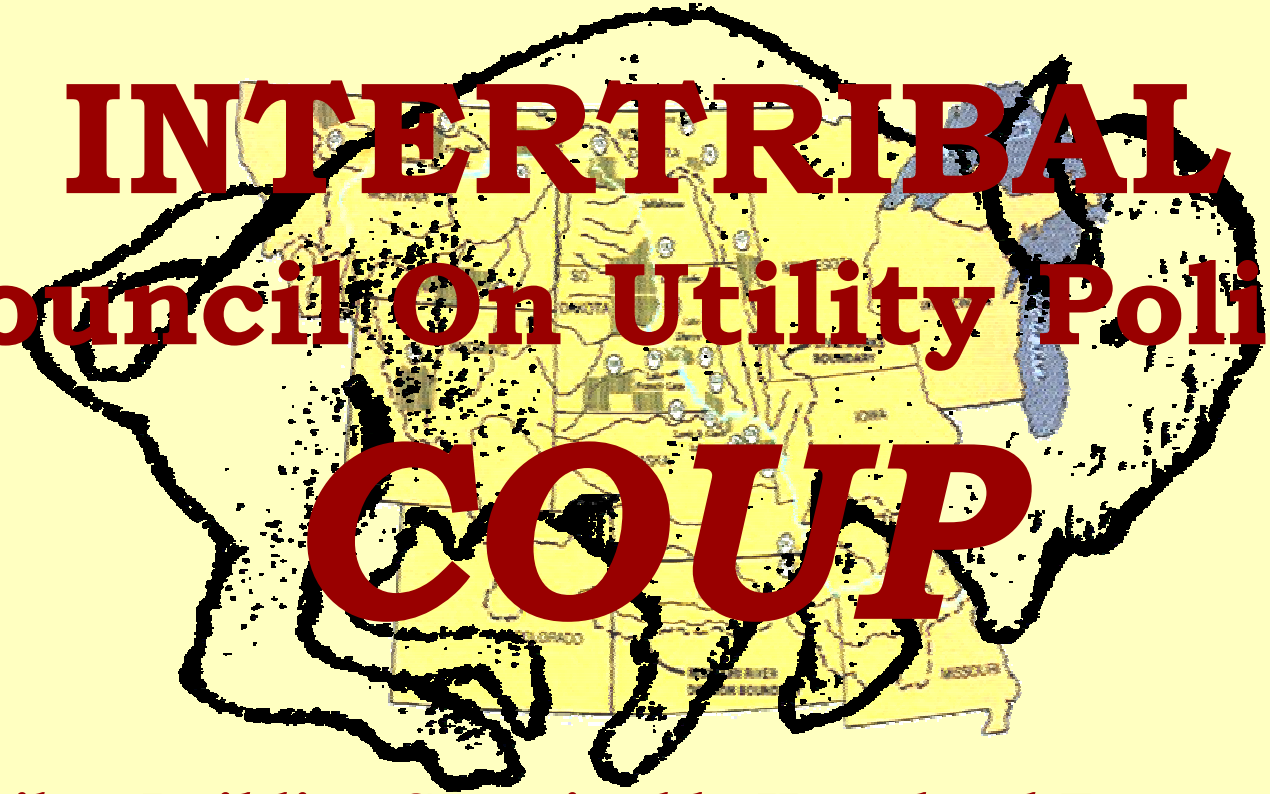
Wind Powering America
State Summit 2005
Tribal Policy Issues

Intertribal Council On Utility Policy
Bob Gough, Secretary

FERC / TRIBAL CONSULTATION



INTERTRIBAL
Council On Utility Policy
COUP

Tribes Building Sustainable Homeland Economies

P.O. Box 25, Rosebud, SD 57570

Pat Spears, President - Lower Brule Reservation, SD

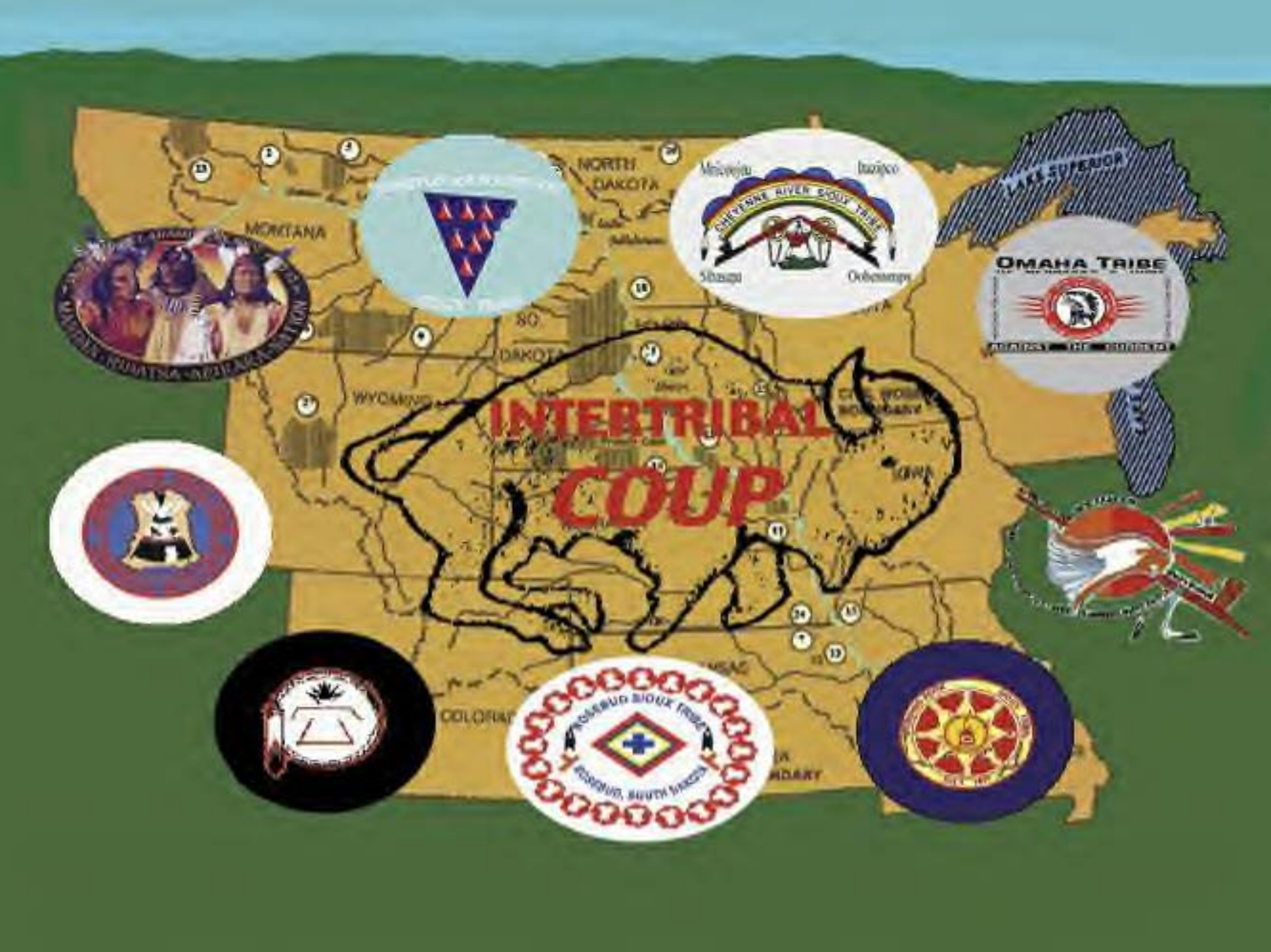
Terry Fredericks, Vice President - Ft. Berthold Reservation, ND

Bob Gough, Secretary - Rosebud Reservation, SD

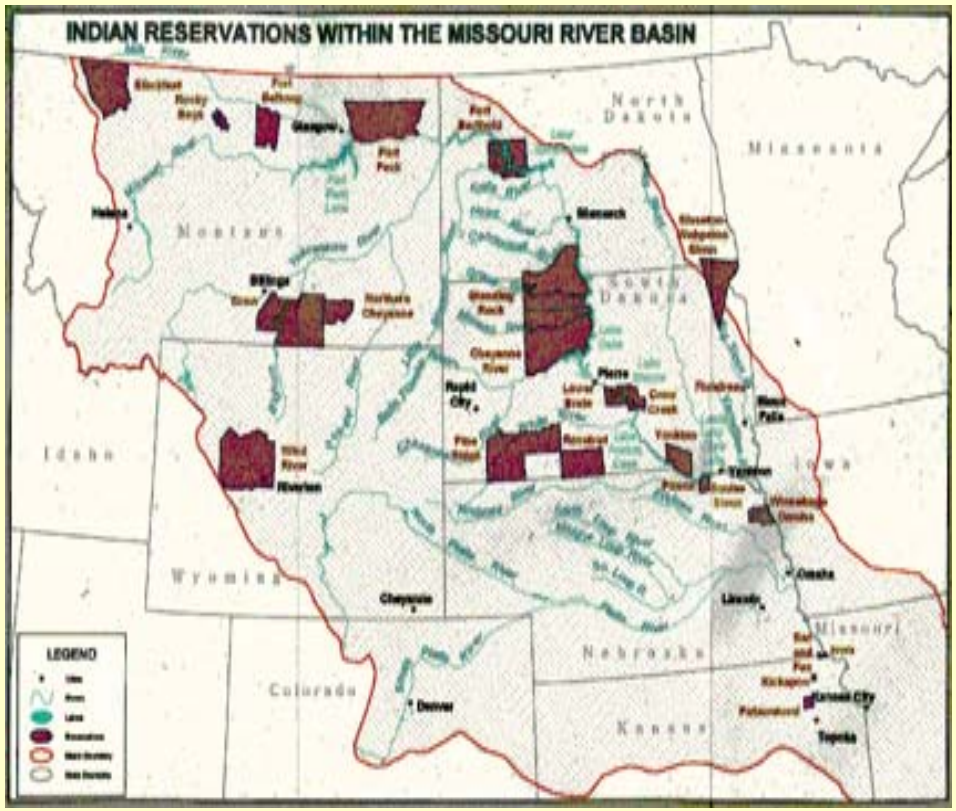
Sam Allen, Treasurer - Flandreau Santee Reservation, SD

Rpwgough@aol.com

www.EnergyIndependenceDay.org


MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
LAKE SUPERIOR
CHEYENNE RIVER SIOUX TRIBE
OMAHA TRIBE
INTERTRIBAL
COUP

Great Plains Region



Tribal Wind Development Issues

- Tribal capacity for construction, operation and maintenance of wind projects.
- Tribal governmental capacity for regulation of reservation utilities: Renewable Portfolio Standards, Netmetering

On Reservation Issues

- Resolve Demand Charge, Avoided Cost, "Green Tag" issues
- Development, implementation and enforcement of diverse policies and regulations to promote renewable energy development, such as Net-metering and Tribal Renewable Portfolio Standards.

Off Reservation Issues

- Access to Transmission Grid and Queue policies
- Imbalance penalties and forecasting
- Order 888 / RTO policies
- Wind-Hydropower integration

New Study Confirms Benefits Of Replacing Coal-Fired Electricity In Ontario

May 2005

"Coal is costing the people of Ontario more than the number on their electricity bills," Duncan said. "This study shows the true cost of coal is in air pollution-related illness, hospital visits and pre-mature deaths. That's why we are committed to replacing coal-fired generation with cleaner sources of electricity."

The study found a relationship between increased air pollution due to coal-fired electricity generation and up to 668 premature deaths, 928 hospital admissions, 1,100 emergency room visits and 333,660 minor illnesses such as headaches, coughing and other respiratory symptoms, per year.

Global Warning:

A real and present danger...

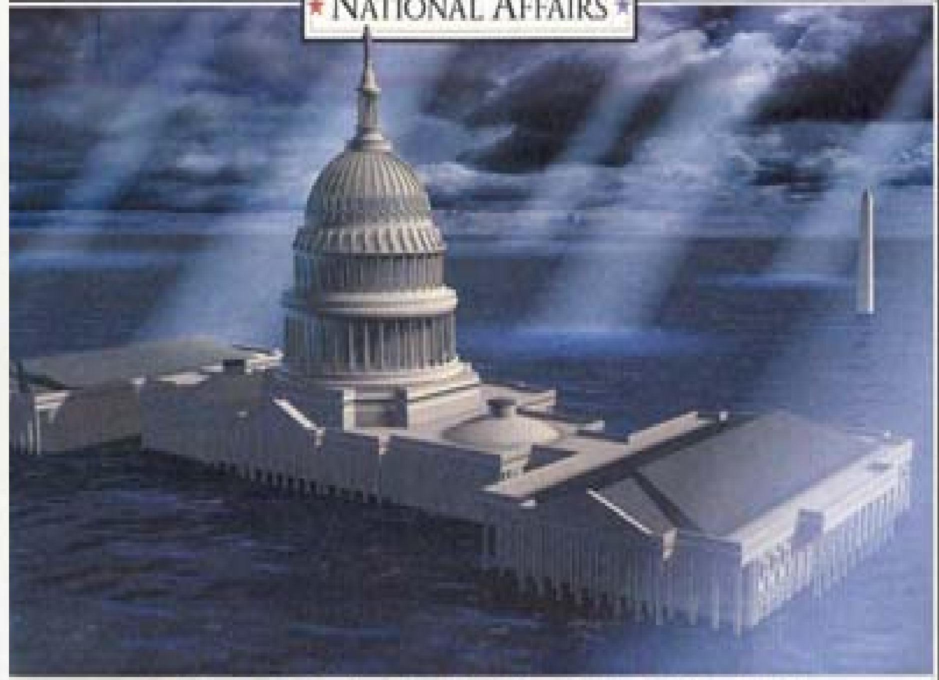
BEYOND OIL

What's next, and how we'll get there: A ROLLING STONE forum

BY AMANDA GRISCOM

THE PANELISTS

NATIONAL AFFAIRS



GLOBAL WARMING RIGHT NOW

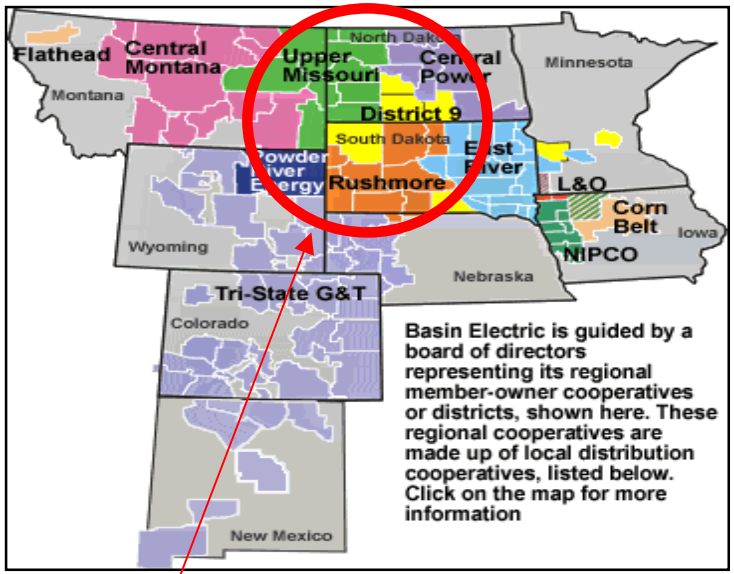
ACCORDING TO NEW RESEARCH, CLIMATE CHANGE COULD GO TWO WAYS: BAD, OR REALLY BAD. A SOBERING LOOK AT THE FACTS – DON'T SAY YOU WEREN'T WARNED

BY KATHRYN SCHULZ

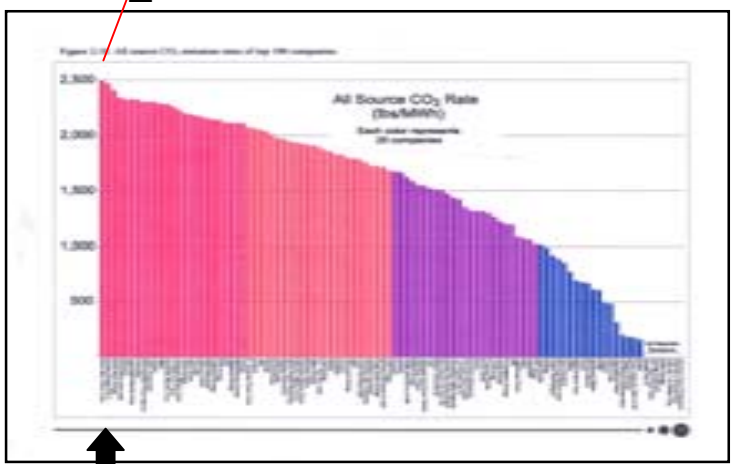
Rolling Stone

Intertribal COUP

BASIN ELECTRIC G&T RANKS #1



Highest Output of CO_2/MWh in the U.S



A recent study ranked the companies based on the amount of pollution produced relative to their power output. By that measure, Basin Electric Power Cooperative, a relatively small utility in Bismarck, ND, that relies primarily on coal-fired power plants to supply over 100 rural electric co-ops, was identified as producing the *highest output of carbon dioxide per megawatt-hour of electricity.* But the company contends that its plants are among the cleanest coal-burning plants in the nation.

"Bench marking Air Emissions of the 100 Largest Electric Generation Owners in the U.S. - 2000." Natural Resources Defense Council and Coalition for Environmentally Responsible Economies, and Public Service Enterprise Group (a Newark NJ utility). From "Study Ranking Utility Polluters Aims to Sway Emissions Debate", By NEELA BANERJEE, NYT, March 21, 2002

BASIN Electric Assn. RANKS #1

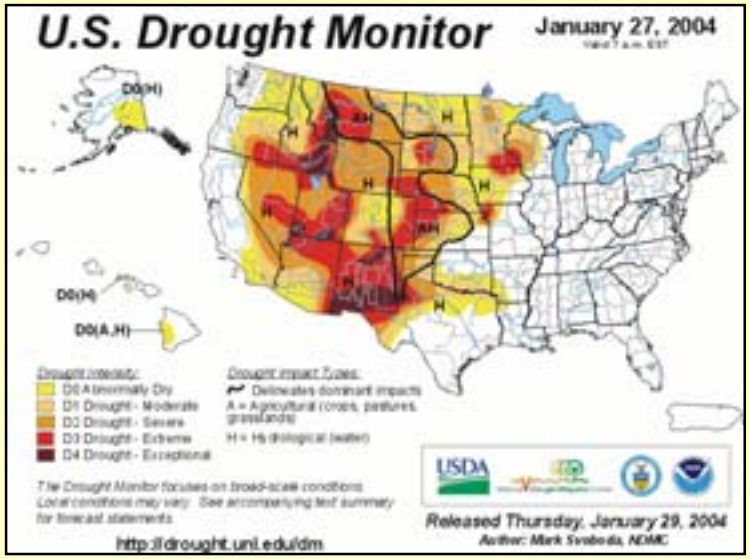
Conventional Electricity Generation Consumes Thousands of Gallons of Water per Minute!!

