Intertribal Council On Utility Policy
Pat Spears, President - Lower Brule, SD
Terry Fredericks, Vice President - Ft. Berthold, ND
Bob Gough, Secretary - Rosebud, SD
Sam Allen, Treasurer - Flandreau, SD

From Wind Powering Native America,
To Native Wind Powering America

Energy Independence Day
HUMAN FINGERPRINT ON THE FIRMAMENT

“In the beginning, when God created the heavens and the earth. The earth was a formless wasteland, and darkness covered the abyss, while a mighty wind swept over the waters.”

Genesis 1:1-2

Human industrialized activities have accelerated the increased levels of “green house gases” at unprecedented levels. The U.S. is responsible for 25% of the World’s CO2 Emissions.

Intertribal COUP / ICLEI-CCP
Native and Local Government Partnership for Renewable Energy
The sky isn’t falling, ... it’s filling!!

If ... the Planet Earth

was the size of an Apple,

Then Her life-giving atmosphere

would be thinner than the Apple’s peel!

Intertribal Council On Utility Policy
Beyond Oil

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

By Amanda Griscom

GLOBAL WARMING
RIGHT NOW

According to new research, climate change could go two ways: Bad, or really bad. A sobering look at the facts — don’t say you weren’t warned

By Kathryn Schulz

From: Rolling Stone Magazine
Intertribal Council On Utility Policy
If we could only connect the dots ...

Burning Fossil Fuels

Green House Gases & Global Warming

Over 35,000 die in Europe as bad weather, heat waves, storms hit ... Floods in Canada and the West Nile virus in the West ... Federal disaster relief triggers ... Alaskan spruce budworms... Polar ice caps, sea levels, ... snow pack... shrinking of asthma, catastrophic fires, floods and storms, coastal erosion, new diseases, and the loss of traditional plant and animal life... shrinking water supplies and snow pack... increased rates of asthma, catastrophic fires, floods and storms, coastal erosion, new diseases, and the loss of traditional plant and animal life... heat waves, drought, shrinking water supplies and snow pack... increased rates of asthma... Intertribal Council on Utility Policy
No Big Great Plains Wind Projects due to Constrained Transmission.
“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.”
Environmental Justice Issues in Federal Energy Generation

Northern Great Plains - Indian Reservation Wind Resource Map

Impacts of Federal Dams on Indian Reservations: Flood Control, Hydropower and Cultural Resources
The TREMENDOUS WIND POWER RESOURCES Found on the NORTHERN GREAT PLAINS INDIAN RESERVATIONS:

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

Wind power potential on these Indian Reservations alone is more than enough to meet North American Kyoto targets.
750 kW Wind Turbine ~ Rosebud ~ 2003

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

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

RST TRIBAL COUNCIL/COUP
and NativeEnergy, Inc.

The Intertribal Council On Utility Policy
Rosebud Sioux & Intertribal COUP

Environmental Justice Revitalization Plan:
3,000 MWs of Tribally Owned Wind Power Across the Northern Great Plains
Financed Through Sales of Energy and Environmental Attributes ("Green Tags")

Rosebud/COUP EJ Revitalization
Tribal Wind Power Plan

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

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

Phase 3 (2004/5):
Eight 10 MW Wind Ranches on 8 Dakota Reservations

Replicate across the Northern Great Plains

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

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Tribal Wind Power for Sustainable Homeland Economic Development
Intertribal Council On Utility Policy

Intertribal COUP ©
“The Wind Energy Council’s primary objective is to promote and foster the development and growth of a vibrant wind energy industry in the Upper Midwest.”

FUTURE PLANS (by 2005):
INTERTRIBAL WIND DEVELOPMENT
A series of 10 MW North and South Dakota Reservation-based Intertribal Wind Turbine Ranches

COUP EJ Revitalization Demonstration Project objectives:

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

In the Dakotas, some of the best wind resources are found in the Black Hills. But since the Black Hills are sacred to the Lakota, the Tribes are not likely to promote wind development there.

However, we have found some disturbed areas in the Black Hills...
Energy Development Issues: Protecting Sacred Sites and Cultural Resources

* Absence of turbine on George Washington’s head due to mitigation efforts at this site.

Intergovernmental Council on Utility Policy
Native Wind
Powering America

Serving the West
with Federal Hydropower

... And Tribal Renewable Energy

• Cities & Tribes are on WAPA grid
• Cities & Tribes are eligible WAPA "Preference Customers"
• Federal trust responsibility
• Sustainable Homeland Economies
• Great Wind/Hydro Potential
• Diminishing Hydropower resource
• Once 100% renewable, now only 20%
• Restore Renewable Energy to
• Federal Transmission Grid

Intertribal Council On Utility Policy
Tribal “Green Tags” Concept

- Tribal “Green Tags” present an innovative and extremely economic way to support Tribally owned, utility-scale wind projects in remote areas that are trapped within a constrained transmission grid system.

