

## Wind & Hydropower Technologies Program

Harnessing America's abundant natural resources for clean power generation

# NAWIG NEWS

THE QUARTERLY NEWSLETTER OF THE  
NATIVE AMERICAN WIND INTEREST GROUP

SUMMER 2004

*As part of its Native American outreach, DOE's Wind Powering America program has initiated a quarterly NAWIG newsletter to present Native American wind information, including projects, interviews with pioneers, issues, WPA activities, and related events. It is our hope that this newsletter will both inform and elicit comments and input on wind development in Indian Country.*

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## Blackfeet Wind Projects Provide Foundation for Future Development

The winds that blow across the Blackfeet Reservation in Montana are so powerful, they may be able to provide energy to more than 1 million homes.

That's the conclusion of scientists, economists, and government officials who have measured and evaluated the wind flow from the Rocky Mountains to the plains of the Blackfeet Reservation for more than a decade. The estimated potential of 3,900 megawatts (MW) offers untapped economic development opportunities for the Blackfeet. The remote area and lack of transmission lines are challenges to be overcome, but the rich wind resource makes future large-scale wind development likely.

Many other Native American communities in the Great Plains also have electrical loads that could be partially met with wind power. Since 1995, the U.S. Department of Energy (DOE) has provided grants to fund projects that explore the potential for large-scale development. The Blackfeet Reservation has hosted two such projects: a 100-kilowatt (kW) demonstration turbine at Blackfeet Community College and four 10-kW turbines that provide supplemental power to the Town of Browning Wastewater Treatment Facility. The data and lessons learned from these projects may help other Tribes contemplating similar projects.



The 100-kW Vestas turbine at Blackfeet Community College near Browning, Montana, provides revenue for the college and serves as a learning tool for students.

### Blackfeet Community College Demonstration Wind Turbine

**Project dates:** The formal project period ran from 1995–1998. The turbine is still operating.

**Project participants:** U.S. DOE, the Blackfeet Tribal Business Council, Blackfeet Community College, Glacier Electric Cooperative (GEC), Zond Systems Inc., Siyeh Development Corporation, and Montana State University.

**Project purpose:** a) Assess the feasibility of a utility-scale wind development, b) gain experience within the Tribe in operating a utility-scale wind turbine, c) evaluate the environmental impacts of wind turbines, and d) provide a focus for educational and outreach programs conducted by local organizations.

**Community involvement:** The estimated unemployment rate on the reservation is 80%, and the wind turbine project was designed to employ and involve members of the local community in the installation and operation of the turbine. Approximately 20 to 25 local workers and subcontractors were involved in the installation, three local men were employed part-time to assist with the monthly

— Story continued on page 2



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## Blackfeet Wind Projects Provide Foundation for Future Development — Story continued from front page

maintenance of the turbine, and more locals were hired part-time to gather data on bird behavior around the turbines. Local organizations, including the college, have used the turbine as an educational tool and the focus of job and training programs and student and teacher workshops.

**System description:** Grid-connected Vestas V-17 100-kW turbine.

**Use of electricity:** The 181,824 kWh of energy produced by the turbine offset the college's electric usage almost completely for the period of the project. The power was purchased by GEC at a rate of \$0.027/kWh, which is approximately half of the retail price of energy in GEC territory. Now the electricity from the wind turbine is sold at avoided cost (2.0 – 2.2 cents per kWh). The revenues are credited against the electric bills of Blackfeet Community College.

**Financing:** This project was funded primarily with a DOE grant; other project participants also made cash and in-kind contributions.

**Lessons learned:** 1) Try to get more money to invest in a larger wind turbine. 2) Try to get better than avoided cost for the power generated by the turbine. 3) Incorporate wind technology into more core classes, particularly industrial arts. For example, students could work on a wind turbine in mechanics class.

## Wind Turbines at the Town of Browning Wastewater Treatment Facility

**Project dates:** 1999–2002

**Project participants:** Siyeh Development Corporation, Blackfeet Indian Housing, Town of Browning, Montana, U.S. DOE, National Renewable Energy Laboratory (NREL), Bergey WindPower Company.

