DOE OFFICE OF INDIAN ENERGY

DOE Indian Energy Program Overview

Lizana Pierce, Senior Engineer, Project Officer and Deployment Supervisor



U.S. DEPARTMENT OF ENERGY | Office of Indian Energy

November 13, 2017

Strengthening Tribal Communities Sustaining Future Generations

The DOE Office of Indian Energy is charged by Congress under the **Indian Tribal Energy Development and Self Determination Act of 2005** (Energy Policy Act of 2005 (EPAct 2005), Title V, codified at 42 USC § 15801) to

"**provide, direct, foster, coordinate, and implement energy planning, education, management, conservation, and delivery programs that –**

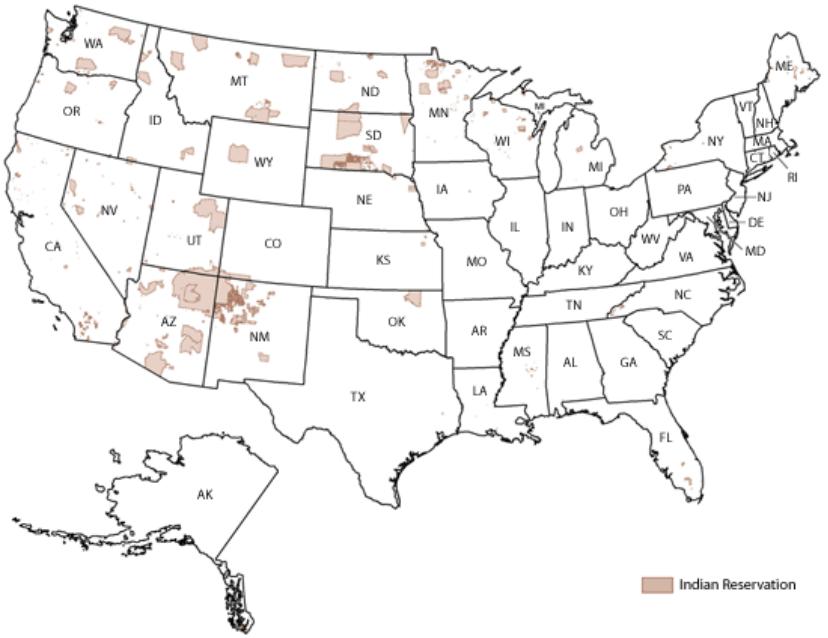
(1) promote Indian tribal energy development, efficiency, and use;
(2) reduce or stabilize energy costs;
(3) enhance and strengthen Indian tribal energy and economic infrastructure relating to natural resource development and electrification; and
(4) bring electrical power and service to Indian land and the homes of tribal members located on Indian lands or acquired, constructed, or improved (in whole or in part) with Federal funds."

Vast Underdeveloped Resources

- 86% of Indian lands with energy or mineral resources remain untapped
- American Indian land comprises approximately 2% of the U.S. land base, but contains an estimated 5% of all renewable energy resources*
- Reservations contain:
  - 30% of the coal reserves west of the Mississippi
  - 50% of uranium reserves, and
  - 20% of known oil and gas reserves
- In 2012, Indian energy and minerals (oil, gas, coal and minerals) were valued at $3.6 billion (DOI Outlook 2012)

* Research underway by the Office of Indian Energy to refine.

567 Federally Recognized Tribes



Tribal Trust Land Comprises 57 Million Acres

(2012 GAO report)

Barriers to Energy Development

- Indian tribes and tribe-owned businesses are non-taxable entities and thus are **not eligible to receive federal or state tax incentives**, including tax credits, deductions, or other tax subsidies currently used to stimulate energy deployment.

- According to a 2012 study by the Board of Governors of the Federal Reserve System*, Indian tribes also face a multitude of challenges in economic and business development in Indian Country. Among the key challenges are a

  - **Lack of access to capital and**

  - **Underdeveloped physical infrastructure**

* Growing Economies in Indian Country: Taking Stock of Progress and Partnerships A Summary of Challenges, Recommendations, and Promising Efforts, Published by the Board of Governors of the Federal Reserve System April 2012.

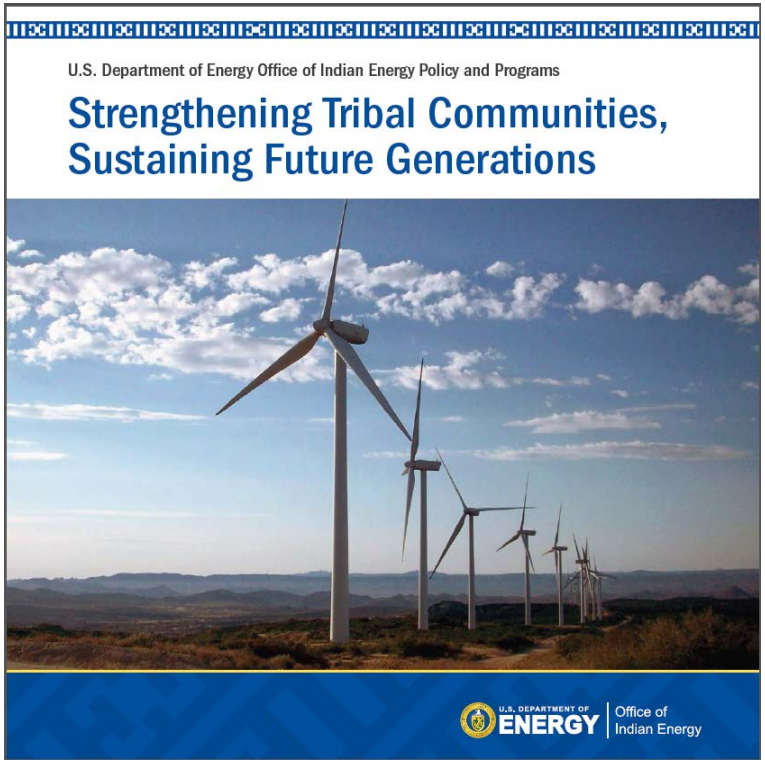
Barriers to Energy Development

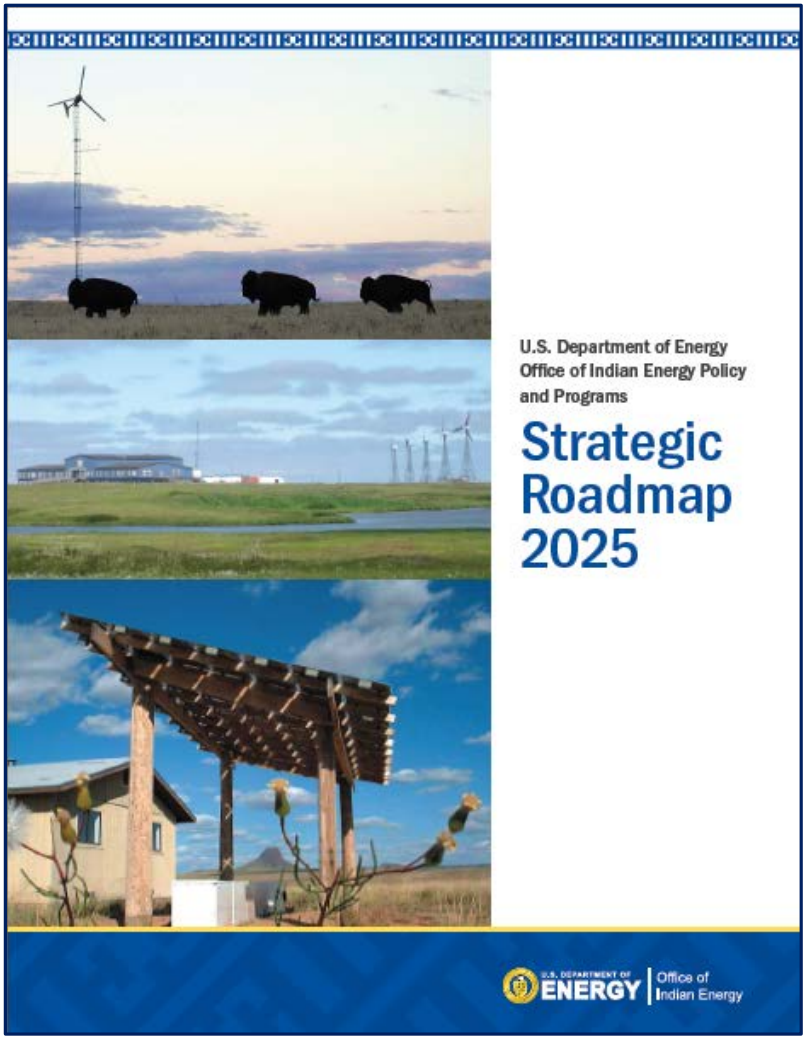
Most Significant Barriers (Ranked Order)*
Financing / Funding
Infrastructure
Tribal Leadership / Staff
Customer
Partnerships
Community vision & Stakeholder buy-in & Cultural acceptance
Depends on Regulation, Incentives, Energy Market
Permitting
Strategic Energy Planning
Federal policy & programs

