#### **DOE OFFICE OF INDIAN ENERGY**

## **DOE Indian Energy Program Overview**

Lizana Pierce, Senior Engineer, Project Officer and Deployment Supervisor





**November 18, 2019** 

## **Department of Energy**

#### **Mission**

Ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.

- Energy
- Science and Innovation
- Nuclear Safety and Security
- Management and Operational Excellence









## **Department of Energy**

#### **Program Offices**

- Cybersecurity, Energy Security, and Emergency Response
- Advanced Research Projects Agency Energy
- Energy Efficiency and Renewable Energy
- Indian Energy Policy and Programs
- Environmental Management
- Office of Electricity
- Loan Program Office
- Office of Fossil Energy
- Legacy Management
- Nuclear Energy
- Office of Science







## Office of Indian Energy



Authorized under the Energy Policy Act (EPAct) of 2005 and charged by Congress to:

- (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."



## **Statutory Authority**



#### Indian Energy Education Planning and Management Assistance (25 USC § 3502(b))

- "(1) The Director shall establish programs to assist consenting Indian tribes in meeting energy education, research and development, planning, and management needs.
- "(2) In carrying out this subsection, the Director may provide grants, on a competitive basis, to an Indian tribe, intertribal organization or tribal energy resource development organization for use in carrying out—
  - "(A) energy, energy efficiency, and energy conservation programs;
  - "(B) studies and other activities supporting tribal acquisitions of energy supplies, services, and facilities, including the creation of tribal utilities to assist in securing electricity to promote electrification of homes and businesses on Indian land;
  - "(C) activities to increase the capacity of Indian tribes to manage energy development and energy efficiency programs;".
  - "(D) planning, construction, development, operation, maintenance, and improvement of tribal electrical generation, transmission, and distribution facilities located on Indian land; and
  - "(E) development, construction, and interconnection of electric power transmission facilities located on Indian land with other electric transmission facilities.



## **Statutory Authority**



## Department of Energy Loan Guarantee Program (25 USC § 3502(c))

#### Implemented through the DOE Loan Program Office

Secretary of Energy may provide loan guarantees for an amount equal to not more than 90 percent of the unpaid principal and interest due on any loan made to an Indian tribe for energy development.

The aggregate outstanding amount guaranteed by the Secretary of Energy at any time under this subsection shall not exceed \$2,000,000,000.



## **Program Mission**

To maximize the development and deployment of strategic energy solutions that benefit tribal communities by providing American Indians and Alaska Natives with the knowledge, skills, and resources needed to implement successful strategic energy solutions.

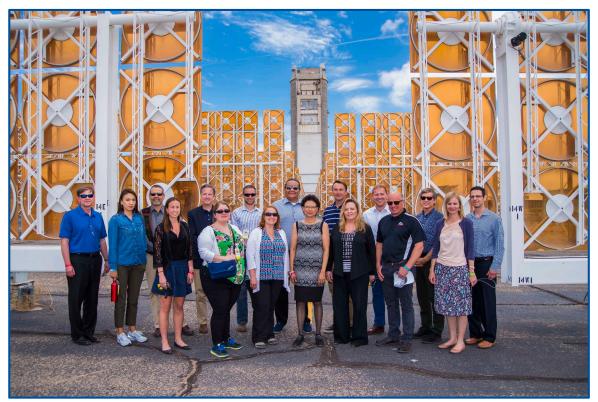


Clockwise from top right: **Seneca Nation's** (NY) 1.5 MW wind turbine, **Fort Yukon's** (AK) combined heat and powerhouse, **Coeur d'Alene Tribe's** (ID) Benewah Market energy efficiency project, **Sokaogon Chippewa Community** (WI) Housing Project, and **Chippewa Cree Tribe's** (MT) Residential Solar.



#### **ICEIWG**

The Indian Country Energy and Infrastructure Working Group (ICEIWG) works collaboratively with the DOE Office of Indian Energy to assist in surveys, analysis, and recommendations related to program and policy initiatives that fulfill DOE's statutory authorizations and requirements.



May 2018 ICEIWG meeting at Sandia National Laboratories



## **Deployment Program**



#### **Access to Capital**

We facilitate access to capital for energy project development through financial assistance (competitively awarded grants), Tribal Energy Loan Guarantee Program and innovative financing strategies.



