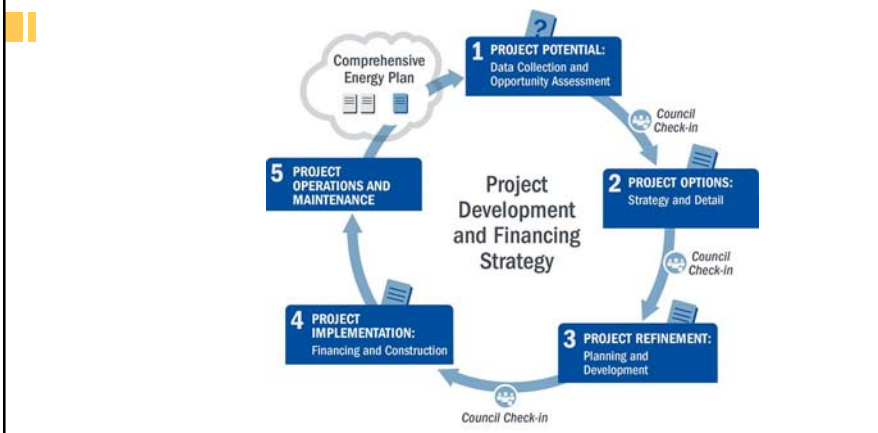
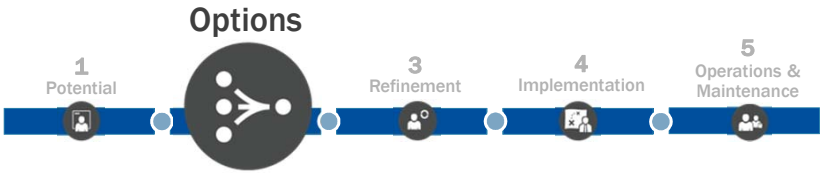
DOE OFFICE OF INDIAN ENERGY

The Five-Step Development Process
Step 2: Project Options

U.S. DEPARTMENT OF ENERGY | Office of Indian Energy





Presentation Agenda

- Step 2: Project Options
- Project members and roles
- Activity
- Project ownership options
  - Interconnection, net metering, permitting, and considerations
- Tools
- Case in Point

Step 2: Roles, Business Structures, & Regulatory Considerations

Purpose: Determine ownership structure and permitting considerations if any.
(Note: It is likely that internal tribal permitting is required if developed on tribal lands, however, state and federal permitting may be required if the Tribe is dealing with fee or trust land outside the tribal land holdings.)

Tasks:

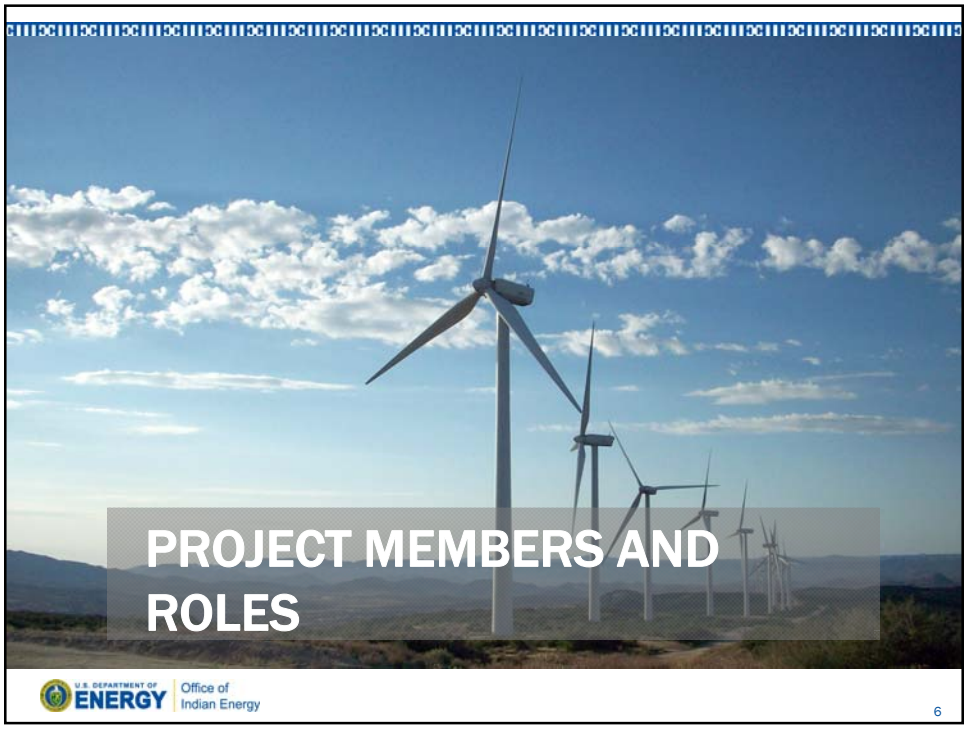
1. Understand tribal role(s) and risk allocations/business structure
2. Identify permitting needs and site use considerations
3. Identify interconnection rules and net metering options with the local utility

