

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

# *DOE's Tribal Energy Program*



## *Tenth Annual Tribal Energy Program Review*

**November 14, 2011**

**Lizana K. Pierce, Project Manager  
U.S. DOE, Golden Field Office**



# Department of Energy

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

Contributes to the future of the Nation by ensuring energy security, maintaining the safety, security and reliability of the nuclear weapons stockpile, cleaning up the environment from the legacy of the Cold War, and developing innovations in science and technology

### Managed by Program Offices:

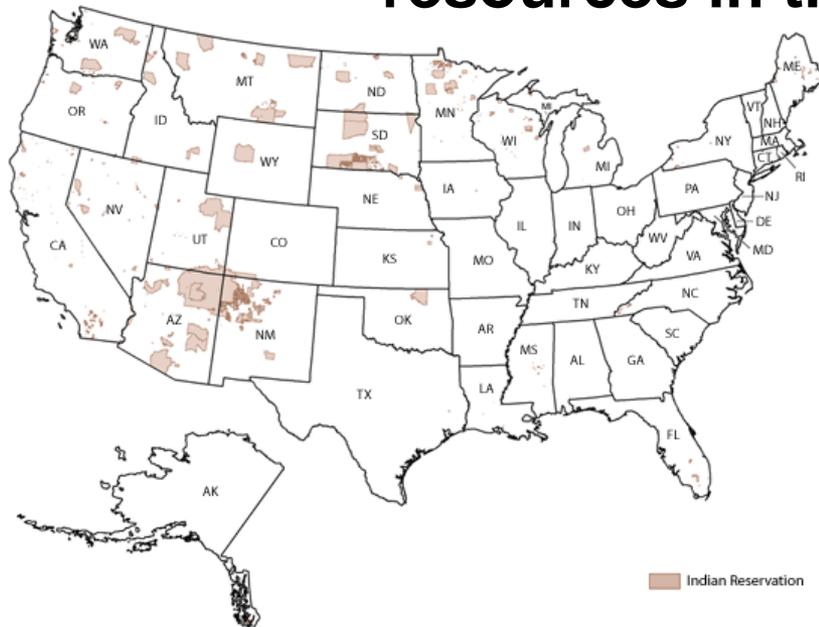
- Advanced Research Projects Agency - Energy
- Loan Programs Office
- Electricity Delivery & Energy Reliability
- **Energy Efficiency & Renewable Energy**
- Environmental Management
- Fossil Energy
- **Indian Energy Policy and Programs**
- Legacy Management
- Nuclear Energy
- Science



**Principally, a National Security Agency**

## *DOE's Tribal Energy Program*

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



**Tribal Trust Lands Comprise  
55.7 Million Acres (Per BIA)**

**565 Federally Recognized  
Tribes**

**225 Tribes in Alaska (39% of total  
and 19% of Alaskan population)**

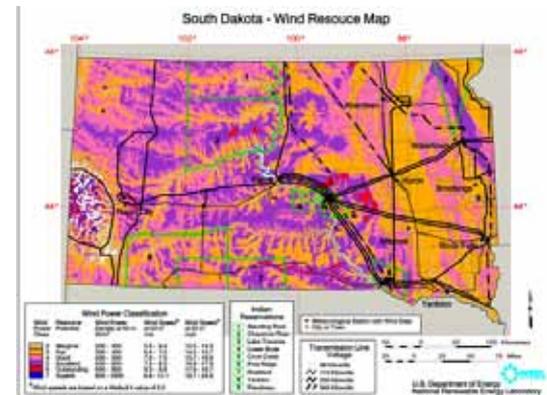
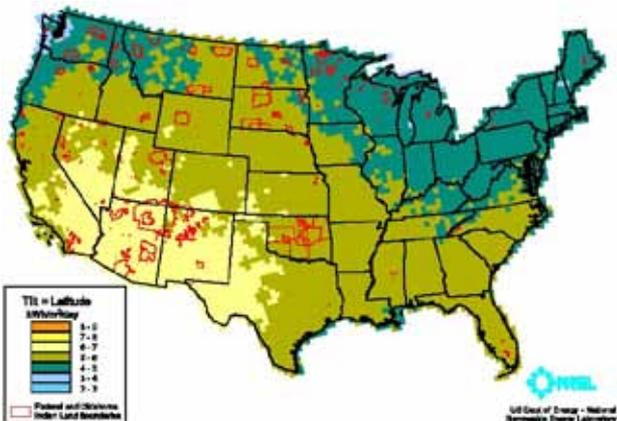
**Tribal energy resource development can  
support local economies and Tribal sovereignty**



# *DOE's Tribal Energy Program*

## Abundant Tribal Renewable Resources

**Wind Potential on Tribal Lands ~ 32%  
(1,331 Million MWH/yr) of the Total U.S.  
Annual Electric Generation\* in  
Contiguous 48 States (NREL 2011)**



**Solar Electric Potential on Tribal Lands  
~2 times (9,275 Million MWH/yr) of the  
Total U.S. Electric Generation\* in  
Contiguous 48 States (NREL 2011)**



\* U.S. Electric Generation ~ 4,120 Million MWH/yr (2010)

## *DOE's Tribal Energy Program*

**More than 2.4 million Native Americans live on or near tribal land** (2000 U.S. Census)

- **Ten Times More Native Americans Without Access to Electricity** (2000 EIA Report)
- **40% On-reservation Housing is Inadequate, Compared to 6% Nationwide** (U.S. Commission on Civil Rights)
- **Total of 90,000 Native families are homeless or under-housed** (U.S. Commission on Civil Rights)
- **An estimated 200,000 housing units needed in Indian Country** (U.S. Commission on Civil Rights)



