

DOE OFFICE OF INDIAN ENERGY

Step 3: Project Refinement Iterations



U.S. DEPARTMENT OF
ENERGY

Office of
Indian Energy



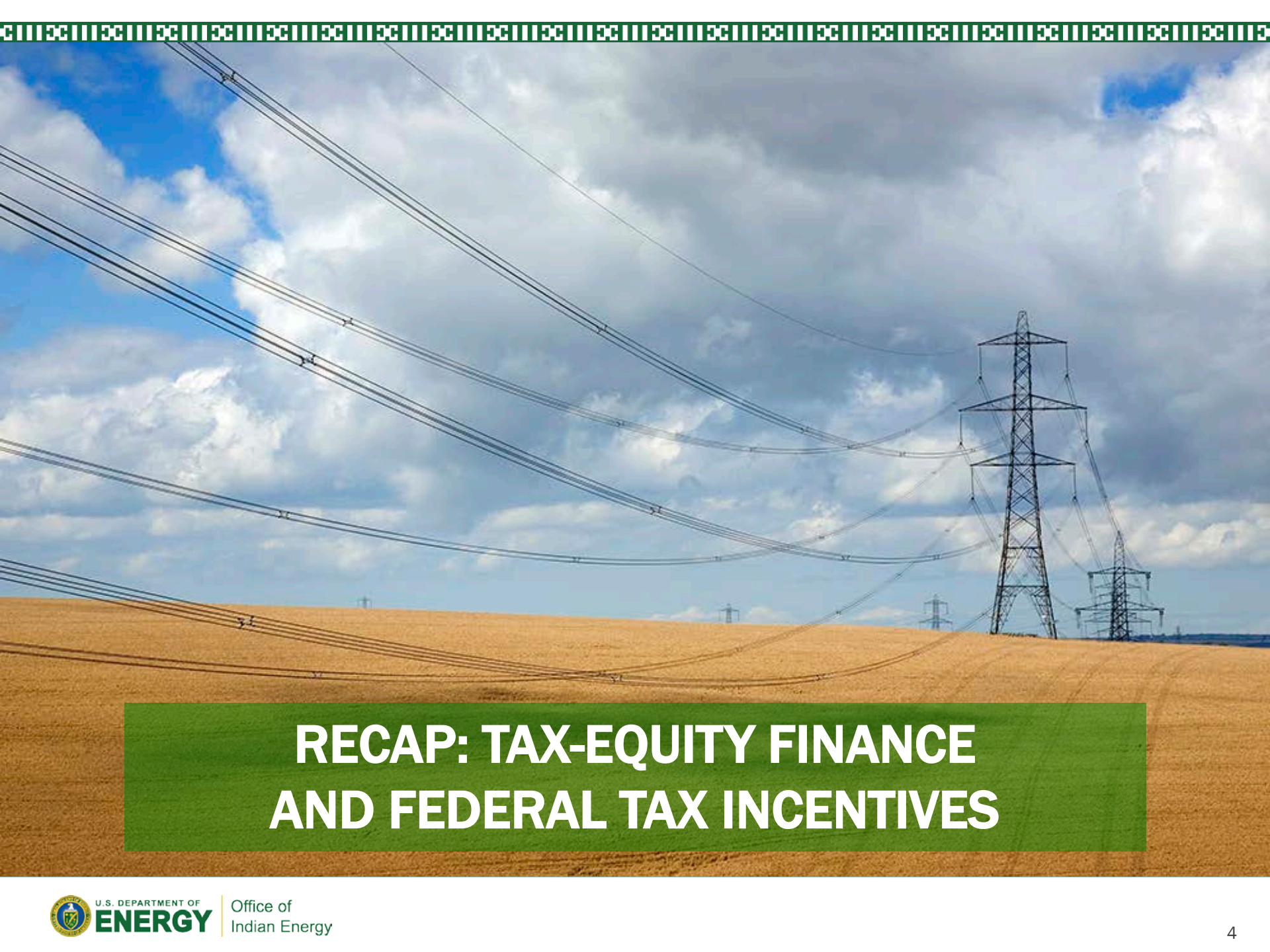
3 Refinement





■ | Agenda

- Recap: Tax-Equity Finance and Federal Tax Incentives
- Project Financing Structures
- Offtaker Agreements and Vendor Selection



RECAP: TAX-EQUITY FINANCE AND FEDERAL TAX INCENTIVES



The Competitive Power Business

Role: Independent power producer (IPP)/non-utility generator (NUG)

Commercial-scale: Long-term, revenue-generating facility on Tribal land that sells power to one or more utilities

Rewards: Typical Goals

- Generate revenue for Tribe
- Job creation (construction, O&M)
- Available, Tribe-controlled location
 - May/may not be Tribe-owned
- Found interested party to off-take/purchase power
- Have enough capital for a large-scale project
- Environmental sustainability
- Self-sufficiency, pride

Challenges

- Capital intense
- Development risk and time
- Involves external players
- Competes with wholesale price of elec.