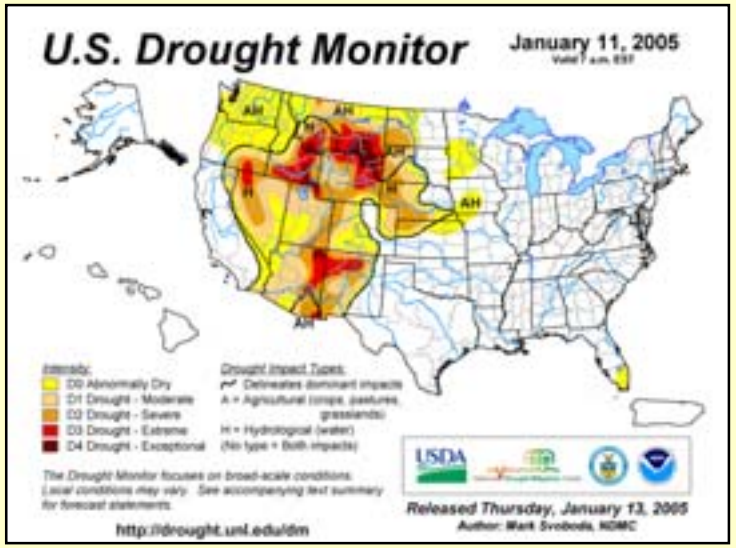
Induced-draft fans, located near the stack, pull the exhaust gases through the environmental equipment and send it up the stack. **On cold days, the white plume from the stack of this type of plant is actually just water vapor condensing. On hot days, even though the plant is operating, stack emissions are clear.**

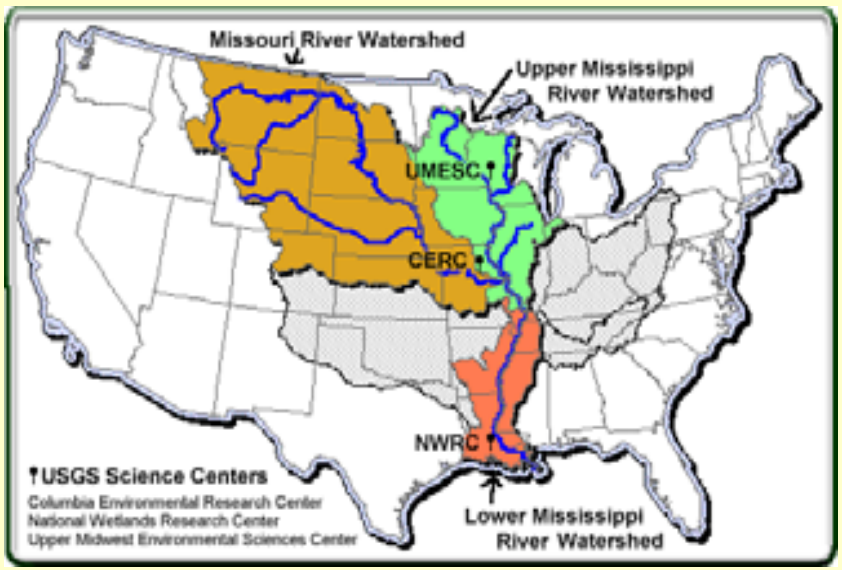
Source:http://www.basinelectric.com/

The hot water is pumped from the condenser to the top of the cooling tower. It cascades to the bottom against cool air being forced up by two dozen 22-foot diameter fans at the base of the cooling tower. **Cooling takes place by evaporating thousands of gallons of water per minute from each tower.** Not all plants use cooling towers; some pump water from a lake or river and return it.

Persistent Drought Conditions in Missouri River Headwaters

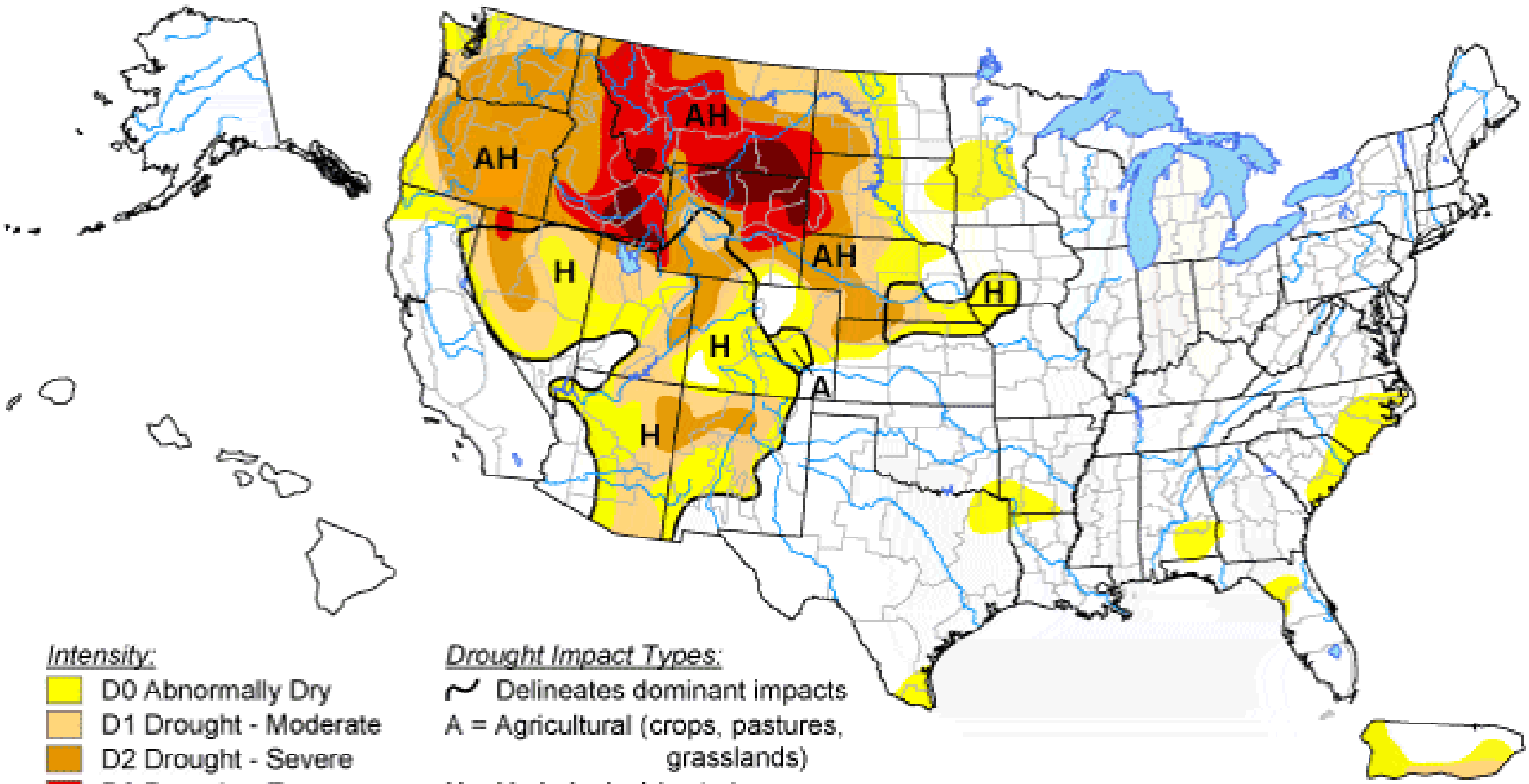






U.S. Drought Monitor

March 22, 2005
Valid 7 a.m. EST



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:
- ~ Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)
- (No type = Both impacts)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

Released Thursday, March 24, 2005

Author: Mark Svoboda, NDMC

NATIVE PEOPLES-NATIVE HOMELANDS CLIMATE CHANGE WORKSHOP

– Final Report –

Nancy G. Maynard, Editor

CIRCLES OF WISDOM

U.S. Global Change Research Program

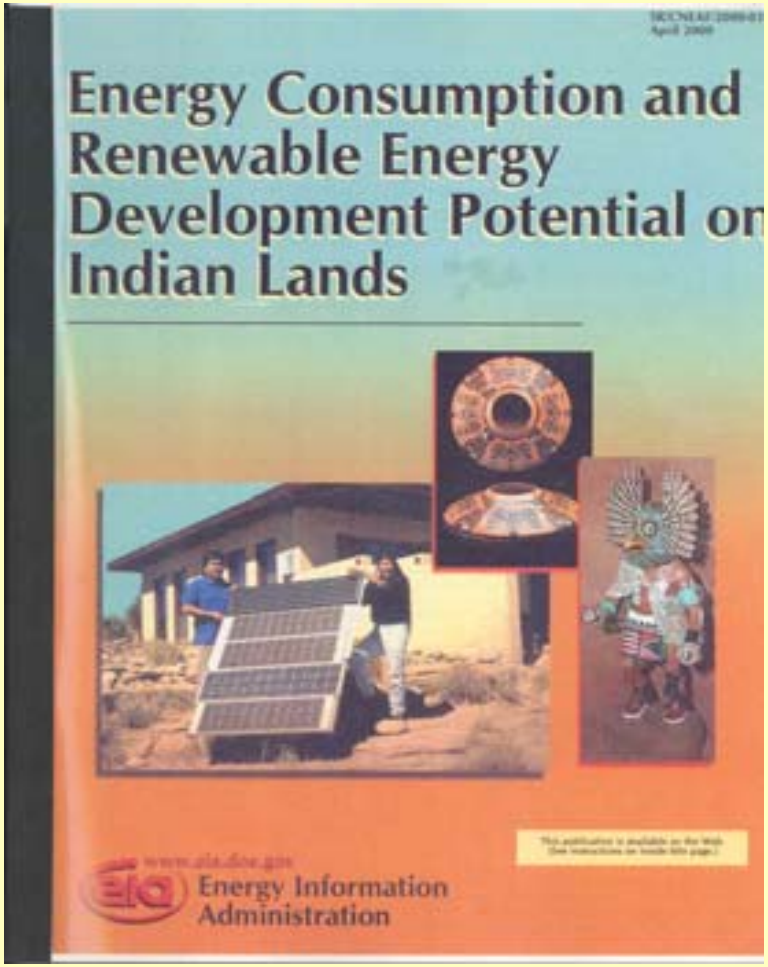
OCTOBER 28 – NOVEMBER 1, 1998
Albuquerque Convention Center
Albuquerque, New Mexico

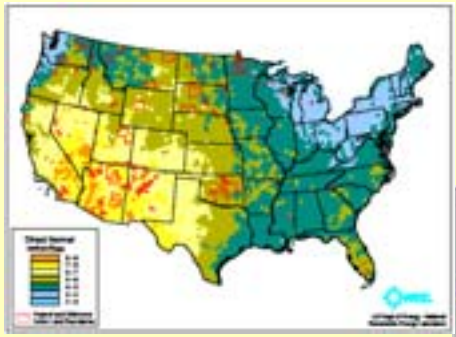
Sponsors:
The National Aeronautics and Space Administration
American Indian Chamber of Commerce of New Mexico
City of Albuquerque

"Entering the 21st century, a prime Native strategy encourages the development of sustainable homeland economies to ensure survival as Nations and for the restoration of a more balanced climate for Mother Earth. The Strategy includes the protection of naturally diverse ecosystems and the use of renewable energy technologies."

www.usgcrp.gov/usgcrp/Library/nationalassessment/native.pdf

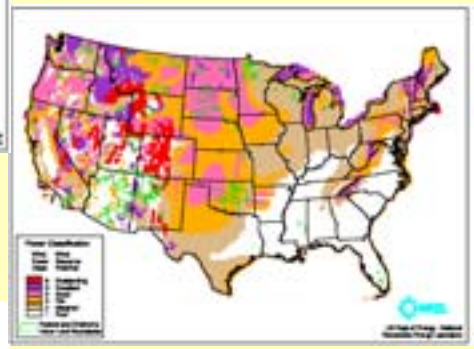
TRIBES HAVE A WEALTH OF RENEWABLE RESOURCES

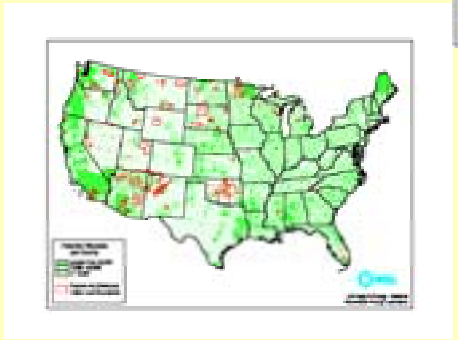




Solar

Wind





Biomass

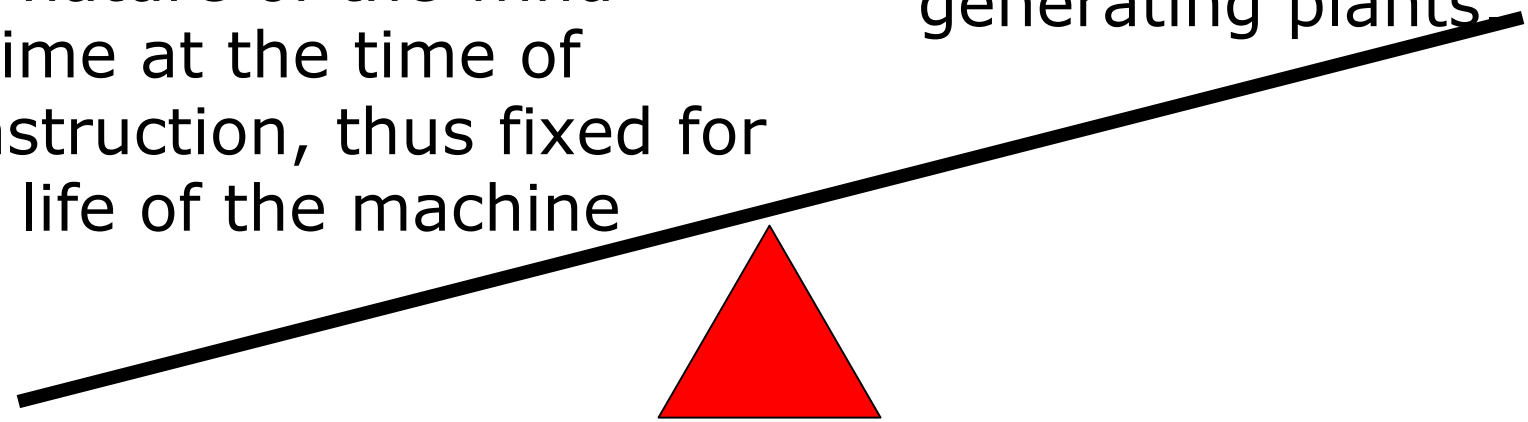
Geothermal

http://www.eia.doe.gov/cneaf/solar.renewables/page/pubs.html

Longterm Economic Advantage of Fixed Cost of Windpower

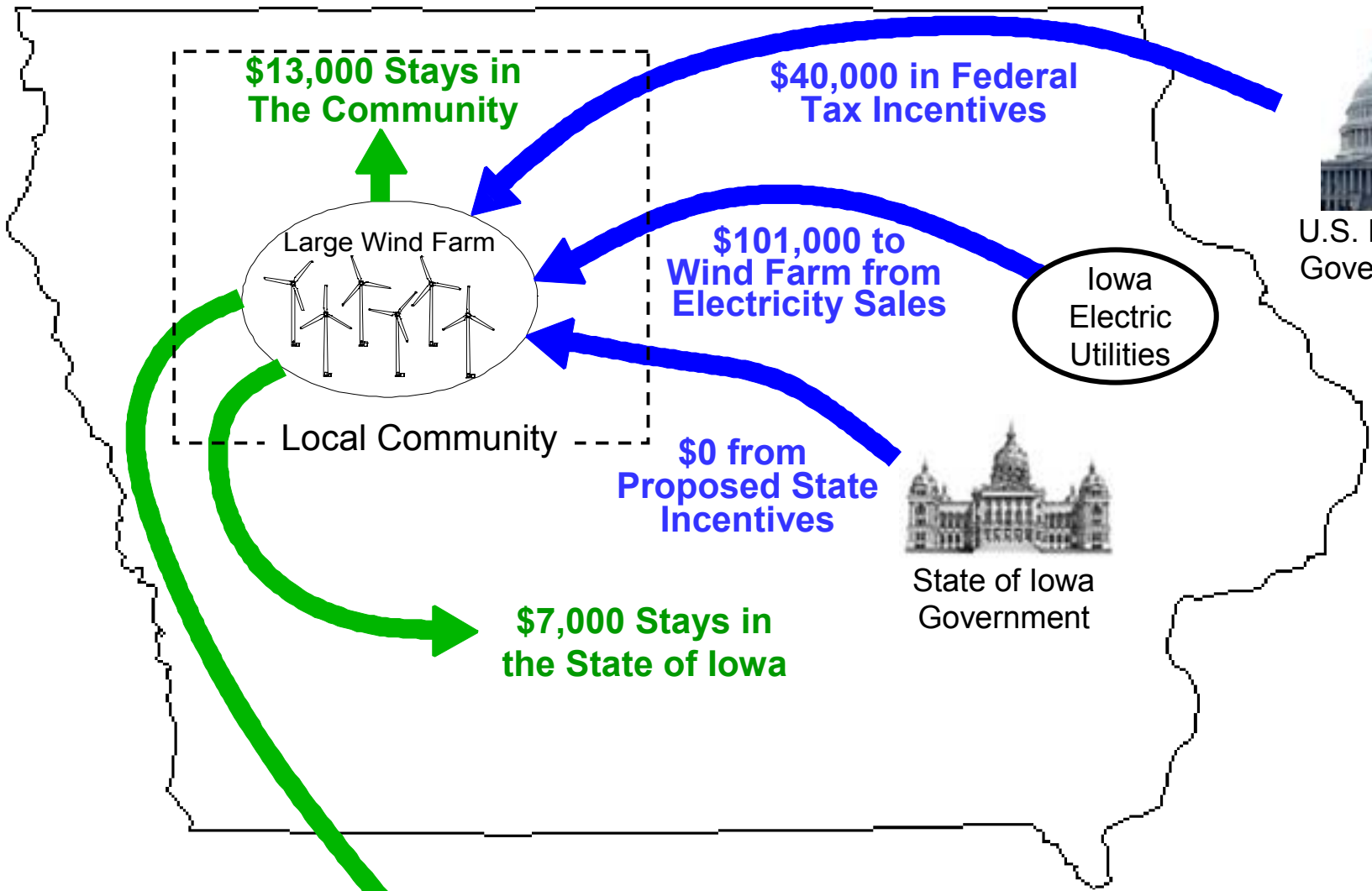
Wholesale electricity price of wind is basically the cost of the installation and the nature of the wind regime at the time of construction, thus fixed for the life of the machine

Wholesale electricity prices are likely to be higher because of rising prices for natural gas and oil used to fuel generating plants.