**Over a 30 year life span, only 2% (on average) of the overall investment in a building goes towards construction**

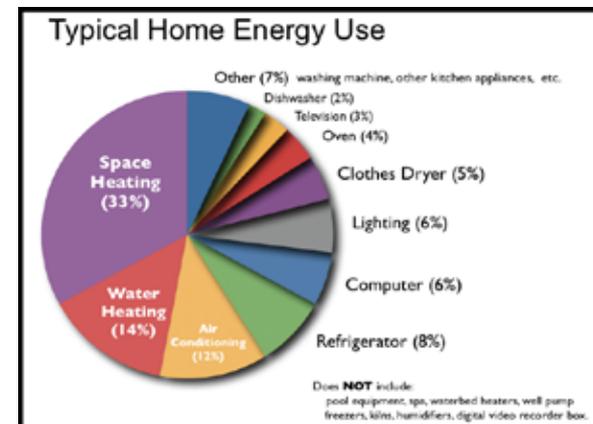


# *DOE's Tribal Energy Program*

## Why Invest in Energy Efficiency First?

Existing buildings represent one of the best opportunities for immediate and cost-effective reductions in energy use

- It's easier and cheaper to save energy than produce energy – “The low hanging fruit”
- Every \$1 spent on efficiency saves at least as much as \$2 spent on renewables
- Energy efficiency can return ~\$2.51 in benefits for every \$1 invested (Based on DOE Wx Program)



Weatherization reduces the export of local energy dollars and keeps more money in the community



## *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**



### **Authority**

**Title V of the Energy Policy Act (EPAAct 2005)**



# *DOE's Tribal Energy Program*



## *Mission*

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

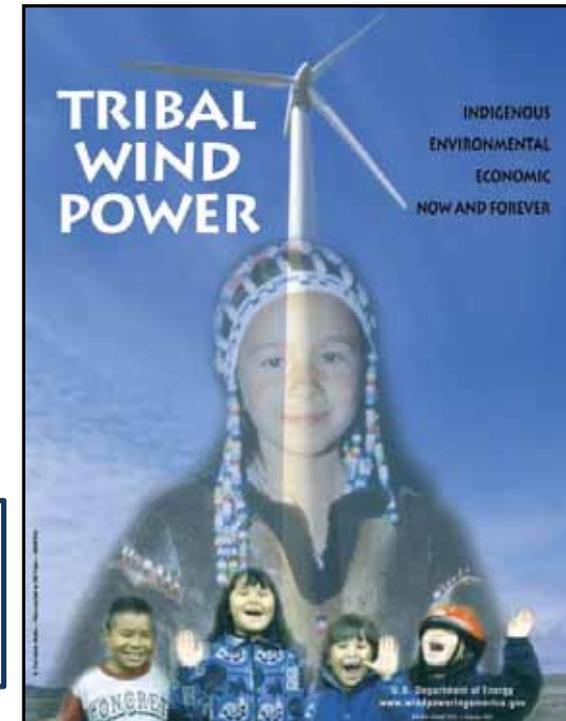
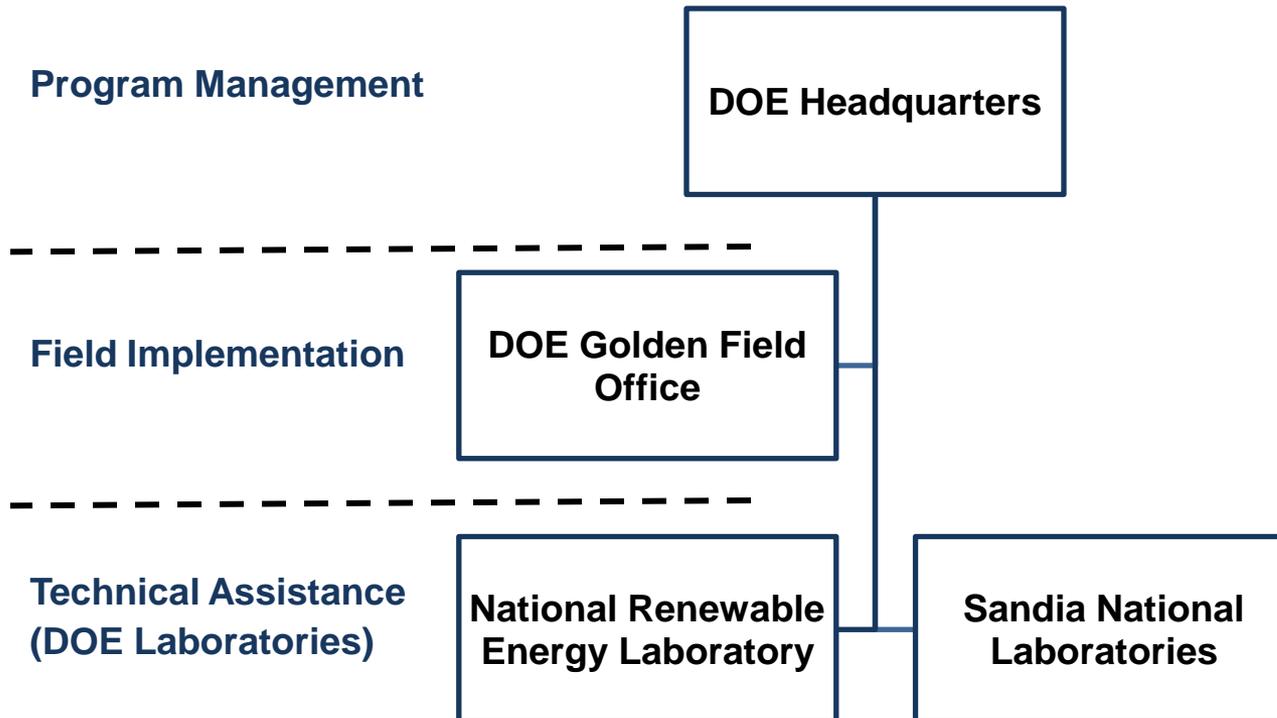
- 1) Enable Tribal leaders to make informed decisions about energy choices;***
- 2) Bring renewable energy and energy efficiency options to Indian Country;***
- 3) Enhance human capacity through education and training;***
- 4) Improve local Tribal economies and the environment; and***
- 5) Make a difference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