A commercial project is dependent upon market forces. The project needs to be competitive with wholesale rates, or non-Tribal projects and/or provide a clear differentiator.

See Tribal Business Structure Handbook www.irs.gov/pub/irs-tege/Tribal_business_structure_handbook.pdf

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 may also require state-level incentives in order to be economically viable

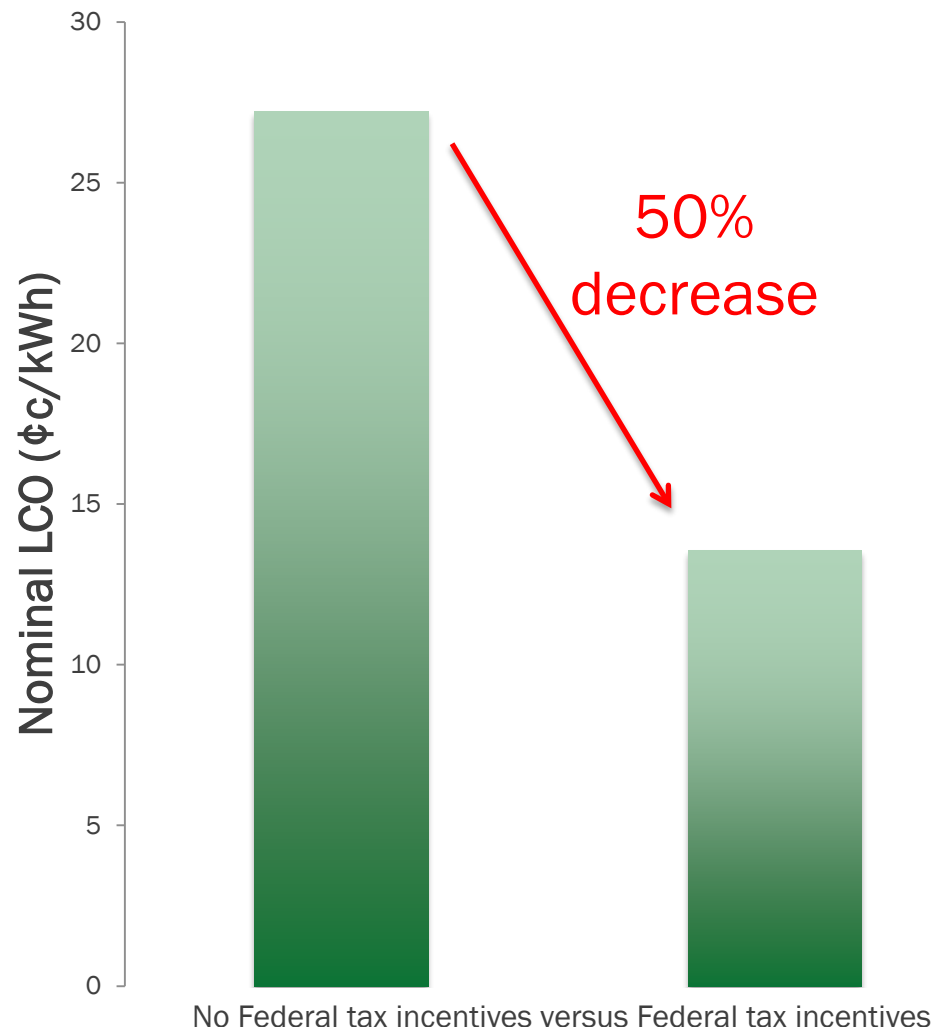
Federal Tax Incentives vs. No Tax Incentives

No Federal Tax Incentives)