Outputs:

1. Clarify tribal roles
2. Decide on business structure
3. Understand the permit needs and process
4. Understand interconnection and net-metering options

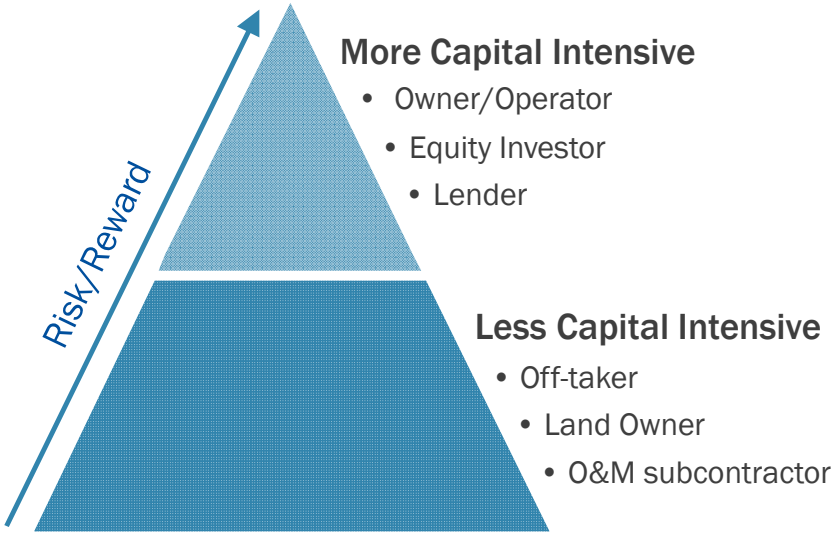
Potential Team Members

- Tribal Members
  - Leadership, staff, community members
  - Attorneys, engineers, professionals
  - Energy champions (key success component)
- Developer
  - Business managers, engineers, permitting specialists, investors, banks
- Utility
  - Attorneys, planning specialists, operations specialists, regulatory specialists, finance.
- Government
  - Tribal government, federal, state and local entities, regulating bodies (public utilities commission), Bureau of Indian Affairs, DOE.



The Role of the Project Champion

Tribal Roles



Tribal Roles: Opportunities and Risks

Role	Opportunity	Constraints	Comments
Resource/ Land Owner	Land rent/royalty, taxes. Low risk, known reward, consistent income.	Limited project control. Must provide site access.	Limited upside potential, limited risk
Off-Taker/ Energy User	Tribe purchases and uses all power on-site. Electricity price security/hedge value.	Limited investment, economic development for on-site projects	Must have demand to use power; still requires utility interconnection agreement (if on the grid). Limited/Med risk.
Project Operator/ O&M	Greater involvement; Job/skills development opportunity. Modest source of revenue	Investors require experience May not be very labor intensive Might not be practical for a single project	Depending on technology, can be complex. Risk profile higher given O&M responsibilities.

