

DOE OFFICE OF INDIAN ENERGY

# Financing Renewable Energy in Alaska

Alaska Native Village Renewable Energy and Energy Efficiency  
Workshop

October 17, 2012



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Indian Energy

# Outline

- Introduction & Stakeholder overview
- Key Concepts
- Financing renewable energy projects
- Financing Opportunities for Tribal Governments
  - Government sponsored
  - Private
- Financing Opportunities for Native Corporations
  - Government sponsored
  - Private
- Conclusion

## Key Takeaways

- Financing for renewable energy depends on:
  - Tax status of entity interested in development (*tax exempt, or not*)
  - Financing source (*government sponsored or private*)
- Native corporations have tax advantage and can diversify current portfolios with renewables
- Tax exempt tribal entities can partner with a native corporation, as a subsidiary, to take advantage of ITC and depreciation benefits

# Stakeholders

- Alaska Native Corporations
  - Regional and Village Corporations
- Village Governments
- Village Utilities / Electric Cooperatives
- Potential 3<sup>rd</sup> Party Developers
- Members of the community

# Key Concepts

- Risk and Uncertainty
- Levelized Cost of Energy (LCOE)
- Project Roles for Villages and ANCs
- Tax Equity Investments

# Key Risks in Project Development

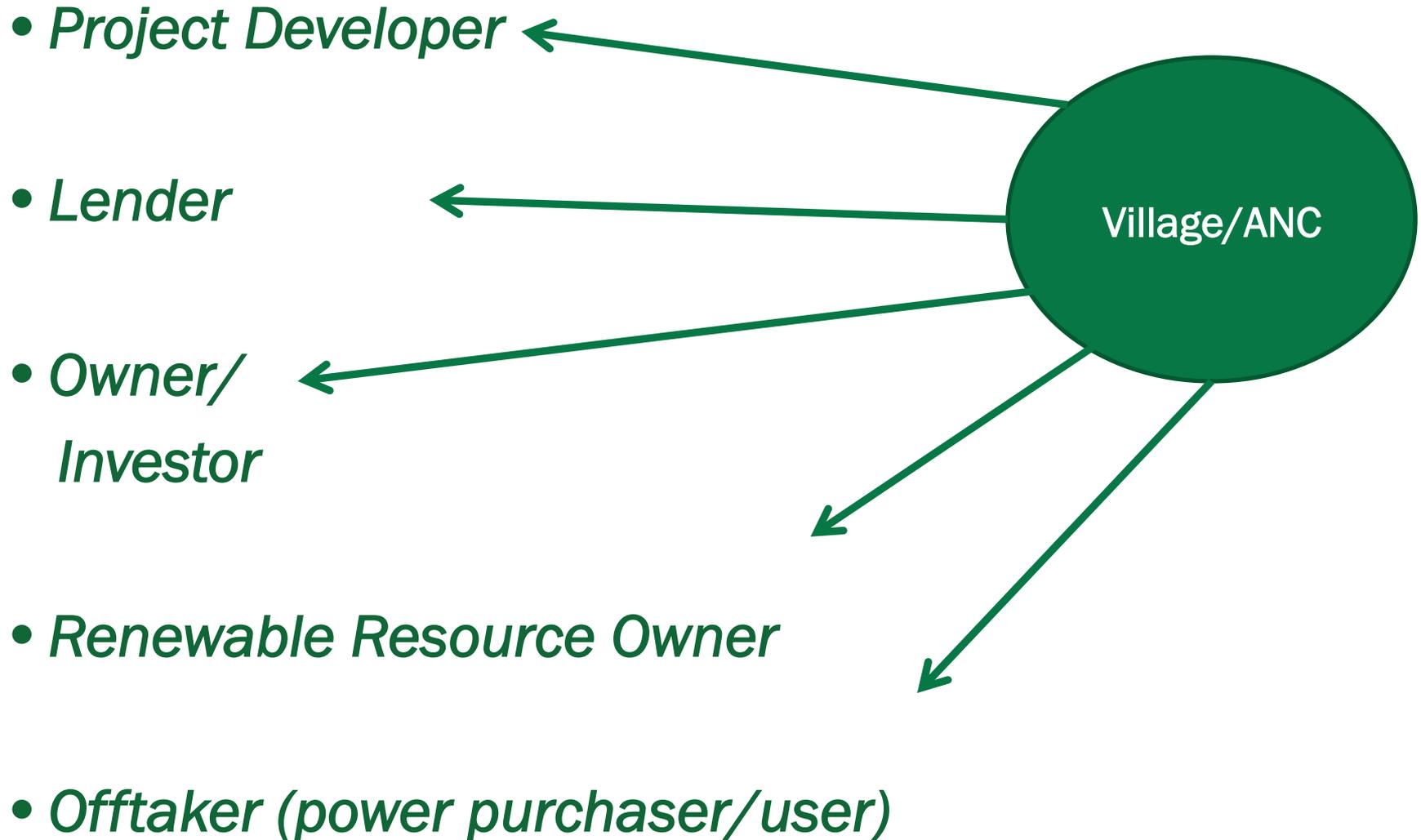
	Risks
Development	<ul style="list-style-type: none"> <li>•Concept and scoping</li> <li>•Power pricing</li> <li>•Grid integration</li> <li>•Access to power markets (adequacy and availability of transmission)</li> </ul>
Site	<ul style="list-style-type: none"> <li>•Site control</li> <li>•Land ownership</li> <li>•NIMBY/BANANA</li> </ul>
Permitting	<ul style="list-style-type: none"> <li>•Environmental studies</li> <li>•Archaeological, historical, cultural significance</li> <li>•Federal Aviation Administration restrictions</li> </ul>
Finance	<ul style="list-style-type: none"> <li>•Capital availability</li> <li>•Credit-worthy offtaker</li> <li>•Incentive availability risk and regulatory risk</li> </ul>
Construction/Completion	<ul style="list-style-type: none"> <li>•Engineering, procurement, and construction difficulties</li> <li>•Cost overruns</li> <li>•Schedule</li> </ul>
Operating	<ul style="list-style-type: none"> <li>•Output shortfall</li> <li>•Technology O&amp;M</li> <li>•Integration</li> </ul>

