



U.S. DOE OFFICE OF INDIAN ENERGY

INDIAN ENERGY BEAT



News on Actions to Accelerate Energy Development in Indian Country

SPRING/SUMMER 2014

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Arizona Apache Tribe Set to Break Ground on New Solar Project



The San Carlos Apache Tribe is making use of its extensive solar resources to power tribal facilities, including this 10-kilowatt (kW) solar PV system, which generates energy to run the tribal radio tower. Photo from San Carlos Apache Tribe, NREL 29202

Recognizing that renewable energy projects can offer both economic and environmental benefits, many Tribes are developing energy plans that include renewable energy as a way to link these important benefits. The San Carlos Apache Tribe, located approximately 90 miles east of Phoenix, is dedicated to a vision that links these benefits, which also support the Tribe’s goal of energy self-sufficiency and commitment to a better environment.

This spring, the San Carlos Apache Tribe is planning to break ground on a new tribally financed and owned 1.1-megawatt (MW) solar photovoltaic (PV) array. The PV system will provide power to tribal enterprises and is one of several projects the Tribe has undertaken to reduce energy use and greenhouse gas emissions.

Although the Tribe knew the type and size of renewable technology it wanted to pursue based on a previous energy feasibility analysis completed through a U.S. Department of Energy (DOE) grant, tribal leaders and staff needed assistance with moving the project toward financing and construction. Through the DOE Office of Indian Energy’s Strategic Technical Assistance Response Team (START) Program, San Carlos competed for and received technical support that included, among other activities, third-party review of estimates and independent financial modeling of the project.

START experts from the DOE Office of Indian Energy and the National Renewable Energy Laboratory worked closely with the Tribe to help analyze and explore solar PV opportunities and identify system options, based on the current marketplace, to optimally support a commercially viable project and mitigate the risk to the Tribe or tribal enterprises. The START analysis

and recommendations were key components that supported the tribal leadership decision-making process to approve the proposal to finance the project with tribal funds.

“The unbiased expertise provided through START helps Tribes weigh all the available options and focus on those that best support their goals for energy security and self-sufficiency with clean energy,” said DOE Office of Indian Energy Director Tracey A. LeBeau. “We established START to invest resources in those tribal communities that have made the commitments necessary to build a cleaner, more secure energy future, but need targeted expertise to address their specific priorities. It was clear from the onset that San Carlos had that commitment.”

San Carlos will own the system and sell the power to the Apache Gold Convention Center & Resort through a power purchase agreement. The Tribe will also receive production

“The independent expertise provided through START helped the Tribe gain confidence in the technical viability of the project.”

—Ken Duncan Jr., Project Manager,
San Carlos Apache Telecommunications Utility, Inc.

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ARIZONA APACHE TRIBE (CONTINUED)

incentives from its current utility because the project is helping meet Arizona's renewable portfolio standard. Eventually, the Tribe will assume responsibility for operating and maintaining the equipment, creating jobs for tribal members.

"This solar project represents a major first step of the San Carlos Apache Tribe to become more energy independent through the development of renewable energy on the reservation," said tribal Councilman Wendsler Nosie Sr.

This project builds upon the Tribe's existing renewable energy projects, including a 10-kW solar PV system that powers the tribal radio station and twelve 3-kW solar PV systems used to power a small subdivision of 12 tribal homes.

"We are growing into solar," said Ken Duncan Jr., who oversees the project and serves as project manager for San Carlos Apache Telecommunications Utility, Inc. "The START assistance helped us build upon our current knowledge about renewable energy projects so that we can feel more confident about pursuing future projects, including commercial-scale solar."

Duncan presented what he's learned about working on renewable energy projects to tribal attendees at the DOE Office of Indian Energy's renewable energy development and finance workshop held in September 2013.

"Bringing project stakeholders in early in the development process and maintaining communication is key to a successful project," he explained. "Communicating project expectations helps ensure the project is consistent with the Tribe's vision and tribal values."

San Carlos Apache is one of 10 Tribes receiving technical assistance through the 2013 START Program. Learn more at www.energy.gov/indianenergy/resources/start-program.

