

Wind Energy Applications Training Symposium



Policy Issues for Tribal Wind

**Bob Gough, Secretary
Intertribal COUP
Council On Utility Policy
August 2006**

A map of the Great Plains region in the United States, showing state boundaries and tribal territories. The map is overlaid with a thick black outline that defines the geographical area covered by the Intertribal Council on Utility Policy (COUP). The text "INTERTRIBAL Council On Utility Policy" is written in large, bold, red letters across the top of the map.

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

Bill Schumacher, Treasurer - Flandreau Santee Reservation, SD

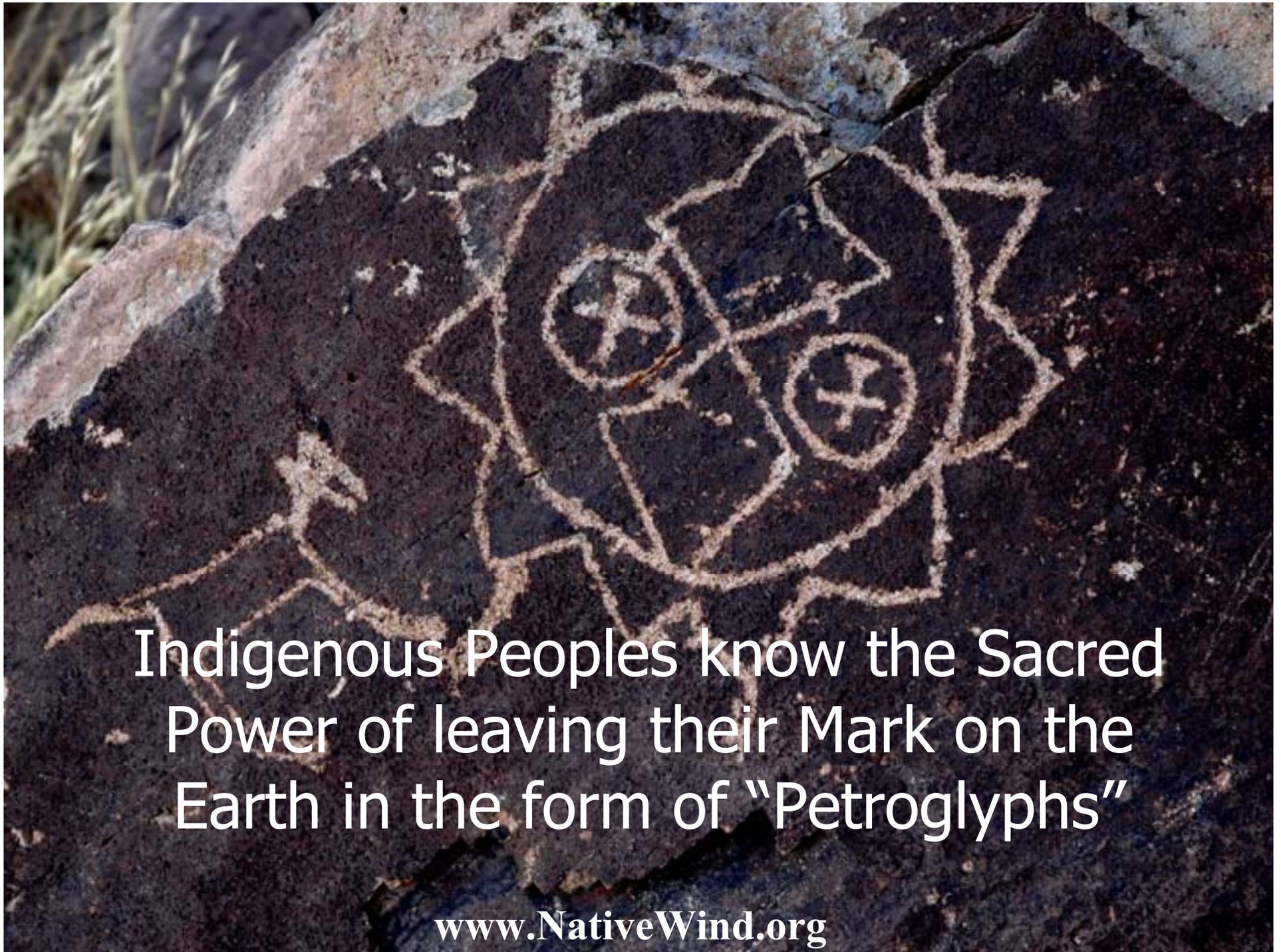
www.IntertribalCOUP.org

www.NativeWind.org



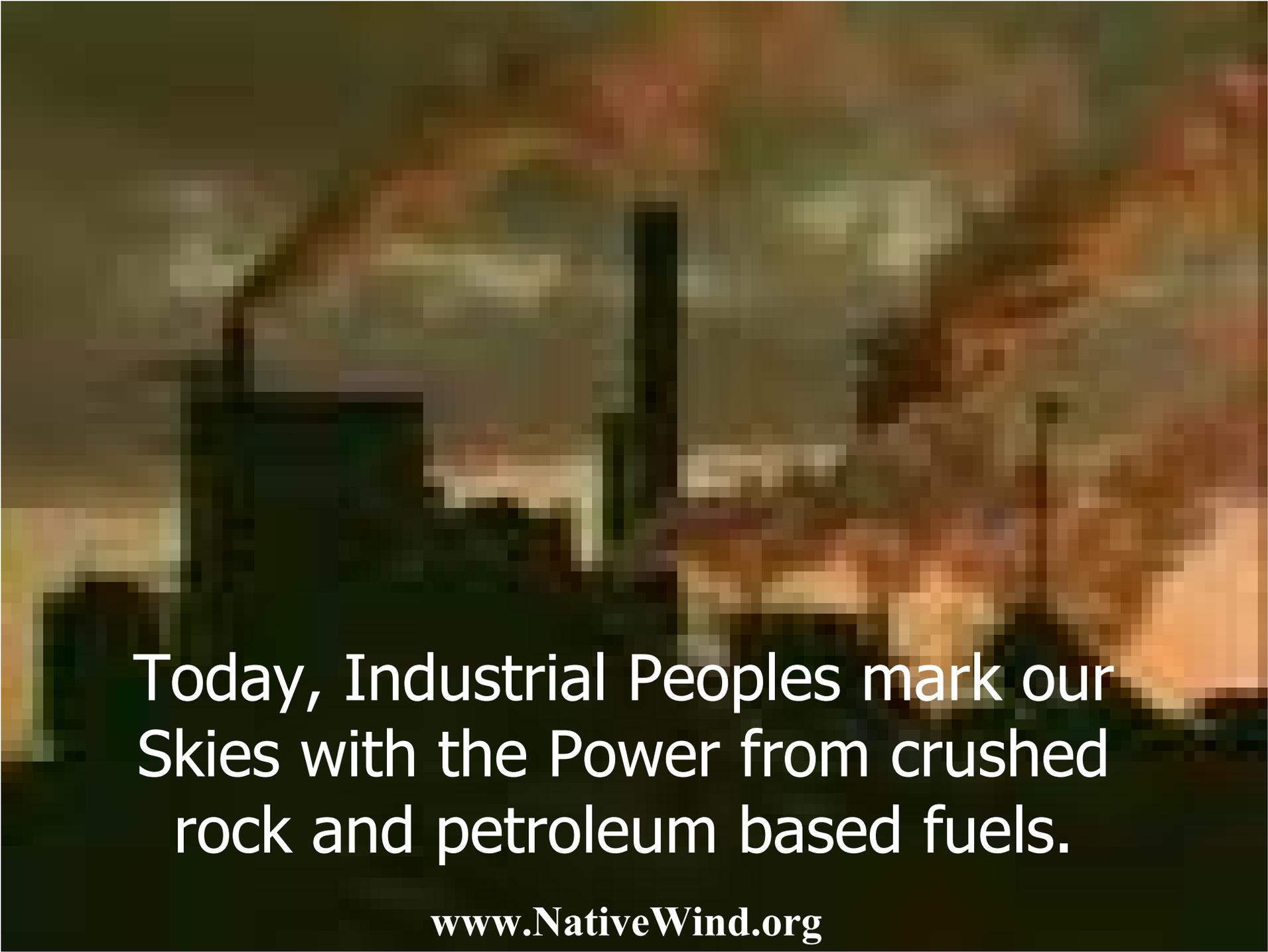
http://www.windows.ucar.edu/tour/link=/earth/images/Tropical_Storm_image.html

**If the Earth was the size of an apple,
Then Her life-giving atmosphere
would be thinner than the Apple's peel!**



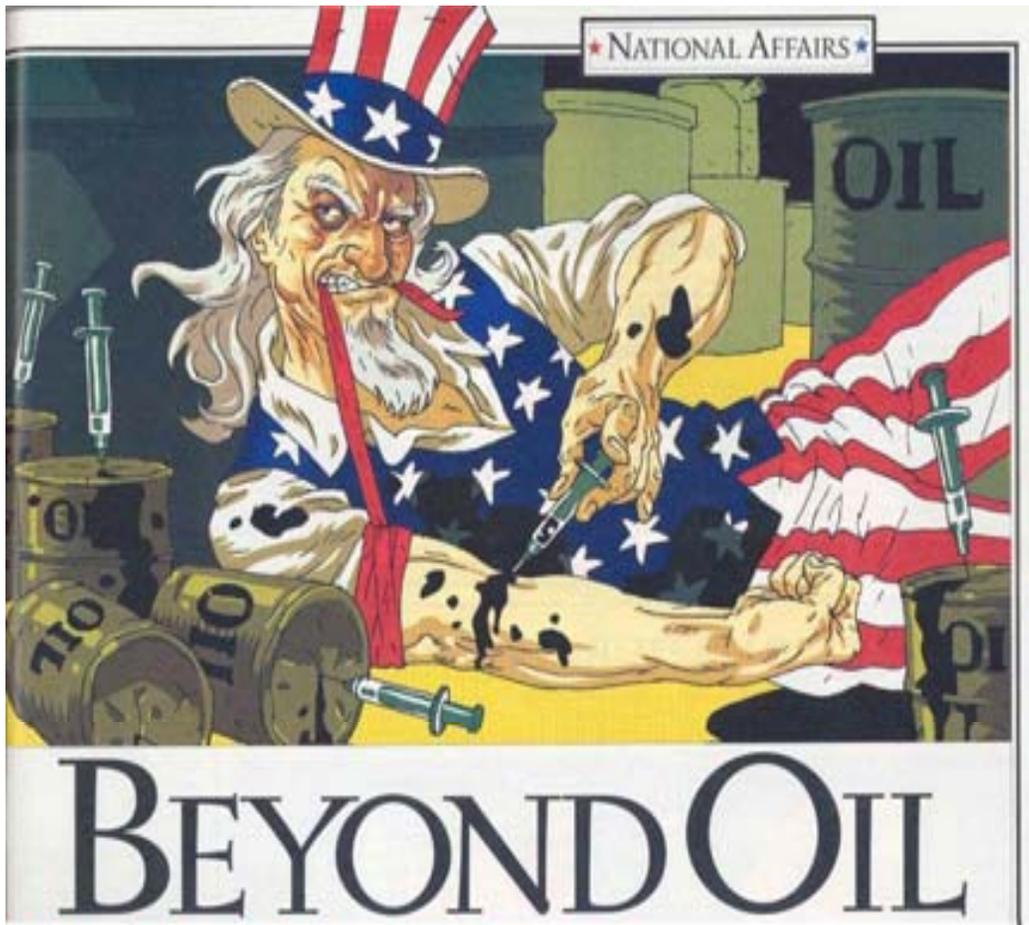
Indigenous Peoples know the Sacred Power of leaving their Mark on the Earth in the form of “Petroglyphs”

www.NativeWind.org



Today, Industrial Peoples mark our
Skies with the Power from crushed
rock and petroleum based fuels.

www.NativeWind.org



“America is addicted to Oil!”

BEYOND OIL

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

— BY AMANDA GRISCOM —

As we again witness another round of global warming, which will cause widespread drought, rising sea levels and extreme weather patterns; air pollution from power generators weakens lung and heart disease; the melting of food fuels results in contaminated riverbeds and chopped-up mountains, not to mention leakage, spills and hazardous waste that require costly cleanups.

And then there is the threat of oil shortages. Some energy experts are sounding the alarm that based on current demand, the world's known oil reserves will be depleted by mid-century. Other experts foresee the discovery of more reserves, but most agree that oil's political and environmental costs will likely intensify in the coming decades, and that the future health of our planet and our way of life is at stake.

The environmental threats are also interconnected.

documented. Burning fossil fuels is believed to be the primary cause of global warming, which will cause widespread drought, rising sea levels and extreme weather patterns; air pollution from power generators weakens lung and heart disease; the melting of food fuels results in contaminated riverbeds and chopped-up mountains, not to mention leakage, spills and hazardous waste that require costly cleanups.

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— THE PANELISTS —

Lord John Browne, group chief executive of BP-Petroleum

Robert O. Anderson, CEO of Shell International Renewable

David Goman, assistant secretary for energy efficiency and innovative energy at the U.S. Department of Energy

Michael Klare, professor of peace and war studies at Hampshire College and author of *Resource Wars: The New scramble for Global Conflict*

Amory B. Lovins, CEO of Rocky Mountain Institute and chairman of *Nuclear 101*

Joel Makower, co-founder of Clean Edge, a research and consulting firm in clean technology

Anthony Pavella, CEO of Adelman Power, a New York renewable energy contractor

Don Reiches, executive vice president of Northern Power Systems and former assistant secretary of energy and chief of staff of the U.S. Department of Energy in the Clinton administration

Bob Stempel, chairman of Energy Conversion Devices Inc., former CEO and chairman of General Motors (1990-92)

Richard Trigg, director of the National Renewable Energy Laboratory

Daniel Yergin, chairman of Cambridge Energy Research Associates and Pulitzer Prize-winning author of *The Prize: The Epic Quest for Oil, Money and Power*

www.NativeWind.org

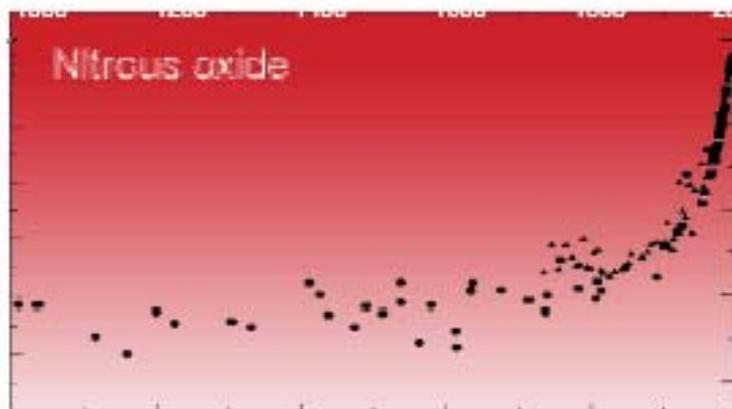
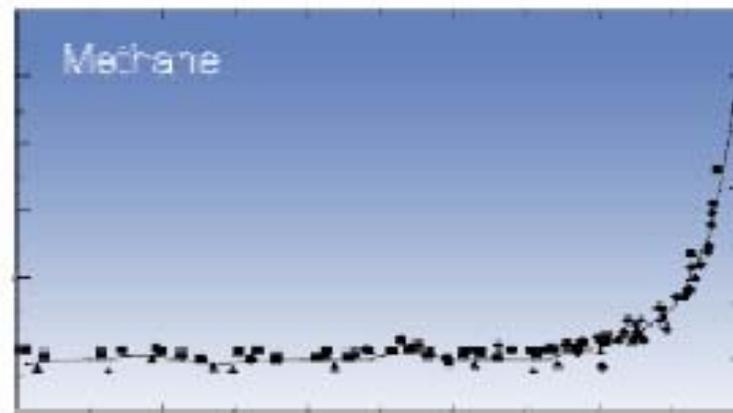


www.NativeEnergy.com

A Question of National Responsibility

Changes in Atmospheric Concentrations

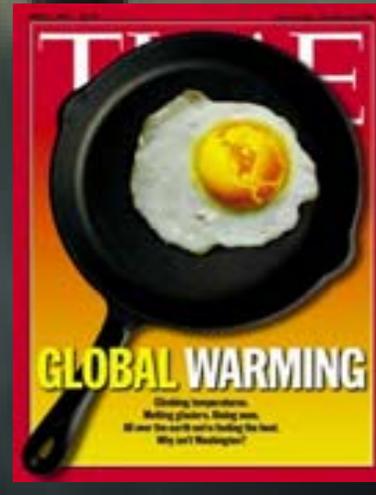
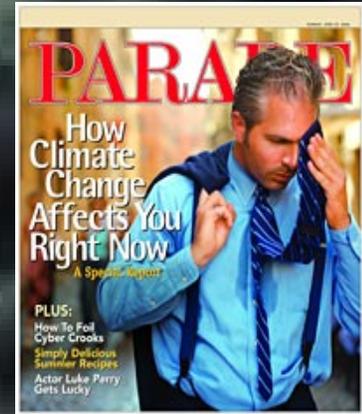
- A Thousand Year History -



Kyoto Protocol went into Effect in 2005.

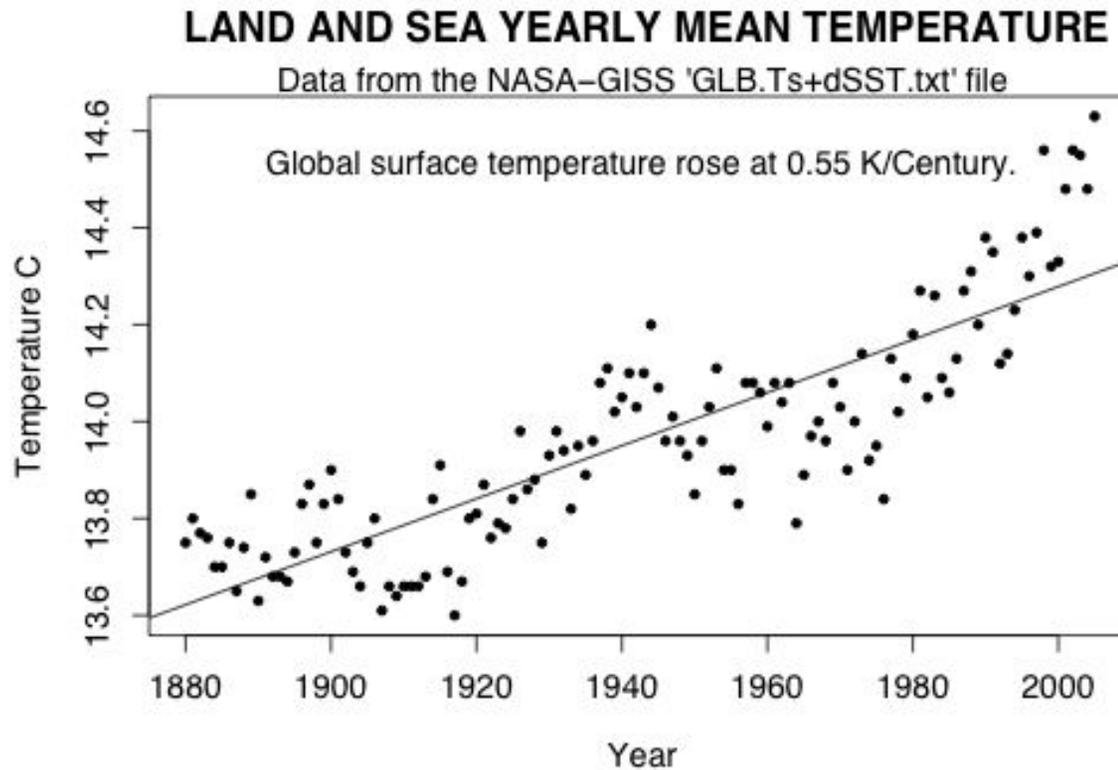
Source: NREL

Global Warming: A real and present danger...



www.NativeWind.org

www.NativeEnergy.com



Last 7 Months Were Warmest Stretch on Record

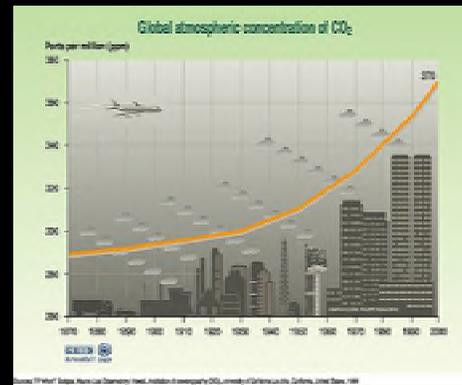
By ANDREW C. REVKIN Published: August 8, 2006 *The New York Times*

The first seven months of 2006 were the warmest such stretch in the continental United States for any year since climate record-keeping began in 1895, federal scientists said. Scorching temperatures in July, particularly strings of hot nights, were almost certainly related in part to the continuing buildup of heat-trapping smokestack and tailpipe gases linked to global warming, said Jay Lawrimore of the National Climatic Data Center. "The long-term trend we're seeing cannot be explained without the influence of greenhouse gases," Mr. Lawrimore said.

***If we could only
connect the dots ...***



**Burning Fossil
Fuels**



**Green House
Gases & Global
Warming**



Council On Utility Policy



Global Warming as a Moral Issue about Stewardship of the Earth

LIVES OF AMERICAN SOLDIERS

GLOBAL

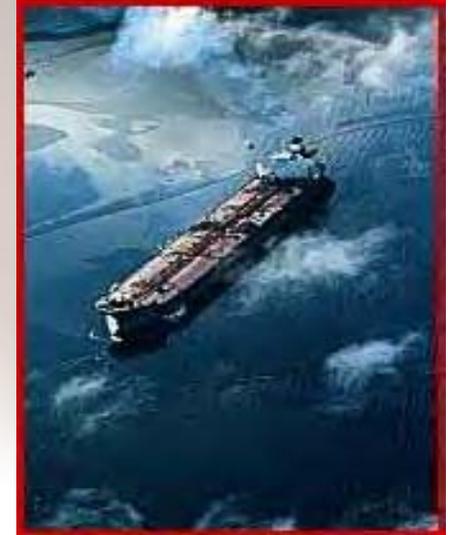
ENVIRONMENTAL DEGRADATION

WARMING

IRANIAN NUCLEAR PROGRAM

TERRORIST
FUNDING

EMBRACE OF REPRESSIVE GOVERNMENTS

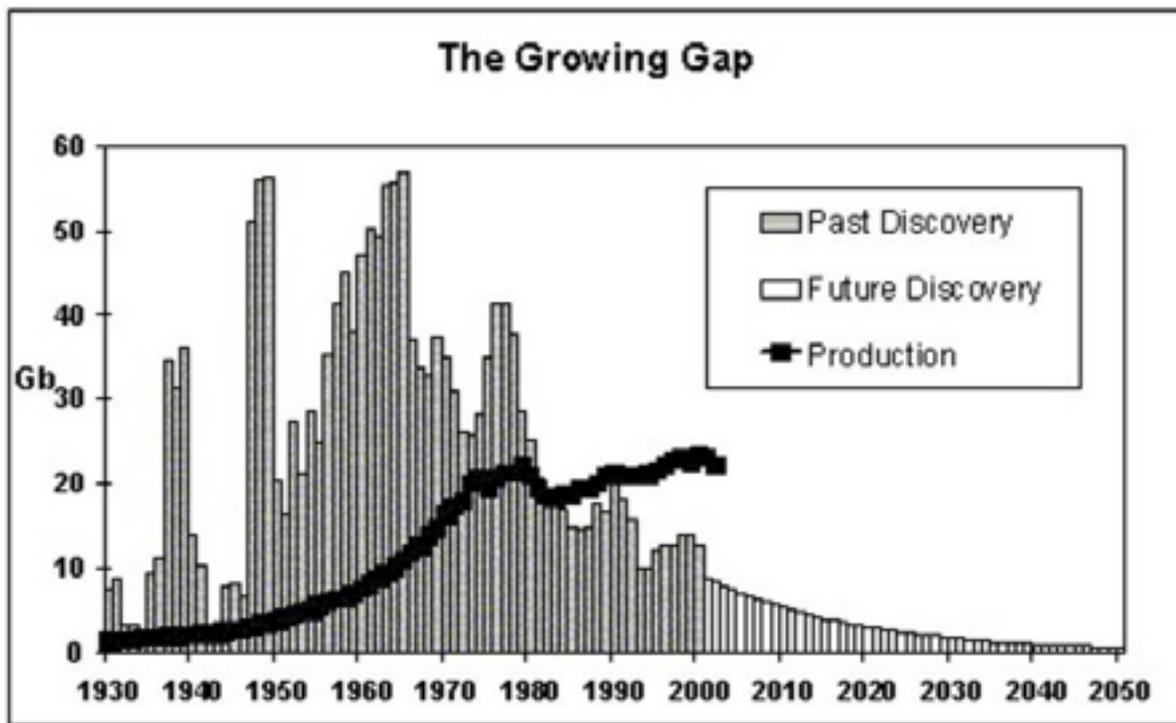
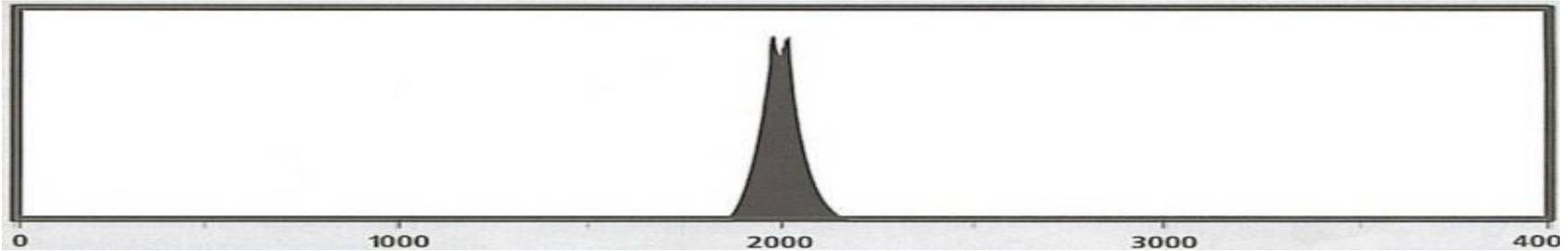


The high price per barrel



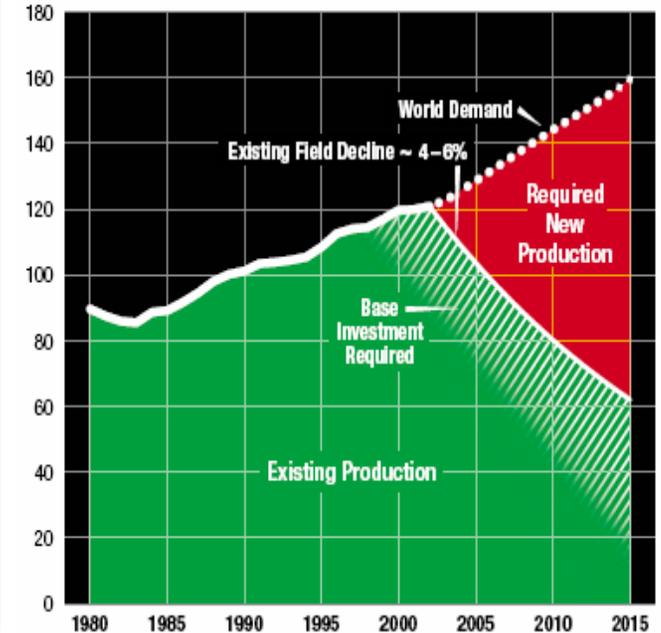
Hubbert's Peak ~ The Energy Curve of History?

Source: [Community Solution](#)

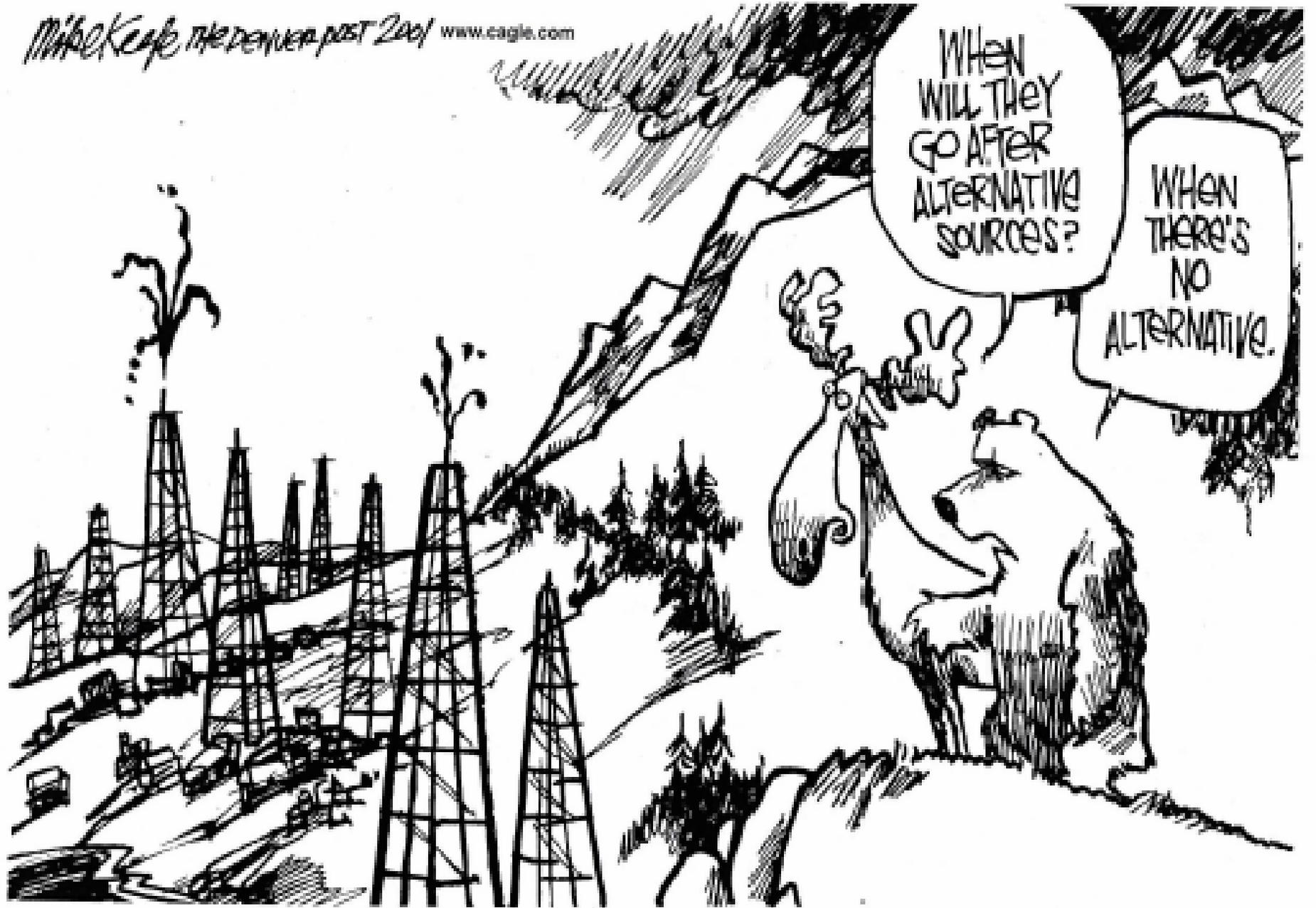


Supplying Oil and Gas Demand Will Require Major Investment

Millions of Barrels per Day of Oil Equivalent (MBOE)



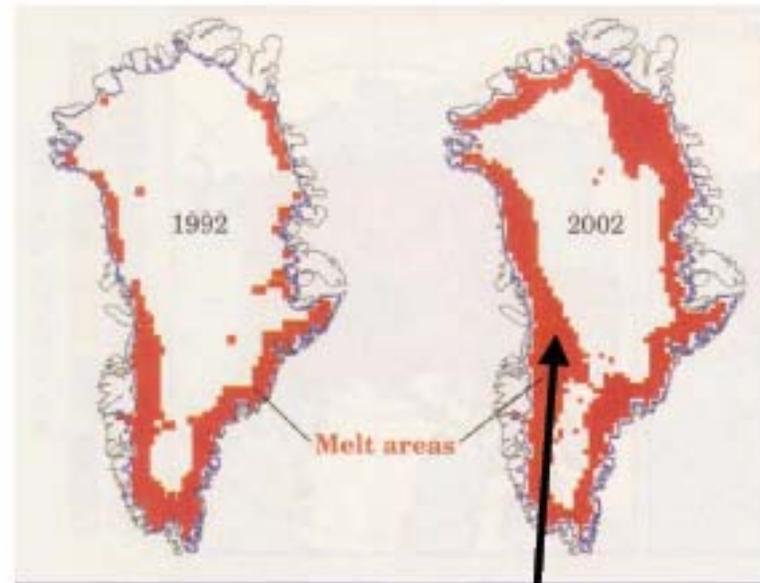
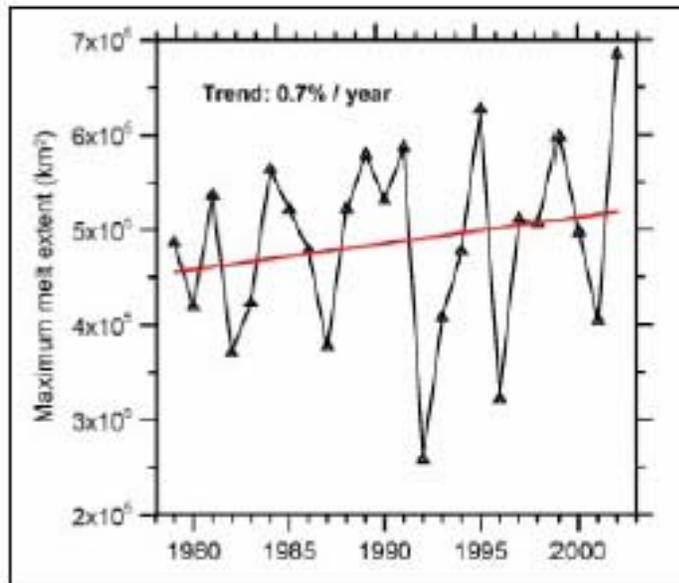
Mike Keefe THE DENVER POST 2001 www.cagle.com



www.NativeWind.org

www.NativeEnergy.com

Increasing Melt Area on Greenland



- 2002 all-time record melt area
- Melting up to elevation of 2000 m
- 16% increase from 1979 to 2002

70 meters thinning in 5 years

Satellite-era record melt of 2002 was exceeded in 2005.

