DOE TEP 2004

INTERTRIBAL
Council On Utility Policy

COUP

Tribes Building Sustainable Homeland Economies
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Northern Great Plains - Indian Reservation Wind Resource Map

INTERTRIBAL Council On Utility Policy

Intertribal Wind Planning and Policy Project (IWPPP)

Intertribal COUP

2004 DOE TEP Grant

[All base maps courtesy of NREL]
The TREMENDOUS WIND POWER RESOURCES Found on the NORTHERN GREAT PLAINS INDIAN RESERVATIONS:

Twenty Northern Plains Indian Reservations hold several hundred gigawatts of wind power potential.

Wind power potential on these Indian Reservations alone is more than enough to meet North American Kyoto targets.


Intertribal COUP
INTERTRIBAL WIND PLANNING AND POLICY PROJECT

- WIND ASSESSMENT
  - 50 Meter Met Tower Loan Program

- BUSINESS AND MARKET DEVELOPMENT
  - 80 MW Intertribal Wind Project
  - Feasibility Studies
  - Site Selection
  - Environmental Review
  - Pre-Development
  - Interconnection Studies
  - Economic Modeling
  - Market Development
    - Basin Electric Power Cooperative
    - WAPA
    - Green Tags
    - EIDC
INTERTRIBAL WIND PLANNING AND POLICY PROJECT

- TRANSMISSION AND INTERCONNECTION STUDIES
  - 80 MW Sites
  - WAPA Rates
  - Study on Non Renewable Fuels Replacement with Windpower
  - Regional organizations

- POLICY ANALYSIS AND FEDERAL PROCUREMENT
  - Basin Electric
  - WAPA Supplemental Power
  - Corps of Engineers
  - Federal Green Tags
  - EJ Interagency Working Group
  - EIDC
  - Tribal Policies
INTERTRIBAL WIND PLANNING AND POLICY PROJECT

• MODEL INTEGRATED RESOURCE PLAN (IRP)

• ENERGY EFFICIENT HOUSING DESIGN
  • Design Team
  • EE Building Code Research
  • Model Housing Design

• CAPACITY BUILDING
  • Wind Interest Group
  • GP Tribal Chairmans Association
  • Tribal Councils
  • Districts and Communities
  • WPA and NREL
  • Workshops on Wind Development and Policy
  • COUP Internship

• PROJECT PLANNING AND MANAGEMENT
Past and ongoing Tribal Environmental Justice Issues Resulting from the Construction of Hydropower Dams

- Reburial at Standing Rock due to dams - Summer 2001
- White Swan reburials - Winter 2000
- Treaty rights as Missouri River Tribe
- Tribal lands flooded and access to river lost

Intertribal Wind Planning and Policy Project
Intertribal Council On Utility Policy (COUP)

Wind Resources on Northern Plains Reservations located in the Eastern Pick-Sloan Region (Upper Missouri River Basin) of the Western Area Power Administration (WAPA) Grid

Tribal Environmental Justice Issues
Treaty rights as Missouri River Tribe
Tribal lands flooded and access to river lost

Reservoir separates reservation
Village relocated twice
Jurisdictional issues over "takings lands"

Wind Power Classification

<table>
<thead>
<tr>
<th>Wind Power Class</th>
<th>Wind Resource Potential</th>
<th>Wind Power Density at 50 m m/s</th>
<th>Wind Speed at 50 m kph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>0 - 200</td>
<td>0.0 - 5.6</td>
<td>0.0 - 12.5</td>
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<tr>
<td>Marginal</td>
<td>200 - 300</td>
<td>5.6 - 6.4</td>
<td>12.5 - 14.3</td>
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<tr>
<td>Fair</td>
<td>300 - 400</td>
<td>6.4 - 7.0</td>
<td>14.5 - 15.7</td>
</tr>
<tr>
<td>Good</td>
<td>400 - 500</td>
<td>7.0 - 7.5</td>
<td>15.7 - 16.8</td>
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<tr>
<td>Excellent</td>
<td>500 - 900</td>
<td>7.5 - 8.0</td>
<td>16.8 - 17.9</td>
</tr>
<tr>
<td>Outstanding</td>
<td>600 - 800</td>
<td>8.0 - 8.8</td>
<td>17.9 - 19.7</td>
</tr>
</tbody>
</table>

Wind speeds are based on a Weibull k value of 2.0

Intertribal COUP
Council On Utility Policy
Rosebud Sioux & Intertribal COUP
Environmental Justice Revitalization Plan:
3,000 MWs of Tribally Owned Wind Power Across the Northern Great Plains
Financed Through Sales of Energy and Environmental Attributes (“Green Tags”)

Rosebud/COUP EJ Revitalization
Tribal Wind Power Plan

Phase 1 (Up and Running):
750 kW Turbine on Rosebud Indian Reservation
1st Tribally owned, large scale utility turbine
Commissioned March 4th, Dedicated May 1st, 2003