* Jones, T., Necefer, L. (2016). Identifying Barriers and Pathways for Success for Renewable Energy Development on American Indian Lands (SAND2016-311J). Sandia National Laboratories (SNL-NM), Albuquerque, NM (United States).

Program Mission

To maximize the development and deployment of energy solutions for the benefit of American Indians and Alaska Natives.





Office Leadership

Carole Plowfield
Acting Director

As the Acting Director for the U.S. Department of Energy (DOE) Office of Indian Energy Policy and Programs, Carole Plowfield is committed to maximizing the development and deployment of energy solutions for the benefit of American Indians and Alaska Natives, and strengthening the Department's partnership with these communities. She will work to improve the conditions in remote Alaskan native communities where energy costs are often much higher than the national average, providing the technical assistance, resources, skills, and analytical tools needed to overcome these challenges and implement sustainable energy strategies.

Michael L. Rodrigue
Chief Operating Officer

Michael L. Rodrigue coordinates and executes the administrative operations that support the mission of the Office of Indian Energy, including acquisitions, human capital, facilities, and financial management.

Deployment Program Staff

Lizana Pierce
Senior Engineer, Project Officer and Deployment Supervisor, Colorado

Lizana Pierce duty stationed in Colorado and serves as the principle engineering expert for the Director and Deputy Director on deployment programs. Mrs. Pierce is responsible for implementing the Office's Deployment Programs: Technical Assistance, Financial Assistance; and Education and Capacity Building. She has more than 20 years of energy technology, project development, and management experience assisting tribes in developing their energy resources and building their energy visions.

Givey Kochanowski
Program Manager, Alaska

Givey Kochanowski is the Alaska Program Manager for the Office of Indian Energy. Stationed in Anchorage, Alaska, he is responsible for the support and delivery of DOE technical assistance, capacity building, energy education, and outreach to all Alaskan tribal entities. Mr. Kochanowski is a champion for tribal needs through the various organizational boards on which he serves, ranging from the Alaska Federal Executive Association to the National Defense Transportation Association's North Pole Chapter.

Deployment Program Staff

Michael Kuca
General Engineer, Alaska
Michael Kuca is an engineer for the Office of Indian Energy, duty-stationed in Anchorage, Alaska, and provides technical assistance to American Indian tribes and Alaska Native villages for energy development, capacity building, energy cost reduction, and electrification of Indian lands and homes. His experience includes engineering feasibility studies, power plant construction, commissioning, and operations. Mr. Kuca also facilitates strategic energy planning to improve energy outcomes in Indian Country.

Tweedie Doe
Project Officer, Colorado
As a project officer, Tweedie Doe serves as Project Officer, overseeing, reviewing, analyzing, and evaluating a diverse grants portfolio including cooperative agreements, awards, and projects involving: energy development, efficiency, and use; reducing and stabilizing energy costs; development of Indian tribal energy and economic infrastructure relating to natural resource development; and electrification. Ms. Doe also serves as a financial assistance program resource to tribes.

Deployment Program

Education and Capacity Building

Thorough regional workshops, webinars, and college student internships, we support tribal efforts to build internal capacity to develop energy projects and navigate energy markets.

Technical Assistance

We provide federally recognized Indian tribes, including Alaska Native villages, regional and village corporations, tribal energy resource development organizations, and other tribal groups and communities, with technical assistance to advance tribal energy and infrastructure projects.

Access to Capital

We facilitate access to capital for energy project development through financial assistance, including competitively awarded grants, authorized loan program and innovative financing strategies.

Access to Capital

- **Financial Assistance**

  Focused on community and facility hardware deployment

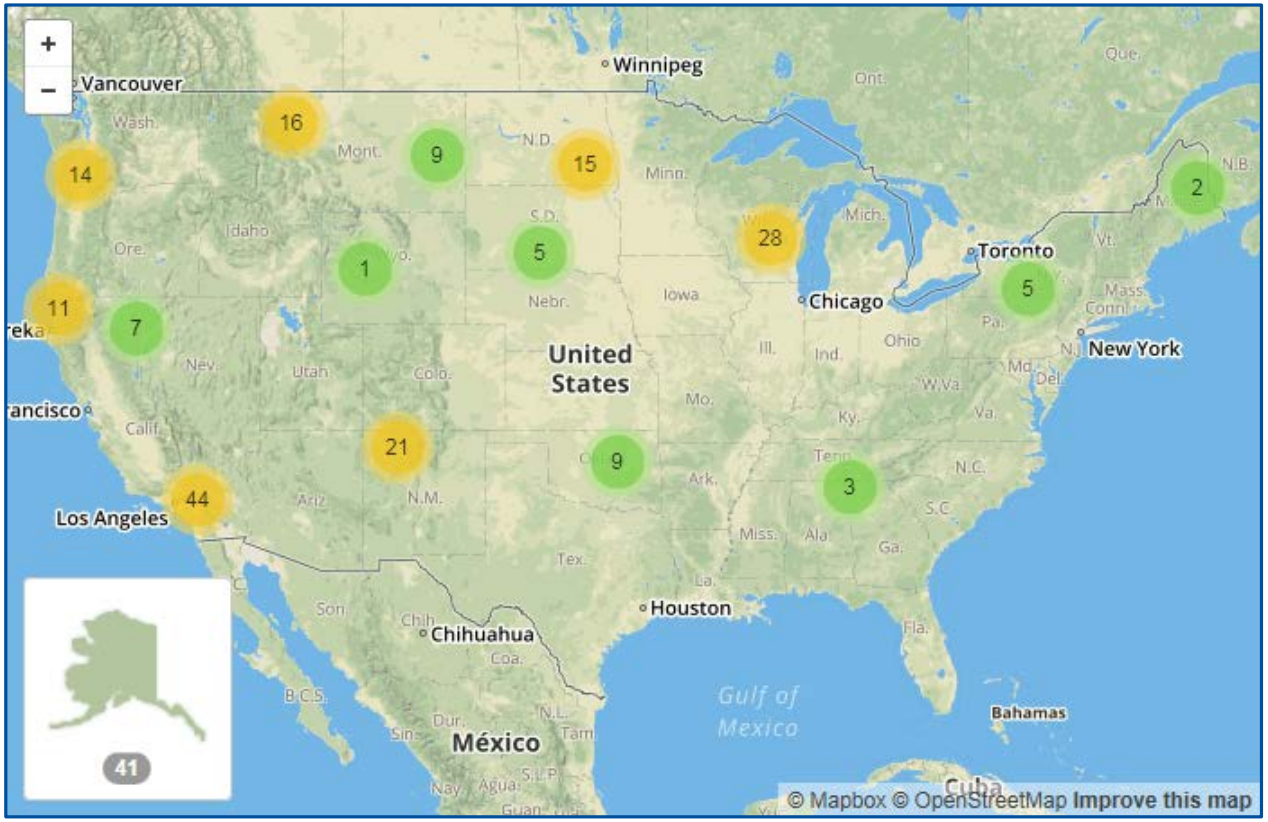
- **Innovative Financing Strategies**

  Predominately implemented through grants, capacity building, recent roundtables, and research

