DOE OFFICE OF INDIAN ENERGY

## Course Outline

### What we will cover...

- **About the DOE Office of Indian Energy Education Initiative**

- **Project Financing Structures**
  - Direct Ownership
  - Partnership Flip
  - Sale Leaseback
  - Inverted Lease/Lease Pass-Through

- **Additional Information and Resources**
Introduction

The U.S. Department of Energy (DOE) Office of Indian Energy Policy and Programs is responsible for assisting Tribes with energy planning and development, infrastructure, energy costs, and electrification of Indian lands and homes.

As part of this commitment and on behalf of DOE, the Office of Indian Energy is leading education and capacity building efforts in Indian Country.
Training Program Objective and Approach

A specially designed curriculum was created to give tribal leaders and professionals background information in renewable energy development to:

- Present foundational information on strategic energy planning, grid basics, and renewable energy technologies
- Break down the components of the project development process on the facility, commercial, and community scales
- Explain how the various financing structures can be practical for projects on tribal lands.
Course Audiences

Tribal Leaders
- Primary decision makers
- Understand terminology
- Understand key decision points and factors influencing them

Staff/Project Management
- May be self-managing project or acting as managing consultants
- Communicate at key points with decision makers
- Require in-depth knowledge of process
How This Advanced/In-Depth Course Fits

Essentials
Basic process, decisions, and concepts for project development
Audience: All involved in project

Facility
Comprehensive, in-depth process pathways for project development and financing by project scale
Audience: Decision makers and project and contract managers

Community
Comprehensive, in-depth process pathways for project development and financing by project scale
Audience: Decision makers and project and contract managers

Advanced/In-Depth
Detailed academic information for deep understanding of concepts
Audience: Project and contract managers

Commercial
Comprehensive, in-depth process pathways for project development and financing by project scale
Audience: Decision makers and project and contract managers
Terminology in These Courses

Why Is It Important?

• Provides common language for internal discussion
• Assists in interaction with external organizations
• Increases credibility in project development

What Does It Include?

• Common terms and language for project development
• Acronyms for and roles of:
  – Federal agencies
  – Common federal and state policies

Your resource for reference: DOE-IE Course Terminology Guide
Key Concepts

- Tax-Equity Partnership
- Risk and Uncertainty
- Roles of the Tribe
- Levelized Cost of Energy (LCOE)
- The Project Team

In-depth information on each key concept available in Advanced Courses
About the Speaker

Travis Lowder

• Renewable energy and financial policy analyst

• Background in international development and environmental governance
RECAP: TAX-EQUITY FINANCE AND FEDERAL TAX INCENTIVES
Key Concept: Tax-Equity Partnerships

- Tribe can benefit from tax-equity incentives without being taxable
- Tribe can partner with third-party tax investors and/or developers to gain this advantage
  - Recent IRS private letter ruling (PLR) supports tribal partnerships with third-party tax equity
  - Even with IRS ruling, the Tribe needs capital to build a large renewable project; the Tribe can enjoy tax incentives by partnering with “Tax Equity,” a corporate investor
- Tax incentives (Modified Accelerated Cost Recovery System [MACRS] and either Production Tax Credit [PTC] or Investment Tax Credit [ITC]) can represent up to half the project value, or reduce project’s capital costs by ~50%
- Tribe benefits either by reducing its electricity costs or by offering a more competitive price for energy/renewable energy credits (RECs) from the project to a utility
So Why Seek a Tax-Equity Finance Partner?

- Tax incentives (MACRS and either PTC or ITC) can represent up to half the project value or reduce project’s capital costs by ~50%

- Tax incentives can help to achieve a competitive price of power

- Many projects also require state-level incentives to be economic
## Comparison of Tax Incentives