Phase 2 (2004/5):
30 to 50 MW Wind Ranch on Rosebud Reservation

Phase 3 (2004/5):
80MWs: 10 MW Wind Ranches on 8 Reservations

Replicate across the Northern Great Plains

Phase 5 (2010):
3,000 Tribal MW on Great Plains Reservations

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RST Resources Development
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FEDERAL-TRIBAL COLLABORATIVE PARTNERSHIP
ENVIRONMENTAL JUSTICE REVITALIZATION Through
RENEWABLE ENERGY DEVELOPMENT

- Grassroots Intertribal initiative to overcome environmental injustices and successfully realize Tribal aspirations for community revitalization and energy development
- Development of Sustainable Tribal Homeland Economies based upon renewable energy generation
- Long-term Tribal employment, development and capacity building in collaboration with federal departments and agencies
IWPP Project”
Phases Two & Three
Strategically promotes explicit Tribal and Federal Policies aimed at addressing:

- Development of *Sustainable Tribal Homeland Economies* based upon renewable wind energy (Intertribal COUP, GPTCA)
- Native American Environmental Justice and Community Revitalization concerns (Interagency Working Group)
- Staged development of significant new renewable energy generation (White House /DOE/WAPA/Wind Powering America/RUS)
- Progress towards announced goals for sustainable economic/energy development and employment in Indian Country (White House /DOE/DOI/BIA)
The “IWPP Project”
Phases Two & Three
Strategically promotes explicit Tribal and Federal Policies aimed at addressing:

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TRIBAL WIND - FEDERAL HYDROPOWER:
Breaking the Positive Feedback Loop in the CO2 Energy Cycle

- Drought and Reduced Mountain Snowpack
- Excessive Rainfall and Flooding

- Present drought and precipitation shifts that are consistent with changing climate scenarios associated with increased levels of CO2 from coal fired power plants-- the “New Normal”!
- Missouri River dam operations are managed by the Corps of Engineers based upon the last 100 years of flow -- Hydropower production for WAPA based on the “Old Normal”.
- Hydropower is only an incidental responsibility of the Corps of Engineers which holds back water due to drought and flood conditions, resulting in less hydropower production.
- Hydropower marketing administration (WAPA) buys lignite coal power to offset hydropower shortfalls, which only increases the atmospheric CO2 intensity, resulting in greater drought and precipitation shifts, leading to ...

Tribal Wind can replace diminishing Federal Hydropower on Federal Transmission Grid.

Intertribal COUP
Council On Utility Policy
Northern Plains Reservations in WAPA-PS Service Territory:

Eleven of 23 Reservations with anemometer wind data in 2002

Reservations with available wind data: 4 in North and 4 in South Dakota, 2 in Montana, and 1 in Nebraska.

Reservations with no wind data available: 4 in Montana, 4 in South Dakota, 3 in Nebraska and 1 in Wyoming.
PHASE ONE: 750 kW Wind Turbine - Rosebud - 2003

First 750 kW utility scale wind turbine to be owned and operated by the Rosebud Sioux Tribe through a Tribal partnership with Department of Energy (DOE), the Rural Utilities Service (RUS/USDA), DisGen, Inc. (Engineering) and NativeEnergy, Inc. (Green Tags)
PHASE TWO A: 30-50 MW Wind Ranch - Rosebud - 2004

First Tribal Utility Scale 50 MW Wind Ranch to be owned and operated by Rosebud Sioux Tribe through a Tribal partnership with Department of Energy, Rural Utilities Service w/ other federal / private partners for Green Power & Tag sales.
PHASE TWO B: Distributed Intertribal Wind Ranch - 2004-5
All COUP Reservations Will Have Commercial Anemometer Wind Data

GOAL 2005:
- 50 meter tower
  anemometer wind data
  for ALL COUP Tribes
- Intertribal Wind
  Development Plan among
  Interested COUP Tribes

Intertribal COUP Tribes
in North and South Dakota:

- Without Wind Data
- With Wind Data
- Commercial Data
- 30-50 MW Ranch
- .75 MW
By end of the 2004 Wind Season

- Tribes with commercial wind anemometer data:
- Tribes with operational 100 to 750 kW wind turbines:
- Tribes with commercial wind clusters/ ranches: 10 MW, 50 MW
PHASE THREE: Distributed 80 MW Intertribal Wind Ranch
10 MW Clusters Distributed Across 8 COUP Reservations - 2004-5

GOAL 2004-5: 130.75 MW of COUP Tribal Wind Developed in the Dakotas

First Intertribal Wind Ranch to be owned and operated by the COUP Tribes through federal and private collaboration and partnerships for Green Power and Green Tag sales. Intertribal COUP will encourage and support data collection for all Tribes.