- **Loan Guarantee Program**

  Authorized in 2005. Funds appropriated FY2017

Invested nearly $66.5 million in more than 200 tribal energy projects *(2002-2016)*

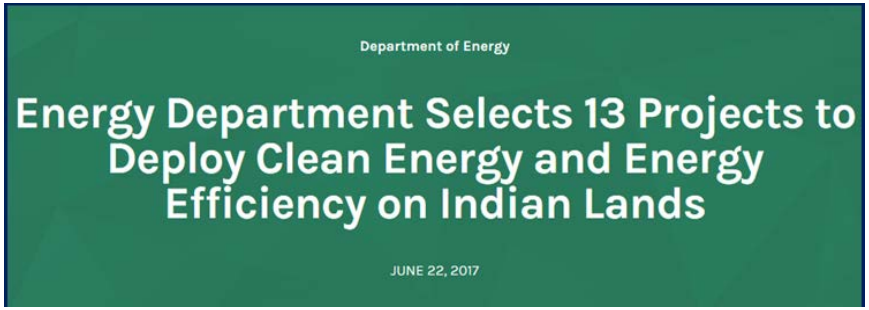


Leveraged by nearly $60 million in tribal cost share

32 New Awards Announced in 2017

Valued at over $23 million

(DOE $10.5M; Cost share $137M)

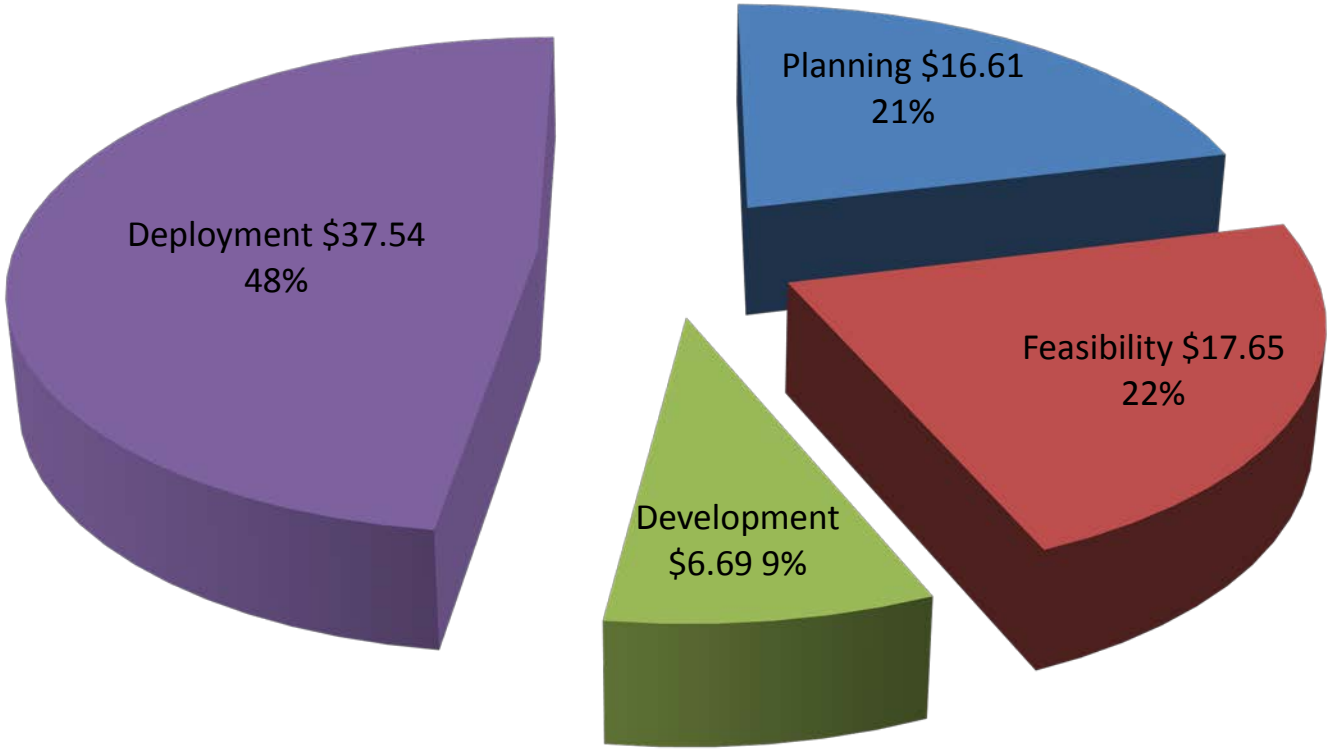


These projects will install 6.3 megawatts of new energy generation for more than 3,000 tribal buildings and homes across the nation, and save these communities more than $2 million each year.

These Native American communities will conduct energy options analyses; establish baseline energy use and efficiency options; develop energy organizations; conduct resiliency planning; establish policy, regulations, and codes; and obtain skills and training to promote energy efficiency and development.

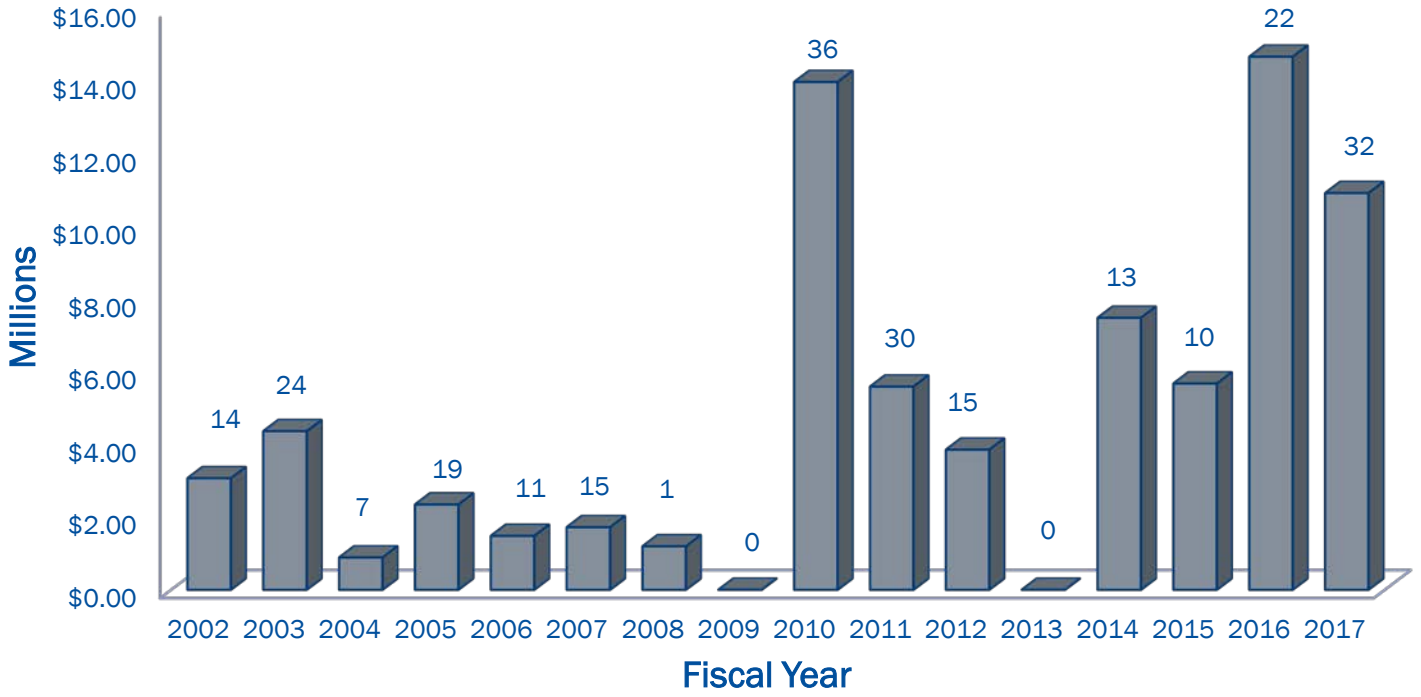
DOE Investment by Award Type (Millions)