Metric	Base
Annual Energy	37,230,428
PPA price	25.36 ¢/kWh
LCOE Nominal	27.22 ¢/kWh
LCOE Real	22.11 ¢/kWh
Internal rate of return (%)	12.00 %
Minimum DSCR	3.36
Net present value (\$)	\$ 2,386,955
Calculated ppa escalation (%)	1.00 %
Calculated debt fraction (%)	50.00 %
Capacity Factor	21.3 %
First year kWhac/kWdc	1,862
System performance factor (%)	0.82

Federal Tax Incentives

Metric	Base
Annual Energy	37,230,428
PPA price	12.62 ¢/kWh
LCOE Nominal	13.55 ¢/kWh
LCOE Real	11.00 ¢/kWh
Internal rate of return (%)	21.11 %
Minimum DSCR	1.57
Net present value (\$)	\$ 6,525,698
Calculated ppa escalation (%)	1.00 %
Calculated debt fraction (%)	50.00 %
Capacity Factor	21.3 %
First year kWhac/kWdc	1,862
System performance factor (%)	0.82



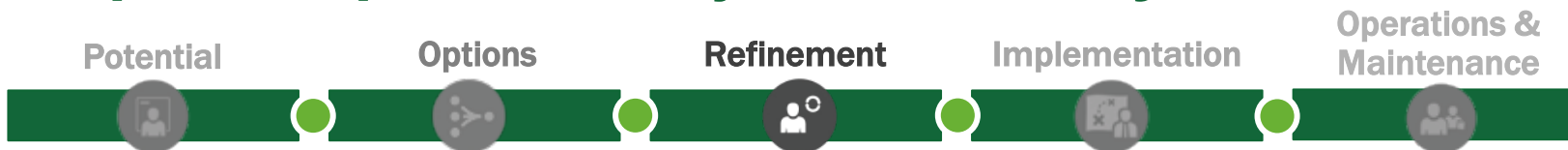
If Tribal Ownership is the Goal...

- Tribes should not expect to purchase a renewable energy project from tax equity in the initial years of operation because this will jeopardize the tax credits. They must wait a number of years depending on the technology:
 - Solar: 6+ years (recapture, MACRS, lease term)
 - Wind: 10+ years (length of PTC)

If Tribal Ownership is the Goal (cont.)

- If and when a Tribe purchases a renewable energy project, they must do so at “fair market value.”
 - Ownership timing and cost will be structure dependent (e.g. partnership vs. sale leaseback)
 - Though it will be less than if the Tribe were the original owner.
- There are methodologies for calculating FMV for a renewable energy project in the future.
 - Tribe could get a sense of how much capital will be required and plan accordingly

