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

DOE's Tribal Energy Program

Program Review

October 18, 2004

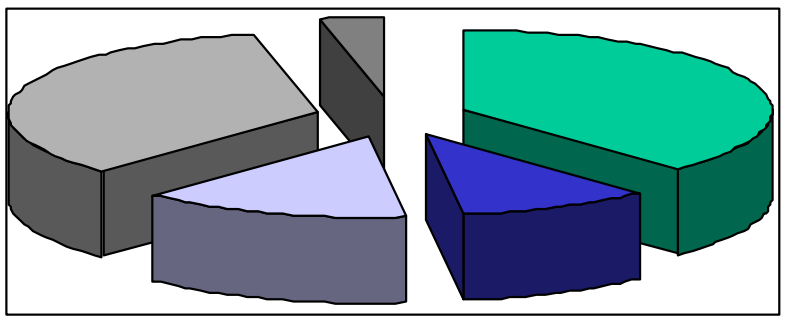
Lizana Pierce, Project Manager

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

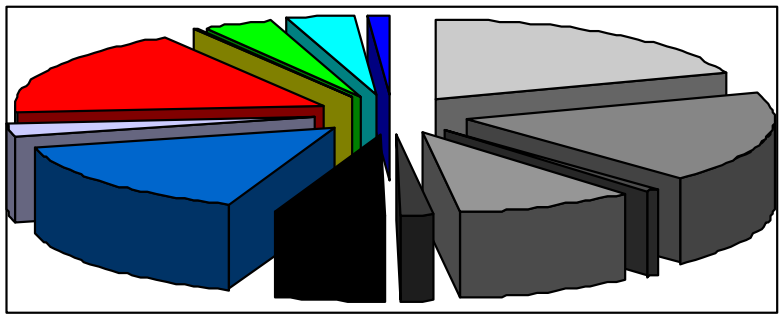
Renewable Energy Technologies

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



Tribal Energy Budget (FY2004)

Requested: $6 Million

Appropriated: $5 Million

DOE's Tribal Energy Program

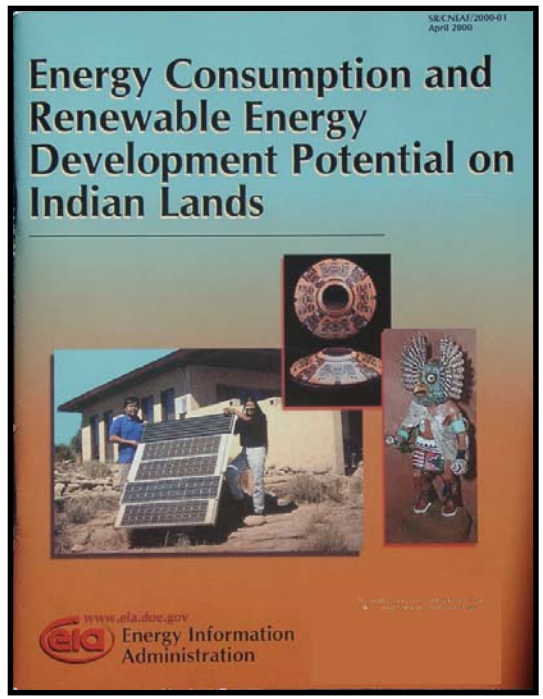
"Indian households on reservations are disproportionately without electricity. A total of 14.2% of Indian households have no access to electricity, as compared to only 1.4% of all U.S. households." Navajo accounts for 75% of the households without electricity (2000 EIA Report)

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)



