



**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY**

DOE's Tribal Energy Program



Program Review

October 18, 2004

Lizana Pierce, Project Manager

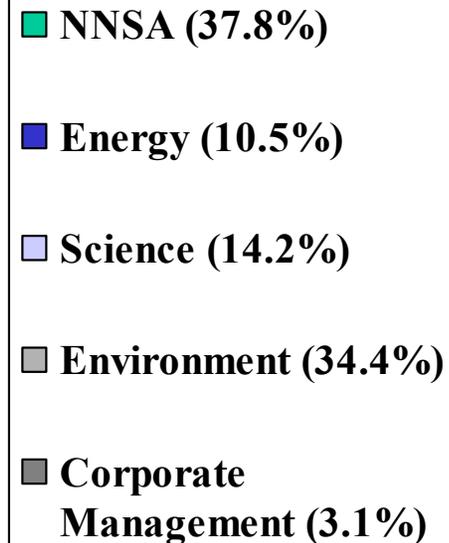
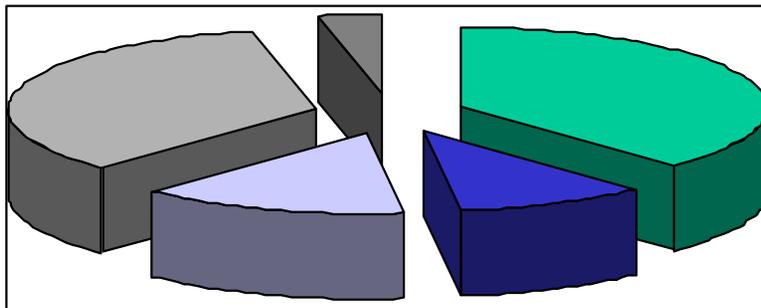
U.S. DOE, Golden Field Office



Department of Energy

Advancing Energy and National Security through
Science, Technology and Environmental Stewardship

**FY 2004 Budget Request
\$23.4 Billion**



Energy (\$2.45 Billion) includes:

- **Energy Efficiency and Renewable Energy (\$1.3)**
- **Fossil Energy (\$0.75)**
- **Nuclear Energy, Science and Technology (\$0.38)**





DOE's Office of Energy Efficiency and Renewable Energy (EERE)

Mission

The EERE's mission is to strengthen America's energy security, environmental quality, and economic vitality in public-private partnerships that:

- Enhance energy efficiency and productivity;
- Bring clean, reliable and affordable energy technologies to the marketplace; and
- Make a difference in the everyday lives of Americans by enhancing their energy choices and their quality of life.





Renewable Energy Resources

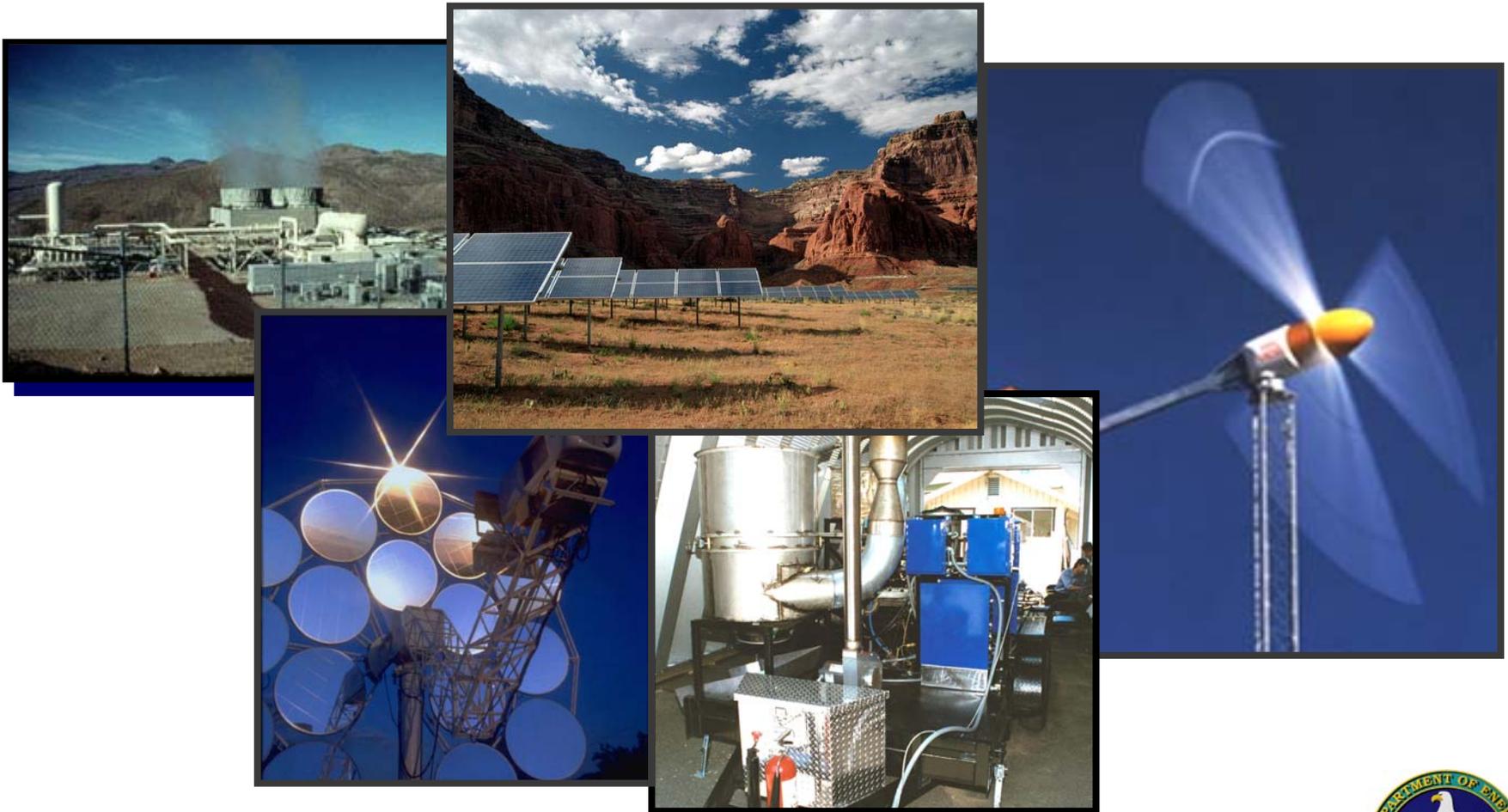


**Using the Sun, Wind, Water,
and Earth**



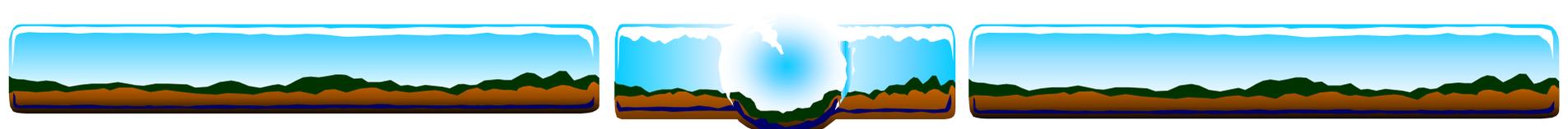


Renewable Energy Technologies



Prime Focus is Research and Development

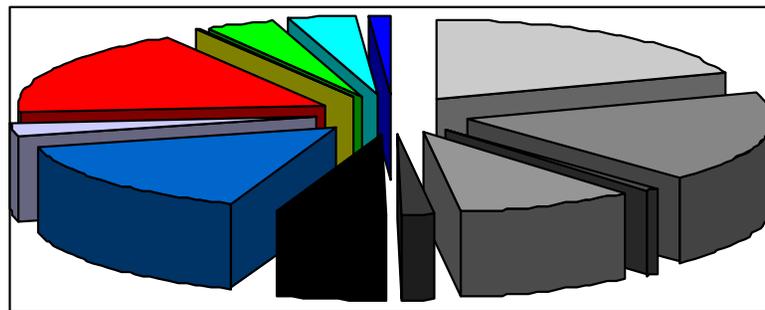




DOE's Office of Energy Efficiency and Renewable Energy (EERE)