Step 3: Capital to Pay for the Project



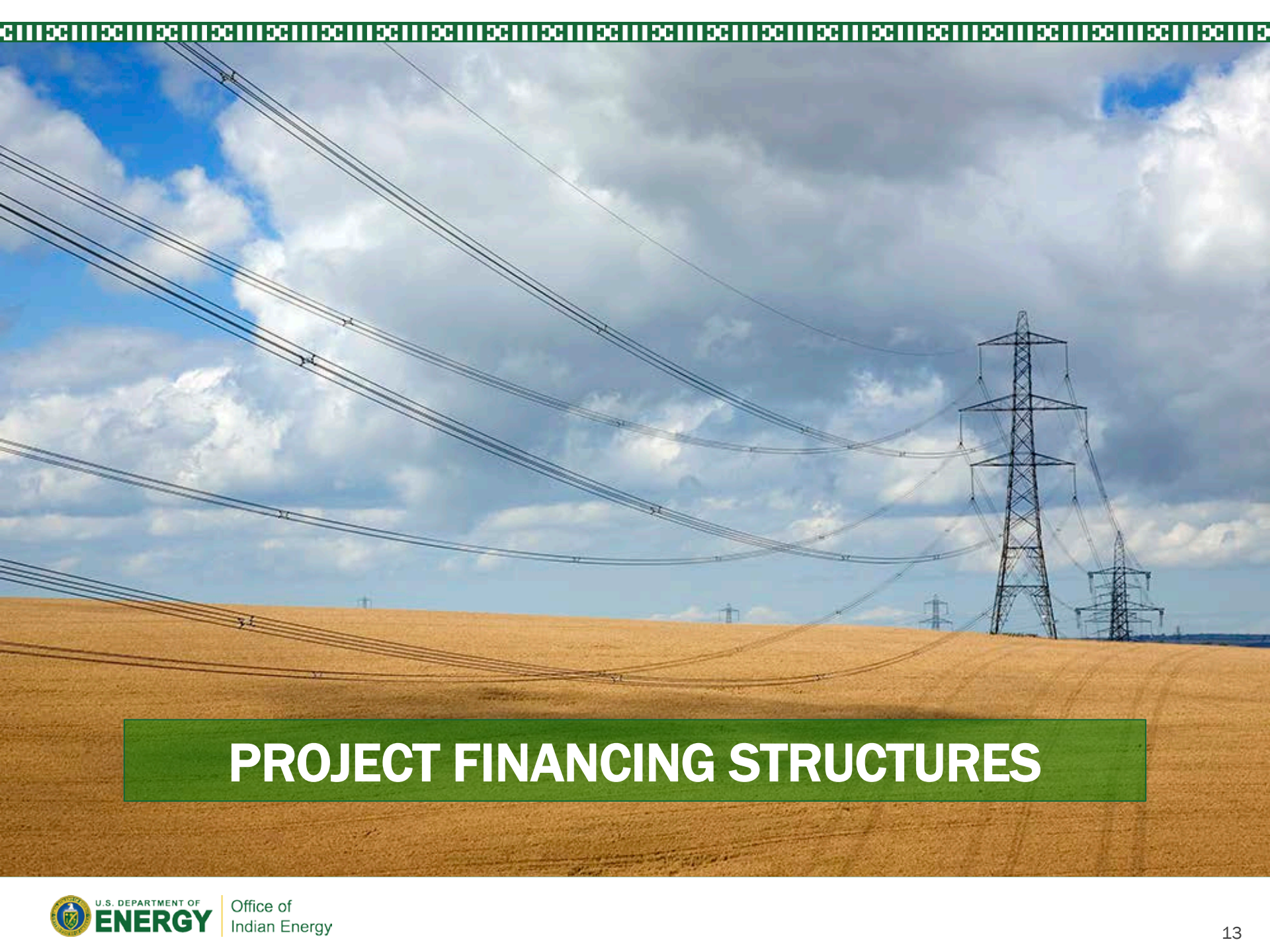
Process Stage	Activity	Primary Capital	Secondary Capital
1. Potential	Feasibility studies	Developer equity	None/Grants
2. Design	Permitting, environmental, site control	Developer equity	None/Grants
3. Refinement	Engineering	Developer equity	Debt
4. Implementation	Construction	Construction debt	Vendor finance Tax Equity
5. Operations & Maintenance (O&M)	Completed	Project cash flows	Reserve fund from term debt

Federal Tax Incentives

- Production Tax Credit (PTC)
- Investment Tax Credit (ITC)
- Modified Accelerated Cost Recovery System (MACRS)

Comparison of Tax Incentives

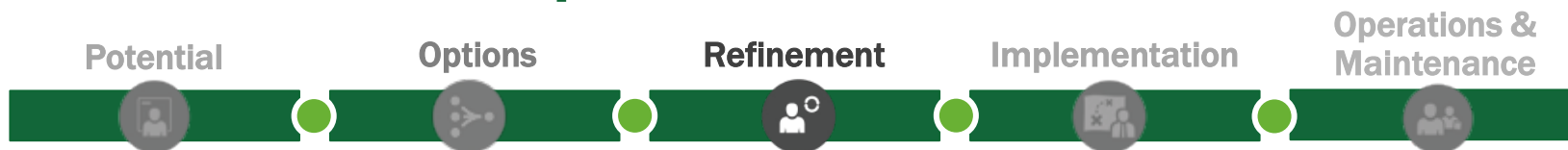
	PTC	ITC	Accelerated Depreciation
Value	Tax credit of 2.3¢/kWh or 1.1¢/kWh, depending on tech	Tax credit of 10% or 30% of project costs, depending on tech	Depreciation of eligible costs (not all project costs qualify)
Select Qualifying Technologies	<ul style="list-style-type: none"> • Wind • Geothermal • Biomass • Hydro 	<ul style="list-style-type: none"> • Solar • Fuel cells • Small wind • Geothermal 	Depreciation can be taken with either PTC or ITC
Basis	Energy produced over 10-year period. Can be combined with depreciation.	Eligible project cost. Credit taken at the time the project is placed in service. Can be combined with depreciation.	MACRS: 5-year depreciation schedule
Expiration	Start construction before 12/31/14	Placed in service before 1/1/2017*	MACRS: None