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

# Key Concept: Levelized Cost of Energy (LCOE)

- Calculates present value of total cost of building and operating a power plant over an assumed life cycle, expressed in real dollars to remove the impact of inflation
- Allows the comparison of different technologies (i.e. wind, solar, natural gas) of unequal life spans, different capital cost, risk, return, and capacities
- Critical to making an informed decision to proceed with development of a particular renewable energy or energy efficiency project over status quo

# Key Concept: Project Roles



# Ownership Structure Options

- Direct ownership
- Third-Party Lease / PPA
- Partnership Flips

Key Question: What viable ownership structure options are attractive to the community?

# Key Concept: Tax Equity Investment

- Taxable entity provides investment/equity into project, and receives tax credits/benefits in return.
- Tax equity can lower capital costs for a qualifying project significantly (40%-50%)
- Village benefits from reduced electricity costs from the renewable project
- Village can partner with ANC as tax investors to gain this advantage

# Common Ways to Finance Renewable Energy

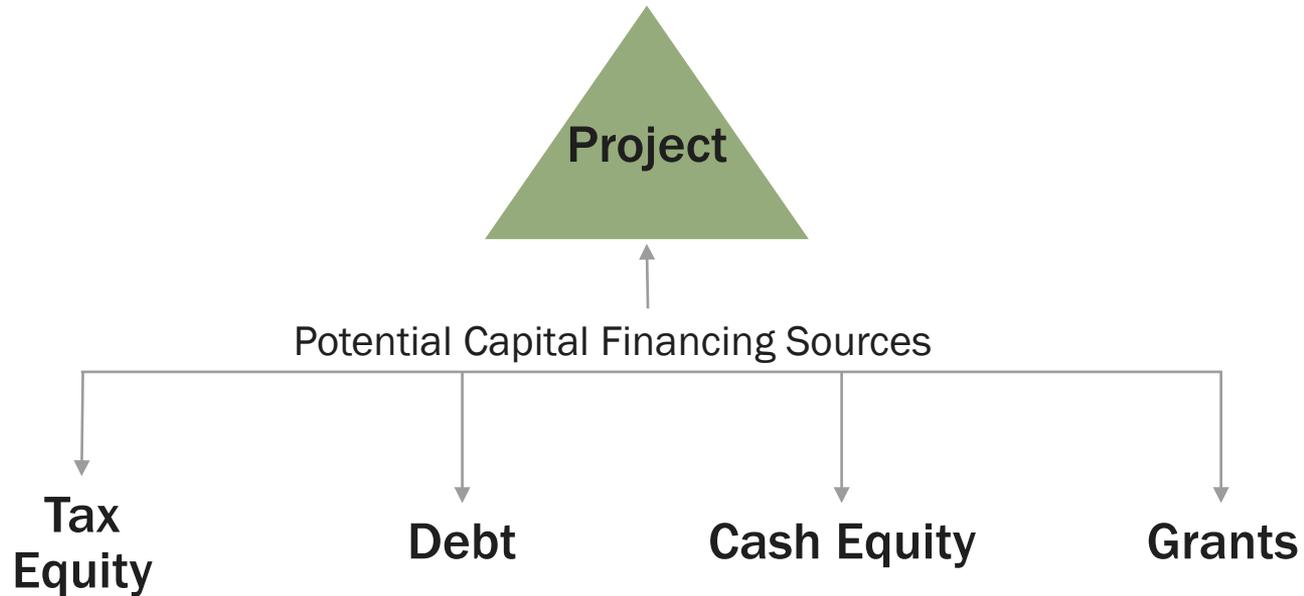
## Government Sponsored

- Tax benefits
  - Tax credits
  - Depreciation benefits
- Grants
- Loans
- Tax Exempt Bonds
- Renewable Energy Credits

## Private Financing

- Equity
  - Equity from large independent power producers (IPPs), smaller developers, utilities, and private equity players
- Debt
  - Banks
  - ESCOs - Energy savings performance contracting
- Tax equity
  - Upfront equity, in exchange for tax credits and other benefits, primarily from US banks and insurance companies (and Google)

# Project Capital Structure



Financing Opportunities

# **VILLAGE GOVERNMENTS & NATIVE CORPORATIONS**

# Grants

Grant	Contact	Amount	Eligibility	Information