Single upfront capital cost vs. Capital + longterm fuel cost

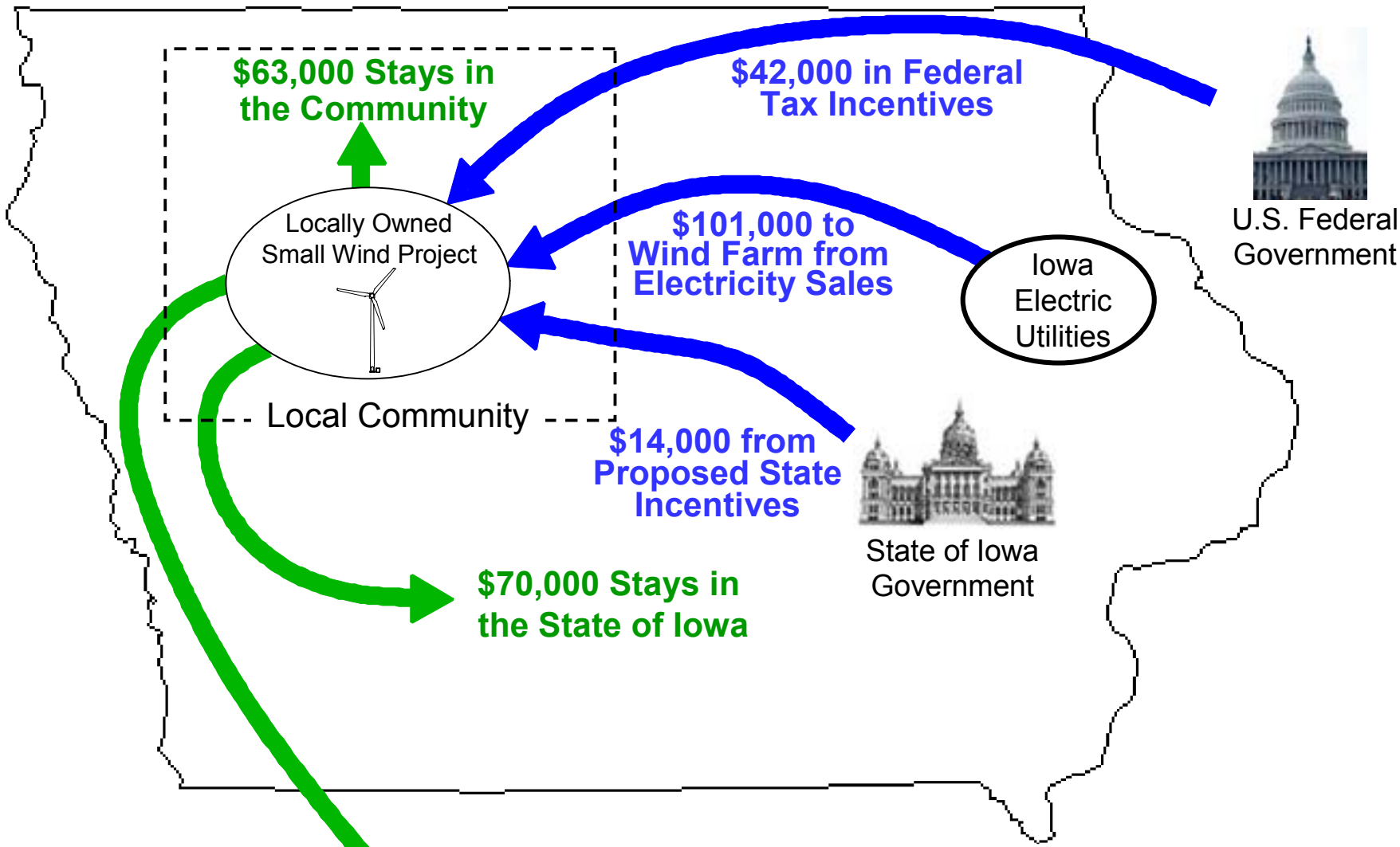
Typical Average Annual Cash Flows for 1 MW from Large Wind Farm Generation Capacity Owned by Out-of-State Companies



Based on simplified model using average annual cash flows over expected 25-year life of wind turbines and normalized to 1 MW of wind generation capacity

Wind Utility Consulting

Typical Average Annual Cash Flows for 1 MW from Small Wind Farm Generation Capacity Owned by Local Community Members



Based on simplified model using average annual cash flows over expected 25-year life of wind turbines and normalized to 1 MW of wind generation capacity.

Wind Utility Consulting

Comparison of Typical Average Annual Operating Cash Flows Over the Life of the Wind Generation Project

Where the Dollars Go for 1 MW of Wind Generation Capacity	Large Wind Farm Projects $ per Year	Small Locally-Owned Wind Farm Projects $ per Year	Difference $ per Year
Dollars Staying in Community	$13,000	$63,000	$50,000
Additional Dollars Staying in Iowa	$7,000	$70,000	$63,000
Dollars Leaving Iowa	$122,000	$25,000	($97,000)

Notes to Table

The Power Purchase Agreement is 3 ¢ per kWh in both cases. The locally-owned wind farm receives a 1¢ per kWh tradable tax credit for 10 years. The capital and operating costs of the large wind farm were assumed to be 10% less proportionately than that for the small wind farm. The dollars in the above table include all operating and maintenance expenses, property taxes, loan payments, profits, and federal tax benefits. The majority of the differences in cash flows between the two wind farms is caused by the source of financing and the retention of profits and federal tax benefits. These were assumed to stay in Iowa for a locally-owned wind farm. No allowance or evaluation of state income tax impacts is included in the above data. The local economic impact of these differences in cash flows has not been evaluated.

Renewable Energy Incentives:

Production Tax Credit (PTC)

(Current Law expires 12/2005)

- ***Sec. 45. - Electricity produced from certain renewable resources***
- ***(d)*** *Definitions and special rules*
- ***(3)*** *Production attributable to the taxpayer*
- *In the case of a facility in which more than 1 person has an ownership interest, except to the extent provided in regulations prescribed by the Secretary, production from the facility shall be allocated among such persons in proportion to their respective ownership interests in the gross sales from such facility.*

Renewable Energy Incentives:

Production Tax Credit (PTC)

(Current Law expires 12/2005)

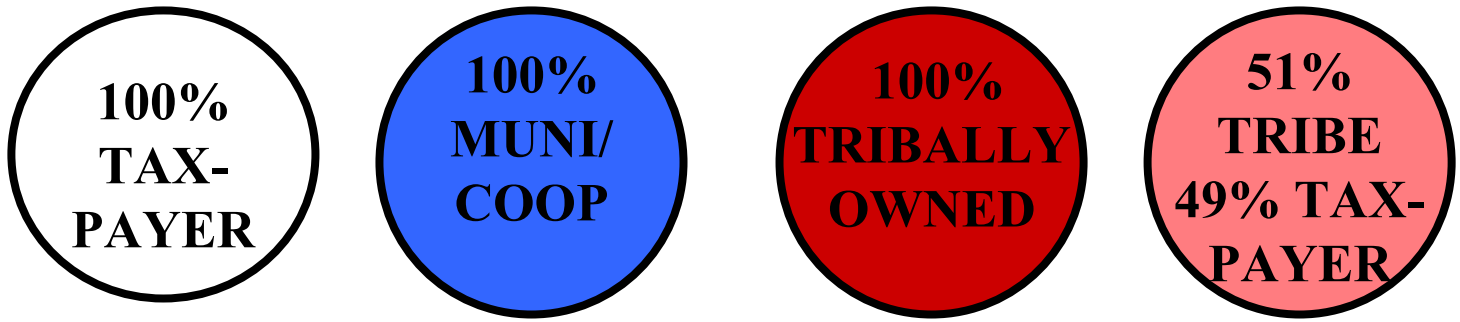
- PTC **[26 USC 45]** is the single, most important economic driver in promoting the development of wind power in U.S.
- A renewable electricity production tax credit subtracted from federal income taxes is available for electricity produced from certain renewable resources.
- Unavailable to tribally owned projects since Tribes can not use a "tax credit"

Renewable Energy Incentives:

Renewable Energy Production Incentive (REPI)

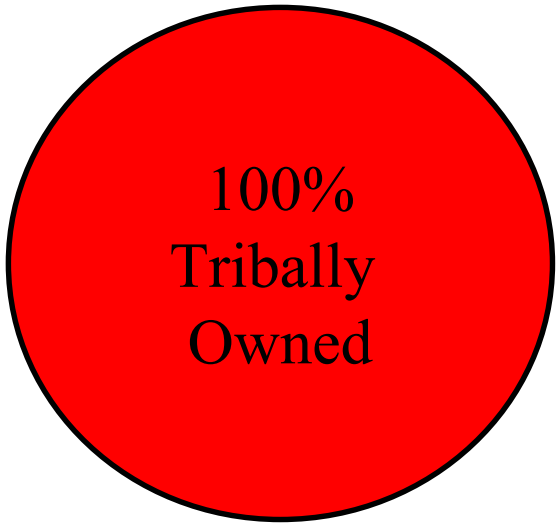
- REPI designed for "State and local government entities (such as municipal utilities) and not-for-profit electric cooperatives" between Oct 1,1993- Sept 30, 2003)
- REPI provides financial incentive payments for electricity produced and sold by new qualifying renewable energy generation facilities.
- REPI draws from an annually appropriated pool of money.

Current Federal Renewable Energy Incentives: Applicability of the PTC and REPI

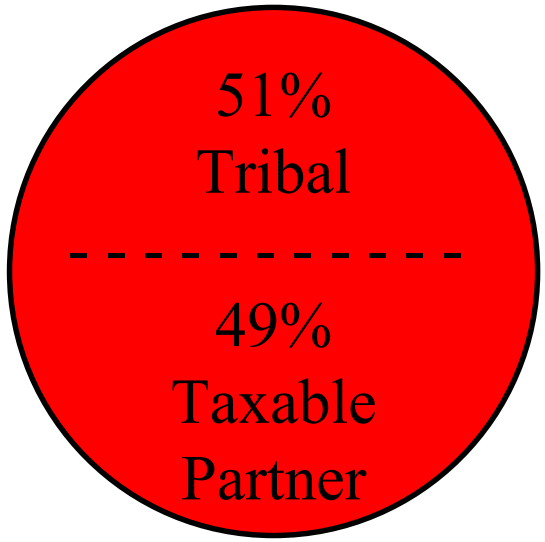


PRODUCTION TAX CREDIT

Not Applicable



(Tradable Proposed)



"In the case of a qualified facility as defined in 26 USC 45 (c)(3) in which one or more of the persons with an ownership interest is an Indian tribe, the owners may allocate the full renewable electricity production credit among the taxpaying owners of the production in the gross sales from such facility irrespective of the proportion of any particular taxpayer's ownership interest." **(suggested legislative language)**

Native Wind Powering America

www.EnergyIndependenceDay.org

Tribal Renewable Energy

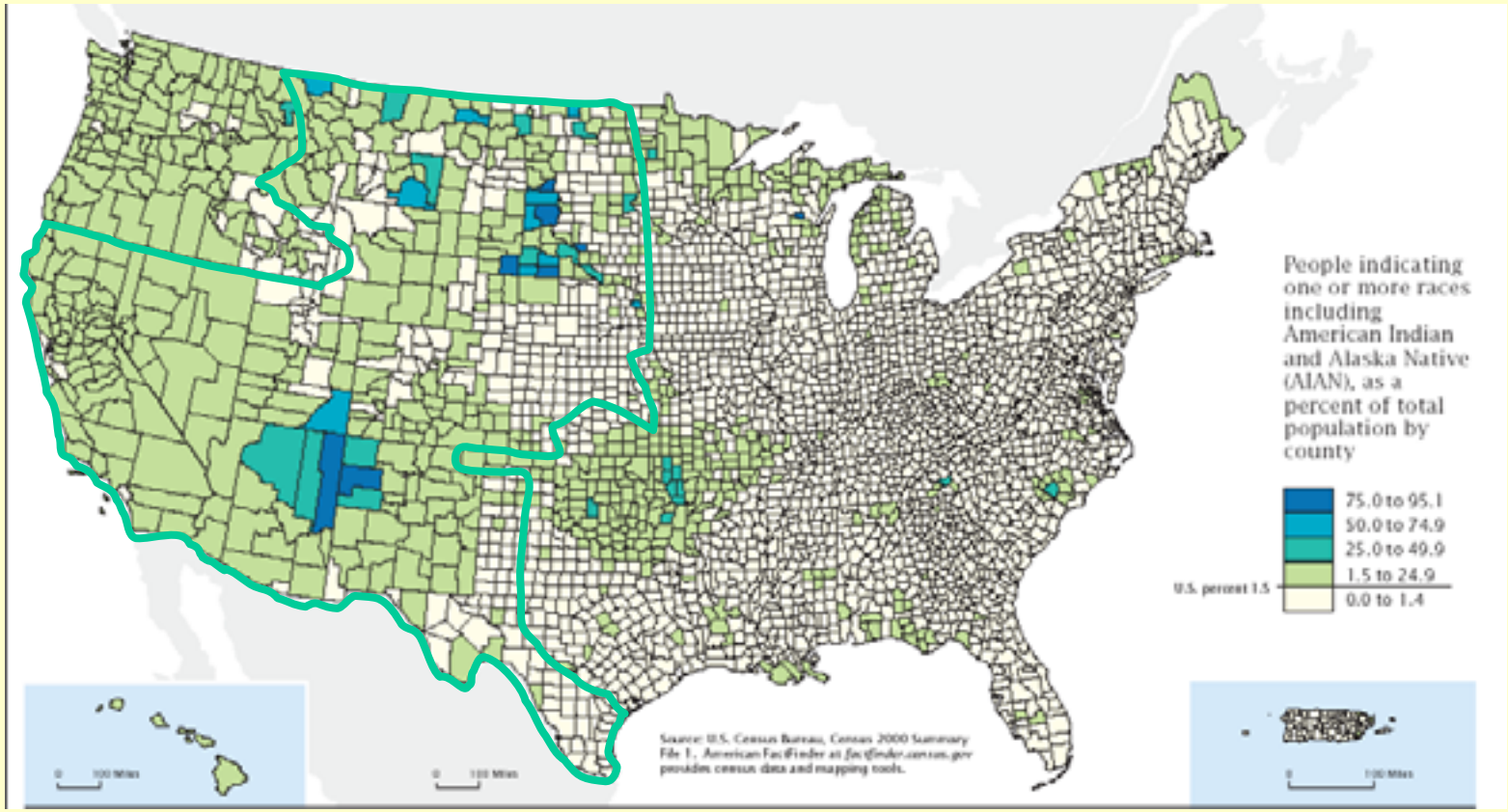
Rosebud Sioux 750 kW

- Indian Reservations are the poorest communities with highest unemployment rates in the nation.
- Indian Tribes are the fastest growing populations in the U.S with half the members under 18 years of age, and all growth is natural, not immigration.
- Reservations homes are 10 times more likely (14.2%) to be without electricity than rest of U.S.
- Tribes have hundreds of giga-watts of renewable energy potential. Theoretically, Tribes could meet most of U.S. electric energy needs.
- Federal Trust Responsibility to build Tribal Sustainable Homeland Economies/Federal Markets

http://www.eia.doe.gov/cneaf/solar.renewables/page/pubs.html

A Few Statistics

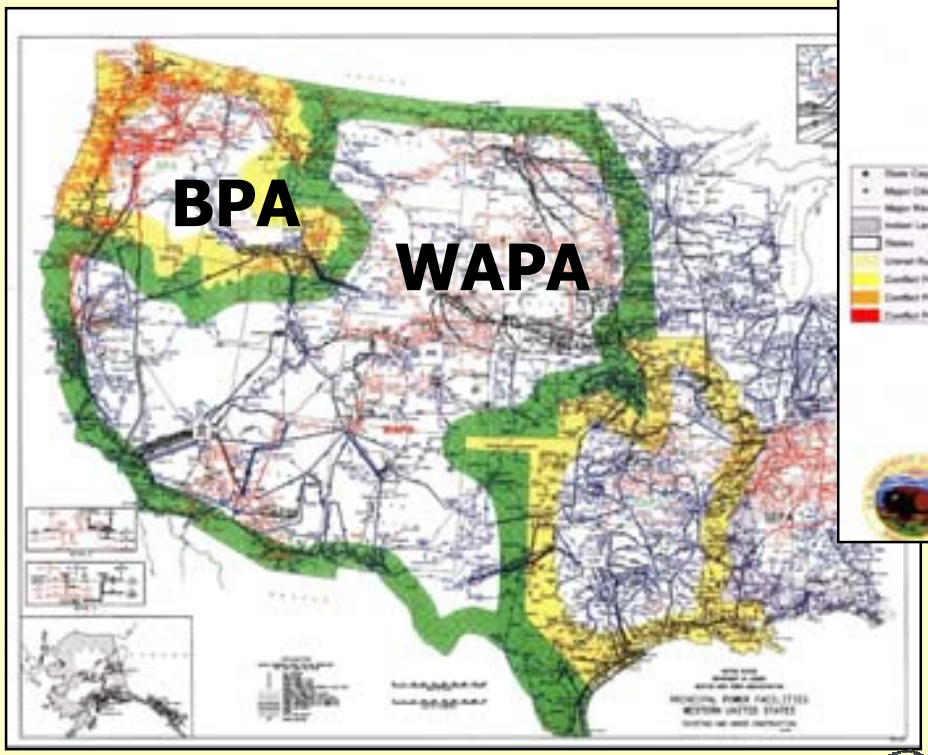
43% of all Native Americans in the lower 48 are in Western's service area
29 counties where Tribal population > 25%
17 counties where Tribal population > 50%
300+ Tribes in Western's service area
1.96% of the population in Western's service area are Indian
1.2% of Western sales & revenue come from Tribes