ON THE HORIZON

APRIL 2

Tribal Renewable Energy Series Webinar: *Renewable Project Development and Finance Framework*
Sponsored by DOE and Western

APRIL 23

Tribal Renewable Energy Series Webinar: *Identifying Project Potential and Options*
Sponsored by DOE and Western

APRIL 29-30

Alaska Native Village Energy Development Workshop
Anchorage, Alaska

MAY 1-2

Renewable Energy Alaska Project (REAP) Business of Clean Energy in Alaska Conference
Anchorage, Alaska

MAY 11

Indian Gaming Tradeshow and Convention
San Diego, California

MAY 28

Tribal Renewable Energy Series Webinar: *Renewable Energy Project Refinement*
Sponsored by DOE and Western

JUNE 8-11

National Congress of American Indians (NCAI) 2014 Mid-Year Conference
Anchorage, Alaska

JUNE 25

Tribal Renewable Energy Series Webinar: *Net Metering*
Sponsored by DOE and Western

JULY 30

Tribal Renewable Energy Series Webinar: *Project Implementation and O&M*
Sponsored by DOE and Western

AUG. 11

OIGA Conference and Tradeshow
Oklahoma City, Oklahoma



MESSAGE FROM THE DIRECTOR TRACEY LEBEAU

Dear Friends,

After a long winter season, spring has arrived—bringing new energy and a fresh perspective.

I returned from my special assignment with the Western Area Power Administration's (Western's) Transmission Infrastructure

Program, and I am encouraged and recharged by signs of progress emerging from the communities that have sought our support in bringing their energy visions to fruition. The work and effort that go into tribal energy project development demand patience and perseverance, and it's gratifying when tangible results begin to surface. I'm grateful to Deputy Director Pilar Thomas for her strong and capable leadership while I was on assignment. And I'm pleased we have the resources to continue investing in the future of Indian Country.

In November, DOE selected nine tribal entities to receive more than \$7 million for clean energy project development and deployment. Highlighted during the 2013 White House Tribal Nations Conference, the projects include a 1.1-MW solar energy system on the San Carlos Apache Reservation in Arizona. (Read more about this project in this issue's cover story.)

While financial support is essential to advancing tribal energy goals, our Office places equal importance on building the knowledge and capacity needed to bring about the next generation of energy development in Indian Country. These efforts are highlighted throughout this issue in articles on the webinars and workshops we offer through our Education Program and the technical assistance we provide through our START Program.

None of this would be possible, of course, without the support of the committed tribal leaders who serve on the Indian Country Energy and Infrastructure Working Group (ICEIWG), which convened in January with record-setting attendance. (Read more about ICEIWG's January meeting on page 3.) It was a productive discussion fueled by the growing sense of purpose and direction that support from the top often brings.

President Obama signaled his support to identify and address issues in Indian Country caused by climate change, including issues related to infrastructure resiliency and energy security, when he appointed Tribal Leaders Karen Diver (Fond du Lac Band of Lake Superior Chippewa) and Reggie Joule (Mayor of the Northwest Arctic Borough in Alaska) to his Climate Change Task Force in November. (Read more about this in the Leading the Charge article on page 3.)

I encourage you to keep up with our latest news and activities by subscribing to our email list on our website at www.energy.gov/indianenergy.

—Tracey A. LeBeau

SHARING KNOWLEDGE

A recent DOE report entitled *U.S. Energy Sector Vulnerabilities to Climate Change and Extreme Weather* identified a number of issues that could compromise energy systems critical to the nation's economy, including:

- Increased risk of temporary partial or full power plant shutdowns
- Reduced power generation from hydroelectric power plants in some regions and seasons
- Risks to energy infrastructure located along the coasts
- Increasing risks of physical damage to power lines, transformers, and electricity distribution systems
- Increased risks of disruption and delay to fuel transport by rail and barge
- Higher air conditioning costs and risks of blackouts and brownouts in some regions.

In addition to identifying critical areas at risk from climate change and extreme weather, the report also identifies activities already underway to address these challenges. Read the full report at www.energy.gov/downloads/us-energy-sector-vulnerabilities-climate-change-and-extreme-weather.

LEADING THE CHARGE

Native Leaders Give Tribes a Voice on White House Climate Task Force

Change doesn't happen on its own. It's led by dedicated and passionate people who are committed to empowering Indian Country to energize future generations. Leading the Charge is a regular feature spotlighting the movers and shakers in tribal energy and energy infrastructure.

Chairwoman Karen Diver (Diver), Fond du Lac Band of Lake Superior Chippewa (MN), and Mayor Reggie Joule (Joule), Northwest Arctic Borough (AK), serve on the new White House State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience. Below are excerpts from our interviews with them. Read the full story online at www.energy.gov/indianenergy.



Chairwoman Karen Diver, Fond du Lac Band of Lake Superior Chippewa (MN)



Mayor Reggie Joule, Northwest Arctic Borough (AK)

Tell us about the insights and experience you bring to the table as members of the White House Climate Change Task Force.