- Electricity can be sold for local consumption with little transmission, while Tribal “Green Tags” can be purchased by downwind communities far away from projects.

Intertribal Council On Utility Policy
Electric Generation Makes MORE than Electrons

Global Warming GHGs

Air & Water Emissions:
- SO\(_x\)
- NO\(_x\)
- Mercury & Particulates

"Acid Rain" and Health Impacts

... and are paid by the Environment and People

ELECTRICITY into the GRID

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

"Green" Environmental Attributes

Intertribal Council On Utility Policy
Wind Turbines Create Several Revenue Streams:

- **Renewable Incentives**
  - Federal and State Incentives: PTC, REPI, tax credits, etc

- **Green Tags**
  - Pollution Reductions (pounds per kWh)
  - Environmental / Marketing Rights

- **Generic Electricity**
  - kWhs power local load or transmission grid

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**Renewable Incentives** - Tribally owned projects are not eligible for federal Production Tax Credits or the Renewable Energy Production Incentives, or other tax based state incentives.

**GREEN TAGS** – rights to pollution reductions from a certain quantity of renewable electricity, backed by real generation, but can be sold separately from electricity, over time & space.

**Generic Electricity** – actual electricity generated by facility either sold into the grid (avoided cost) or used on site to meet the demand of an on-grid (net-metered at retail/avoided cost) or off-grid load (avoided transmission costs), or used for non-electricity purpose.

Intertribal Council On Utility Policy
“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

Intertribal Council On Utility Policy
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.


Intertribal Council On Utility Policy
Conventional electricity generation consumes thousands of gallons of water per minute!!

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

**Source:** Basin Electric website

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**
Western Area Power Administration (WAPA) is already a renewable energy transmitter and marketer.

However, WAPA’s policy in times of drought is to buy fossil-based energy to make up for reduced hydropower, while a variety of abundant renewable resources, particularly on Tribal Lands, go undeveloped.

Renewables are a No-Regret Strategy for Tribal Sustainable Homeland Economic Development.
TRIBAL WIND - FEDERAL HYDROPOWER:
Breaking the Positive Feedback Loop in the CO2 Energy Cycle

Drought and Reduced Mountain Snowpack

Excessive Rainfall and Flooding

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

... Present drought and precipitation shifts that are consistent with changing climate scenarios associated with increased levels of CO2 from coal fired power plants-- the "New Normal"!

- Missouri River dam operations are managed by the Corps of Engineers based upon the last 100 years of flow -- Hydropower production for WAPA based on the "Old Normal".
- Hydropower is only an incidental responsibility of the Corps of Engineers which holds back water due to drought and flood conditions, resulting in less hydropower production.
- Hydropower marketing administration (WAPA) buys carbon-based power to offset hydropower shortfalls, which only increases the atmospheric CO2 intensity, resulting in greater drought and precipitation shifts, leading to more extreme climatic shifts ...

Intertribal Council On Utility Policy
Figure ES3. U.S. Carbon Dioxide Emissions by Sector, 1990-2001

Wind power can make the greatest contribution in Commercial and Residential electricity CO2 emissions reduction!!

Transportation is primarily based on oil & gas consumption

Industry has greater capacity for flexibility, innovation & incentives to reduce emissions.

Sources: Estimates presented in this report.

Intertribal Council On Utility Policy
Learning That We Live in A WINDSHED!

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

Sustainable Homeland Economic Development based on Tribal Wind Energy Generation

Downwind communities support and benefit from Tribal Wind Energy

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

5,700 MWs of “New Coal” Development

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

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

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

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

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

Intertribal Council On Utility Policy
Intertribal COUP City/Tribal Partnership Plan

Coupling Urban Energy Efficiency and Use of Tribally Owned Wind & Solar Facilities on Rural American Indian Reservations, America can:

- Reduce our nation’s \( \text{CO}_2 \) Emissions
- Increase National Energy Security
- Build Sustainable Homeland Economies in Urban and Rural Areas and on Indian Reservations.
Supporting Tribal Renewable Energy:

DEMAND: Federal grids carry Tribal Renewable Energy

ENCOURAGE: Your local governments to join ICLEI and sign on to Mayors’ Statement on Global Warming

PRACTICE: Energy conservation and efficiency

CALCULATE: Your Carbon Footprint (energy usage)

BUY: Tribally Generated Green Power & “Green Tags”

JOIN: March Forth to Energy Independence Day Campaign!

Intertribal Council On Utility Policy

Respect the Earth
Honor the Treaties
Promote Renewables
Develop Sustainable Homeland Economies
Declaration of Energy Independence

ICLEI-Local Governments for Sustainability
Intertribal COUP - Renewable Energy Tribes
Policies to reduce global warming!
Urgency of climate justice actions!
Invest in Renewable Energy!
Promote Energy Transition on Federal Grid!

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