**Project purpose:** Install four Bergey Excel 10-kW wind turbines adjacent to the town's sewage treatment plant as part of the U.S. Department of Energy (DOE) Field Verification Project to supply supplemental power to the facility.

**Community involvement:** Local manpower was used to construct the civil works and install the turbine.

**System description:** Four Bergey Excel/S 10-kW wind turbines on 100-ft towers; grid-connected; distributed generation.

**Use of electricity:** The turbines provide about one quarter of the electricity for the local sewage treatment plant, displacing energy bought from the grid. Although the turbines are grid connected, the project was designed so that almost all the energy produced is consumed on site.

**Financing:** This project was funded primarily with a DOE grant; other project participants also made cash and in-kind contributions.

**Lessons learned:** Don't rely too much on one person. When the project manager resigned in 2000, the remaining project participants had difficulty keeping the project on track.

Pat Spears/PIX13497



### Interview: Pat Spears, President of Intertribal Council On Utility Policy (COUP).

**Tell us about Intertribal COUP.** Intertribal COUP was formed in 1994 to provide a forum for utility issue discussions from regulatory and economic perspectives.

The Intertribal COUP Council has representatives from nine Tribes located in a three-state area in the Northern Plains: South Dakota, North Dakota, and Nebraska.

We provide policy analysis and recommendations, as well as workshops on telecommunications, climate change research, Western Area Power Administration (WAPA) hydropower allocations, energy efficiency, energy planning, and renewable energy, with a heavy emphasis on wind energy development.

**Why is Intertribal COUP interested in wind energy?** The Tribes in the Northern Plains have a huge wind resource, one of the best on the planet. It has the potential to provide clean renewable energy for Tribal use and sustainable economic development, as well as for export to large population centers in the Western and Midwestern regions. Wind energy from Tribal lands alone can meet at least one-third of the nation's energy needs. Wind energy has the greatest potential to restore our economies.

With more than half of our population under the age of 20, wind energy development can provide skilled technical employment for our youth.

**What is Intertribal COUP'S vision for wind energy development?** The Federal energy transmission system operated by WAPA across the Northern Plains once carried 100% hydropower. Now only about 20% of the electricity carried by the system comes from hydropower; the remainder is from fossil fuel sources. Our vision includes the return of renewable energy to this grid, providing both wind and hydropower to the western states and potentially into the eastern grid as well. We believe the system should be restored to at least a 50% renewable energy capacity, with the additional 30% coming from Tribal wind energy.

**How is Intertribal COUP moving wind energy development forward in Indian Country?** Along with providing policy recommendations for renewable energy development in regional and national forums, we are developing an 80-MW Intertribal Wind Energy Project on six reservations. This project has been selected as an Environmental Justice Community Revitalization Project by a 15-member Interagency Working Group.

*Read the entire Pat Spears interview online at [www.windpoweringamerica.gov](http://www.windpoweringamerica.gov).*



## Energy Independence Day Campaign

The Intertribal Council On Utility Policy (COUP) has teamed up with U.S. Cities for Climate Protection (CCP) and Local Governments for Sustainability (ICLEI) to promote the Energy Independence Day Campaign (EIDC). More than 150 U.S. cities have voluntarily pledged to reduce carbon emissions through conservation, energy efficiency, and renewable energy. American Indians recognize the value of renewable energy in addressing climate change and in building sustainable homeland economies. The EIDC joins rural tribes and urban governments in renewable generation and carbon emissions reductions.

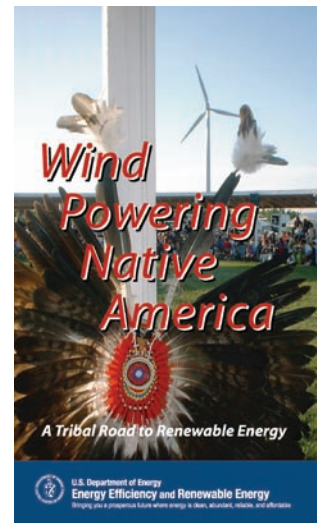
The EIDC is open to all Tribes willing to commit to producing utility-scale renewable energy for sale into the national grid. Local governments and Tribes can participate through endorsement of the Declaration of Energy Independence, educational and promotional outreach, conservation and energy efficiency, and/or green energy purchases. By encouraging local businesses and households to purchase tribally generated renewable energy and/or "green tags," participating local governments can achieve some or all of their emission reduction goals consistent with their communities' global warming reduction strategy. This rural-urban/tribal-cities partnership will create good jobs, foster markets, reduce greenhouse gas emissions efficiently, and build ecologically sustainable economies based on the clean generation and efficient use of renewable energy.