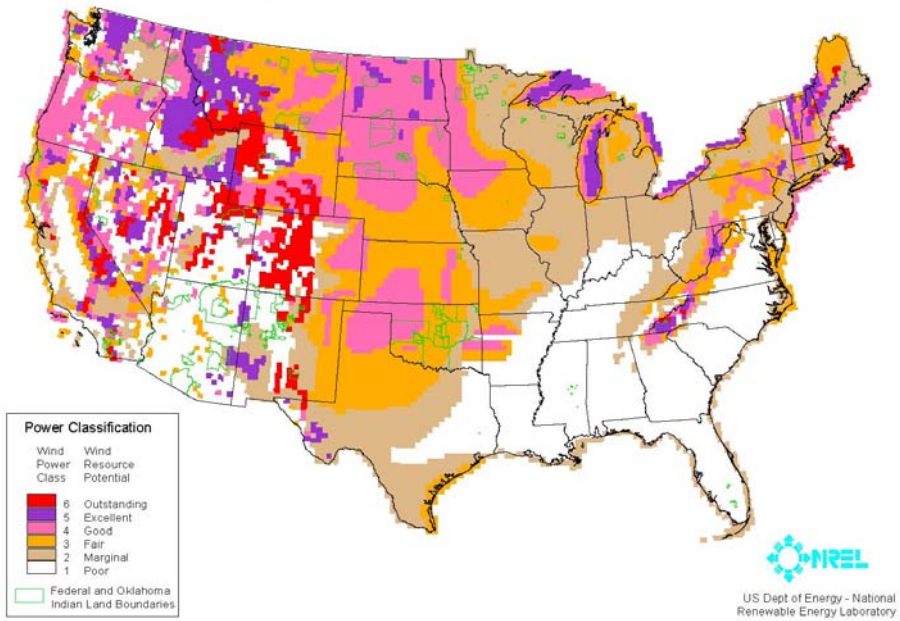
DOE's Tribal Energy Program

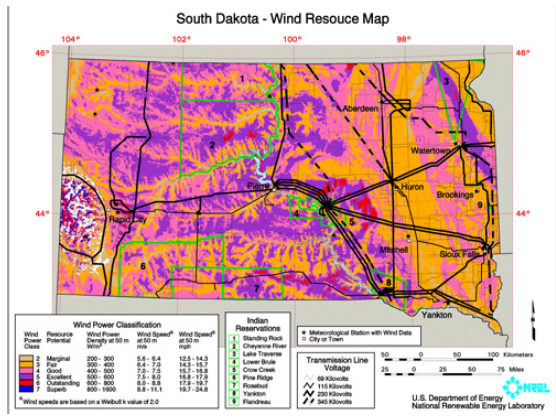
"Indian land comprises 5% of the land area of the United States, but contains an estimated 10% of all energy resources in the United States"

"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 <u>Indian Lands</u> in Lower 48 States