# *DOE's Tribal Energy Program*

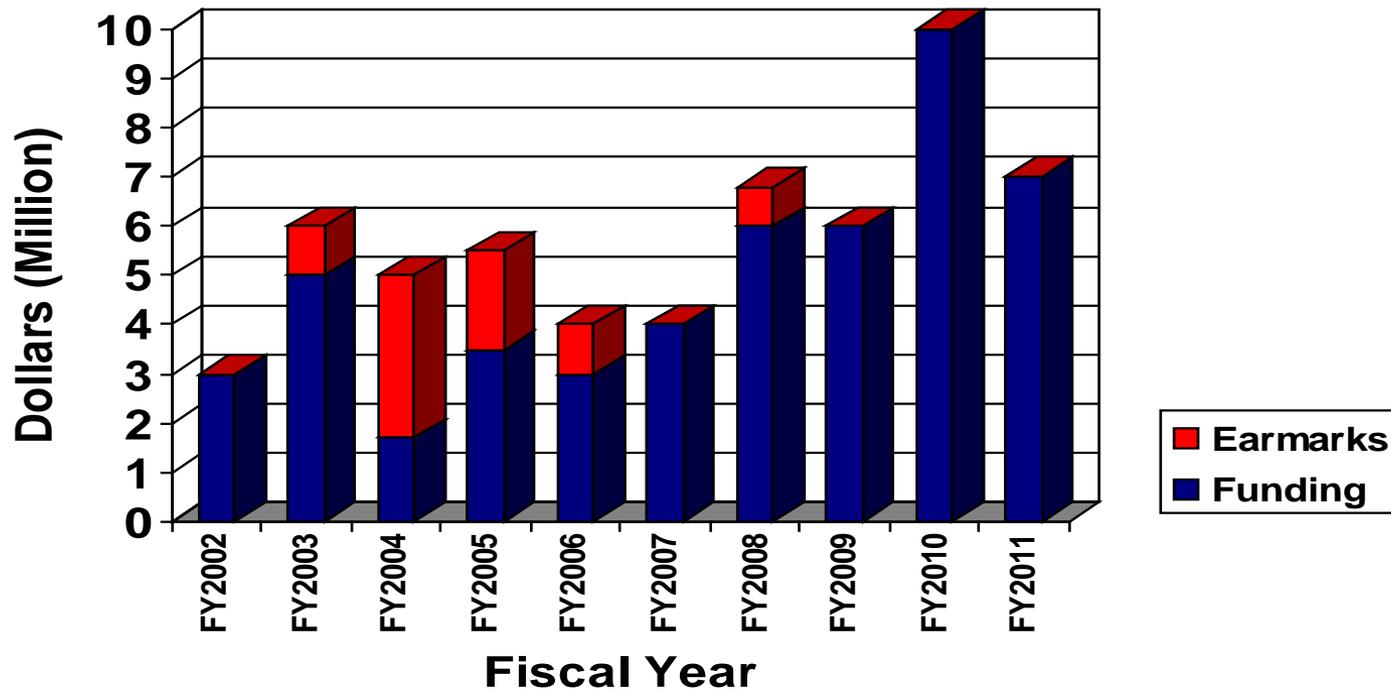
## Organization

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*

## Program Funding History



*Program budget averages less than \$6.0 million per year*





# Tribal Energy Program Funding\*

	<i>FY2009</i>	<i>FY2010</i>	<i>FY2011</i>	<i>FY2012</i>
<i>DOE Request</i>	<i>\$1.0</i>	<i>\$6.0</i>	<i>\$10.0</i>	<i>\$10.0</i>
<i>Appropriated Funds</i>	<i>\$6.0</i>	<i>\$10.0</i>	<i>\$7.0</i>	<i>TBD</i>
 <i>Senate Mark</i>				<i>\$10.0</i>
<i>House Marks</i>				<i>\$10.0</i>

\* Amounts in Millions



# *DOE's Tribal Energy Program* **Three Pronged Approach**

**Financial  
Assistance**

*Success through  
Government-to-  
Government  
Partnerships*

**Technical  
Assistance**

*Leveraged through  
Intergovernmental  
Coordination*

**Information & Education**

*Leveraged with Intra-  
governmental  
Coordination*



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# Providing Financial Assistance

**Providing financial and technical assistance to Tribes for the evaluation and development of renewable energy resources and energy efficiency on Tribal Lands**

## **Eligibility:**

Federally-recognized Tribes, Tribal Energy Resource Development Organizations, or Tribal Consortia (two or more entities, at least one of which is an Indian Tribe).



**Tribal Lands** include 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.

***Funds Awarded through a Competitive Process***



# FY2011 Financial Assistance

## Financial Assistance to Spur Deployment in Indian Country

### § First Steps Toward Developing Energy Efficiency and Renewable Energy on Tribal Lands

- Strategic energy planning
- Energy options analysis
- Energy organization development
- Human capacity development