More than $78 million invested in 250 tribal energy projects *(2002-2017)*



Projects valued at more than $150 million ($74.5 in cost share)

Financial Assistance Funding History



Discretionary grant funding of $78.5 million
Average of ~$5.0 million per year

Financial Assistance

Competitive Process (2002-2017)

- **22 Funding Opportunities Announcements issued**
- **Accepted a total of 826 applications** (valued at $547 million)
- **Funded 86% of all meritorious applications** (Total of 250 out of 291)
- **Funded ~30% of all applications received** (250 out of 826)
  DOE average is ~5 to 10%
- **Funded 170 different tribal entities** (30% of all 567 Indian tribes)

All Funds Awarded through a Competitive Process

Assisting Tribes Achieve Their Energy Vision

DOE's Office of Indian Energy funded 58 tribal energy projects valued at more than $95M (2010 -2017) (DOE $35.8M; Cost Share $60M)

- Electricity bills reduced for more than 5,500 tribal government and community buildings and more than 50,000 tribal members
- Every $1 DOE investment results in more than $4.50 savings for those tribes
- Average price of electricity for the buildings affected reduced from $0.25/kWh to $0.09/kWh (U.S. average $0.12/kWh)
- Average annual savings of ~$12M and lifetime savings of a half a billion dollars.

Tonto Apache Tribe Solar photovoltaic systems installed on their government buildings (AZ)

Forest County Potawatomi Community(WI) 2-megawatt anaerobic digestion and biogas generation facility (May 2013)

POSITIONING TRIBES TO THRIVE

DOE-Funded Tribal Energy Projects, 2010–2016

Between 2010 and 2016, the U.S. Department of Energy (DOE) Office of Indian Energy co-funded the deployment of **43** tribal energy projects valued at more than **$70 million**.

DOE invested nearly **$25 million** in these renewable energy and energy efficiency projects.

The 1-megawatt solar photovoltaic system installed on the Soboba Band of Luiseño Indians Reservation in California was co-funded by a DOE grant.

Shared investments in tribal energy have yielded tangible results, including:

Approximately **18.5 megawatts**

of new tribal renewable energy generation capacity

Annual electricity savings of

51 million kilowatt-hours—

enough to power

~4,700 U.S. homes

for one year

Lower electricity bills for more than

2,500 tribal buildings and more than

29,000 tribal members

Total cost savings of

$9 million–$11 million annually

and more than **$0.5 billion**

over the life of the projects

The equivalent of

~2,000 jobs

Annual greenhouse gas emissions reductions of

~73,000 tons—

the equivalent of taking

14,000 passenger vehicles

off the road for one year

Learn more about tribal energy project impacts and outcomes at **energy.gov/indianenergy/successes**

September 2016 · Front photo from Soboba Band · Printed on paper that contains recycled content.

Advancing Tribal Energy Development in Alaska

Chaninik Wind Group (AK)
Thermal heating using wind energy
(November 2012)

Yukon River Inter-Tribal Watershed Council (AK) installed energy efficiency measures for the Nunamiut people of Anaktuvuk Pass to reduce energy use by 34%

Alaska Native Tribal Health Consortium (AK) upgraded sanitation facilities in Selawik

2016-2017 Tribal Successes

Menominee Tribal Enterprise (WI) Ribbon cutting for biomass Combined heat and power system (April 2016)

Southern Ute Indian Tribe (CO) Construction completed on the 1.3 MW Oxford Solar Project (June 2017).

Rosebud Sioux Tribe (SD) installed a low-income residential system (August 2016)

2016-2017 Tribal Successes

Seneca Nation of Indians (NY) installation of 1.7 MW turbine (April 2017)

Picuris Pueblo (NM) completion of the 1 MW solar photovoltaic system (October 2017)

2016-2017 Tribal Successes

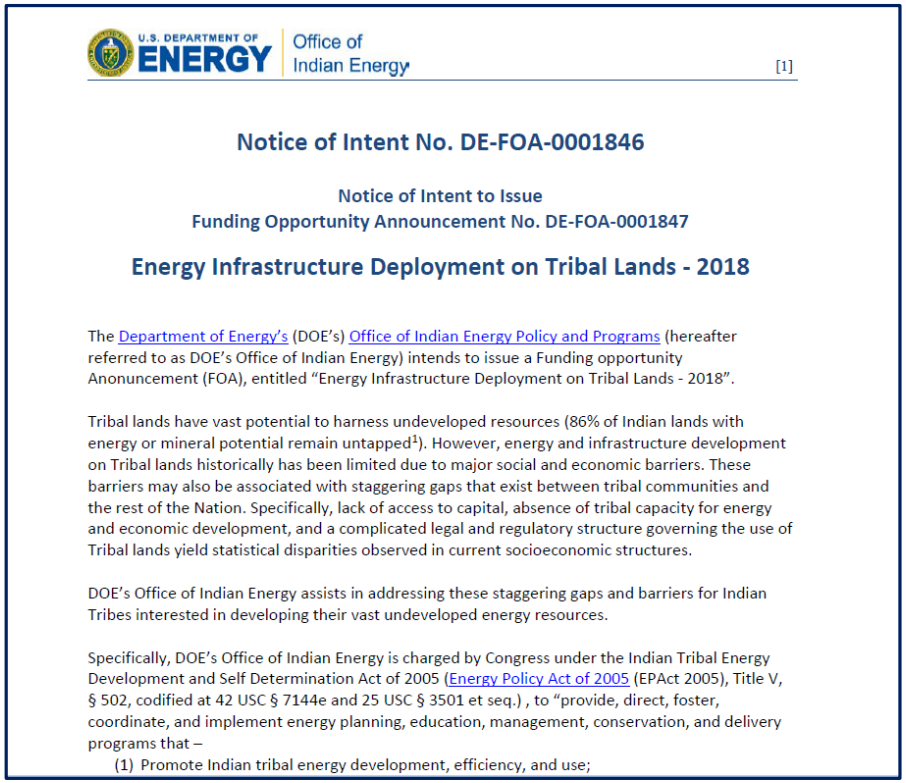
The **Bishop Paiute Tribe (CA)** Residential Solar Program with two grants from DOE will install 178 kW on 56 homes (April 2017)

Soboba Band of Luiseño Indians (CA)
1 MW solar installation (July 2016)

Notice of Intent (NOI) to Issue a Funding Opportunity

Energy Infrastructure Deployment on Tribal Lands - 2018

Through the planned FOA, the Office of Indian Energy intends to solicit applications from Indian tribes (including Alaska Native Regional Corporations and Village Corporations) and Tribal Energy Resource Development Organizations to promote Indian tribal energy development, efficiency, and use.