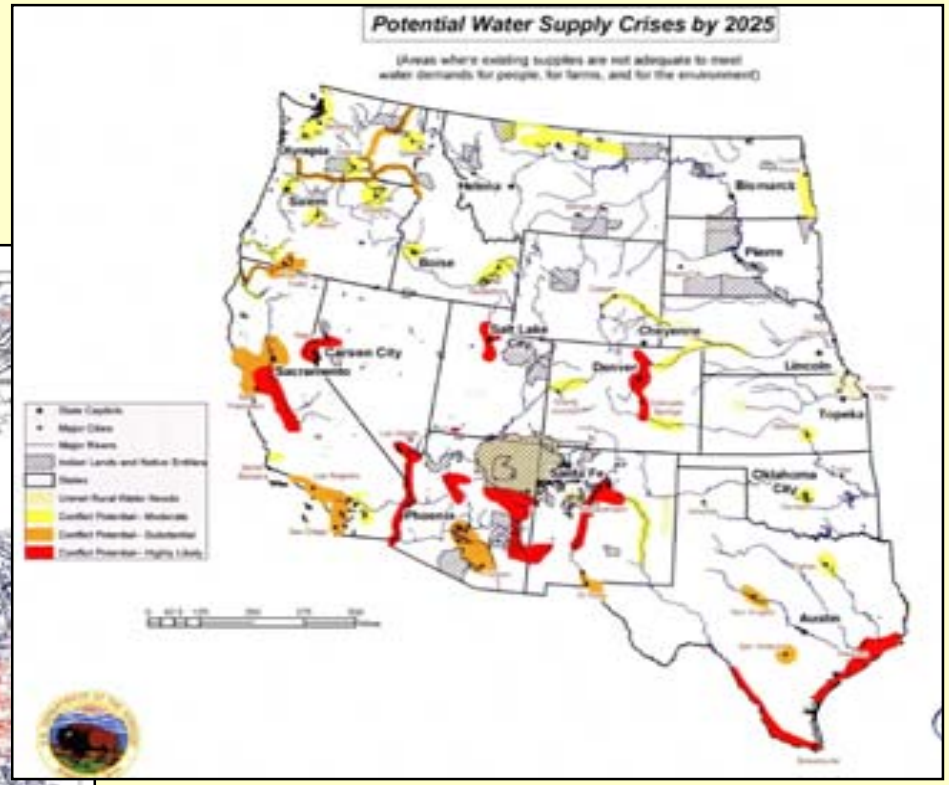


National Renewable Energy Grids

BPA and WAPA Renewable Hydropower Grids (in red) Are The Backbone of the U.S. Western Transmission Grid

But WAPA hydropower is diminishing under drought





… and with regional growth and conventional generation.

Predicted Western Water Crises Areas Do Not Consider Proposed Energy Development Projects

U.S. Bureau of Reclamation

Potential Water Supply Crises Areas Where existing supplies are not adequate to meet water demands.

White House Energy Task Force

Proposed Electricity Generation and Associated Transmission Projects Depend on adequate water supplies.

Rights to Water Supplies: Single Greatest Constraint on Future Energy Development and Greatest Threat to Tribal Water Rights.

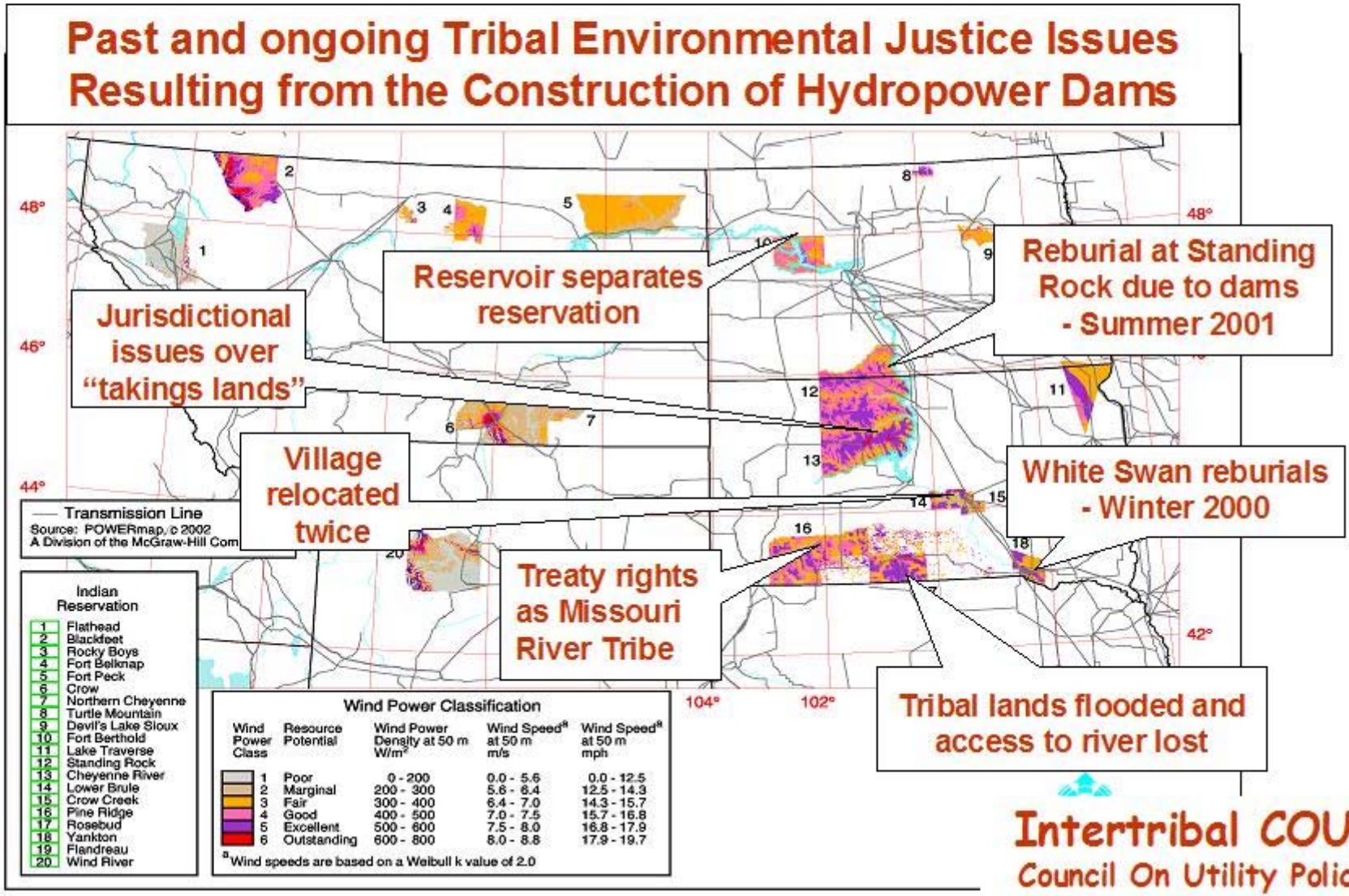
Wind produces lower cost utility scale electricity without consuming water!

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

Past and ongoing Tribal Environmental Justice Issues Resulting from the Construction of Hydropower Dams



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):
Eight 10 MW Wind Ranches on 8 Dakota Reservations
Phase 4 (2004-2007):
Replicate across the Northern Great Plains
Phase 5 (2010):
3,000 Tribal MW on Great Plains Reservations

For additional details, please contact:
Patrick Spears, Intertribal COUP
605-945-1908 or Pnspears2@aol.com
or
Phil Two Eagle, Director
RST Resources Development
605-856-5644 or PD2Eagle@gwtc.net

Tribal Wind Power for Sustainable Homeland Economic Development

Intertribal Council On Utility Policy

"The Wind Energy Council's primary objective is to promote and foster the development and growth of a vibrant wind energy industry in the Upper Midwest."

FUTURE PLANS (by 2005):

INTERTRIBAL WIND DEVELOPMENT

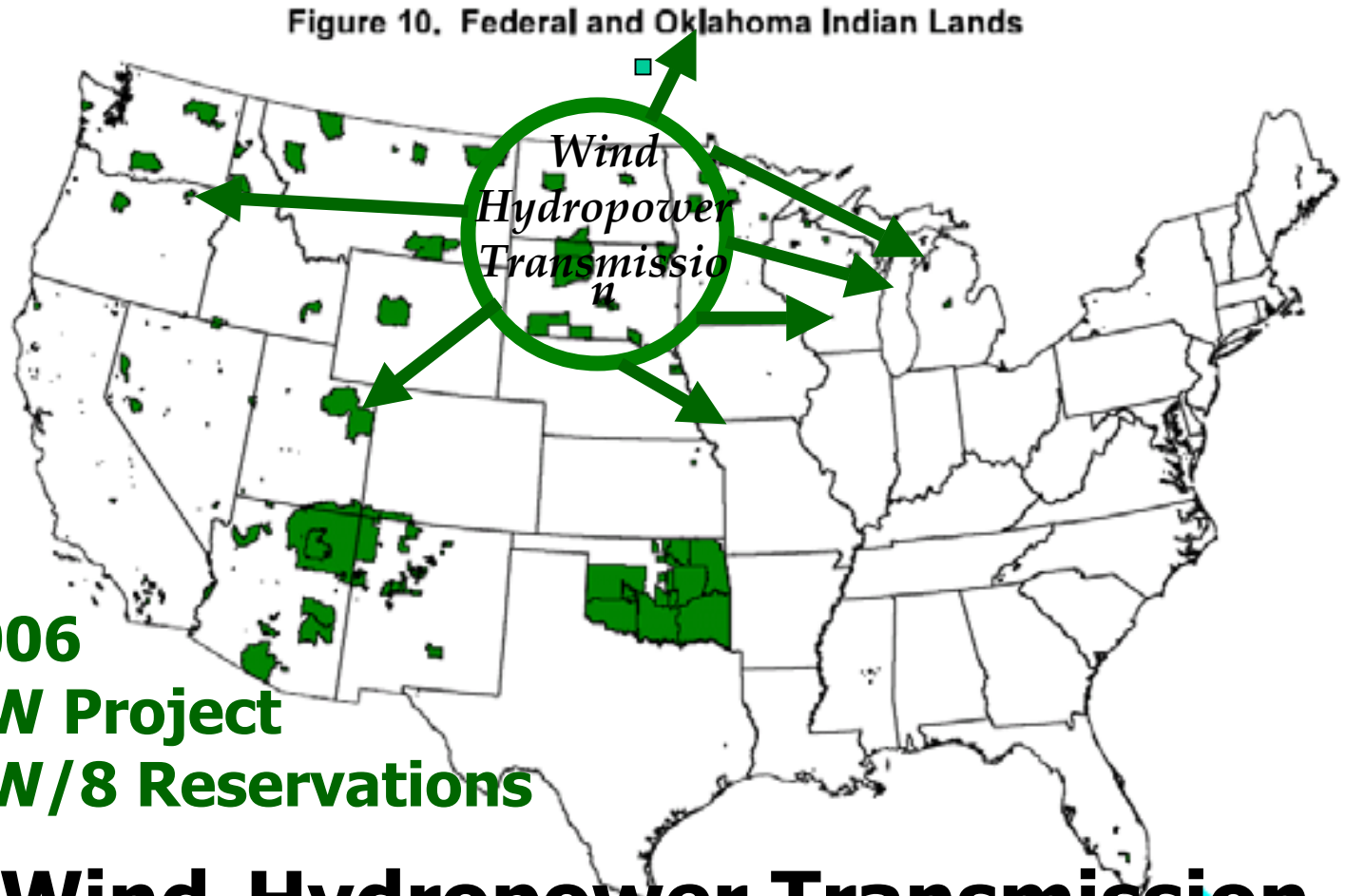
A series of 10 MW North and South Dakota Reservation-based Intertribal Wind Turbine Ranches

COUP EJ Revitalization Demonstration Project objectives:

- Significant Tribally owned, local generation for Reservation loads
- Opportunity to pool Tribal resources for economies of scale
- Shared risk, experience and capacity building
- Easier initial interconnection into a constrained grid system
- Greater overall Intertribal project capacity from distributed generation of 80 MWs on sites spread across the Great Plains
- Reduced opportunity costs for expansion from 10 MWs
- Use of *"Green Tags"* to overcome grid constraints
- Help meet 2005 Federal 2½% Green Power goals:
  Approximately 514 MW of Installed Capacity of wind generation
- COUP Project *WINDSHED:*
  ~ *WIND*power for *Sustainable Homeland Economic Development*.

Intertribal COUP
Council On Utility Policy

Intertribal COUP
Federal Demonstration Project



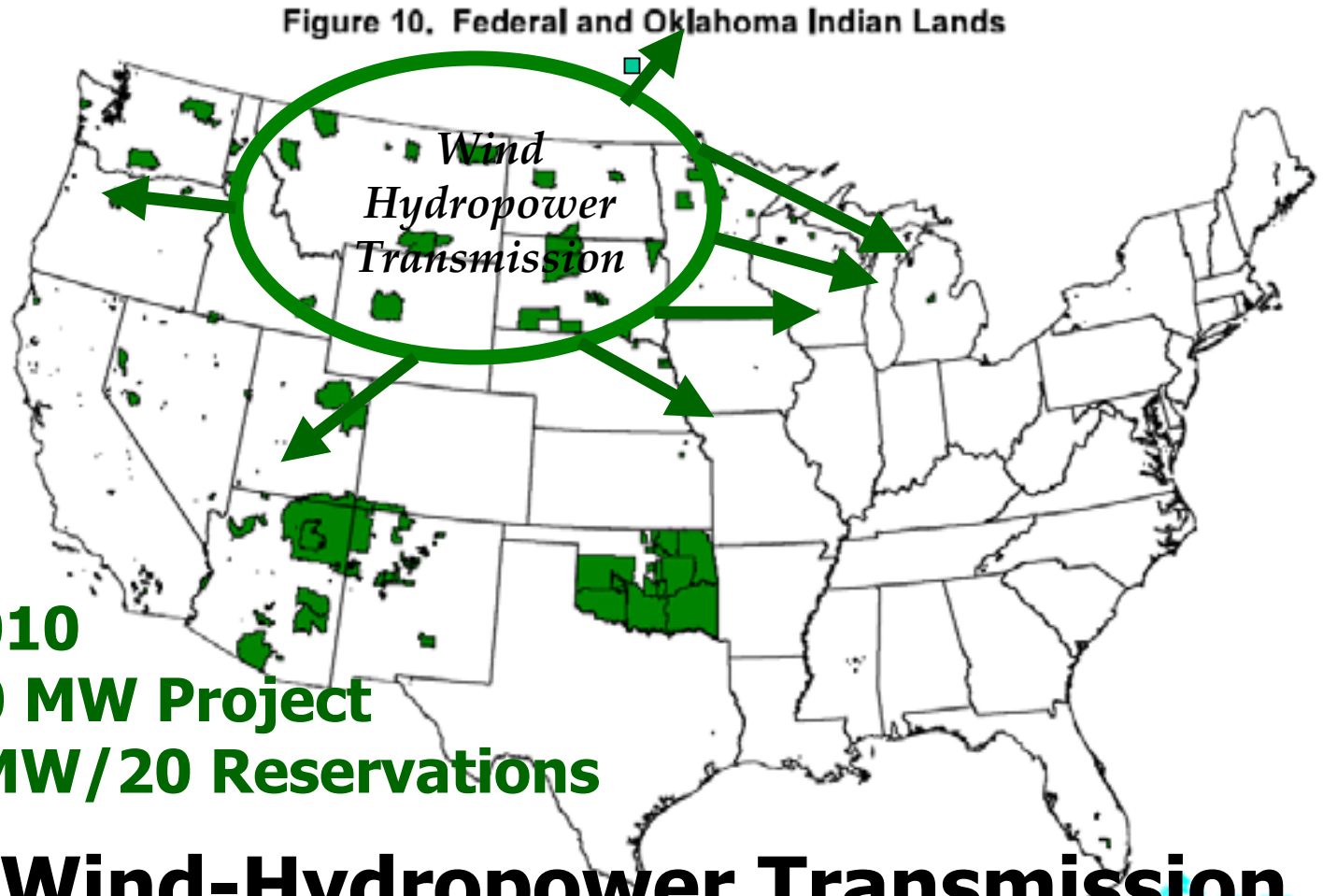
By 2006
80 MW Project
10 MW/8 Reservations

Wind-Hydropower Transmission

COUP Wind EJ Demonstration

US Dept of Energy - National Renewable Energy Laboratory

Intertribal COUP
Extended Demonstration Project



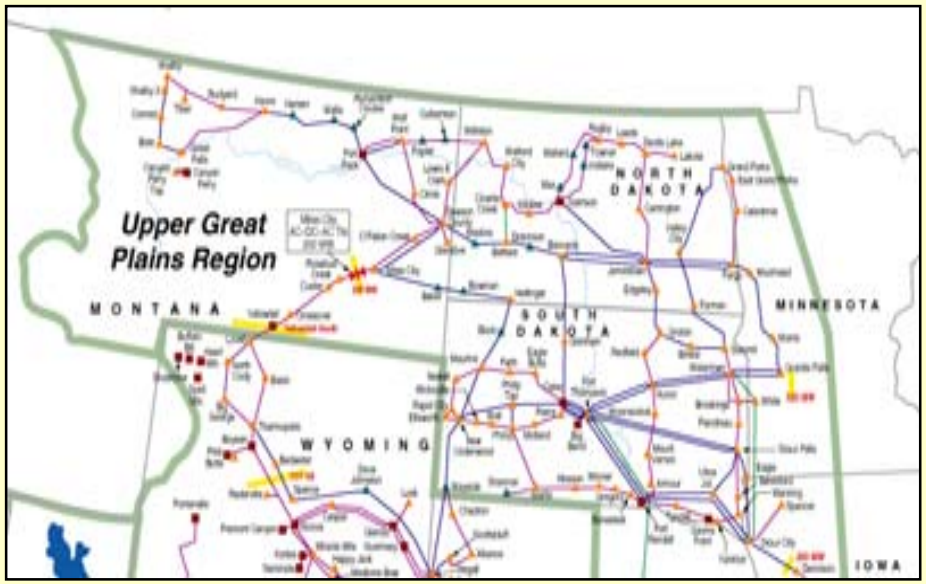
By 2010
3,000 MW Project
150 MW/20 Reservations

Wind-Hydropower Transmission

COUP Wind EJ Demonstration

US Dept of Energy - National Renewable Energy Laboratory

Transmission in the Upper Great Plains Region



Western Area Power Administration Mission and Objectives:

Western's mission is to implement the national energy policy by marketing Federal power over an efficient and reliable transmission system while encouraging conservation and **the use of renewable energy resources.**

Western Area Power Administration
Marketing Objectives:

- Market and transmit Federal power in a manner beneficial to the public interest.