### § Energy Efficiency Development and Deployment in Indian Country

- Feasibility Studies
- Installation of energy efficiency improvements

### § Renewable Energy Development and Deployment in Indian Country

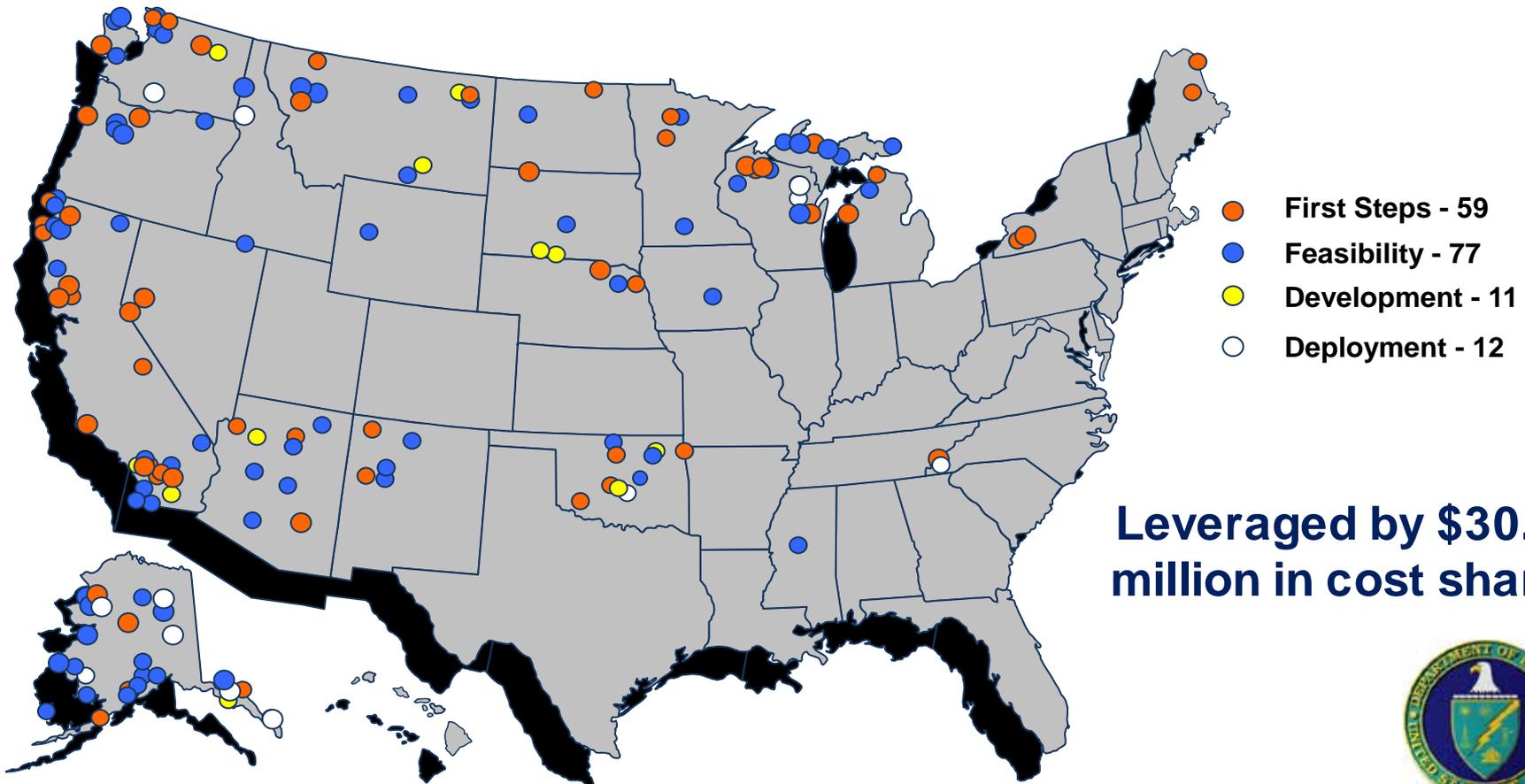
- Feasibility Studies
- Development (pre-construction) activities
- Deployment (construction) activities