#### **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.



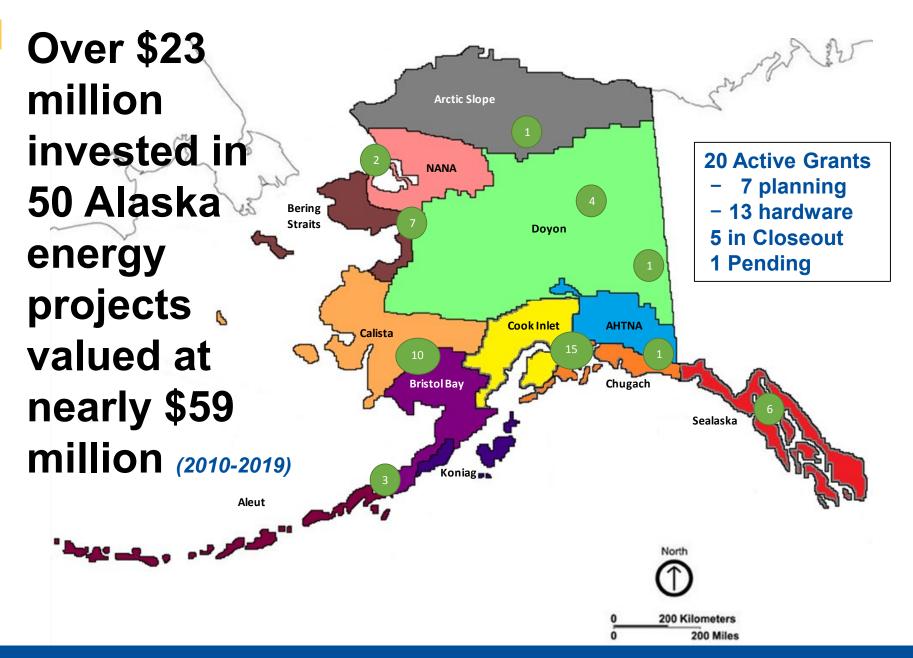
#### **Education and Capacity Building**

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

# Invested nearly \$85 million in more than 180 tribal energy projects valued at over \$180 million (2010-2019)









## **Tribal Energy Investment Transparency**

#### **Online Tribal Energy Projects Database**

- Project Map (Interactive Map)
- Project Database (Sortable)
- Project Successes
- Project Summaries
  - Annual Presentations
  - Final Reports







Office of Indian Energy Policy and Programs

Project Overview

Akwesasne Housing Authority

Community-Scale AHA Go Solar

Initiative and Net Zero Initiative

Tribe/Awardee

Hogansburg, NY

Type of Application

**DOE Grant Numbe** 

DE-EE0000038

Project Amounts DOE: \$1.500,000

Awardee: \$1,837,831

Total: \$3.337.831

**Project Status** 

End: June 2019

See project status

Project Period of Performance Start: July 2016

Project Title

Deployment

#### Summary

Initiative 1: Go Solar

Under the Community-Scale Akwesasne Housing Authority (ANA) on Solar Initiative, the St. Regis Mohwak AlA will install approximately 614.74 kilowatts (kW) of solar photovoltaic (PV) systems in Franklin County, New York, to serve 159 housing-related buildings on the Tribe's reservation. The ground-mounted PV systems will be installed on a 25-acre paned owned by the Tribe, and the generated electrical power will be utilized under National Grid's net metering programs to offset energy use and costs for AMA's buildings and tribal members' residences.

This project will serve 5% of the total tribal community's residential energy toad and 4% of the total electrical energy usage including governmental and commercial buildings. When considering all fuels used on the reservation, the project provides a 3.35% reduction of total energy load on the reservation.

Initiative 2: Net Zer

The Akwesasne Housing Authority will create three "netzero" buildings by installing energy efficiency measures and 161.5 kW of solar PV, reducing annual energy costs by about \$36,200. Two of the buildings are part of the Sunrise Green Development project, a tribal alfordable housing development that will provide on-site services to tribal veterans, elders, and their families; the third is an existing building that houses the Akwesane Boys & Girls Club.

#### Project Description

#### Background

Saint Regis Mohawk Tribe is a sovereign, federally acknowledged Indian tribe. The Tribal Council created the AHA by ordinance in July 1984 and has designated the AHA as its agency for purposes of administering the Tribe's Indian Housing Block Grant under the Native American Housing and Self-Determination Act of 1996. The St. Regis Mohawk Reservation is also known by its Mohawk name Akwessane, U.S. census data indicate that the total population is 2,919, and U.S. Post Office data confirm that there are 1,277 households on the reservation.