Source: Waleed Abdalati, Goddard Space Flight Center

Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado

Surface Melt on Greenland

Melt descending into a moulin, a vertical shaft carrying water to ice sheet base.



*Source: Roger Braithwaite,
University of Manchester (UK)*

**Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado**

Jakobshavn Ice Stream in Greenland

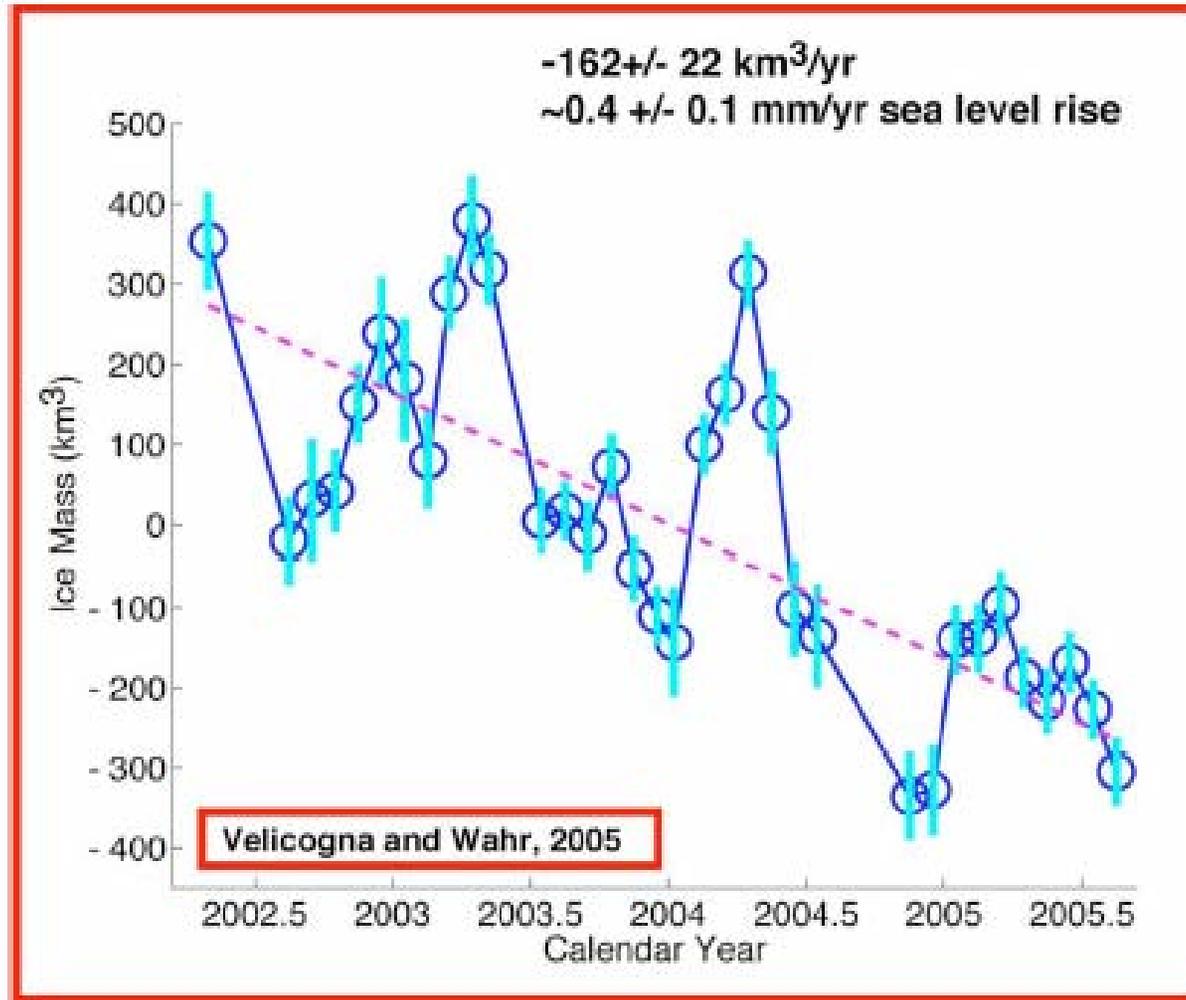
Discharge from major Greenland ice streams is accelerating markedly.

Source: Prof. Konrad Steffen, Univ. of Colorado



**Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado**

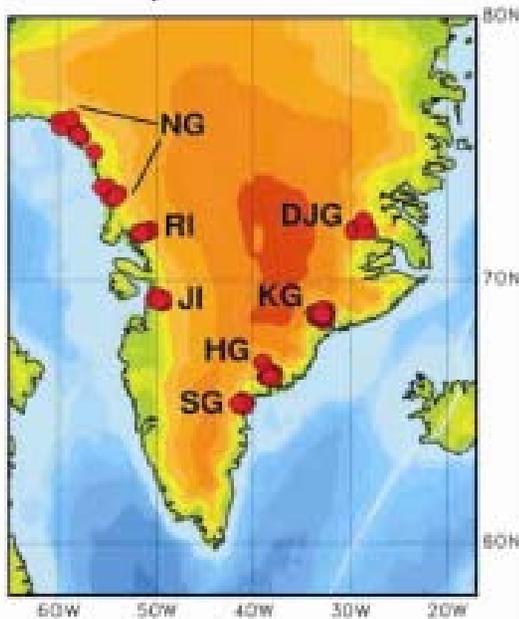
Greenland Mass Loss – From Gravity Satellite



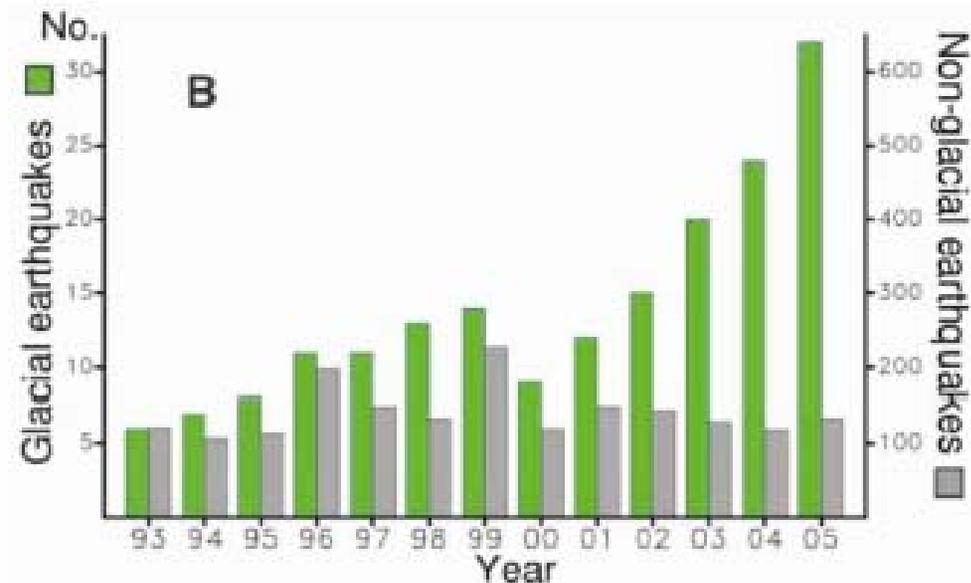
Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado

Glacial Earthquakes on Greenland

Earthquake Locations



Annual Number of Quakes*



* 2005 bars capture only first 10 months of 2005

Location and frequency of glacial earthquakes on Greenland. Seismic magnitudes are in range 4.6 to 5.1.

Source: Ekstrom, Nettles and Tsai, *Science*, 311, 1756, 2006.

Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado

Survival of Species

1. “Business-as-Usual” Scenario

- Global Warming ~ 3°C
- Likely Extinctions ~ 50 percent

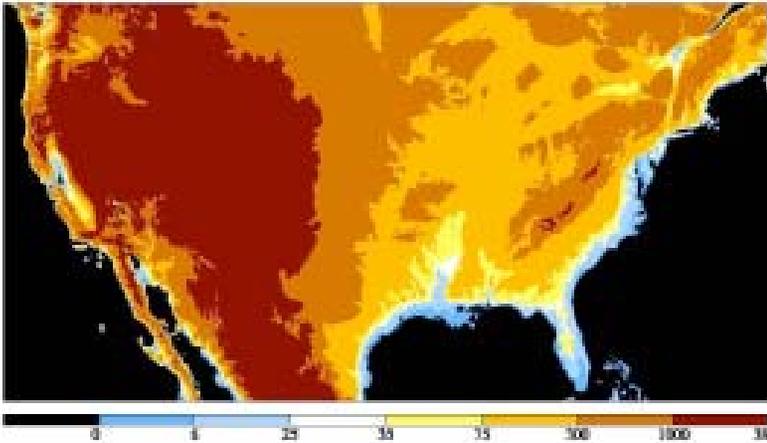
2. “Alternative” Scenario

- Global Warming ~ 1°C
- Likely Extinctions ~ 10 percent

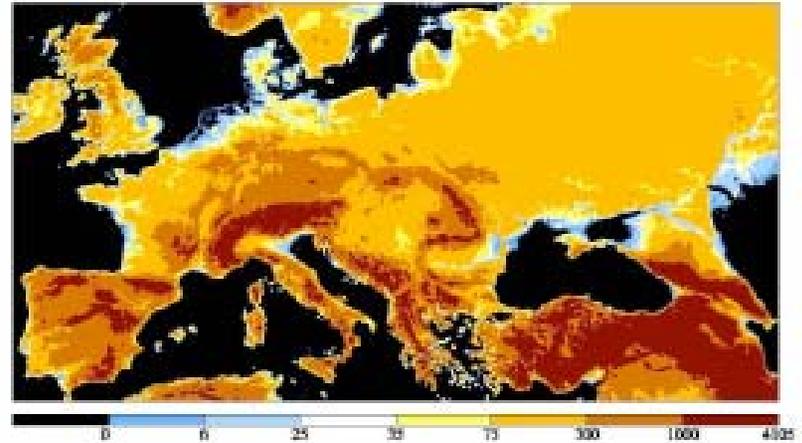
Climate Feedbacks ♦ Scenario Dichotomy

Areas Under Water: Four Regions

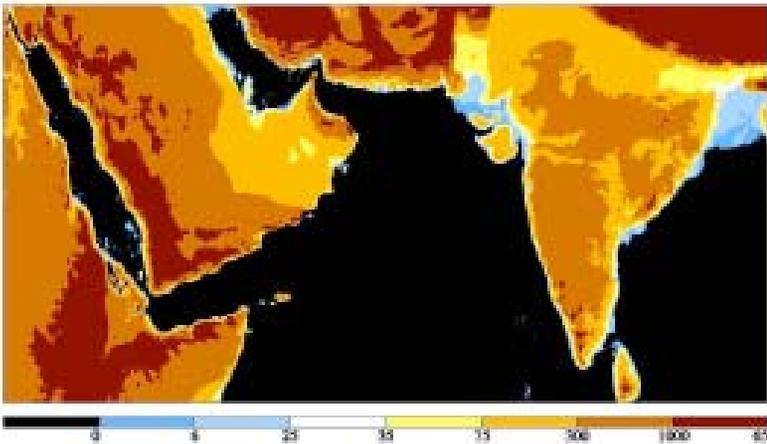
U.S. Area Under Water



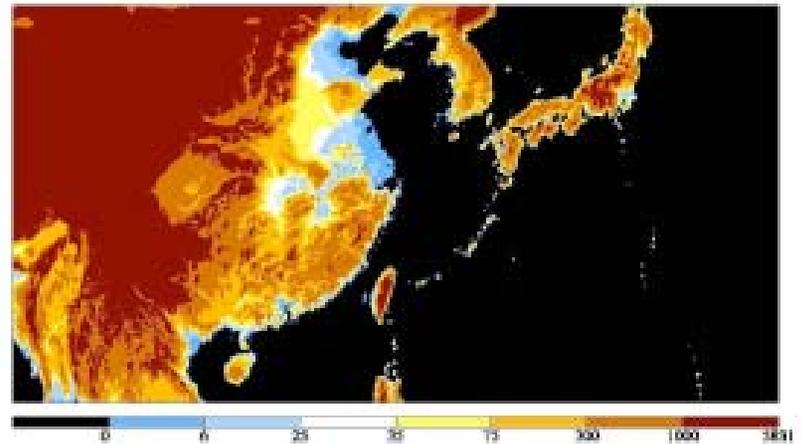
Europe Area Under Water



Central Asia: Area under Water

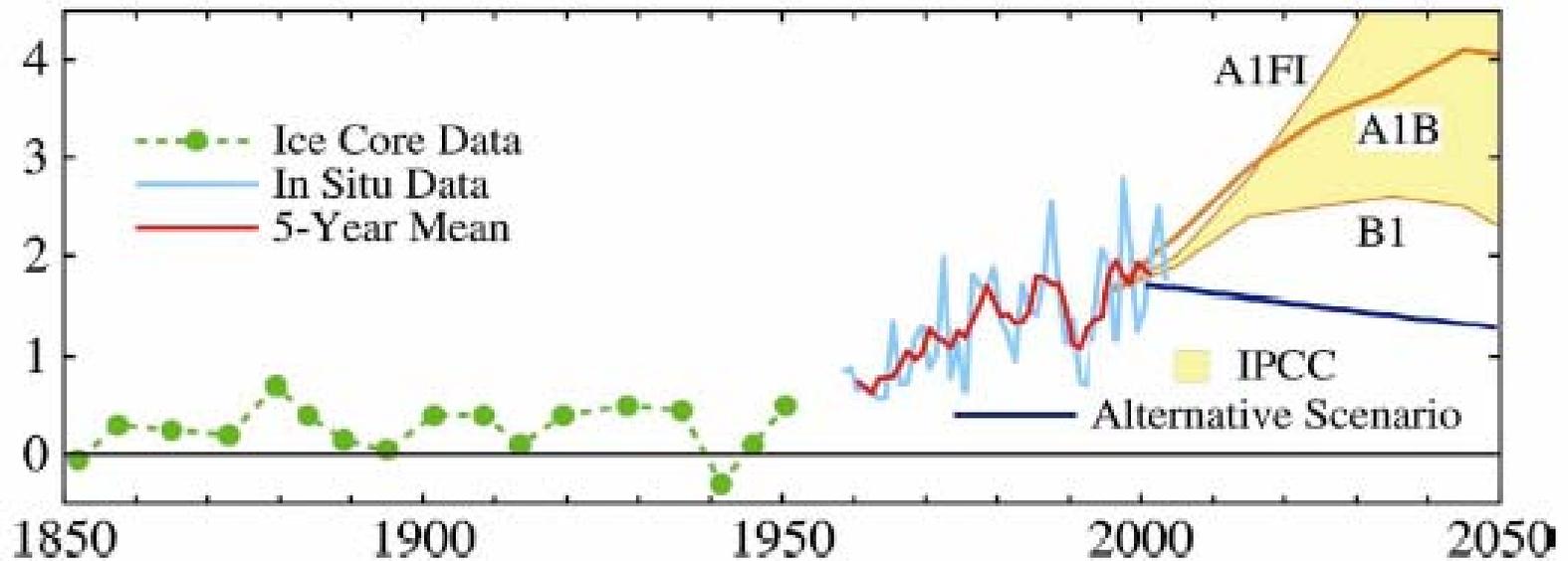


Far East: Area under Water



Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado

Annual CO₂ Growth (ppm/year)

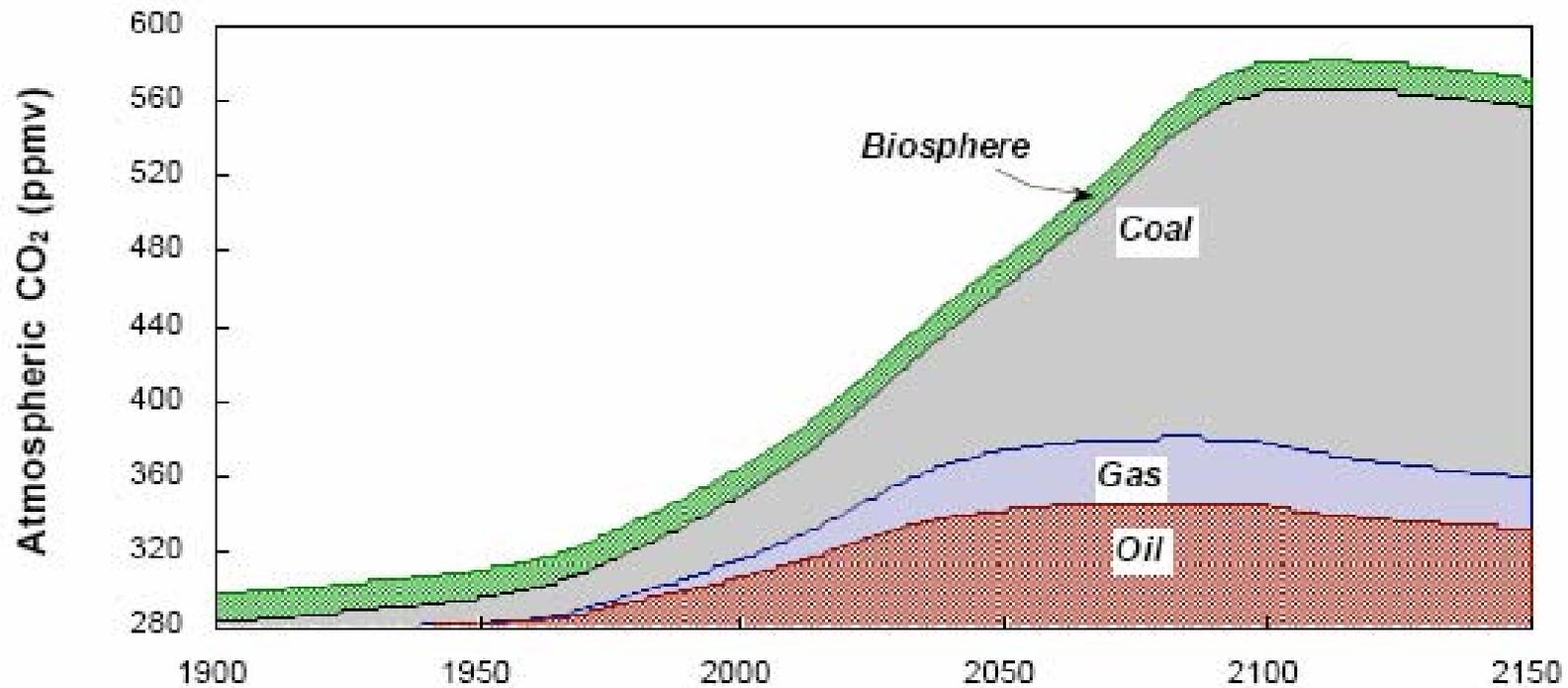


Growth rate of atmospheric CO₂ (ppm/year).

Source: Hansen and Sato, PNAS, 101, 16109, 2004.

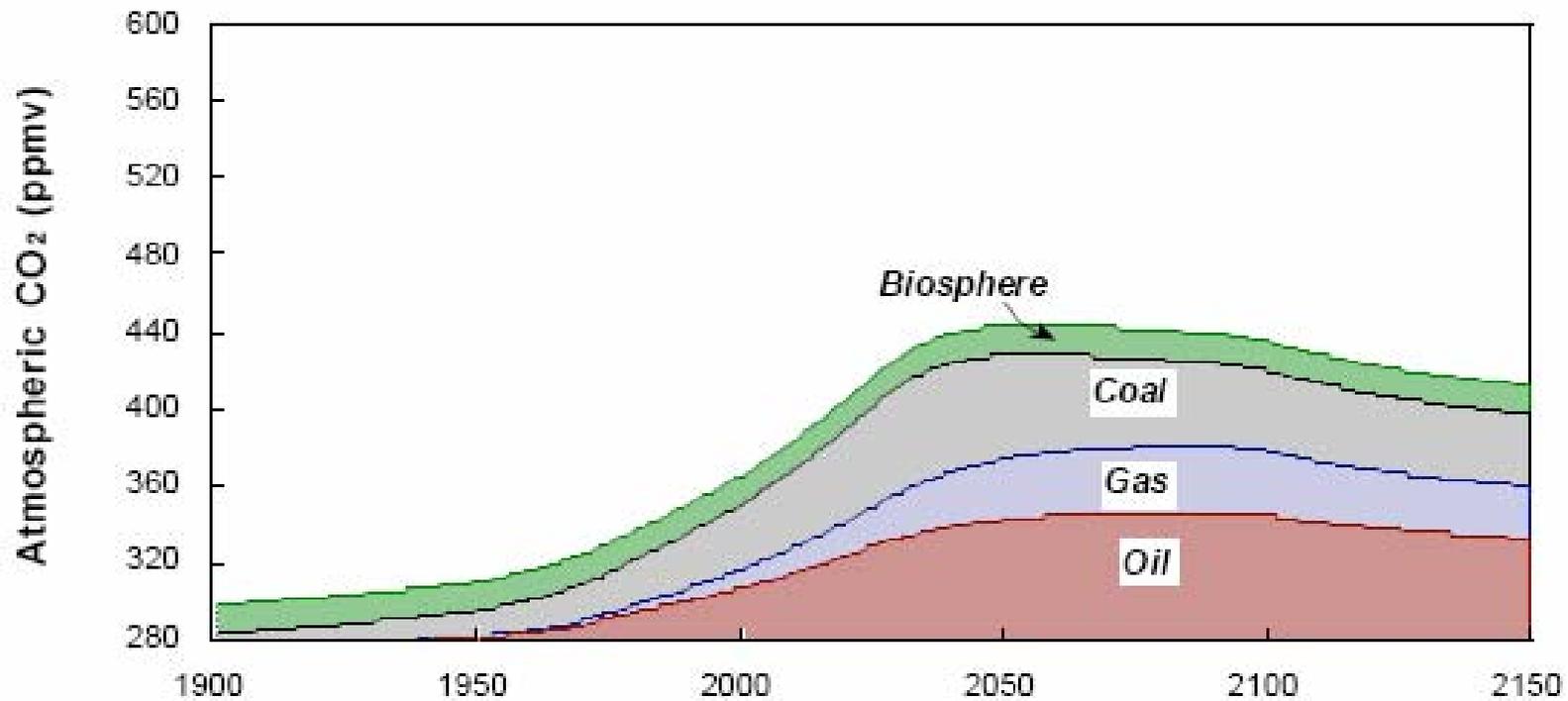
Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado

Business-as-Usual
(2% annual growth to peak, then 2% annual decline)

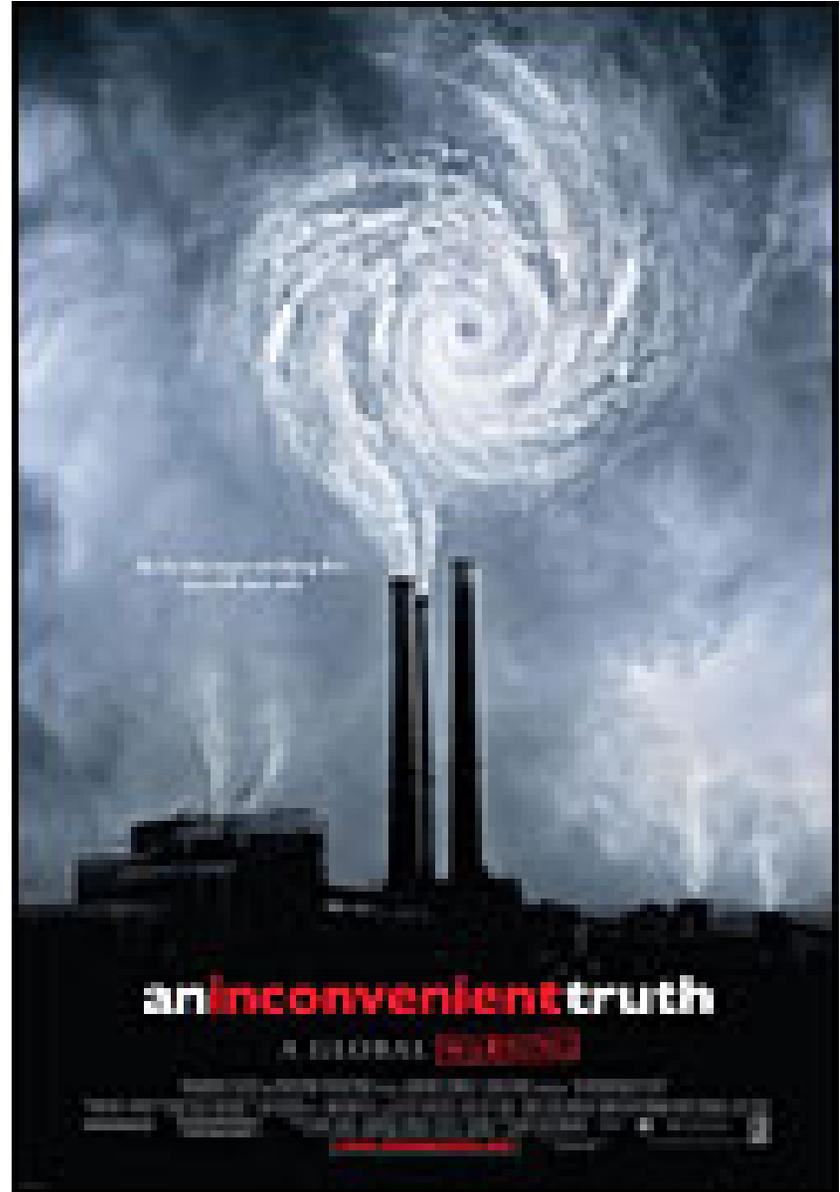
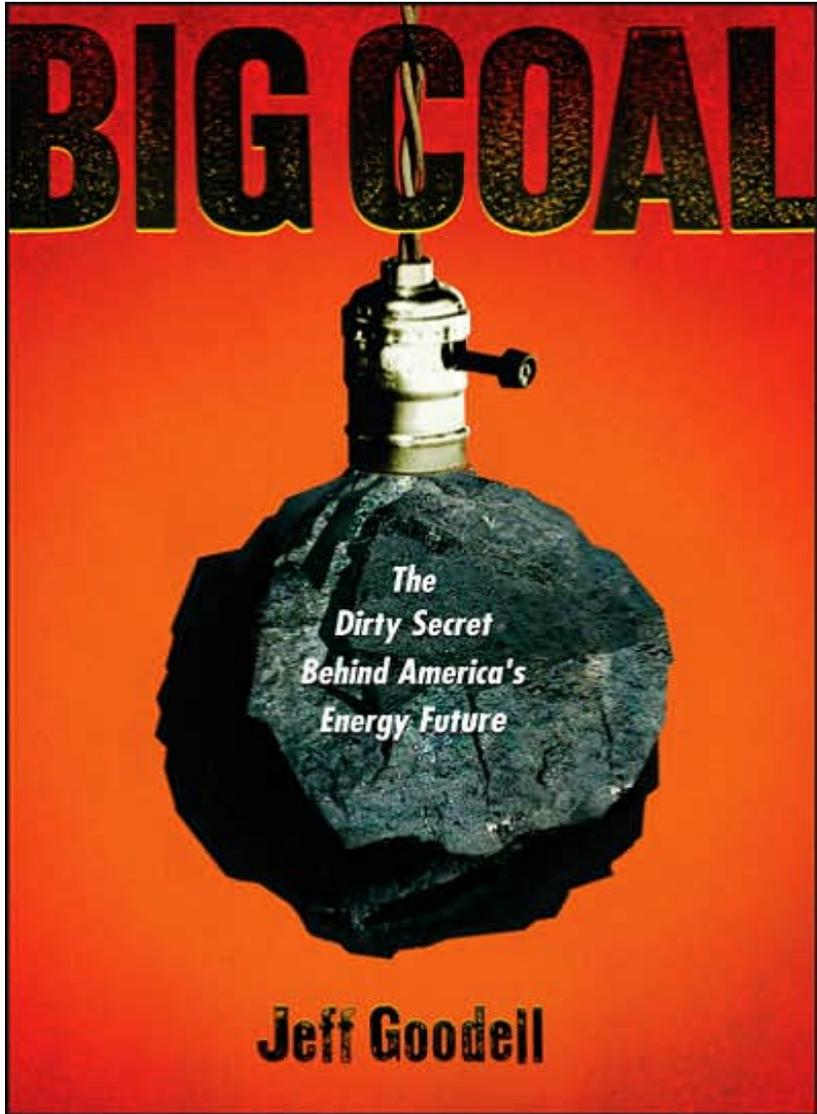


Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado

Alternative Case: Coal Phaseout (+2%/yr to 2012; +1%/yr to 2022; phaseout by 2050)



Source: Jim Hansen ~ The Threat to the Planet Actions Required to Avert Dangerous Climate Change
10 July 2006 SOLAR 2006 Conference on Renewable Energy, Denver, Colorado



Controlling the increase of green house gas emissions “would take 40 successful Kyotos. But we’ve got to do it”

Dr. Jerry Mahlman,
National Center for Atmospheric Research
National Geographic, Sept 2004



CLIMATE CHANGE - NATIONAL SECURITY



An Abrupt Climate Change Scenario and Its Implications for United States National Security

A report commissioned by the U.S. Defense Department

By Peter Schwartz and Doug Randall

“[G]lobal warming should be elevated beyond a scientific debate to a U.S. national security concern.”

http://www.ems.org/climate/pentagon_climate_change.html

www.EnergyIndependenceDay.org



www.EnergyIndependenceDay.org Intertribal Council On Utility Policy

CLIMATE CHANGE - INSURANCE - THREATS

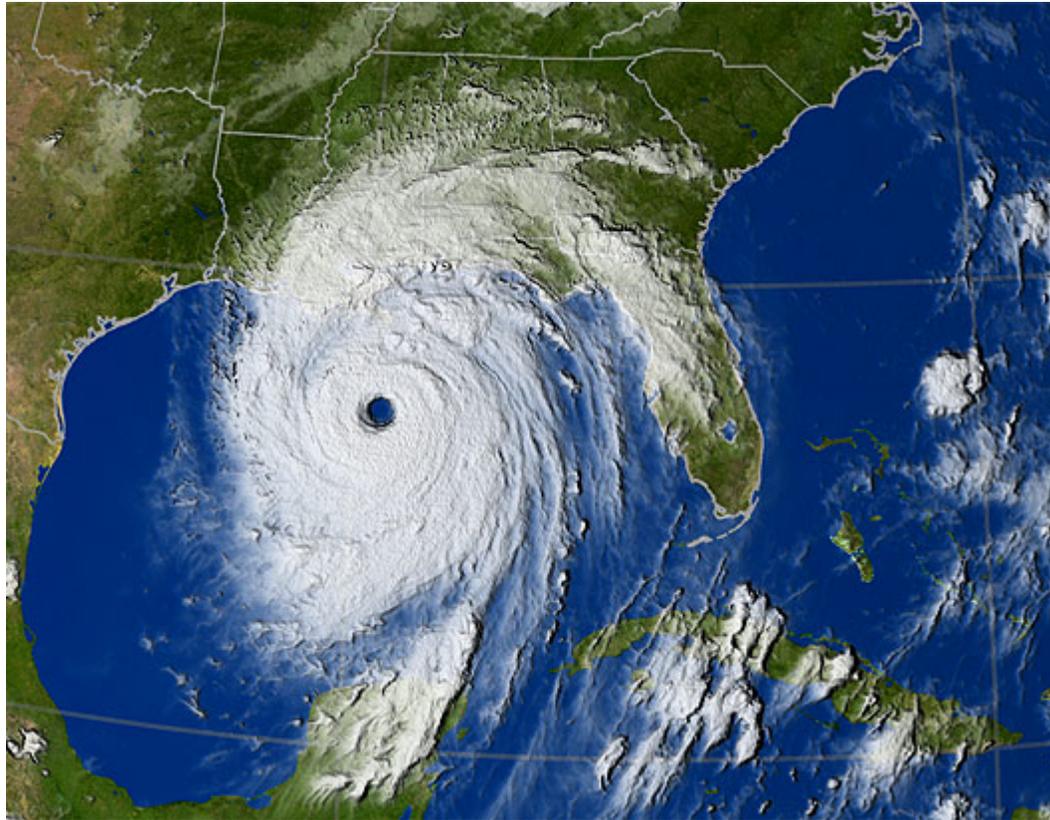


Scientists expect global warming to trigger increasingly frequent and violent storms, heat waves, flooding, tornadoes, and cyclones while other areas slip into cold or drought.