Rural Energy for America Grant Program	USDA	\$2,500 - \$500,000 or 25% of project costs, whichever is less	<p><b>Requirements:</b> Borrower must be rural small business or agricultural producer</p> <p><b>Technology:</b> biomass, solar, wind, hydro, hydrogen, geothermal</p> <p><b>Applications:</b> equipment, construction, permitting, professional service fees, feasibility studies, business plans, land acquisition</p>	<p><a href="http://www.rurdev.usda.gov/BCP_ReapResEei.html">http://www.rurdev.usda.gov/BCP_ReapResEei.html</a></p>
Renewable Energy Grant Program	Alaska Energy Authority	Varies, funded by state appropriations on an annual basis, no cap on per project grant amount	<p><b>Requirements:</b> Cost share not required by considered favorable</p> <p><b>Technology:</b> Solar, Wind, Biomass, Hydro, Geothermal, LFGTE, Tidal, Wave, Anaerobic Digestion</p> <p><b>Application:</b> Feasibility studies, reconnaissance studies, energy resource monitoring, design and construction, transmission and distribution linking an eligible project to the grid, natural gas projects in small communities may also be eligible</p> <p><b>Add'l Info:</b> State Legislature must approve each project. Applications for FY14 grants were due in September 2012. Expires 6/30/2023.</p>	<p><a href="http://www.akenergyauthority.org/">http://www.akenergyauthority.org/</a></p>
High Energy Cost Grant Program	USDA	\$75,000-\$5,000,000 (No open solicitations)	<p><b>Requirements:</b> Community's average home energy costs must exceed 275% of national average</p> <p><b>Technology:</b> Solar, Wind, Biomass, Hydro</p> <p><b>Applications:</b> Energy generation and transmission and distribution</p>	<p><a href="http://www.rurdev.usda.gov/UEP_Our_Grant_Programs.html">http://www.rurdev.usda.gov/UEP_Our_Grant_Programs.html</a></p>
Tribal Energy Program Grant	DOE's TEP	Varies (No open solicitations)	<p><b>Requirements:</b> Varies by solicitation</p> <p><b>Technology:</b> Solar, wind, biomass, hydro, geothermal</p>	<p><a href="http://apps1.eere.energy.gov/tribalenergy/">http://apps1.eere.energy.gov/tribalenergy/</a></p>