\$1.3 Billion Total EERE Budget Request (FY2004)

Energy & Water Development Request \$444.2 Million



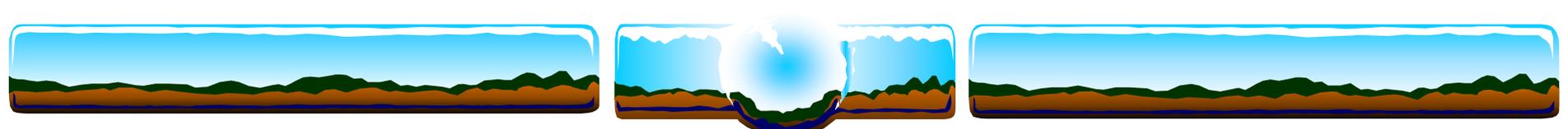
- Hydrogen
- Solar Energy
- Zero-Energy Buildings
- Wind Energy
- Hydropower
- Geothermal
- Biomass/Biorefinery Systems R&D
- Intergovernmental Activities
- Electric Reliability
- Energy Management
- NCCTI
- Program Direction
- Facilities & Infrastructure

Tribal Energy Budget (FY2004)

Requested: \$6 Million

Appropriated: \$5 Million





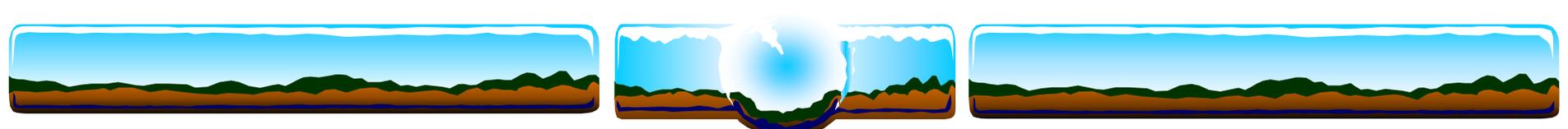
DOE's Tribal Energy Program

“Indian households on reservations are disproportionately without electricity. A total of 14.2% of Indian households have no access to electricity, as compared to only 1.4% of all U.S. households.” Navajo accounts for 75% of the households without electricity (2000 EIA Report)



DOE funded the Navajo Nation Electrification Demonstration Program (P.L. 106-511) resulting in 503 households electrified in fiscal year 2002

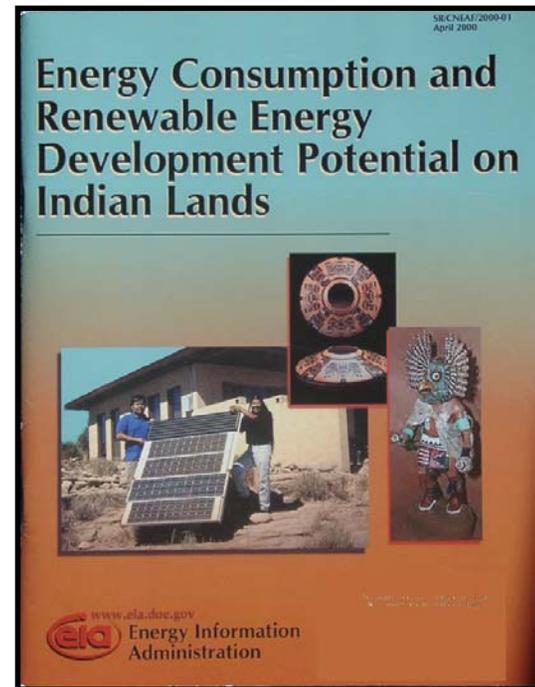




DOE's Tribal Energy Program

The most-burdened 10 percent of Indian households on reservations spend 20 percent or more of their income on electricity.

Over twice the percentage of U.S. households at the same income level. (2000 EIA Report)





DOE's Tribal Energy Program

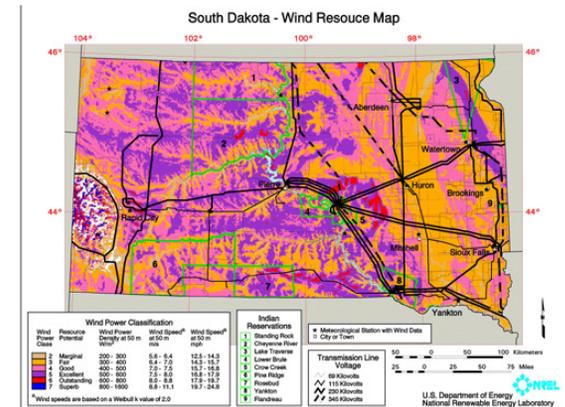
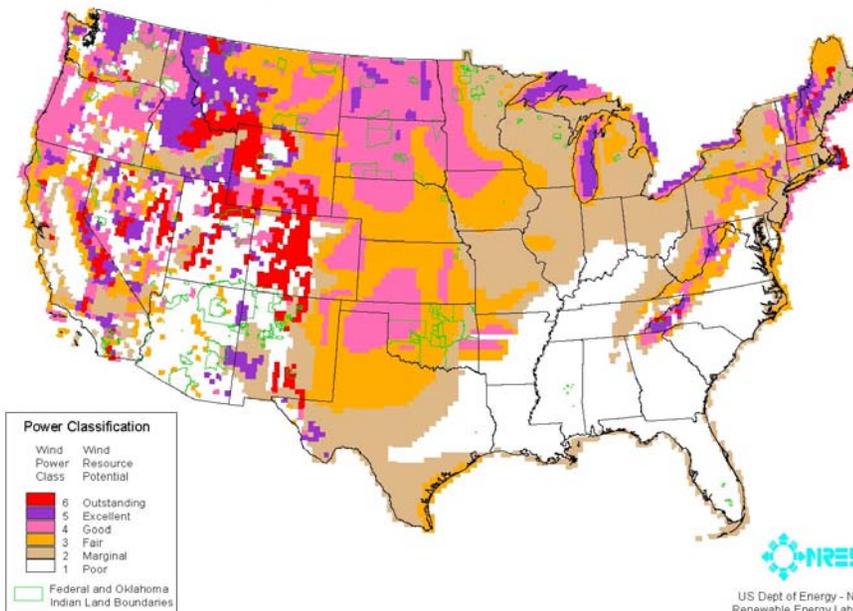
“Indian land comprises 5% of the land area of the United States, but contains an estimated 10% of all energy resources in the United States”