[A Swiss RE] report comes as a growing number of policy experts warn that the environment is emerging as the security threat of the 21st century, eclipsing terrorism.

National Wildland Fire Potential and Incidents





Global Warming: As Seen From Space

Last summer, Hurricane Katrina devastated the Southeastern U.S. An increasing body of evidence links warmer ocean seas -- due to global warming -- to stronger, more dangerous hurricanes. Last year's hurricane season was the busiest yet.

(NASA/Goddard Space Flight Center Scientific Visualization Studio)

Growing Public Awareness of Changing Climate In the Aftermath of Hurricanes Charley, Frances, Ivan, Jeanne, Katrina and Rita



There is the real possibility that if we wait long enough, moving Florida may be a less costly!!

What could
be *more*
American?



NATIVEWIND
ENERGY INDEPENDENCE
INTERTRIBAL COUP

'Midwest' Discovered Between East and West Coasts



NEW YORK—A U.S. Geological Survey expeditionary force announced Tuesday that it has discovered a previously unknown and unexplored land mass between the New York and California coasts known as the "Midwest."

The Geological Survey team discovered the vast region while searching for the fabled Midwest Passage, the mythical overland route passing through the uncharted area between Ithaca, NY, and Bakersfield, CA.

"I long suspected something was there," said Franklin Eldred, a Manhattan native and leader of the 200-man exploratory force. "I'd flown between New York and L.A. on business many times, and the unusually long duration of my flights seemed to indicate that some sort of large area was being traversed, an area of unknown composition."



CLIMATE JUSTICE:

**THE WORLD'S
INDIGENOUS
PEOPLES ARE THE
FIRST AND WORST
HIT BY THE IMPACTS
OF GLOBAL CLIMATE
CHANGE !**

NATIVEWIND
ENERGY INDEPENDENCE
INTERTRIBAL COUP



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>

www.EnergyIndependenceDay.org



www.EnergyIndependenceDay.org Intertribal Council On Utility Policy

Want to see America's new ghetto? Follow the Rockies northwards towards the Great Plains

No place so demonstrates the shaky economic state of rural America as the northern Rockies and western Great Plains. Virtually all of the 20 poorest counties in America, in terms of wages, are on the eastern flank of the Rockies or on the western Great Plains (see map and table below). Not one of the ten poorest counties in this region issued a housing permit in 2002...

There are two unusual things about the deprivation in this region. **First, it is largely white.** The area does include several pockets of wretched Native American poverty, but in most areas the poor are as white as a prairie snowstorm. **Second, most people do not think of themselves as poor.**

The poorest part of America
~ Not here, surely?
JUDITH BASIN, MONTANA
From "The Economist"
print edition Dec 8th 2005

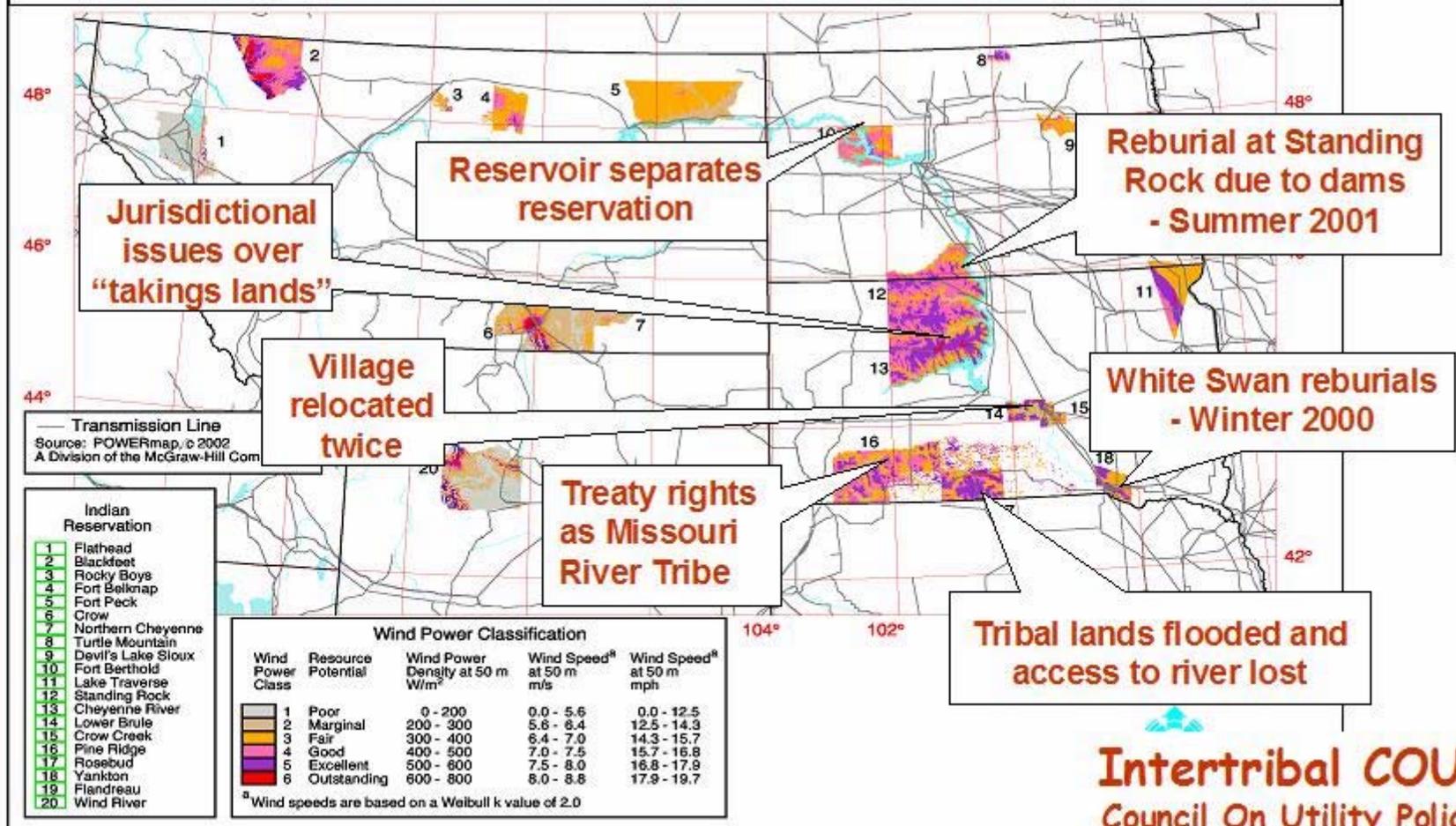


Intertribal Wind Planning and Policy Project

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



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

www.EnergyIndependenceDay.org



Intertribal Council On Utility Policy

Presidential Directive for WMD in America!!

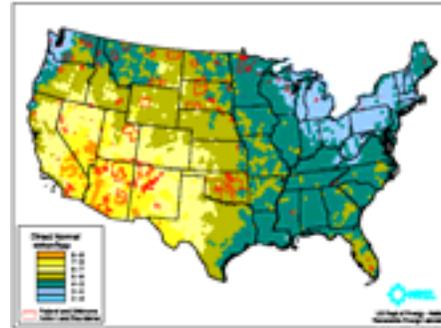
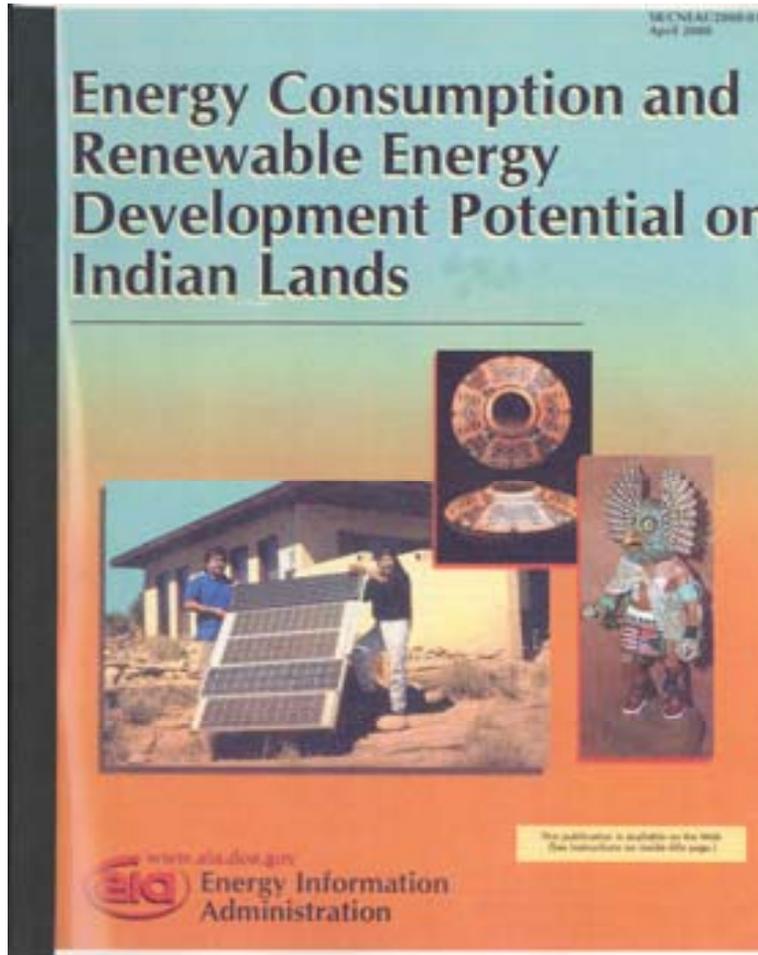
Wind Mass Deployment

“Wind energy is one of the world's fastest-growing energy technologies. In 2005, the U.S. wind energy industry installed more than 2,300 megawatts (MW) of new wind energy capacity – or over \$3 billion worth of new generating equipment – in 22 states. Areas with good wind resources have the potential to supply up to 20% of the electricity consumption of the United States.”

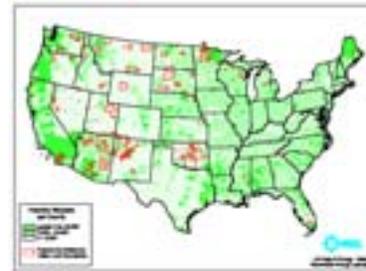
President's Energy Vision: Advanced Energy Initiative, February 20, 2006

<http://www.whitehouse.gov/stateoftheunion/2006/energy/index.html>

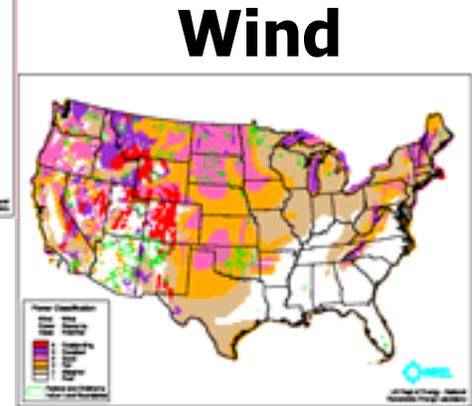
TRIBES HAVE A WEALTH OF RENEWABLE RESOURCES



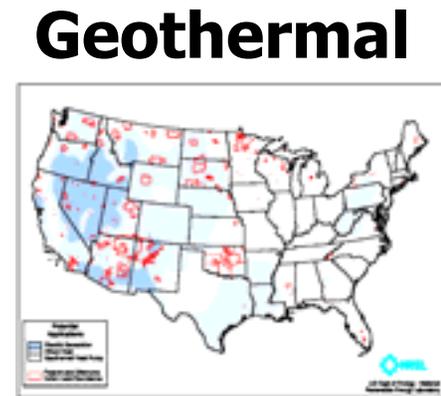
Solar



Biomass



Wind



Geothermal

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

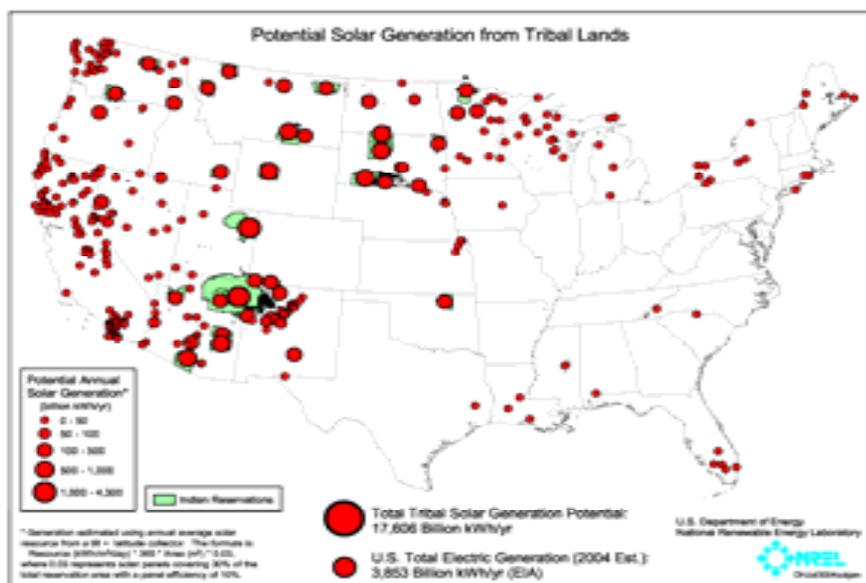
www.EnergyIndependenceDay.org



Intertribal Council On Utility Policy

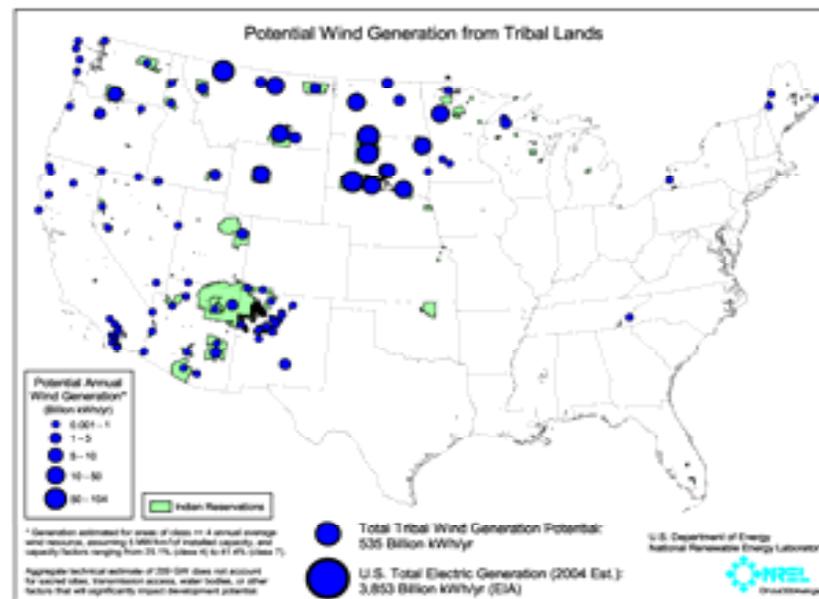
Tribal Renewable Energy Resources

Solar



~4.5 times U.S. annual generation
at about 20 cents/kWh

Wind



14% of the U.S. annual generation
at about 4 cents/kWh

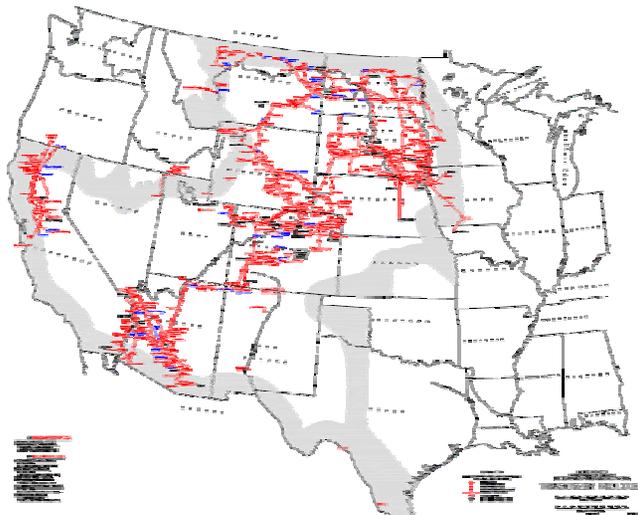
WEATHER



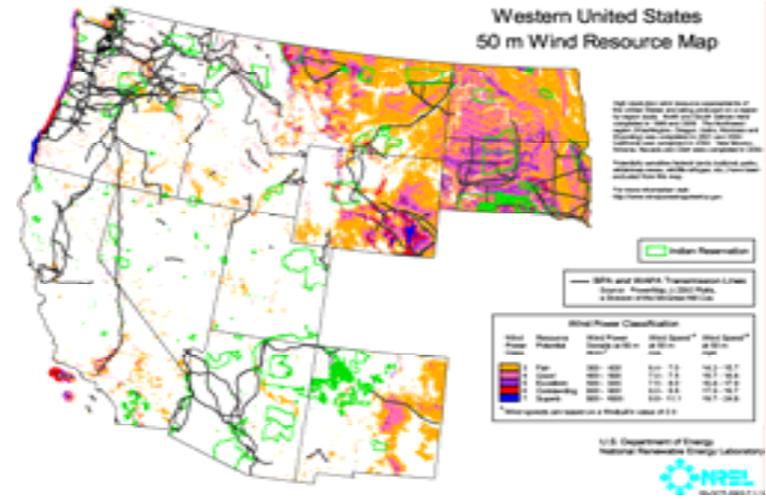
WATER



WAPA WIRES

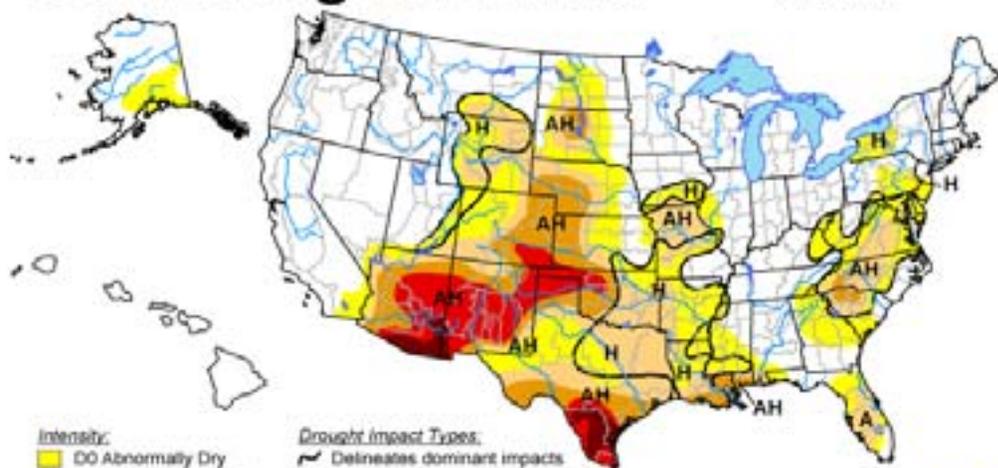


WIND



U.S. Drought Monitor

May 30, 2006
Valid 8 a.m. EDT



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)

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, June

Author: Brian Fuchs, National Drought M

U.S. Seasonal Drought Outlook Through August 2006

Released May 18, 2006



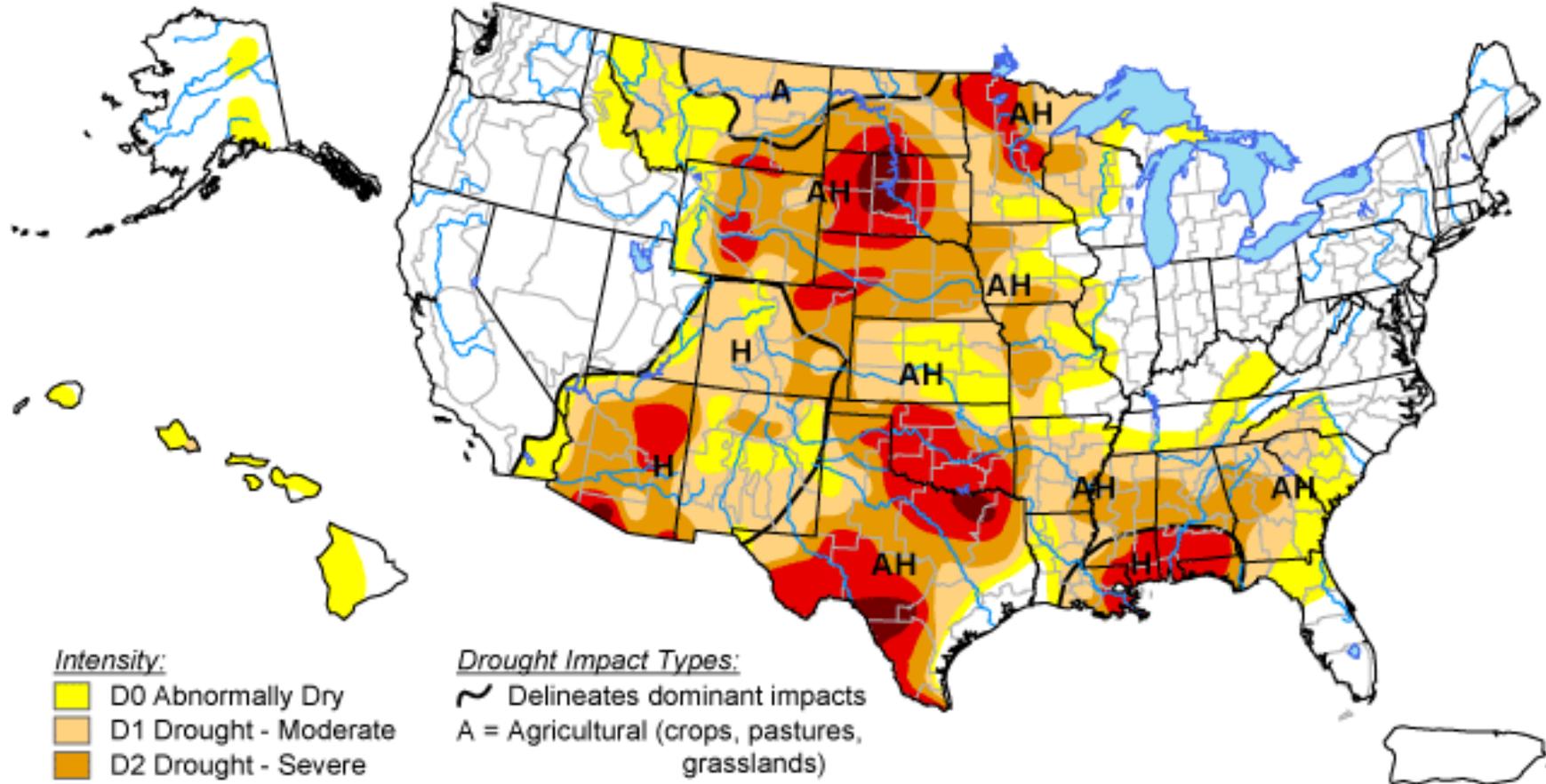
KEY:

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Drought general, large scale trends based on subjectively derived probabilities guided by numerous indicators, including short and long range statistical and dynamical forecasts. Short term events - such as individual storms - cannot be accurately forecast more than a few days in advance, so use caution if using this outlook for applications - such as crops - that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

U.S. Drought Monitor

August 1, 2006
Valid 8 a.m. EDT



Intensity:

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

Drought Impact Types:

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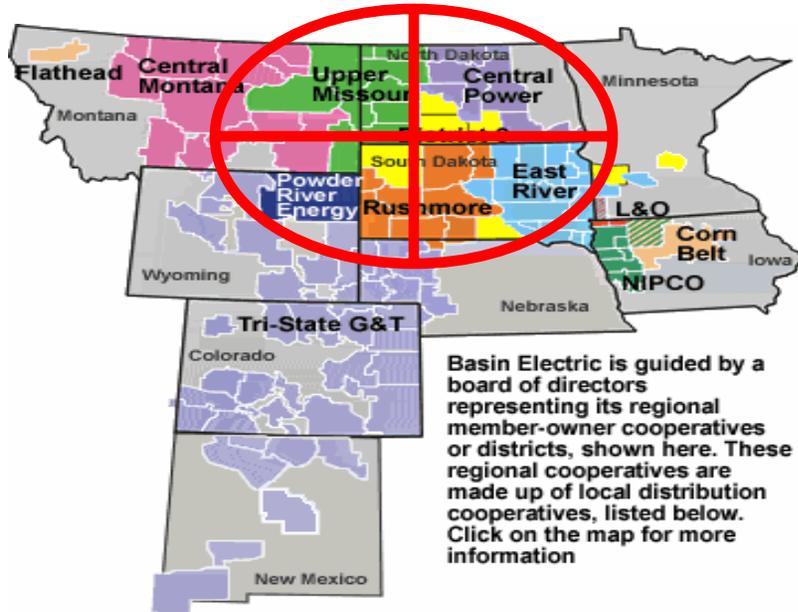
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



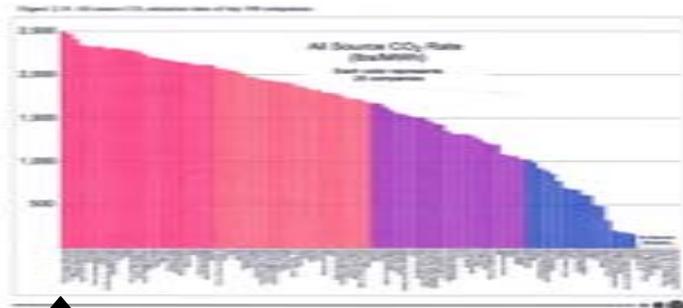
Released Thursday, August 3, 2006
Author: David Miskus, JAWF/CPC/NCEP/NOAA

BASIN ELECTRIC G&T RANKS #1



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.

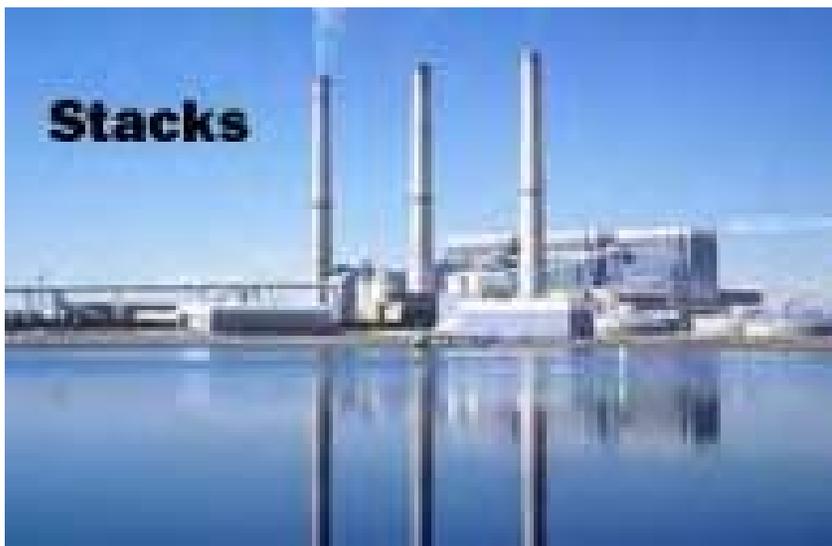
Highest Output of CO₂/MWh in the U.S



↑ BASIN Electric Assn. RANKS #1

“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

Thermal Electricity Generation Evaporates 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.

Intertribal Council On Utility Policy

Falling Water,

Seeking answers to problems of drought and economic stagnation, Indian tribes in the American West are listening to the wind.

by Bob Gough

Water has always been the lifeblood of the arid Americas West, and electricity—the primary byproduct of U.S. federal government water management in the area—is the current that powers urban and rural life after a century of settlement. But the West is now suffering its sixth year of drought, the longest and harshest in recorded history. Electricity trickles from the six big hydropower dams on the Missouri River at a rate less than two-thirds of the 10 billion kilowatt-hours produced in a “normal” year. The Western Area Power Administration (WAPA) supplements its hydro shortfall with coal-fired power using lignite, which is not only the dirtiest form of coal but has increased fivefold in cost since the drought began.

There is, however, a domestically secure, carbon-free resource that will conserve water, enhance regional air quality, and broaden reservation economies beyond the opportunities offered by casinos and amulets.

For the past decade, several Missouri-basin tribes—the Lakota, Nakota, and Dakota, the Mandan, Hidatsa, and Arikara, and the Omaha—have gathered as the Intertribal Council On Utility Policy (Intertribal COUP) to formulate energy and utility policy recommendations, beginning with how best to utilize the hard-won 20-year contract for a WAPA allocation of about 4 percent (85 megawatts) of the river’s hydropower capacity. (WAPA manages over 17,000 miles of high-voltage transmission systems stretched across 15 western states. If you live on an Indian reservation, you are 10 times less likely to have electricity than anywhere else in the country, but are far more likely to have a federal transmission line towering overhead.) Federal power began flowing directly to reservation customers in 2001, after 75 years of unprecedented tribal cooperation to secure this modest benefit from the dams that flooded



This 750kW wind turbine on the Rosebud Line Reservoir, completed in April 2001, is the first phase of a planned 10MW wind farm.

Rising Wind

tribal lands 80 years ago.

One condition of the allocation, however, was for tribes to develop integrated resource plans for reservation energy resources. The resulting assessments showed that, along with remarkable solar, geo-thermal, and biomass resources, the COUP tribes have thousands of megawatts of power potential in the wind that blows across their reservations every day—one of the richest wind regimes in the world. Moreover, the transmission grid, designed to distribute hydropower from the dams, can just as easily collect and transmit native wind power beyond the region. The Intertribal COUP tribes are collaborating in a plan providing for tribal control and owner-

ship of reservation NativeWind™ projects that could install up to 3,000 megawatts of capacity on two dozen reservations within a decade, to meet tribal needs and produce power for sale into the regional grid. That grid once carried 100-percent renewable hydropower, but as demand growth has outpaced hydroelectric capacity and drought has reduced water levels, hydropower is now less than 20 percent of the mix. The balance comes from coal-fired plants, but the COUP plan could recharge the system with clean, renewable, and water-saving power.

The current drought may be a result of climate change, or part of a natural transition from the historical long-term wet cycle to a dry phase. In either case, the West’s electrical system relies heavily on water that is in short supply and may remain so. Wind needs no water to generate electricity, and unlike coal produces no CO₂ emissions. Rural tribal economies, building upon our domestic wind resources offer both Indian Country and our nation a no-regrets option for energy security and a step toward national energy independence.

