

# WIND POWER ON NATIVE AMERICAN LANDS: OPPORTUNITIES, CHALLENGES, AND STATUS

A. Jimenez, NREL      P.B. Johnson, NREL  
 R. Gough, ICoup      R. Robichaud, NREL  
 L. Flowers, NREL      R. Taylor, NREL

## Existing and Pending Native American Wind Projects: 50 kW and Larger (May 30, 2007)

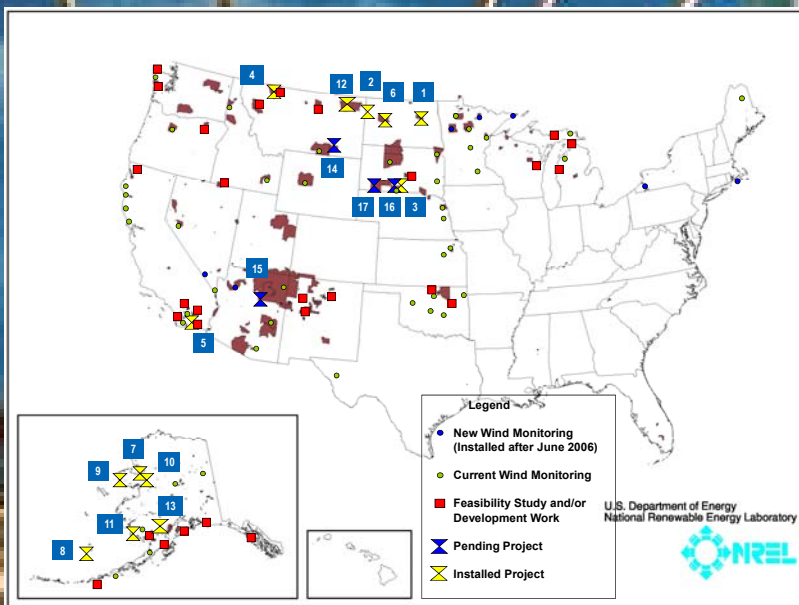
## Tribal Wind Opportunities and Issues

| In-Place Projects   | Near-Term Projects   |
|---|--|
| <b>1 - Spirit Lake State (Fort Totten, ND)</b><br>1x 100-kW turbine<br>Meets part of casino load<br>Installed 1996<br>Financing: TEP grant  | <b>10 - Northern Plains (Lame Deer, MT)</b><br>10 x 66-kW turbines<br>1x 100-kW turbine<br>Initial installation: 1997, subsequently expanded<br>Low-penetration wind-diesel system<br>Installed 1999 |
| <b>2 - Fort Belknap (Gardiner, MT)</b><br>1x 100-kW turbine<br>Meets part of wastewater treatment plant load<br>Installed 1996<br>Financing: TEP grant  | <b>11 - TDX Power (Tulsa, OK)</b><br>1x 225-kW turbine<br>High-penetration wind-diesel system for TDX industrial area<br>Installed 1999<br>Financing: Commercial financing                           |
| <b>3 - Fort Belknap (Gardiner, MT)</b><br>1x 750-kW turbine<br>Energy sold to Basin Electric and Ellsworth AFB<br>Green tags sold to Ellsworth AFB and Native Energy<br>Installed: 2003<br>Financing: TEP grant, RUS loan | <b>12 - Alaska Village Electric Cooperative (AVEC) (Wetzel, AK)</b><br>2x 66-kW turbines<br>High-penetration wind-diesel system<br>Installed 2000  |
| <b>4 - Fort Belknap (Gardiner, MT)</b><br>1x 100-kW turbine<br>Energy sold to local utility<br>Installed 1996<br>Development supported by TEP<br>Financing: TEP grant   | <b>13 - Alaska Village Electric Cooperative (AVEC) (Selkirk, AK)</b><br>2x 66-kW turbines<br>High-penetration wind-diesel system<br>Installed 2000   |
| <b>5 - Fort Belknap (Gardiner, MT)</b><br>50 MW<br>Installed 2005<br>Privately owned project: leasing land from the Tribe   | <b>14 - Alaska Village Electric Cooperative (AVEC) (Selkirk, AK)</b><br>4x 100-kW turbines<br>High-penetration wind-diesel system<br>Installed 2006  |
| <b>6 - Fort Belknap (Gardiner, MT)</b><br>1x 66-kW turbine<br>Energy will be used within the reservation<br>Installed July 2006<br>Financing: TEP grant   | <b>15 - Fort Belknap (Gardiner, MT)</b><br>2x 50-kW turbines<br>Energy will be used within the reservation<br>Installed July 2006<br>Financing: TEP grant  |
| <b>7 - Fort Belknap (Gardiner, MT)</b><br>1x 66-kW turbine<br>Energy sold to local utility<br>Installed 2005<br>Financing: TEP grant  | <b>16 - Alaska Village Electric Cooperative (AVEC) (Kudluk, AK)</b><br>3x 100-kW turbines<br>High-penetration wind-diesel system<br>Installed June 2006  |

- Wind resource
- Transmission access
- Renewable energy for climate change mitigation
- Environmental justice
- Federal outreach programs (DOE TEP, WPA, DOI/BIA MAP, USDA 9006)
- Wind-hydro integration
- Federal green energy preference
- Purchase by Intertribal COUP of Native Energy, a green tag broker (supporting tribal wind projects by purchasing green tags at beginning of project)
- Clean Renewable Energy Bonds (CREBs).

## Projects on Tribal Land Are Different

- Inability to monetize Production Tax Credit (PTC) and accelerated depreciation (affects projects with tribal equity interest)
- Tribal tax advantages: Not as valuable as the PTC. Projects with non-tribal partners may lose these tax advantages
- More stringent environmental regulations (NEPA)
- Agreements require multiple levels of review: Tribal, BIA, FWS, EPA, THPO/SHPO
- Land ownership often varies within the reservation (checkerboarding): Trust, Allotted, Fee. Needed permissions and tax status vary depending on ownership status
- Tribal sovereignty/Tribal policies/Native American law: Applicable laws and jurisdictions vary with regard to projects and contracts
- Optimal business structure with tribal equity interest has not emerged.



## Business Models

- Tribally Owned: e.g., TDX Power, Blackfeet
- Joint Venture: No current examples. Tribes evaluating lessons from community wind experience.
- Land lease to third-party owner: e.g., Kumeyaay

## Tribal Expectations from Partners

- Respect for tribal sovereignty and self-determination
- Native American culture places a high premium on face-to-face interaction
- Extensive outreach to local community
- Respect for tribal cultural artifacts and spiritual sites
- Maximum opportunity for local training and jobs.

Tribal Energy Program: [www.eere.energy.gov/tribalenergy/](http://www.eere.energy.gov/tribalenergy/)  
 Wind Powering America: [www.windpoweringamerica.gov](http://www.windpoweringamerica.gov)