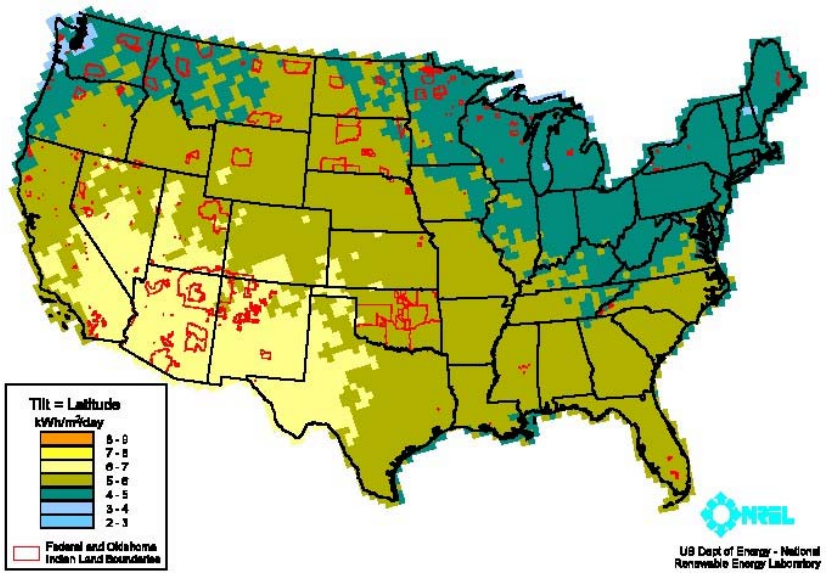


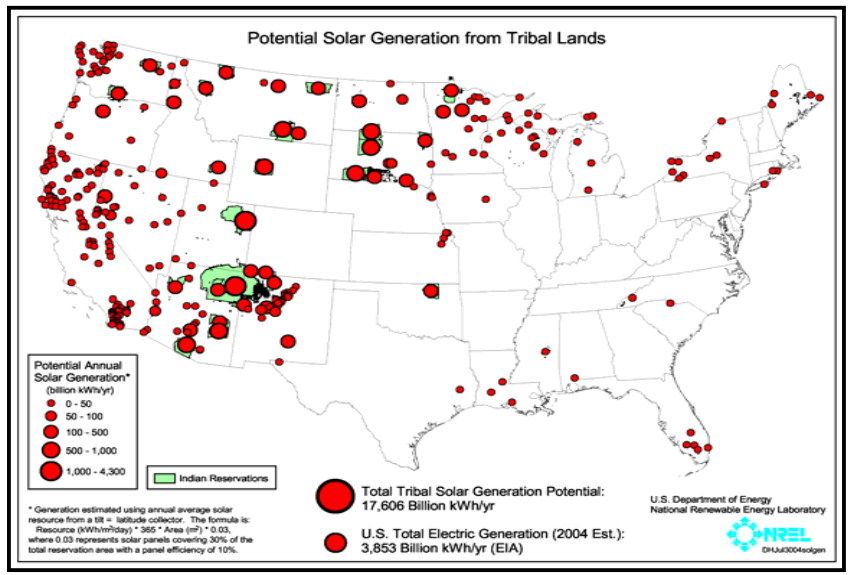


Equivalent to 14% of the U.S. Annual Electric Generation (~ 3,853 Billion kWh/year)

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 <u>government-to-government</u> 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.

Program Management

Thomas Sacco
Weatherization and Intergovernmental Program
Office of Energy Efficiency and Renewable Energy (EERE)
Department of Energy, HQ

Field Implementation

DOE Golden Field Office
Project Manager, Tribal Energy Program
Lizana Pierce
(303) 275-4727

Technical Assistance

Sandia National Laboratories, Albuquerque
Sandra Begay-Campbell
(505) 844-5418

National Renewable Energy Laboratory
Roger Taylor
(303) 384-7389

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.

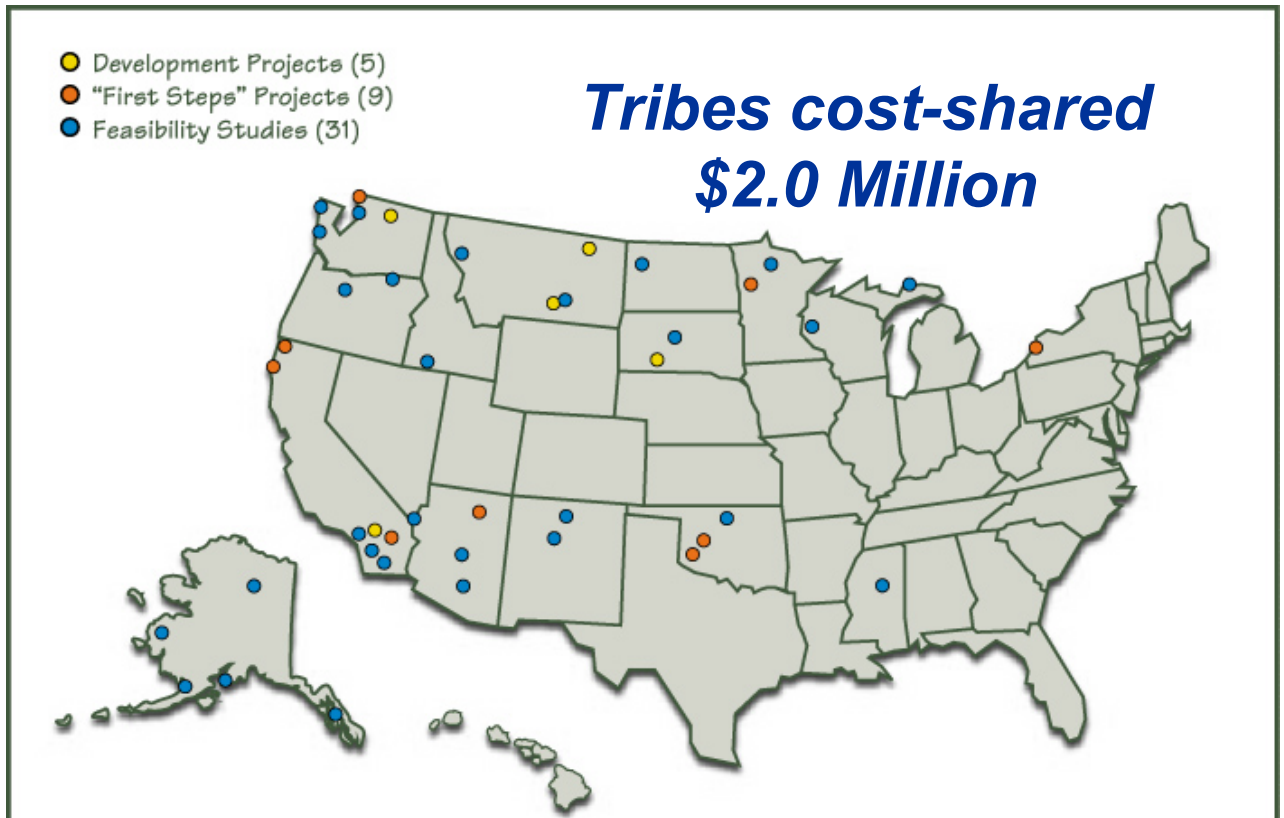
Solar Installations at Pueblo of Laguna's Majors Ranch

