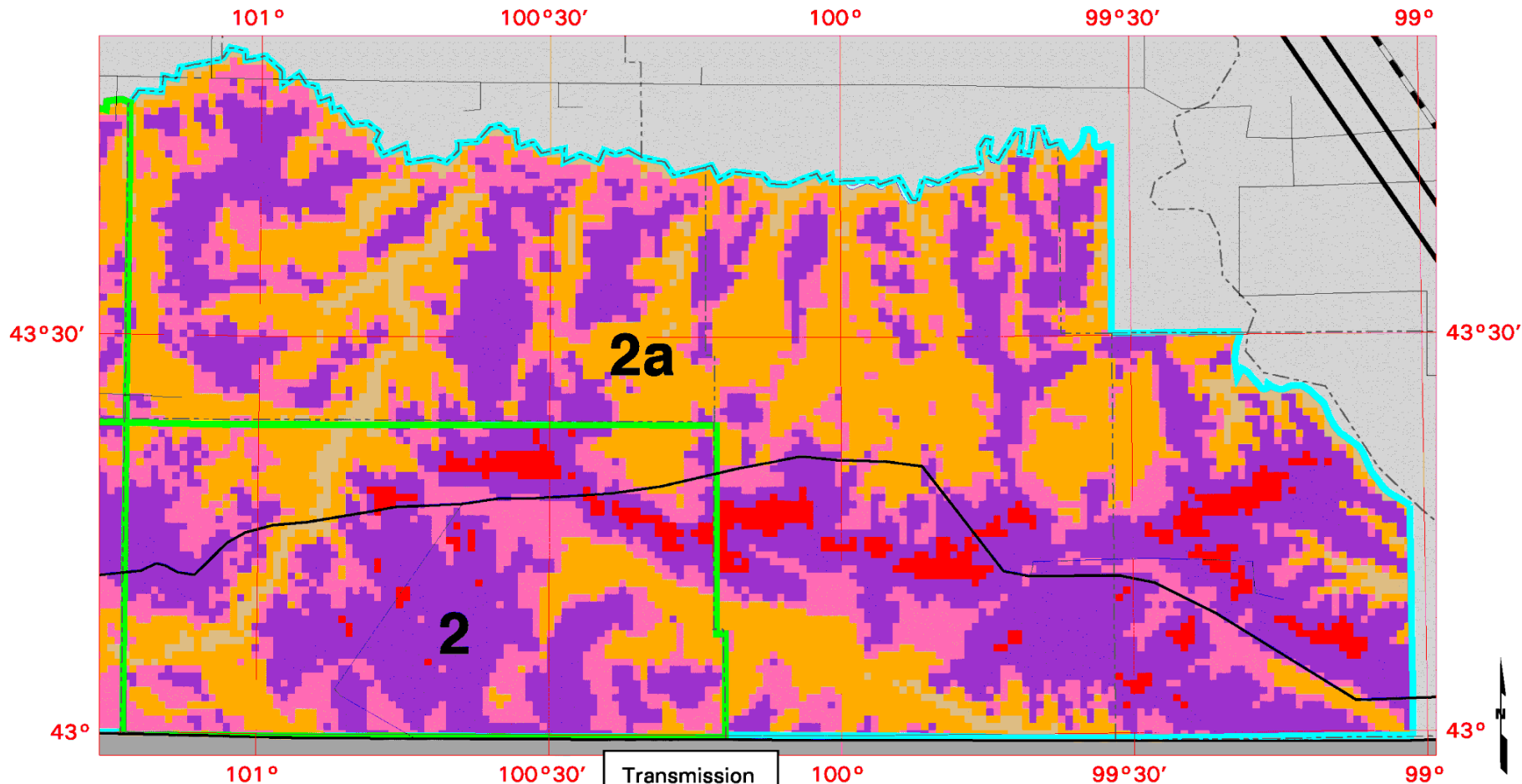
# Wind Development on the Rosebud



ROSEBUD SIOUX TRIBE  
COMMUNITY BOUNDARIES



# South Dakota - Rosebud Reservation Wind Resource Map and Capacity

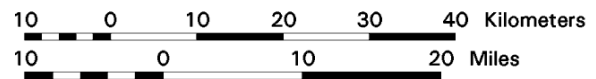


Wind Power Classification				
Wind Power Class	Resource Potential	Wind Power Density at 50 m W/m <sup>2</sup>	Wind Speed <sup>a</sup> at 50 m m/s	Wind Speed <sup>a</sup> at 50 m mph
2	Marginal	200 - 300	5.6 - 6.4	12.5 - 14.3
3	Fair	300 - 400	6.4 - 7.0	14.3 - 15.7
4	Good	400 - 500	7.0 - 7.5	15.7 - 16.8
5	Excellent	500 - 600	7.5 - 8.0	16.8 - 17.9
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Transmission Line Voltage	
	69 Kilovolts
	115 Kilovolts
	230 Kilovolts
	345 Kilovolts

	Federal Facility
	City or Town



Indian Reservations	Wind Electric Potential (MW)	
	Class 4 - 6	Class 2 - 6
Rosebud	17,400 - 34,800	25,750 - 51,500
-Original Boundary	30,280 - 60,560	48,975 - 97,950