<table>
<thead>
<tr>
<th></th>
<th>PTC</th>
<th>ITC</th>
<th>Accelerated Depreciation</th>
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<tbody>
<tr>
<td><strong>Value</strong></td>
<td>Tax credit of 2.3¢/kWh or 1.1¢/kWh, depending on tech</td>
<td>Tax credit of 10% or 30% of project costs, depending on tech</td>
<td>Depreciation of eligible costs (not all project costs qualify)</td>
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</tbody>
</table>
| **Select Qualifying Technologies** | • Wind  
• Geothermal  
• Biomass  
• Hydro | • Solar  
• Geothermal  
• Fuel cells | Depreciation can be taken with either PTC or ITC                        |
| **Basis**    | Energy produced over 10-year period. Can be combined with depreciation of equipment. | Eligible project cost. Credit taken at the time the project is placed in service. Can be combined with depreciation of equipment. | **MACRS**: 5-year depreciation schedule  
**Bonus**: 50% first year accelerated depreciation on equipment |
| **Expiration** | Start construction before 1/1/2014                                 | Placed in service before 1/1/2017                                   | **MACRS**: None  
**Bonus**: 1/1/2014 |
INTRODUCTION:
PROJECT FINANCING STRUCTURES
Capital Structure with Tax Equity

Potential Capital Financing Sources

- Tax Equity
- Debt
- Cash Equity
- Other

Tax-Equity Investment Structures

- Partnership Flip
- Sale Leaseback
- Inverted Lease
March 8, 2013 IRS Private Letter Ruling – 111532-11

• An Indian tribal government is not considered a “governmental unit” or “tax-exempt organization” for purposes of renewable energy tax subsidies

• This presumably would permit tribal governments to enter into any one of the three tax-equity financing structures without jeopardizing access and use of federal tax incentives (BIG change)

• Yet to be tested in the market; Tribes should seek legal counsel


PROJECT FINANCING STRUCTURES: DIRECT OWNERSHIP
Direct Ownership Structure

The Tribe is the owner in this structure and self-generates its electricity.

Tribe purchases a renewable energy system with its own funding.

Over time, investment recouped from utility bill savings.

Primarily for facility and community-scale projects.

Tribe and Electricity Users

Payments

Remaining energy needs

Utility
Direct Ownership: Advantages and Challenges

Advantages

• Potential to use cheap public debt (tax-exempt debt issuance)
• Full control over a project: design, operations, and risks
• Ability to choose what to do with renewable energy attributes generated by the project (retain or monetize)

Challenges

• The Tribe does not have a tax liability to efficiently apply the federal renewable energy tax incentives
• Need expertise to navigate potential revenues from renewable portfolio standard-driven subsidies
• Debt lender requirements could complicate the model (if used)
• Project management expertise is required

Source: Cory et al. 2008, Pearlman 2011a
PROJECT FINANCING STRUCTURES: PARTNERSHIP FLIP
Partnership Flip Structure

**Partnership Flip**

- **Resource Owner**
- **Lender/Capital Provider**
- **Utility/Off-taker**
- **Project Developer**

**Income:**
- 99% Pre-Flip; 5% Post-Flip
- ITC/PTC, MACRS
- Equity Investment $$ (99%)
- Electricity
- PPA ($/kWh)
- Income: 1% Pre-Flip; 95% Post-Flip
- Developer Equity $ (1%)

**Equity Investment:**
- 99% Pre-Flip; 5% Post-Flip
- ITC/PTC, MACRS
- Equity Investment $$ (99%)

**Resource Role:**
- Rent/Royalty $
- Access/Site Control

**Resource Role:**
- Debt Payments ($/mo.)
- Debt Capital $$

**Resource Role:**
- Project Company/Pass-Through Entity
- Corporations
- Potential Tribal Role
- Tax Equity

**Resource Role:**
- Project Developer
- Lender/Capital Provider
- Utility/Off-taker
- Resource Owner
Cash Flow Example: Partnership Flip, No Debt

- Development Costs
- Project Development
- Project Construction
- Project Operation
- Cash Flows and Tax Benefits*
  - Flip point after year 5

- Capital Investment
  - Year: -7, -6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

- Tax-Equity Investor
- Developer

- U.S. Department of Energy Office of Indian Energy
Cash Flow Example: Partnership Flip, With Debt

Development Costs

Capital Investment

Year -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Cash Flows and Tax Benefits

Flip point after year 5

Lender
Tax-Equity Investor
Developer
Partnership Flip: Advantages and Challenges

Advantages

• Tax-equity provides most of the capital up front

• Easier way for Tribe/developer to own the project in the long run (than sale leaseback)

