

2014 Tribal Renewable Energy Webinar Series

Questions and Answers

“Identifying Project Potential and Options” Webinar

April 23, 2014

Speakers: Travis Lowder, Todd Hooks, Mark Dansby

Attendees: 45

- Q: Are there any upcoming tribal grant opportunities from DOE or other entities?
A: There is a \$7million Tribal Energy grant application currently open as of 8-25-14
- Q: On the Renewable Portfolio Standards (RPS), slide #8, there are about 7 states with RPSs. Is this a complete list?
A: There are actually 29 states and D.C. with RPS policies (see http://www.dsireusa.org/documents/summarymaps/RPS_map.pdf). Note that Ohio recently made headlines by “freezing” their RPS so that utilities will not have to comply with renewable targets for two years.
- Q: Can the PV Watts tool be used by a layperson or does it require a skilled solar installer?
A: Yes, The tool is very easy to operate, and can provide a useful “first-pass” analysis of a given site and its production potential.
- Q: What level of expertise is needed to use these renewable tools (LCOE, System Advisor Model [SAM])? Is it necessary to hire an engineer to use these tools in the project development phase? Or can these tools be used by tribal government to determine viability of renewables for their tribe?
A: While SAM is requires more data and a familiarity with renewable energy technologies and project development in general, it is still a very usable tool. You do not need to hire an engineer to run it (though if you have engineers in house it may be helpful for you to consult them for your model runs). Tribal governments can use SAM, though we recommend that Tribal governments use the simpler CREST model (<http://financere.nrel.gov/finance/content/crest-cost-energy-models>) which is designed specifically for policymakers. Both tools will give a cost of energy calculation for a given internal rate of return, but CREST has fewer inputs and is less technical.
- Q: Does DOE have tribal wind maps?
A: The Tribal Energy Program (TEP) has posted individual wind maps by Reservation (at least at 50m hub height) rather than utilizing the [NREL GIS Mapstore](#)
- Q: Does the Tribal Energy Program has a funding opportunity list and sends out emails?
A: Yes, you can register for it here: <http://apps1.eere.energy.gov/tribalenergy/>
- Q: Does NREL have a map for biomass resources?
A: The Tribal Energy Program has web pages dedicated to Biomass Resource: <http://www1.eere.energy.gov/tribalenergy/guide/biomass.html>
Also, there is a biofuels atlas resource map at <http://maps.nrel.gov/biomass>
- Q: Is there a link to a current Tribal RFPs?



A: <http://apps1.eere.energy.gov/tribalenergy/>

Q: What opportunity is there for hydrogen fuel production in Indian Country?

A: Hydrogen is an up and coming fuel. According to a 2009 article of The Christian Science Monitor, the Icelandic government announced its plan to replace fossil fuels with hydrogen in 1998 and aim to convert the country to hydrogen by 2040. In Alaska the opportunity is not focused on hydrogen powered vehicles. An excellent use for rural projects would be hydrogen fuel cells in place of diesel generators, as backup to renewables. The technology is available and on the market. **See this webinar: *The presentation slides and a recording of the presentation have been posted to our website (<http://energy.gov/eere/fuelcells/2014-webinar-archives>)*** ***More specific details on our next webinar will be posted to our website soon, so please check back. (<http://www1.eere.energy.gov/hydrogenandfuelcells/webinars.html>)*** ***For more information about upcoming webinars and hydrogen and fuel cell news and events, register to receive our monthly newsletter and news alerts. (<http://www1.eere.energy.gov/hydrogenandfuelcells/subscribe.html>)***

From an article in 2012 by Fuel Cell Works:

The Southeast Alaska Power Agency is preparing a grant application to study the feasibility of hydrogen production and storage as an alternative to underutilized hydro.

In a letter written to the Alaska Energy Authority by Petersburg Mayor Al Dwyer, he states that the Southeast Region has experienced significant winter load growth, which has caused, and will continue to cause, both energy and capacity shortages.

According to Dwyer, the shortages are currently met with diesel electric generation that dispatches at a cost differential of four to one over the current hydro cost.

“Many benefits could be realized if it is determined that hydrogen production and storage is feasible for this region,” Dwyer states. “The City of Petersburg supports SEAPA’s efforts in studying the feasibility of turning its surplus hydro into stored hydrogen as a source of energy.”