Tribal Roles: Opportunities and Risks

Role	Opportunity	Constraints	Comments
Lender/ Debt Provider	Participate financially in project with lower risk. Interest income.	Requires ready capital May be cost-prohibitive to document and manage a single debt transaction (multiple more cost-effective)	Med-risk, more complex Requires lending experience Option for Tribes with limited lands, available $
Equity Investor	Invest cash into project development. Profit opportunity. Less capital required than commercial scale.	Higher risk than debt lending. Requires ready capital, or unique source of capital that provides market advantage (like NMTC). Implications for tax credits	High risk, more complex Competes with other investments Option for Tribes with limited lands, available $
Project Developer and Owner	Self-determination of project; potential for profits (and losses) is highest. Tribes with its own resource may not need investors.	Capital intensive and complex Tribes investing money may not want this high risk/return investment Might forfeit tax benefits	High risk Likely Tribe has gained experience over time in other roles A project portfolio mitigates some risks

Activity

Read and discuss tribal roles case studies.

Importance of Choosing the Right Ownership Structure

- Protect tribal assets
- Preserve tribal sovereignty
- Minimize potential liability
- Facilitate project construction

Photo by Brian Hirsch, NREL 20893

Evaluating Ownership Options

Business Structure Option	Simplicity and Quick Formation	Shield Tribal Assets from Business Liabilities	Avoid Federal Income Taxes	Separate Business from Tribal Control	Ability to Secure Financing
Tribal Instrumentality*	●		●		●
Political Subdivision*			●		●
Section 17 Corporation*		●	●	●	●
Tribal Law Corporation*	●	●	●	●	●
State Law Corporation	●	●		●	●
LLCs/Joint Venture		●	●	●	●
LLC (only if Tribe is sole member)	●		●		

*(*Can be protected by tribal sovereign immunity)*

Ownership Structure Resources

- **Renewable Energy Development in Indian Country: A Handbook for Tribes** (Douglas MacCourt and Ater Wynne LLP)
  http://www.nrel.gov/docs/fy10osti/48078.pdf
- **Tribal Business Structure Handbook** (The Office of the Assistant Secretary – Indian Affairs U.S. Department of Interior)
  http://www.irs.gov/pub/irs-tege/tribal_business_structure_handbook.pdf
- **Structuring Tribal Business Enterprises and Joint Ventures** (Kathleen M. Nilles, and Karen J. Atkinson)
  http://apps1.eere.energy.gov/tribalenergy/pdfs/course_biz0904_nilles.pdf
- **Tribal Energy Development Primer** (Quapaw Tribe of Oklahoma)
  http://www.cwlaw.com/wp-content/uploads/2010/03/Indian-Tribal-Energy-Development-Primer1.pdf

What Is Interconnection?

- An agreement required to connect your facility- or community-scale system to the grid
- Distribution-level interconnection is largely the domain of state policy
  - Rules and regulations are highly variable between states
- Involve your utility *early* and *often* in the project development process
  - Many utilities have their interconnection procedures and the necessary contacts posted on their website

Net Metering

- Simple way for utilities to encourage customers to deploy on-site, grid-connected generation (owned by the customer or a 3rd party) and maximize value
- Excess generation flows to the grid and can be credited back to the customer at the wholesale rate, retail rate or a higher incentive rate (or sometimes not at all)
- Often credit for net excess generation can be carried over to future months
- Can improve the economics of small-scale renewable power systems; may be a critical element in determining project economic feasibility

Illustration by Ray David, NREL

"Net metering allows residential and commercial customers who generate their own electricity from [eligible technologies] to feed electricity they do not use back into the grid."