PROJECT FINANCING STRUCTURES



Direct Ownership



Parent Company: Taxable Corporation

Tax Benefits

— 5% Potential

— 10% Design

— 25% Refinement

— 60% Implementation

Project Company

- Corporations
- Project Company/
Pass-Through Entity
- Tax Equity

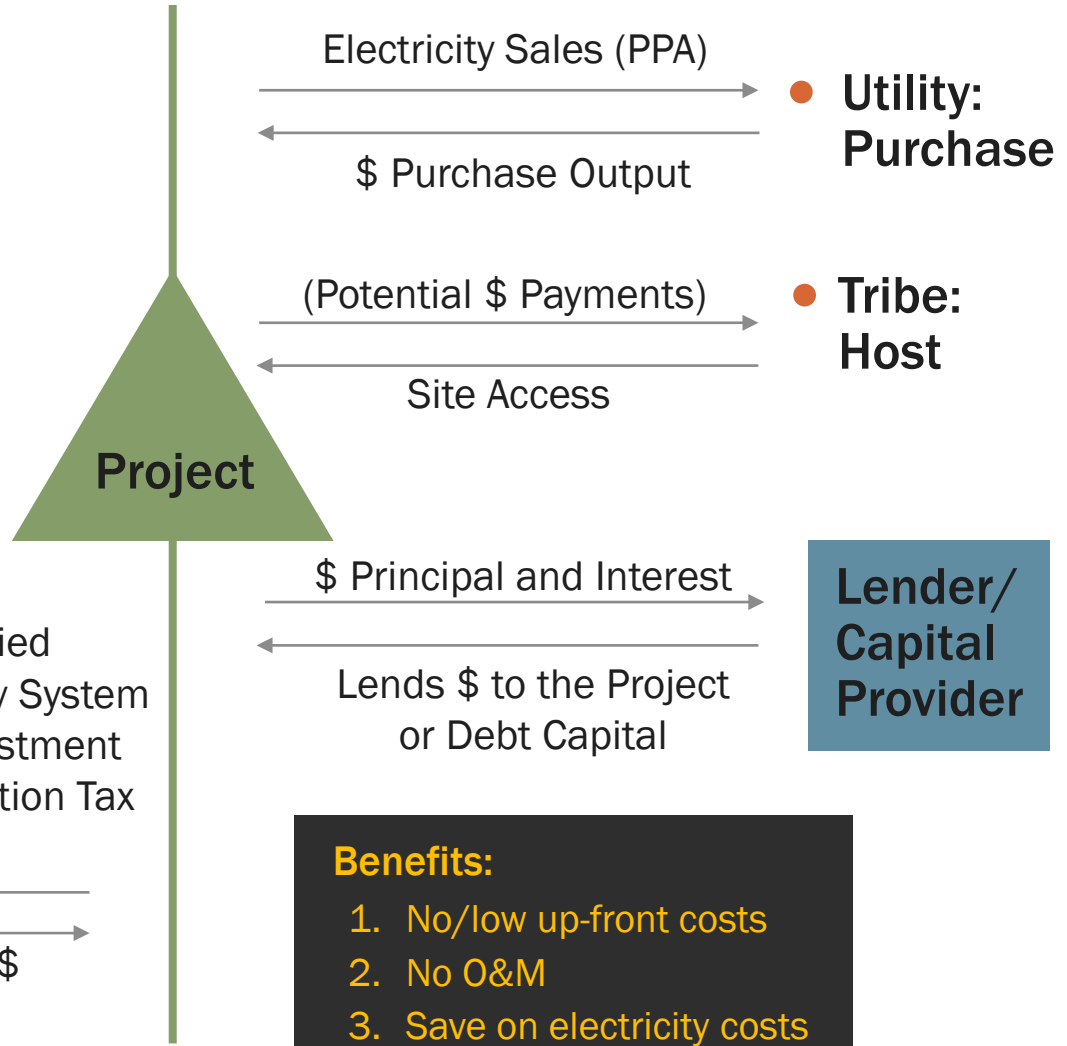
Project Development Stages – % Resource Inputs, Time/\$



Third-Party Financed Power Purchase Agreement: Where Electricity is Sold to a Utility

- Corporations
- ▲ Project Company/
Pass-Through Entity
- ◆ Tax Equity
- Potential Tribal Role