U.S. DEPARTMENT OF ENERGY | Office of Indian Energy [1]

Notice of Intent No. DE-FOA-0001846

Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0001847

Energy Infrastructure Deployment on Tribal Lands - 2018

The Department of Energy's (DOE's) Office of Indian Energy Policy and Programs (hereafter referred to as DOE's Office of Indian Energy) intends to issue a Funding opportunity Anonuncement (FOA), entitled "Energy Infrastructure Deployment on Tribal Lands - 2018".

Tribal lands have vast potential to harness undeveloped resources (86% of Indian lands with energy or mineral potential remain untapped[1]). However, energy and infrastructure development on Tribal lands historically has been limited due to major social and economic barriers. These barriers may also be associated with staggering gaps that exist between tribal communities and the rest of the Nation. Specifically, lack of access to capital, absence of tribal capacity for energy and economic development, and a complicated legal and regulatory structure governing the use of Tribal lands yield statistical disparities observed in current socioeconomic structures.

DOE's Office of Indian Energy assists in addressing these staggering gaps and barriers for Indian Tribes interested in developing their vast undeveloped energy resources.

Specifically, DOE's Office of Indian Energy is charged by Congress under the Indian Tribal Energy Development and Self Determination Act of 2005 (Energy Policy Act of 2005 (EPAct 2005), Title V, § 502, codified at 42 USC § 7144e and 25 USC § 3501 et seq.) , to "provide, direct, foster, coordinate, and implement energy planning, education, management, conservation, and delivery programs that –

(1) Promote Indian tribal energy development, efficiency, and use;

This is a Notice of Intent (NOI) only. DOE may issue a FOA as described herein, may issue a FOA that is significantly different than the FOA described herein, or DOE may not issue a FOA at all.

Notice of Intent (NOI) to Issue a Funding Opportunity

Energy Infrastructure Deployment on Tribal Lands - 2018

It is anticipated that the respective Areas of Interest may include:

1) **Energy Efficiency Measures and/or Energy Generating System(s) for Tribal Building(s) (Area of Interest 1)**
   a. **Deep Energy Retrofits (Area of Interest 1.a.)**
   b. **Energy Generating System(s) (Area of Interest 1.b.)**
   c. **Energy Efficiency Measure(s) and Energy Generating System(s) (Area of Interest 1.c.)**

   or,

2) **Community-Scale Energy Generating System(s) Deployment (Area of Interest 2);**

   or,

3) **Energy System(s) for Autonomous Operation (Area of Interest 3)**
   a. **Powering Essential Tribal Loads (Area of Interest 3.a.)**
   b. **Tribal Community Resilience (Area of Interest 3.b.)**

Notice of Intent (NOI) to Issue a Funding Opportunity

Energy Infrastructure Deployment on Tribal Lands - 2018

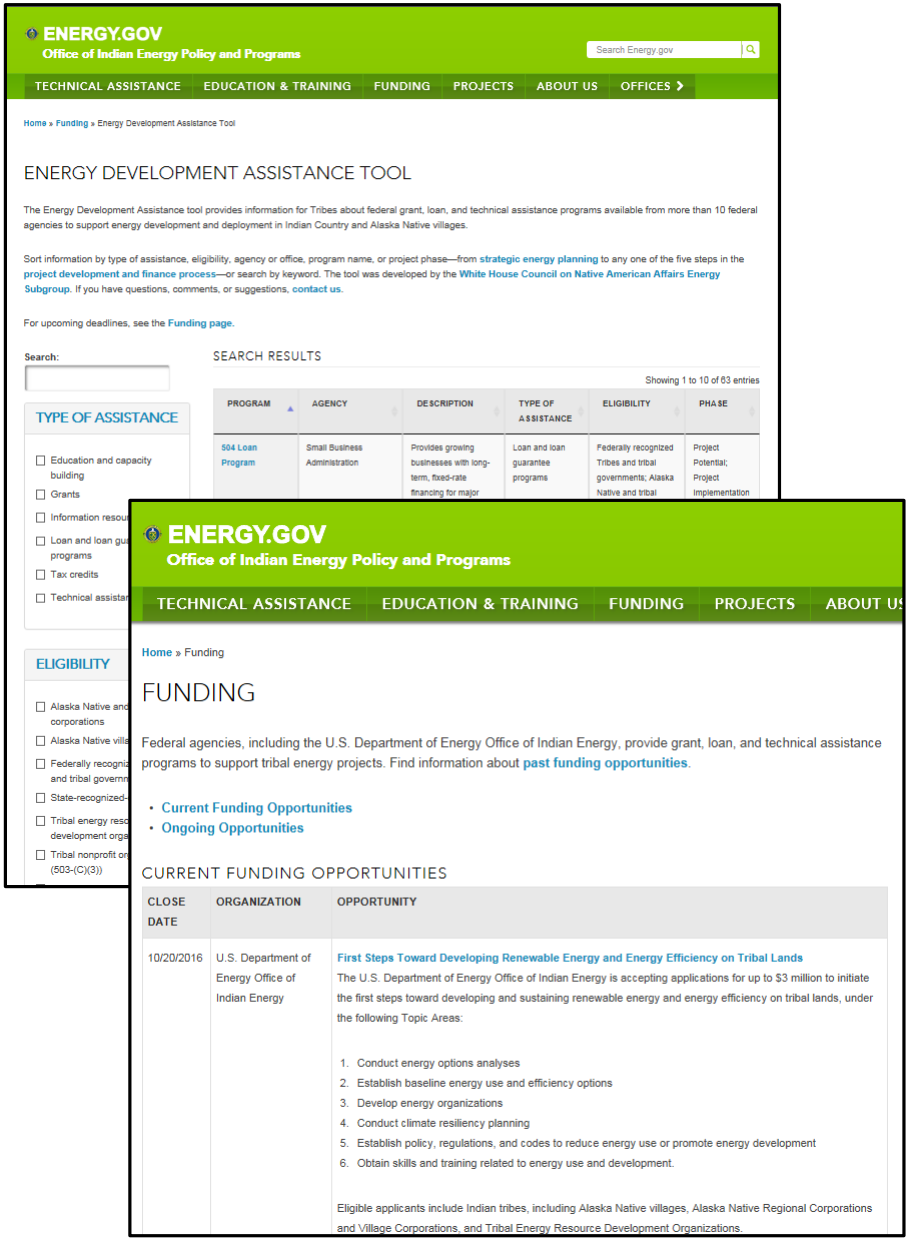
- DOE envisions awarding multiple financial assistance awards in the form of grants. Under the planned FOA and as required by statute, a 50% cost share of the total project costs is required and must come from non-federal sources, unless otherwise allowed by law.
- Under the planned FOA, DOE anticipates making awards that range from $50,000 to $500,000 or from $250,000 to $1 million, depending on the Area of Interest.
- DOE's Office of Indian Energy plans to issue the FOA on or about December 2017 or January 2018. To be notified, subscribe to receive email updates from the Office of Indian Energy.
- See the Notice of Intent for additional information.