— Solar Industry Association

Issues and Policies: Net Metering, accessed Aug 11, 2013. http://www.seia.org/policy/distributed-solar/net-metering

Permitting and Regulatory Key Considerations

Action	Applicability	Timeline	Contacts
Interconnection	If on grid (with a utility)	Communicate with utility early; this should be one of the first topics that is discussed and finalized before construction	Local utility
Net metering	If available in state (check)	Communicate with utility before construction	Local utility
Local tribal permitting	• Internal tribal process approvals • For off-reservation projects, state permits may apply	Determine permitting requirements early	Tribal Historic Preservation Office (THPO) and local tribal government
Environmental	Impacts to: • Wetlands/waterways • Wildlife, habitat, flora • Cultural resources	• May not be necessary • Determine applicability early	Applicable federal agency

Permitting and Regulatory Key Considerations Cont.

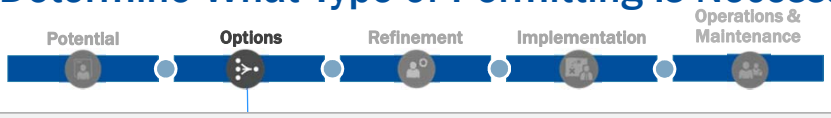
Outside Tribal Boundaries

- In general, if located on private, nontribal land, or state properties, local and state land-use policies do apply.
- If located on tribal-owned fee land outside of reservation boundaries, then project is subject to state and local land-use, permitting jurisdiction.

Inside Tribal Boundaries

- In general, state and local land-use laws do not apply.
- In addition, the extent to which federal rules and regulations apply depends on the type of project, its location, and size.
- Tribal law, regulations, and policies will apply.
- Tribes may "self-regulate" under federal law (e.g., Tribal Energy Resource Agreements, Hearth Act).

Determine What Type of Permitting Is Necessary



Key Types of Permitting at Tribal Community & Facility Level	Always	Sometimes	Rarely
Interconnection agreement	✓		
Net-metering agreement		✓	
Environmental permitting		✓	
Transmission permitting		✓	
Off-take agreement			✓
Local and state permitting			✓
Federal permitting		✓	
Local tribal permitting	✓		

Legal Issues

Legal issues that can arise during project development occur on three levels:

- **Tribal**
  - Will the project operate as a profit-making enterprise? A governmental function of the Tribe? A public service under the tribal government (e.g., a tribal utility)?
  - New tribal laws may be needed to govern financing arrangements and development contracts
- **State**
  - States may not impose taxes on tribes or tribal members doing business on reservations
  - State building codes do not apply to construction on Indian lands
- **Federal**
  - Environmental protection
  - Cultural preservation
  - Rights of way or leases
  - Taxation—See irs.gov/government-entities/indian-tribal-governments

Site Due Diligence

Consideration	Applicability	Resources
Wetlands/ waterways	• Are there wetlands, water bodies, washes, arroyos, drainage considerations, or floodplain on site?	http://www.fws.gov/wetlands/Data/Mapper.html https://msc.fema.gov/portal/search
Soils	• Soil conditions impact structural design and site feasibility • Caliche or bedrock may require costly drilling • Sandy soils may require deeper post embedment to meet wind and snow loading requirements • Corrosive soils can require measures to protect embedded posts	http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx
Wildlife/ habitat/ flora	• Check for critical habitat, riparian areas, and endangered species of flora or fauna that may be impacted	http://ecos.fws.gov/crithab/flex/crithabMapper.jsp?
Driveway/ access	• Is a new driveway required? If so, is access available (limited access highways may not allow a driveway)? • Can equipment and materials be safely delivered to the site with no obstructions such as overhead utilities, trees, or vehicle weight limits?	Check local, state, or federal transportation department or equivalent

Site Due Diligence cont.