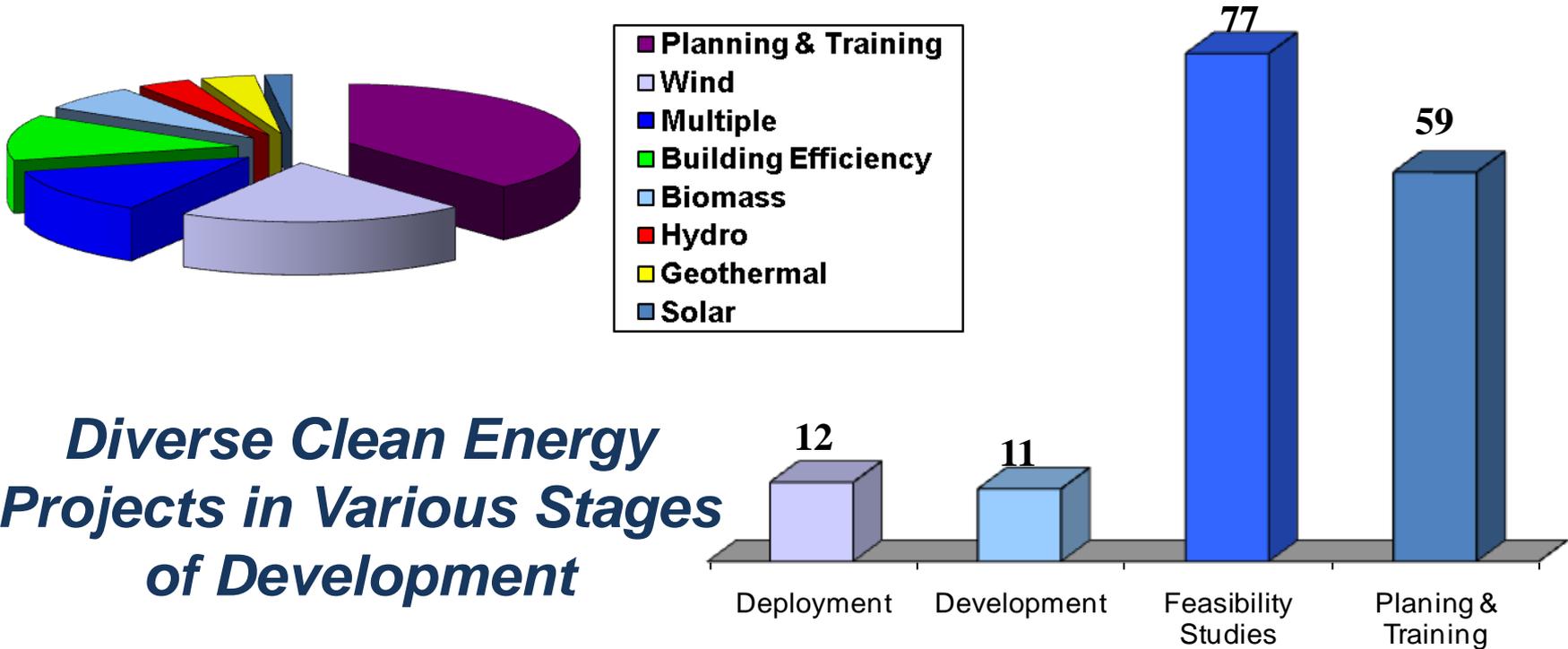
Solar arrays on Navajo home



# DOE has Funded 159 Tribal Energy Projects Investing \$36 Million *(2002-2011)*



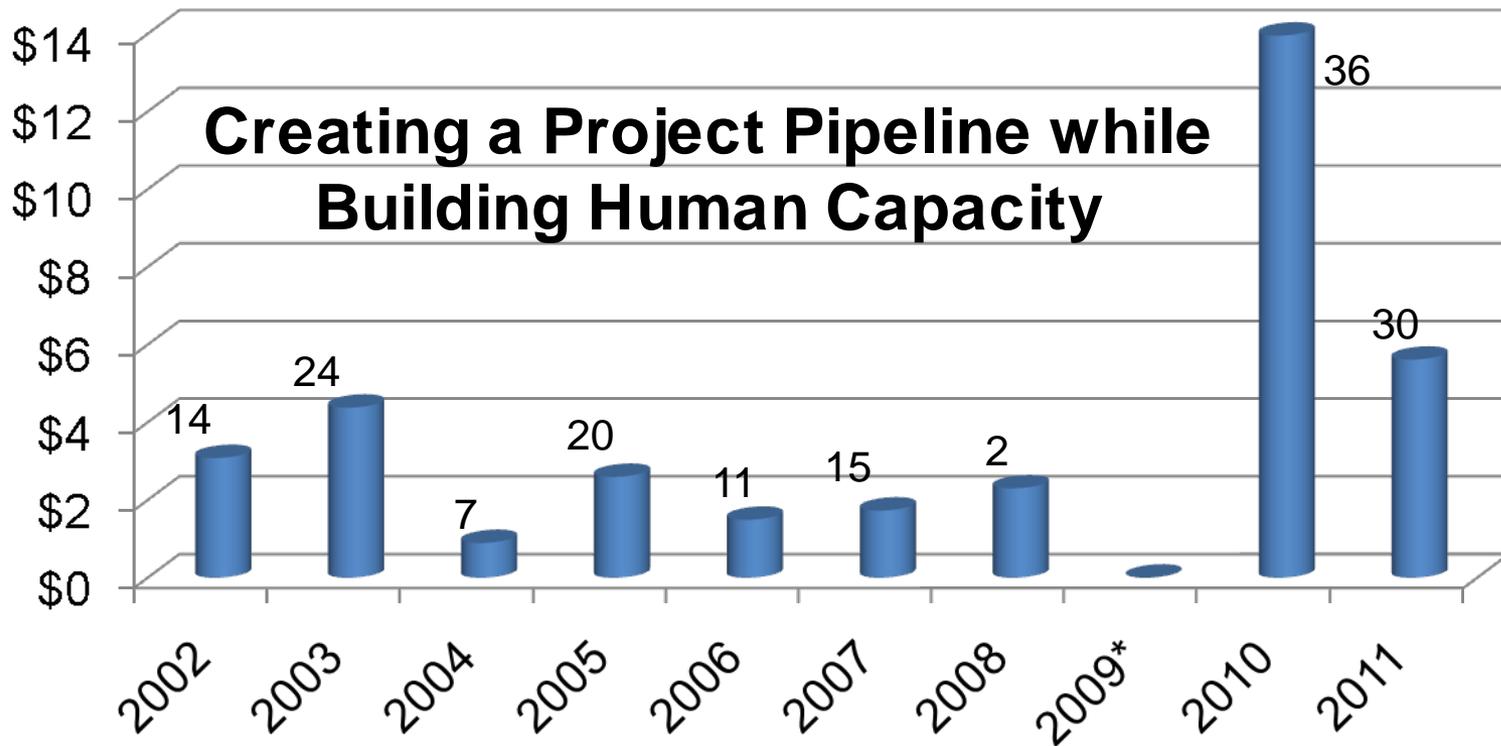
# Tribal Energy Project Pipeline



***Assisting Tribes Fulfill Their Energy Vision***



## Project Funding History



\* FY2009 funds carried over and used to fund projects awarded in FY2010

## Investment in Tribal Energy Sufficiency



# Renewable Energy Development in Indian Country

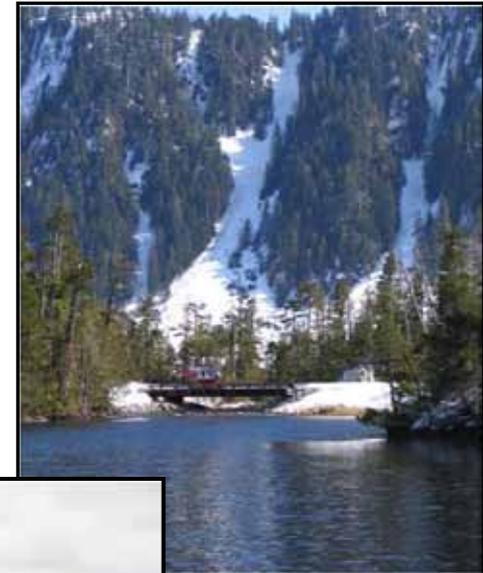


**Campo Bands 50 MW Wind Farm - Developing 160 MW**



**Rosebud Sioux's (SD) Little Soldier Turbine - Pursuing a 30 MW and 190 MW Wind Farm**

**Haida Corp's Reynolds Creek 5MW Hydro Project**



**Fort Yukon Biomass Project**



**Chaninik Wind Group's Thermal Heating Project**



# Energy Efficiency & Wx Training Projects

**Goal of Reducing Building Energy Use by 30%**





# Building Local Skills and Knowledge



**Keweenaw Indian Community** trained members in weatherization: 9 energy auditors; 8 envelop professionals; and 38 air sealing insulation installers. Logo contest winner shown above.