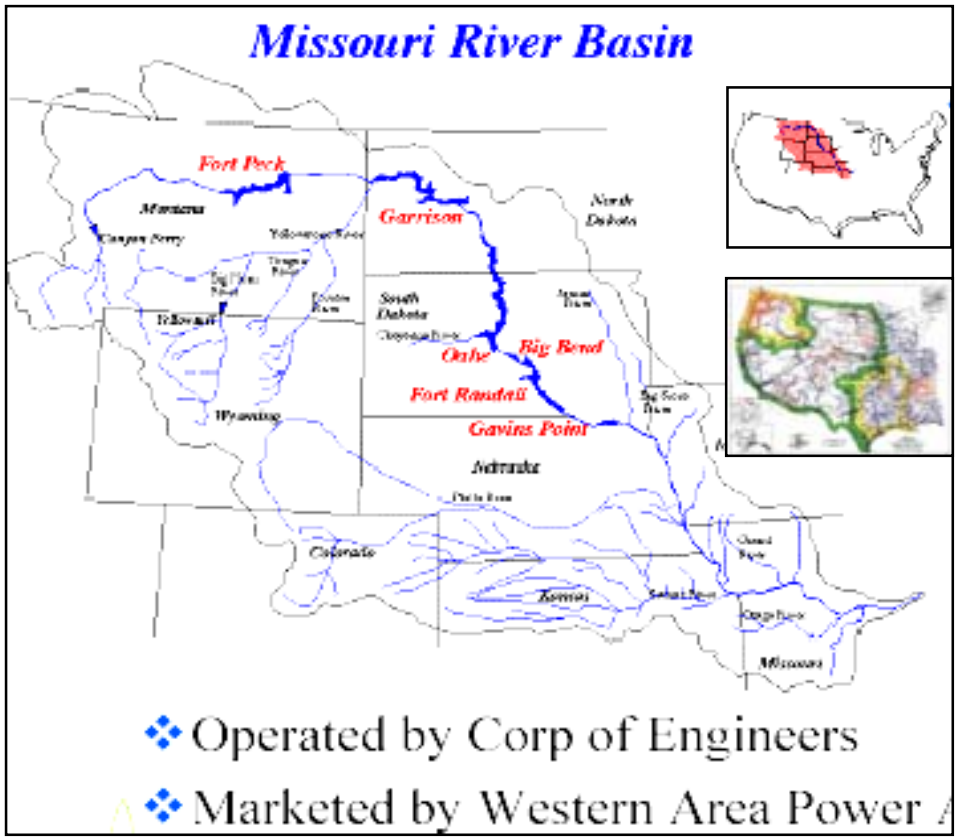
- Sell Federal power at the lowest possible rates sufficient to recoup costs in accordance with law sound business principles.

- Encourage and assist its customers with conservation and renewable energy programs.

- Sponsor and participate in research and development programs to ensure continued technological advances and pursuit of electrical reliability, renewable resource, and environmental goals in the electrical industry.

Serving the West with Federal Hydropower

Western Area Power Administration



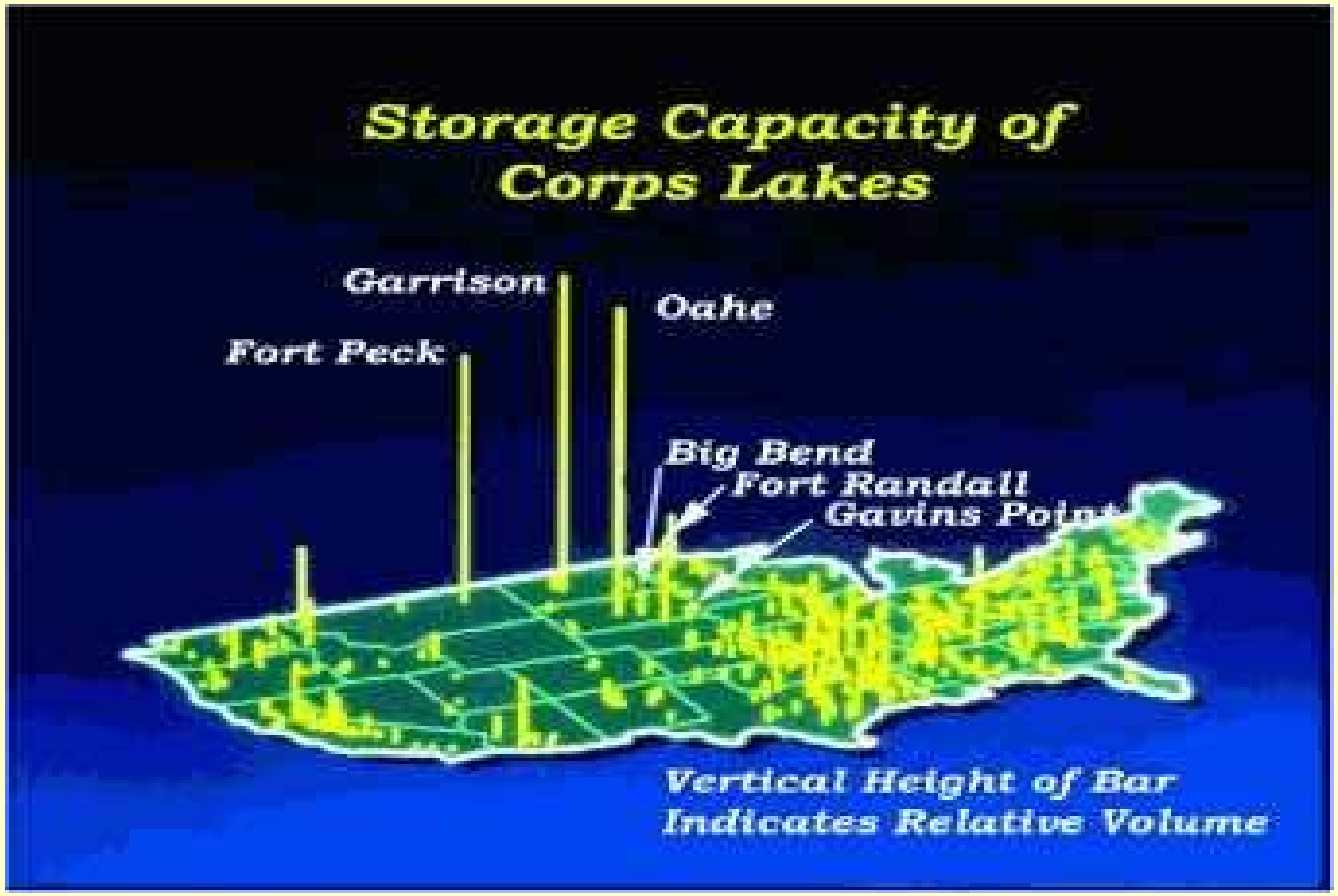
Hydropower ShortFall

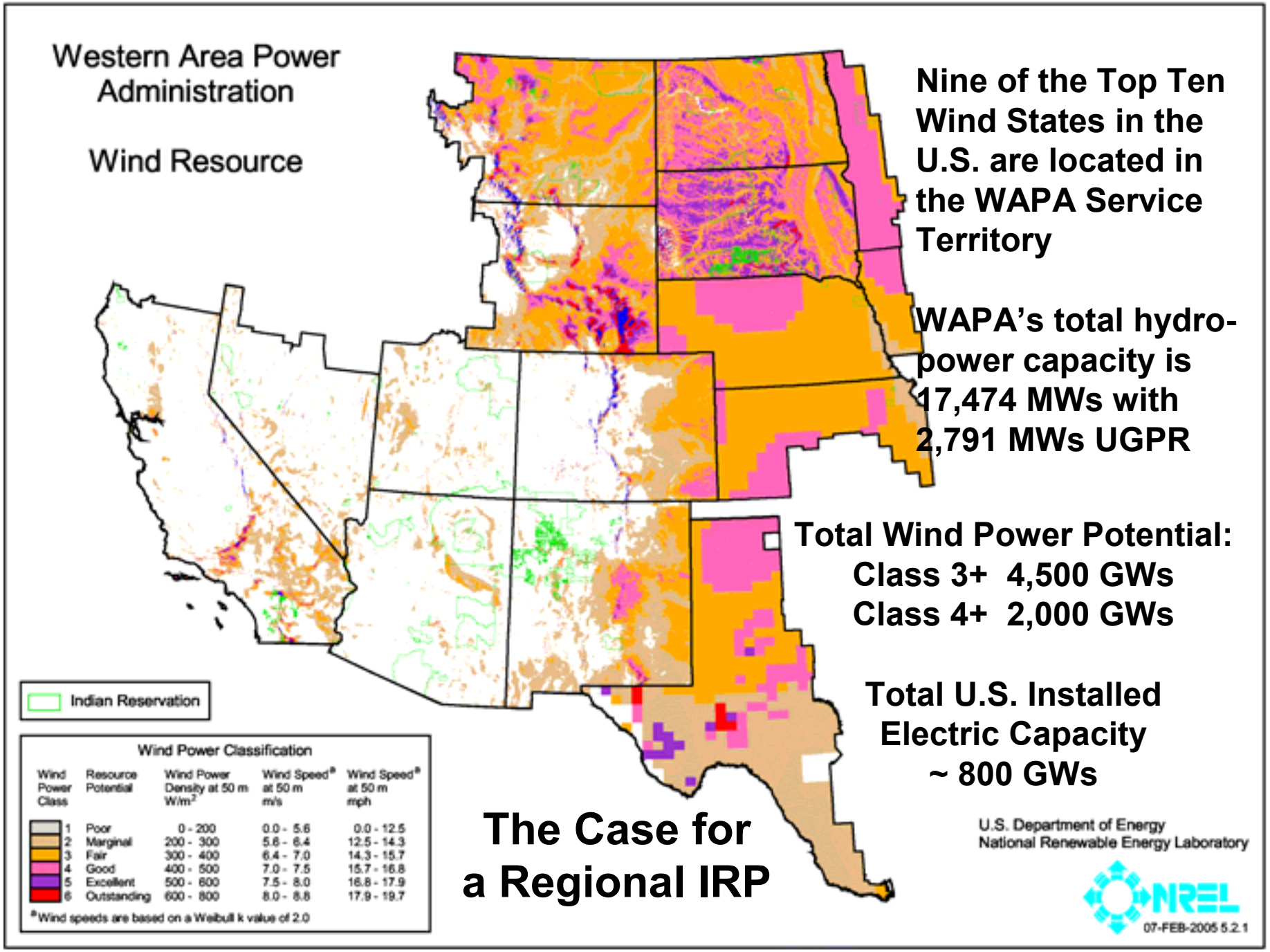
The six main stem power plants generated 715 million kilowatt hours (kWh) of electricity in July 2004, 72 percent of normal. The forecast for 2004 energy production is 6.8 billion kWh, compared to a normal of 10 billion kWh.

The 3.2 billion kWh WAPA shortfall equals the expected production of 1,333 turbines like the Rosebud 750 kW turbine.

Missouri River Mainstem Dams Provide One of the Largest Hydropower Storage Capacity Systems in the World

The downstream dams at Big Bend, Fort Randall and Gavins Point depend upon utilizing the upstream flow from Fort Peck, Garrison and Oahe. Current climate trends have shifted precipitation from west to east of the dams with far less water entering into the Missouri River behind the dams.




Western Area Power Administration
Wind Resource
Nine of the Top Ten Wind States in the U.S. are located in the WAPA Service Territory
WAPA's total hydro-power capacity is 17,474 MWs with 2,791 MWs UGPR
Total Wind Power Potential:
Class 3+ 4,500 GWs
Class 4+ 2,000 GWs
Total U.S. Installed Electric Capacity ~ 800 GWs
Indian Reservation
Wind Power Classification
Wind Power Class
Resource Potential
Wind Power Density at 50 m W/m²
Wind Speed[a] at 50 m m/s
Wind Speed[a] at 50 m mph
1 Poor 0 - 200 0.0 - 5.6 0.0 - 12.5
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
6 Outstanding 600 - 800 8.0 - 8.8 17.9 - 19.7
[a] Wind speeds are based on a Weibull k value of 2.0
The Case for a Regional IRP
U.S. Department of Energy
National Renewable Energy Laboratory
NREL
07-FEB-2005 5.2.1

Potential Wind Generation from Tribal Lands

The single 750kW turbine at RST in 18 mph average annual winds produces almost 2,400,000 kWh/yr

Great Plains sites could yield between 50,000,000,000 kWh/yr to 104,000,000,000 kWh/yr

Potential Annual Wind Generation*
(Billion kWh/yr)
- 0.001 - 1
- 1 - 5
- 5 - 10
- 10 - 50
- 50 - 104

Indian Reservations

* Generation estimated for areas of class >= 4 annual average wind resource, assuming 5 MW/km^2 of installed capacity, and capacity factors ranging from 25.1% (class 4) to 41.4% (class 7).

Aggregate technical estimate of 209 GW does not account for sacred sites, transmission access, water bodies, or other factors that will significantly impact development potential.

Total Tribal Wind Generation Potential:
535 Billion kWh/yr

U.S. Total Electric Generation (2004 Est.):
3,853 Billion kWh/yr (EIA)

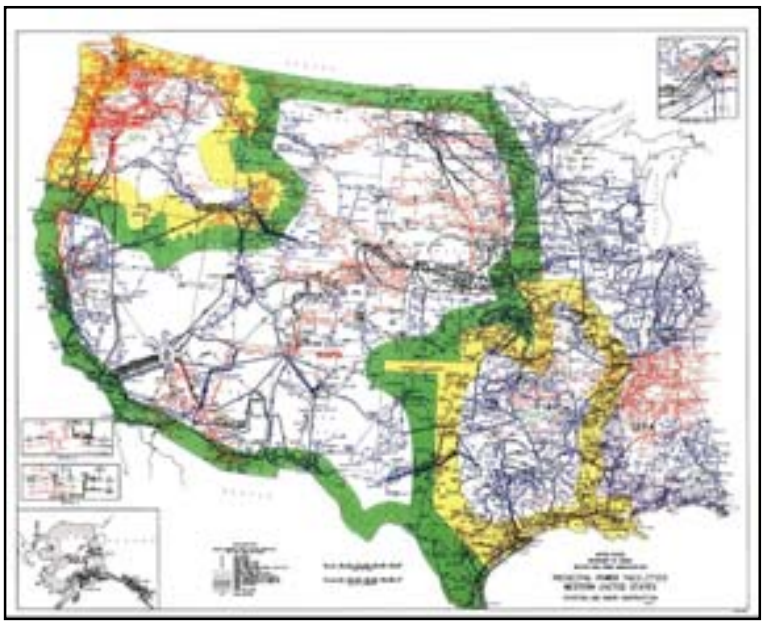
U.S. Department of Energy
National Renewable Energy Laboratory