For more information, contact Susan Ode of CLEI/CCP (510-540-8843 ext. 311, [sode@iclei.org](mailto:sode@iclei.org)) or Pat Spears of COUP (605-945-1908, [Pnspears2@aol.com](mailto:Pnspears2@aol.com)).

## Wind Powering Native America Video Released

Tribal members interested in pursuing wind energy projects should be inspired by Wind Powering Native America, a video produced by the U.S. Department of Energy's Wind Powering America program. The video describes wind energy opportunities for Native Americans, Alaska Natives, and Native Hawaiians and highlights the 2003 Rosebud Sioux wind turbine case study. The development process and the resulting benefits may be a pilot for your tribe or village.

For more information or to request copies of the video, please contact Bob Gough at 303-384-7110 or Tony Jimenez at 303-384-7027.



## Over the last two years, DOE has funded 45 tribal energy projects totaling \$8.4 million.

### ● Development Projects (5)

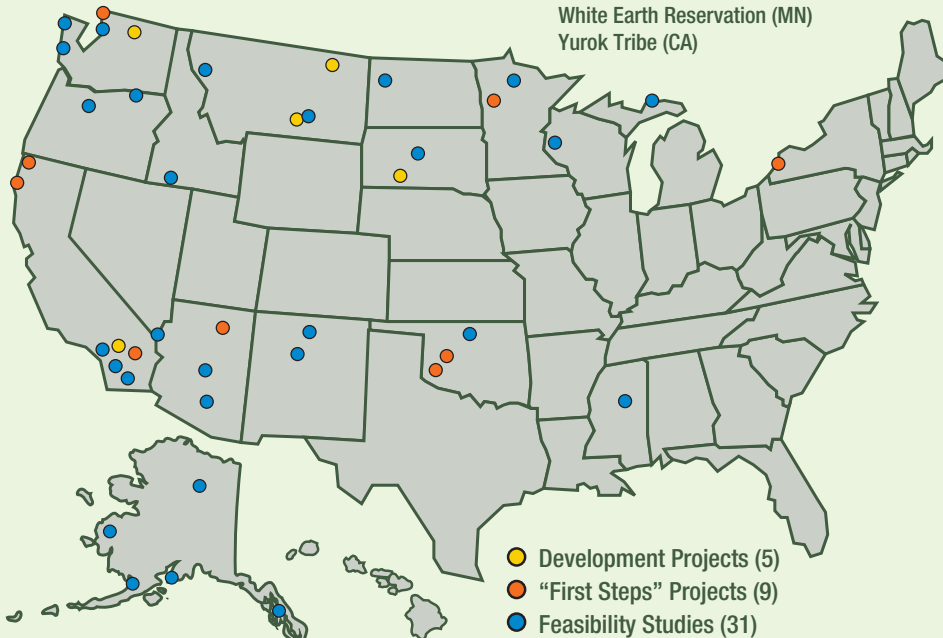
- Colville Confederated Tribes (WA)
- Fort Peck Assiniboine & Sioux Tribes (MT)
- Northern Cheyenne Tribe (MT)
- Ramona Band of Cahuilla Mission Indians (CA)
- Rosebud Sioux Tribe (SD)

### ● "First Steps" Projects (9)

- Cabazon Band of Mission Indians (CA)
- Citizen Potawatomi Nation (OK)
- Hopi Tribe (AZ)
- Fort Sill Apache Tribe of Oklahoma (OK)
- Samish Indian Nation (WA)
- Seneca Nation of Indians (NY)
- Smith River Rancheria (CA)
- White Earth Reservation (MN)
- Yurok Tribe (CA)