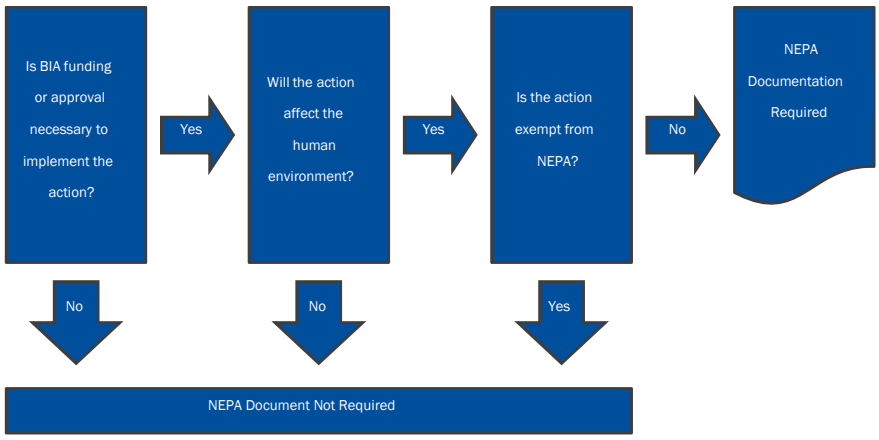
Consideration	Applicability	Resources
Easements/ encumbrances/ rights-of-way	• Are there easements or rights-of-ways for pipelines, utilities, or railroads that will be crossed or impacted? • Are there plans for road expansions or improvements, new pipelines, or future utility rights-of-ways at any time during the life of the project?	Check with land management authorities, transportation plans, USGS maps
Cultural resources	• Are there known cultural resources on or near the site? If not, are further studies required?	Tribal Historic Preservation Office http://nrhp.focus.nps.gov/natreg/docs/Download.html (Google Earth layer)
Land use and building permits	• Building permit requirements • Land use/zoning permits—Is the facility allowed as a primary or accessory use? Is a special or conditional use permit or re-zoning required? • Rights-of-way permits, including interconnection line, driveway, drainage	Local tribal government
Storm water	• Is the site one acre or more? If so, a construction storm water permit and mitigation measures are required • Are measures such as retention ponds or swales required for erosion and sediment control or storm water mitigation during and after construction?	http://water.epa.gov/polwaste/npdes/stormwater/EPA-Construction-General-Permit.cfm

When Will NEPA Apply to Tribes?

The National Environmental Policy Act (NEPA) requires all federal agencies to assess environmental impact of proposed actions

- Federal funding may trigger assessment for tribal projects (federal nexus, e.g. federal grants, BIA initiated/approved projects)
- Each federal agency may have its own particular NEPA procedure (check with appropriate agency)
- Timeline: Approx. 1–3 years depending on project size and complexity (unlikely for community scale)
- Recommendations:
  - Draft the Environmental Impact Statement concurrently with other applicable federal statutes and regulations
  - If necessary, work with NEPA experts to determine and prepare required analysis

NEPA Decision Making Process



Adapted from http://www.bia.gov/cs/groups/xraca/documents/text/idc009157.pdf

NEPA cont.

Three types in order of complexity and time:

Types	Complexity	Timeline
Categorical exclusions (CX)— Categories of actions that federal agencies have determined do not have a significant effect on the quality of the environment and neither an environmental assessment (EA) nor an environmental impact statement (EIS) is required.	Does not require any public reviews, hearings, and unless any 'extraordinary circumstances' exist, an EA or an EIS is not required.	The Categorical Exclusion Exception Review (CEER) conducted by the BIA is an internal two step process and mainly involves a simple check-box form.
Environmental assessment (EA)— The document that provides sufficient analysis for determining whether a proposed action may or will have a significant impact on the quality of the environment and therefore require the preparation of an EIS.	Usually requires a 30 day public commenting period and may also require a 14-30 day scoping period upfront.	Generally allow 6-9 months for this process before issuing either a FONSI or proceed with an EIS.
Environmental impact statement (EIS)— If an action is expected to have significant impacts, or if the analysis in the EA identifies significant impacts, then an EIS will be prepared.	Requires more rigorous and expanded review including public involvement, public meetings and hearings.	Generally should allow 18 to 24 months for completing this process.

http://www.bia.gov/cs/groups/xraca/documents/text/idc009157.pdf

Other Environmental Regulations to Consider

Clean Air Act

- Purpose is to protect the nation's air and public health.
- Mandates identification of both mobile and stationary pollutants and the sources----gives authority to U.S. Environmental Protection Agency (EPA) for listing such pollutants.