St. Regis Mohawk Tribe and AHA have worked together to develop a 10-Year Tribal Strategic Energ



#### PROJECT SUCCESSES

#### Can Solar Work in Alaska? Hughes Village Savs Yes.

The Native Village of Hughes just installed the bones of a 120-kilowatt solar photovoltaic system that will cut diesel use and costs.
FEBRUARY 6, 2019

#### The Confederated Tribes of the Umatilla Indian Reservation Trap the Sun to Offset Energy Costs

The Tribe turned a strip of its land in Oregon into nearly \$12,000 in annual energy cost savings.

AUGUST 27, 2018

#### Pala Band of Mission Indians Sees Savings from Solar-Powered Fire Station, Looks Ahead to Continued Energy Development

The Tribe has turned to renewable energy as a means of lowering energy costs and gaining independence from the grid.

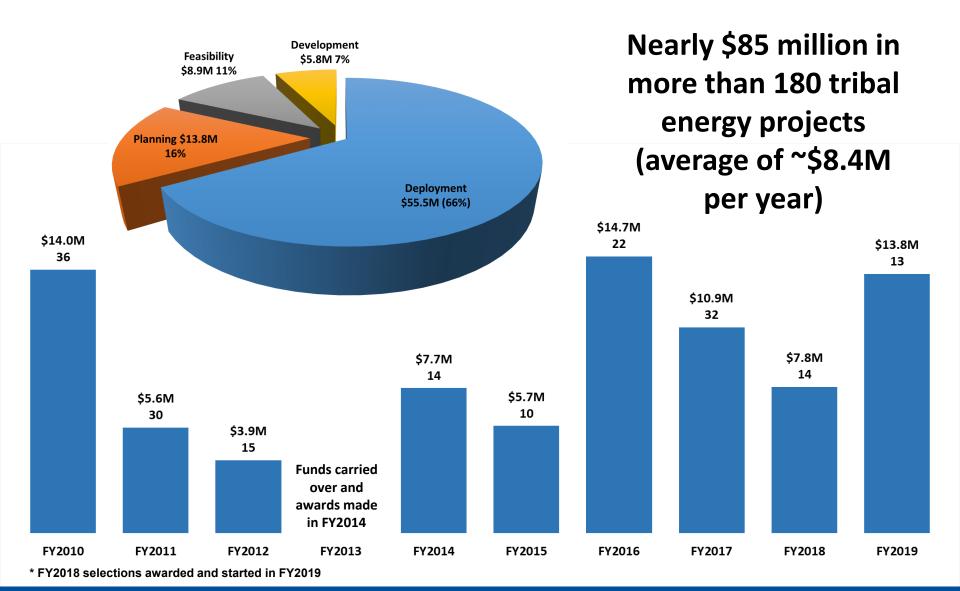
#### Community Solar to Meet 100% of Energy Costs for New Mexico Tribe

A DOE co-funded 1-megawatt community solar array will offset the cost of the entire energy load of Picuris Pueblo.

BANIARY 11 2018

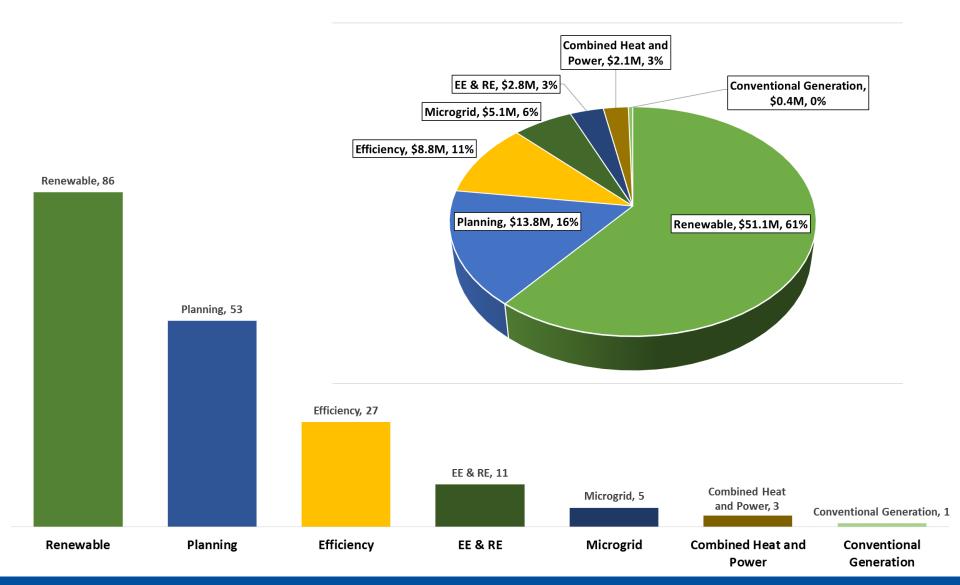


#### Financial Assistance Investments (All States, 2010-2019)





## **Investments by Technology** (2010-2019)





## **Tribal Energy Successes**



Clockwise from top right: Seneca Nation's 1.5 MW turbine (2017) (NY); Rosebud Sioux (SD) solar system on low-income home (2016); Chaninik Wind Group (AK) thermal stove install (2013); Southern Ute (CO) 1.3 MW Oxford Solar Project (2017).; Huslia Tribal Council's (AK) Biomass Project (2018); and Nunamiut people of Anaktuvuk Pass (AK) energy efficiency measures (2013).