# Loans

Loan	Contact	Amount	Eligibility	Information
Rural Development Biorefinery Assistance Program	USDA	Up to 90% loan guarantee	<b>Technology:</b> Commercial-scale biorefinery <b>Applications:</b> Equipment, construction, permitting, land acquisition, cost of financing	<a href="http://www.rurdev.usda.gov/BCP_Biorefinery.html">http://www.rurdev.usda.gov/BCP_Biorefinery.html</a>
Power Project Loan Fund	Alaska Energy Authority	Varies	<b>Technology:</b> Solar, wind, MSW <b>Applications:</b> For development or upgrade of small-scale power production (<10 MW), conservation facilities, and bulk fuel storage, includes transmission and distribution	<a href="http://www.akenergyauthority.org/programsloan.html">http://www.akenergyauthority.org/programsloan.html</a>
Indian Affairs Loan Guaranty, Insurance, and Interest Subsidy Program	BIA	Guarantee: up to 90% of loan; Interest subsidy covers the difference between the lender's rate and the Indian Financing Act rate	<b>Requirements:</b> Borrower must have 20% tangible equity in the project. This is for business development.	<a href="http://www.bia.gov/WhoWeAre/AS-IA/IEED/LoanProgram/index.htm">http://www.bia.gov/WhoWeAre/AS-IA/IEED/LoanProgram/index.htm</a>
Energy and Mineral Development Program	BIA	Varies (Annual solicitations)	<b>Applications:</b> Evaluation of energy and mineral resources on tribal lands.	<a href="http://www.bia.gov/WhoWeAre/AS-IA/IEED/DEMD/TT/TF/index.htm">http://www.bia.gov/WhoWeAre/AS-IA/IEED/DEMD/TT/TF/index.htm</a>
Section 1703 Loan Guarantee Program	DOE	Varies (No open solicitations)	<b>Requirements:</b> Must be pre-commercial technology <b>Technology:</b> Biomass, hydrogen, solar, wind, hydro, transmission and distribution technologies	<a href="https://lpo.energy.gov/?page_id=39">https://lpo.energy.gov/?page_id=39</a>
Rural Energy for America Loan Guarantee Program	USDA	Up to 85% of loan amount (No open solicitations)	<b>Requirements:</b> Borrower must be rural small business or agricultural producer <b>Technology:</b> biomass, solar, wind, hydro, hydrogen, geothermal <b>Applications:</b> equipment, construction, permitting, professional service fees, feasibility studies, business plans, land acquisition	<a href="http://www.rurdev.usda.gov/BCP_ReapResEei.html">http://www.rurdev.usda.gov/BCP_ReapResEei.html</a>

# Other Government Financing

	Contact	Amount	Eligibility	Information
Advanced Biofuel Payment Program	USDA	Varies and is based on production	<b>Technology:</b> Advanced biofuel refineries (excl. biofuels from corn kernel starch)	<a href="http://www.rurdev.usda.gov/BCP_Biofuels.html">http://www.rurdev.usda.gov/BCP_Biofuels.html</a>
Qualified Energy Conservation Bonds	DOE	Varies	<b>Technology:</b> Solar, wind, biomass, hydro, geothermal, MSW, anaerobic digestion, tidal, wave, OTEC, LFGTE	<a href="http://www.naseo.org/resources/financing/qecb/index.html">http://www.naseo.org/resources/financing/qecb/index.html</a>

# Government Financing for Corporations

	Contact	Amount	Eligibility	Information
SBA Bond Guarantee	SBA	Varies	<b>Add'l Info:</b> The business must be unable to secure a bond without this guarantee. The contract must not exceed \$2 million.	<a href="http://www.sba.gov/content/small-business-eligibility-requirements">http://www.sba.gov/content/small-business-eligibility-requirements</a>
7(a) Loan Program	SBA	Up to \$5M; No Min.	<b>Applications:</b> Working capital, machinery and equipment, land and building, leasehold improvements, debt refinancing	<a href="http://www.sba.gov/content/7a-loan-program">http://www.sba.gov/content/7a-loan-program</a>