Diver: The Fond du Lac Band went through unprecedented flooding in the summer of 2012. There was extensive damage to roads, infrastructure, and housing. In addition to dealing with an extraordinary weather event, the Band has been working to reduce its carbon footprint, as well as exploring energy security through biofuels. We have been promoting community gardening and farm-to-school food service. We also have been tireless advocates and regulators of clean water.

Joule: I am the mayor of a borough in northwest Alaska that is roughly 36,000 square miles, with a population of approximately 7,500 people. Almost all of the area is above the Arctic Circle. We've been living with climate change for a while, even before it became an issue. We've seen swings in temperature, and we've seen that impact migration patterns of our renewable resources, like the caribou. Another thing we're seeing is erosion in our coastal communities and changes in our rivers. There is no road that connects any two of our communities, so a lot of transport is by air or by river. Since we're not getting as much snow in winter, there is not enough runoff to allow barges to get through and bring fuel to those communities, which means that fuel needs to be flown in. We have communities that pay around \$11 a gallon for heating fuel, and almost the same for gasoline. So it becomes very,

very expensive for communities that don't have any economies to harvest the renewable resources that are there.

What are your top priorities and goals as members of the task force?

Diver: Overall, making sure that each set of recommendations coming from the committees of the task force represent what is important to Indian Country. I am particularly interested in natural resource issues. Tribal treaty rights make the connection to the land a little different than for other communities, and it will be important for tribal perspectives to be reflected in the recommendations.

Joule: First there's the issue of life and safety. That's a priority. There's also the issue of subsistence, and our fish and game resources, and whether there are things we can do to mitigate those concerns. And because we're strapped with such high costs of living in our area, looking at whether there are ways we can help with those costs and be more responsive.

What do you see are the greatest opportunities to strengthen Native communities' resilience against the impacts of climate change?

Diver: This information will be forthcoming as the work of the task force continues. Mayor Joule and I will be working with each of the federal agencies that are working on the task force. We will be hosting webinars and listening sessions to gain feedback on each of the four pillar areas:

1) Disaster Recovery and Resilience; 2) Built Systems: Transportation, Water, Energy and Facilities Infrastructure; 3) Natural Resources and Agriculture; and 4) Communities: Human Health and Community Development.

Joule: We've always been a resilient people. The mere fact that we've been able to live in our various environments and adapt and not just merely survive is a testament to our ability to be resilient. But these changes are coming so much quicker. One opportunity is using research and science to help us find ways to be more prepared. And the other is identifying mitigations and ways can we adapt.

What are your respective visions for the future of tribal energy development in Indian Country and Native Alaska?

Diver: That each Tribe can move toward energy reduction and/or energy production that respects its own traditions.

Joule: Trying to find that balance between reducing the cost of living through increased infrastructure while still protecting the environment and the natural resources. We were granted the gifts of renewable resources and nonrenewable resources, and they're our gifts, but they are also our responsibility.

BUILDING BRIDGES

RECORD ATTENDANCE AT JANUARY ICEIWG MEETING

Hosted by the Seminole Tribe in Hollywood, Florida, the first ICEIWG meeting of 2014 brought a record number of 14 tribal leaders and numerous working group members to the table to discuss progress and plan the path forward for Indian energy development with a focus on building tribal communities' resiliency to the impacts of climate change.

Following a lively conversation about DOE programmatic and policy updates, the Working Group discussed energy and infrastructure issues with White House Domestic Policy Council Special Policy Advisor Jodi Gillette, and White House Office of Intergovernmental Affairs Associate Director Raina Thiele. Attendees also received an energy and climate change tribal policy update from Dean Polchies of the National Congress of American Indians. The open discussion that followed included updates on President Obama's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience, and the White House Native American Affairs Council/Subgroup on Energy, cochaired by DOE.

The meeting also featured a presentation on the Seminole Tribe's projects by Steve Osceola of the Seminole Tribe's Board of Directors.

View the meeting agenda at <http://energy.gov/indianenergy/downloads/iceiwg-meeting-agenda-january-24-2014>.



The Seminole Tribe of Florida hosted the January ICEIWG meeting. Photo from Gordon Wareham, Seminole Tribe of Florida, NREL 29203

FREE TRIBAL WEBINAR SERIES CONTINUES

The DOE Office of Indian Energy and Tribal Energy Program, and the Western Area Power Administration, are continuing to offer free monthly webinars designed to help Tribes navigate the path to energy project development. There is no charge to attend, but advance registration is required. Upcoming webinars are listed in On the Horizon on page 2. View the complete 2014 schedule and register for the webinars at www.energy.gov/indianenergy/resources/education-and-training/tribal-renewable-energy-webinar-series.