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

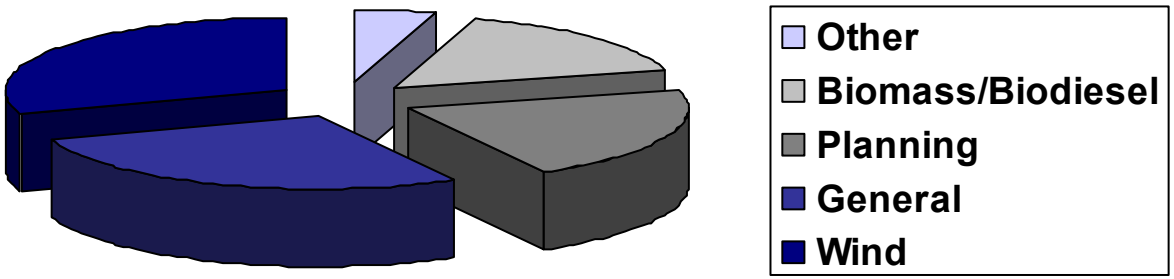


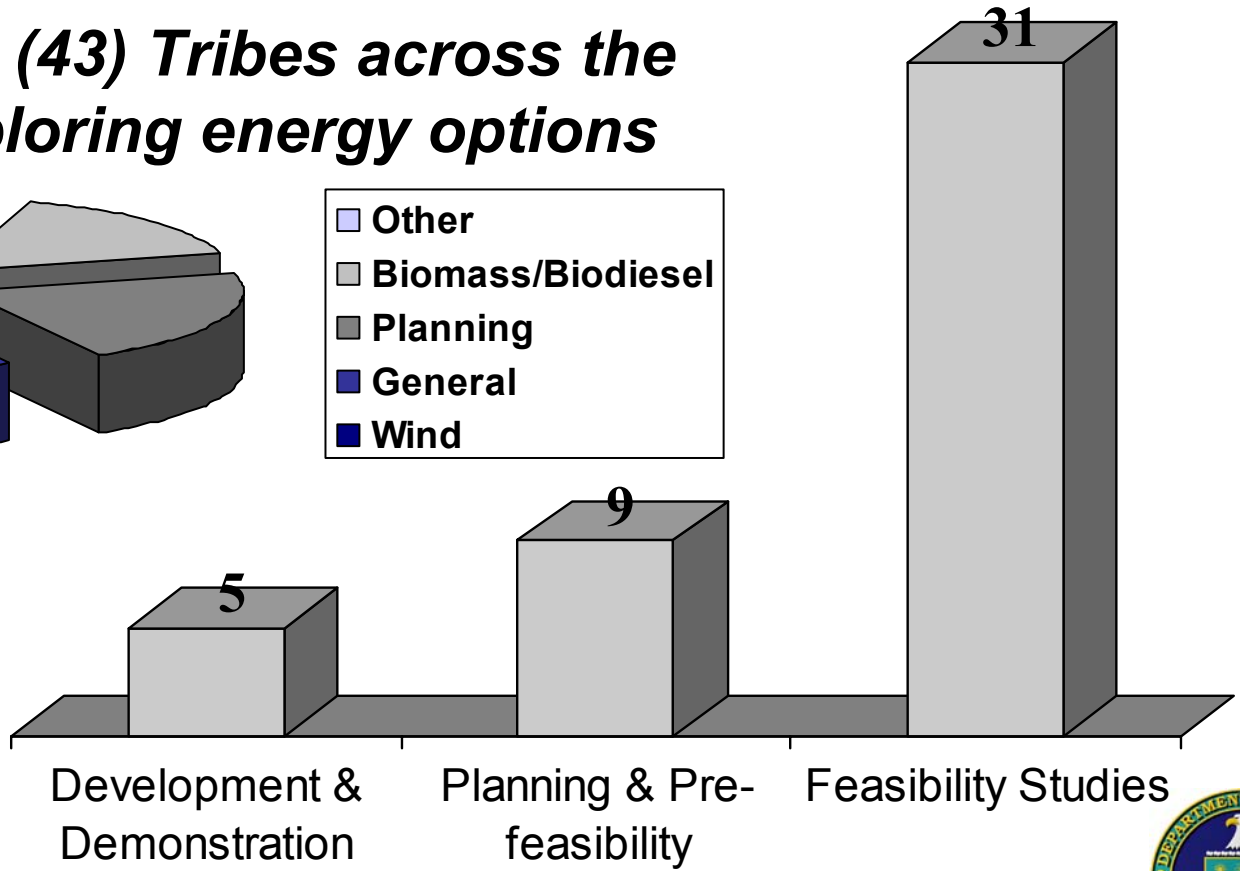
Total of 91% of DOE funds awarded directly to Tribes