# Financing Considerations – Village Governments

- Village governments are excluded from tax credits and accelerated depreciation benefits, though private financing does not differ significantly from that for ANCs (*debt and equity*)
- For tax exempt village governments, innovative financing models and public private partnerships might enable the project to monetize value of ITC and PTC
- Third party power purchase agreement provides another avenue for villages and utilities to participate in renewable energy deployment

# Private Financing Sources

- **Debt**

Banks and the US Department of Treasury (via its lending arm, the Federal Financing Bank)

Energy Savings Performance Contracting

- **Sponsor equity**

Equity from large independent power producers (IPPs), smaller developers, utilities, and private equity players

- **Tax equity**

Upfront equity, in exchange for tax credits and other benefits, primarily from US banks and insurance companies

# Energy Savings Performance Contract

Mechanism for incorporating building maintenance, energy efficiency AND renewable energy to increase building functionality and maintenance savings.

- Energy Service Company (ESCO): Incurs initial cost of developing and implementing project
- Village/tribe repays the ESCO over the contract term out of energy and energy related savings

Common method in federal and public sector.



# Tax Credits

- Investment Tax Credits (ITC)
  - Solar , small wind (30%), geothermal, microturbines, combined heat and power (10%)
- Production Tax Credits (PTC)
  - The amount of the PTC is adjusted for inflation each year
  - 2.2¢/kWh for wind, geothermal, closed-loop biomass; 1.1¢/kWh for other eligible technologies
- New market tax credits
  - Qualified Equity Investments (QEIs) in qualified community development entities (CDEs)
  - Intended for “low income communities”
  - Indian tribes qualify as *targeted populations*, treated as *low income communities* for IRS purposes

*NOTE: Projects owned or operated by tax-exempt entities, like tribal governments, **cannot** take advantage of tax credits. But, there are 3<sup>rd</sup> party ownership options that can be used (discussed later).*



## ■ Tax Benefits of Depreciation

Renewable energy projects are eligible for five-year accelerated depreciation recovery period:

- lowers tax liability
- enhances overall project economic viability

## Tax Credits an Opportunity for Native Corporations

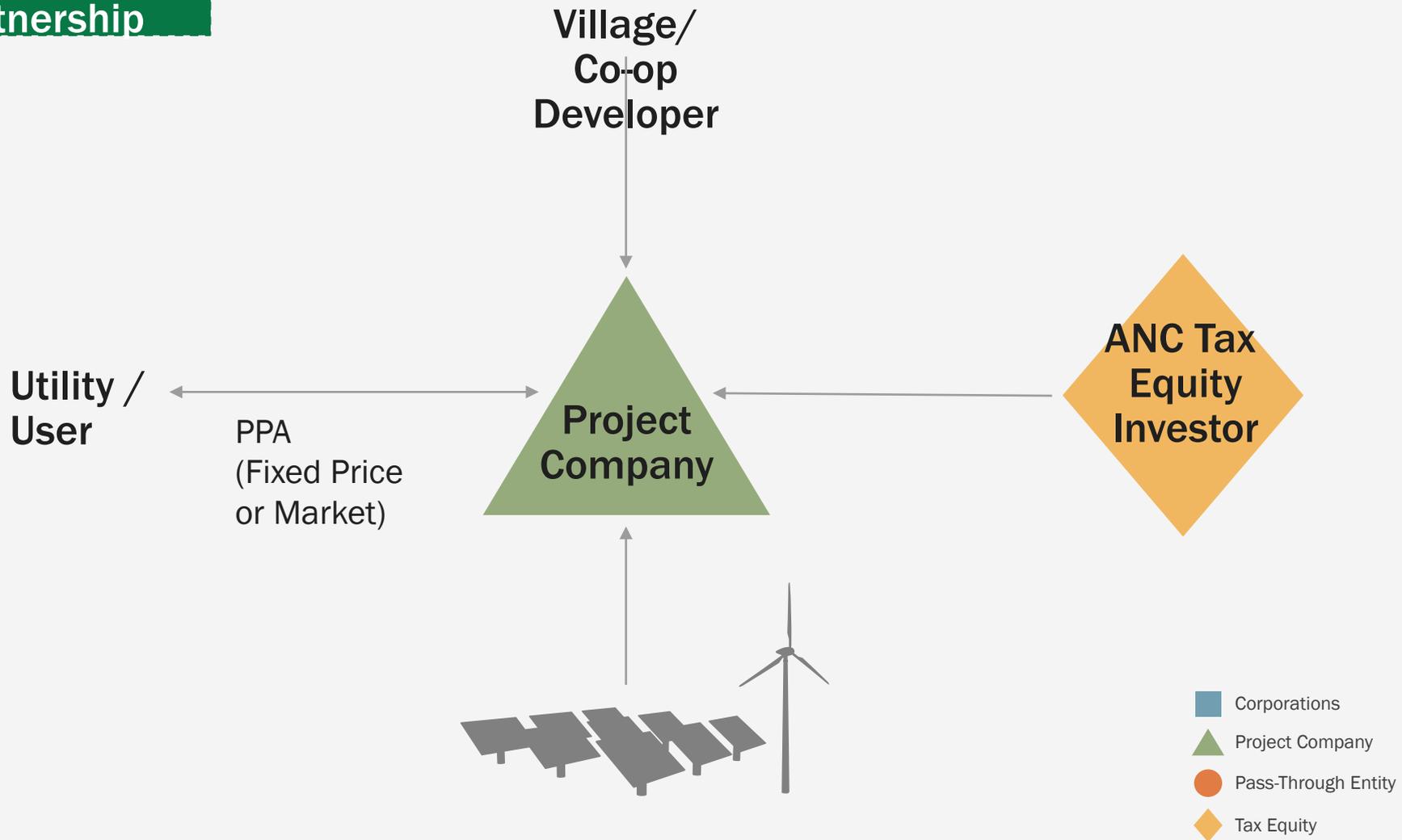
While village, borough and governments may not be able to take advantage of tax credits directly, Native Corporations can as long as there is enough taxable income to take advantage directly of the tax benefits