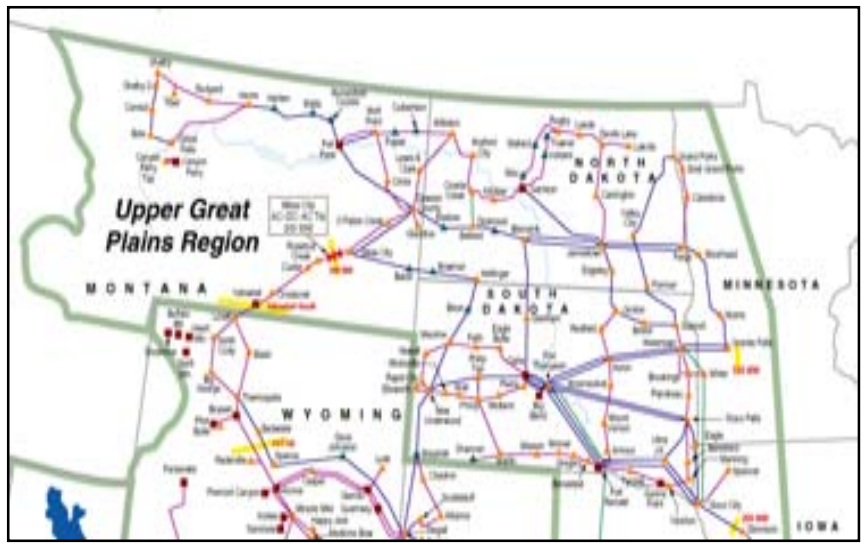
NREL

DHJul3004wingen

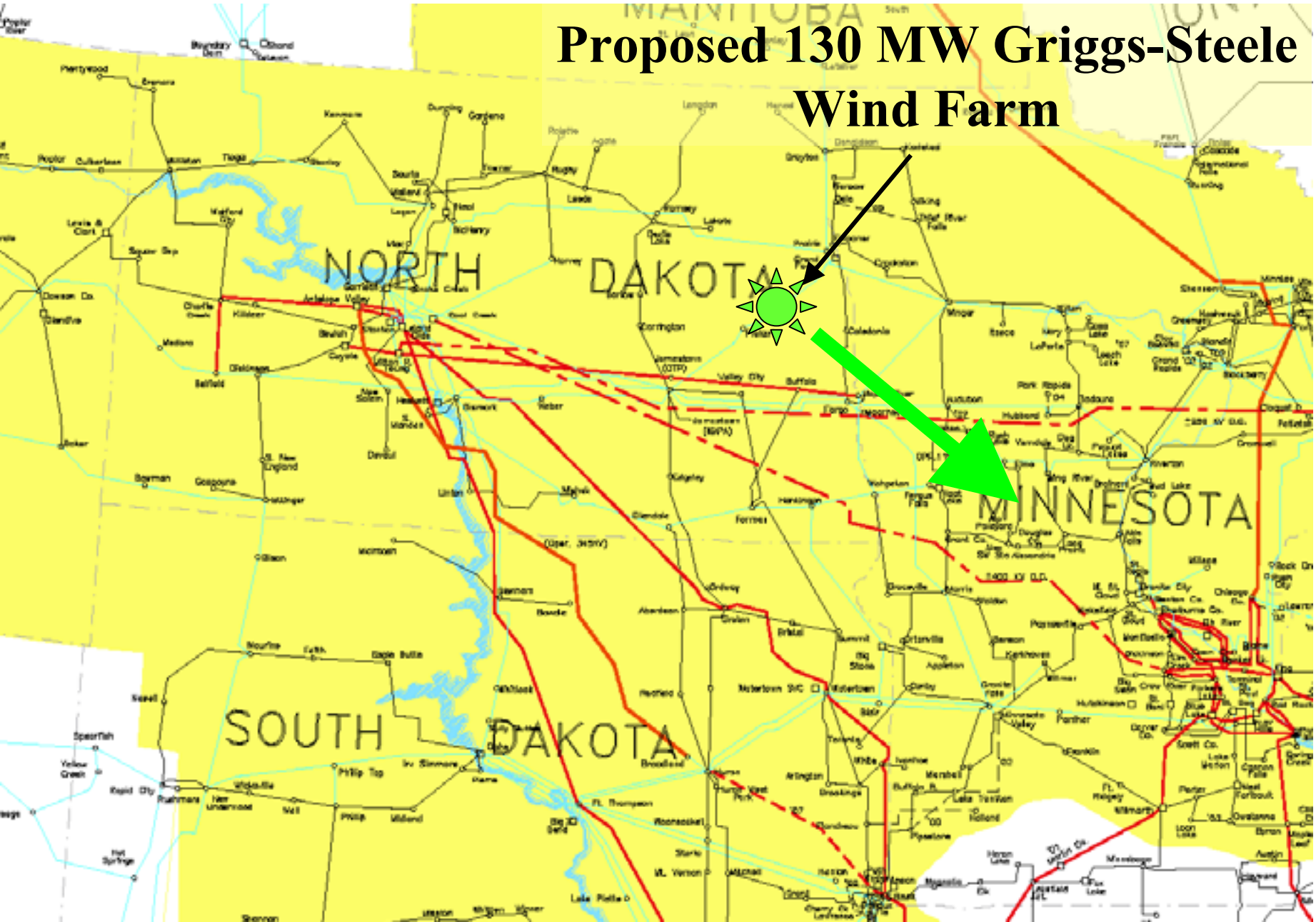
Access to Federal Transmission (WAPA, BPA) Grids

"For the purpose of federal Power Marketing Administrations' supplemental or replacement power purchases and sales, renewable energy generated on tribal lands under federal jurisdiction may, at the discretion of the tribal generator, be deemed to be federal power." ***(Suggested legislative language)***

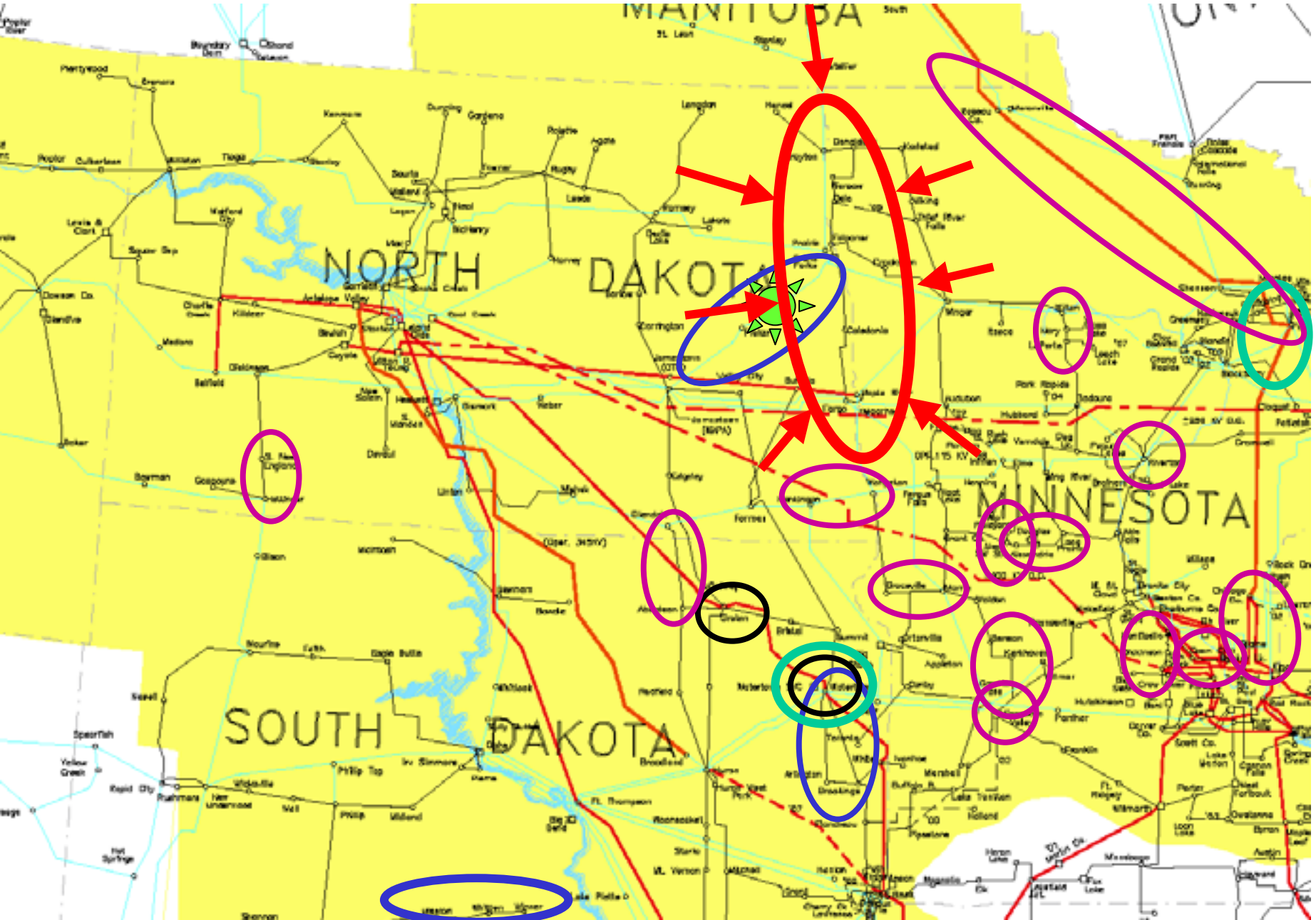




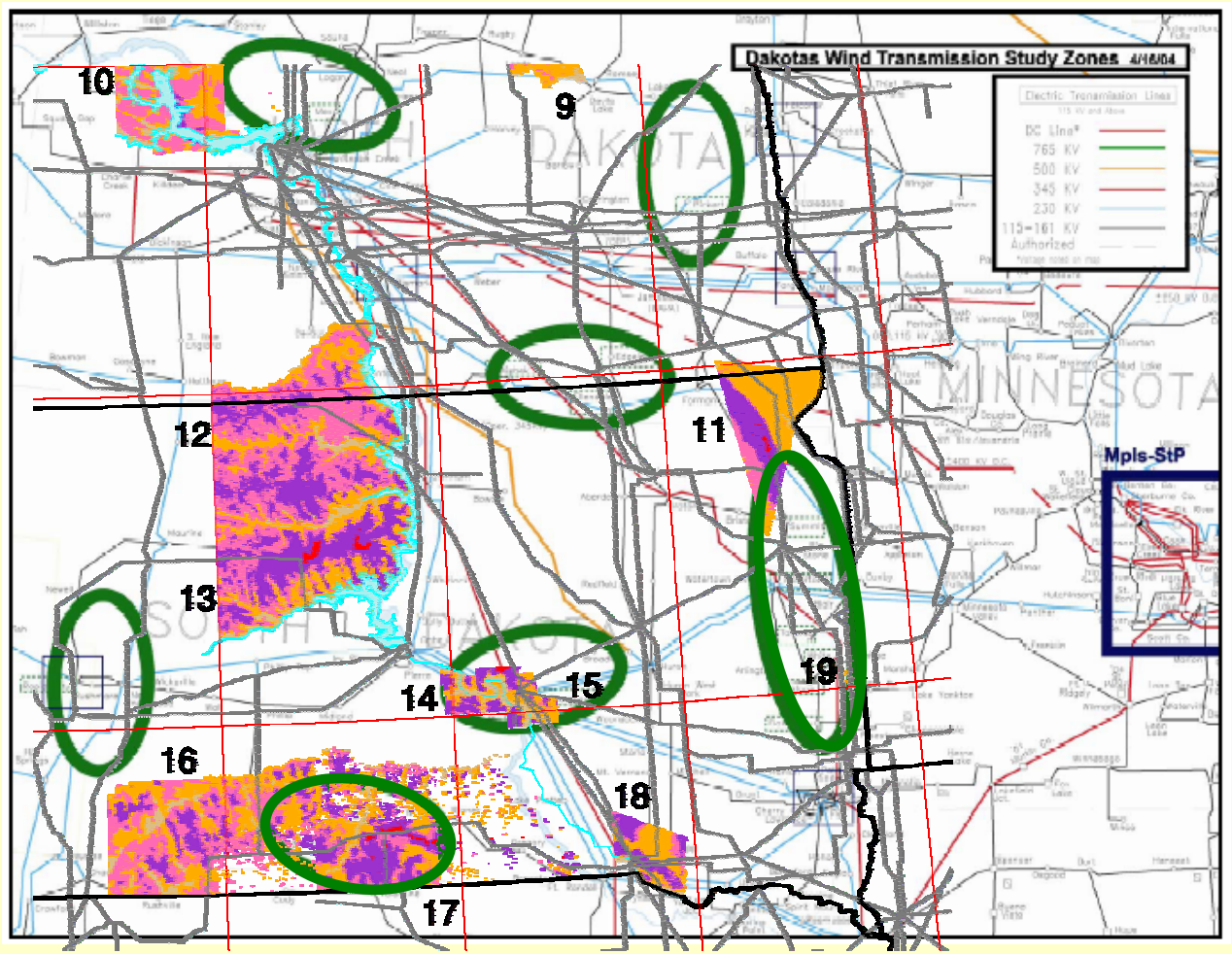
An Example of Transmission Problems



A Few Problems to Fix



WAPA / WIND INTEGRATION STUDY AREA

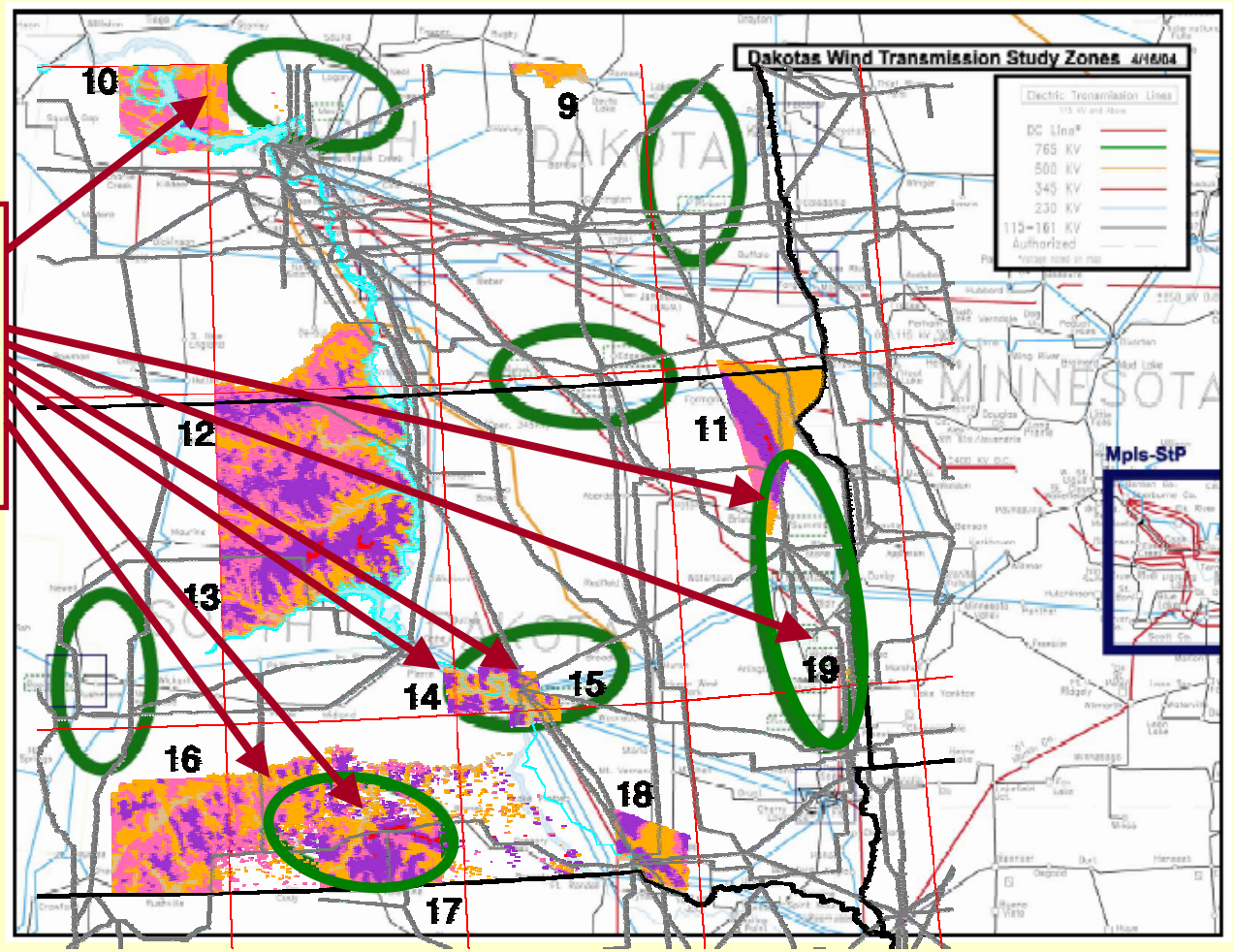


http://www.wapa.gov/ugp/study/DakotasWind/Zone%20Map.pdf

WAPA / WIND INTEGRATION STUDY AREA

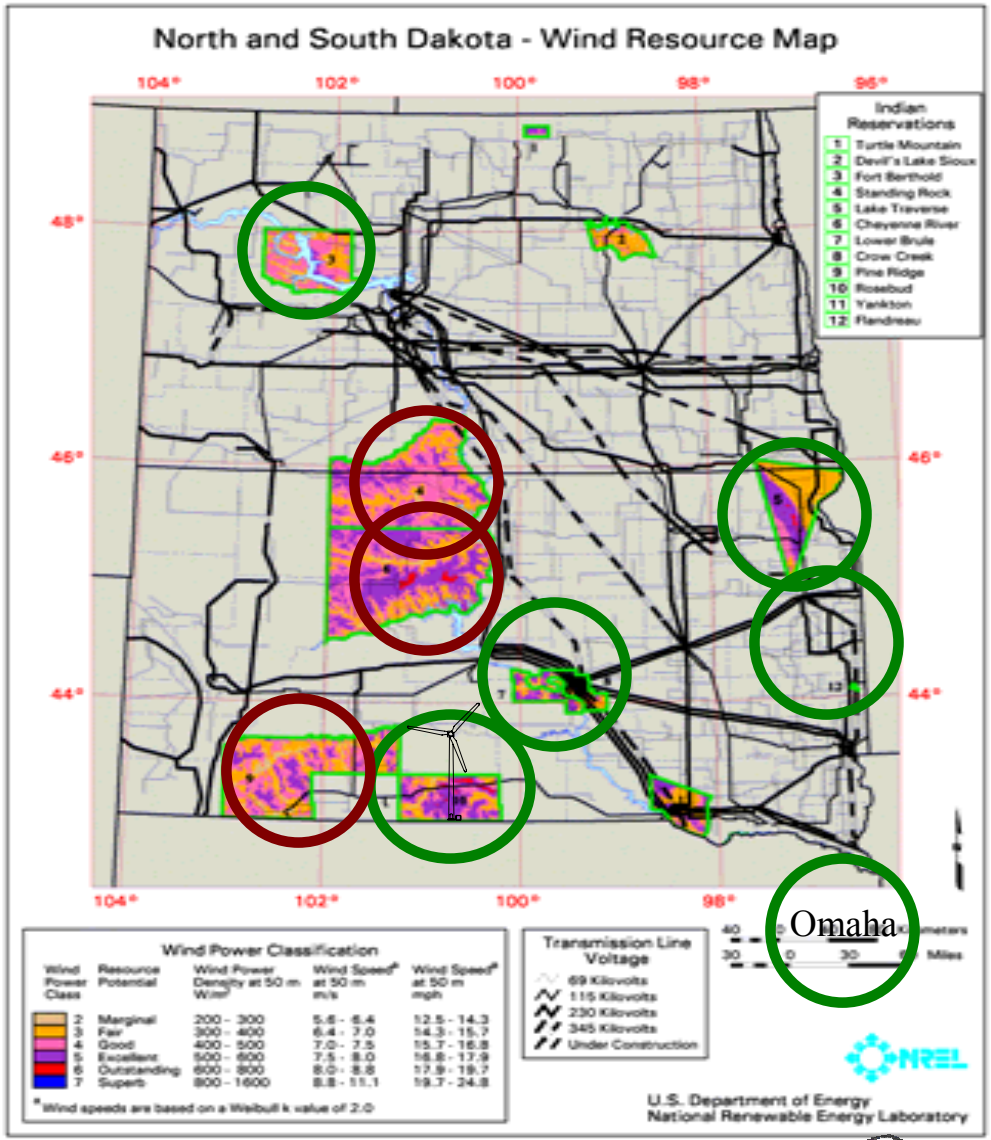
Includes Several Reservation Interconnection Sites