“Wind resources in the Great Plains could meet 75% of the electricity demand in the contiguous 48 states.” (Native American Energy Development and Self-Determination Act of 2003)



DOE's Tribal Energy Program

Wind potential of about **535 Billion kWh/yr** on Indian Lands in Lower 48 States

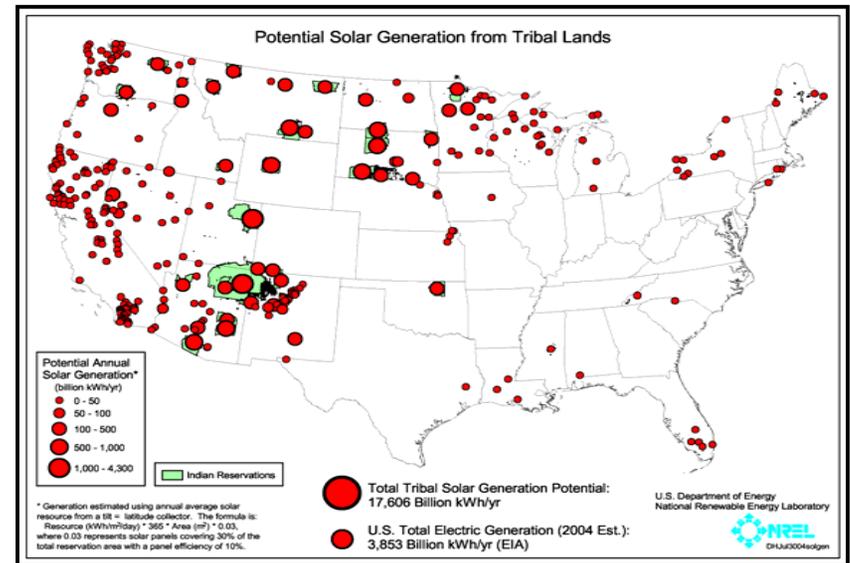
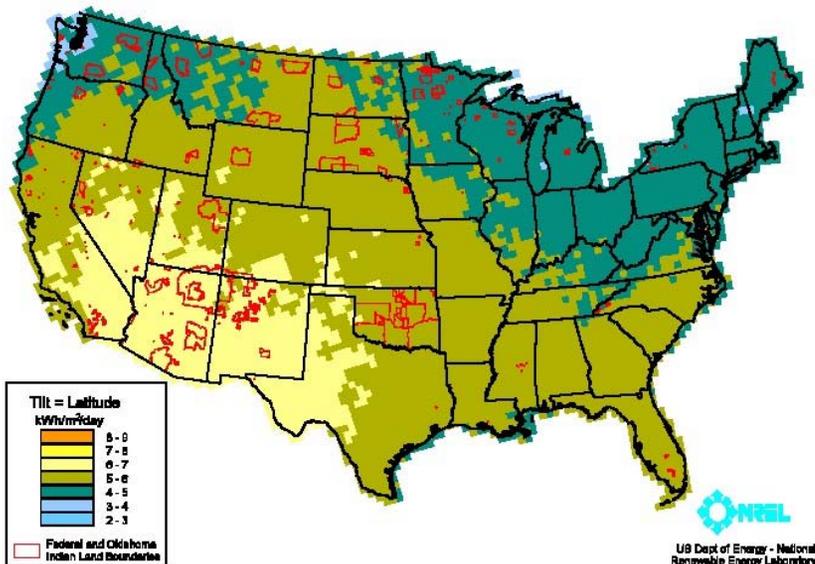


Equivalent to **14%** of the U.S. Annual Electric Generation (~ 3,853 Billion kWh/year)



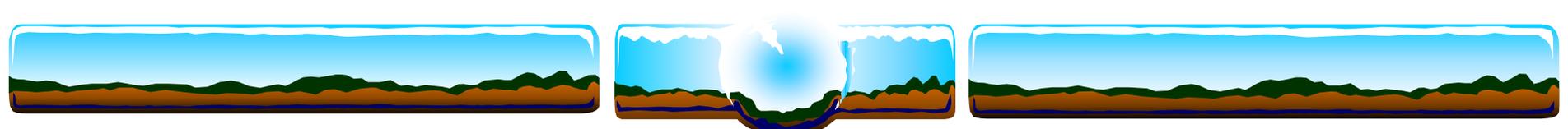
DOE's Tribal Energy Program

Solar Electric Potential of 17,600 Billion kWh/yr on Indian Lands



~4.5 times the Total U.S. Electric Generation in 2004





DOE's Tribal Energy Program

Promote tribal energy sufficiency, economic development and employment on tribal lands through the use of renewable energy and energy efficiency technologies

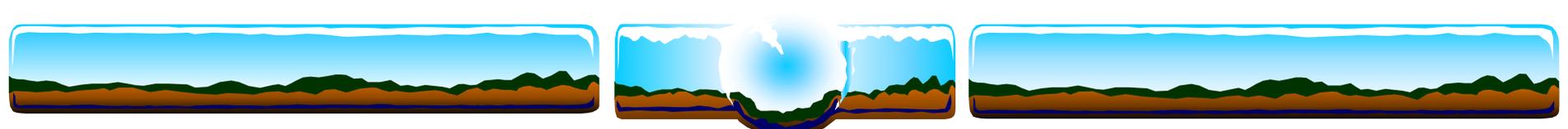


Mission

Offering financial and technical assistance to Tribes through government-to-government partnerships that:

- 1) Allow Tribal leaders to make informed decisions;***
- 2) Bring renewable energy and energy efficiency options to Indian Country;***
- 3) Enhance human capacity through education and training;***
- 4) Improve local Tribal economies and the environment; and***
- 5) Make a difference in the quality of life of Native Americans.***