Bob Gough is Secretary of the Intertribal Council On Utility Policy. For more information on the work of Intertribal COUP and its partner organizations, go to www.energyindependence.org.

In drought, hydropower is reduced and thermal generation plants (coal, nuclear and gas) that rely on cooling water must curtail electricity production

Consistent With Global Warming: Warming Greatest in Winter, Early Spring

Average Monthly Temperatures in 1995-2004, Compared to Historical Average Monthly Temperatures

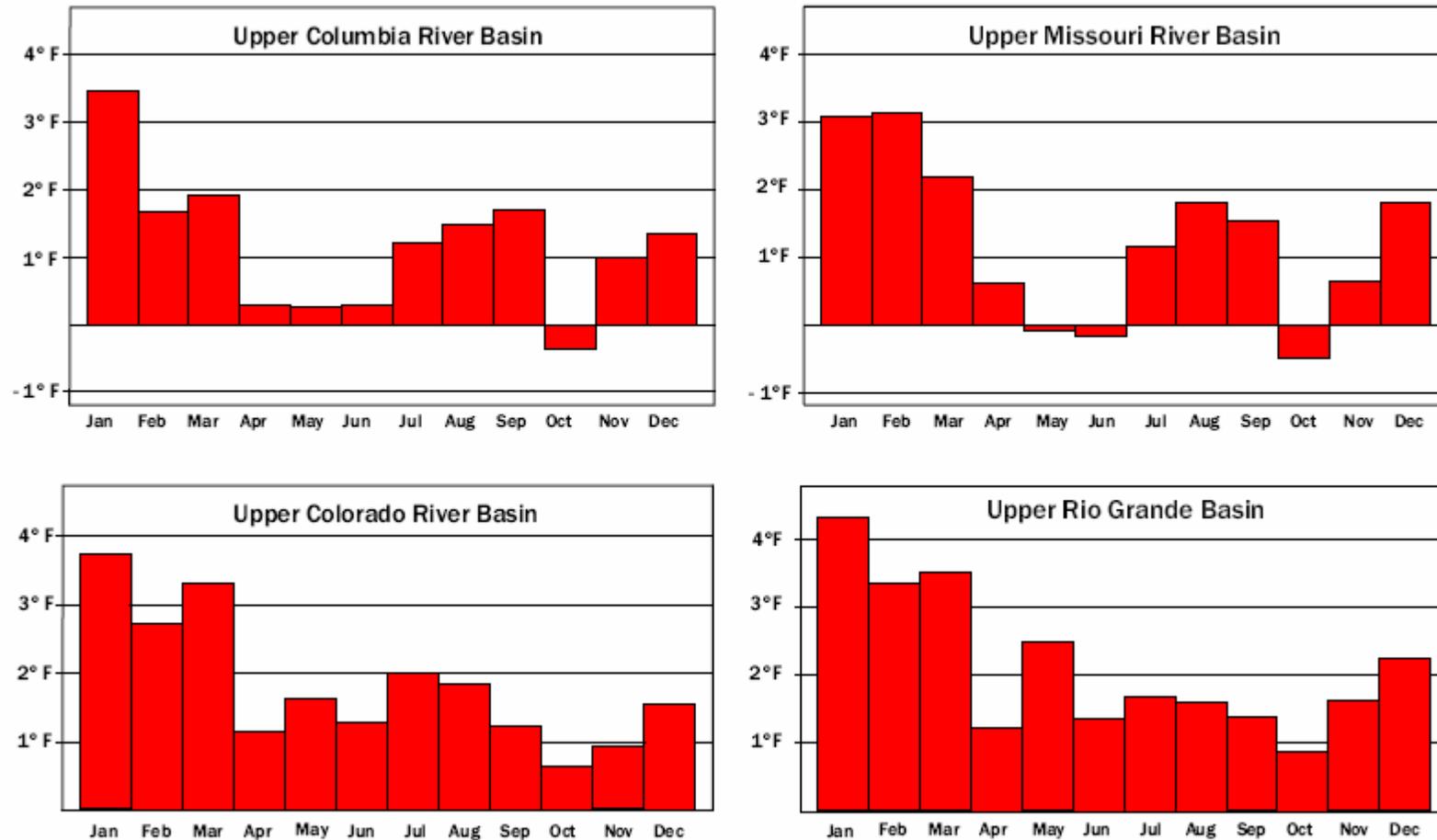


Figure 3 — Data from the climate division series, National Oceanic and Atmospheric Administration. Analysis by the Rocky Mountain Climate Organization. Historical average monthly temperatures are from the the period 1961-1990.

Declining Snowpacks By River Basin

April 1 Snowpacks, 1961-2005, Compared to Historical Averages

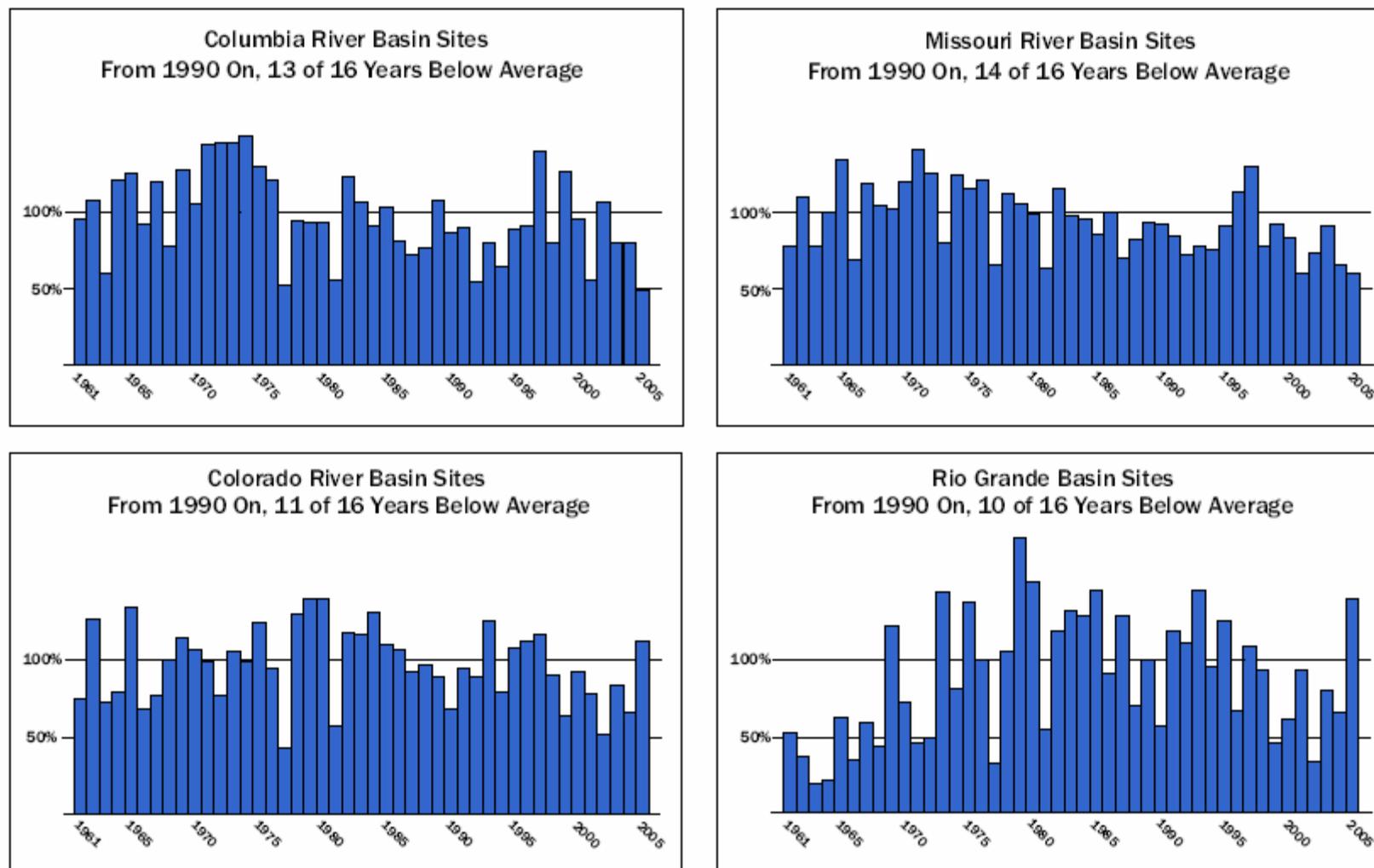
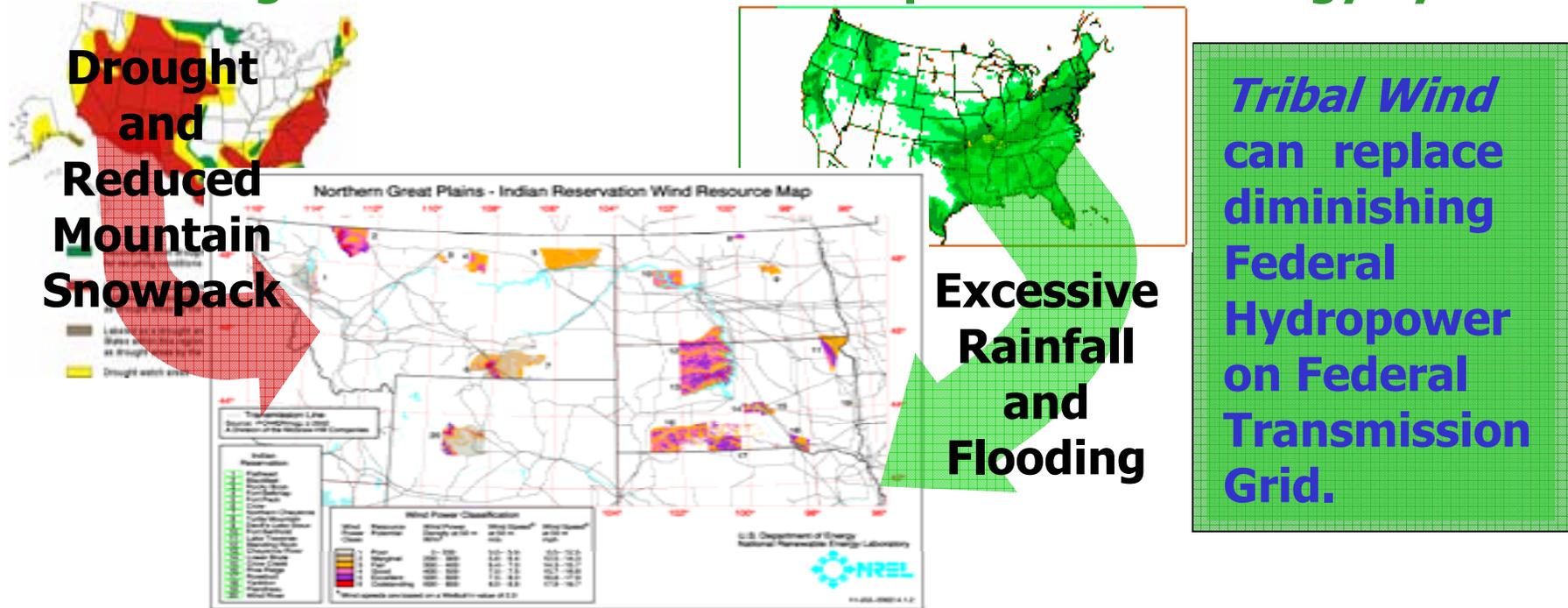


Figure 4 — April 1 snowpacks compared to historical averages. Data from the Natural Resources Conservation Service. U.S. Department of Agriculture. Analysis by the Rocky Mountain Climate Organization. Historical averages are for the period 1961-1990.

TRIBAL WIND - FEDERAL HYDROPOWER:

Breaking the Positive Feedback Loop in the CO2 Energy Cycle



Missouri River is at all time historical low-water level !

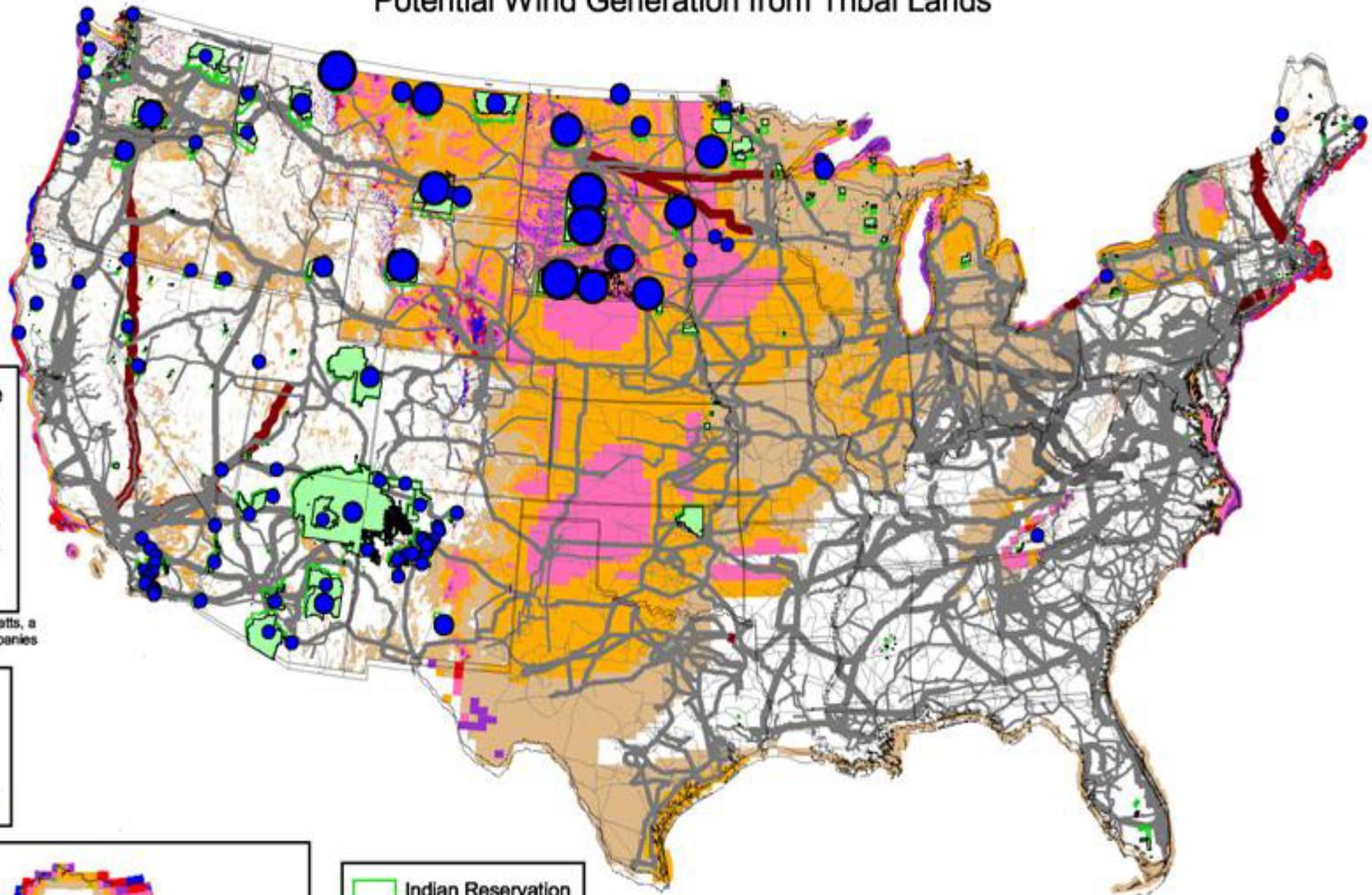
The present drought and precipitation shifts are consistent with changing climate scenarios associated with increased levels of CO₂ from coal fired power plants -- the "New Normal". While precipitation has shifted to the east, the infrastructure has not. Now, more water falls downstream of the dams, diminishing the hydropower available to WAPA.



www.EnergyIndependenceDay.org

Intertribal Council On Utility Policy

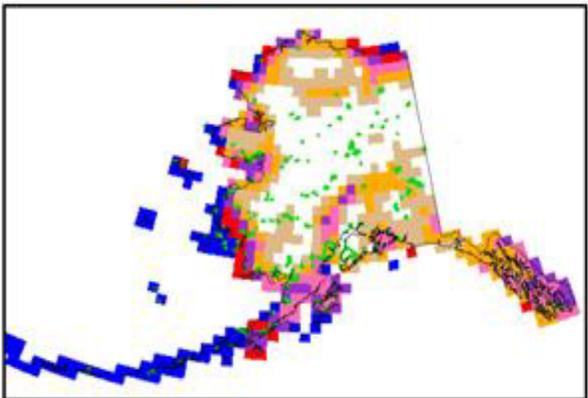
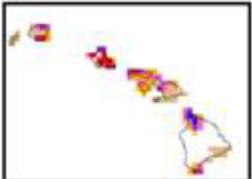
Potential Wind Generation from Tribal Lands



Transmission Line Voltage

- Below 230kV
- 230kV - 344kV
- 345kV - 499kV
- 500kV - 734kV
- 735kV - 999kV
- DC (1000 kV)

Source: POWERmap, © 2002 Platt's, a Division of the McGraw-Hill Companies



Indian Reservation

Wind Power Classification

Wind Power Class	Resource Potential	Wind Power Density at 50 m W/m ²	Wind Speed ^a at 50 m m/s	Wind Speed ^a 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
6	Outstanding	600 - 800	8.0 - 8.8	17.9 - 19.7
7	Superb	800 - 1600	8.8 - 11.1	19.7 - 24.8

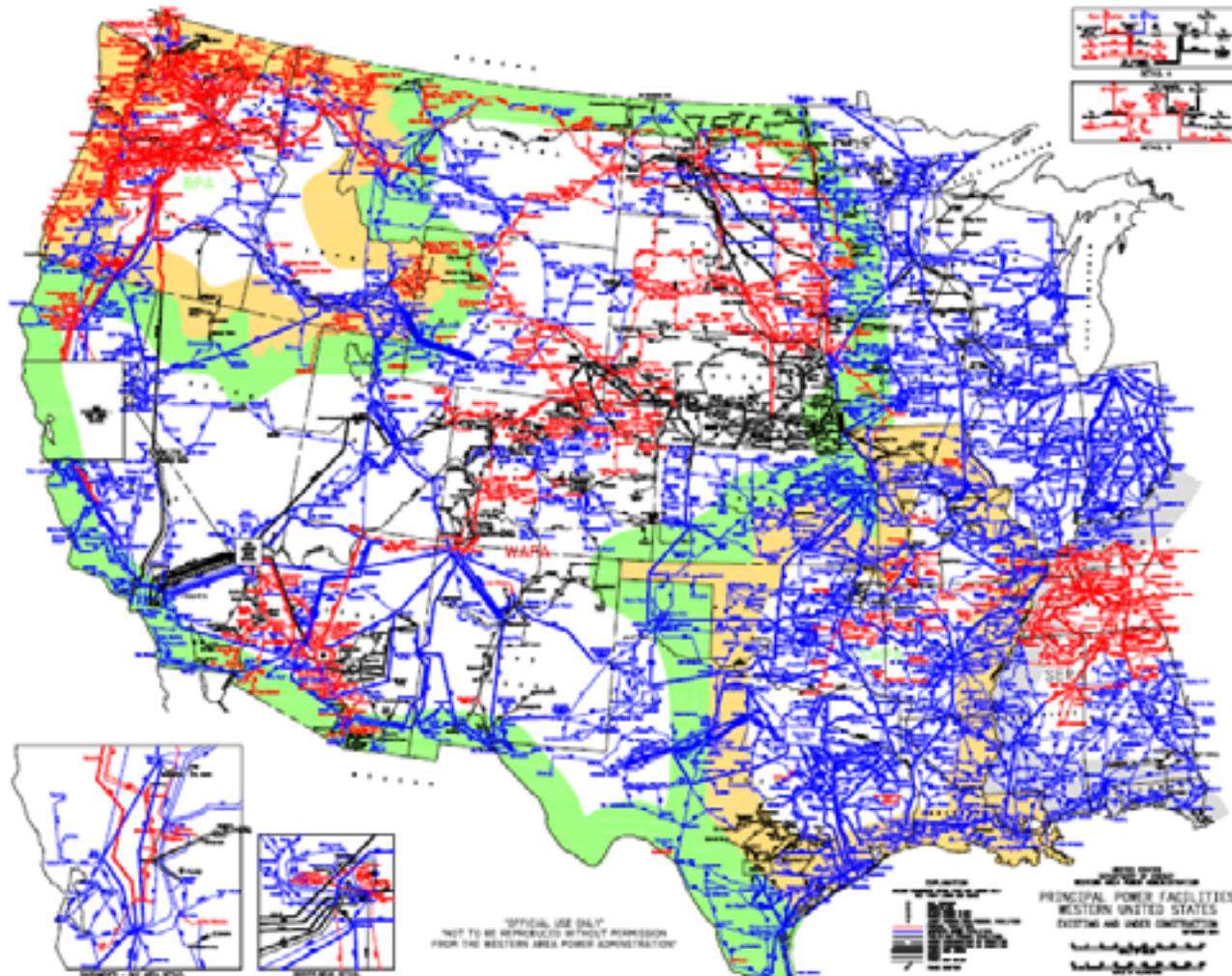
^a Wind speeds are based on a Weibull k value of 2.0

The wind resource information shown is a composite of high resolution (0.04 - 1 sq. km.) and low resolution (~625 sq. km.) wind resource estimates. As little as 2.5% of the areas shown in the low resolution data may have the wind resource value shown, based on the type of exposed terrain (ridge crest vs. plain).

U.S. Department of Energy
National Renewable Energy Laboratory

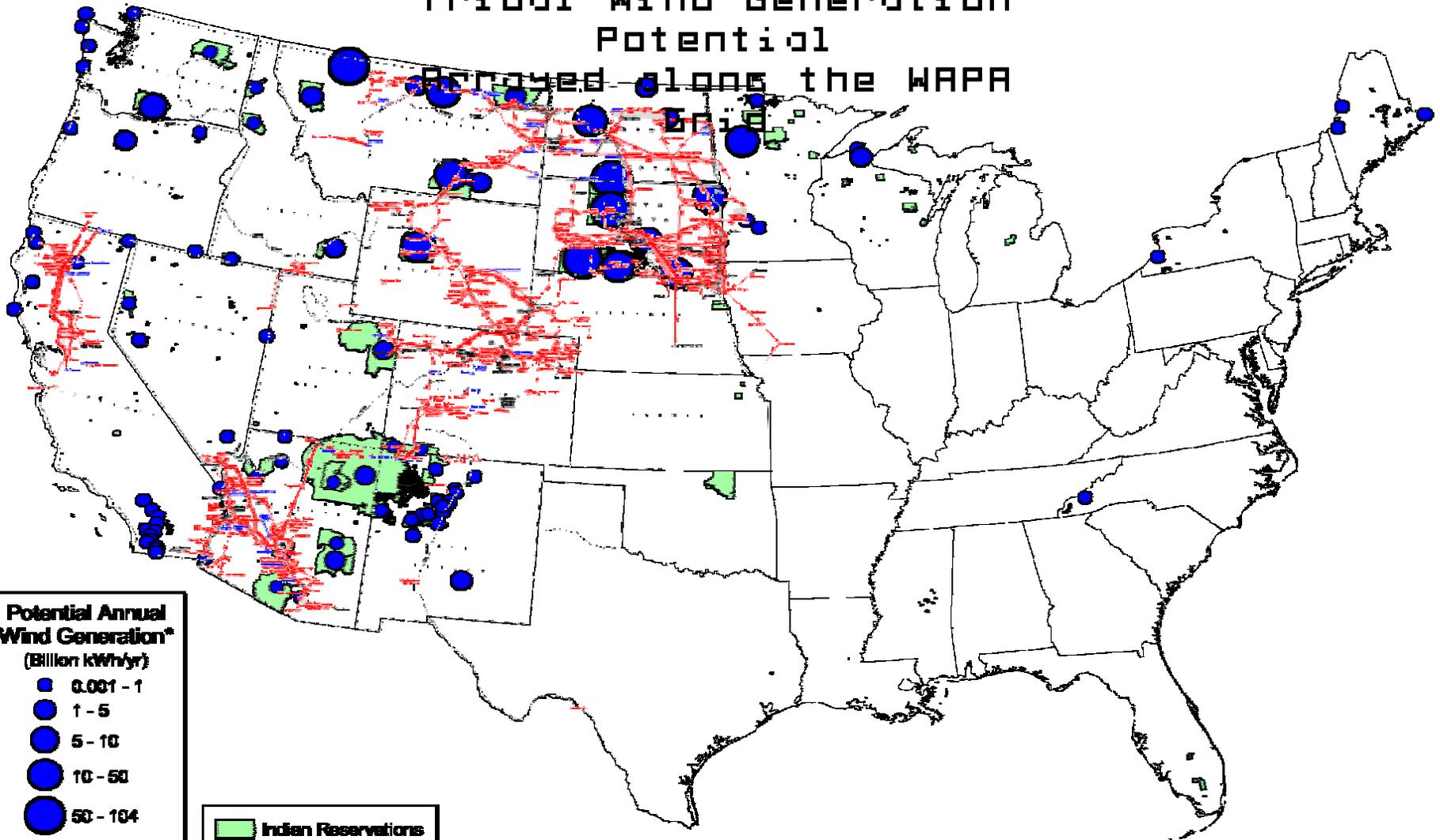


Principal Power Transmission Facilities



Tribal Wind Generation Potential

Arrayed along the WAPA



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/km² 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



A Few Statistics

43% of all Native Americans in the lower 48 are in Western's service area

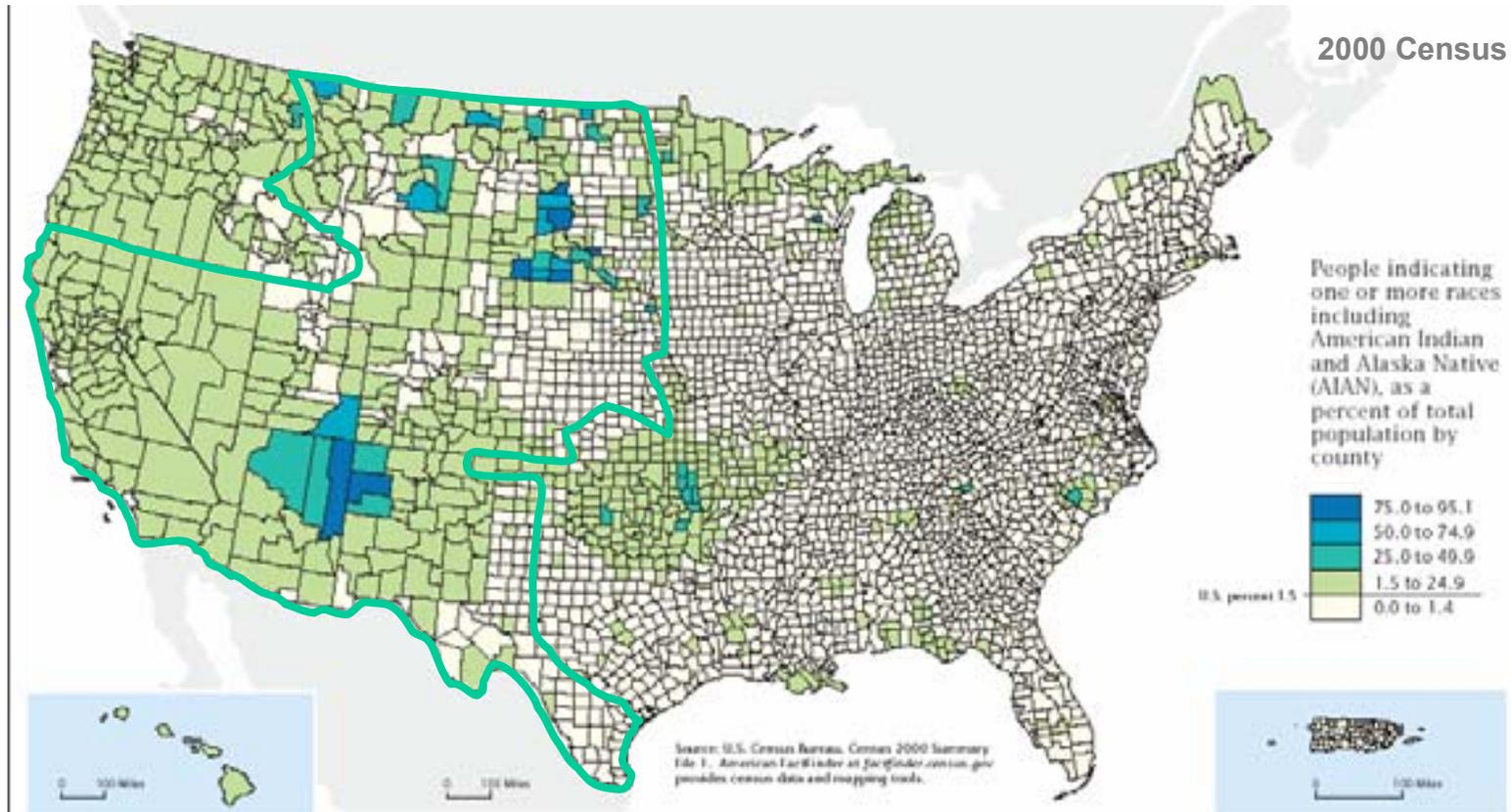
29 counties where Tribal population > 25%

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



WAPA's Native American Program and Initiatives

Over 300 Tribes located within Western's service territory

Currently allocating Federal hydropower, entering into sales contracts and negotiating delivery arrangements to ensure Native Americans receive the benefits of Federal power

- 4 Tribes in Sierra Nevada Region (CA)
- 25 Tribes in Upper Great Plains Region (MT, ND, SD and parts of NE, IA and MN)
- 55 Colorado Plateau Tribes negotiating with Colorado River Storage Project Management Office (CO, UT, NM, AZ and parts of NV)
- 6 Tribes in the Rocky Mountain Region (KS and WY)

Technical Assistance

- Economic benefits of renewable, cost-based hydropower could be leveraged to stimulate tribal consideration of additional renewable development
- Western is a source of technical assistance on renewable energy resources

Renewable Resource Program

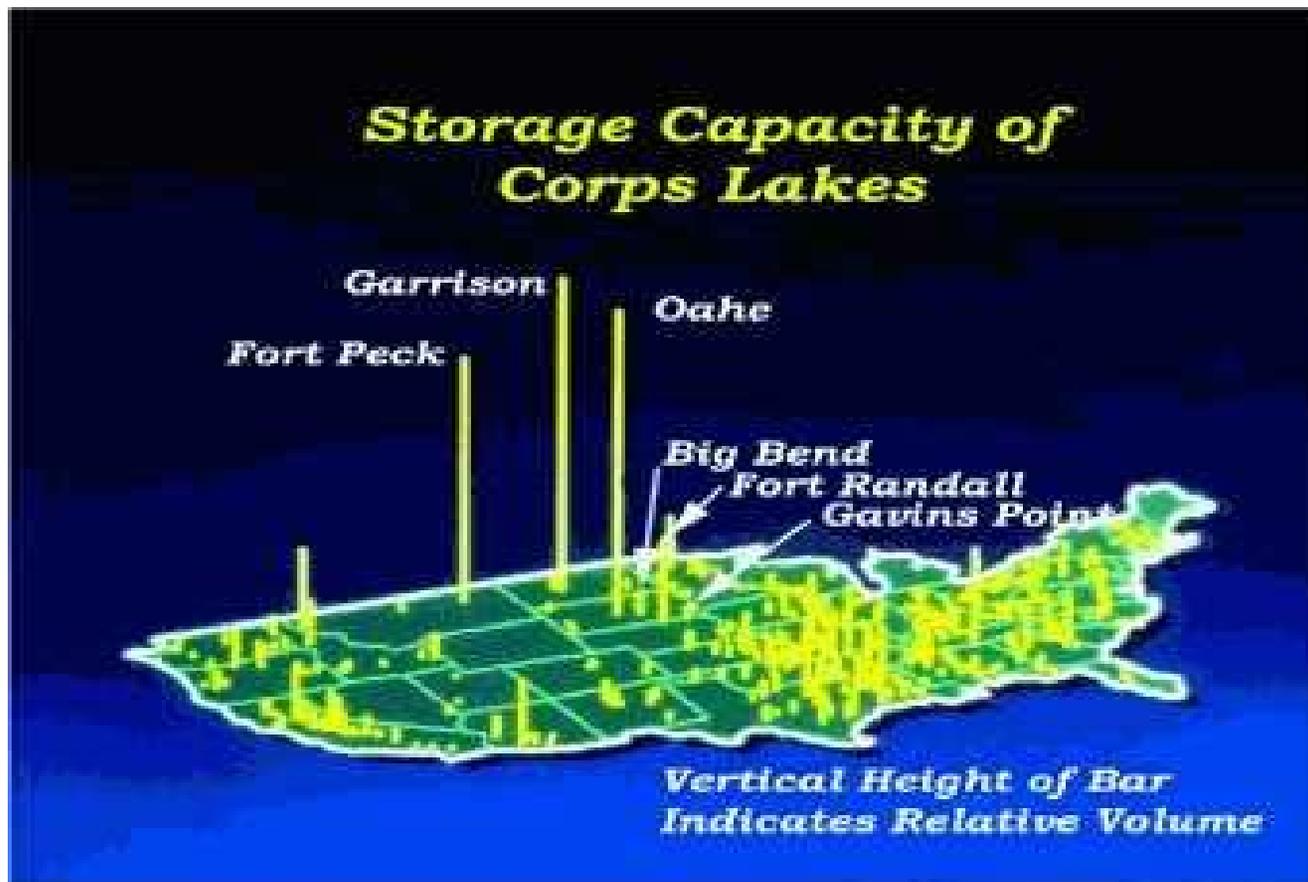
Energy Planning and Management Program

Western's Request for Proposals

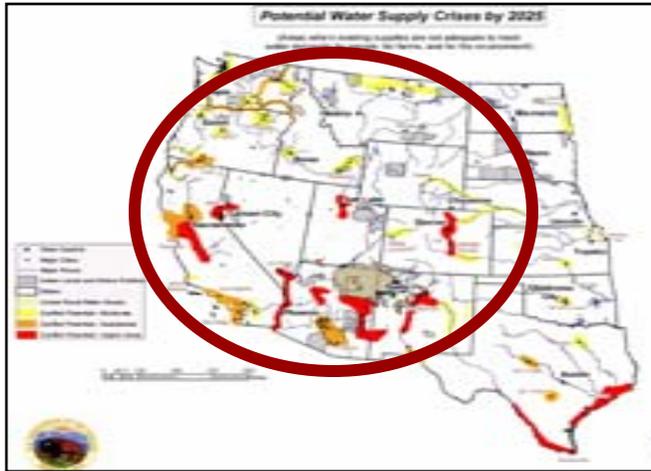
- Purchase of renewable energy certificates with favorable consideration to renewable energy generated on tribal lands

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.