COUP Proposed WAPA Wind Study Site Areas



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

Intertribal COUP Wind Demonstration Project



- Intertribal 80 MW wind development demonstration project
- Six COUP Tribes by Resolution signed on to participate, several pending
- Tribally-owned, distributed generation
- 80 MW project w/ 10 MW on each of the COUP Reservations

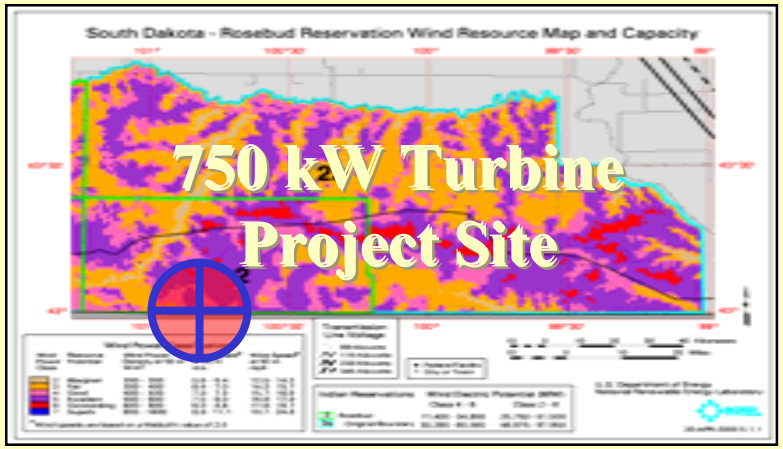
In Planning Pending

750 kW Wind Turbine ~ Rosebud ~ 2003

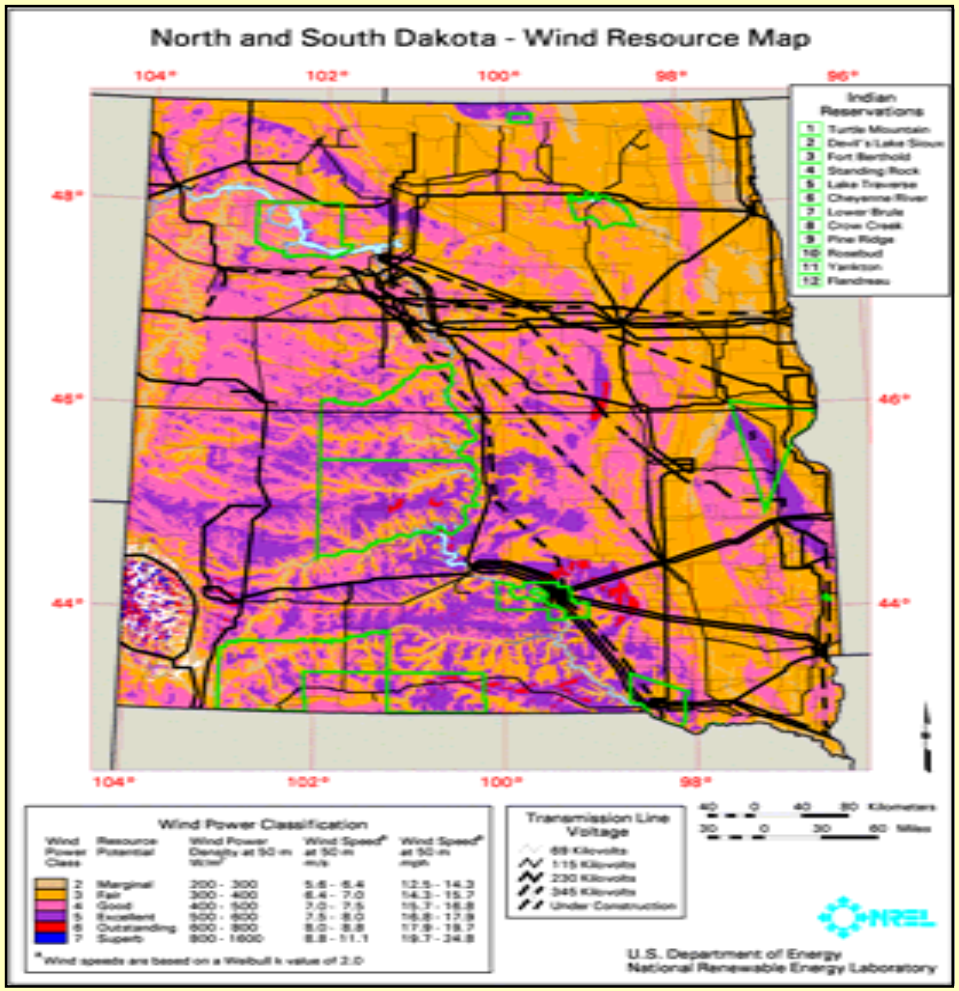
The first 750 kW utility scale NEG MICON wind turbine owned and operated by the Rosebud Sioux Tribe through partnerships:

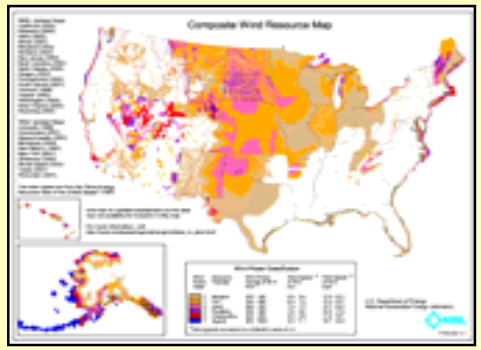
- **Department of Energy (DOE)**
- **Rural Utilities Service (RUS/USDA)**
- **DisGen, Inc. (Engineering)**
- **Basin/CherryTodd/ NPPD/ WAPA/ Ellsworth AFB**
- **Native*Energy*/Clean Air-Cool Planet (Green Tags)**

RST TRIBAL COUNCIL/COUP
and *NativeEnergy, Inc.*



PROTECTING CULTURAL RIGHTS

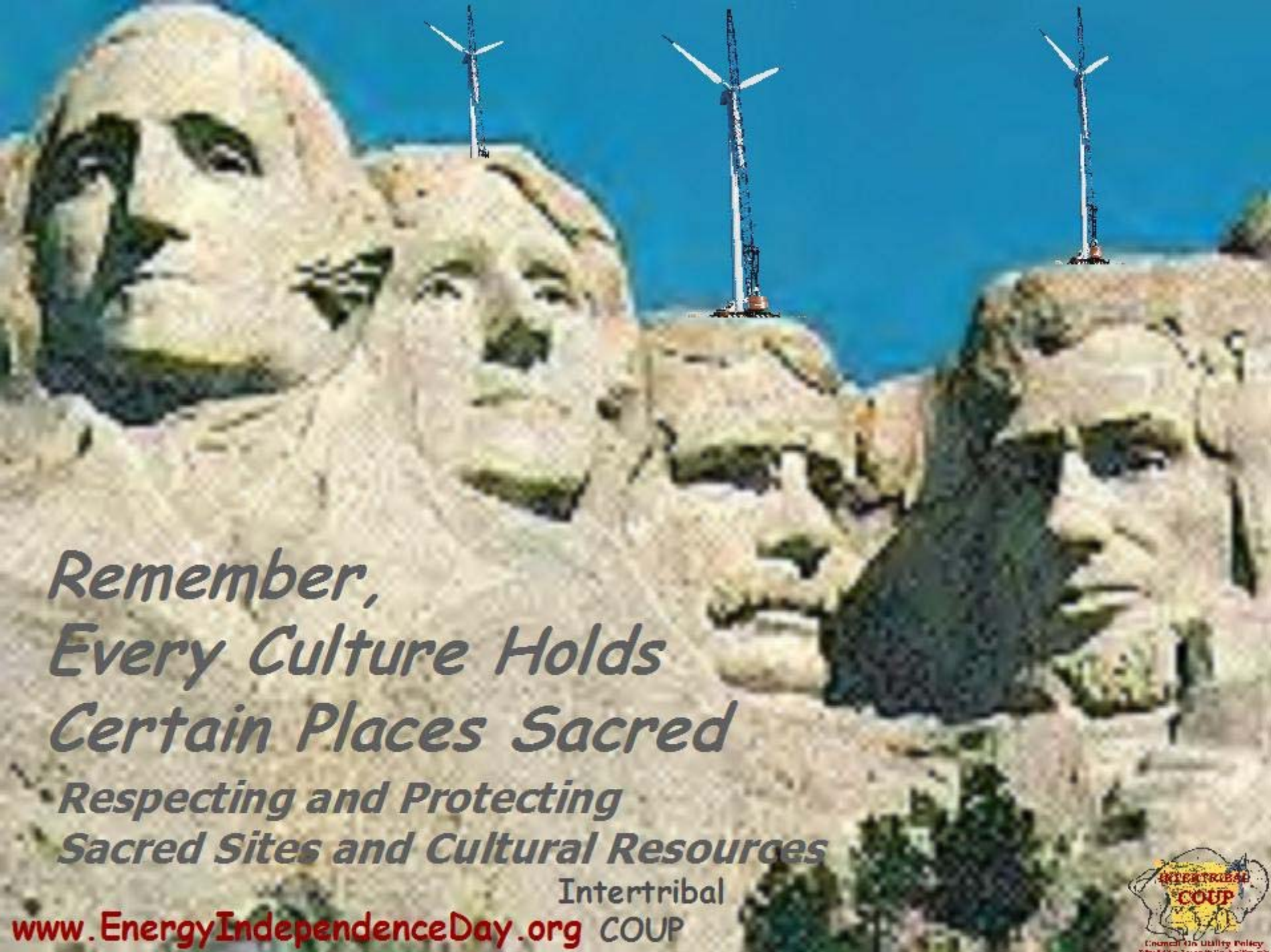




Sacred Sites and Cultural Resource Protection

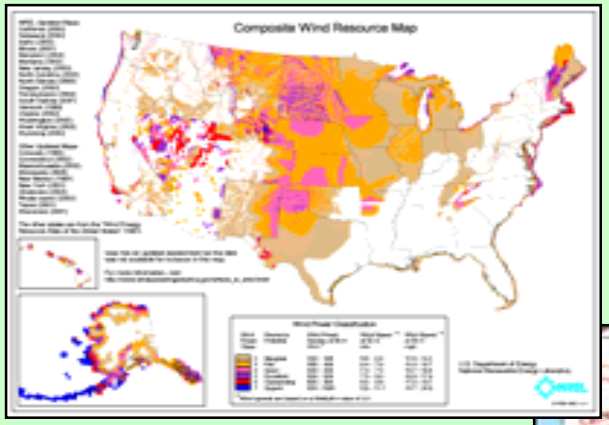
In the Dakotas, some of the best winds are found in the Black Hills. But the Black Hills are sacred to the Lakota.

Tribes are not likely to promote wind projects there. However, we have found some previously disturbed federal land there ...


Remember,
Every Culture Holds
Certain Places Sacred
Respecting and Protecting
Sacred Sites and Cultural Resources
Intertribal
www.EnergyIndependenceDay.org COUP
INTERTRIBAL
COUP

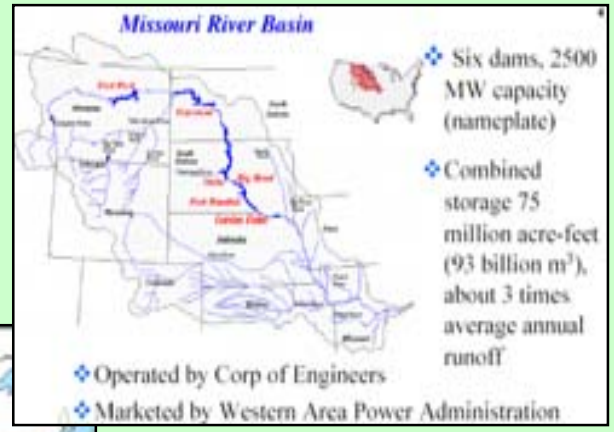
Tribal Wind / Federal Hydropower Renewable Energy Dynamo

World's Largest Hydropower Storage System Could Operate as a Wind Storage Battery



http://www.windpoweringamerica.gov

TransAmerica Generation Grid for Wind/Hydro Dynamo



http://www.solpath.com/luna/admin/documents/NEITS_AWEA_presentation_032904.pdf

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

Native Wind Powering America

www.EnergyIndependenceDay.org

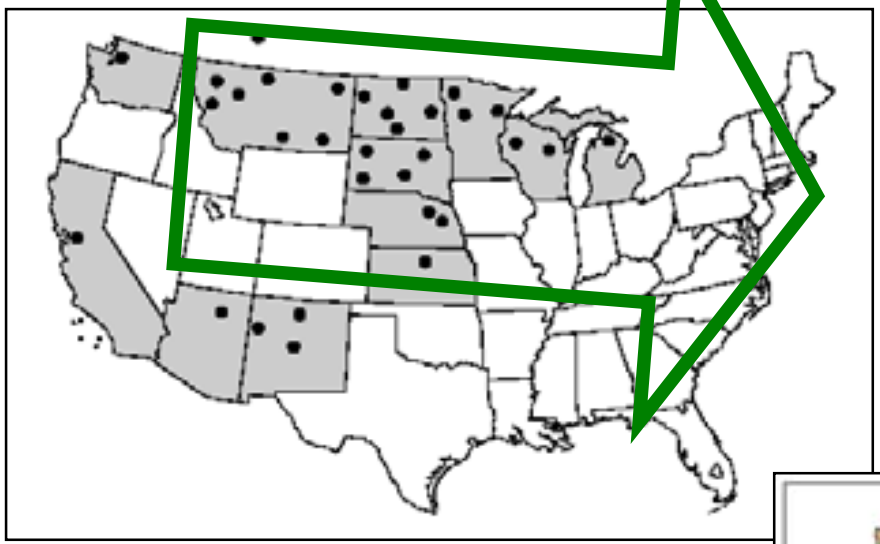
Western Area Power Administration

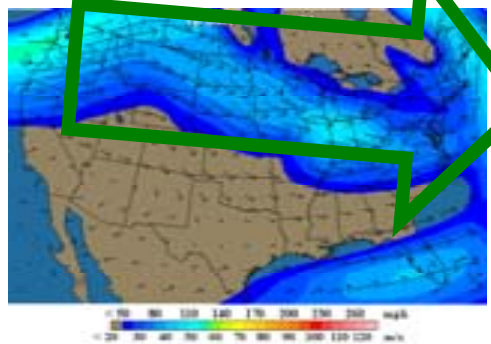
Serving the West with Federal Hydropower

… And Tribal Renewable Energy

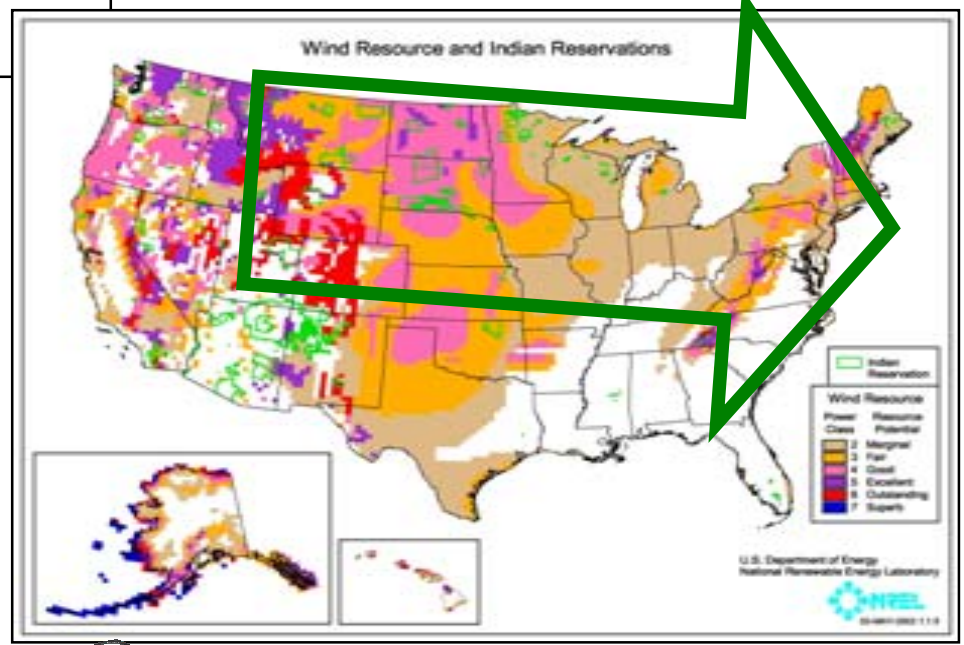
- Cities & Tribes are on WAPA grid as eligible WAPA *"Preference Customers"*
- Federal trust responsibility to Tribes
- Sustainable Homeland Economies
- Great Wind/Hydro Dynamo Potential
- Diminishing Hydropower Resource
- Once 100% renewable, now only 20% hydropower and 80% coal
- Restore Federal Renewable Energy Grid 30% wind /20% hydro / 50% coal-gas

