Developing & Financing Renewable Energy Projects in Indian Country

Presenters:
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Matthew Ferguson, Reznick Group

TRIBAL LEADER FORUM
EXPLORING THE BUSINESS LINK OPPORTUNITY:
TRANSMISSION & CLEAN ENERGY DEVELOPMENT IN THE WEST
DENVER, COLORADO
FEBRUARY 7-8, 2012
Presentation Overview

• Context & Objective
• Overview of Renewable Energy:
  – Project Development
  – Project Financing
• Questions
Indian lands have enough renewable energy resource to produce:

- 1.3 million megawatt-hours (MWh) of wind (about 148,000 homes)
- 9.2 million MWh of solar photovoltaics (PV)
- 4 million MWh of biomass

There are a number of barriers constraining this potential including:

- Infrastructure & transmission;
- Project development capacity;
- Project financing options;
- Permitting barriers;
- Expertise;
- Other
Who?!
Me?

Project Development
Finance?

OR? Hey, that doesn't make sense!

“and then”

Finance

YOUR FAULT

And
Key Concepts

• **Project Context & Motivation**
  – What is your interest in the project (e.g. revenue, self-reliance,)?
  – What are the basics of your energy environment (e.g. utility relationship, governance structure, energy sources and costs, key decision makers)?

• **Project Development Framework**
  – How will this work and how long will it take?
  – What are the stage gates for moving projects forward?

➢ Use this process to organize the project and determine viability.
➢ Bankable projects can move on to determine the potential for different financing options.
## Project Motivation

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Economics</th>
<th>Policy</th>
<th>Technology</th>
<th>Consensus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Resource/Needs</td>
<td>Fundamental Drivers</td>
<td>Conditions for Success or Constraint</td>
<td>What, When, Where, How</td>
<td>Among Decision Makers &amp; Stakeholders</td>
</tr>
</tbody>
</table>

**CONTINUOUS PROCESS**

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## Project Development Framework

<table>
<thead>
<tr>
<th>Site</th>
<th>Resource</th>
<th>Off-take</th>
<th>Permits</th>
<th>Technology</th>
<th>Team</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Site, No Project</td>
<td>Engineering Assessment</td>
<td>Off-take Contract – (Revenue)</td>
<td>Anything that can stop a project if not in place...</td>
<td>Engineered System</td>
<td>Professional, Experienced, Diverse</td>
<td>Financing Structure</td>
</tr>
</tbody>
</table>

**CONTINUOUS PROCESS**

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Site

**Purpose:**
Understanding site availability and characteristics.

**Considerations:**
• Site control
• Size and shape
• Distance to *usable* transmission
• Upgradeable
• Road access for operations and maintenance

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U.S. DEPARTMENT OF

Office of Indian Energy
Purpose:
Understanding what renewable resources are available and usable on site.

Considerations:
• Resource availability
• Resource variability
• 24-hour resource profile
• Weather dependence
• Technology suitability
Resources: Wind Map of the U.S.

Source: National Renewable Energy Laboratory.
Resources: Solar Map of the U.S.

Direct Normal Solar Radiation (Two-Axis Tracking Concentrator)

Model estimates of monthly average daily total radiation using inputs derived from satellite and/or surface observations of cloud cover, aerosol optical depth, precipitable water vapor, albedo, atmospheric pressure and ozone resampled to a 4km resolution. See http://www.nrel.gov/gis/ for documentation for more details.

Source: National Renewable Energy Laboratory.
Off-take

Purpose:
Understanding the power buyer and utility interactions.

Considerations:
• Utility operations
• Regulatory governance (e.g. PUC)
• Interconnection agreement
• Parameters
• Pricing and terms
Permits

**Purpose:**
Understanding necessary regulatory requirements for the project.

**Considerations:**
- Interconnection
- Environmental (NEPA, EIS)
- Cultural
- State use permits
Technology

Purpose:
Identifying specific technology type to develop the resource.

Considerations:
• Engineering design plans
• Construction plans
• Technology specifications development for bid
Team

**Purpose:**

*Ensure* all relevant players (internal and external) are engaged in the project at the right time, levels, and roles.

**Considerations:**

**Engage:**

- Tribal Leadership (Decision Makers)
- Project & Business Management (Professionals & Staff)

**Employ:**

- Legal & Financing
- Technical & Construction Expertise
- Power Marketing

Capital

Purpose:
Identifying and developing the right capital investment vehicles for the project to be realized.

Considerations:
• Role of the Tribe: Owner or Partner
• Renewable energy attribute (REC) sales
Development Risk Capital

Project Finance (Construction)

Asset Finance

Unknows

Site

Resource

Off-take

Permits

Technology

Team

Capital

Risk

$.  