Predicted Western Water Crises Areas Do Not Include 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.**

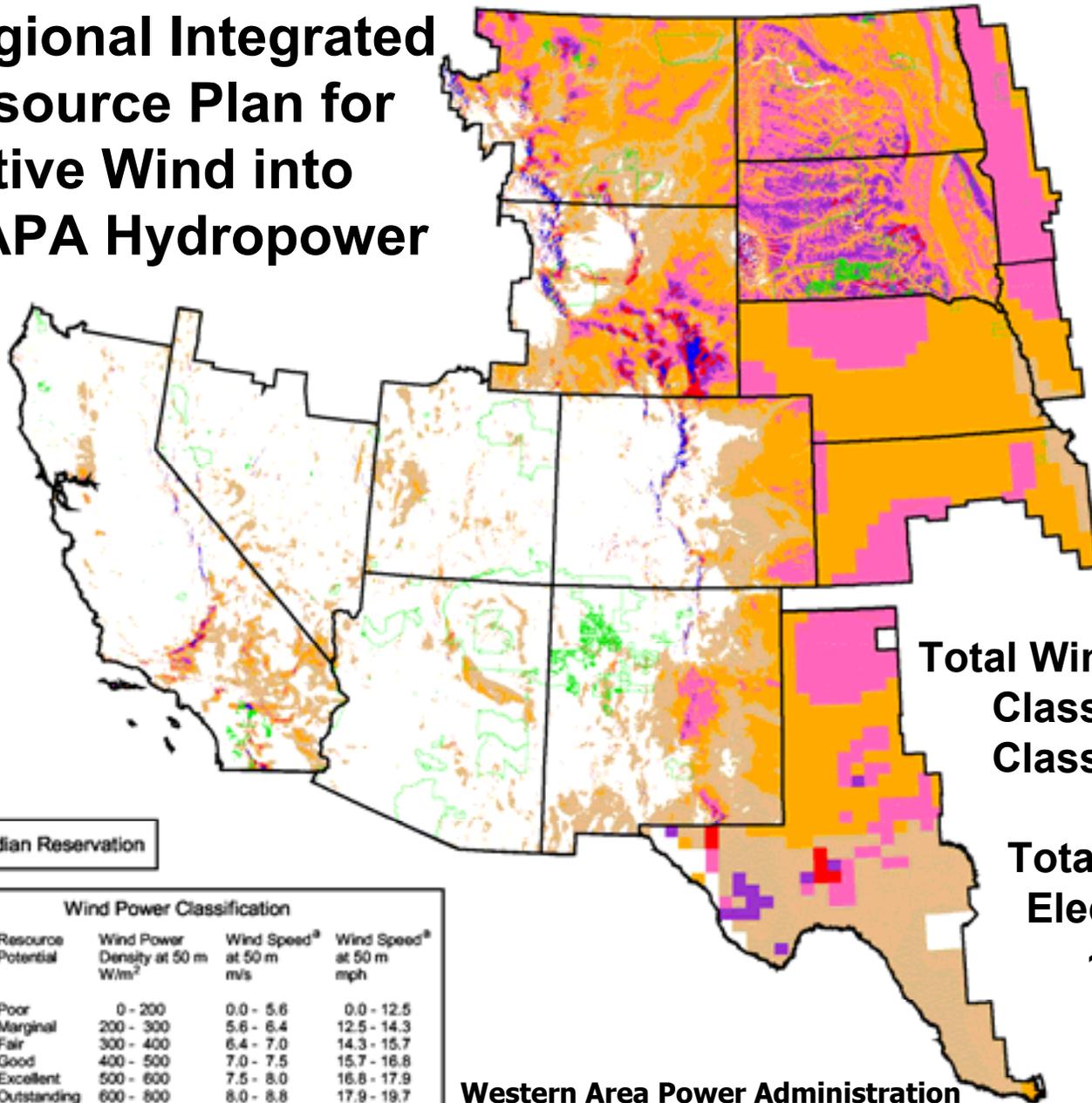
***Rights to Water Supplies: Single Greatest Constraint on Future
Energy Development and Greatest Threat to Tribal Water Rights.
Only Wind Power produces utility scale electricity
without consuming water!***



www.EnergyIndependenceDay.org

Intertribal Council On Utility Policy

Regional Integrated Resource Plan for Native Wind into WAPA Hydropower



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/m ²	Wind Speed ^a at 50 m m/s	Wind Speed ^a at 50 m mph
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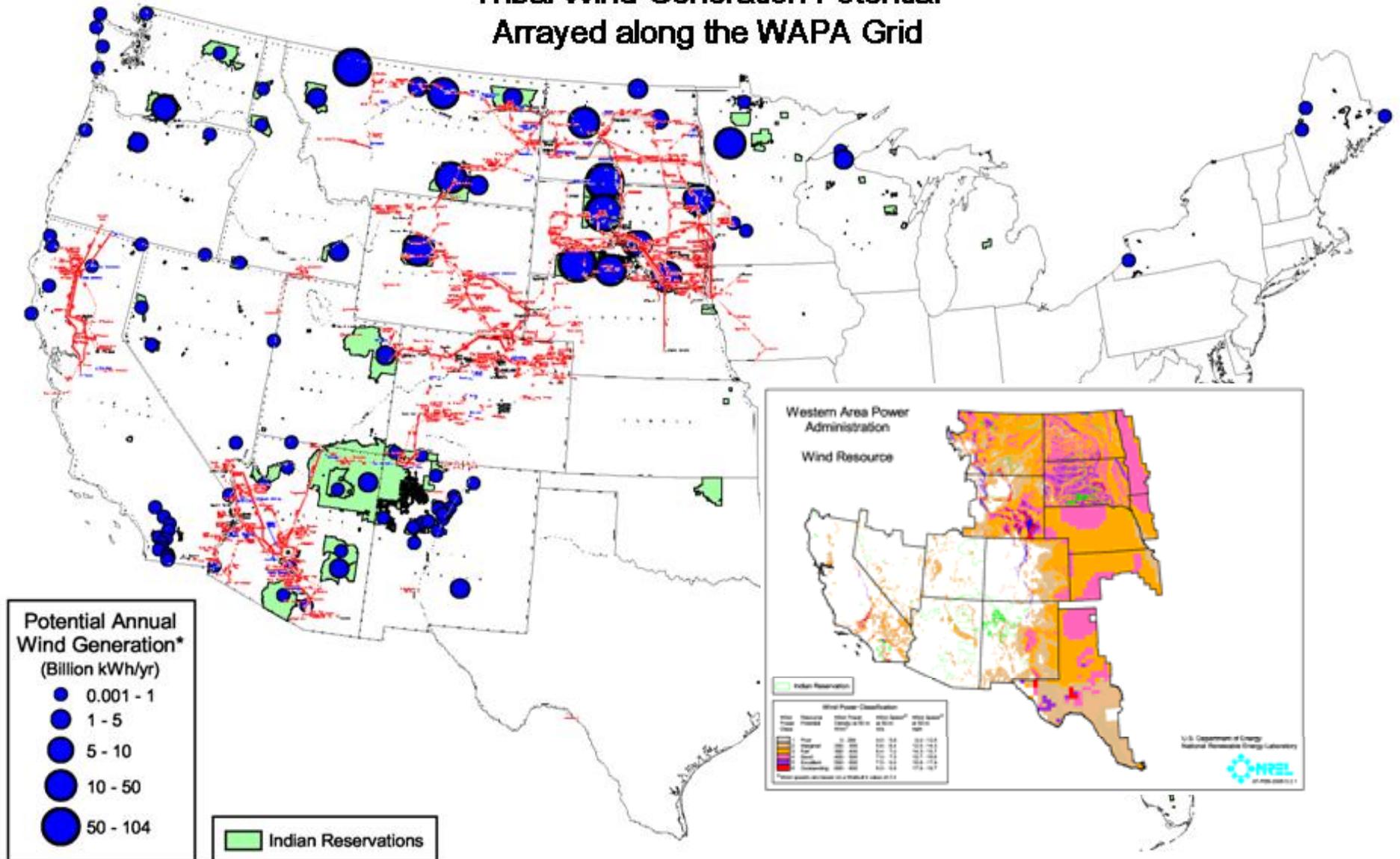
^aWind speeds are based on a Weibull k value of 2.0

**Western Area Power Administration
Wind Power Potential**

U.S. Department of Energy
National Renewable Energy Laboratory



Tribal Wind Generation Potential Arrayed along the WAPA Grid



* Generation estimated for areas of class ≥ 4 annual average wind resource, assuming 5 MW/km² of installed capacity, and capacity factors ranging from 25.1% (class 4) to 41.4% (class 7).

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535 Billion kWh/yr

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3,853 Billion kWh/yr (EIA)

U.S. Department of Energy
National Renewable Energy Laboratory



Restoring and Recharging "The Federal Renewable Energy Grid"



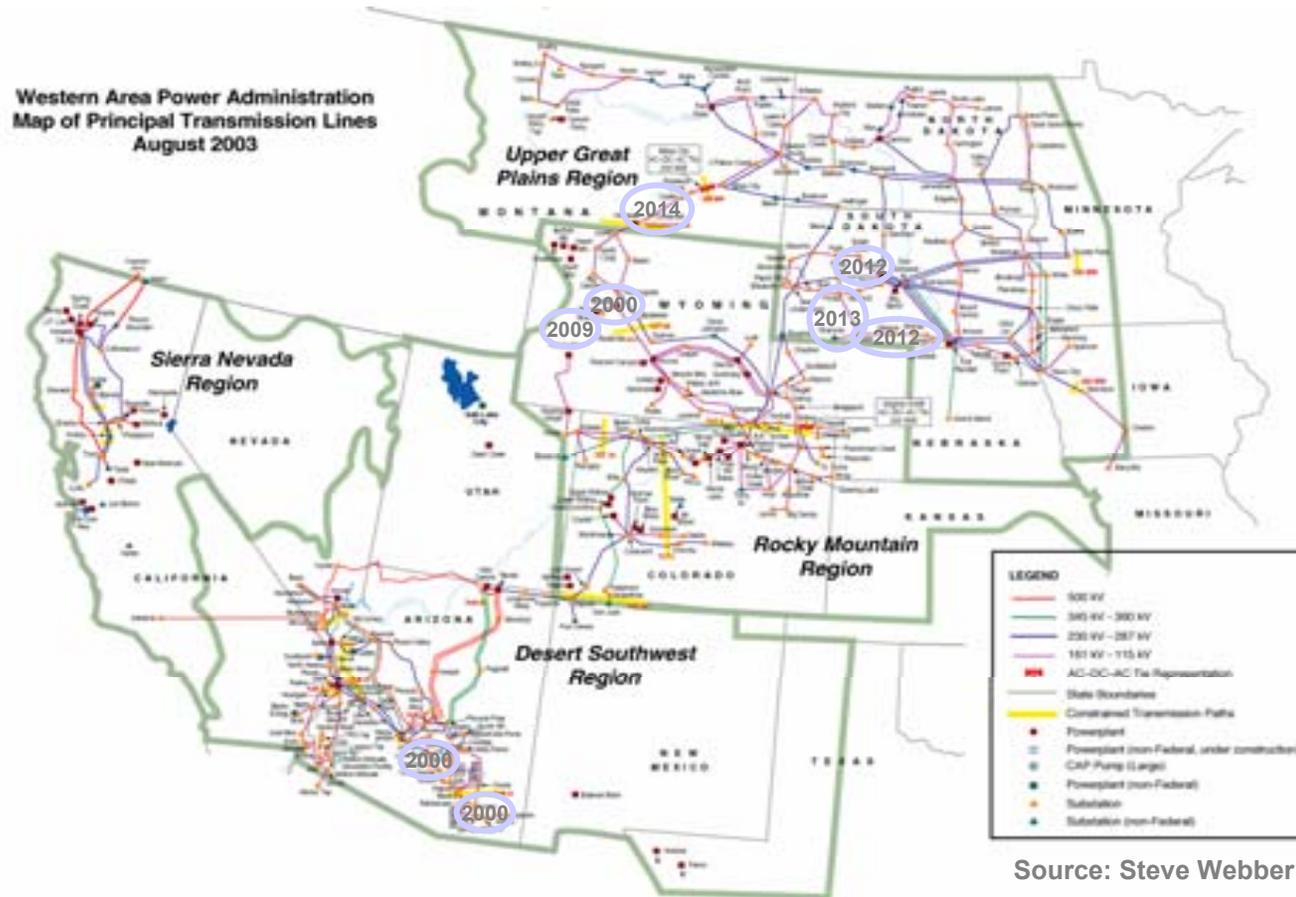
*Serving the West
with Federal Hydropower*

... 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
- Clean Air Quality and Attainment
- Once 100% renewable, now only 20% hydropower and 80% coal
- Federal Renewable Energy Grid 20% hydro & 30% wind / 50% coal-gas



Tribal Rights of Way Expirations (8) And Transmission Constraints



Many more ROW issues (opportunities) between
Tribes, IOUs, and Coops in coming decade.

Implementing the Energy Policy Act of 2005

<http://www.wapa.gov/newsroom/cct/2005/sept9/27no181a.htm>

Title V—Indian Energy

Section 2602 of EPAAct is amended to allow Federal agencies to give preference to electricity purchased from tribes at prices not greater than prevailing market rates.

Section 2604 of EPAAct is amended to provide tribes with additional authority for entering into leases or business agreements related to energy-resource development or construction and operation of energy and transmission facilities on tribal lands. It limits lease and agreement terms to 30 years. **TERAs**

Implementing the Energy Policy Act

Title V—Indian Energy

Section 2605 of EPAAct requires **Federal power marketing administrators to encourage Indian tribal energy development.**

New amendments under this section include:

- Tribes are allowed to **use power allocations** from Western to **meet firming and reserve needs of Indian-owned energy projects on Indian land.**
- Western may **purchase** non-Federally generated power from tribes **to meet its firming and reserve requirements.**
- Western may **provide technical assistance** for tribes wanting **to use the high-voltage transmission system** to deliver electric power.

Implementing the Energy Policy Act

Title V—Indian Energy

Section 2605 The Secretary of Energy must conduct a study describing the use and quantity of power allocations sold to, or for the benefit of, tribes by the PMAs and the barriers that impede tribal access to Federal power. The report must describe how to remove those barriers and improve the ability of the PMAs to deliver Federal power to tribes.

Section 2606 of EPAAct is amended to require the Secretary of Energy to conduct a study of the cost and feasibility of developing a demonstration project that uses wind energy generated by tribes and Federal Missouri River hydropower to supply firming power to Western.

Section 504 requires the Energy and Interior secretaries to consult with Indian tribes to the maximum extent practical on energy issues.

ENERGY POLICY ACT OF 2005

Section 2602 (d) Federal Agencies-Indian Energy Preference -

(1) In purchasing electricity or any other energy product or by-product, a **Federal agency or department may give preference** to an energy and resource production enterprise, partnership, consortium, corporation, or other type of business organization the majority of the interest in which is owned and controlled by 1 or more Indian tribes.

(2) In carrying out this subsection, a Federal agency or department shall not--

(A) pay more than the prevailing market price for an energy product or by-product; or

(B) obtain less than prevailing market terms and conditions.

ENERGY POLICY ACT OF 2005

SEC. 203. FEDERAL PURCHASE REQUIREMENT.

(a) Requirement- The President, acting through the Secretary, shall seek to ensure that, to the extent economically feasible and technically practicable, of the total amount of electric energy the Federal Government consumes during any fiscal year, the following amounts shall be renewable energy:

- (1) Not less than 3 percent in fiscal years 2007 through 2009.
- (2) Not less than 5 percent in fiscal years 2010 through 2012.
- (3) Not less than 7.5 percent in fiscal year 2013 and each fiscal year thereafter

(c) Calculation- For purposes of determining compliance with the requirement of this section, **the amount of renewable energy shall be doubled if--**

- (1) the renewable energy is produced and used on-site at a Federal facility;
- (2) the renewable energy is produced on Federal lands and used at a Federal facility; or
- (3) **the renewable energy is produced on Indian land as defined in title XXVI of the Energy Policy Act of 1992 (25 U.S.C. 3501 et seq.) and used at a Federal facility.**

ENERGY POLICY ACT OF 2005

SEC. 2604. LEASES, BUSINESS AGREEMENTS, AND RIGHTS-OF-WAY INVOLVING ENERGY DEVELOPMENT OR TRANSMISSION.

Allows Intertribal Wind Company to serve as a **'tribal energy resource development organization'**

Allows Tribes to develop Tribal energy resource agreements (**TERAs**) for renewable energy projects

SEC. 1303. *Clean Renewable Energy Bonds ("CREBs")*. A new category of bonds are authorized for facilities qualifying for tax credit under Section 45. Qualified issuers include governmental bodies (**including Indian tribal governments**) and mutual or cooperative electric companies.

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")

Phase 1 (2003):

750 kW Turbine on Rosebud Reservation 2003
65 kW Turbine on Ft. Berthold Reservation 2005

Phase 2 (2003/6):

30 to 50 MW Wind Ranch on Rosebud Reservation

Phase 3 (2004/7):

80+MWs: 10+ MW Wind Ranches on
8 Reservations

Phase 4 (2004-2008):

Expand and Replicate across the Northern Great Plains

Phase 5 (2006/15):

3,000 Tribal MW on Great Plains Reservations

Tribal Wind Power for Sustainable Homeland Economic Development

110°

108°

106°

104°

102°

100°

98°

96°

INTERTRIBAL WIND DEVELOPMENT

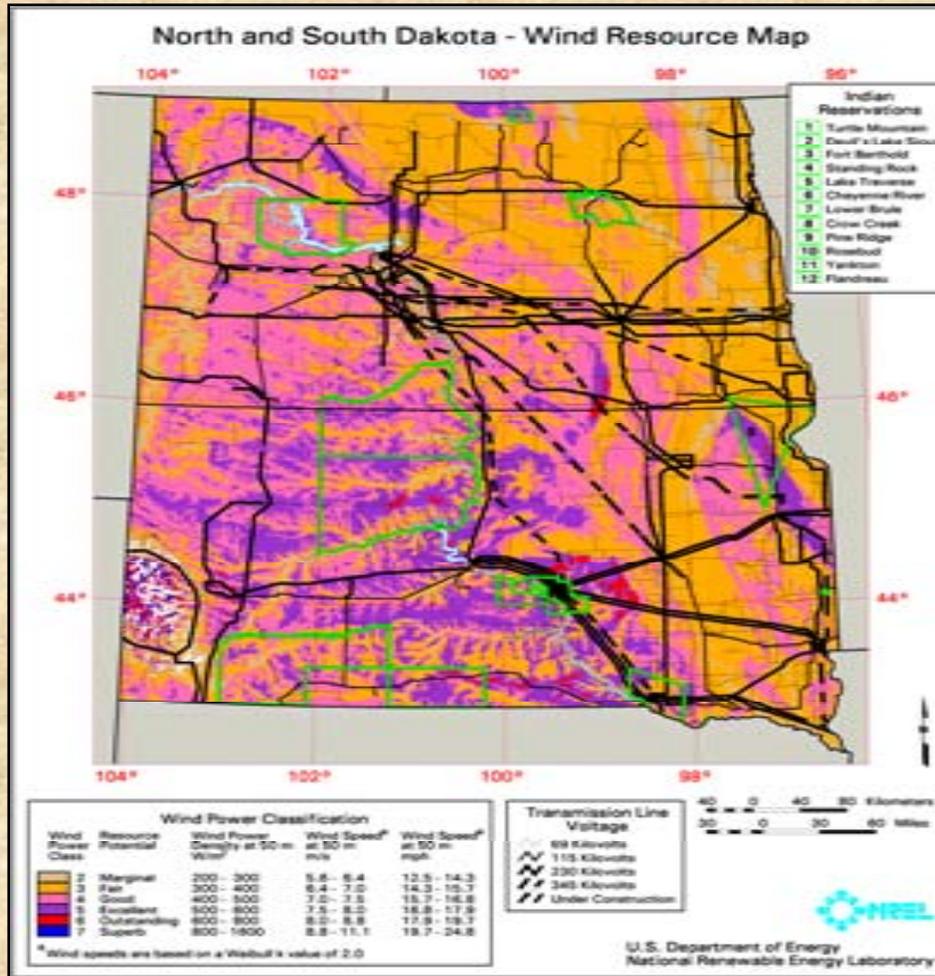
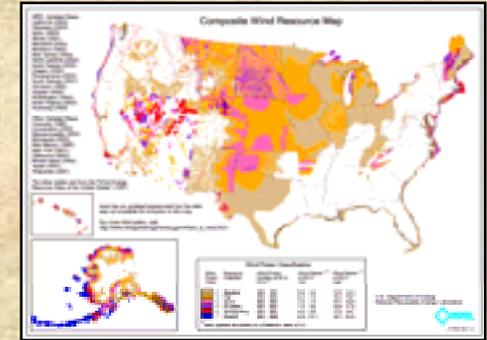
COUP 80 MW Distributed Wind Generation Project Eight 10 MW Intertribal Wind Ranches On 8 North and South Dakota Reservations

COUP EJ Revitalization Demonstration Project Objectives:

- Create significant Tribally owned generation for Reservation loads
- Pool Tribal resources for economies of scale
- Gain experience, share risk and build capacity
- Ease initial interconnection into a constrained grid system
- Build greater overall project capacity from distributed generation of 80 MWs spread across two Great Plains states
(The wind is *always* blowing somewhere on the Plains)
- Reduce opportunity costs for expansion from 10 MWs
- Use “Green Tags” to overcome grid constraints
- Help meet 2005 Federal 2½% Green Power goals:
(Approximately 514 MW of installed wind generation)
- Kick off COUP Project *WINDSHED*:
~ *WIND*power for *Sustainable Homeland Economic Development*.



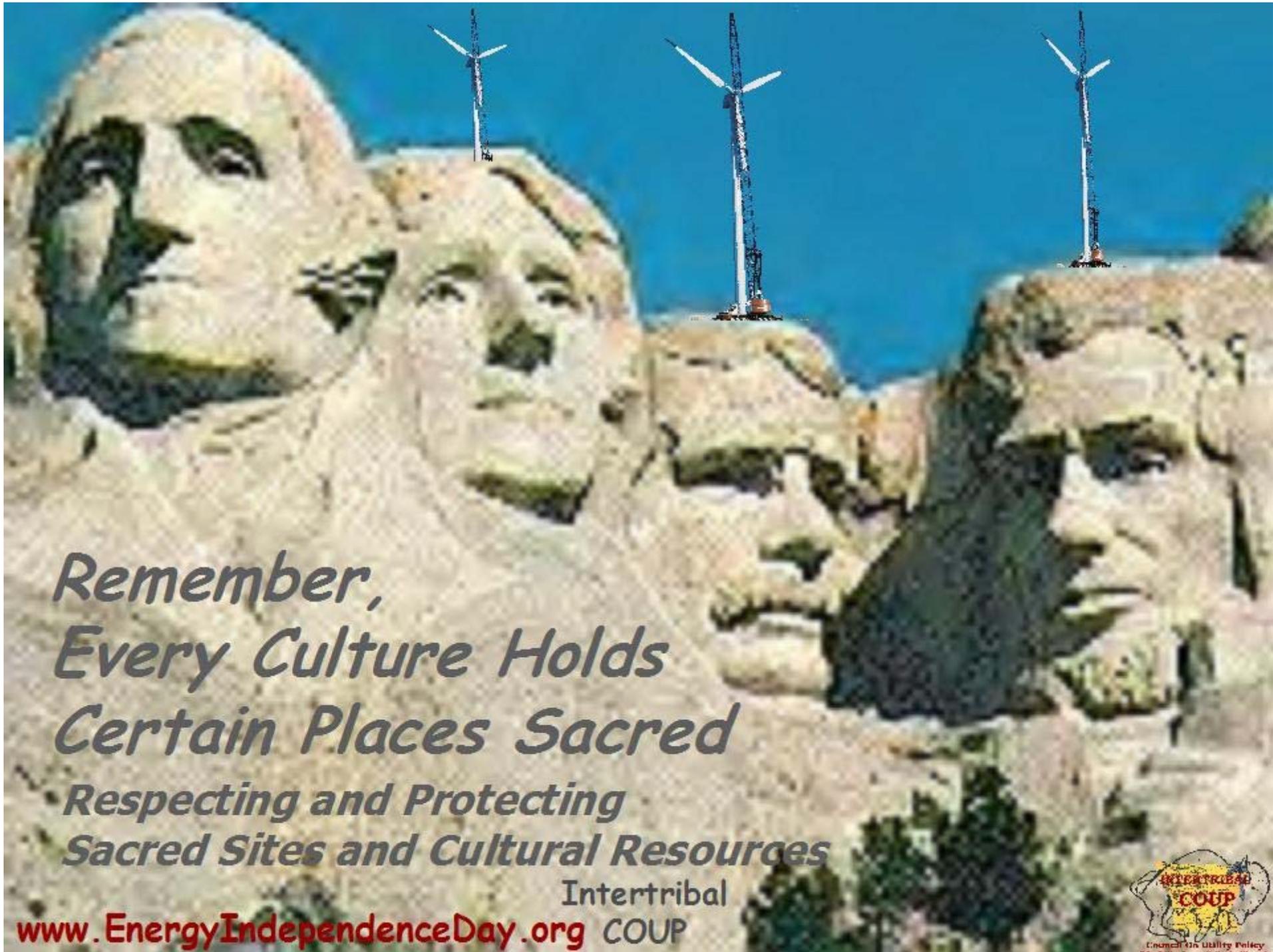
PROTECTING CULTURAL RIGHTS



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
COUP

www.EnergyIndependenceDay.org

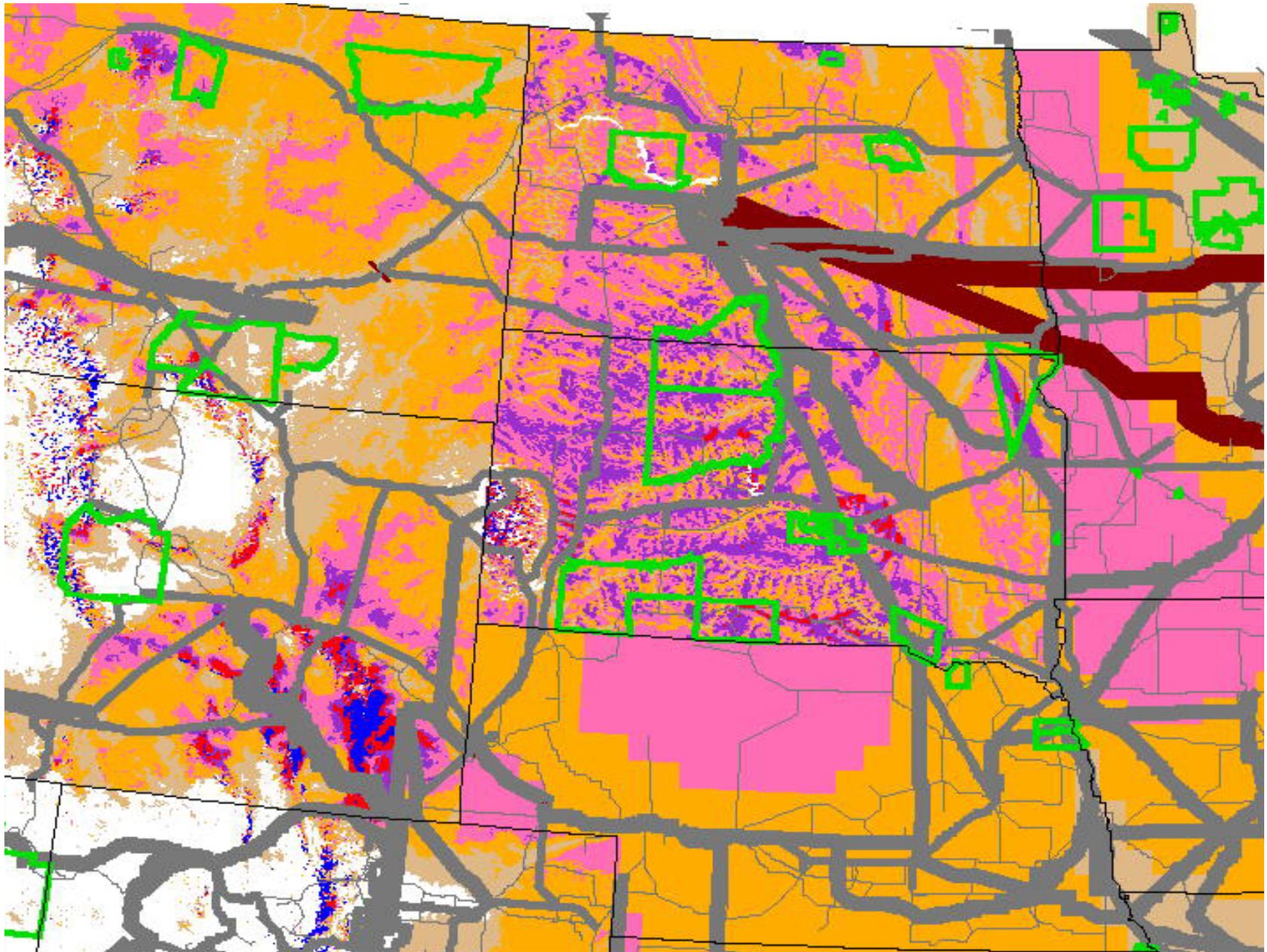




Rosebud's 750 kW Turbine produces 2.4 Mil kWh/yr.
IntertribalCOUP.org



Ft. Berthold's 65 kW Turbine installed Sept 30, 2005
IntertribalCOUP.org



Indian Reservations shown in green on wind map of Northern Great Plains

80 MW Intertribal Wind EJ Demo Project

Feasibility Study complete for majority of Tribes

Rosebud, Lower Brule, and Ft. Berthold (DOE)

Flandreau Santee, Sisseton-Wahpeton and Omaha (BIA)

Pending: Pine Ridge and Standing Rock

Delays in anemometer tower installation due to BIA NEPA requirements of USFWS and State Historic Preservation Office approvals

Intertribal COUP will apply for BIA grant for development

Continuing discussions with WAPA / Dakota Wind Transmission Study

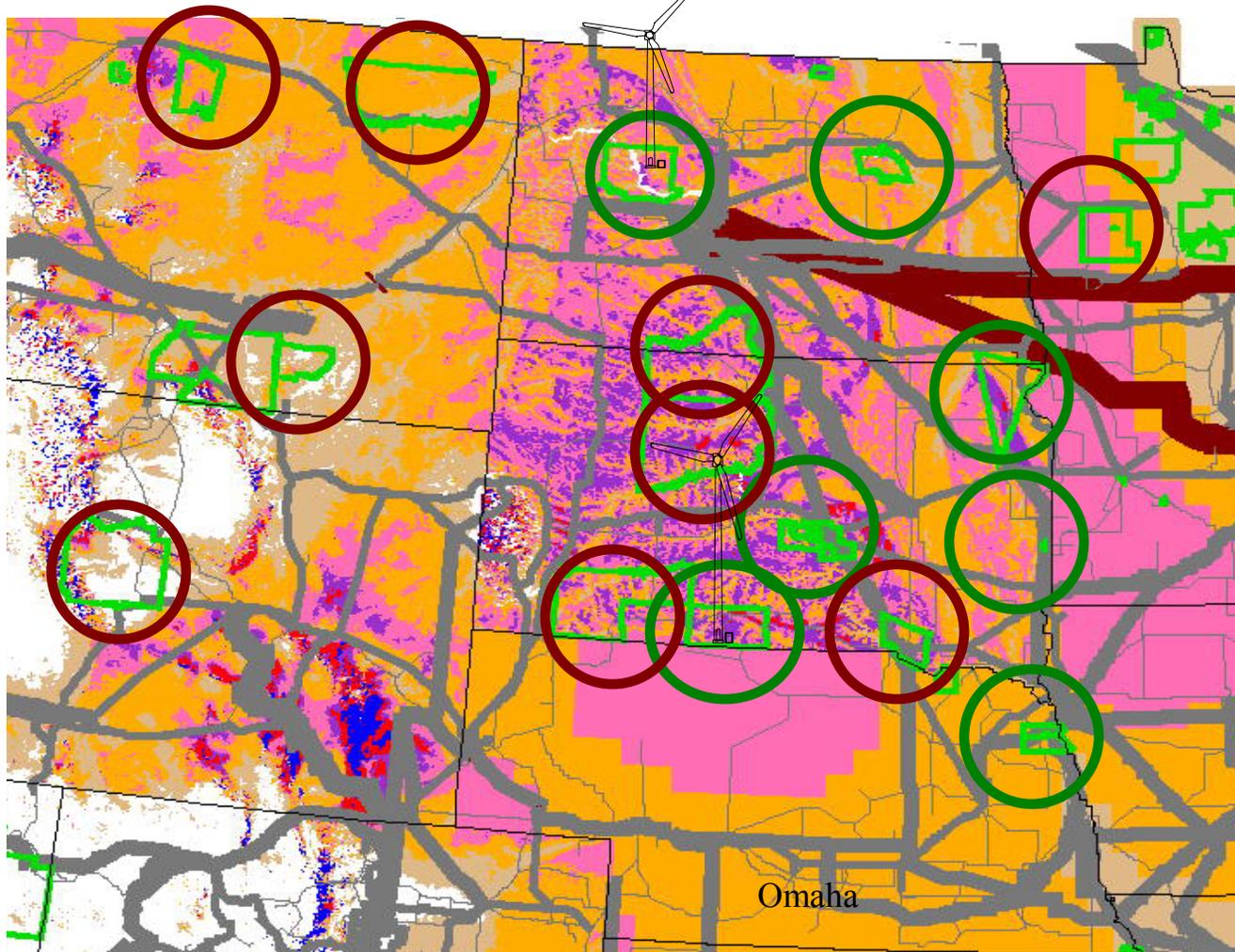
Interconnection Studies for 10 MW sites

Supplemental Power Purchase requirements

Discussion with Basin Electric on reservation projects

Discussion with IOUs on PPA potential (Xcel, Otter Tail, MRE Services)

Intertribal COUP Wind Demonstration Project



COUP Tribes have, by Resolution, signed on to participate in the Intertribal 80+ MW wind development demonstration project, with several more pending.