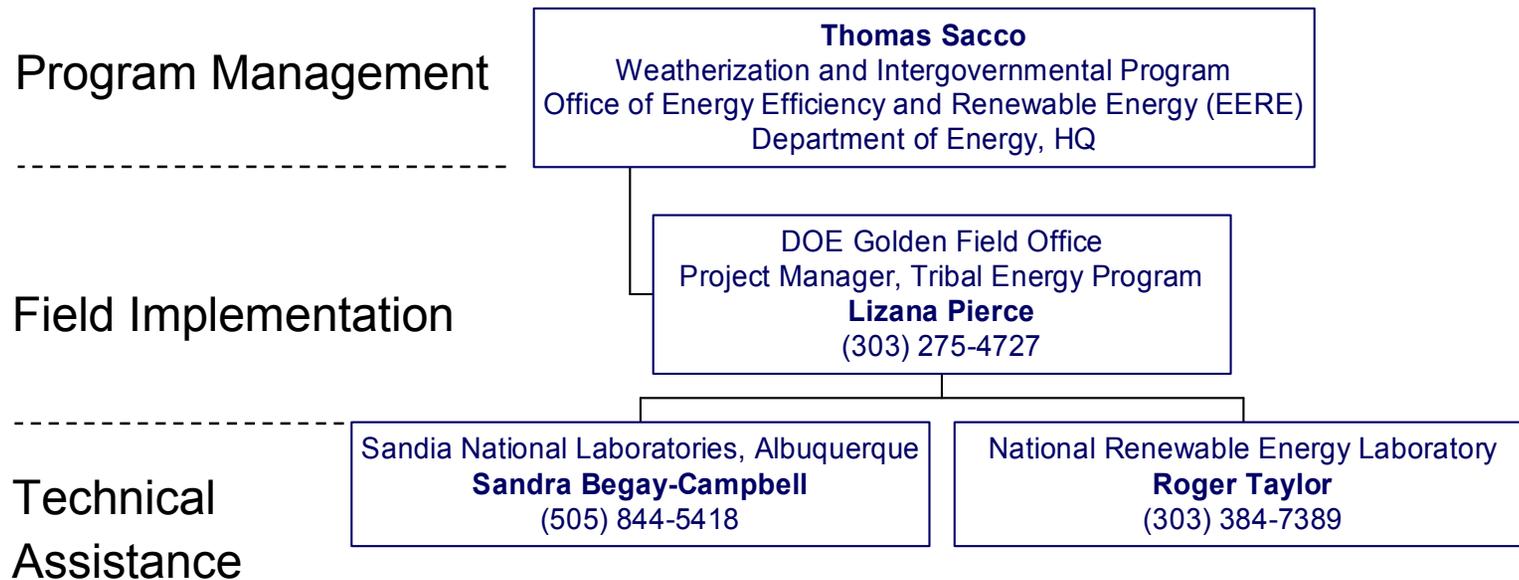




DOE's Tribal Energy Program

Organization

Program Management through DOE Headquarters, implementation through the DOE Golden Field Office, and technical support through the DOE's Laboratories.





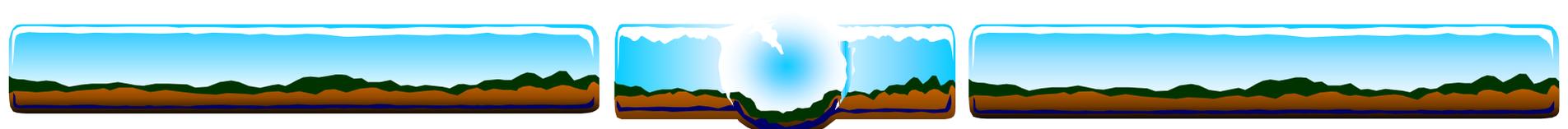
DOE's Tribal Energy Program Funding

| | FY2002 | FY2003 | FY2004 | FY2005 |
|--------------------|---------|----------|-----------|---------|
| Requested | \$2,100 | \$8,307 | \$6,000 | \$5,500 |
| Enacted | \$3,000 | \$6,000* | \$5,000** | |
| Discretionary | \$3,000 | \$5,000 | \$1,700 | |
| Competitive Awards | 14 | 24 | 7 | |

* Total of \$1,000,000 earmarked to the Council of Energy Resource Tribes (CERT)

** Total of \$3,300,000 earmarked to CERT, ICoup, and Pyramid Lake Paiute





DOE's Tribal Energy Program



First 750 kW Turbine on Tribal Lands in the Contiguous U.S.

Funding Opportunities (Subject to Available Funding)

First Steps Toward Developing Tribal Renewable Energy and Energy Efficiency

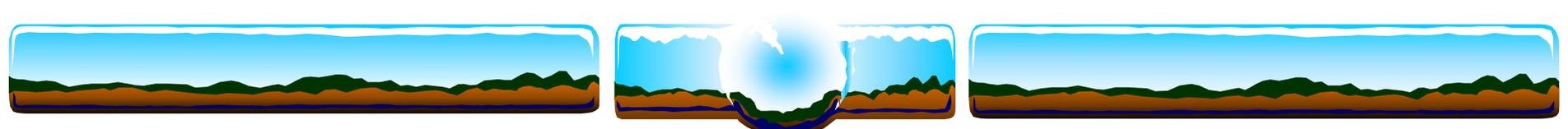
- Strategic planning
- Energy options analysis
- Capacity building
- Organizational development

Renewable Energy Development on Tribal Lands

- Feasibility studies
- Cost shared development projects

Education Programs

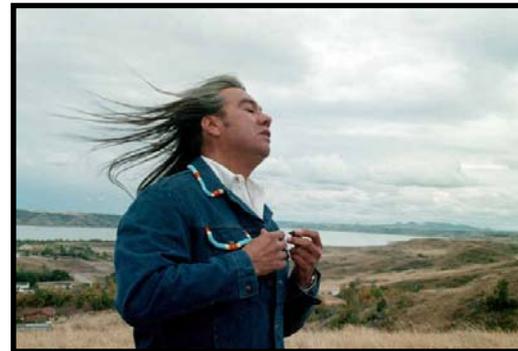
- **Student Internships**
- **Tribal College Teach-the-Teacher Workshops (July 2004)**
- **Biomass Workshop (September 2004)**
- **Regional Workshops (2003/2004)**



DOE's Tribal Energy Program **Funding Opportunities**

“First Steps” Toward Developing Renewable Energy and Energy Efficiency

- Strategic planning
- Energy options analysis
- Capacity building
- Organizational development



Chairman Tex Hall,
Three Affiliated
Tribes Ground
Breaking for Wind
Turbine on the Fort
Berthold
Reservation

Renewable Energy Development on Tribal Lands

- Feasibility studies
- Development projects (cost shared)

Announcements Issue September 2004
Awards Subject to Appropriation of Funds





DOE's Tribal Energy Program

Funding Opportunities

➤ **Federally-recognized Tribes eligible for funding**

- Federally-recognized Tribes;
- Alaska Native villages; and
- Alaskan Native Corporations.

➤ **Tribal Lands**

- Indian reservations;
- Public domain Indian allotments;
- Former Indian reservations in Oklahoma;
- Land held by under the provisions of the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.); and
- Lands held in fee simple or under a Federal land lease.