## **Annual Program Review**

#### Unique Tribal Forum for Sharing and Learning

- Forum for Tribes to meet and learn from other each other and to share their successes and challenges
- Networking & learning opportunity
- Typically forty to fifty (40-50) Tribal energy projects presented
- Typically ~200 participants



Sheraton Denver West Hotel in Lakewood, Colorado

#### Week of November 18, 2019

For more, see <a href="https://www.energy.gov/indianenergy/projects/program-review">https://www.energy.gov/indianenergy/projects/program-review</a>



#### **Financial Assistance**

#### Competitive Process (2010-2019)

- 16 Funding Opportunity Announcements (FOAs) issued (Includes FOA's issued in 2009 for award in 2010)
- Accepted a total of 610 applications, valued at \$625 million
- Funded 95% of all meritorious applications (Total of 186 out of 196)
- Funded ~30% of all applications received (186 out of 610)

  DOE average is ~5 to 10%

#### All Funds Awarded through a Competitive Process

The Office of Indian Energy has primarily fulfilled the requirements under 42 U.S.C. § 7144e by providing cost shared federal funding to Indian tribes and tribal entities through competitive financial assistance awards.



## **2020 Funding Opportunity**

#### **ENERGY INFRASTRUCTURE DEPLOYMENT ON TRIBAL LANDS - 2020**

Funding Opportunity Announcement (FOA)

Number: DE-FOA-0002168

FOA Type: 0000

CFDA Number: 81.087

FOA Issue Date:	November 13, 2019							
Informational Webinar:	December 10, 2019 at 3:00 pm Eastern Time							
Submission Deadline for Applications:	February 6, 2020 at 5:00 pm Eastern Time							
Expected Date for DOE Selection Notifications:	Summer 2020							
Expected Timeframe for Award Negotiations	90 days after receipt of any requested							
100 100 100 100 100 100 100 100 100 100	supplemental information							

**Announced November 13, 2019 Applications due February 6, 2020** 

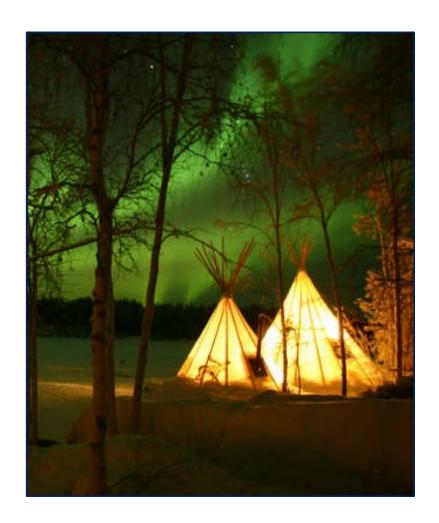


## **2020 Funding Opportunity**

This FOA is consistent with the principles of tribal sovereignty and self-determination, and with an all of-the-above energy strategy that recognizes the breadth of energy resources on Tribal Lands, and each Tribe's right to use them as they see fit. Projects sought under this FOA are **fuel and technology neutral**.

Specifically, DOE's Office of Indian Energy is soliciting applications from Indian Tribes, which include Alaska Native Regional Corporations and Village Corporations, Intertribal Organizations, and Tribal Energy Development Organizations.

Applications may also be submitted on behalf of Indian Tribe(s) by an authorized Tribal Organization, provided evidence of that authority is supplied as part of the application.



#### **2020 Funding Opportunity – Topic Areas**

#### **ENERGY INFRASTRUCTURE DEPLOYMENT ON TRIBAL LANDS - 2020**

Funding Opportunity Announcement (FOA)
Number: DE-FOA-0002168

FOA Type: 0000

CFDA Number: 81.087

- 1) Install energy generating system(s) and/or energy efficiency measure(s) for Tribal Building(s) (Topic Area 1); or,
- 2) Deploy community-scale energy generating system(s) or energy storage on Tribal Lands (Topic Area 2); or,
- 3) Install integrated energy system(s) for autonomous operation (independent of the traditional centralized electric power grid) to power a single or multiple essential tribal facilities during emergency situations or for tribal community resilience (Topic Area 3); or,
- 4) Deploy energy infrastructure or integrated energy system(s) to electrify Tribal Buildings (Topic Area 4).