This tribally-owned, multi-MW intertribal project is to be built in 10 MW clusters on each of the participating COUP Reservations.

-  Planned
-  Pending

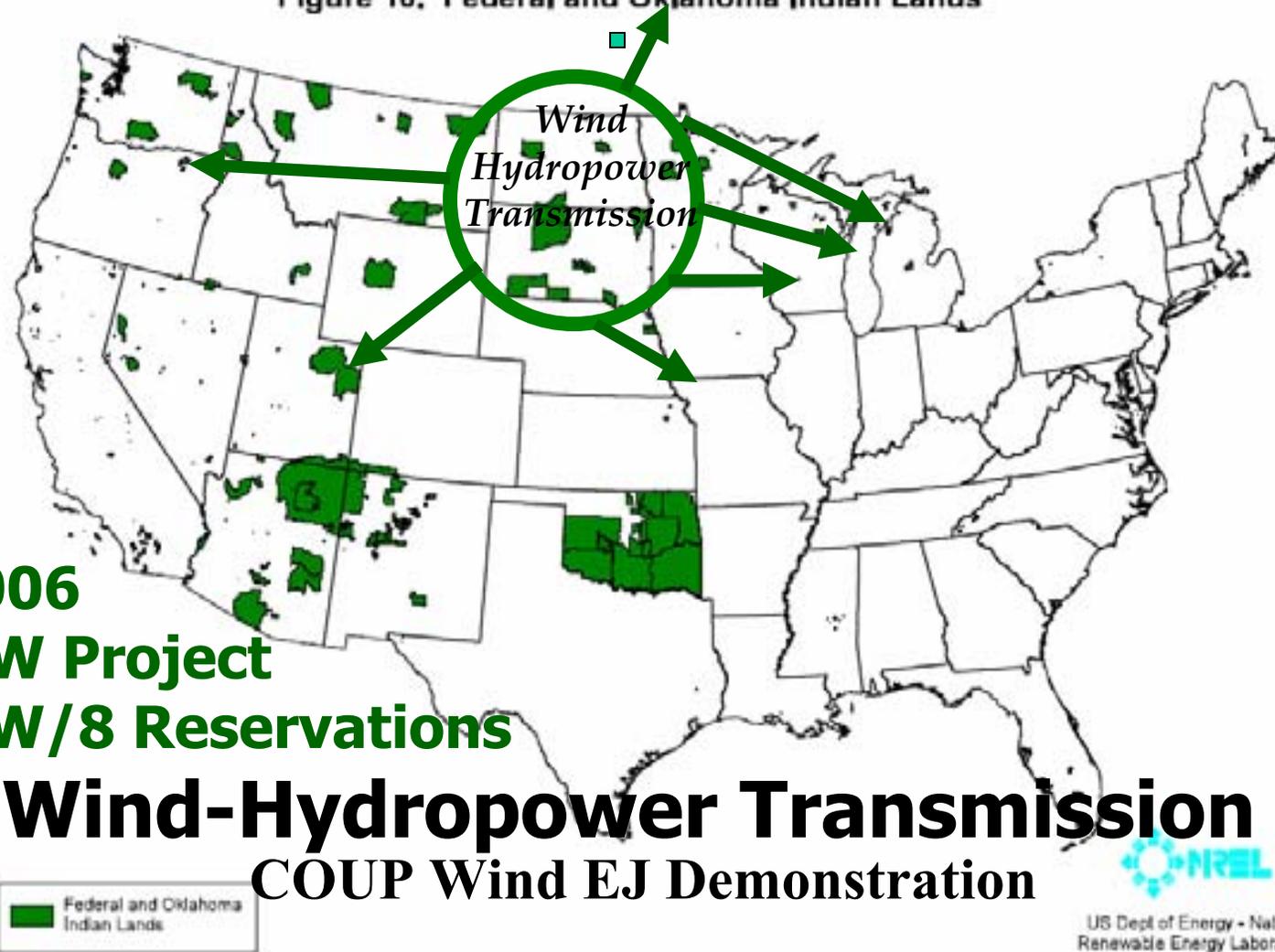
www.NativeWind.org



www.IntertribalCOUP.org

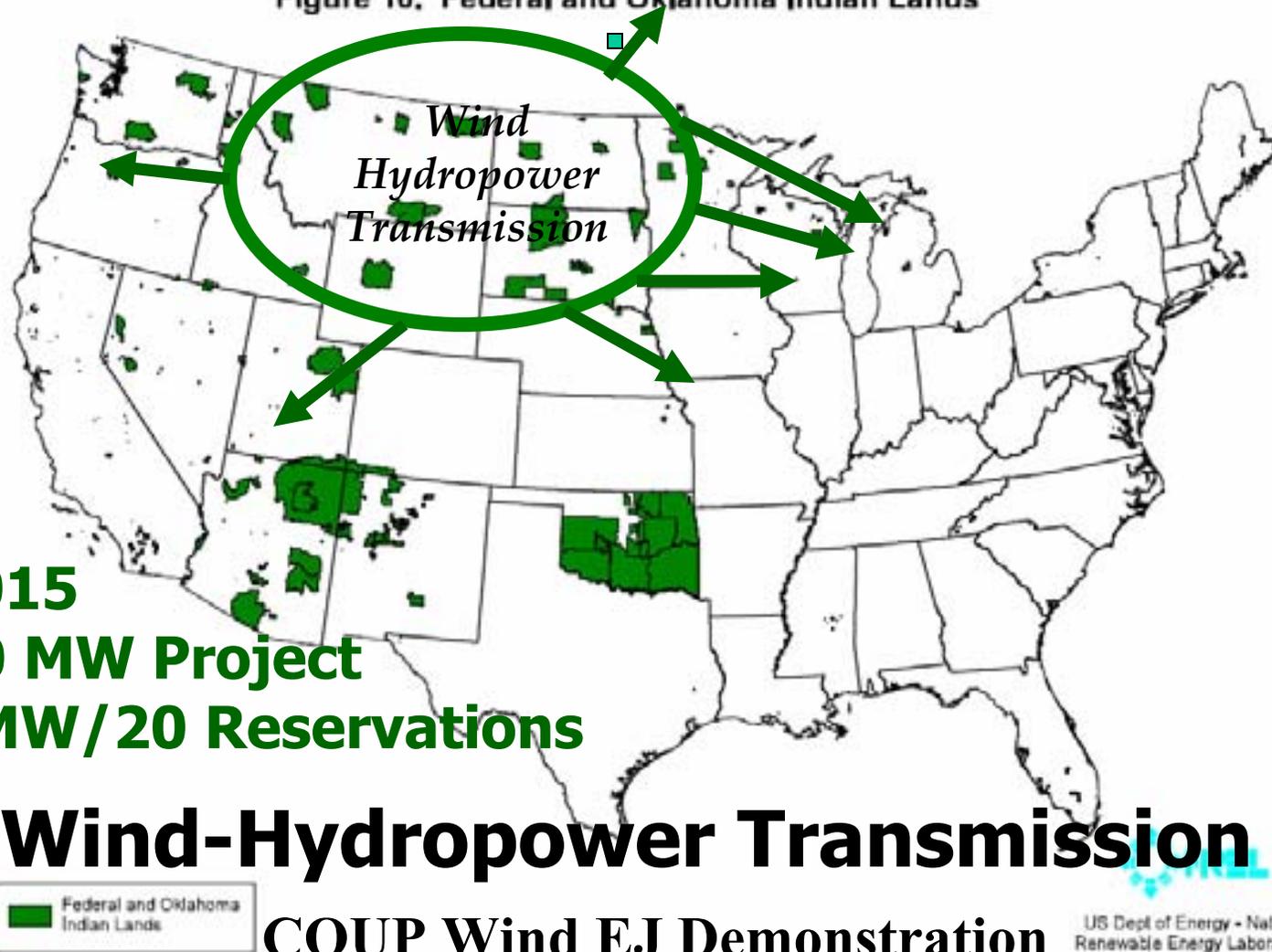
Intertribal COUP Federal Demonstration Project

Figure 10. Federal and Oklahoma Indian Lands



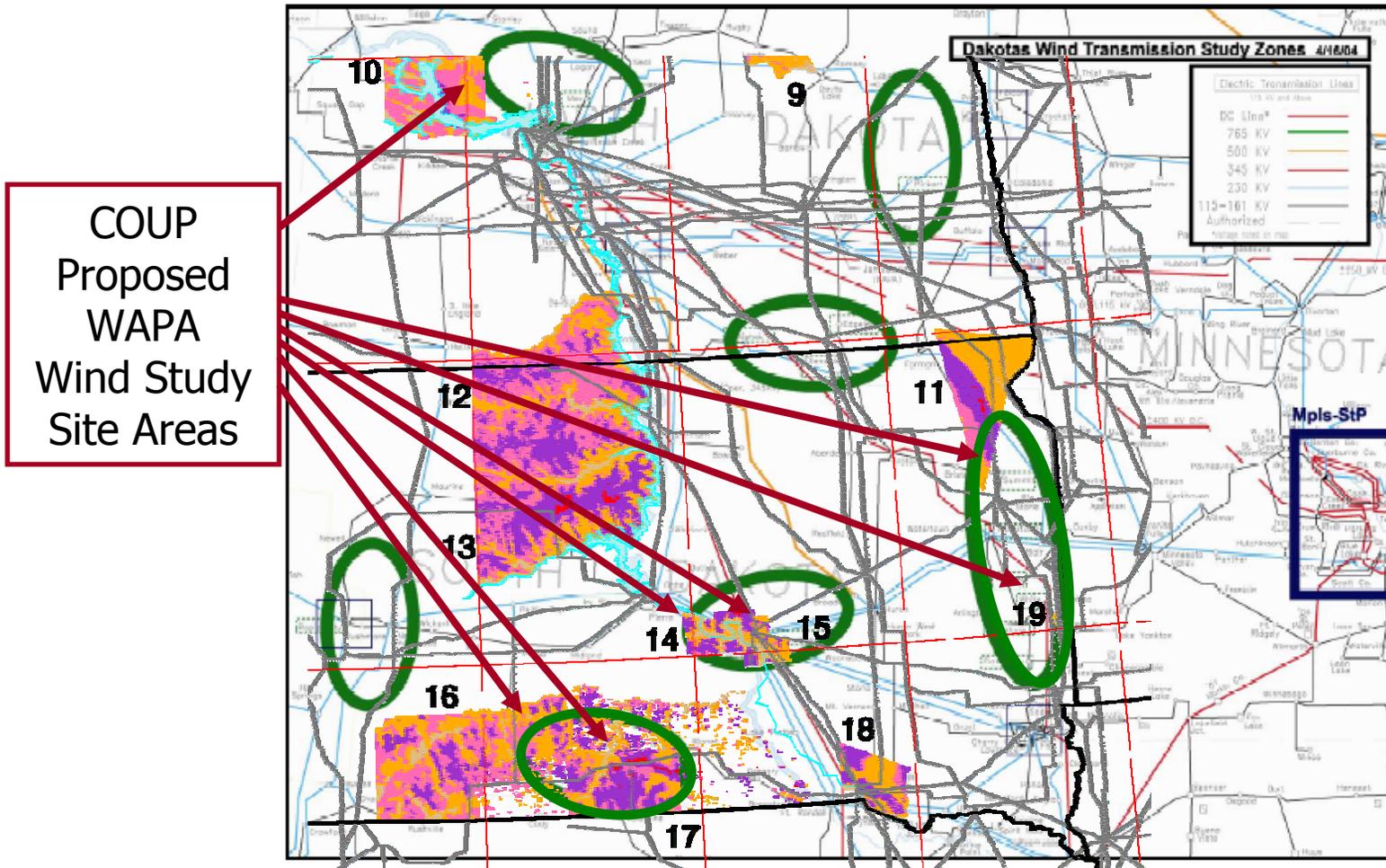
Intertribal COUP Extended Demonstration Project

Figure 10. Federal and Oklahoma Indian Lands



WAPA / WIND INTEGRATION STUDY AREA

Includes Several Reservation Interconnection Sites



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

www.EnergyIndependenceDay.org



Intertribal Council On Utility Policy

4,000 MW is about 3% of ND Wind Generation Potential

State	WIND POWER (MW)	
	Existing ¹	Total Potential ²
Illinois	50	6980
Iowa	471	62900
Minnesota	563	75000
Nebraska	14	99100
North Dakota Table 1 - Wind Resource Availability	66	138400
South Dakota	44	117200
Wisconsin	53	6440
Total	1261	506020

Table 2

Notes:

[1] Nameplate MW, American Wind Energy Association, January 2004.

<http://www.awea.org/>

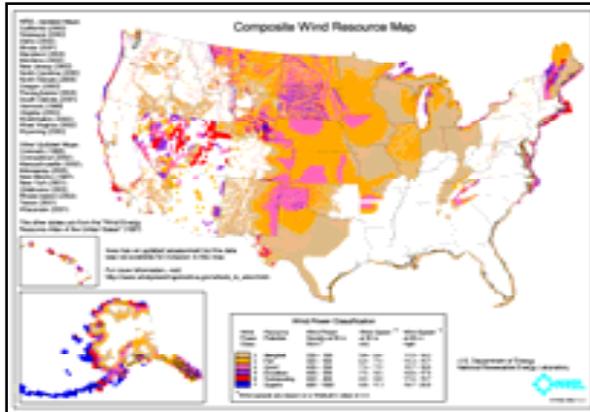
[2] Average MW, circa 33% of nameplate capacity, sourced from "An Assessment of Windy Land Area and Wind Energy Potential", Pacific Northwest Laboratory, 1991.

Source: Wind on the Wires presentation on Net Environmental Impacts of Transmission Systems in the Midwest.

**MISO Status Report to the Upper Great Plains Transmission Coalition
St. Paul, January 31, 2006**

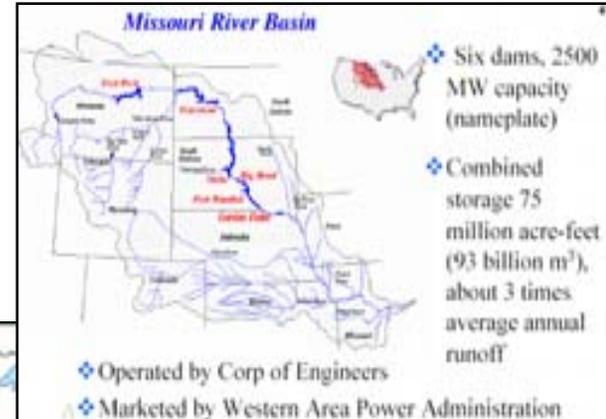
Tribal Wind / Federal Hydropower Renewable Energy Dynamo

World's Largest Hydropower Storage System Could Operate as a 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



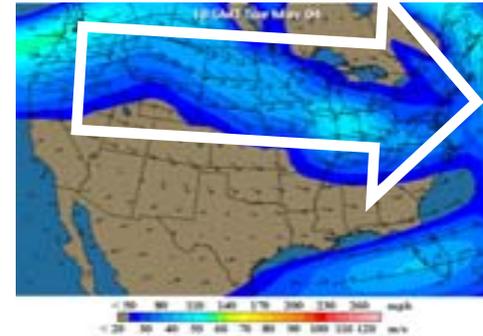
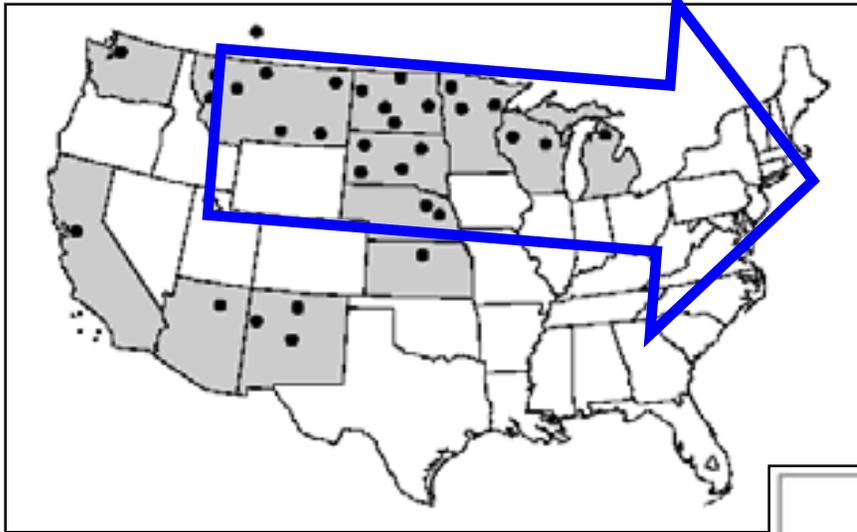
New and Upgraded Transmission Needed To Deliver Clean Abundant Wind Power to Load Centers

www.NativeWind.org



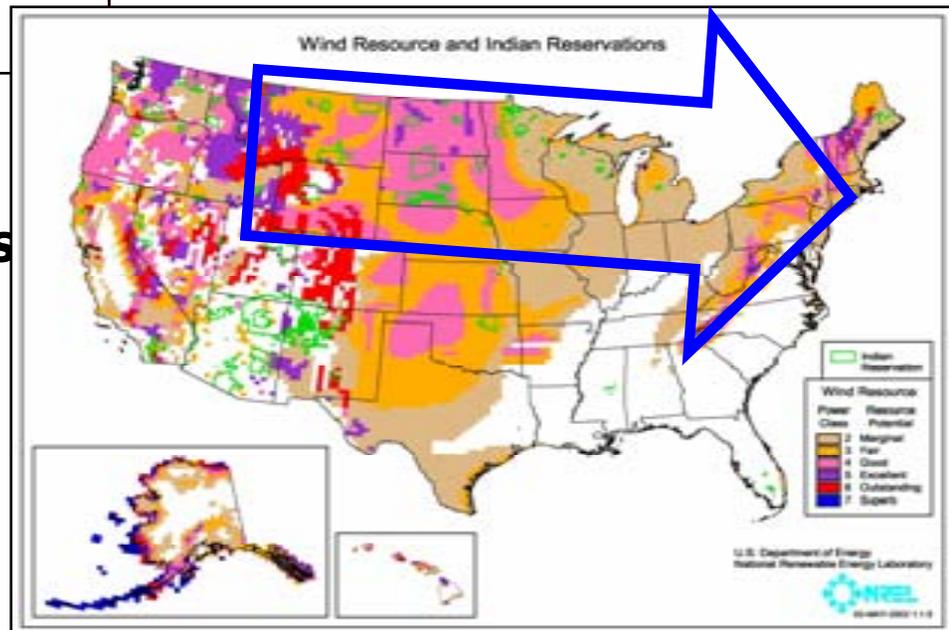
IntertribalCOUP.org

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 Forecasting along the Windshed for value-add firm power sales into the market

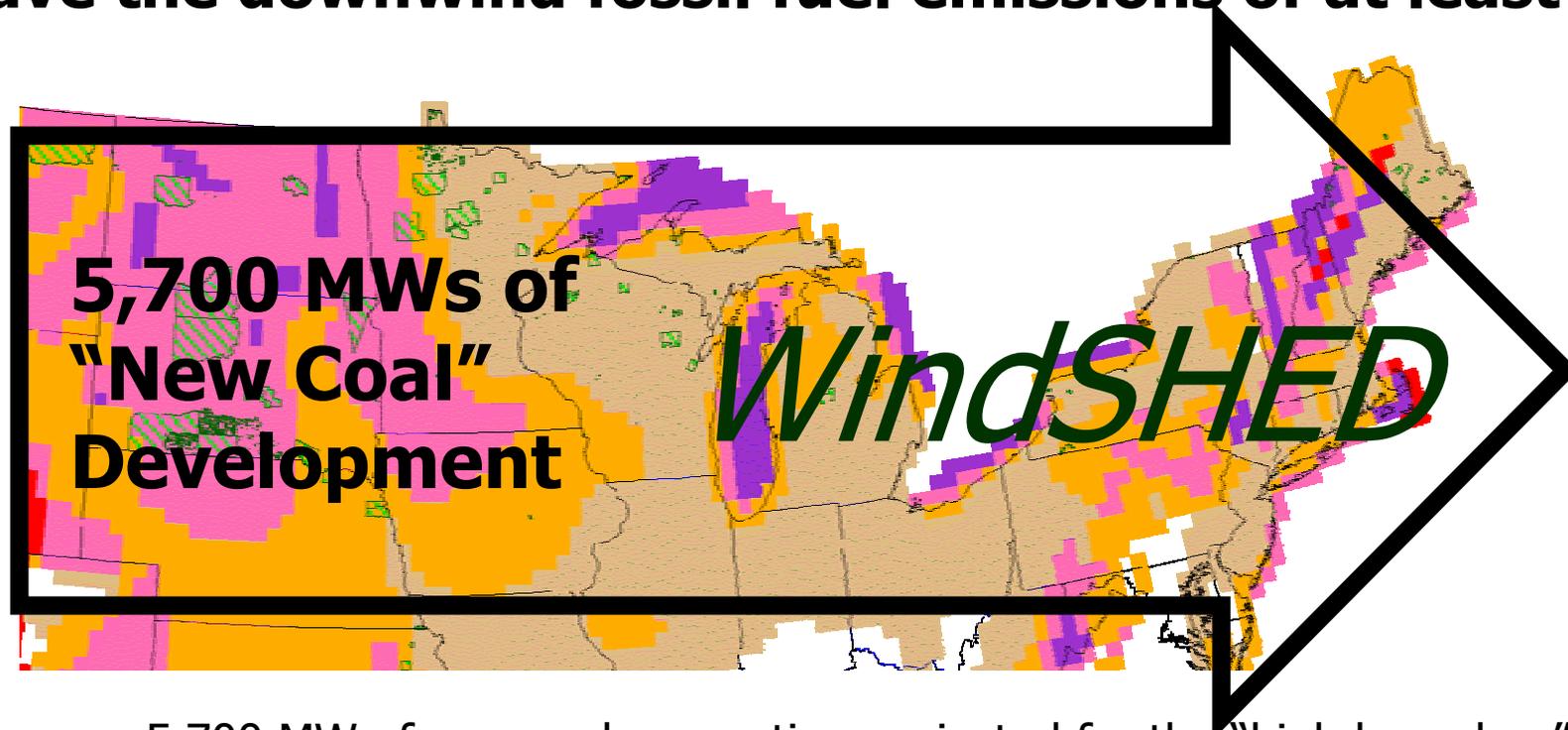


www.EnergyIndependenceDay.org



Intertribal Council On Utility Policy

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 NO_x**, (acid rain downwind)
- **691 kilograms of mercury** (air borne toxin to downwind waters & wildlife)

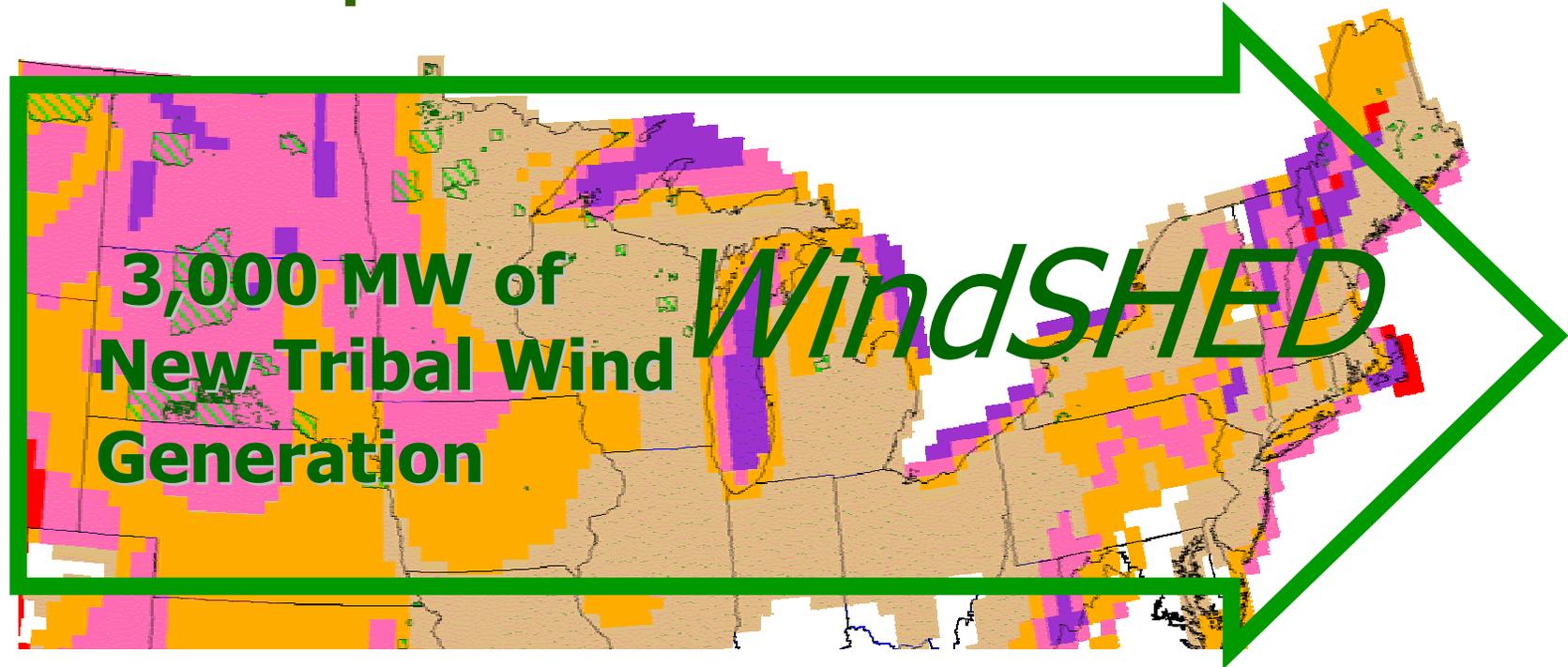
estimated to be annually associated this new fossil fuel development.

www.EnergyIndependenceDay.org



Intertribal Council On Utility Policy

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

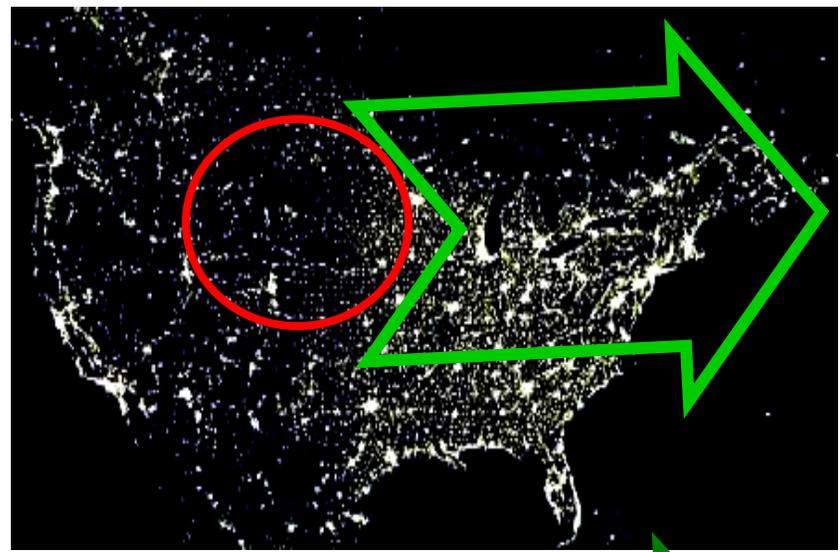
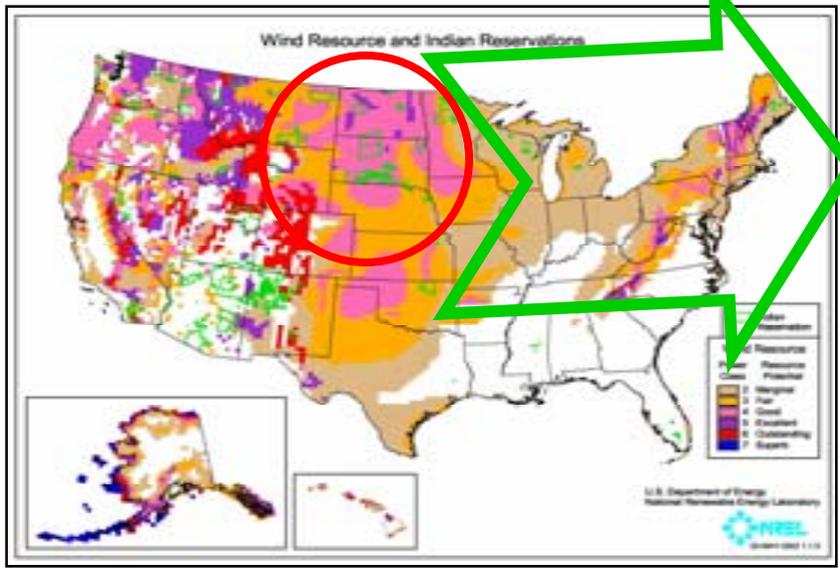


- ***Tribal Green Tags*** (downwind environmental benefits associated with upwind clean energy development) generated by tribally owned, utility scale wind turbines developed on Northern Great Plains Indian Reservations.
- ***Tribal Green Tags*** result direct and practical improvements in the economic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

Learning We Live In A WINDSHED !