**Cook Inlet Tribal Council** training two apprentices in weatherization (4,000 hour program). Apprentices to graduate February 2012 and be hired to serve local communities



**Scotts Valley Band** partnered with 12 Tribes in Lake and Mendocino Counties to build local capacity through education and training. Twenty-three members trained and 3 hired by the Tribes



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# Providing Technical Assistance

## Technical Assistance

- Technology Advice
- Models and Tools
- Resource Maps
- Strategic Energy Planning
- Pre-Feasibility Transmission Studies
- Project Support
- Economic Evaluation
- Design Review
- Special Studies



National Renewable Energy Laboratory (NREL) Science & Technology Facility and Solar Energy Research Facility (SERF)

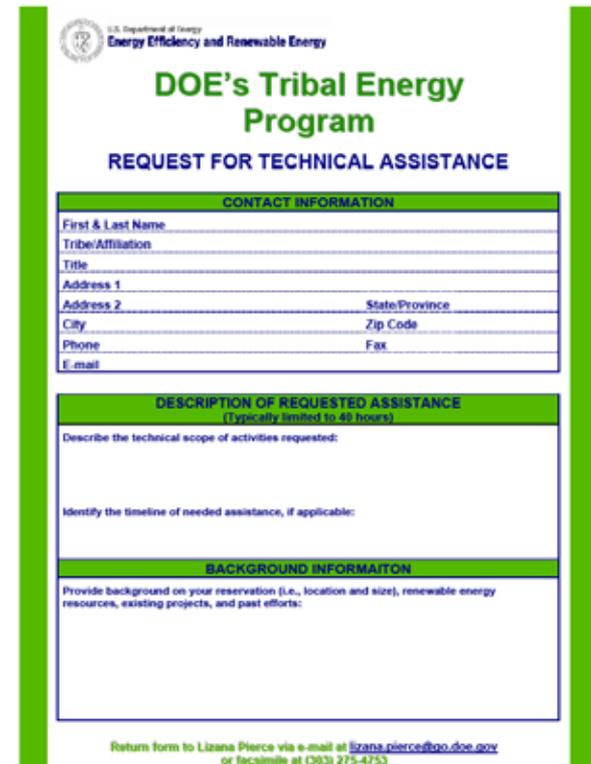


Assisting Tribes with expertise from  
DOE's National Laboratories



# Technical Assistance Requests for Tribes

- Ø Offered within available resources
- Ø The application process is quick and easy on-line process
- Ø The value of technical assistance for Tribes is typically limited to 40 hours and may include, but is not limited to, renewable energy technology information, renewable resource information, energy efficiency techniques, project support, system performance modeling, policy information, design review, special studies, strategic energy planning, pre-feasibility transmission studies, and training.



The form is titled "DOE's Tribal Energy Program REQUEST FOR TECHNICAL ASSISTANCE". It is divided into three main sections: CONTACT INFORMATION, DESCRIPTION OF REQUESTED ASSISTANCE, and BACKGROUND INFORMATION. The CONTACT INFORMATION section includes fields for First & Last Name, Tribe/Affiliation, Title, Address 1, Address 2, City, Phone, E-mail, State/Province, and Zip Code. The DESCRIPTION OF REQUESTED ASSISTANCE section includes a field for "Describe the technical scope of activities requested:" and a field for "Identify the timeline of needed assistance, if applicable:". The BACKGROUND INFORMATION section includes a field for "Provide background on your reservation (i.e., location and size), renewable energy resources, existing projects, and past efforts:". At the bottom of the form, it says "Return form to Lizana Pierce via e-mail at [lizana.pierce@eeere.doe.gov](mailto:lizana.pierce@eeere.doe.gov) or facsimile at (303) 275-4733".

***Complete Request Form On-line at***  
**[www.eere.energy.gov/tribalenergy/tech\\_assistance.cfm](http://www.eere.energy.gov/tribalenergy/tech_assistance.cfm)**



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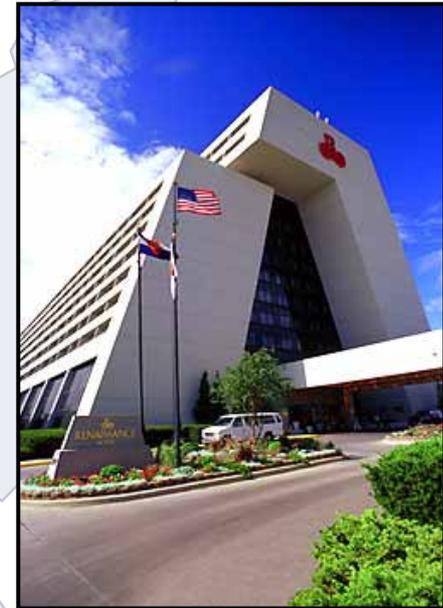
**Information &  
Education**



# *DOE's Tribal Energy Program*

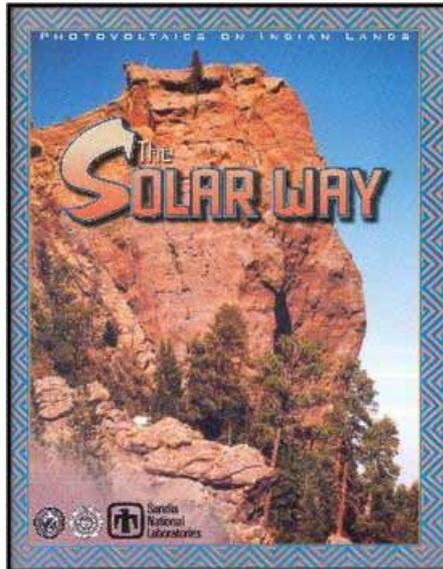
## **Education & Training**

- § Annual Program Review
- § National Workshops
  - Business Development and Financing
  - Renewable Energy and Energy Efficiency
- § Tribe Specific or Regional Trainings
  - Upon Request and within available resources