Tribal Colleges and Wind Resources



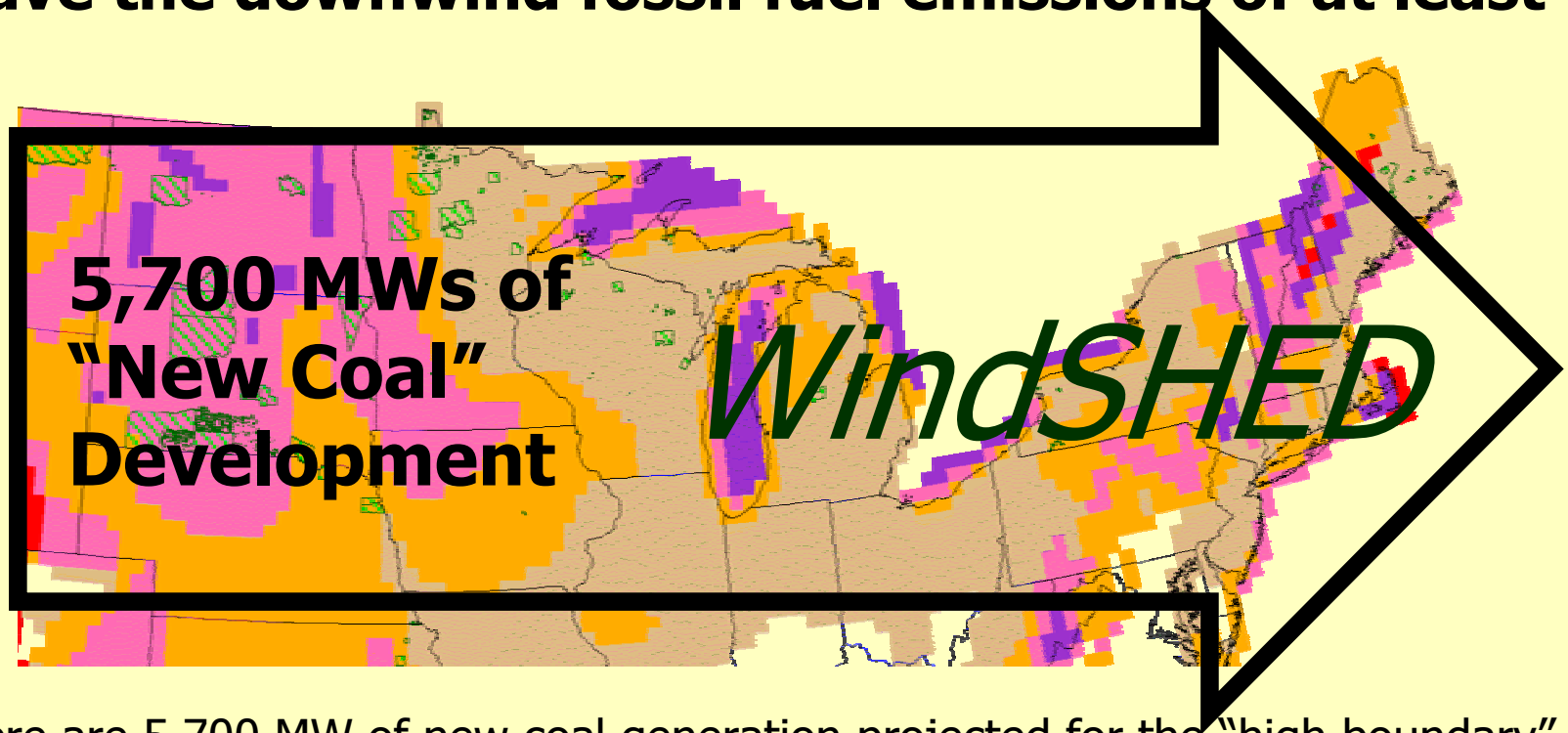


Prevailing Windshed



- **Climate/Natural Resource monitoring training/projects**
- **Meteorological Data Centers**
- **Wind Development Training courses for Reservation job creation and employment**
- **Wind Development Training courses for Reservation job creation and employment**
- **Wind Forecasting along the Windshed for value-add firm power sales into the market**

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

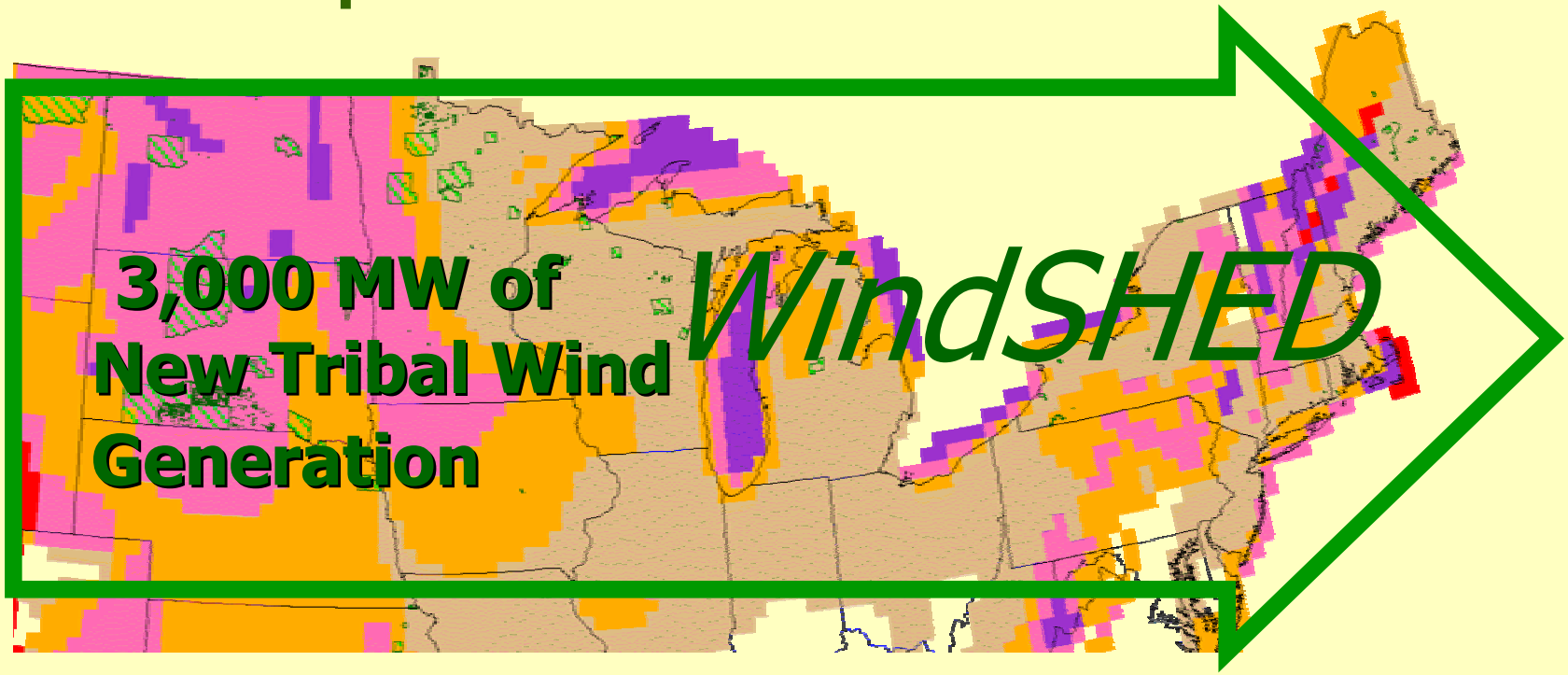


There are 5,700 MW of new coal generation projected for the "high boundary" case announced in the four northern Great Plains (MT, WY, ND & SD) states through 2007, complete with:

- **31,986,746 tonnes of CO2** (contributing to global warming)
- **28,962 tonnes of SO2** and **22,770 tons of NOx**, (acid rain downwind)
- **691 kilograms of mercury** (air borne toxin to downwind waters & wildlife)

estimated to be annually associated this new fossil fuel development.

With "*Tribal Green Tags*" the *WindSHED* can support the development on Tribal lands of at least ...



- ***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

Council On Utility Policy

Tribes Building Sustainable Homeland Economies

ICLEI

Local Governments for Sustainability

The Energy Independence Day Campaign is open to all tribes and local governments willing to commit to producing or promoting the purchase of utility scale renewable energy for sale into the national transmission grid. Local Governments and Tribes can participate through endorsement of the Declaration of Energy Independence, educational and promotional outreach, conservation and energy efficiency, and/or green energy purchases. "By encouraging local businesses and households to purchase tribally-generated renewable energy and/or 'green tags', participating local governments can achieve some or all of their emission reduction goals consistent with their communities' global warming reduction strategy" according to Susan Ode, Outreach Director for the U.S. Cities for Climate Protection.

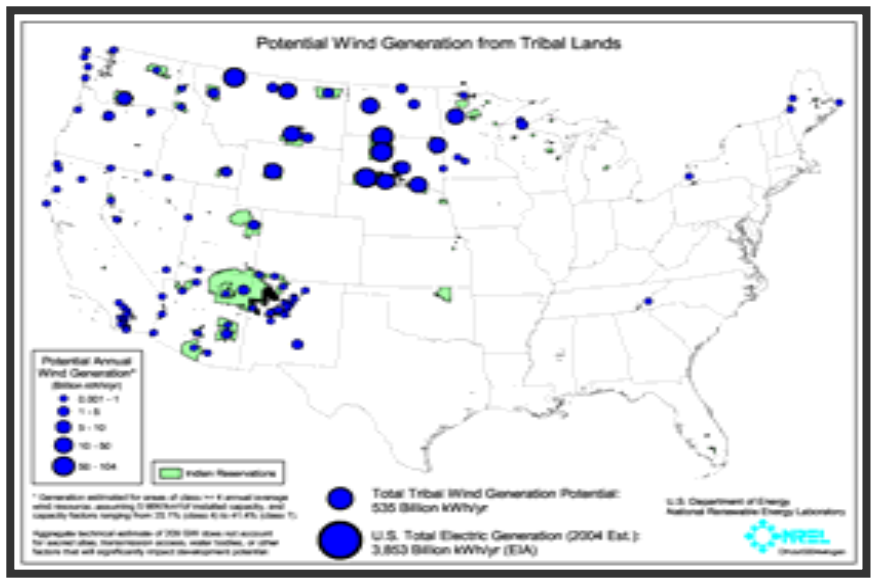
Intertribal COUP Plan For Partnership:

150 US Cities for Climate Protection

(ICLEI ~ International Council for Local Environmental Initiatives)

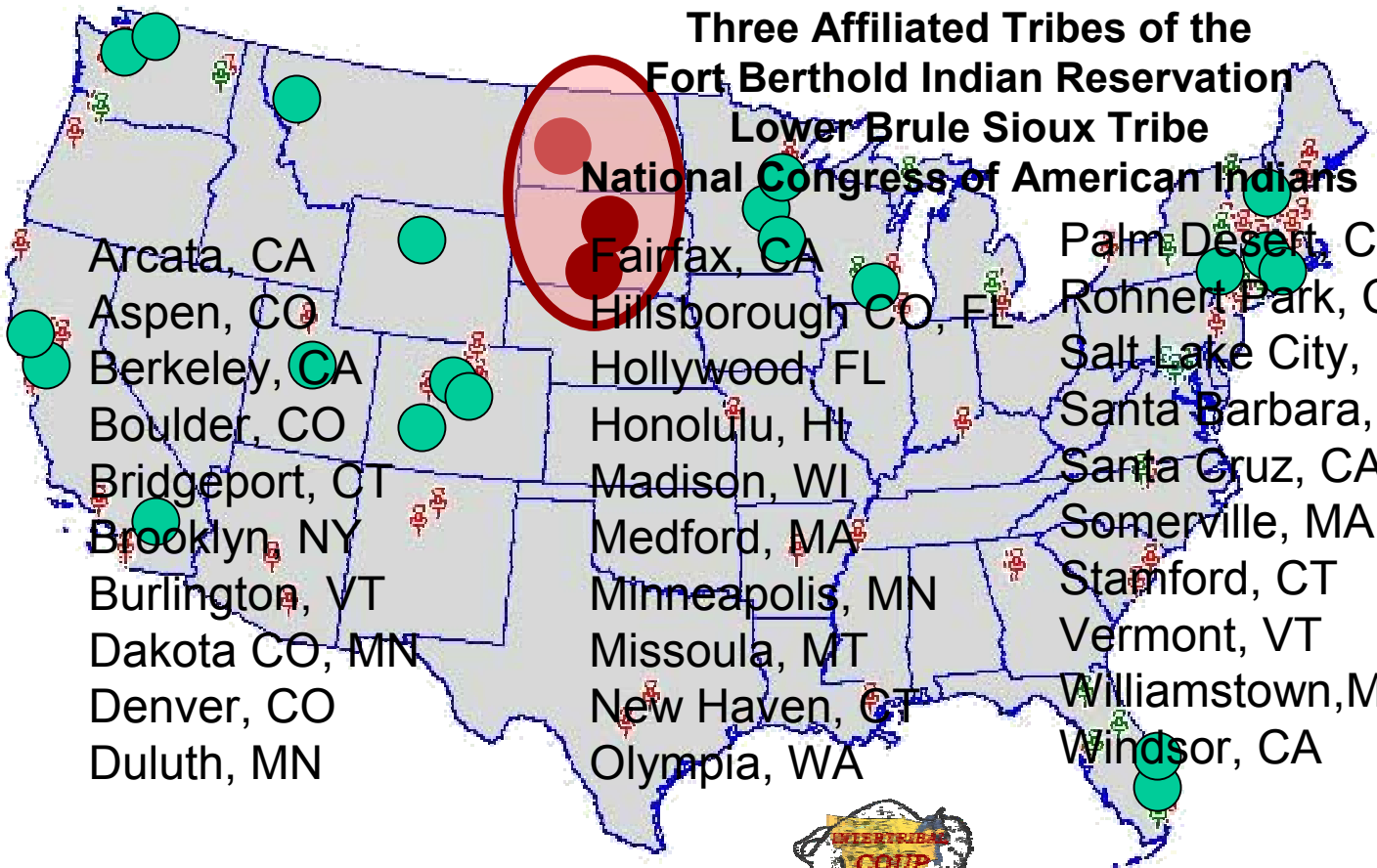
American Indian Tribes and Nations

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
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Aspen Daily News
"If you don't want it printed, don't let it happen."
517 E. HOPKINS * ASPEN, COLORADO 81611 * PHONE: (970) 925-2220

Native winds of change for Aspen's energy supply

By Thomas Watkins/Aspen Daily News Staff Writer 6/27/04

The vast, empty expanses of South Dakota's Great Plains could hardly be more geographically different from the jagged peaks surrounding Aspen.

But if a plan currently under review gets the go-ahead, the two areas will be linked firmly together by a commodity that has little regard for geography: electricity.

Aspen City Council and the city's electricity department are looking at a proposal that would see a significant portion - up to 7 percent - of the city's electricity needs being generated by a huge wind turbine that will soon be installed on an American Indian reservation on the Great Plains.

By committing to buy power from the Great Plains' Rosebud Sioux Indians, Aspen City Council is hoping to achieve two goals - to fulfill the city's commitment to renewable energy, which is currently under threat due to drought-caused diminishing hydroelectric returns, and to establish a demand for electricity that will help contribute to the Rosebud Sioux's economic prosperity.

"It would be fantastic if it could happen," said Mayor Helen Klanderud, who has been a keen proponent of the project. She also made Aspen the first U.S. signatory of a declaration that pledges a reduction in municipal carbon emissions. More than U.S. 150 cities have now signed that document.

NativeWind …
The Coming Generation!

Intertribal COUP Public Service Announcement

Electric Generation Makes *MORE* than Electrons

Global Warming ***GHGs***

CO_2

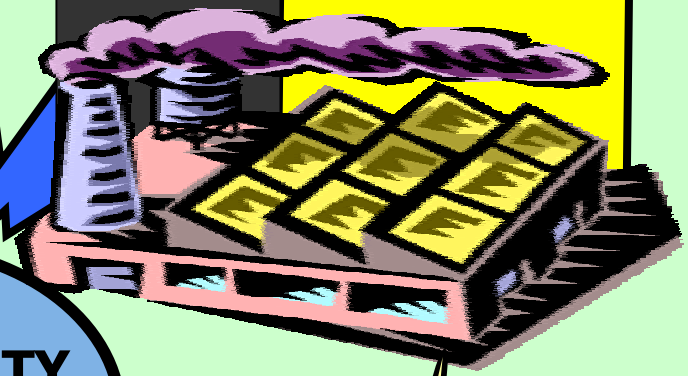
Costs of Pollution are ***Externalized*** by Utilities

Air & Water Emissions:

SO_x NO_x Mercury & Particulates

"Acid Rain" and Health Impacts

... are ***paid*** by the Environment and People



ELECTRICITY into the GRID

"Green" **Environmental Attributes**

Costs of Clean Attributes are ***Subsidized*** by *"Green Tags" Buyers*

Wind Turbines Create Several Revenue Streams:

Generic Energy → **kWhs power local load or sold on to transmission grid. Tribes can not rate base power.**

"Green Tags" → **Environmental Attributes / Pollution Reductions** (lbs per kWh) Marketing Rights

Renewable Incentives → **Federal and State Incentives: PTC, REPI, tax credits. TEPI needed.**

Generic Electricty – Actual power generated by facility is either sold into the grid (for "avoided cost") or used on site to meet the demand of an on-grid load (net-metered at retail/avoided cost) or off-grid load (avoiding transmission costs). It can also be used for non-electricity purpose.

GREEN TAGS – Rights to ***environmental attributes (pollution reductions)*** associated with a certain quantity of renewable electricity, backed by real electricity generation, which can be sold directly with or separately from the actual energy, over space and/or time.

Renewable Incentives **-** Tribally owned projects are not eligible for federal Production Tax Credits (PTC) or the Renewable Energy Production Incentives (REPI), or other tax based state incentives. PTC requirements penalizes private partners in a tribal joint venture by limiting the credit. Tribes need a Tradable Energy Production Incentive (TEPI) to level the playing field.

Value of Wind Turbine Revenue Streams:

Generic Energy

Local load ~$.08/kWh retail price
Basin @ $ .011/kWh avoided cost
WAPA @ $ .015/kWh wholesale

"Green Tags"

Green Tags for present value
~$.01/kWh for total output
OR
GreenPower@ $.025 /kWh
over short term contract

Tradable Energy Production Incentives

PTC or TEPI:
$.017+/kWh for 10 yrs

Generic Energy – Actual power generated by distributed facilities could be collected by the existing distribution and transmission systems and exported as a value added commodity to keep communities on the land.

GREEN TAGS – these rights to ***environmental attributes*** (RECs) can be used in a "cap and trade" programs between utilities **OR** can be used by governments for Renewable Portfolio Standards, or by NGOs, companies or individuals to support project development.

Renewable Incentives **-** Tribally owned projects could utilize tradable/assignable federal Production Tax Credits under COUP's proposed Senate legislation. At 1.8 cents/kwh the PTC is worth more than the "avoid cost" of energy, the lowest price utilities pay for power.

Up-Front Green Tags

$$

Event Carbon Footprint

$

Native Energy

Tags

Up-Front Payment

Marketing Tribal Green Tags

Reaching out to the marketplace...

...fighting global warming!

NativeEnergy
Bringing New Renewables To Market

www.NativeEnergy.com

www.EnergyIndependenceDay.org

24 TRIBES with over 200 GWs of Wind Power Potential

Supporting Tribal Renewable Energy:

PRACTICE: Energy conservation and efficiency

ENCOURAGE: Local governments to join COUP-ICLEI Energy Independence Day Campaign!

DEMAND: Federal grids carry Tribal Renewable Energy

PURCHASE: Tribally Generated Green Power & "Green Tags"

www.NativeEnergy.com

Intertribal Council On Utility Policy