

## 2014 Tribal Renewable Energy Webinar Series

### Questions and Answers

#### “Project Implementation and O&M” Webinar August 8, 2014

Speakers: Tom Harris, Robi Robichaud and Chris Gaul of NREL;  
David Nahai, Attorney of Law, California  
Attendees: 43

- Q: How can I come up with an estimate for an O&M budget for wind and solar projects? Is there a rule of thumb such as a percentage of installed cost?
- A: There are “rules of thumb,” and a common form is a percentage of installed cost per year. These are probably “order of magnitude” estimates and most are useful at the project concept “screening” level. A good estimate for O&M costs should be based on location, operator type and equipment model specifications.
- Q: What is a tax equity investor?
- A: Tax equity financing has been a significant driver of the expansion of U.S. renewable energy over the past decade. It has had the most positive impact in the areas of utility-scale wind power generation and commercial-scale solar. Tax Equity is a term used to describe a passive ownership interest in a project, where an investor receives a return based not only on cash flow from the project but also on federal and state income tax benefits through tax deductions or tax credits. Tax equity investors are usually large tax-paying financial entities such as banks, insurance companies, and utility affiliates that use these investments to reduce future tax liabilities. Tax equity is not the traditional “corporate equity” when an investor makes an active investment and is actively involved in corporate governance. A tax equity investor is passive and only gets involved in management of the project when the project has gone wrong and the performance of the investment is not producing cash flow.
- Q: Chris Gaul: Is DOE or NREL looking at processing Municipal Solid Waste (MSW) to produce energy for any of the Tribal communities?
- A: Not specifically for Tribes, but in [Alaska](#), market ready technology exists for waste to energy. Also in Canada the old [Crow, Yukon Territory](#) delivered a waste to energy project. Also the Department of Energy has a loan guarantee solicitation announcement for Federal Loan Guarantees for energy efficiency and renewable energy projects that includes MSW.  
<http://www.energy.gov/sites/prod/files/2014/07/f17/Renewable%20Energy%20and%20Efficient%20Energy%20Projects%20Solicitation%20FINAL.pdf>
- Q: Tom Harris: Can Tom discuss **performance** versus **production** guarantees, from the first few slides of his presentation?
- A: The concepts are closely related and are often confused, but strictly speaking, common metrics for performance of a system include availability, reliability, maintainability, supportability, and total cost of ownership. Most often a performance guarantee is usually concerned with an obligation to keep a system operating properly and in good working order.

Production, on the other hand, in the context of energy systems, is the amount of (renewable) energy produced by a system, often over the course of a cycle of time, usually over one year. A production guarantee is a guarantee or “promise” (with consequences for failure of the promise) that a system will produce a minimum specified amount of energy over a time period.



These concepts are closely related because failure of one of the guarantees often coincides with failure of the other. If a system is not in good working order (is unreliable or failed performance) it is likely that despite the availability of a renewable energy resource (i.e. even if the sun is shining brightly on the PV), the energy production of the system will fail to produce.

Well-designed common exceptions to production guarantees for renewable energy systems that utilize intermittent renewable energy sources (such as wind or sun) highlight the delineation between the two concepts. A production guarantee may have exceptions that are perhaps based on formulas that account for lower than usual available resource. An example is an especially cloudy year or a year with many volcanic eruptions for a solar system. This exception would not excuse system failure/downtime caused by performance/reliability issues. Indeed, one purpose of a performance guarantee can be to support a production guarantee. (A reliable system can be expected to produce more energy more consistently.)

Q: Does the Tribal Energy Program have 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/>

### 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](mailto: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.