## ■ Tax Equity Investor

- Entity with high tax liability to take advantage of tax credits/depreciation
- In exchange for providing cash to project, monetizes the ITC and accelerated depreciation benefits
- Must own project, to monetizes tax benefits
- Tax equity investors are typically very large corporations or banks
- Represents roughly 50-55% of the initial capital costs
- Can negotiate future purchase/flip of the project to village or coop utility.

# Partnership Flip Structure

## Tax Equity Partnership



# Third Party Power Purchase Agreement (PPA)

- Removes:

- tribe, or other tax-exempt entity, from project ownership
- limitations and challenges created by having a tax-exempt party, like a tribe, involved in the ownership of the project

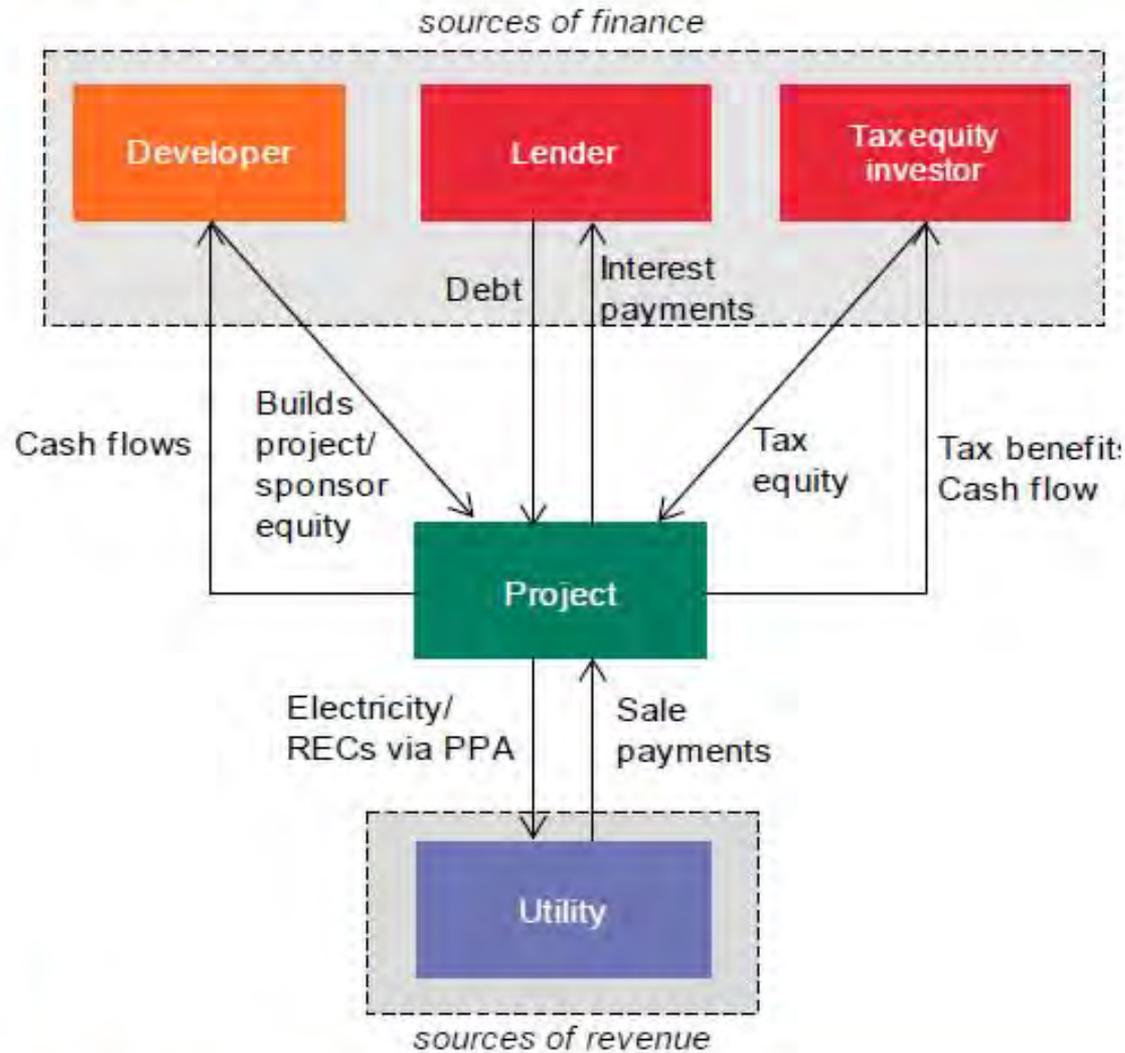
- Allows the investors to take full advantage of the tax credits and accelerated depreciation

- Like a tax equity investor, project owner may be primarily interested in:

- the tax benefits of the project with no interest in long-term ownership
- long-term ownership and operation of the project

- potential for Native Corporation to serve as third party project owner, of tribal developed project

# Third Party PPA



## Summary Slide

- Financing for renewable energy depends on:
  - Tax status of entity interested in development (*tax exempt, or not*)
  - Financing source (*government sponsored or private*)