Intertribal COUP Tribes in North and South Dakota:

- With wind data .75 MW
- 10 MW Cluster
- 50 MW Ranch

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PHASE THREE: Northern Plains Reservations:
All COUP Tribes have at least 10 MW wind clusters by 2005

COUP Tribes and/or Affiliates with DOE wind projects
PHASE FIVE: Northern Plains Reservations
All Interested Great Plains Indian Reservations Have Commercial Wind Ranches by 2007-10

Intertribal COUP Proposal to Western Area Power Administration:
Distributed Wind Facilities of up to 150 MWs on each Reservation
Total Tribal Wind Generation of up to 3,000 MWs

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A Few Statistics

43% of all Native Americans in the lower 48 are in Western’s service area
29 counties where Tribal population > 25%
17 counties where Tribal population > 50%
300+ Tribes in Western’s service area
1.96% of the population in Western’s service area are Indian
1.2% of Western sales & revenue come from Tribes
• Cities & Tribes are on WAPA grid as eligible WAPA “Preference Customers”
• Federal trust responsibility to Tribes
• Sustainable Homeland Economies
• Great Wind/Hydro Dynamo Potential
• Diminishing Hydropower Resource
• Once 100% renewable, now only 20% hydropower and 80% coal
• Restore Federal Renewable Energy Grid 30% wind / 20% hydro / 50% coal-gas
WAPA / WIND INTEGRATION STUDY AREA
Includes Several Reservation Interconnection Sites

http://www.wapa.gov/ugp/study/DakotasWind/Zone%20Map.pdf

www.EnergyIndependenceDay.org    Intertribal COUP
Learning That We Live in A WINDSHED!

The Richest Renewable Energy Regime in the World is Just Upwind from the Region of Greatest Energy Consumption and Acid Rain Impacts in North America!!

Sustainable Homeland Economic Development based on Tribal Wind Energy Generation

Downwind communities support and benefit from Tribal Wind Energy


Intertribal COUP
A CHOICE: In this decade, the Northeastern U.S. can have the downwind fossil fuel emissions of at least ...

5,700 MWs of “New Coal” Development

There are 5,700 MW of new coal generation projected for the “high boundary” case announced in the four northern Great Plains (MT, WY, ND & SD) states through 2007, complete with:

- 31,986,746 tonnes of CO2 (contributing to global warming)
- 28,962 tonnes of SO2 and 22,770 tons of NOx, (acid rain downwind), and
- 691 kilograms of mercury (air borne toxin to downwind waters & wildlife) estimated to be annually associated this new fossil fuel development.


Intertribal COUP
With “Tribal Green Tags” the WindSHED can support the development on Tribal lands of at least 3,000 MW of New Tribal Wind Generation.

- *Tribal Green Tags* (downwind environmental benefits associated with upwind clean energy development) generated by tribally owned, utility scale wind turbines developed on Northern Great Plains Indian Reservations.
- *Tribal Green Tags* result direct and practical improvements in the economic and ecological health in our region’s WindSHED, for both the host reservations and for all the downwind communities.

Intertribal COUP Plan For Partnership: 
150 US Cities for Climate Protection 
(ICLEI ~ International Council for Local Environmental Initiatives) 
American Indian Tribes and Nations 
Coupling Urban Kyoto Commitments with 
Tremendous Tribal Renewable Resources 

American Leadership

Energy Independence Day. org

Local Government/Tribal Partnership

Signers to Date

Great Plains Tribal Chairman’s Association
Rosebud Sioux Tribe
Three Affiliated Tribes of the
Fort Berthold Indian Reservation
Lower Brule Sioux Tribe
National Congress of American Indians

Arcata, CA
Aspen, CO
Berkeley, CA
Boulder, CO
Bridgeport, CT
Brooklyn, NY
Burlington, VT
Dakota CO, MN
Denver, CO
Duluth, MN
Fairfax, CA
Hillsborough CO, FL
Hollywood, FL
Honolulu, HI
Madison, WI
Medford, MA
Minneapolis, MN
Missoula, MT
New Haven, CT
Olympia, WA
Palm Desert, CA
Rohnert Park, CA
Salt Lake City, UT
Santa Barbara, CA
Santa Cruz, CA
Somerville, MA
Stanford, CT
Vermont, VT
Williamstown, MA
Windsor, CA


Intertribal COUP

Local Governments for Sustainability
Tribal Wind / Federal Hydropower
Renewable Energy Dynamo
World’s Largest Hydropower Storage System
Could Operate as a Wind Storage Battery

TransAmerica
Generation Grid
for Wind/Hydro Dynamo

New and Upgraded Transmission Needed To Deliver
Clean Abundant Wind Power to Load Centers

http://www.windpoweringamerica.gov


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