## **2020 Funding Opportunity – Topic Areas**

#### Topic Area Requirements

The requirements below are not all inclusive and cannot exclusively be relied upon as they do not reflect all of the requirements for each Topic Area. Applicants <u>must</u> read the entire FOA to determine the complete requirements for each Topic Area. See a more detailed description of each Topic Area under Section I.B. and definitions in Appendix A.

Topic Area	Title	Building-Scale	Community-Scale	Grid-Connected	Not Grid-Connected	Options Analysis	Feasibility Study	Energy Audits/Assessments	Energy Generating	Energy Efficien cy	Energy Storage System(s)*	Integrated Energy Systems	Energy Infrastructure	Tribal Building(s)	Essential Tribal Facility(s)	100kW or 100kWh	Verification (12-months)	Commercially-Proven Warrantied**
1.a.	Energy Generating System(s)	Х		X		X	X		X					X			X	X
1.b.	Multiple Energy Efficiency Measures	Х		Х	Х	Х		Х		Х				Х			Х	X
1.c.	Energy Generating System(s) and Energy Efficiency Measure(s)	х		X		X	х	X	X	X				X			х	х
2.a.	Community-Scale Energy Generating System(s)		X	X		X	X		X							X	X	X
2.b.	Community Energy Storage		Х	Х		Х	Х				Х					Х	Х	X
3.a.	Powering Essential Tribal Facility(s)	Х		Х	Х	Х	Х				Х	Х			Х		Х	X
3.b.	Tribal Community Resilience		Х	х	Х	Х	х				Х	Х			Х		Х	X
4	Electrification of Tribal Buildings		Х		Х	Х	Х				Х	Х	Х	Х			Х	X

<sup>\*</sup> As storage is a component of integrated energy system(s), storage is marked for those Topic Areas under which integrated energy system(s) are eligible.

Commercially-proven warrantied applies to all proposed technology.



## 2020 Funding Opportunity – Key Information

- Approximately \$3.5 million to \$15 million in federal funds. The actual level of funding will depend on Congressional appropriations.
- DOE anticipates making approximately 5 to 15 awards under this FOA. DOE may issue awards in one, multiple, or none of the Topic Areas.
- DOE funding per individual award range from:
  - No less than \$50,000 to maximum of \$1,000,000 for Topic Area 1 and Topic Area 3.a.
  - No less than \$250,000 to a maximum of \$2,000,000 for Topic Area 2, Topic Area 3.b, and Topic Area 4
- DOE anticipates making awards with period of performances of approximately one (1) to two (2) years, but no longer than three (3) years including the mandatory 12 month verification period.



## **2020 Funding Opportunity – Questions**

# DOE Office of Indian Energy – 2020 Energy Infrastructure Deployment on Tribal Lands FOA

- Questions regarding the content of this FOA must be submitted to: <u>TribalGrants@hq.doe.gov</u> not later than three (3) business days prior to the application due date.
- Frequently asked questions for this FOA and the DOE application process may be accessed at <a href="https://eere-exchange.energy.gov/FAQ.aspx">https://eere-exchange.energy.gov/FAQ.aspx</a>.
- Please note that in order to view questions specific to this FOA you must first select this specific FOA Number and then "Frequently Asked Questions (FAQS)".
- DOE will attempt to respond to a question within three (3) business days, unless a similar question and answer has already been posted on EERE Exchange.

NOTE: DOE will <u>not</u> make eligibility determinations for potential Applicants <u>prior to</u> the date on which applications to this FOA must be submitted. The decision of whether to submit an application in response to this FOA lies <u>solely</u> with the Applicant.



## **2020 Funding Opportunity – Questions**

To Remain Fair and Equitable to All Potential Applicants

All Questions <u>must</u> be in Writing



Please do <u>not</u> ask us questions about the FOA or about the eligibility of a specific project as we are unable to provide guidance.



## 2020 Funding Opportunity – Webinar

# DOE Office of Indian Energy – 2020 Energy Infrastructure Deployment on Tribal Lands FOA Informational Webinar

The U.S. Department of Energy (DOE) Office of Indian Energy will conduct an informational webinar to provide information on the Funding Opportunity Announcement (FOA) to potential applicants. In addition to describing the FOA in detail, information will be provided on who is eligible to apply, what an application needs to include, cost share and other requirements, how to ask questions, and how applications will be selected for funding. If you are unable to attend the webinar, it will be recorded and posted for later viewing.