### ● Feasibility Studies (31)

- Ak-Chin Indian Community (AZ)
- Bristol Bay Native Corporation (AK)
- Cherokee Nation (OK)
- Confederated Tribes of Warm Springs (OR)
- Flathead Reservation (MT)
- Fort Mojave Tribe (AZ)
- Kaw Nation of Oklahoma (OK)
- Kenaitze Indian Tribe (AK)
- Lower Brule Sioux Tribe (SD)
- Makah Tribe (WA) — 2 projects
- Manzanita Band of Mission Indians (CA)
- Mesa Grande Band of Mission Indians (CA)
- Mississippi Band of Choctaw Indians (MI)
- Native Village of Venetie (AK)
- Northern Cheyenne Nation (MT)
- Pueblo of Jemez (NM)
- Quinalt Indian Nation (WA)
- Red Lake Band of Chippewa Indians (MN)
- St. Croix Tribal Government (WI)
- Sault Ste. Marie Tribe (MI)
- Sealaska Native Corporation (AK)
- Shoshone Paiute Tribes (NV)
- Taos Pueblo (NM)
- Three Affiliated Tribes of the Fort Berthold Reservation (ND)
- Tulalip Tribe (WA)
- Umatilla Indian Reservation (OR)
- Viejas Tribal Government (CA)
- White Mountain Apache Tribe (AZ)
- Yavapai-Apache Nation (AZ)
- Yukon-Kuskokwim Health Corporation (AK)



## 2004 Calendar

- Sept. 28 – Oct. 1 **Wind Diesel 2004 Workshop** — Anchorage, AK  
[www.eere.energy.gov/windpoweringamerica/wkshp\\_2004\\_wind\\_diesel.html](http://www.eere.energy.gov/windpoweringamerica/wkshp_2004_wind_diesel.html)
- Oct. 10 – 15 **National Congress of American Indians (NCAI) 61st Annual Session** — Ft. Lauderdale, FL  
[www.ncai.org/main/pages/national\\_calendar/ncai\\_events.asp](http://www.ncai.org/main/pages/national_calendar/ncai_events.asp)
- Oct. 25 – 30 **Alaska Federation of Natives Annual Convention**  
 — Anchorage, AK  
[www.nativefederation.gor/frames/calendar.html](http://www.nativefederation.gor/frames/calendar.html)
- Oct. 27 – 28 **Trading at the River Conference: A Gathering of Native American Businesses and Tribal Enterprises**  
 — Portland, OR • [www.onaben.org](http://www.onaben.org)
- Nov. 11 – 14 **American Indian Science and Engineering Society (AISES) 26th Annual National Conference** —  
 Anchorage, AK • [www.aises.org/calendar](http://www.aises.org/calendar)

## 2005 Calendar

- Feb. 28 - March 2 **National Congress of American Indians Executive Council Winter Session** — Washington, DC  
[www.ncai.org/main/pages/national\\_calendar/ncai\\_events.asp](http://www.ncai.org/main/pages/national_calendar/ncai_events.asp)

Current Native American wind events can also be found on the Wind Powering America Web site at [http://www.eere.energy.gov/windpoweringamerica/wpa/na\\_calendar.asp](http://www.eere.energy.gov/windpoweringamerica/wpa/na_calendar.asp).

### Useful Links

Wind Powering America • [www.windpoweringamerica.gov](http://www.windpoweringamerica.gov)  
 American Wind Energy Association • [www.awea.org](http://www.awea.org)  
 U.S. Department of Energy Tribal Energy Program • [www.eere.energy.gov/tribalenergy](http://www.eere.energy.gov/tribalenergy)  
 National Wind Coordinating Committee • [www.nationalwind.org](http://www.nationalwind.org)



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 by the National Renewable Energy Laboratory, a DOE National Laboratory

For more information contact:  
 EERE Information Center  
 1-877-EERE-INF (1-877-337-3463)  
[www.eere.energy.gov](http://www.eere.energy.gov)

### A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

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