DOE's Tribal Energy Program

Tribal Projects

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





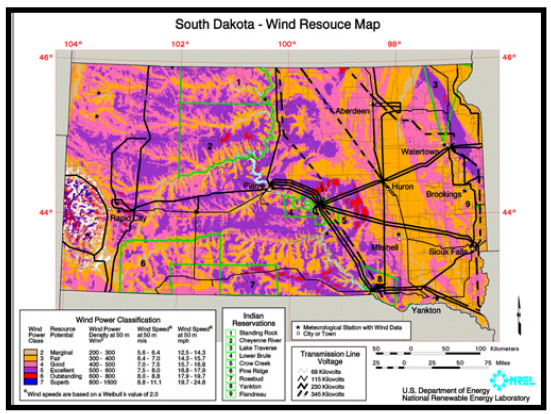
For more, see www.eere.energy.gov/tribalenergy

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 Veneer 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

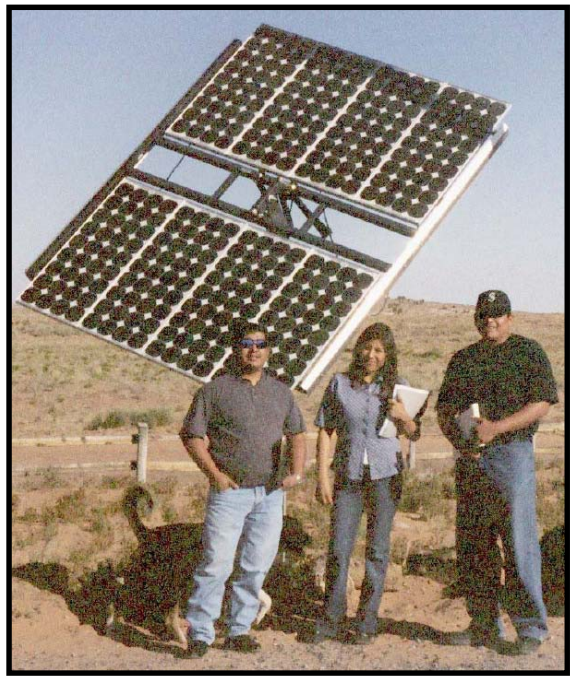
Turbine Installed at Rosebud Sioux Reservation in South Dakota

Colville Indian Power and Veneer Energy Substation

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/BIA/NREL sponsored workshop September 2004