## Informational Webinar December 10, 2019 3:00 pm Eastern

Register at <a href="https://register.gotowebinar.com/register/8209149928731040013">https://register.gotowebinar.com/register/8209149928731040013</a>



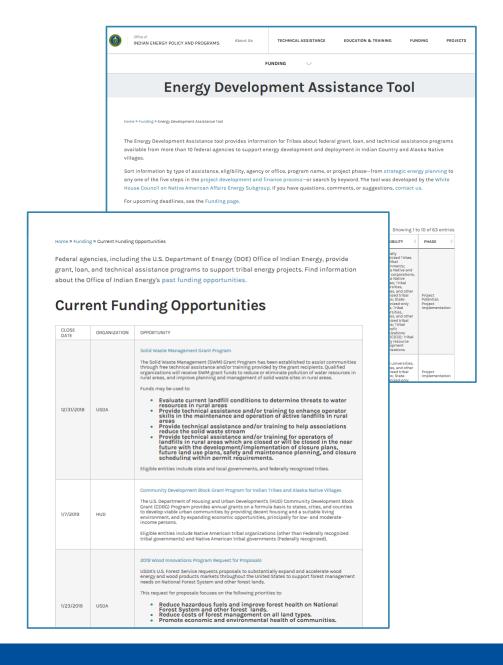
## **Funding Resources**

#### 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



#### **Technical Assistance**

The goal of 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.

http://energy.gov/indianenergy

"This is government money well spent. This assistance is helping our people afford to live in the village. Thank you!"

#### **Types of Technical Assistance**

**Technical Analysis** 







## **Technical Assistance Types**

#### **Technical Analysis**

Assistance in technical analysis generally involves analysis and modeling, expert review, transmission and/or utility assessment, market access, and energy efficiency reviews. This assistance is intended to address a specific project needs and result in a tangible product or deliverable to move a specific project forward.



#### **Financial Analysis**

Financial analysis assistance is intended for decision makers in the early stages of energy development, including economic or market analysis. This assistance may include modeling for payback periods, net present value (NPV), and levelized cost of energy (LCOE).



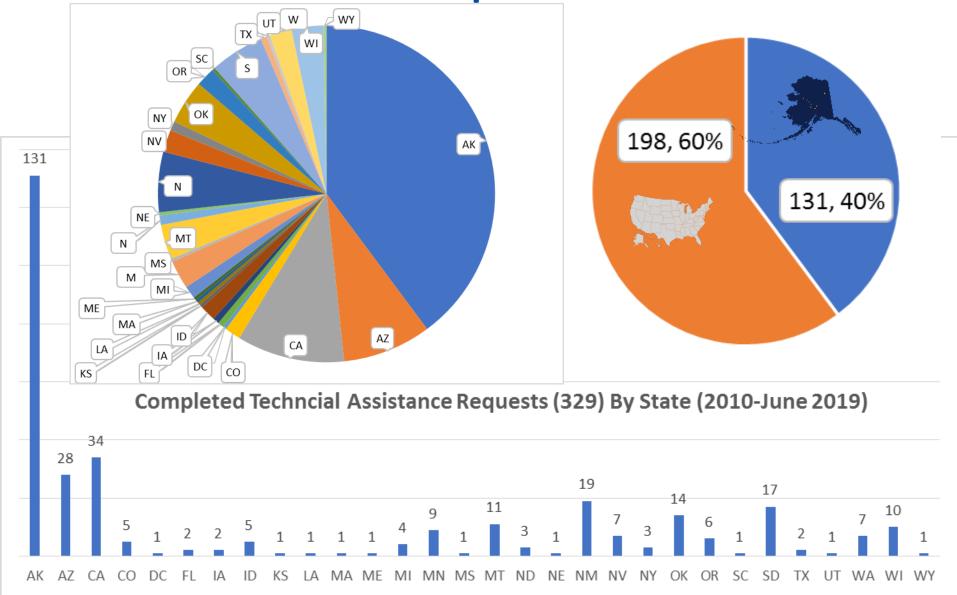
#### Strategic Energy Planning

Assistance in strategic planning may provide an initial resource assessment, energy options analyses, and development of a viable roadmap for development. This assistance typically includes an on-site workshop facilitated by tribal energy expert(s) to assist tribal leaders, elders and staff develop an energy plan.

#### **Strategic Energy Planning**



## Technical Assistance Requests (Completed, 2010-June 2019)



#### **Technical Assistance Feedback**

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

"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."