SEAPA operates a transmission system and hydroelectric plants that serve electrical loads in Ketchikan, Wrangell and Petersburg. The SEAPA system is part of a region that is nearly 100 percent hydro based and electrically isolated.

When surplus hydro generation conditions occur, typically all hydro operators in the region are fully utilized; with an isolated system, there is no alternative other than spilling surplus energy over a spillway.

“It only makes sense to do this,” Petersburg Council member Rick Braun said. “If we are wasting water over the spillway, we should try to recover that energy.”

Hydrogen production and storage during times of surplus may be an alternative to spill. This stored energy would then be used for generation either by supplementing diesel combustion or through the operation of fuel cell technology during times of hydroelectric shortages.

“If there is a surplus of hydrogen, it could be sold in the towns so people could drive fuel cell vehicles,” Braun said. “They are very efficient.”

Council member John Jensen explained that Iceland is already doing this with all modes of transportation. In fact, he explained that it is in the process of being mandated that all commerce will be powered by hydrogen.

SOURCE :
Shelly Pope-Petersburg Pilot

Q: How has The Agua Caliente tribe’s renewable investments paid back in dollars so far? Are they proving to be cost effective early on or will you expect long term gains only?

A: The Agua Caliente Tribe’s 8.25 kW off-grid solar PV system was projected to deliver a five year return on investment (ROI) but it actually produced a three year ROI. Larger facility scale projects have not been



developed on the Agua Caliente Reservation at this point but we continue to assess possible projects that make sense for the area and the tribe. Factors that affect our ability to expand renewable energy include the checkerboard configuration of the Agua Caliente Indian Reservation, the fairly densely populated areas, and the issue of high cost land values.

- Q: What was the Agua Caliente process like in doing an energy plan with the Department of Energy (DOE)?
- A: Creating a Strategic Energy Plan (SEP) and working with DOE truly helped the Tribe analyze its resources and the way the Tribe now thinks about its resources. The Tribe worked closely with consultants to develop the DOE Indian Energy model for the SEP. Mountain Energy Partners looked at short, medium and long-term energy goals. The SEP was developed in 2005 and we found we needed to reassess some of our goals from 2014. Many of our goals from 2005 were achieved, but others need to be reconsidered, and the economic downturn in 2008 caused some delay. The Tribe continues to assess energy and water issues via its Water and Energy Resource Authority, which was developed as part of the Strategic Energy Plan.
- Q: Agua Caliente Band of Cahuilla Indian speakers stated the following factors must be considered when analyzing project potential.
- Available renewable resource (enough sun, wind, biomass fuel source, etc.)
 - Real Estate Potential
 - Tribal Council Considerations
 - Load Centers
 - Environmental/Site
- Please describe "Load Centers".
- A: The Tribe considers its major energy use facilities as its "Load Centers". For the Agua Caliente Tribe there are three facilities: The Spa Resort Casino, The Agua Caliente Casino Resort & Spa, and the Tribal Administration Plaza.

Links to Helpful Resources

There are many resources available to help Tribes decide which renewable resource is best for them. These include:

- The DOE Office of Indian Energy offers [education and training](#) on project development and financing and renewable energy fundamentals and an [Energy Resource Library](#).
- Tribal-specific renewable energy curriculum developed by the DOE Office of Indian Energy can be accessed any time on the [National Training Education Resource website](#).
- Basic information on the [types of renewable energy](#), as well as [tools and resources](#) for assessing renewable energy potential, are available on the NREL website.
- [Energy 101](#) videos developed by the DOE Office of Energy Efficiency and Renewable Energy provide short, basic overviews of the various types of renewable energy.
- The DOE Office of Indian Energy and Tribal Energy Program offer up to 40 hours of in-depth [technical assistance](#) for federally recognized Indian Tribes, tribal energy resource development organizations, and other organized tribal groups and communities to advance tribal renewable energy and energy efficiency projects.

Answers are provided by the National Renewable Energy Laboratory. If you have additional questions, email indianenergy@hq.doe.gov. The Tribal Renewable Energy Webinar Series is sponsored by the DOE Office of Indian Energy, Tribal Energy Program, and Western Area Power Administration.