**Proposed North Antelope Highlands Wind Farm, 190Mw**

**Met towers installed in 2009**

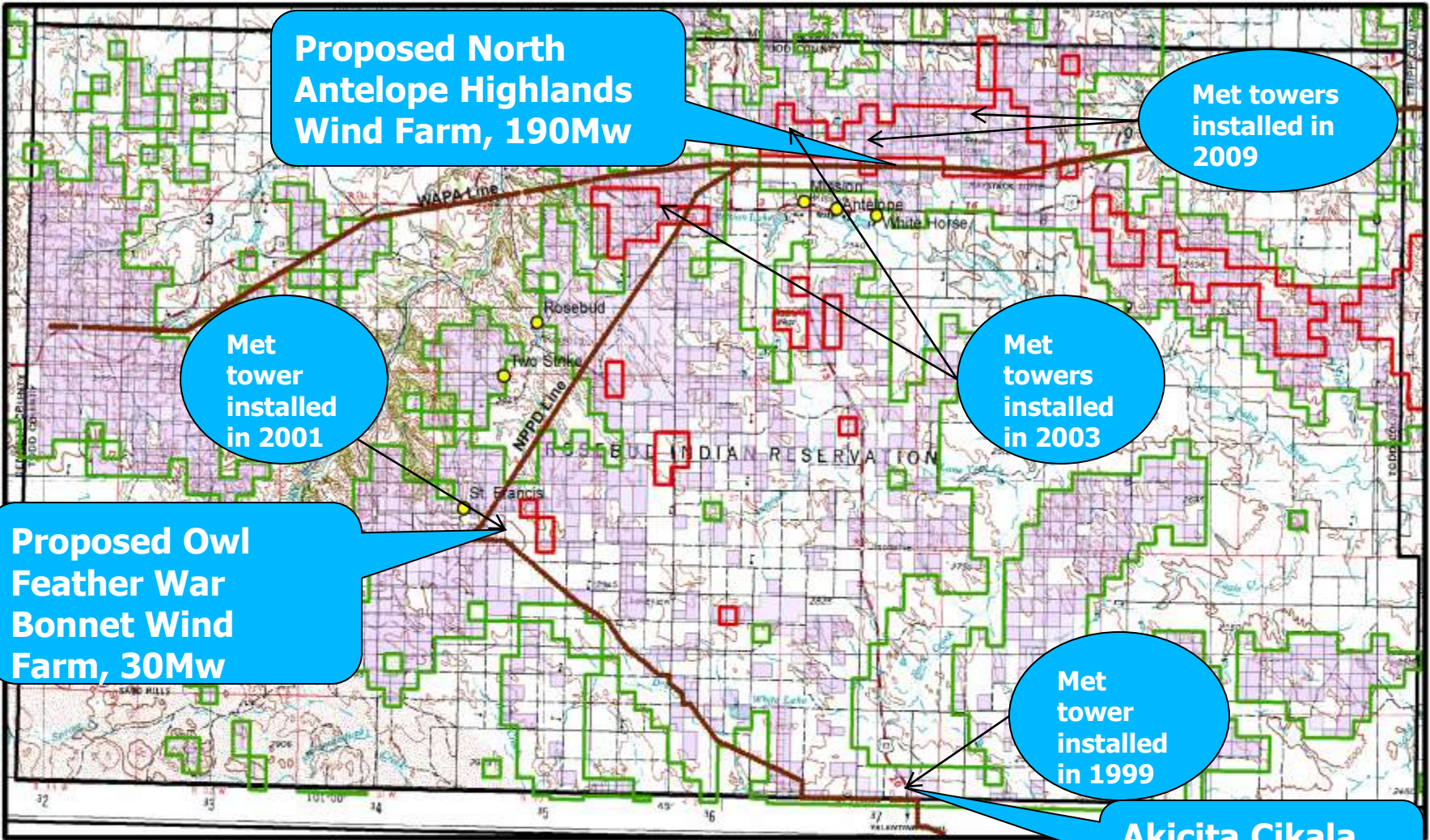
**Met tower installed in 2001**

**Met towers installed in 2003**

**Proposed Owl Feather War Bonnet Wind Farm, 30Mw**

**Met tower installed in 1999**

**Akicita Cikala  
750 Kw turbine**



- Wind Potential Class 6
- Wind Potential Class 5
- Tribal Trust Lands within Wind Class 5 and 6
- County Line
- WAPA and NPPD Poles

Tribal Trust Lands within Wind Class 5 and 6 in Todd County  
(Includes Tribal land, Allotment Land, and Trust Deed Land)

Total Trust Land within Wind Class 5 in Todd County = 232,094 Acres

Total Trust Acres within Wind Class 6 in Todd County = 35,116

Martin, SD Topographic Map  
Scale 1:250,000

# Akicita Cikala Turbine

## Neg Micon 750kw

### Commissioned March 2003



# Owl Feather War Bonnet Wind Farm

2003 Dept. of Energy Grant

DOE Funding \$448,551.00

DISGEN Cost share/in-kind \$78,750.00

RST/TUC Cost share/in-kind \$27,272.00

<http://apps1.eere.energy.gov/tribalenergy/pdfs/rosebud03final.pdf>

# Development time lines

## Owl Feather War Bonnet Wind Farm

- Awarded DOE Grant in Summer of 2003
- Commenced Environmental Reviews and Cultural Studies in 2003
- RST Council approval of Grant of Use and Lease Agreement w/DISGEN Inc. in Nov. 2006
- Gathered and submitted all Environment Assessment data to Lead Agency, BIA Dec. 2007
- Project received Findings Of No Significant Impact in Feb. 2008
- After BIA approval of lease agreement, RST reaffirmed Agreement of DISGEN Inc. Aug. 2008



## **Development Issues**

- **Commercial load is nowhere near and project needs to move power almost 1000 miles**
- **Tariff and Wheeling Fees are impeding economics**

# Rosebud Sioux Tribe and Citizens Wind

RFP was issued in Fall of 2007, 3 firms responded and RST chose Citizens Wind and entered into an MOA in December of 2008 for a 5 year period of development.

Basic Agreement: Citizens has exclusive wind rights over all Tribal lands for a period of 2.5 years, at end of the 2.5 year, they must identify land and start paying a lease agreement securing the lands. In the remaining 2.5 years they must have in the ground at least one operating wind farm. All data gathered will be shared.

The RST and Citizens Wind are considered partners in the development phase, initially the RST had a 20% interest with Citizens having a 80% interest as they bring the development knowledge and money to the table, and we bring our land and wind to the projects.

DOE award of 1.5 Million to assist in the development costs garnered the tribe a 33/67 split in development fees.