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

UpWind Generation  **DownWind Benefits**



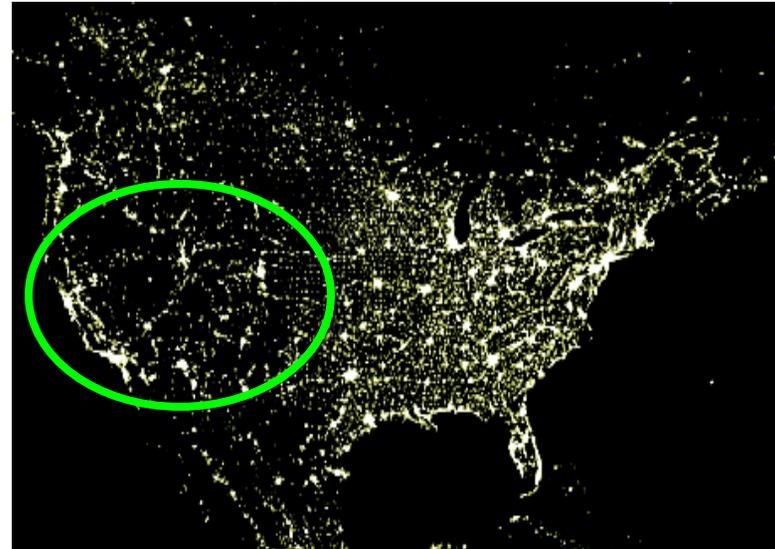
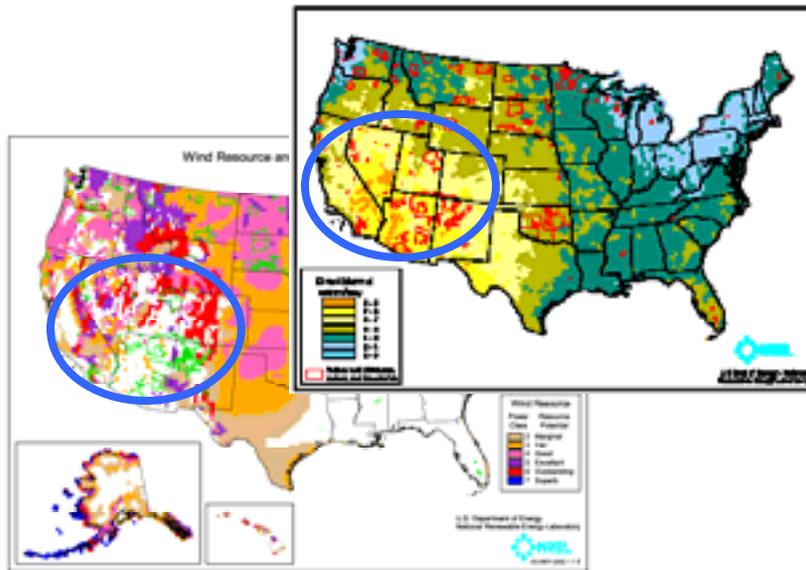
**Sustainable Homeland
Economic Development
based on Tribal Wind
Energy Generation**

**Downwind Communities
can Support Tribal Wind
and Benefit from Clean
Energy and Cleaner Air**



Learning That We Live in An AirSHED !

A Tremendous Wind/Solar Energy Regime Shares the Southwestern Airshed With High Fossil Energy Consumption, Smog and Haze Impacts!!



Sustainable Homeland Economic Development (SHED) based on Tribal Wind/Solar Generation

Southwestern AirSHED Communities can Support and Benefit from Tribal Solar/Wind Energy Projects

www.EnergyIndependenceDay.org



Intertribal Council On Utility Policy





TRIBAL ENERGY PROGRAM GRANT

Incentive Type: Federal Grant Program

DOE's Office of Energy Efficiency and Renewable Energy's (EERE's) Tribal Energy Program provides financial and technical assistance to tribes for feasibility studies and shares the cost of implementing sustainable renewable energy installations on tribal lands

Eligible Technologies: Passive Solar Space Heat, Solar Water Heat, Solar Space Heat, Photovoltaics, Wind, Biomass, Hydroelectric, Geothermal Electric, Geothermal Heat Pumps

Applicable Sectors: Tribal Government

Amount: Varies

Max. Limit: Varies

Terms: Varies

Approximately \$2-\$3 million expected to be available

Rural Utilities Service (RUS)

\$200 Million in Direct Loans available

- **Loans interest rates tied to Municipal Bond Rates**
- **Terms as long as 25 years and can be fixed**
- **Encourages cooperative arrangement with local rural electric cooperatives**
- **Technology must be “proven” and “renewable”**
- **Equity requirement is flexible**
- **Available to private utilities as well as electric cooperatives and public utilities**

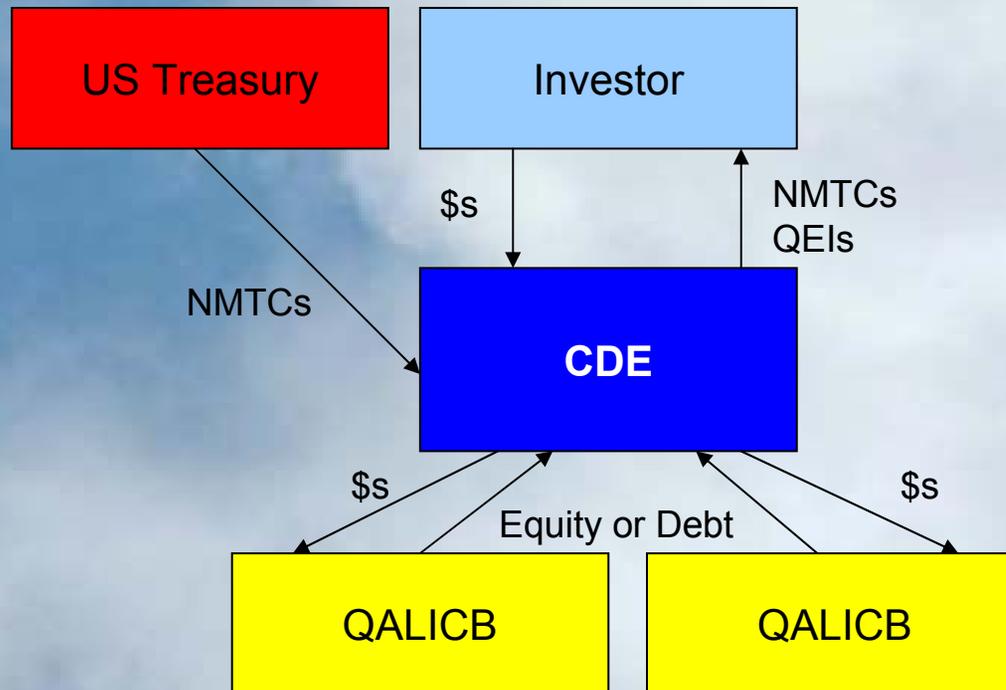
USDA RENEWABLE ENERGY GRANT & LOAN PROGRAM

- **Type: Federal Grant Program**
- **Applicable Sectors: Commercial, Agricultural Producers**
- **Amount: Grants-25% of eligible project costs; Loans-50% eligible project costs; Grant awards are made on a competitive basis**
- **Terms: Demonstrate financial need; Loan terms close to B&I loan terms and conditions**
- **\$23 million available in FY 2005**

NEW MARKET TAX CREDITS

- **Created by Congress to encourage \$15 billion in investments in low-income communities.**
- **Qualified Community Development Entities (CDE) will apply to the CDFI Fund for an award of New Markets Tax Credits. The CDE will then seek taxpayers to make Qualifying Equity Investments in the CDE**
- **Equity investments used to make Qualified Low-Income Community investments in/to Qualified Active Low-Income Businesses in low income areas**
- **The taxpayer will be eligible to claim a tax credit equal 39% percent of the total investment in the CDE**

NMTC Investment Structure



NMTC: New Markets Tax Credit
CDE: Community Development Entity
QALICB: Qualified Active Low-Income Community Business
QEI: Qualified Equity Investment

BUSINESS & INDUSTRY (B&I) GUARANTEE LOAN PROGRAM

- 1. Provides up to a 90% loan guarantee to banks**
- 2. Businesses must be in areas of 50,000 in population or less**
- 3. Primary objective of the program is creation or preservation of jobs in rural areas**
- 4. Loan proceeds may be used for**
 - working capital (7yr amortization),**
 - machinery and equipment (15yr amortization),**
 - buildings and real estate (up to 30yr amortization)**
 - certain types of debt refinancing**
- 5. Maximum loan amount is \$40 million**
- 6. Personal guarantees required**
- 7. Loans can be fixed rate**
- 8. Requires a minimum of 20% tangible equity for biobased and other commercial ventures and 40% tangible equity for renewable energy companies.**

FEDERAL RENEWABLE INCENTIVES

- **PRODUCTION TAX CREDIT (PTC)** Production tax credit of \$.019+ /kWh guaranteed for 10 years provided in proportion to ownership.
- **RENEWABLE ENERGY PRODUCTION INCENTIVE (REPI)** Tiered reimbursement to public power entities depending on appropriations.
- **CLEAN RENEWABLE ENERGY BONDS (CREBs)** Tax exempt bonds for public power entity projects (including Tribes) administered by Treasury.
- **TRIBAL ENERGY PRODUCTION INCENTIVE (TEPI)** Allow Tribes as Joint Venture partners to share their tax credits with taxable partners.

Tribal Joint Venture Production Tax Credit

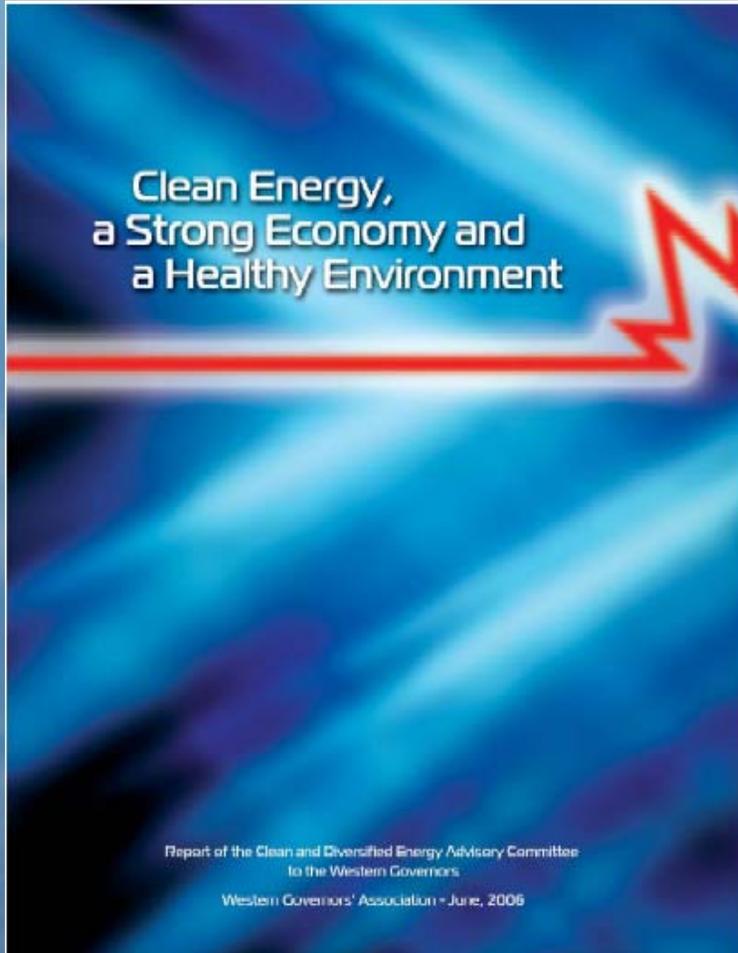
Production Tax Credit (PTC) has been instrumental in:

- **Encouraging investment in wind energy projects**
- **Increasing the economies of scale in the production of wind turbines**
- **Lowering the costs of production of energy.**

Unfortunately, the stop-and-start nature of the PTC:

- **Undercuts the incentive benefits of the PTC**
- **Undermines stable growth of the emerging wind energy industry**
- **Temporarily levels the playing field for Tribally owned projects**

Western Governors Unanimously Adopt CDEAC Report Recommendations



Western Governors set forth several National Policy Recommendations, including the following:

Renewable Energy: Extend the long-term (10 years) production tax credit and investment tax credit across all clean energy technologies, **provide for partnership sharing of tax credits for certain entities such as tribes**, extend and raise the cap on new clean energy bonding authority for non-profits (public power) and Native American tribal authorities, and raise the cap on the residential investment tax credit to \$10,000. (Bold emphasis added)

<http://www.westgov.org/wga/press/plenary1-pr.htm>
and <http://www.westgov.org/wga/publicat/CDEAC06.pdf>

Tribal Joint Venture Production Tax Credit

A tribal energy production incentive is recommended, so Tribes can share any production tax credits (PTC) within a tribal joint venture, such as a tribal energy resource development organization (Energy Policy Act 2005, Section 2602), allowing Tribes to retain significant project ownership while allocating their share of the PTC to their taxable partners:

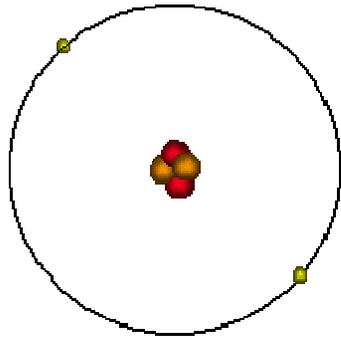
Section 45(d)(3) of 26 USC 45 (relating to additional definitions and special rules) should be amended by adding at the end the following new paragraph:

PTC Sharing Allowed within a Tribal Joint Venture:

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 or tribes, the tribal owner or owners may allocate their share of the renewable electricity production credit among the other, non-tribal, taxpaying owner or owners of the production in the gross sales from such facility.

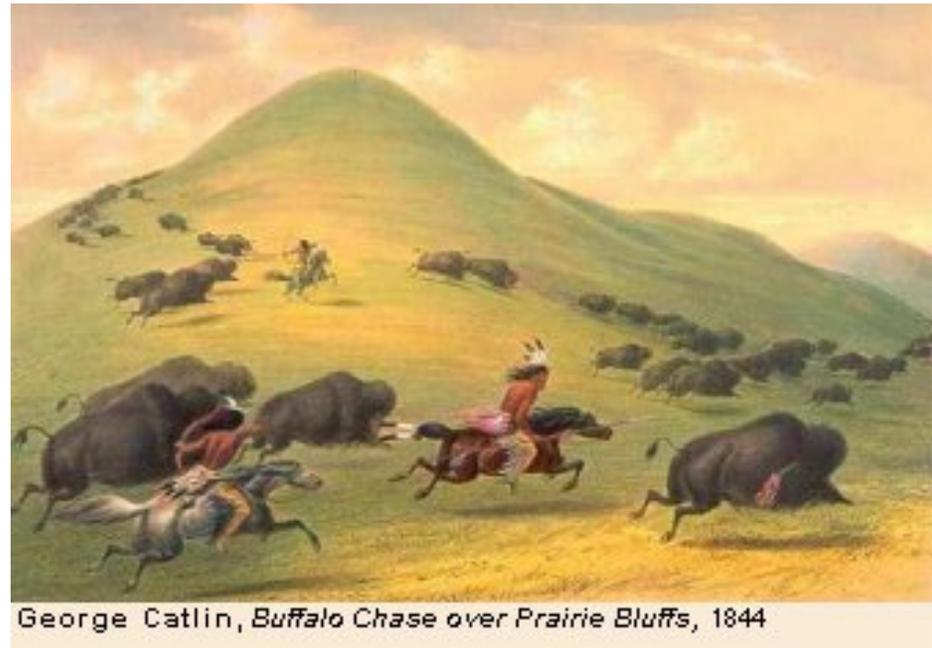


How are Electrons ...

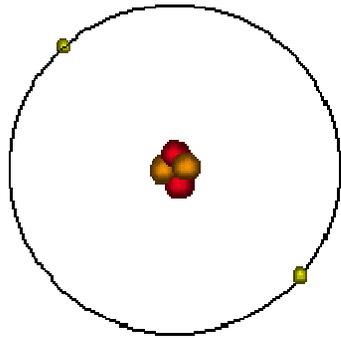


- electron
- proton
- neutron

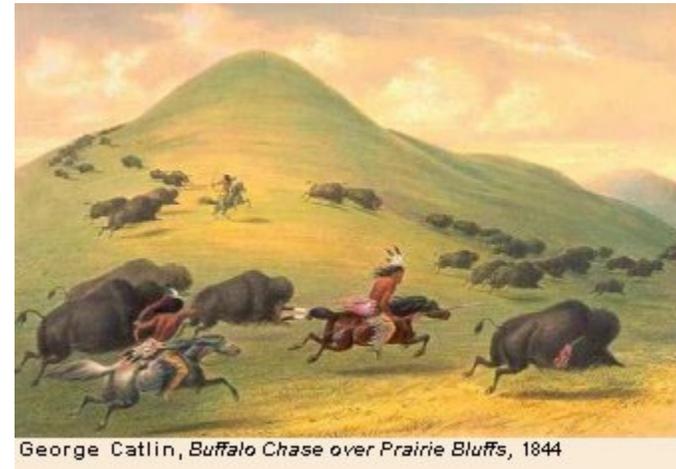
... like Buffalo??



You can HERD them

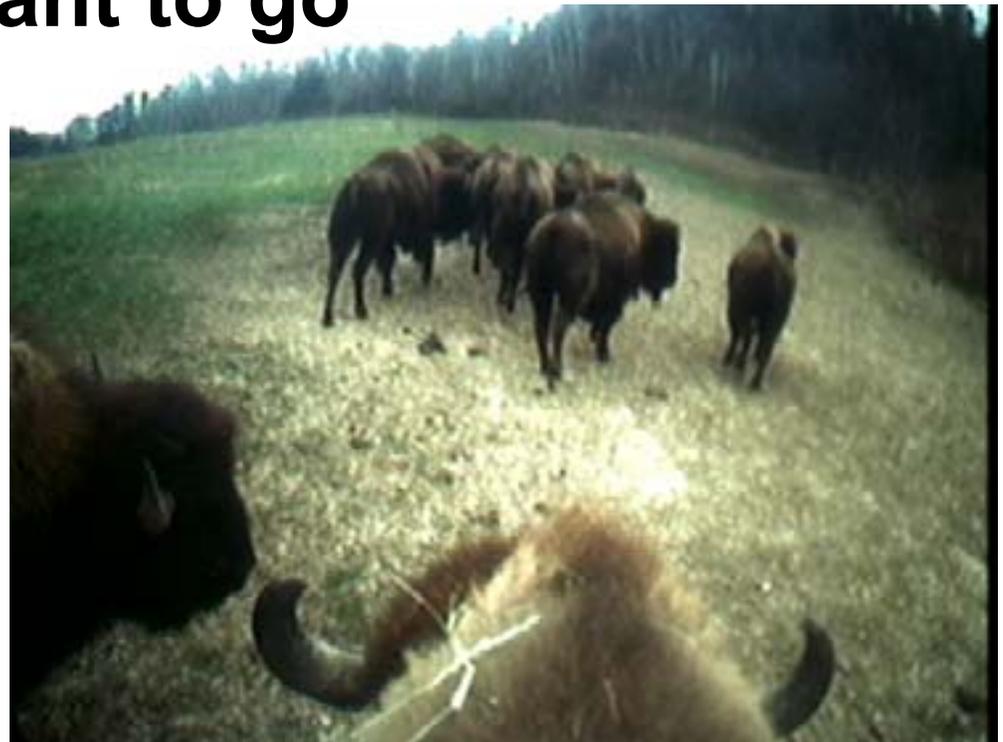


- electron
- proton
- neutron

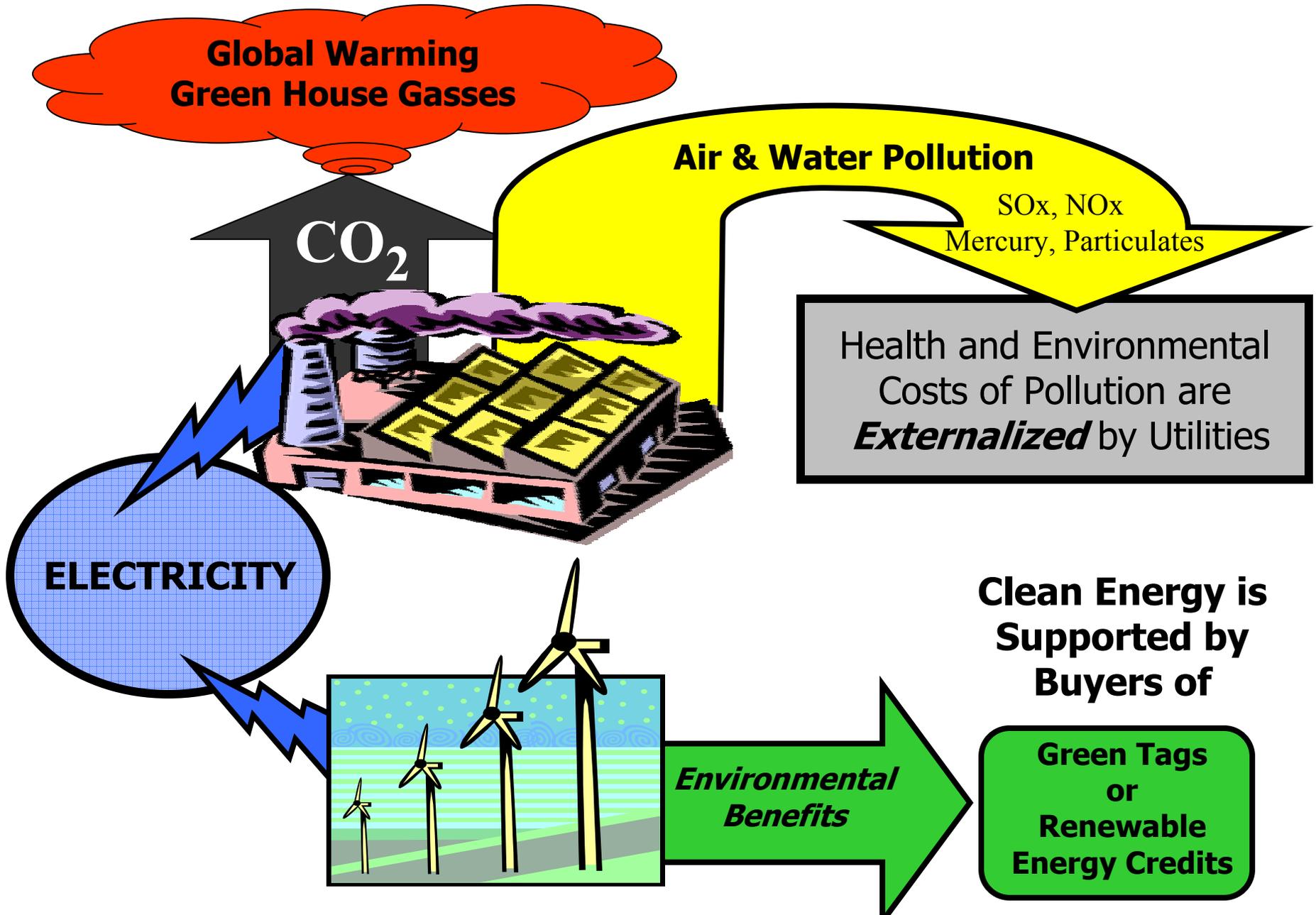


George Catlin, *Buffalo Chase over Prairie Bluffs*, 1844

Anywhere THEY want to go



Where do Green Tags come from?



Global Warming
Green House Gasses

CO₂

Air & Water Pollution

SO_x, NO_x
Mercury, Particulates

Health and Environmental
Costs of Pollution are
Externalized by Utilities

ELECTRICITY

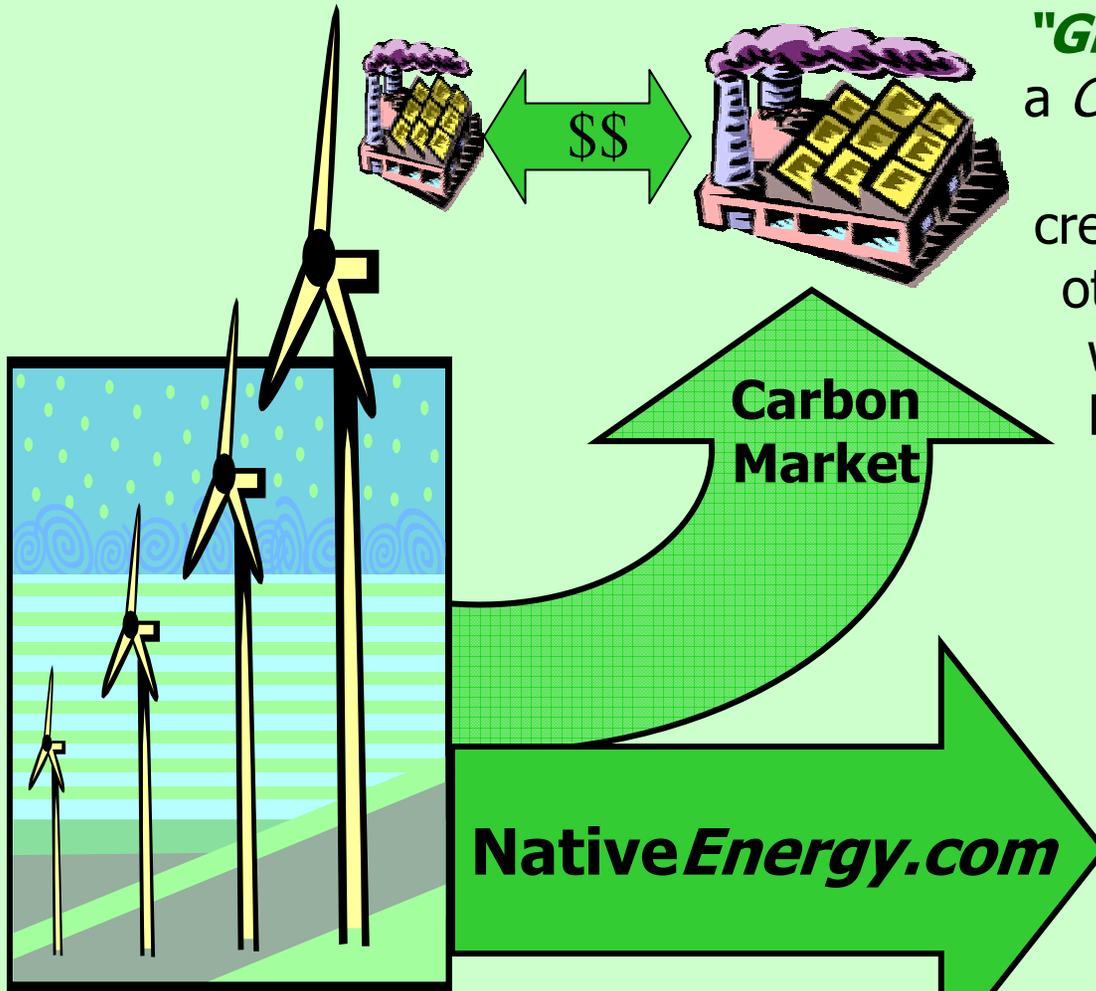
Clean Energy is
Supported by
Buyers of

Green Tags
or
Renewable
Energy Credits

Environmental
Benefits

"Green Tags"

Like Electricity, A Marketable Commodity



"Green Tags" can be sold into a *Cap and Trade*, *CDM* or other *Carbon Market* programs, creating continued pollution at other sites ("**Hot Spots**") where utilities buy tags to become "clean on paper".

Or ...

They can be **sold** to downwind supporters of renewable energy, **retired** and **taken out of market circulation**.

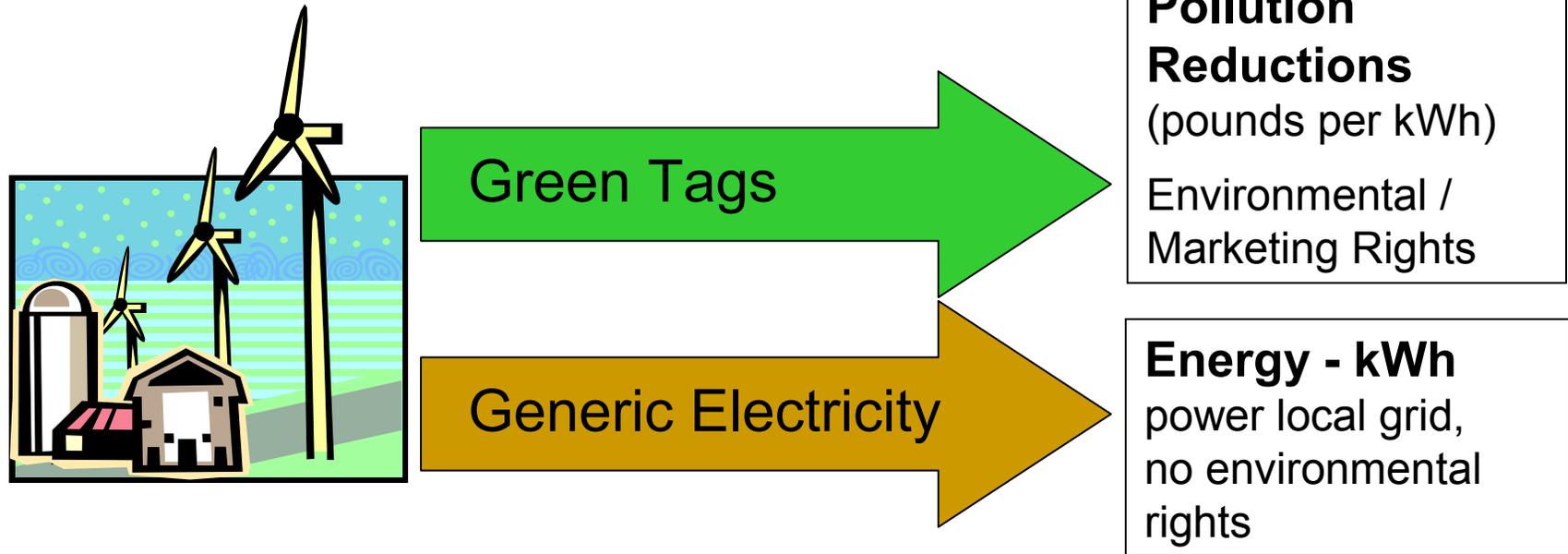
Tribal Wind Projects

www.EnergyIndependenceDay.org



Intertribal Council On Utility Policy

Renewable Projects have Two Commodities to sell:



GREEN TAGS – the rights to claim the pollution reductions from a certain quantity of renewable electricity, also known as “renewable energy credits” (RECs) – they include GHG Offsets

NativeEnergy.com *NativeWind.org*



How Do Green Tags Work Over Space and Time??



Up-Front Green Tags

**Event
Carbon
Footprint**

**Native
Energy**

\$\$

\$

Tags



Up-Front Payment

Marketing Tribal Green Tags

Reaching out to the marketplace...

12 TONS SO CAN YOU!

NativeEnergy
Bringing New Renewables To Market

They know how to fight global warming...
Do you?

NativeEnergy
Bringing New Renewables To Market

The First Native American Wind Turbine
Now Stands Tall...

You can help build the next!

NativeEnergy
Bringing New Renewables To Market

...fighting global warming!