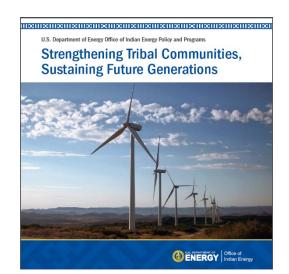
#### Resources

#### Information Resources

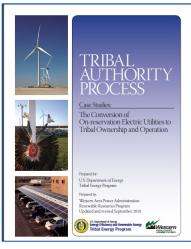
- Energy Resource Library
   Provides links to helpful resources for tribes on energy project development and financing on tribal lands. The library includes links to topically relevant publications, websites, videos, and more.
- Curriculum Foundational and Advanced Courses
   Educational webinars on strategic energy planning, project development, resources technologies, and advance concepts such as business structures and financing

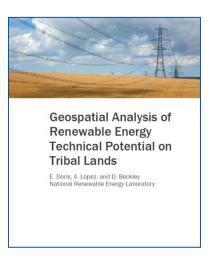
#### Workshops & Webinars

- Monthly Webinars
   Monthly webinars provide foundational information, resources and case studies
- Periodic Workshops
   Workshop on specific topics









http://energy.gov/indianenergy



#### Resources

#### Research

- Identifying Barriers and Pathways for Renewable Energy Development on American Indian Lands
- Solar Energy Prospecting in Remote Alaska (2016)
- Tribal Energy System
   Vulnerabilities to Climate
   Change and Extreme Weather
   (2015)
- Venetie, Alaska Energy Assessment (2013)
- Geospatial Analysis of Renewable Energy Technical Potential on Tribal Lands (2013)
- Financing Opportunities for Renewable Energy Development in Alaska (2013)

Posted on the Energy Resource Library



#### **Monthly Webinars**

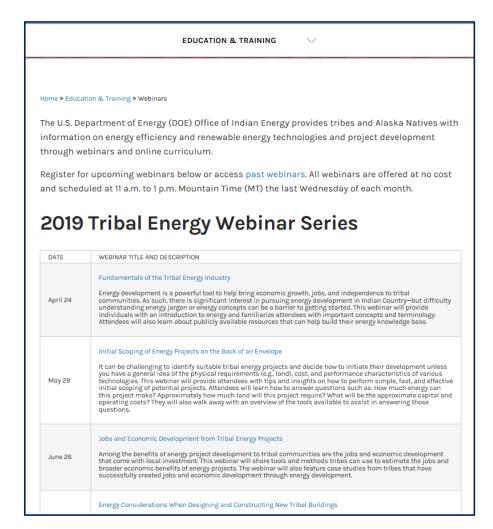


## **Monthly Webinars (2019 Series)**

# Sponsored by the Office of Indian Energy

The U.S. Department of Energy (DOE) Office of Indian Energy provides tribes and Alaska Natives with information on energy efficiency and energy technologies and project development through webinars and online curriculum.

Register for upcoming webinars below or access past webinars. All webinars are offered at no cost and scheduled at 11 a.m. to 1 p.m. Mountain Time (MT) the last Wednesday of each month.

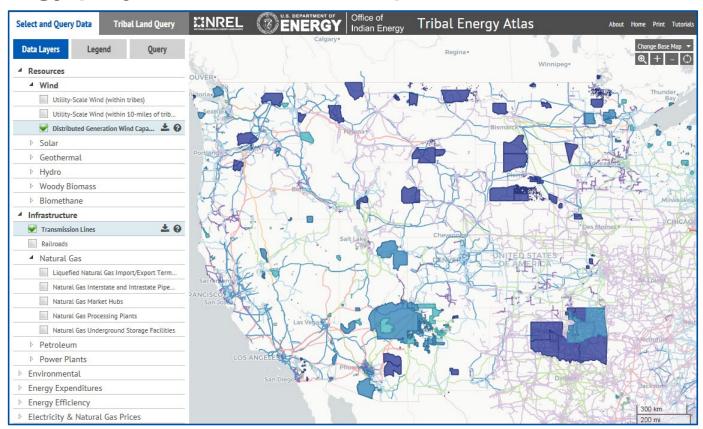


To register, see the Indian Energy website at <a href="https://www.energy.gov/indianenergy">www.energy.gov/indianenergy</a>



## **Tribal Energy Atlas**

First-of-its-kind interactive geospatial application that enables tribes to conduct their own analyses of installed energy projects and resource potential on tribal lands.