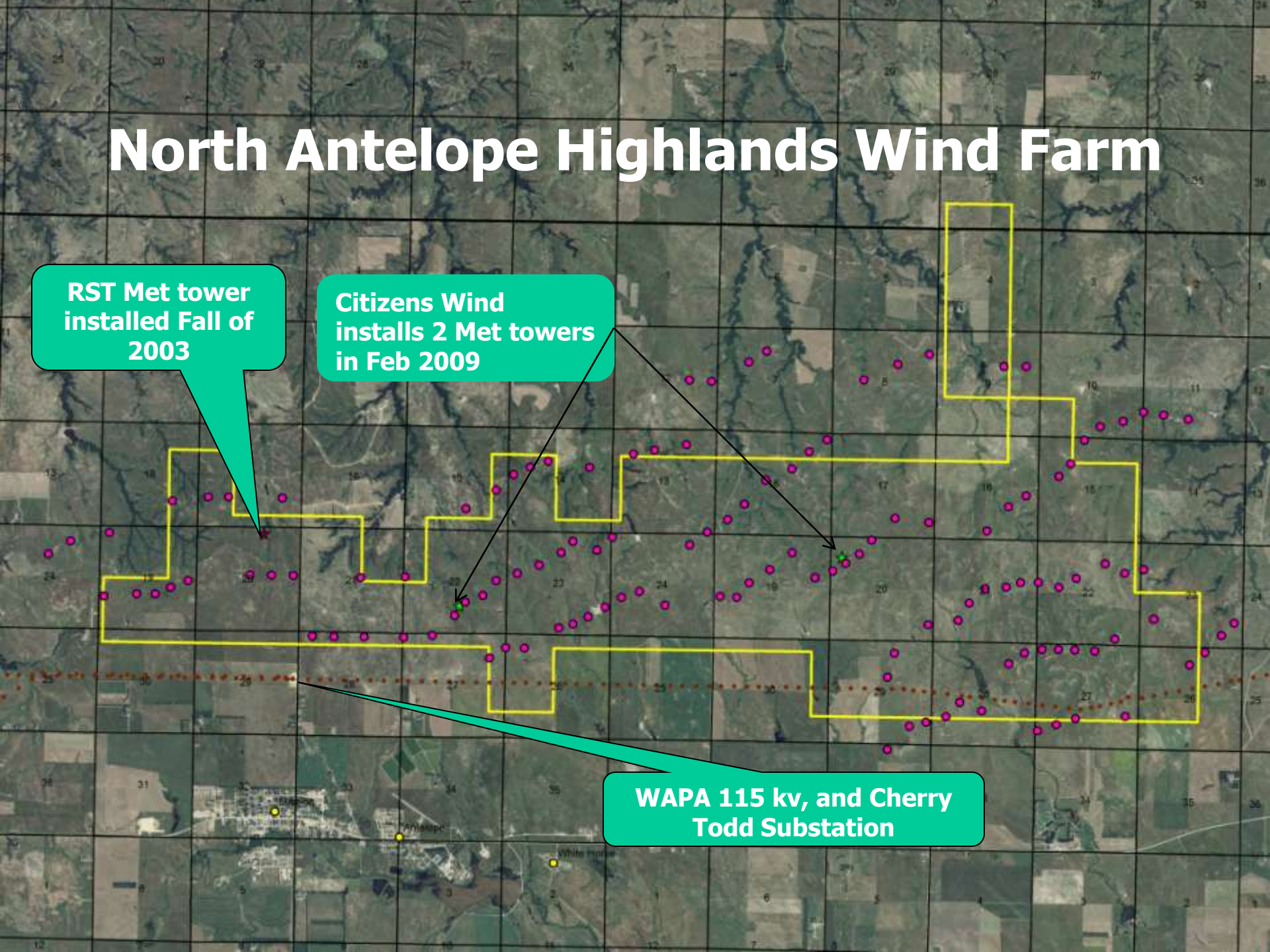
We intend to charge \$100,000.00 per Mw in development fees to the future owner of the wind farm/s. For every Mw developed RST will receive \$33,000 per Mw immediately after financial closing.

# North Antelope Highlands Wind Farm

RST Met tower installed Fall of 2003

Citizens Wind installs 2 Met towers in Feb 2009

WAPA 115 kv, and Cherry Todd Substation



# North Antelope Highlands Project timelines

- Jan '09, a preliminary Systems Impact Study identified approx. 190Mw of capacity remained on WAPA 115kv that runs through the reservation West and East
- Feb '09, Citizens filed interconnection request with WAPA for the North Antelope Highlands project , a 90Mw and a 100Mw wind farm with a queue positions on this line of #2 and #3
- Feb '09, Citizens set up 2 extra MET towers on site to gather additional data and correlate with RST wind data, collective wind data indicates site is in Class 7.