*Building Human Capacity in Indian Country*

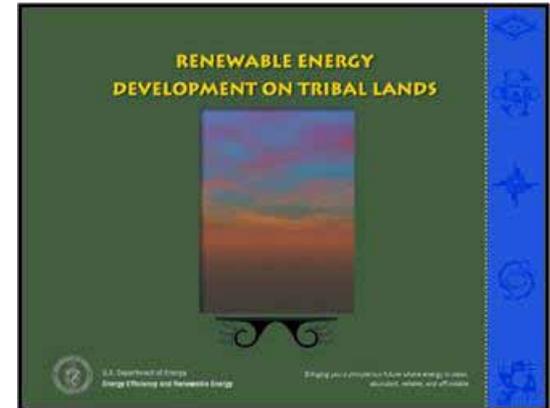




Tribal Energy Website

Guide to Tribal Energy Development

# Information Resources



Join Our Email List

For Information on funding opportunities, workshops & training, and other tribal energy information

Email [tribal@go.doe.gov](mailto:tribal@go.doe.gov)



# *DOE's Tribal Energy Program*

## Program Web Site

- Features
- Program Brochure
- Upcoming Events
- Short Courses
- Financial Opportunities
- Projects on Tribal Lands
  - Project Summaries
  - Status and Reports
  - Contacts
- Information Resources
- Join Email List
- Contacts



**[www.eere.energy.gov/tribalenergy](http://www.eere.energy.gov/tribalenergy)**



# *DOE's Tribal Energy Program*

## Guide to Tribal Energy Development

### Development Processes

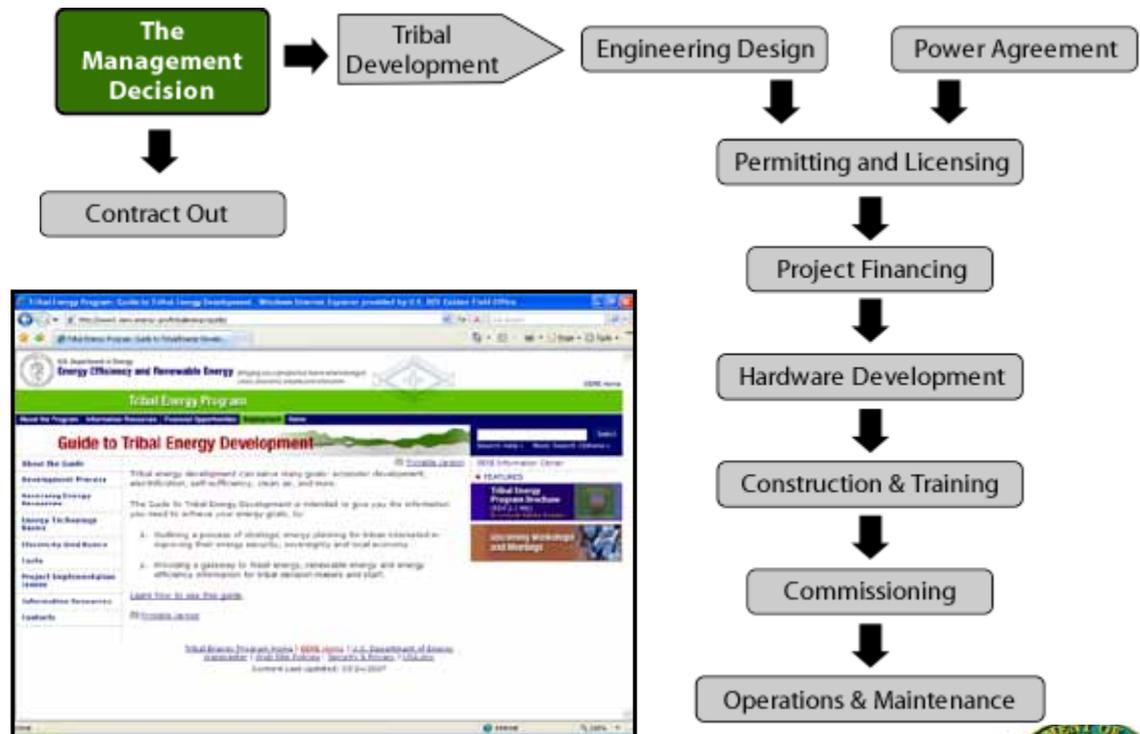
- Strategic Planning
- Options Analysis
- Organizational Development
- Project Development

### Business & Financing

- Under development

### Resource Library

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



# Student Summer Internships

## Requirements

- § Must be a U.S. citizen and a **Native American**, defined as a member of a federally recognized tribe, Alaska Village, or Alaska Corporation

## Application Process

- § Applications due in **February 17, 2012**
- § 12 week internships at Sandia National Laboratories (NM)
- § Contact Sandra Begay-Campbell at (505) 844-5418 or [skbegay@sandia.gov](mailto:skbegay@sandia.gov)
- § Application form posted on TEP website annually