Solar Installations at Pueblo of Laguna's Majors Ranch



Funds Awarded through a Competitive Process

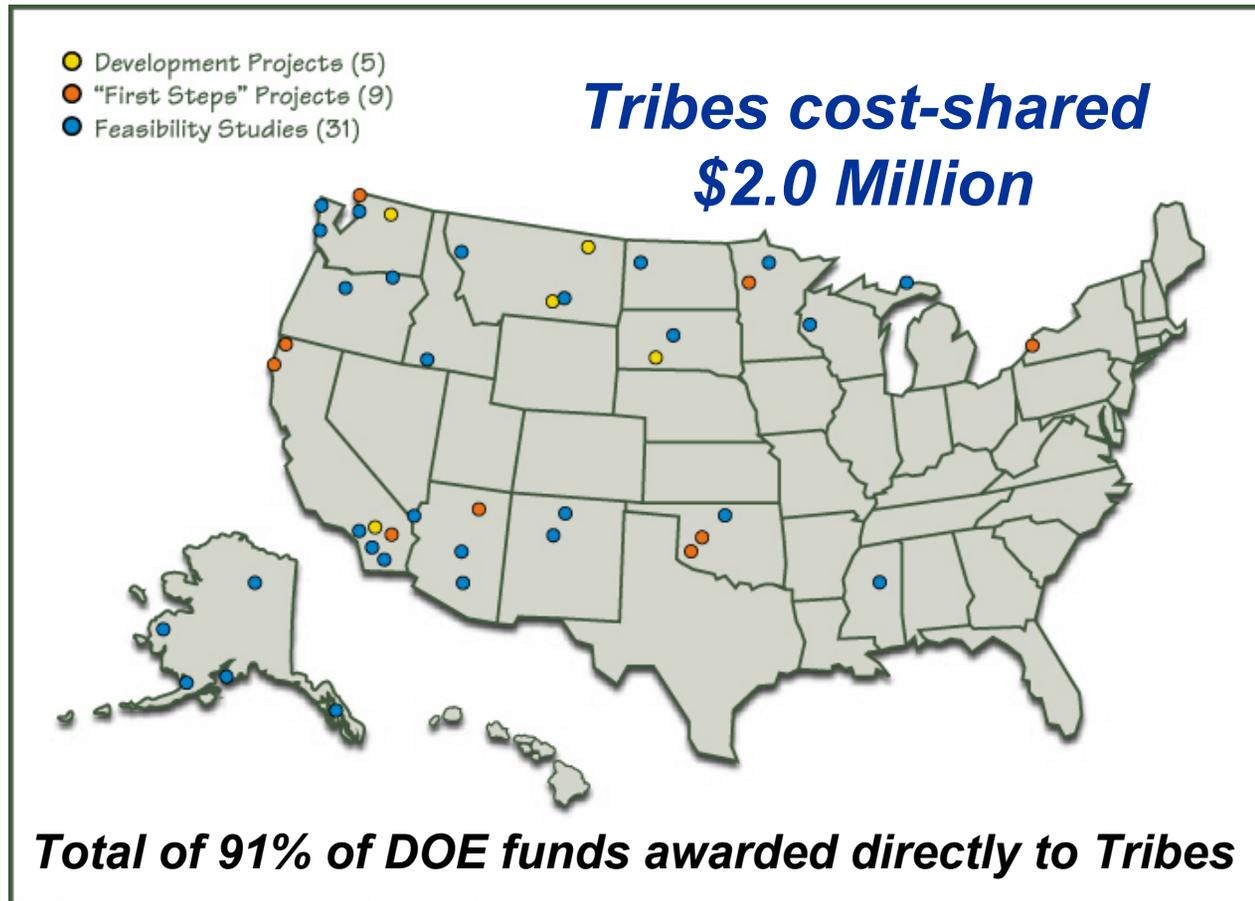
See www.eere.energy.gov/tribalenergy





DOE's Tribal Energy Program

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

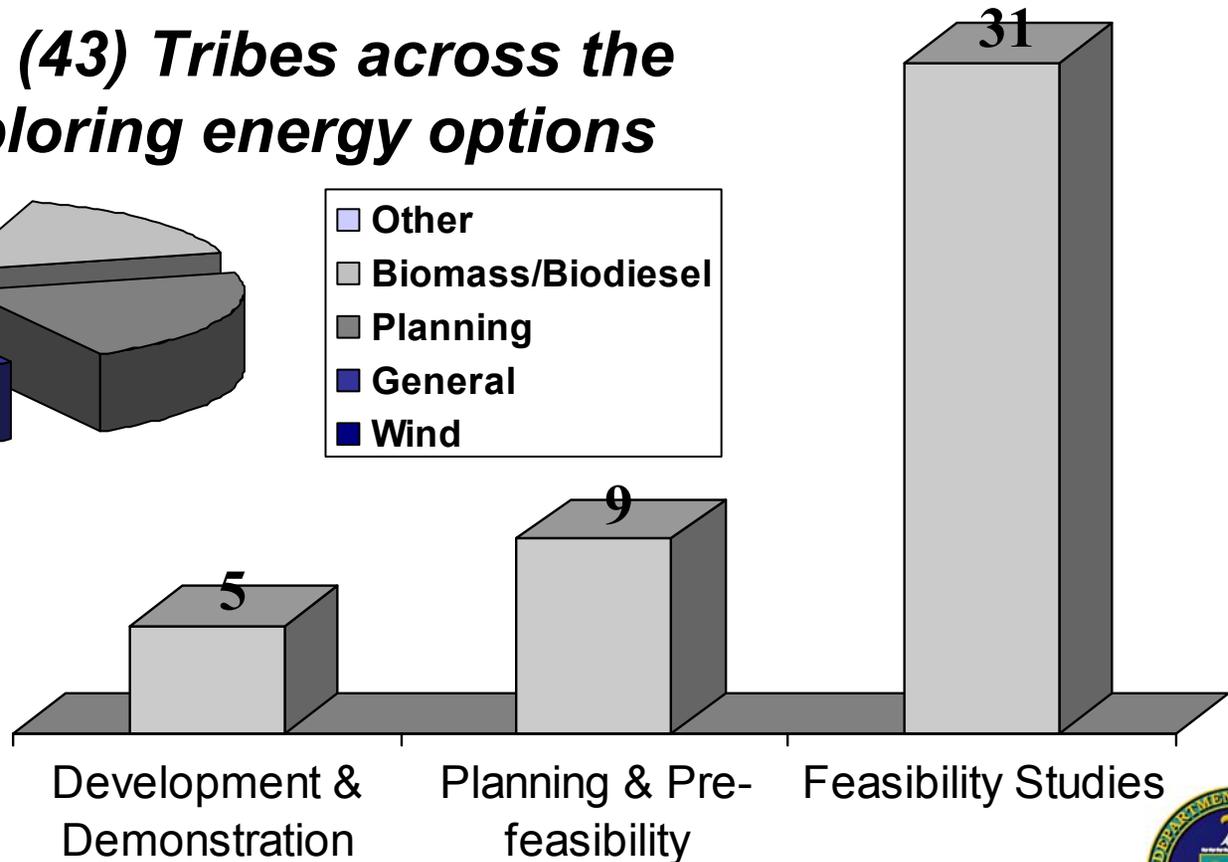
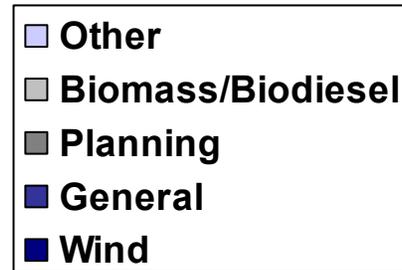
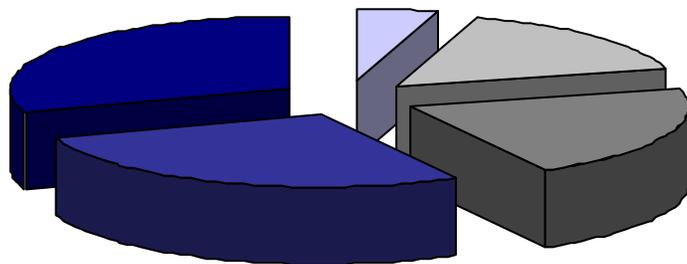