Funding Resources

- **Energy Development Assistance Tool**
  Information for Tribes about federal grant, loan, and technical assistance programs available from more than 10 federal agencies to support energy development and deployment in Indian Country and Alaska Native villages

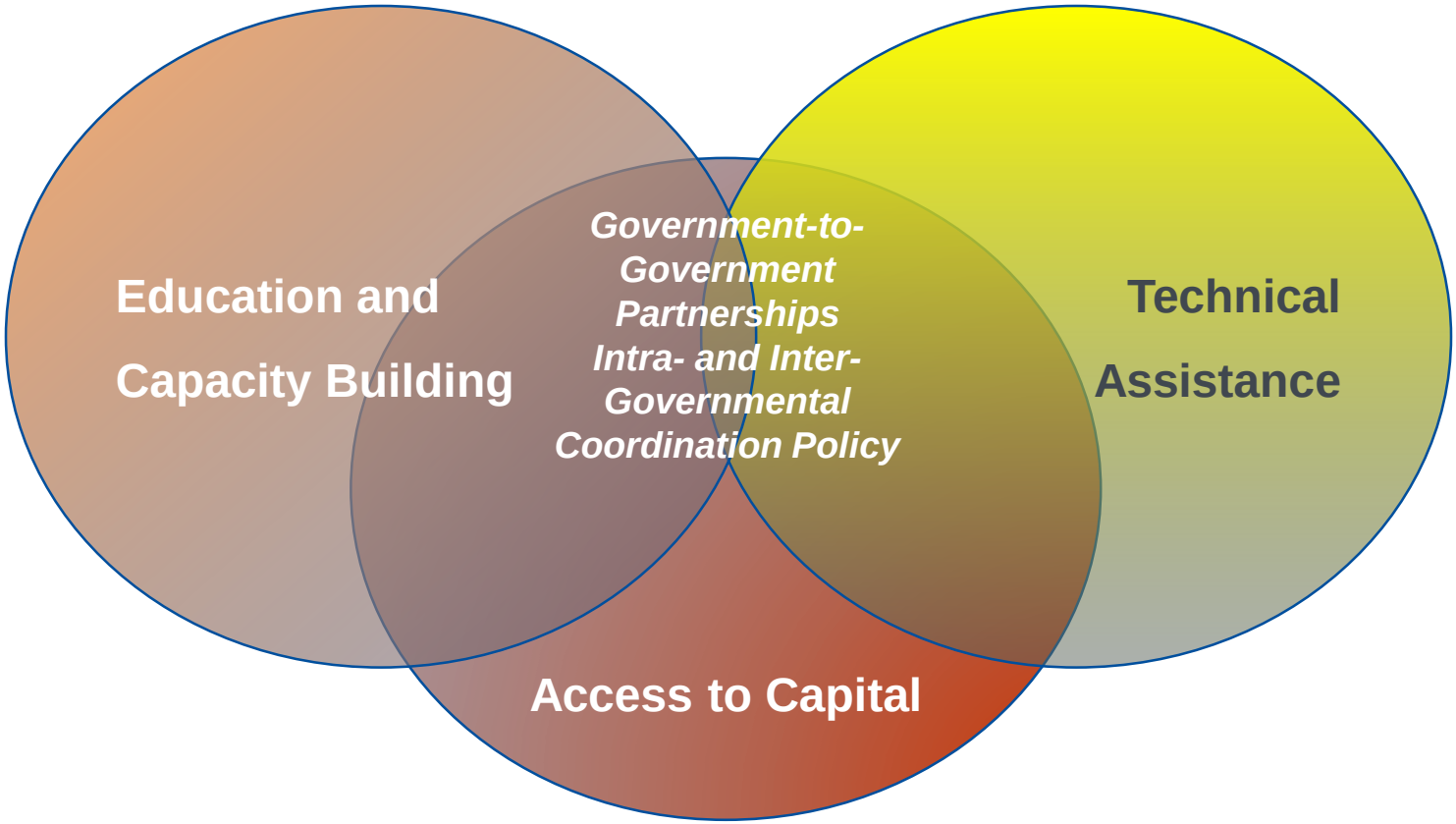
- **Current Funding Opportunities**
  List of open tribal energy related funding opportunities from federal agencies and other sources

- **Ongoing Opportunities**
  Links to ongoing technical assistance, grant, loan and loan guarantee programs



http://energy.gov/indianenergy

Deployment Program – Technical Assistance



Maximizing the Return through Government-to-Government Partnerships

Technical Assistance

- **On-request Technical Assistance**
  Technical assistance is to address a specific challenge or fulfill a need that is essential to a current project's successful implementation. The intended result of this technical assistance is a tangible product or specific deliverable designed to help move a project forward. Types include:
  - Energy Planning
  - Housing and Building Energy Efficiency
  - Project Development
  - Resilience
  - Village Power
  - Policy and Regulation

- **Strategic Technical Assistance Response Team (START) Program**
  Competitive technical assistance program to assists in the development of tribal renewable energy projects.

http://energy.gov/indianenergy

Utility Management Assistance

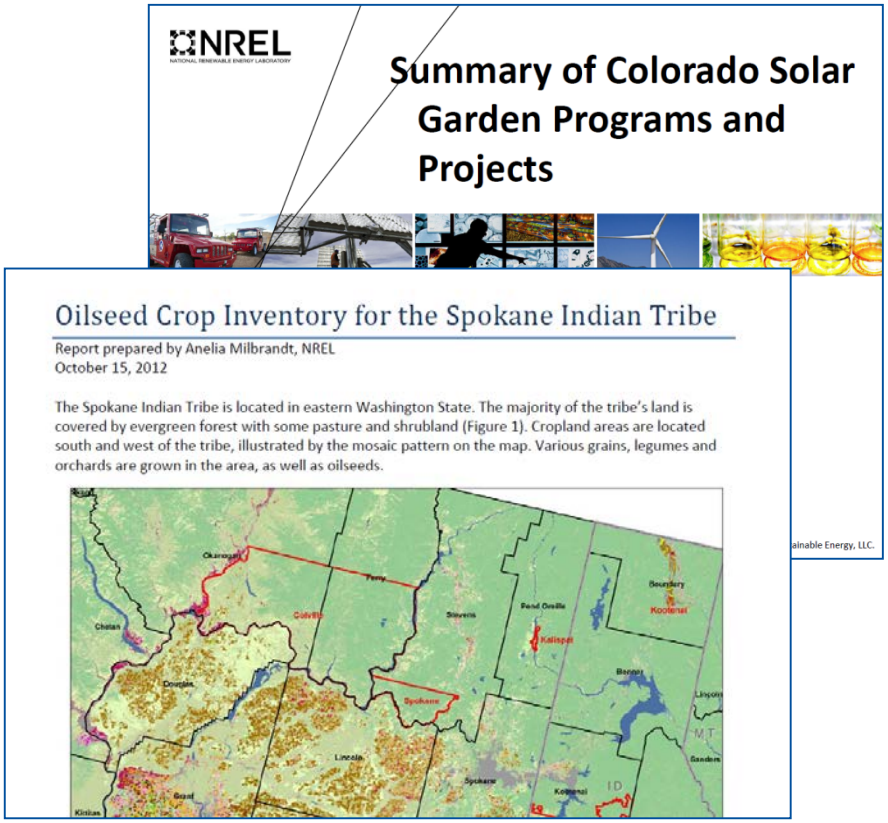
Technical Assistance

Project Development Support

Project development support consists of expert guidance and analysis that helps address specific barriers tribes face while developing a clean energy project.