Time

U.S. DEPARTMENT OF  
Office of  
Indian Energy
The Campo Band of Mission Indians of the Kumeyaay Nation has a successful wind project and is working on another:

- 50 MW project with 25 turbines constructed in 2005, online in 2006
- Production of 175 million megawatt hours in 2011
- Largest commercial wind facility in Indian Country
- Campo Government is lessor of the land where the facility is located.
- Working with Invenergy to build a new 160 MW wind energy project to serve San Diego and help CA comply with its Renewable Portfolio Standard.

Two Paths

DIRECT OWNERSHIP

Community Scale Project

Example: Install solar system for electricity cost management on a Government center, casino, hotel, or school.

- Save money
- Reduce electricity costs
- Energy independence
- Cost avoidance
- Retail electricity price
- Capital budgeting

THIRD PARTY PARTNERSHIP

Commercial Scale Project

Example: Install utility scale solar or wind for revenue generation through a contracted sale with a utility or large electricity user

- Selling electricity to make money
- Levelized cost of energy (LCOE)
- Wholesale electricity prices
- Investment opportunity
Renewable Energy Finance

$100M+ Federal Renewable energy venture investment

Pre-Development  Development  Construction  Operation

$  $$  $$$

Development Risk Capital  Project Finance  Asset Finance

capital

Equity
tax equity
debt
## Financing Structures

<table>
<thead>
<tr>
<th>Options</th>
<th>How Tax Equity Return is Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flip</strong></td>
<td>Tax Equity invests capital to achieve target IRR. Upon achievement to target IRR ownership interest automatically “flips” down to contract percentage.</td>
</tr>
<tr>
<td><strong>Sale Leaseback</strong></td>
<td>Tax Equity buys project and leases it back to developer for a term of years.</td>
</tr>
<tr>
<td><strong>Inverted Lease</strong></td>
<td>Tax Equity invests capital for a preferred return that includes a “pass through” of credit by operation of tax election.</td>
</tr>
</tbody>
</table>
One Size (Financing Structure) Does Not Fit All (Technologies)
Direct Equity
- Project Developer
- Private Equity Investor

DEBT
- Construction Loan
- Term Loan
- Bridge Loan
- Mezzanine, etc.

PROJECT EQUITY

TAX EQUITY
- Partnership flip
- Sale – leaseback
- Inverted lease

Project Entity (SPE)

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Or? Hey that doesn’t make sense!

And

YOUR FAULT

Project Development
Financial
QUESTIONS
THANK YOU

To contact speakers:
Samuel Booth: Samuel.Booth@nrel.gov
Matthew Ferguson: Matt.Ferguson@reznickgroup.com
Useful Resources

**PROJECT DEVELOPMENT & FINANCE “GENERAL”**

**PROJECT DEVELOPMENT “RESOURCES” (Slide 14)**

**PROJECT DEVELOPMENT “OFF-TAKE” (Slide 15)**
Useful Resources (Cont’d.)

**PROJECT DEVELOPMENT “PERMITTING”**
(Slide 16)

- [http://www1.eere.energy.gov/tribalenergy/guide/permitting_licensing.html](http://www1.eere.energy.gov/tribalenergy/guide/permitting_licensing.html)
- [http://www1.eere.energy.gov/tribalenergy/guide/regulatory_agencies.html](http://www1.eere.energy.gov/tribalenergy/guide/regulatory_agencies.html)

**PROJECT DEVELOPMENT “TECHNOLOGY”**
(Slide 17)

- General resource/technology page at: [http://teeic.anl.gov/er/index.cfm](http://teeic.anl.gov/er/index.cfm)

**PROJECT DEVELOPMENT “CAPITAL”**
(Slide 18)

TRAINING PROGRAM OVERVIEW
Training Program Objective & Approach

• Provide easily accessible, multi-format information to Tribes regarding renewable energy project development processes and financing options on Tribal lands.

• Train Tribal leaders and executives on the options for renewable energy development on Tribal lands by:
  
  ➢ Outlining the project development framework;
  ➢ Describing renewable energy technologies and where they may best be developed; and
  ➢ Presenting the various financing structures as practical for projects on Tribal lands.
Program Structure & Offerings

**LEADERSHIP SERIES**
- **Module 1:** Project Development Overview
- **Module 2:** Financing Options Overview

**Delivery:**
- Half Day In-Person

**PROFESSIONAL SERIES**
- **Module 1:** Project Development Framework
- **Module 2:** Financing Options (4 courses)

**Delivery:**
- Webinars
- In-Person Trainings
Timeline for Delivering the Training Series

- **Nov 2011 - NCAI Workshop Overview**
- **Jan/Feb 2012 - In Person Overview Workshops: Transmission Forum and RES2012**
- **Apr/May 2012 - Webinars Available On-line**
- **Jun/Jul 2012 - In Person Trainings/Training Handbook**