• Generally familiar structure for wind and solar industry, so many tax-equity investors have experience

Challenges

• Limited distribution payments to Tribe/developer until later in project (e.g., year 6 for solar; year 11 for wind)

• Still requires up-front capital contribution from developer Tribe (though could be as little as 1%)

• Developer must consult tax equity partner on major decisions
PROJECT FINANCING STRUCTURES:
SALE LEASEBACK
Sale Leaseback Structure

Sale Leaseback can provide 100% financing from tax-equity investor. IRS PLR seems to indicate Tribe can be developer/lessee; legal counsel recommended.

1) Developer sells project to tax-equity investor. Developer receives: sale proceeds and cash from power purchase agreement (PPA), less lease payments, O&M. Must purchase asset from tax equity at end of lease.

2) Tax equity leases project to developer. Tax equity receives: ITC, MACRS, and lease payments.

Potential Tribal Role

- Tax Equity
- Project Developer (Lessee)
- Resource Owner
- Utility/Off-taker
- Site Access
- Rent ($)
- $
Cash Flow Example: Sale Leaseback, No Debt

Developer can purchase project at fair market value
Sale Leaseback: Advantages and Challenges

Advantages

• Tax equity can provide 100% of the capital up front
• Developer gets large cash distribution upon sale of project
• Familiar and utilized structure among solar community

Challenges

• Most costly for Tribe/developer to acquire long-term ownership of project (large cash infusion ~ year 10)
• Tribe/developer operates the project
• Requires largest equity contribution from tax-equity investor (could limit investment)
• Limited participation to developer/Tribe until buyout of project (~ year 10)
• Not possible for PTC-based project (e.g., wind)
PROJECT FINANCING STRUCTURES: INVERTED LEASE/LEASE PASS-THROUGH
In the inverted lease, ITC is passed through to the tax-equity investor, allowing developer to retain ownership and some tax benefits (MACRS). IRS PLR seems to indicate Tribe may be developer; legal opinion required.
Cash Flow Example: Inverted Lease/Lease Pass-Through, No Debt

Cash Flows and Tax Benefits*

Project cash flows revert to developer in yr 6

Development Costs

Capital Investment

Year: -7, -6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

*The difference between structures is in the timing and magnitude of values

- Developer
- Tax-Equity Investor
Inverted Lease/Lease Pass-Through: Advantages and Challenges

Advantages

• Tribe/developer maintains controlling interest and ownership in project
• Cash flows to Tribe/developer from beginning
• Limits risk to tax-equity investor, possibly increasing availability of investment

Challenges

• Most complicated of all three tax-equity structures
• Developer must contribute significantly to up-front capital investment
• Not possible for PTC-based project (e.g., wind)
• Limited upside for tax-equity investor
## Project Financing Structures: Comparison

<table>
<thead>
<tr>
<th>Structures</th>
<th>Overview</th>
<th>Characteristics</th>
<th>Tax-Equity Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partnership Flip</td>
<td>Common to wind/solar deals, two participants (tax-equity and developer).</td>
<td>Typically 99%/1% allocations until flip (approx. 6 years), then 5%/95%</td>
<td>8%–12%</td>
</tr>
<tr>
<td>Sale Leaseback</td>
<td>Extensive use in solar deals, at least two participants (1. tax-equity investor/lessor, 2. developer/lessee)</td>
<td>Developer sells completed project to tax-equity, leases it back (10–15 years)</td>
<td>10%–15%</td>
</tr>
<tr>
<td>Inverted Lease/Lease Pass-Through</td>
<td>More complex and less common, at least two participants (1. tax-equity investor/lessee, 2. developer/lessor)</td>
<td>Project majority owned by developer, leases to investor, (7–10 years)</td>
<td>10%–15%</td>
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</tbody>
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# Financing Structures and Tribal Implications