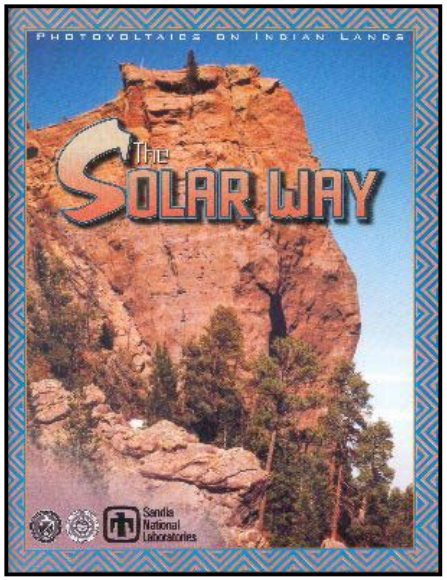


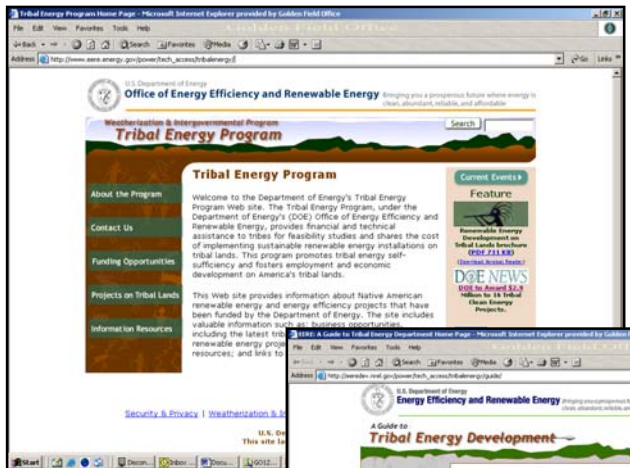
Summer Interns at installation on the Navajo Reservation (2003)

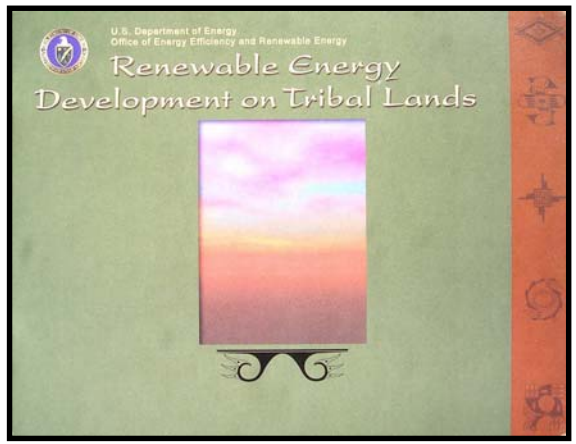
See Education and Training at *www.eere.energy.gov/tribalenergy*