WINNING THE FUTURE

Chaninik Wind Group Pursues Innovative Solutions to Native Alaska Energy Challenges

Challenge: Located within a 50-mile radius of each other on the Kuskokwim River Delta in southwest Alaska, the Native villages of Kipnuk, Kongiganak, Kwigillingok, and Tuntutuliak are not connected by road or electrical intertie, but they are similar in size, resources, and cultural heritage. Their total combined population is fewer than 2,000. With roughly 29% of village residents living below the poverty level and unemployment approaching 50%, these communities struggle greatly under the burden of exceedingly high energy costs—\$0.65/kWh for electricity and up to \$9/gallon for oil used to heat homes. Formed in 2005 by local electrical utility boards and village managers, the Chaninik Wind Group (CWG) set out to stabilize these remote villages' energy costs by harnessing local wind resources.

Solution: Between 2010 and 2013, CWG implemented a multi-village wind heat smart grid in the villages of Kongiganak, Kwigillingok, and Tuntutuliak, integrating heating systems and a grid installed with partial funding through the DOE Tribal Energy Program with the five existing 95-kW wind turbines CWG had installed in each community. Each of these wind-diesel systems produces wind capacity in excess of 200% of the peak load and uses an on-site wind-diesel smart grid control system to maximize efficiency. Heat recovery boilers help manage system energy balance, and diesel generators provide energy support. Light winds displace diesel fuel used to generate electricity at the diesel power plant. Modest-to-high winds produce excess wind energy that is captured in electric thermal storage (ETS) units to heat tribal resident homes at 50% of their previous heating fuel cost. In Kipnuk, a

The Chaninik Wind Group Multi-Village Wind Heat Smart Grid Project has helped our communities of Tuntutuliak, Kongiganak, and Kwigillingok by reducing fossil fuel use at the power generation plant and homes where home heaters were installed.

—William Igkurak, President and Founder,
Chaninik Wind Group

larger version of these systems is under development; the metering system is in place and construction is scheduled for completion in 2016.

Benefits:

- Reduced heating costs for tribal residences with ETS units by at least 30%
- Reduced power plant fuel use by 30%
- Increased utility revenue through excess wind energy sales
- Generated wind technician jobs and increased wages for local personnel
- Improved village economic resilience, helping to build a more sustainable region
- Removed technical obstacles to the effective use of large amounts of highly variable wind energy in small, isolated grids.



Wind turbines installed in Kwigillingok, Alaska, as part of the Chaninik Wind Group Multi-Village Wind Heat Smart Grid Project. Photo from Intelligent Energy Systems, NREL 29204

OPENING DOORS

DOE TO HOST ALASKA NATIVE ENERGY DEVELOPMENT WORKSHOP APRIL 29–30

The DOE Office of Indian Energy and the Tribal Energy Program will present a workshop on Alaska Native village energy project development on April 29–30 in Anchorage, Alaska. The workshop is designed to help Alaska Native villages and corporations understand the range of energy efficiency and renewable energy opportunities that exist in their remote communities. Topics include strategic energy planning, project development and financing, technology updates, weatherization, and workforce development.

The workshop will be held as a lead-in to the REAP Business of Clean Energy in Alaska Conference May 1–2.

There is no cost to attend the workshop, but participants will be responsible for their own lodging, meals, and travel costs. Advance registration is requested. Learn more and register at www.energy.gov/indianenergy/events/alaska-native-village-energy-development-workshop.

FEATURED IN PAST ISSUES

To read about tribal energy champions and tribal energy projects covered in previous issues of *Indian Energy Beat*, please visit www.energy.gov/indianenergy/listings/newsletter-features.

SUBMISSION IDEAS?

Indian Energy Beat is a publication of the DOE Office of Indian Energy that highlights opportunities and actions to accelerate energy development in Indian Country. If you have suggestions for feature stories, interviews, or news relevant to Indian energy, please submit your ideas to indianenergy@hq.doe.gov.

LEARN MORE

For more information on the DOE Office of Indian Energy's efforts to accelerate next-generation energy development in Indian Country and build a 21st century tribal energy economy, and to subscribe to email updates, visit www.energy.gov/indianenergy or email indianenergy@hq.doe.gov.