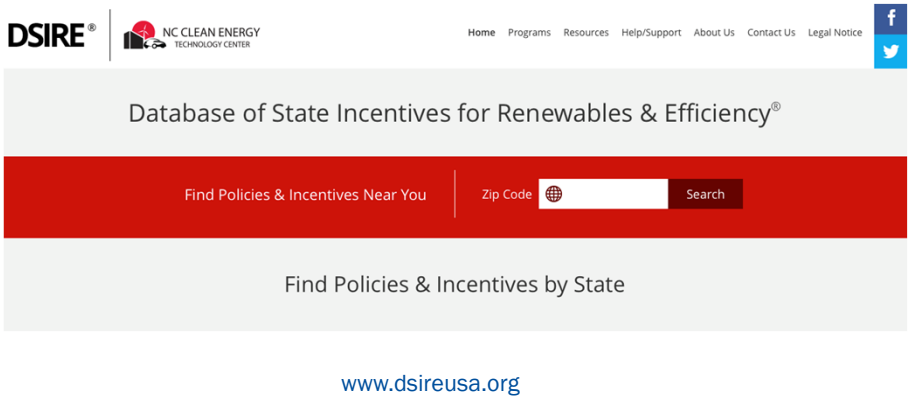
Clean Water Act

- Goals are to make the nation's water fishable and swimmable by 1983 and eliminate the discharge of pollutants into navigable waters by 1985.
- Gives authority to the EPA to regulate National Ambient Water Quality Standards (and effluent limitations applied to all point sources of pollution).

Endangered Species Act

- The purpose is to protect plants and animals that are listed by the federal government as "endangered" or "threatened."
- Enforced by the U.S. Fish and Wildlife Service and the National Marine Fisheries Services

DSIRE : Search Regulatory Policy in Your State



www.dsireusa.org

Project Risk: Facility/Community-Scale Post Step 2

Phases	Risks	Risk Assessment Post Step 2	✓
Development	• Poor or no renewable energy resource assessment	Finalized resource	✓
	• Not identifying all possible costs	Reduced	✓
	• Unrealistic estimation of all costs	Reduced	✓
	• Incorrect estimation of long-term "community" energy use (energy efficiency first)	Finalized projection	✓
	• Utility rules and ability to offset use	Reduced	✓
Site	• Structural (e.g. rooftop solar, wind loading, soil conditions)	Unchanged	✓
	• Installation safety (e.g., wind tower, hazard for adjacent sites)	Unchanged	✓
	• Site control for safety/security purposes	Reduced	✓
Permitting	• Tribe-adopted codes and permitting requirements	Reduced	✓
	• Utility interconnection requirements	Reduced	✓
Finance	• Capital availability	High risk, reduced	
	• Incentive availability risk	Reduced	
Construction/ Completion	• EPC difficulties	Low; allocate to EPC or developer	
	• Cost overruns		
	• Schedule		
Operating	• Output shortfall from expected	Assumed low, mitigable or allocatable	
	• Technology O&M		

*NOTE: Underlining signifies that the risk assessment outcome changes during the step at hand.

Sources: Adapted from Holland & Hart, RE Project Development & Finance & Infocast, Advanced RE Project Finance & Analysis

Tribal Case in Point: Identify Project Options

Forest County Potawatomi, WI

- Challenges
  - Sought to replace the dated heating systems of its government complex in Crandon, Wisconsin, with a biomass system to meet the building's energy needs and pursue the Tribe's ambitious clean energy goals
  - Wanted to site and size the system to maximize economic payback without adversely impacting the community's air or forest management practices
- DOE Technical Assistance
  - Market context analysis identified various potential biomass projects
  - Validated feasibility of a system that uses local nonfood biomass feedstock to provide heat for tribal government facilities
  - Demonstrated potential to reduce Tribe's annual heating fuel costs by $70,000

Photo from Forest County Potawatomi

Notes

Notes