DOE's Tribal Energy Program

Information Resources







Tribal Energy Website

www.eere.energy.gov/tribalenergy

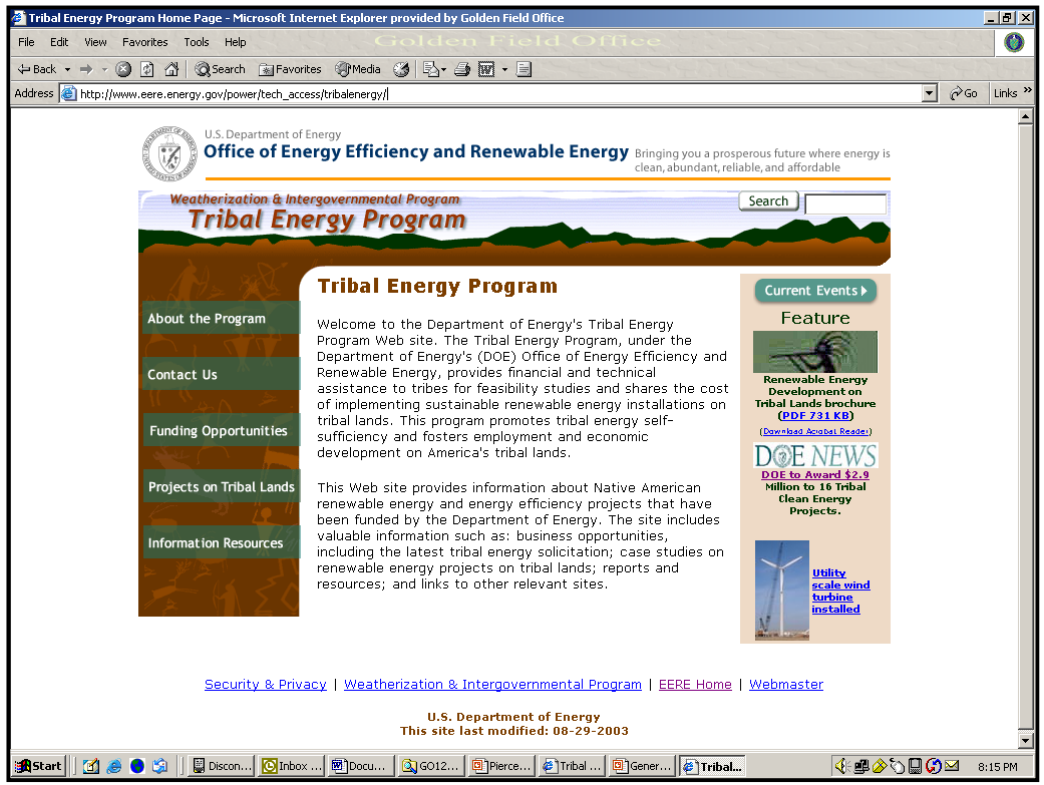
Guide to Tribal Energy Development

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



www.eere.energy.gov/tribalenergy

DOE's Tribal Energy Program

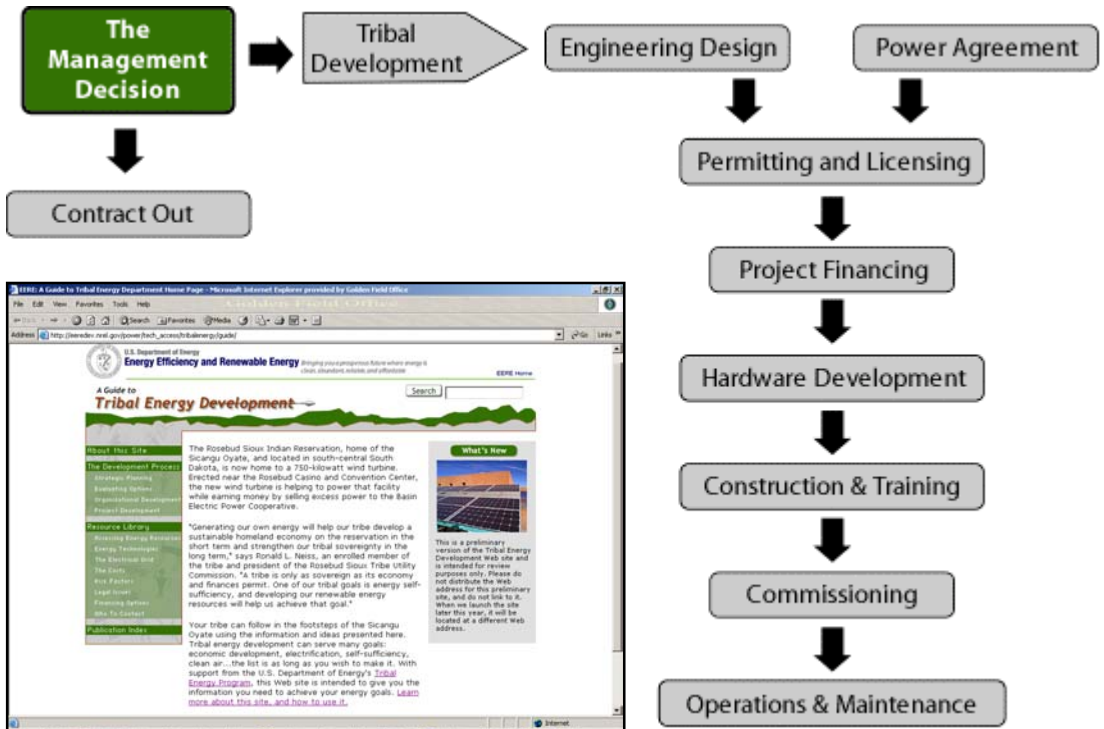
Guide to Tribal Energy Development

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