# North Antelope Highlands timelines continued

- Throughout the spring, summer and fall of 2009, Avian field studies were conducted on the site and are complete.
- Citizens developed a site layout on turbine locates with 127 turbine locates to date. At this time we plan on using GE 1.5 Mw
- Fauna and Flora field studies are complete
- Bat surveys are complete
- Cultural studies , Class I and III are to be conducted fall of 2010
- Submit Environmental Assessment to Lead Agency BIA, March 2011
- Complete System Impact Study by WAPA, (we hope) by Dec. 2011
- FONSI awarded summer of 2011
- Capacity to respond to any RFP available in 2011

# Economic Benefits to RST

## Project cost est. @ \$418,000,000.00

- At financial closing of project if the wind farm is developed at 190 Mw, the Project will charge a *Development Fee* of \$100,000.00 per Mw toward the new owner. 190Mw = \$19,000,000.00
- As Per MOA and JV agreement, Citizens Wind and Rosebud Sioux Tribe to share this at 67/33%, with the RST getting \$6,270,000.00 prior to construction.
- Inject approx. \$15,000,000.00 in construction dollars locally, hiring ironworkers, carpenters and equipment operators for a period of 9-12 months.

# General Contractors 4% sales/use tax on material, as per our existing tribal state agreement

Generally there is the assumption that a wind project has a 70% cost in turbines/materials.

If any of the contractors do not pay a sales or use tax up to 4% on any of the materials coming from anywhere, another state, they are obligated to pay a sales/use tax to the State of SD/Tribe. Their invoices will show this.

$\$418 \text{ Mill} \times 70\% \text{ material cost} = \$292,600,000.00$

$\$292.6 \times 4\% = \$11,704,000.00$  of which the tribe will get 88% of this when the General Contractor files his taxes with the state and he pays what is indicated.

A potential of  $\$10,299,520.00$

## Commercial Operations RST Revenue Stream

In the agreement, the LLC shall pay the tribe 3.5% of Gross Revenue Stream over the next 20 years, with PPA escalating at 2.5% annually.

Based on a price of \$47.50 per Mwh, assumptions of wind data and turbine performance.

$\$36,651,864.19 \times 3.5\% = \$1,282,815.20$  in year one.



## HB 1320, State Tax on Wind Farms (in lieu of Property Tax)

Based on 190 Mw farm, the state will charge the owner of the wind farm if not owned by the tribe:

**Capacity taxes:** \$3.00 per kilowatt,  $\$3.00 \times 190,000\text{kw} = \$570,000.00$  per year (county or tribe(?) receives this back each year.)

**Production taxes:** 2% against gross revenue stream = \$733,037.28 in year 1, and the state keeps 80% of this, (County or tribe(?) gets 20%)

Rebates 90% 1<sup>st</sup> 5 years, 50% 2<sup>nd</sup> 5 years

Total taxes paid to state \$1,303,037.28

County or tribe(?) gets all of capacity taxes: \$570,000.00

County or tribe(?) gets 20% of production taxes: \$146,607.46

## Operations and Maintenance

- Hire approx. 14 technicians and a financial manager
- Approx. \$500,000.00 in annual wages that comes directly from the project not the revenue stream
- Sinte Gleska University and Mitchell Vo-Tech have entered into agreement with support from RST to train 10 Wind Smiths annually

## **RST use of revenue stream**

- Develop a reservation wide distributed generation system, to lessen our dependence on the larger grid to become self sustainable.
- Tribe to start our own tribal utility company, purchasing the existing distribution system from the local cooperative.
- Support our people by upgrading the efficiency of their houses, retrofitting their heating and cooling systems with renewable energy devices such as small wind turbines and photovoltaic panels through grant/loans.
- Support start up funding for small private/tribally owned companies developing residential and community scale renewable energy devices , with the intent to expand outward beyond the reservation boundaries to much larger markets creating jobs and industries.

# Contact Information



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