DOE's Tribal Energy Program

Tribal Projects

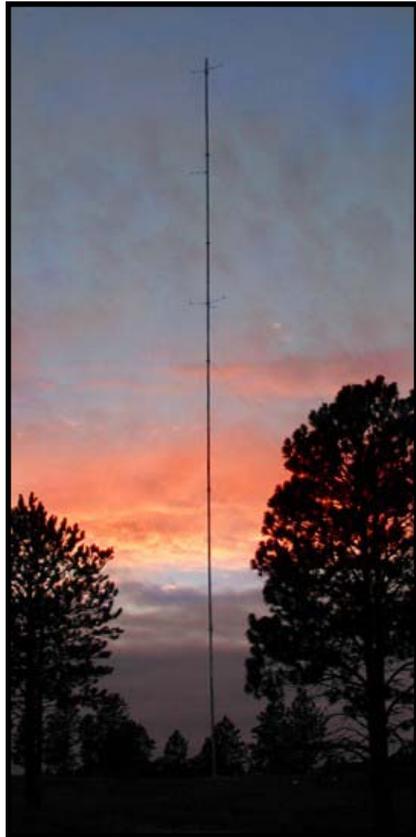
Forty-three (43) Tribes across the Nation exploring energy options



For more, see www.eere.energy.gov/tribalenergy



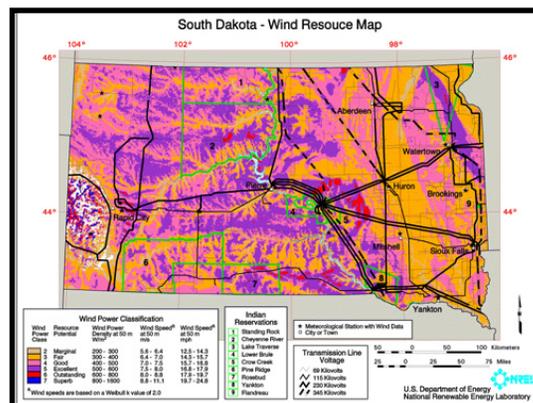
DOE's Tribal Energy Program



Northern Cheyenne
pursuing 30 MW Wind
Farm

Recent Accomplishments

- Nine (9) Tribes developing strategic energy plans and/or assessing energy organization formation
- Thirty-one (31) Tribes assessing their renewable energy resources
- Five (5) Tribal renewable energy projects underway



High Resolution Wind Prospecting Maps
Available for Most Tribal Lands

See Guide to Tribal Energy
Development at

www.eere.energy.gov/tribalenergy/guide



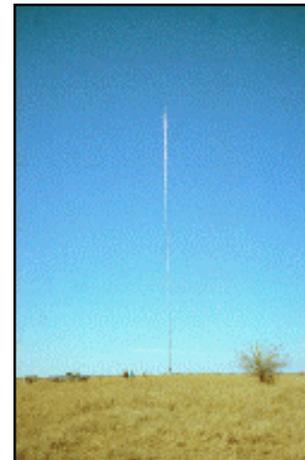


DOE's Tribal Energy Program

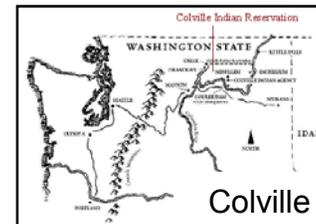
Assisting Tribes Meet Their Energy Goals

Accomplishments

- Installation of the first utility-scale turbine on Tribal lands in the contiguous U.S. (Rosebud Sioux)
- Installation of a substation at the Colville Indian Power and Vener plant in Washington State, projected to reduce line losses and save between \$160,000 and \$260,000 per year.
- Installation of 20 anemometers measuring tribal wind resources across the Nation.
- Mandan, Arikara and Hidatsa Tribes in North Dakota and Assiniboine and Sioux Tribes in Montana installing a total of 710 kW of wind energy
- The Northern Cheyenne, Makah Nation, and Rosebud Sioux Tribes are proceeding toward large-scale wind development with the near-term potential for 90 MW of installed wind energy in Indian Country



Kaw Nation
Wind Resource
Assessment

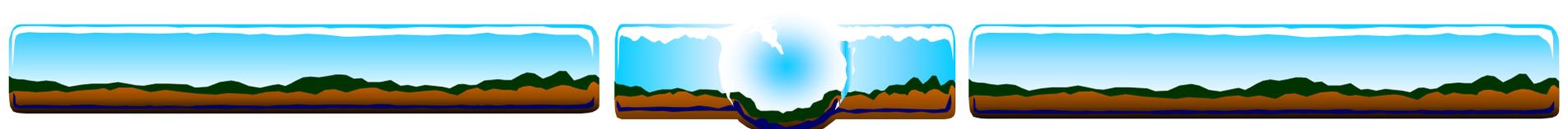


Colville Indian Power
and Vener Energy
Substation



Turbine Installed at Rosebud
Sioux Reservation in South
Dakota





DOE's Tribal Energy Program

Education Program

➤ **Student Internships**

- Three (3) interns sponsored in 2003 and 2004
- Year-round intern sponsored (2002-2004)

➤ **Tribal College Teach-the-Teachers Workshop**

- Week-long renewable energy workshop, July 2004
- For tribal college or university staff or tribes

➤ **Regional Tribal Workshops**

- Four (4) tribal energy workshops held 2004
- Three (3) planned 2004/2005

➤ **Biomass Workshop**

- Biomass Opportunities and Challenges in Indian Country
- DOE/BI/NREL sponsored workshop September 2004

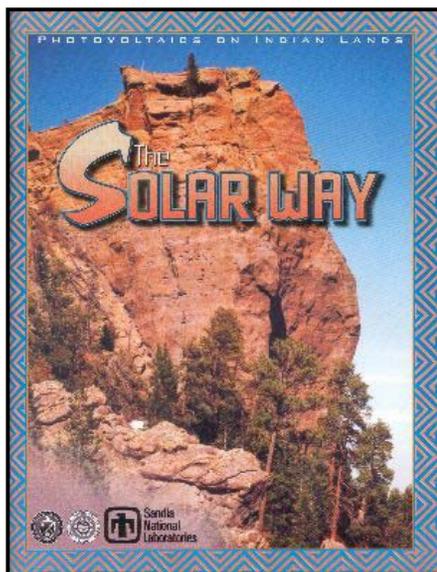


Summer Interns at installation on the Navajo Reservation (2003)

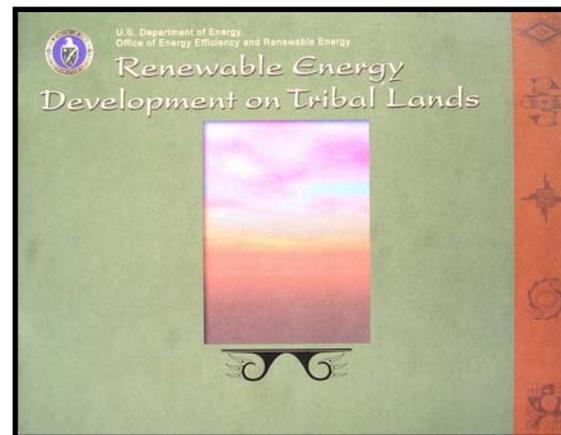
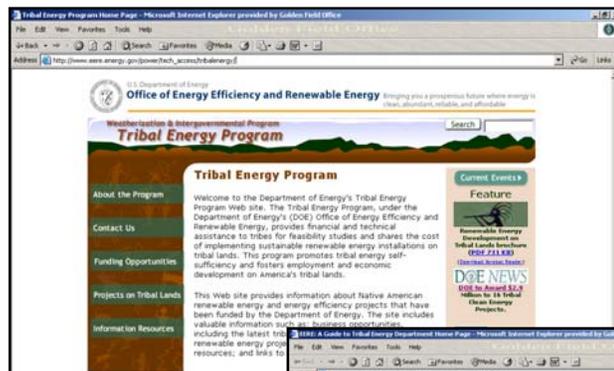
See Education and Training at www.eere.energy.gov/tribalenergy