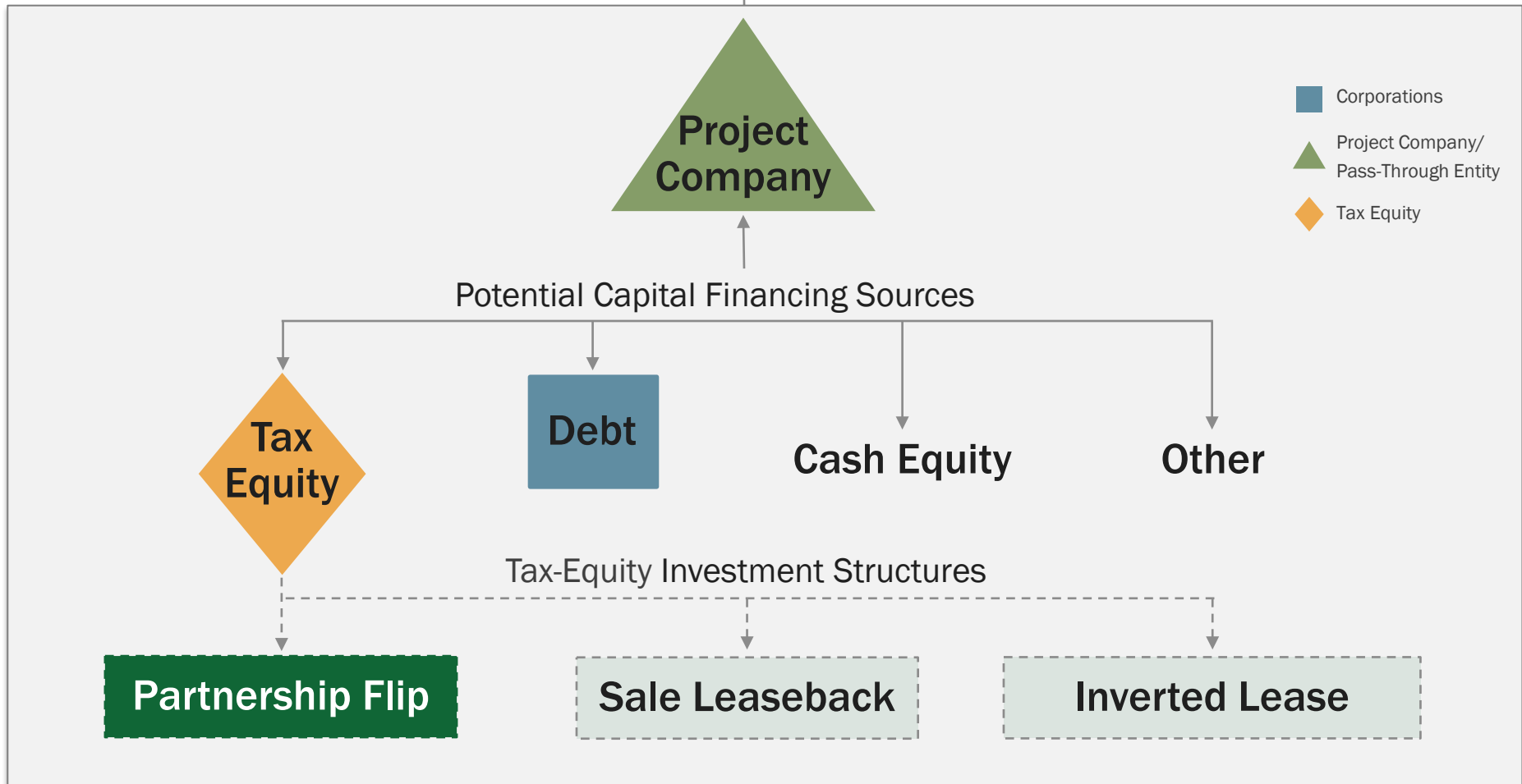
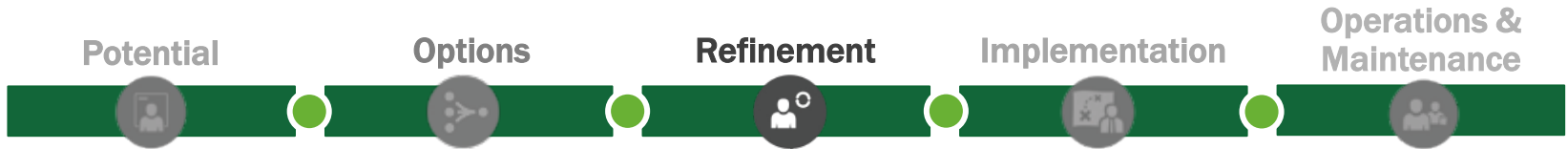
The Tribe is the host in this Structure. The utility agrees to buy electricity generated by the renewable energy system.