Examples of project development technical assistance include:

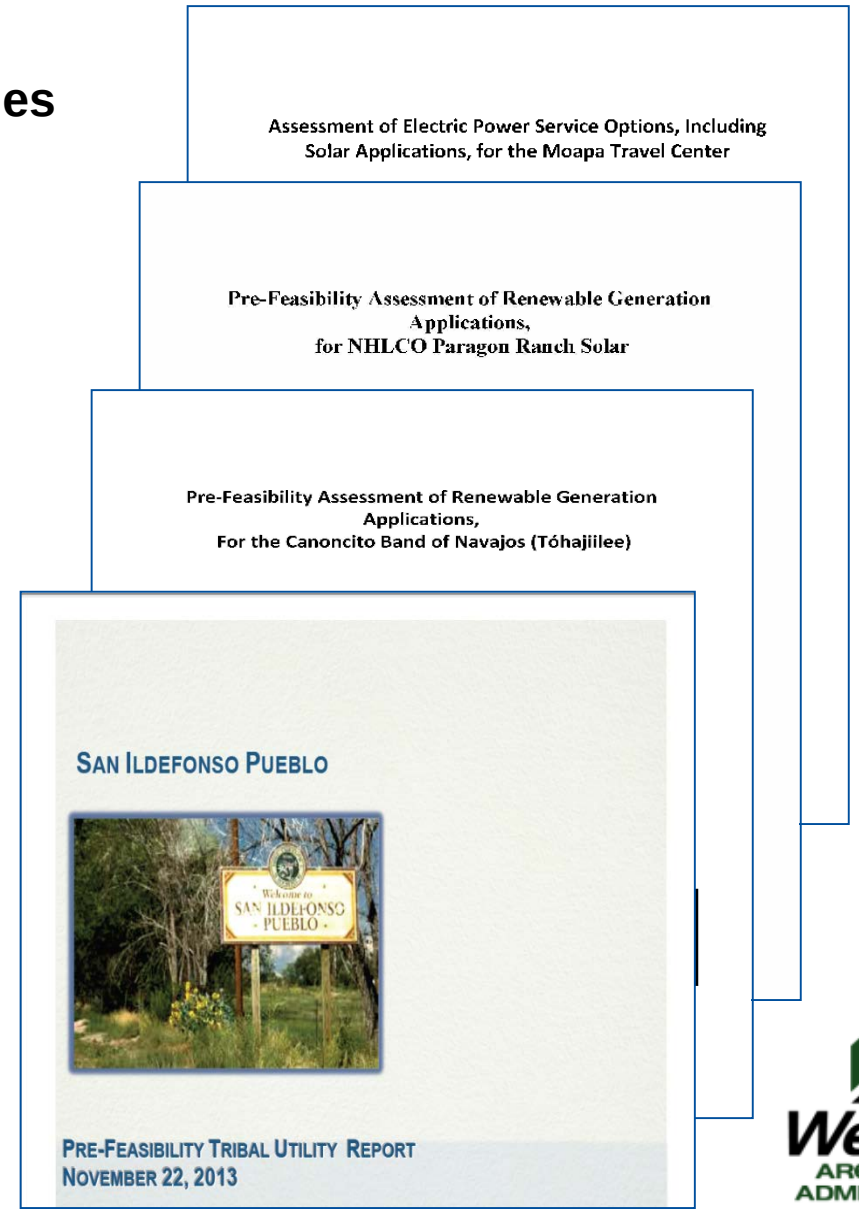
- Third-party independent reviews of transmission studies, financing structures, lease agreements, project reports, etc.
- Objective advice grounded in research and real-world experience on technologies
- Modeling and analysis (or assistance in using available modeling/analysis tools)
- Pre-feasibility transmission studies
- Interconnection agreement facilitation
- Economic evaluations
- System design reviews
- Other specific studies or analysis, upon request



Technical Assistance

Pre-feasibility Transmission Studies

1) Northern Cheyenne Tribe (November 2017)
2) Jicarilla (May 2017)
3) Mesa Grande (October 2017)
4) Hopi (April 2016)
5) Torres Martinez (October 2015)
6) Walker river (September 2015)
7) Saginaw Chippewa (November 2014)
8) Mesa Grande Band (October 2014)
9) Turtle Mountain Band (September 2014)
10) Oglala Sioux (June 2014)
11) Nez Perce Tribe (December 2013)
12) Ione Band (November 2013)
13) San Carlos Apache (May 2013)
14) Chemehuevi Tribe (May 2013)
15) Ute Mountain Ute Tribe (Feb 2011)
16) Hualapai Tribe (July 2010)
17) Navajo Hopi Land Commission (May 2010)
18) To'hajiilee (March 2010)
19) Utu Utu Gwaitu Paiute Tribe (Sept 2009)
20) Moapa Band of Paiutes (June 2009)



Western Area Power Administration

Technical Assistance Feedback

"*This was very helpful! Now we have to figure out what we want to do. The study was very detailed. We appreciate the work by WAPA*."

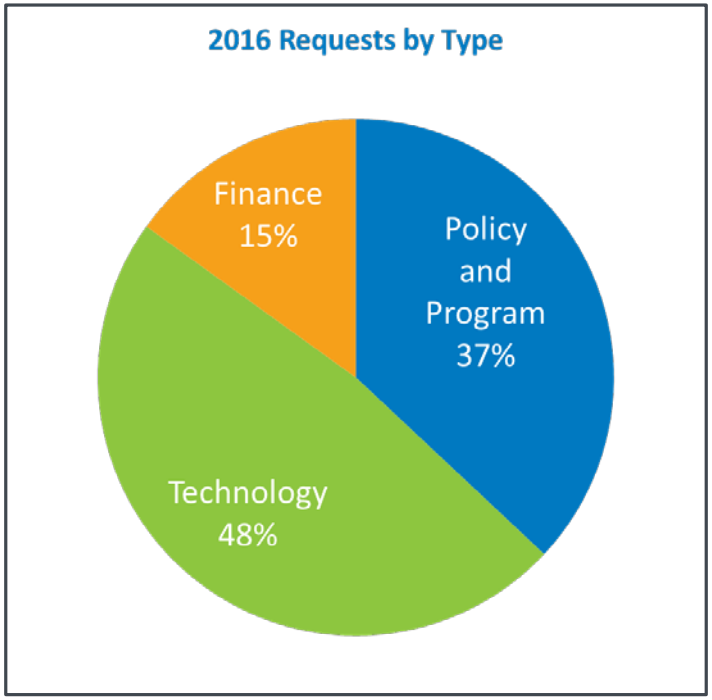
"*Electricity is very expensive here. Our goal is affordability and the PCE assistance helped us move toward that goal*."

"*The workshop was very good. We knew we had energy resources but not how many! This also helped us understand how to better plan for our future energy needs.*"