## Interns

- § Twenty-three (23) interns sponsored since 2002

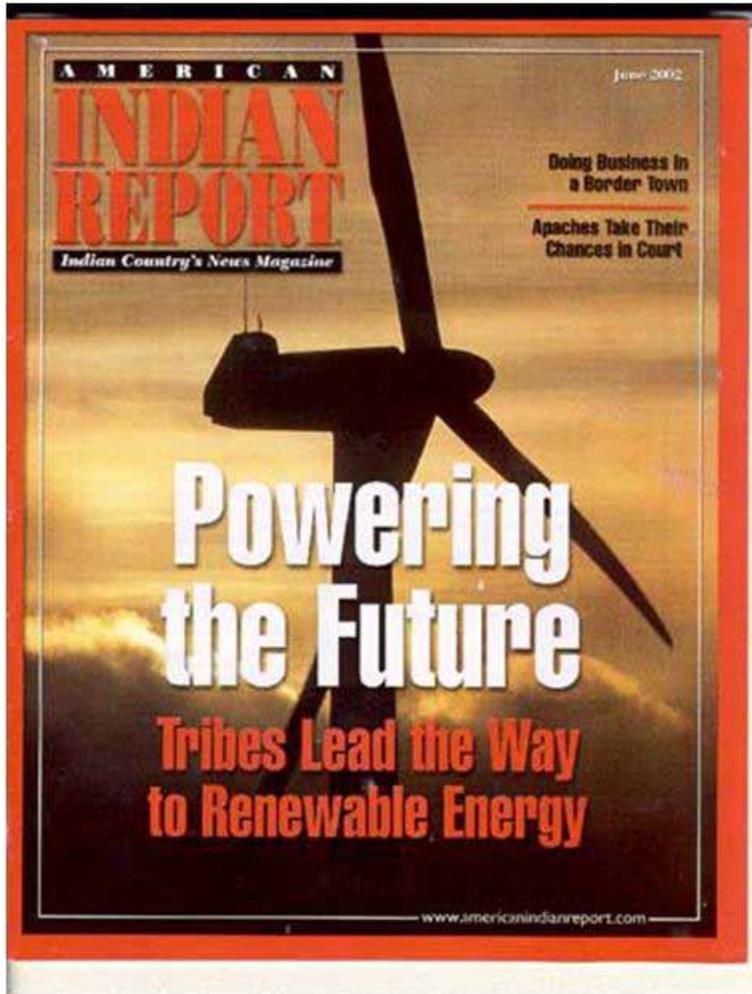
## Student Papers Posted on TEP Website



Summer Interns on the Navajo  
Reservation (2003)

Summer Interns on a windy day (2004)



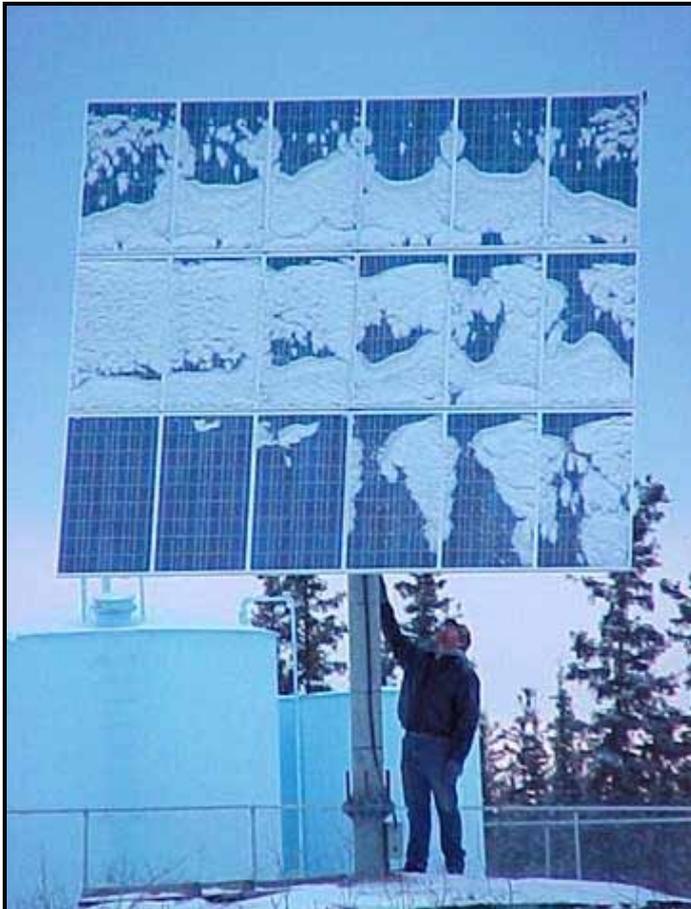


# “Tribes Lead the Way to Renewable Energy”

American Indian Report  
June 2002



# Tribes Leading the Way to Renewable Energy



One of the World's Northern-most  
Tribally-owned Solar systems

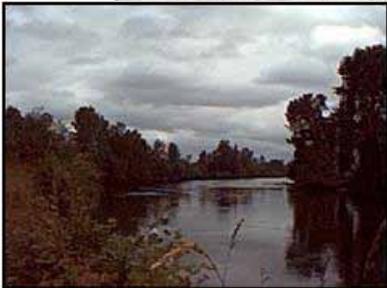
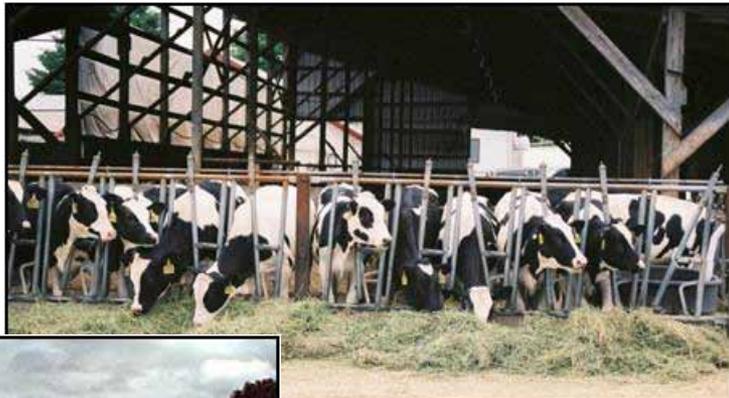
Solar Installations at  
**Pueblo of Laguna's**  
Majors Ranch



Solar Electric Carport at **SIPi's** Science and Technology Building



# Tribes Leading the Way to Renewable Energy



**Tulalip Tribe's** (WA) used an anaerobic digester to reduce dairy waste pollution in the groundwater and salmon stream



**Augustine Band of Cahuilla Indian's** (CA) installed the "largest" (1.1 MW) solar electric system in Indian Country (February 2009)

**Ramona Band** used renewables to power planned ecotourism business



# Contact Information

## Tribal Energy Program

Department of Energy

Golden Field Office

Telephone: (720) 356-1352 (Main)

Email: [tribal@go.doe.gov](mailto:tribal@go.doe.gov)

To receive periodic email information on funding opportunities, upcoming workshops and training, and other tribal energy information

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