<table>
<thead>
<tr>
<th>Financing</th>
<th>Direct Ownership</th>
<th>Partnership Flip</th>
<th>Sale Leaseback</th>
<th>Inverted Lease/Lease Pass-Through</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing</td>
<td>User self-finance system and consumes power on-site</td>
<td>Investor can provide up to 99% financing. Debt can also be part of capital stack.</td>
<td>Investor provides 100% financing. Debt can also be part of capital stack, commonly at developer level.</td>
<td>Investor provides partial financing. Debt is a common part of capital stack.</td>
</tr>
<tr>
<td>Up-front Tribal Capital Req.</td>
<td>$$$$$</td>
<td>$</td>
<td>$, potentially $0</td>
<td>$$$–$$$$</td>
</tr>
<tr>
<td>Ownership</td>
<td>User-owned</td>
<td>Co-ownership by developer and investor</td>
<td>Developer has option to purchase assets at lease term</td>
<td>Assets revert to developer at the lease term</td>
</tr>
<tr>
<td>Tax Credit</td>
<td>NA</td>
<td>PTC or ITC</td>
<td>ITC</td>
<td>ITC</td>
</tr>
<tr>
<td>Investor Preference</td>
<td>Certain firms have preferences for/familiarity with particular structures and/or technologies. Project specifics may also dictate financial structure selected.</td>
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These courses were designed in coordination with Tracey LeBeau and Pilar Thomas of the DOE Office of Indian Energy by a team including Dan Beckley, Stacy Buchanan, Karlynn Cory, Jason Coughlin, Elizabeth Doris, Mike Elchinger, Sara Farrar-Nagy, Bill Gillies, Travis Lowder, Anirudh Paduru, Paul Schwabe, Bob Springer, Blaise Stoltenberg, and Rachel Sullivan of the National Renewable Energy Laboratory; Joe Cruz and Matt Ferguson of Cohn Reznick; Paul Dearhouse of Dearhouse Consulting Group; and Carolyn Stewart of Red Mountain Energy Partners.

Questions/comments: indianenergy@hq.doe.gov
For more information: www.energy.gov/indianenergy
Additional courses: www.nterlearning.org

THANK YOU
Curriculum Structure and Offerings

Foundational Courses
Provide an overview of foundational information on renewable energy technologies, strategic energy planning, and grid basics

Leadership and Professional Courses
Cover the components of the project development process and existing project financing structures
## Foundational Courses

<table>
<thead>
<tr>
<th>Energy Basics</th>
<th>Renewable Energy Technology Options</th>
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</thead>
<tbody>
<tr>
<td>• Assessing Energy Needs and Resources</td>
<td>• Biomass</td>
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<tr>
<td>• Electricity Grid Basics</td>
<td>• Building Heat &amp; Hot Water</td>
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<td>• Strategic Energy Planning</td>
<td>• Geothermal</td>
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<td>• Hydroelectric</td>
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<td>• Solar</td>
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<td>• Wind</td>
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All courses are presented as 40-minute webinars online at: [www.nterlearning.org](http://www.nterlearning.org)
## Leadership and Professional Courses

<table>
<thead>
<tr>
<th>Essentials</th>
<th>Advanced/In-Depth</th>
</tr>
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<tbody>
<tr>
<td><strong>Project Development and Financing Essentials</strong></td>
<td><strong>Project Development</strong></td>
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<tr>
<td>• Key concepts</td>
<td>• Concepts</td>
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<tr>
<td>• Process overview</td>
<td>– Risk and uncertainty</td>
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<tr>
<td>• Decision points</td>
<td>– Tribal project roles</td>
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<td></td>
<td>– Policies and renewable energy (federal &amp; state)</td>
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<td><strong>Process</strong></td>
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<td>– Project scale decision factors</td>
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<td>– Understanding the energy market</td>
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<td>– Project team</td>
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<td>– Procurement</td>
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<td><strong>Project Finance</strong></td>
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<td>• Concepts</td>
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<td>– LCOE</td>
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<td>– Business structures</td>
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<td>– Tax-equity partnerships</td>
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<td><strong>Process and Structures</strong></td>
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<td>– Direct ownership</td>
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<td>– Leaseback</td>
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<td>– Inverted lease</td>
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<td><strong>Project Scale</strong></td>
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<td>• Facility</td>
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<td>• Community</td>
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