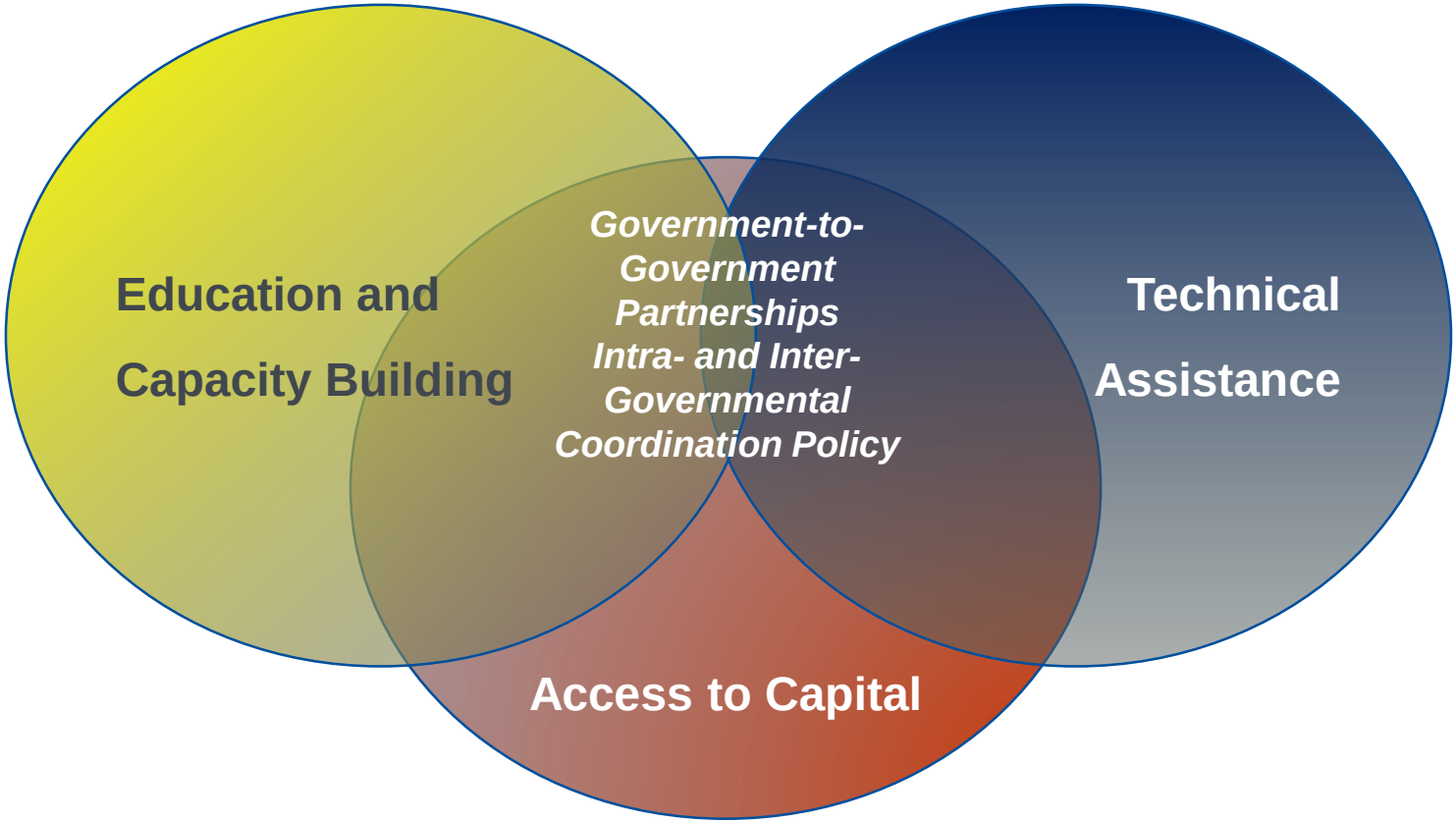
"*This was perfect assistance. NREL and AEA helped us find the problems and correct them. Thank you for your help.*"

"*The WAPA market analysis was very useful*."

"*This was so good for us! We are saving more money now so we can buy more gas to go hunting and fishing."*



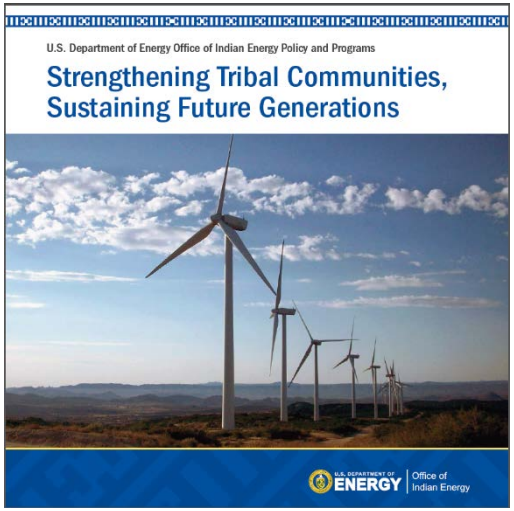
Deployment Program – Education and Capacity Building

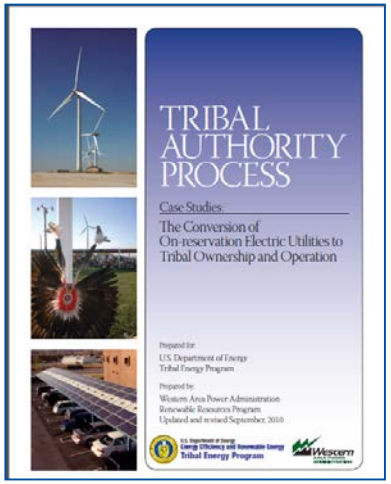


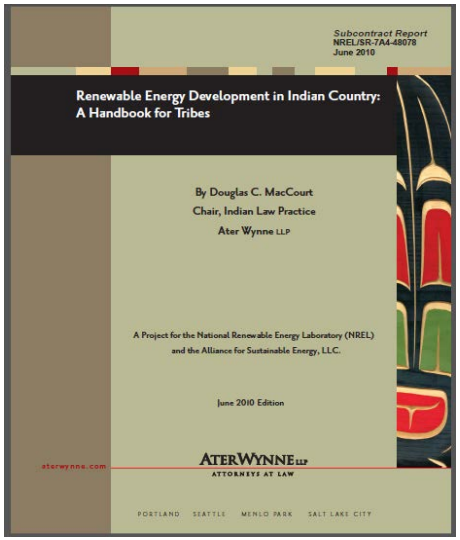
Maximizing the Return through Government-to-Government Partnerships

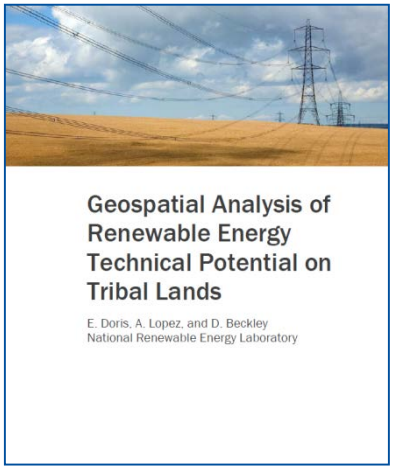
Resources

- **Information Resources**
  - **Energy Resource Library**
    Provides links to helpful resources for tribes on energy project development and financing on tribal lands. The library includes links to topically relevant publications, websites, videos, and more.
  - **Curriculum Foundational and Advanced Courses**
    Educational webinars on strategic energy planning, project development, resources technologies, and advance concepts such as business structures and financing
- **Workshops & Webinars**
  - **Monthly Webinars**
    Technical assistance is to address a specific challenge or fulfill a need that is essential to a current project's successful implementation. The intended result of this technical
  - **Periodic Workshops**
    Workshop on specific topics









http://energy.gov/indianenergy

Monthly Webinars

Expanding Tribal Energy Development through Partnerships Webinar Series (2017)

The Office of Indian Energy and the Western Area Power Administration are pleased to co-sponsor the 2017 Expanding Tribal Energy Development through Partnerships webinar series.

Part of DOE's coordinated efforts to support fiscally responsible energy business and economic development decision making and information sharing among tribes, the webinars will provide attendees with information on tools and resources available to develop and implement tribal energy plans, programs, and projects; tribal energy development case studies; and business strategies tribes can use to expand their energy options and develop sustainable local economies.

Total of 2,229 registered and 1,311 attended the thirteen (13) webinars conducted in FY 2016

Student Summer Internships

Program Highlights (2002-2017)

- 38 undergraduate and graduate interns have participated in the internship program
- 21 different tribal affiliations have been represented
- 19 different student majors have been represented
- 24% of interns were converted to year-round status
- 16% of interns were hired as full-time employees or Sandia contractors
- 63% of interns were female students hired based on merit and competitive selection process.

Summer Interns on the Navajo Reservation (2003)

Summer Interns on a windy day (2004)

Dr. Tommy Jones PhD and Dr. Len Necefer PhD previously interns. Now supporting the Deployment Program as contractors.

Assisting Tribes Achieve Their Energy Vision

Rosebud Sioux's (SD) Little Soldier Turbine
First 750 kW Turbine on Tribal Lands in the Contiguous U.S.

Solar arrays on **Navajo** home (AZ)

PV System (6 kW) **at SIPI's** (NM) Science and Technology Building

Solar Installations at **Pueblo of Laguna's** Majors Ranch (NM)

Jicarilla Apache Reservation PV array on Dulce High School (NM)

Questions?

Lizana Pierce, Program Manager
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To receive periodic email information
"Get Our Email Updates" at
http://energy.gov/indianenergy