DOE's Tribal Energy Program

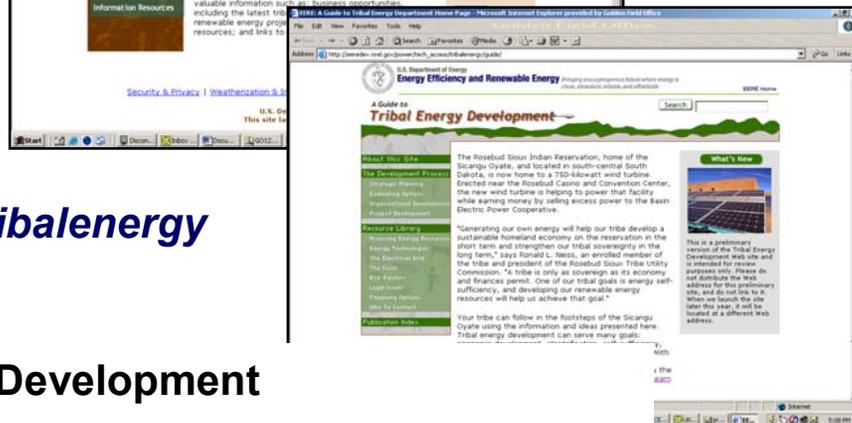


Information Resources



Tribal Energy Website

www.eere.energy.gov/tribalenergy



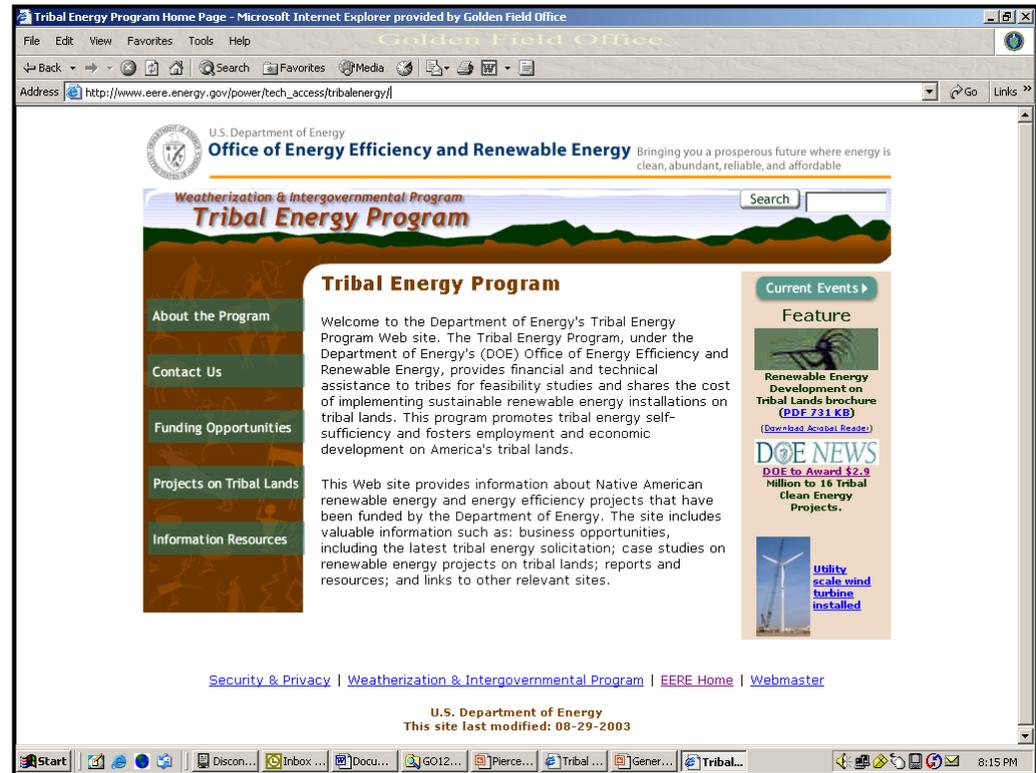
Guide to Tribal Energy Development

www.eere.energy.gov/tribalenergy/guide



DOE's Tribal Energy Program Program Web Site

- Features
- Current Events
- Funding Opportunities
- Projects on Tribal Lands
 - Project Overviews
 - Reports
 - Contacts
- Information Resource
- Program Contacts



The screenshot shows the Tribal Energy Program Home Page in Microsoft Internet Explorer. The browser title is "Tribal Energy Program Home Page - Microsoft Internet Explorer provided by Golden Field Office". The address bar shows the URL: http://www.eere.energy.gov/power/tech_access/tribalenergy/. The page content includes the U.S. Department of Energy logo and the Office of Energy Efficiency and Renewable Energy (EERE) branding. The main heading is "Weatherization & Intergovernmental Program Tribal Energy Program". A search box is located to the right of the heading. Below the heading is a navigation menu with links: "About the Program", "Contact Us", "Funding Opportunities", "Projects on Tribal Lands", and "Information Resources". The "Projects on Tribal Lands" section contains a welcome message and a description of the program. To the right, there is a "Current Events" section with a "Feature" link and a "DOE NEWS" section with a link to "DOE to Award \$2.9 Million to 16 Tribal Clean Energy Projects". At the bottom, there are links for "Security & Privacy", "Weatherization & Intergovernmental Program", "EERE Home", and "Webmaster". The footer includes the U.S. Department of Energy logo and the text "This site last modified: 08-29-2003". The taskbar at the bottom shows the Start button and several open applications.