- Native corporations have tax advantage and can diversify current portfolios with renewables
- Tax exempt tribal entities can partner with a native corporation, as a subsidiary, to take advantage of ITC and depreciation benefits

## Sources

- <http://www.irs.gov/pub/irs-utl/atgnmtc.pdf>
- <http://www.nrel.gov/docs/fy10osti/48078.pdf>
- <http://fairbanks-alaska.com/alaska-native-corporations.htm>
- <http://www.nrel.gov/docs/fy12osti/55021.pdf>
- BNEF Reimagining Solar Financing
- <http://www.ciri.com/content/company/FireIsland.aspx>
- [http://www.irs.gov/pub/irs-tege/tribal\\_business\\_structure\\_handbook.pdf](http://www.irs.gov/pub/irs-tege/tribal_business_structure_handbook.pdf)

# NOTES/EXTRA SLIDES

From: [http://www.irs.gov/pub/irs-tege/tribal\\_business\\_structure\\_handbook.pdf](http://www.irs.gov/pub/irs-tege/tribal_business_structure_handbook.pdf)

- As tribal business transactions become increasingly more sophisticated and involve non-Indian partners, investors, and lenders, there is a need to understand the basic methods for doing business in Indian country. In particular, in the energy industry, Indian tribes are shifting from being passive owners of their energy resources by evaluating ways in which they can own, develop, and produce their resources. Tribes are increasingly looking at ways to develop their resources in a manner that gives them an active ownership interest in the development of the project, often with a non-Indian business partner.