NativeEnergy
Bringing New Renewables To Market

www.NativeEnergy.com

www.EnergyIndependenceDay.org



Intertribal Council On Utility Policy

[Offset Now](#)

[WindBuildersSM](#)

[Products & Services](#)

[CoolHomeSM](#)

[In The News](#)

[About Us](#)

[Privacy Promise](#)

[Carbon Calculator](#)



Syriana
becomes
Climate Neutral
with
NativeEnergy!



Welcome to **NativeEnergy!**

We're here to help you fight global warming and climate change. Take a few minutes to help build a new wind farm or a renewable farm methane project today, and enjoy a climate neutral lifestyle.

New Projects! *WindBuildersSM* helped build [MHA Nation Single Turbine Project](#), and *CoolHomeSM* helping build the [Schrack Family Dairy Farm Methane Project](#).

You'll be in good company – [see who's joined](#) us to fight global warming.

Give a special gift that saves a [ton of CO₂](#)

[Offset your Travel Today!](#)

**CREATING SUSTAINABLE
COMMUNITIES JUNE 8-10**
[CLICK HERE FOR MORE](#)

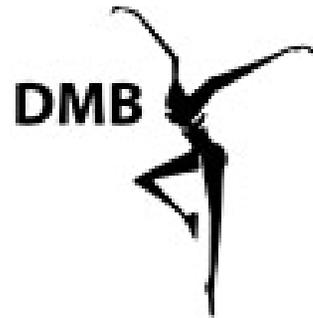


"Ben & Jerry's is excited to support the development of the Rosebud Wind Turbine. By working with *NativeEnergy* we are able to address our global warming impact and provide important social and environmental justice benefits to the Rosebud Sioux Tribe."

Andrea Asch,
Manager of Natural Resources
Ben & Jerry's Homemade

What are other leaders saying about NativeEnergy?

[Click here](#)



AVEDA™



GUSTER



PARTICIPANT PRODUCTIONS



greenfestivals



seventh GENERATION.

INTERFACE



STEPHEN & BURNS AVEDA SPA AND SALON



Chittenden



MEBSR

***NativeEnergy* is now Native-Owned!**



Intertribal COUP Executive Council and the founders of *NativeEnergy*

Intertribal COUP acquires majority stake in leading renewable energy marketer, on behalf of its member tribes.

Rosebud, SD and Charlotte, VT (August 16, 2005) – ***NativeEnergy***, a leading national marketer of Renewable Energy Credits (RECs) and greenhouse gas offsets, and the nonprofit **Intertribal Council On Utility Policy (COUP)**, announced today that COUP has acquired a majority interest in ***Native...***



Council On Utility Policy
Tribes Building Sustainable Homeland Economies



Honor the Earth



I.C.L.E.I

Local
 Governments
 for Sustainability



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"))

Phase 1 (2003):
 1st Tribally owned 750 kW Turbine on Rosebud Reservation
 Commissioned March 4th, Dedicated May 1st, 2003

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

Phase 3 (2004/6):
 80MWs: 10 MW Wind Ranches on 8 Reservations

Phase 4 (2004-2008):
 Expand and Replicate across the Northern Great Plains

Phase 5 (2006/15):
 3,000 Tribal MW on Great Plains Reservations

NATIVEWIND.ORG

Tribal Wind Power for Sustainable Homeland Economic Development

NATIVEWIND
 ENERGY INDEPENDENCE
 INTERTRIBAL COUP



www.energyindependenceday.org

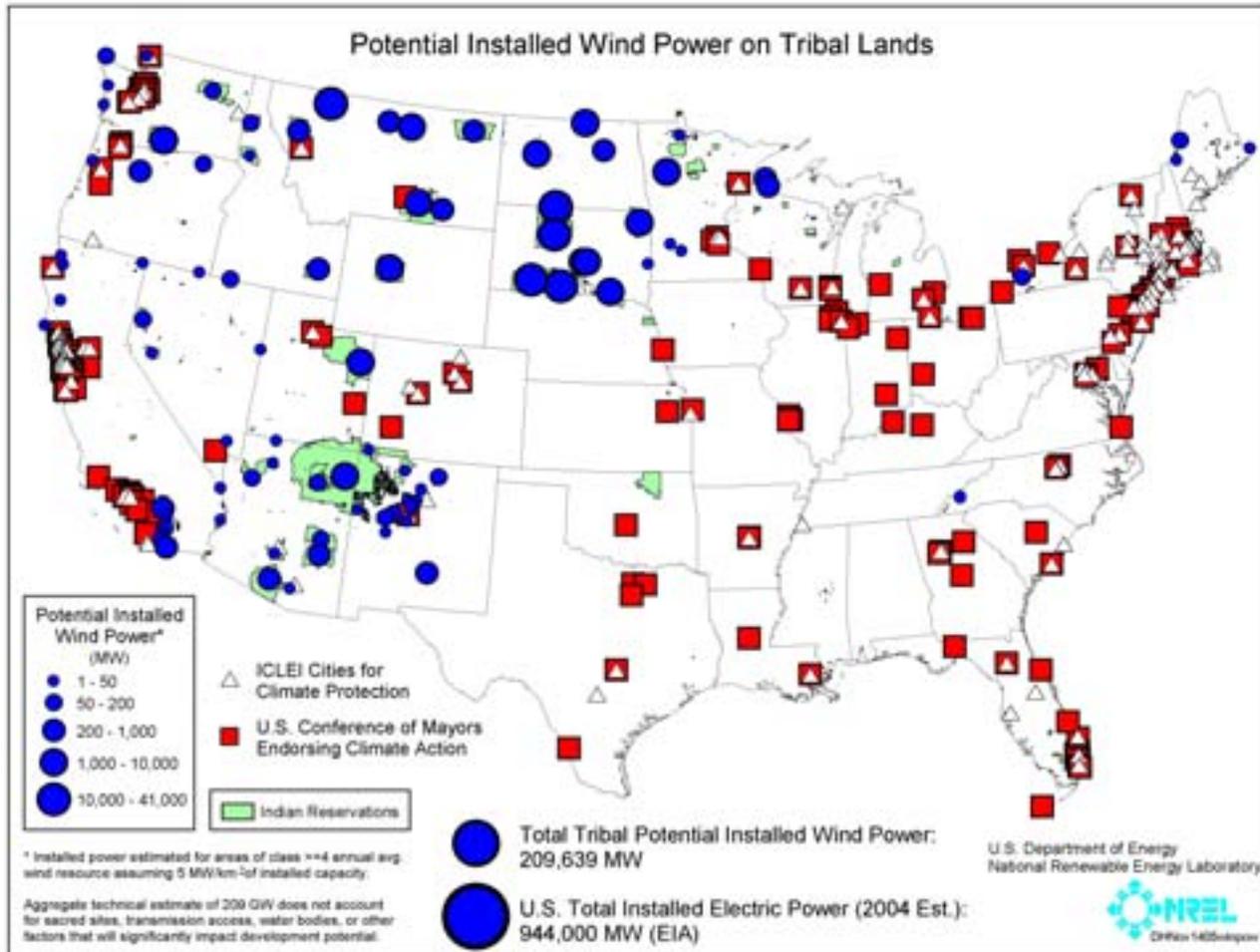
COUP/ICLEI ~ Tribal City Partnership ICLEI and U.S. Conference of Mayors



NATIVEWIND
ENERGY INDEPENDENCE
www.nativewind.com



Council On Utility Policy
www.buildingclimateaction.com





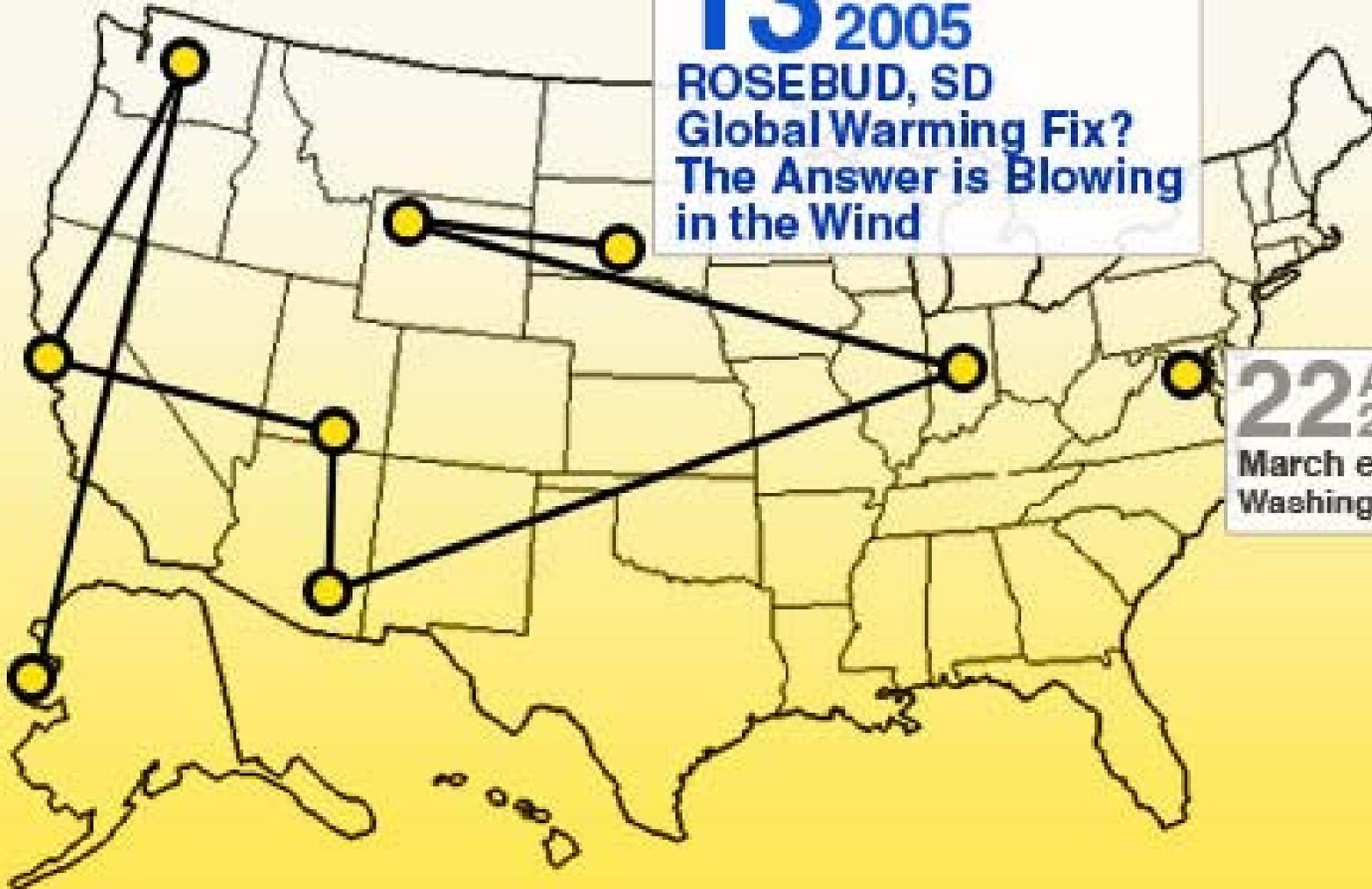
stopglobalwarming.org
join the virtual march on washington!

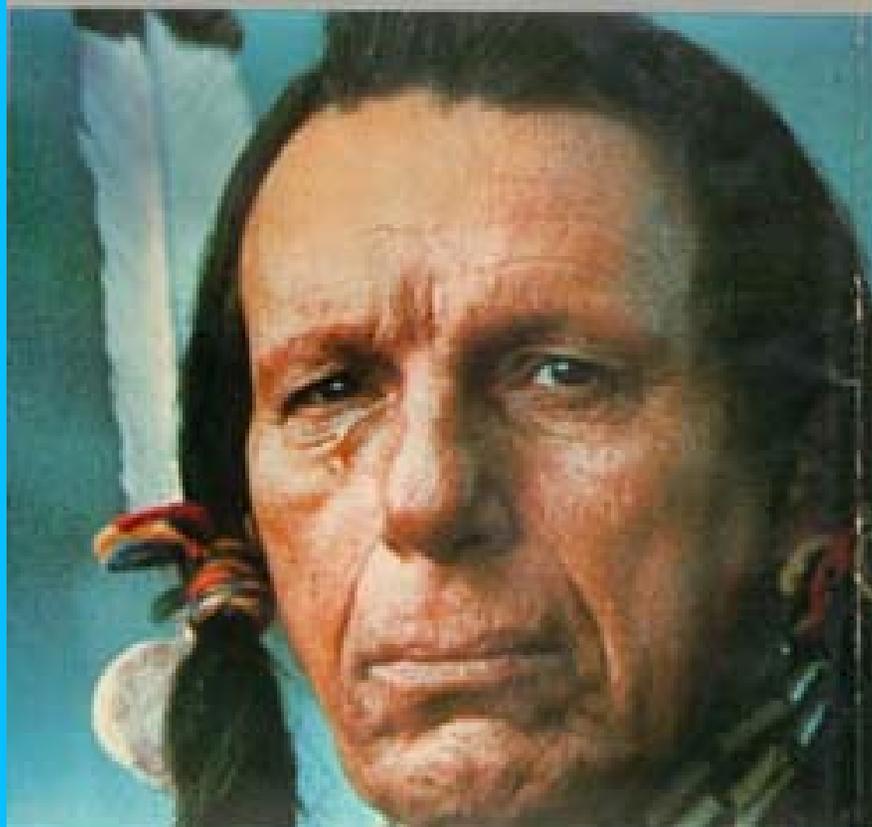
**13 JUL
2005**

**ROSEBUD, SD
Global Warming Fix?
The Answer is Blowing
in the Wind**

**22 APR
2006**

**March ends
Washington, DC**





PSA: Keep America Beautiful! 1971

In a 1971 public service announcement, Iron Eyes Cody played the ecologically-minded brave who canoed down a polluted stream and then was pelted with trash thrown from a car. A single tear rolled down his face. The PSA was shown so many times that it garnered over \$750,000,000 in free airtime. It became the most successful PSA in history. It kicked Smokey Bear's butt.

~~ Iron Eyes Cody's obituary by Steven Miller

NativeWind ... The Coming Generation!



Intertribal COUP Public Service Announcement

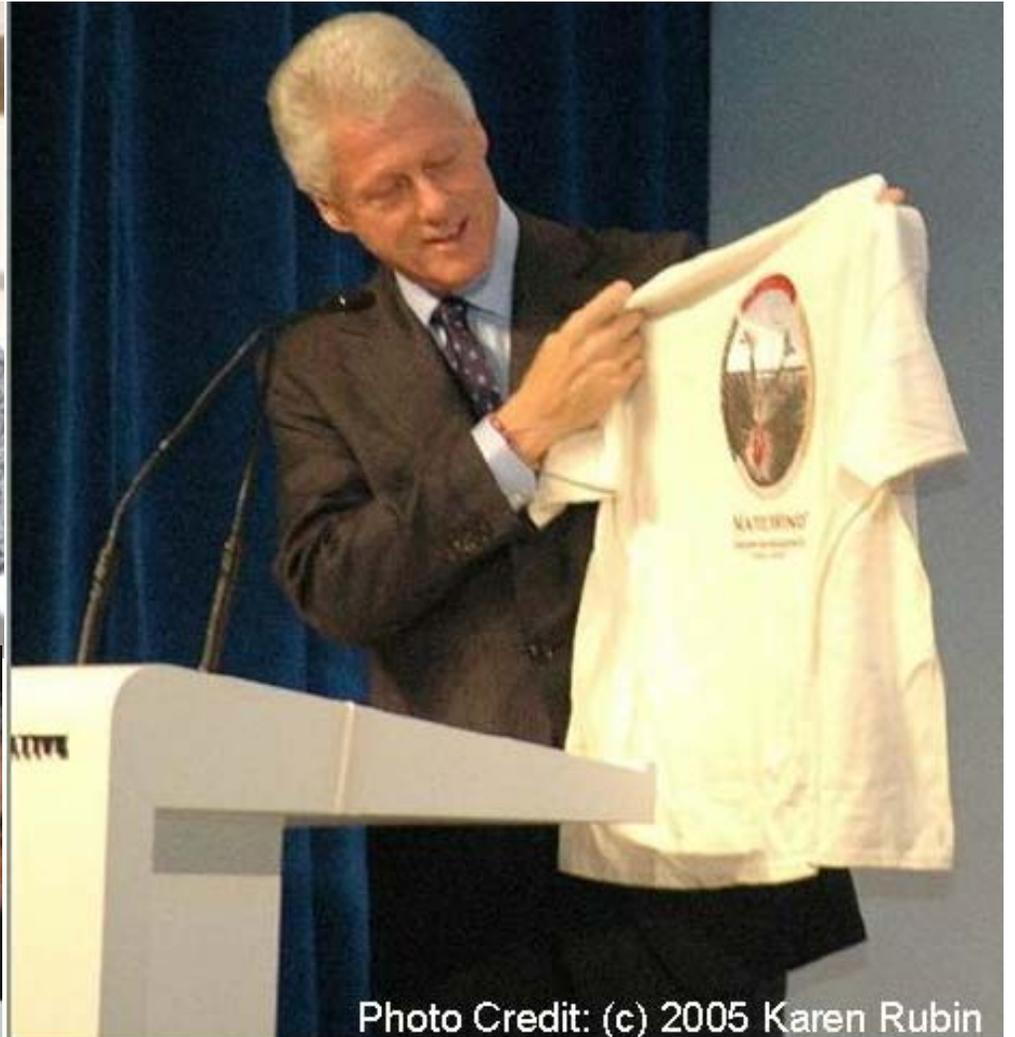
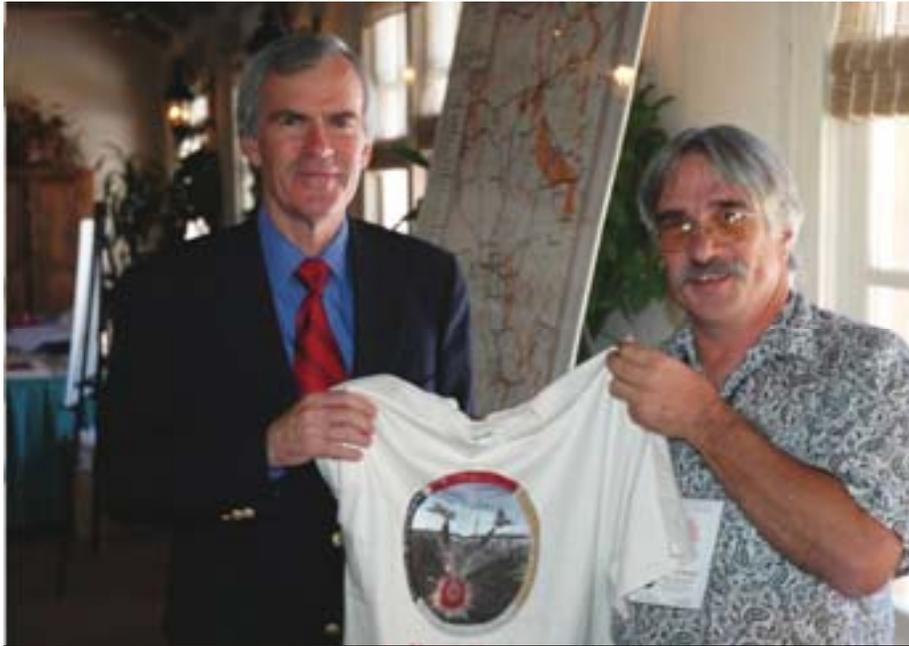


Photo Credit: (c) 2005 Karen Rubin

President Bill Clinton accepts a NativeWind.org T-shirt from Intertribal COUP on behalf of NativeEnergy for off-setting 1,000 tons of CO₂ of the “carbon foot print” of the Clinton Global Initiative gathering in NYC.

This “carbon offset”, courtesy of Marshall Street Management, helped finance construction of a 65 kW wind turbine raised by the Mandan, Hidatsa and Arikara Nations at Ft. Berthold, ND on Sept. 30, 2005.

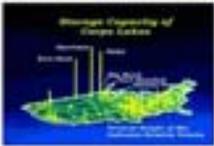
Tribal Wind Power: Recharging the National Renewable Energy Grid in the West

P. Spears and R. Gough, Intertribal Council On Utility Policy

"Wind energy is one of the world's fastest-growing energy technologies. In 2005, the U.S. wind energy industry installed more than 2,100 megawatts (MW) of new wind energy capacity – or over \$3 billion worth of new generating equipment – in 22 states. Areas with good wind resources have the potential to supply up to 20% of the electricity consumption of the United States." President's Energy Vision: Advanced Energy Initiative, February 28, 2006
<http://www.whitehouse.gov/eoi/eoi-energy/energy-facts.html>

With Federal Hydropower Resources Diminishing, Environmental Conditions and Federal Policy Can Encourage Developing Tremendous Tribal Wind Resource to Green the Grid!

Serving the West with Tribal Hydroelectricity



The downstream dams at Big Bend, Fort Peck and Gavins Point in South Dakota depend upon the upstream flow from Fort Peck (DF), Garrison (DF) and Carter (DF) which are dependent upon Minneremo and Spring runs in Montana, Wyoming and the Dakotas.

Current climate trends (drought, warmer and drier winters, greater snow accumulation, increased precipitation, increased evaporation and evapotranspiration, reduced snow lying, melting, and earlier ice position from winter to end of the same period) are now entering into the historical flow regime of the West.



Recent drought throughout the West has already reduced hydroelectric potential to historically low levels. The Western drought may be part of a natural, long-term cycle of wet and dry periods. But it can't mean that as a culture, we're disconnected with historical climate change patterns.



Over 200 Indian reservations and territories in the western high-potential territory which is both rich in wind power potential and severely affected by drought. Many of these Tribes have, or will be entering, 20 year contracts with electric utilities for allocations of federal hydroelectricity directed along the federal grid. Tribes could significantly contribute the nation's renewable energy needs while building sustainable local economies based on clean energy.

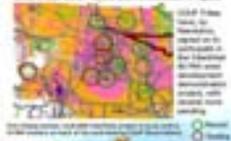
The Federal Electricity Transmission Grid System in the West was originally a "Green Grid", designed and built to carry 100% hydropower from federal dams throughout the region. A Great Plains "Green Wind/Hydro Dynamo", combining existing federal infrastructure (hydro generation & transmission) with the tremendous potential of tribal wind power in the region, could Recharge the Western Green Grid!

- In the West, federal dams are owned by Corps of Engineers-COE and Bureau of Reclamation-BOR for purposes of reclamation, navigation, irrigation and flood control, with hydropower produced as an incidental responsibility to original agency mandates and the protection of endangered species. Agencies have specific seasonal water release requirements but significant daily release flexibility.
- The Western Area Power Administration-WAPA and Bonneville River Administration-BRA have transmission responsibilities, subsidized by U.S. taxpayers, for federally generated hydropower in the West.
- The WAPA transmission system delivers federal hydropower from federal dams to its "preference customers" in 23 western states from Minnesota to California under Reclamation and Federal Power Acts.
- WAPA's total hydropower capacity is 9,740 MW in the West, with 2,792 MW in the Upper Great Plains Region.

- The Missouri River Mainstem Dam System has the largest hydropower storage capacity in the world, but the river is at its lowest levels in recorded history due to severe, chronic drought.
- The persistent Western drought is consistent with long term global climate change scenarios for the western and central U.S.
- Under a Wind/Hydro Integration Plan, the Missouri River dam system could conserve water consumed by conventional generation and function as a battery system to store and firm wind power in a coordinated hydro release operation.
- In the wind-rich northern Great Plains, the WAPA grid now carries less than 20% hydropower and over 80% lignite coal power, the most carbon dioxide (CO₂) intensive electricity in the nation. CO₂ is the major green house gas associated with global warming. Current policy and practice using coal for supplemental power exacerbates natural drought cycles and contributes to climate change.

- Nine of the Top Ten Wind States in the U.S. are located in the WAPA Service Territory.
- Great Plains Tribes have some 200 gigawatts of wind power potential and can be "Preference Customers and Providers"
- Recharging Federal Renewable Energy Grid: With 20% wind power from Indian reservations to supplement the remaining 20% hydropower, with the balance from other wind, coal and natural gas on the Integrated Grid System, WAPA could:
 - Support the Presidential directive and Congressional "Federal RPS provisions" for tribal renewable energy development!
 - Meet federal trust responsibility for tribal economic development!
 - Address issues of the natural and climate variation!
 - Provide greater energy independence and national energy security!

... And Tribal Renewable Energy



Environmental Justice COOP Revitalization Demonstration Project: Intentional Development of Initial 80+ MWs of Distributed Utility Scale Wind Generation on 8 Indian Reservations in 22 MW Clusters

- Build significant, low-impact, Tribal-revenue utility scale wind generation projects to meet local electricity needs.
- Meet Tribes' needs to obtain economies of scale, share expertise and risk, encourage local employment, and build local capacity.
- Eliminate integration of large projects while incorporating in a coordinated grid through demand and distribution.
- Reduce generation cost (levelized cost of electricity) through generation of 80+ MW spread across smaller wind farms sites. The grid is already being converted.
- Reduce opportunity costs for reservation from other (1) MW at 100 MW.
- Link Tribal green tags to economic grid conversion, bringing national financial support for energy generation cost loads.
- Reduce near 200 Energy Policy Act related renewable portfolio standard penalties.
- State of Increased COOP Standard Program.
- Support Sustainable Regional Economic Development.



Greening the Grid

A Federal Tribal Partnership Collaborates to Recharge the Federal Grid with Tribal Wind Power. During drought, WAPA's practice is to buy least-cost energy to replace lost hydropower. WAPA buys the most CO₂ intensive, lignite coal fired electricity further contributing to increased global warming, with a tremendous wind resource on Indian Reservations gone underutilized.

Getting tribal wind built, interconnected to, and integrated on the WAPA grid through direct, long-term federal power purchase contracts and "green tag" purchases for new projects could conserve water and optimize both federal and tribal renewable resources in the West in accordance with overall federal energy and Indian policy.

Wind Power is the "Big Sister" Tribal Strategy for Sustainable Handled Economic Development on the Great Plains!

IntertribalCOUP.org
 Intertribal Council On Utility Policy

NativeEnergy.com
 A Tribally Owned Company

NativeWind.org
 A City/Tribal Partnership

Opportunities for Tribes:

- Diminished hydropower opens capacity on federal PMA grids.
- Arrayed along the WAPA/BPA grids throughout the West.
- "Preference Customers" and can be "Preference Network Providers".
- New authorities under EPAct 2005.
- Intertribal capacity building: 80+ MW to 3,000 in Northern Plains.
- Tribes as ruled by FERC as "Federal Instrumentalities" under the Federal Power Act.
- Tribal contribution to WGA/CDEAC 30,000 MWs

Tribal Issues at WINDPOWER2006 Poster Session

Indian Tribes and Local Governments: Reducing Carbon Emissions with Wind Power

R. Gough and P. Spears, Intertribal Council On Utility Policy

Cities for Climate Protection® (CCP)

The Cities for Climate Protection® (CCP) Registry campaign, designed to educate and empower local governments worldwide to take action on climate change. The US CCP Campaign seeks to significantly reduce US domestic greenhouse gas emissions by assisting local governments in taking action to reduce emissions and realize multiple benefits for their communities.



The Energy Independence Day (EID) Campaign is Intertribal COOP's invitation to the 300+ US-CCP member concerned about climate change and working to reduce emissions (through efficiency and renewable energy) to partner with Indian tribes interested in converting their abundant wind resources into renewable electricity to provide sustainable reservation-based economic development.



2005 RESOLUTION ENVIRONMENT: ENDORSING THE U.S. MAYORS CLIMATE PROTECTION AGREEMENT

Over 200 mayors from around the nation have signed the U.S. Mayors Climate Protection Agreement (MCPA), which reads, in part:

"We urge the federal government and state governments to enact policies and programs to meet at least the target of reducing global warming pollution levels to 7 percent below 1990 levels by 2012, including efforts to reduce the United States' dependence on fossil fuels and accelerate the development of clean, economical energy resources and fuel-efficient technologies such as conservation, methane recovery for energy generation, waste to energy, wind and solar energy, fuel cells, efficient motor vehicles, and biofuels."

"Cities will strive to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking actions in our own operations and communities such as... increase the use of clean, alternative energy by, for example, investing in "green tags", advocating for the development of renewable energy resources, encouraging landfill methane for energy production, and supporting the use of waste to energy technology..."

CCP Partners

ICLEI strengthens the service it provides its members and campaign participants through strategic partnerships with a variety of organizations, including:

- Advanced Energy/Clean Air-Cool Planet
- Intertribal Council On Utility Policy (Intertribal COOP)
- The Climate Group
- US Environmental Protection Agency, ENERGY STAR

CO2 Emissions Reduction: A Voluntary City/Tribal "Cap and Trade" Program

What if over 200 U.S. cities concerned about global climate change purchased tribal wind power to reduce CO₂ emissions?

America's urban heat centers (the bright lights) consume the bulk of conventional fossil-based electricity generation.



Most of that power in the South and West is delivered over the federal transmission grids. In the West, the grids and life grids connect many rivers, rural Indian reservations with these urban heat centers. Tribes, with abundant wind, along with other renewable resources, are amazed along the federal grid system.

Tribes have recently been able to directly purchase WAPA power allocations from the federal dams as "preference customers" and could become renewable energy providers to the federal grid as "preference resellers" of wind power for federal and urban electricity customers. (See "Tribal Wind Power: Reshaping the National Renewable Energy Grid in the West" report.)

Developing voluntary "clean energy trading partnerships" (local tribal generators to the country's local rural regions and urban consumers in the nation's ICLEI-CCP and the U.S. Conference of Mayors cities) could use the tribal physical "capacity of the grid" to actually reduce the amount of fossil generation that is used to make up for the decreased efficiency on the WAPA system. This voluntary "cap and trade" program from the heartlands could significantly reduce America's carbon footprint with clean energy while building rural economies based on renewable energy development.



Aspen Sets the Pace!

In the western United States and throughout the West, a decade of persistent drought has induced residents rivers to record low flows. WAPA, which markets power allocations from a dwindling federal hydro resource through twenty year contracts, now relies primarily upon the retail purchase of coal generation to supplement its dwindling hydroelectric supply.

ICLEI US-CCP and WAPA cities, Rio Arriba, Colorado, which is concerned about climate change and its impact upon water resources, has voluntarily established its "carbon budget" (energy input and carbon emission outputs) and has committed to carbon reductions through efficiency and greater use of renewable energy. Through a "preference customer" recipient of a WAPA allocation, Aspen can no longer count its WAPA power as a non-emissions resource, since it is, in fact, now "carbonated hydroelectricity". Aspen has requested that its federal hydroelectric allocation be 100% renewable energy, so it can be counted in the clean column. If WAPA can not provide 100% hydroelectricity, Aspen would prefer that WAPA supplement its allocation to the city with Native Wind power, with Tribes considered as "preference vendors".

"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 culturally diverse ecosystems and the use of renewable energy technologies."

— Rosalie L. Noto, Executive Director Tribal Utility Commission

NATIVEWIND Energy Independence



Tribes building sustainable rural economies through renewable energy: Meeting urban demands for clean, emissions-free electricity.



Opportunities for Tribes:

- Growing awareness & concern about global warming.
- Growing market concern about carbon & carbonated hydropower.
- Tribal/City partnership can use limitation of constrained grids as part of a "voluntary cap and trade program" on the WAPA/BPA grids throughout the West.
- Tribal can contribute to WGA/CDEAC 30,000 MWs goals.

Tribal Issues at WINDPOWER2006 Poster Session



**NATIVE
RENEWABLES
ENERGY SUMMIT:
SOLUTIONS FOR
TRIBES AND CITIES**

**SUNDANCE SUMMIT OF
U.S. MAYORS AND NATIVE
LEADERS AT**

NATIVEWIND
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www.EnergyIndependenceDay.org



***Supporting Tribal
Renewable Energy:***

PRACTICE Energy conservation
and efficiency!

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

RECHARGE National Renewable
(GREEN) Energy Grid!

PURCHASE Tribally Generated
Green Power & "Green Tags"

SUPPORT passage of Tribal Joint
Venture PTC



www.NativeEnergy.com

Intertribal Council On Utility Policy



***Respect the Earth
Honor the Treaties
Promote Tribal Wind Power***

Develop Sustainable Homeland Economies
www.EnergyIndependenceDay.org

“With regard to Climate Change, it doesn’t matter what boat you came over on, ... we’re all in the same boat now!”

~ Winona LaDuke



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