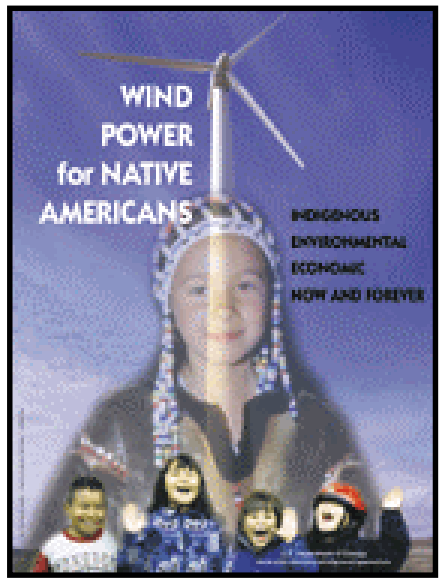
To work in partnership with U.S. industry to establish geothermal energy as an economically competitive contributor to the U.S. energy supply

Wind Powering America's (WPA) Native American Program

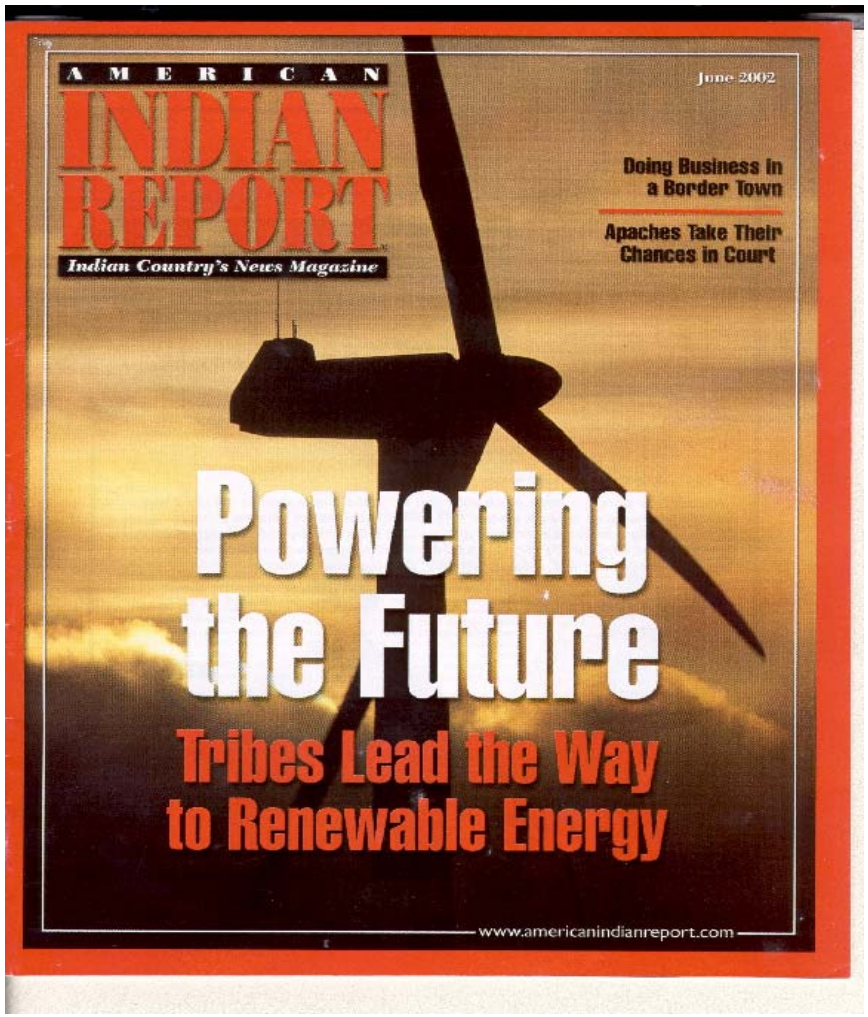
WPA recognizes the vast wind resources on tribal lands and provides technical assistance to:

- 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