To access, see the Indian Energy website at www.energy.gov/indianenergy

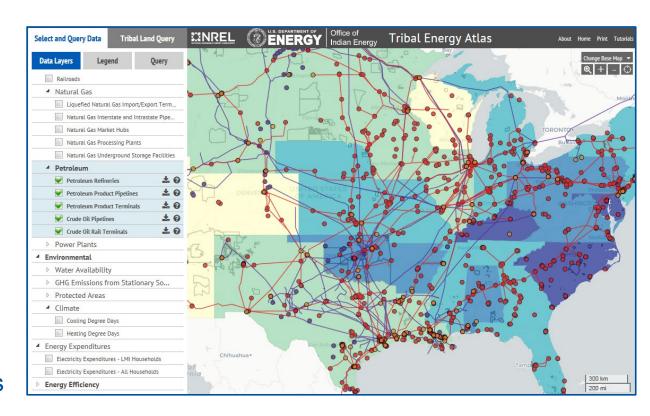


## **Tribal Energy Atlas**

# Includes the most current technical and economic tribal energy potential estimates

#### Includes:

- Energy resource data
- Infrastructure information
- Environmental information
- Energy efficiency
- Electricity and natural gas prices

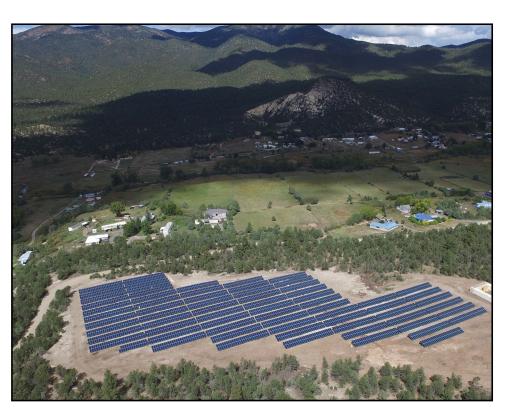


To access, see the Indian Energy website at <a href="https://www.energy.gov/indianenergy">www.energy.gov/indianenergy</a>



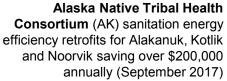
Seneca Nation of Indians (NY) installation of 1.5 MW turbine (April 2017)





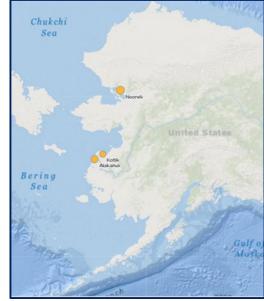
**Picuris Pueblo** (NM) completion of the 1 MW solar photovoltaic system (October 2017)







Alaska Native Tribal Health Consortium (AK) upgraded sanitation facilities in Selawik reducing expenses by 32%, or about \$217,227 annually (2016)





The **Pala Band of Mission Indians (CA)** installed a 91 kW solar system on their Fire Station which will save \$52,000 each year or \$1.3 million over the life of the system (May 2016)



The **Spokane Tribe's (WA)** Children of the Sun Solar Initiative (COSSI) will add 650 kilowatts (kW) of solar capacity to tribal buildings and save the community an estimated \$2.8 million over the next 30 years (June 2019)





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



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



The Gwichyaa Zhee Gwich'in Tribal Government (AK) installed a 18 kW solar system on the Tribal Office to save \$11,338 annually (January 2016)



Huslia Tribal Council's (AK) Biomass Project (2018)



Future Site of **Hughes** Solar PV Array (AK)



Oct 30th 2018 Hughes, AK North of the Arctic Circle (2018)





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)







**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 solar system on low-income home (August 2016)



**NANA Regional Corp.** Solar Project (Buckland, Deering, and Kotzebue, AK (2018)



Buckland, AK





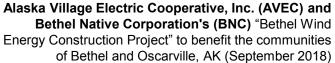
Council Of Athabascan Tribal Governments and Gwitchyaa Zhee Corporation (AK) Combined Heat and Powerhouse (below) and the Old Power Plant (top) (December 2017)

Oneida Nation (WI) installed 800 kilowatts of solar photovoltaic for 6 buildings (November 2017)











#### **Assisting Tribes Achieve Their Energy Vision**



Clockwise from top right: **Nunamiut people** of Anaktuvuk Pass (AK); **Assiniboine & Sioux Tribes** (MT); **Picuris Pueblo** (NM); **Tonto Apache Tribe** (AZ); **Chaninik Wind Group** (AK); **Assiniboine & Sioux Tribes** (MT); and in the center, **Pueblo of Laguna** (NM).



#### **Questions?**

# Lizana Pierce, Deployment Supervisor

U. S. Department of Energy Office of Indian Energy

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Email: <u>lizana.pierce@hq.doe.gov</u>

#### **Program Helpdesk**

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Email: indianenergy@hq.doe.gov



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