www.eere.energy.gov/tribalenergy



DOE's Tribal Energy Program

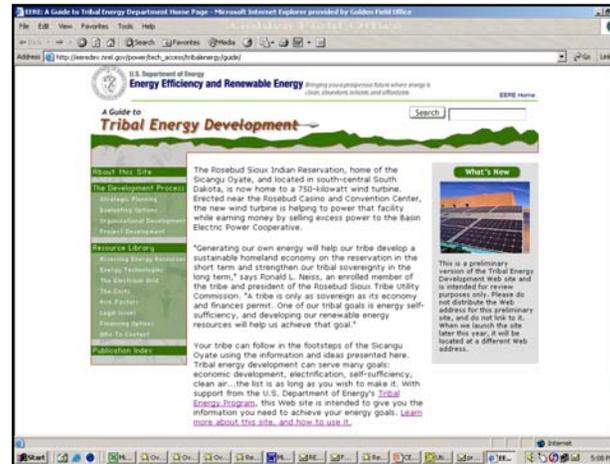
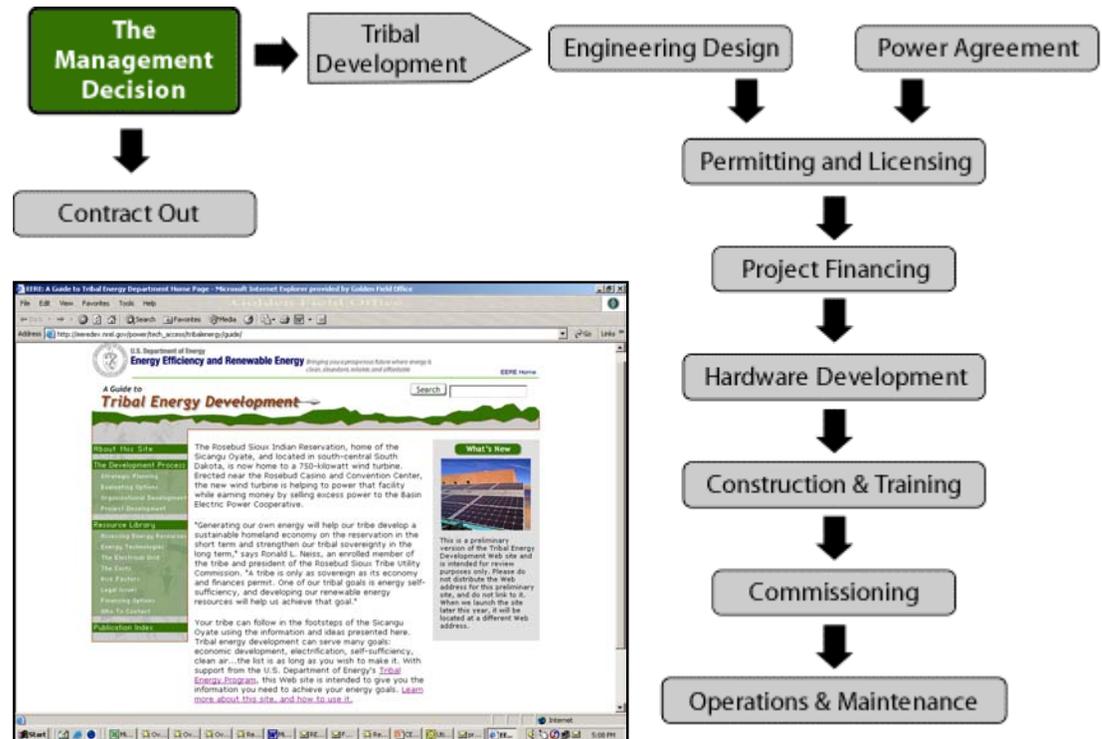
Guide to Tribal Energy Development

Development Processes

- Strategic Planning
- Options Analysis
- Organizational Development
- Project Development

Resource Library

- Energy Resources
- Technologies
- Costs
- Risk Factors
- Legal Issues
- Financing Options
- Contacts



www.eere.energy.gov/tribalenergy/guide





DOE's GeoPowering the West

GeoPowering the West is a commitment to dramatically increase the use of geothermal energy in the western United States



Jemez Pueblo received DOE support to study its geothermal resource

- Provides information and technical assistance to tribes
- Partners with tribes to expand the use of geothermal energy
 - Site visits completed at Pyramid Lake Paiute, Walker River Paiute and Wind River Tribe
 - Geothermal greenhouse tours provided to several New Mexico pueblo officials



**GEOPOWERING
THE WEST**

www.eere.energy.gov/geothermal





DOE's Geothermal Program



Geothermal Resource Exploration and Definitions Program (GRED III)

Financial assistance for geothermal
resource assessments

**Fort Bidwell Indian Community competitively
selected for funding**

Program Mission

To work in partnership with U.S. industry to establish geothermal energy as an economically competitive contributor to the U.S. energy supply



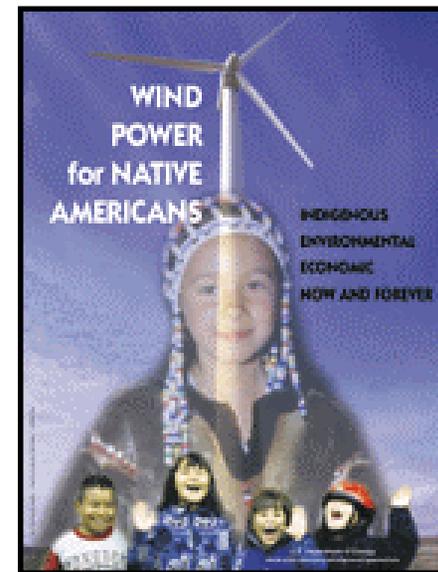


Wind Powering America's (WPA) Native American Program

WPA recognizes the vast wind resources on tribal lands and provides technical assistance to:

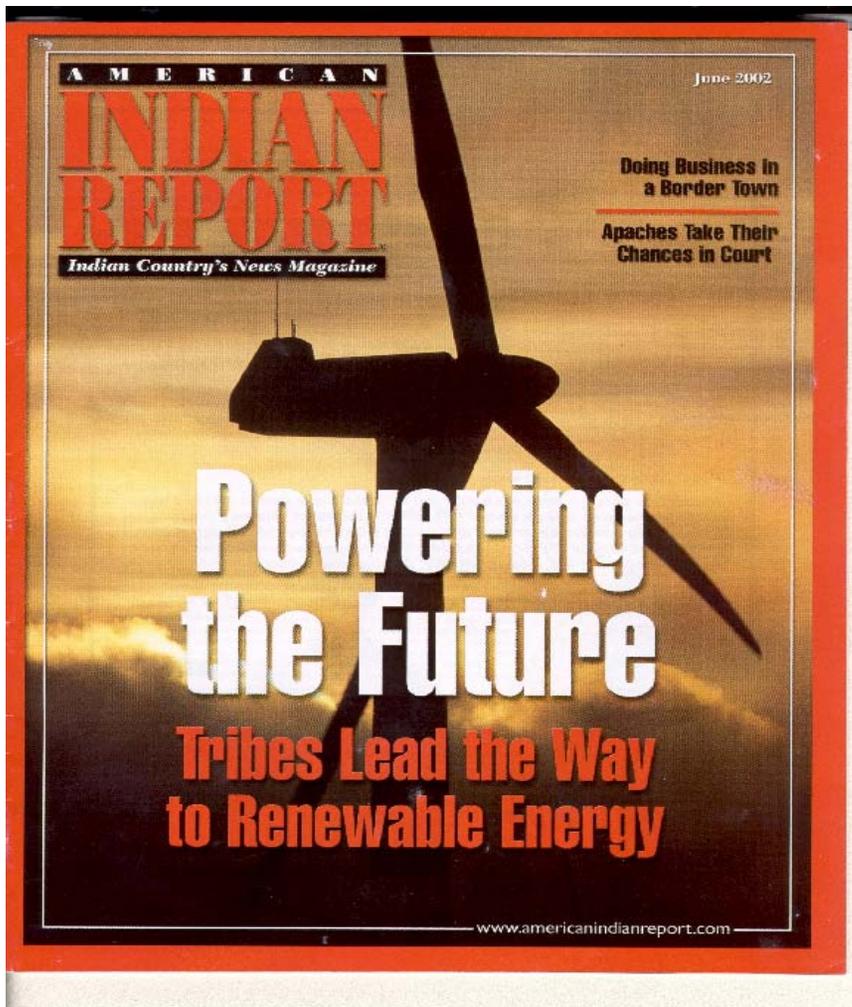
- Evaluate the resource; and
- Pursue development options that best match Native interests

Wind Powering Native America Video
Anemometer Loan Program
Native American Wind Interest Group
(NAWIG) Quarterly Newsletter



Native American Anemometer Loan Program has supported 19 tribes over the last two years





Questions

“Tribes Leading the Way to Renewable Energy”

**American Indian Report
June 2002**