Benefits:

1. No/low up-front costs
2. No O&M
3. Save on electricity costs

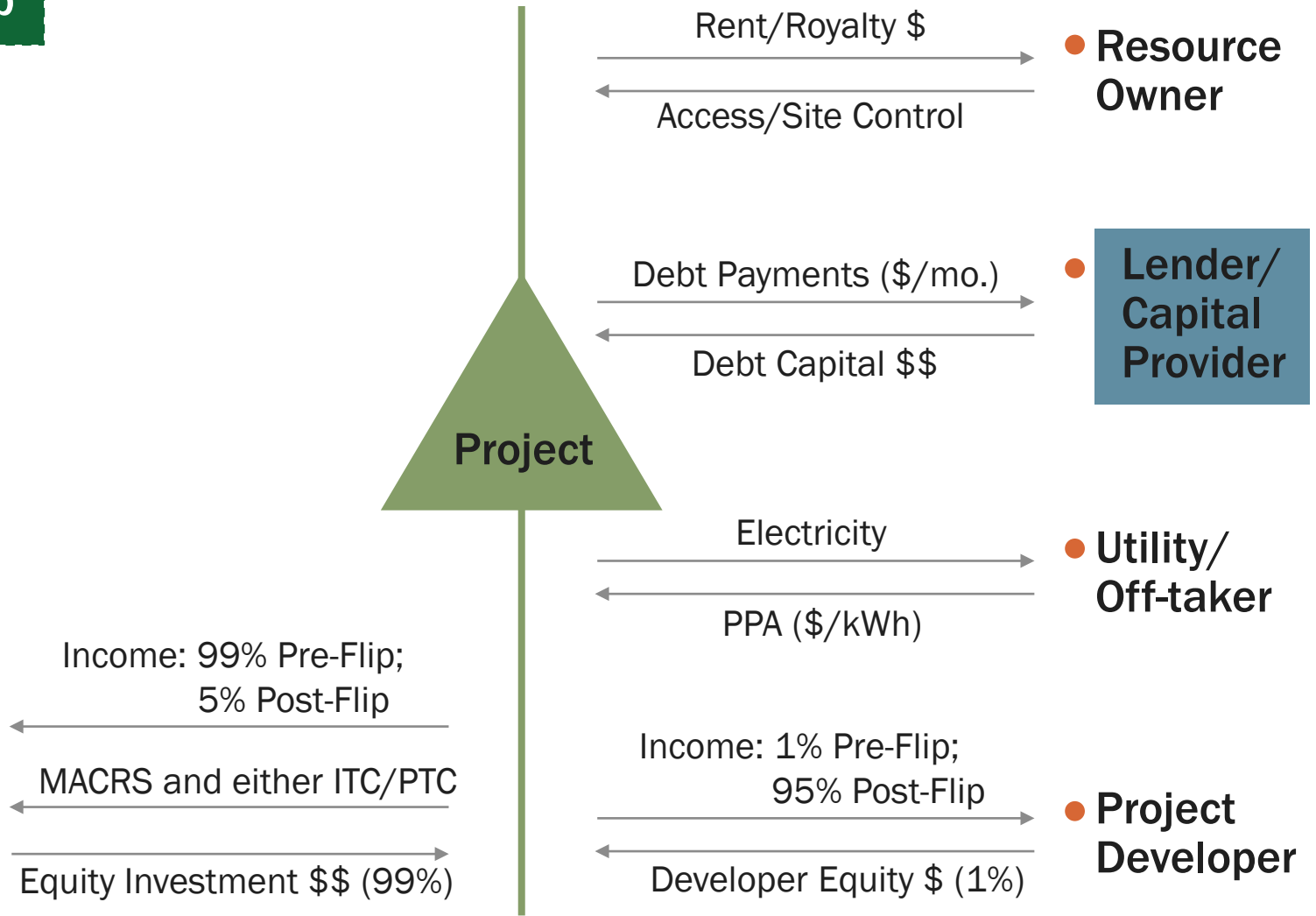
Capital Structure with Tax Equity



Partnership Flip

Partnership Flip

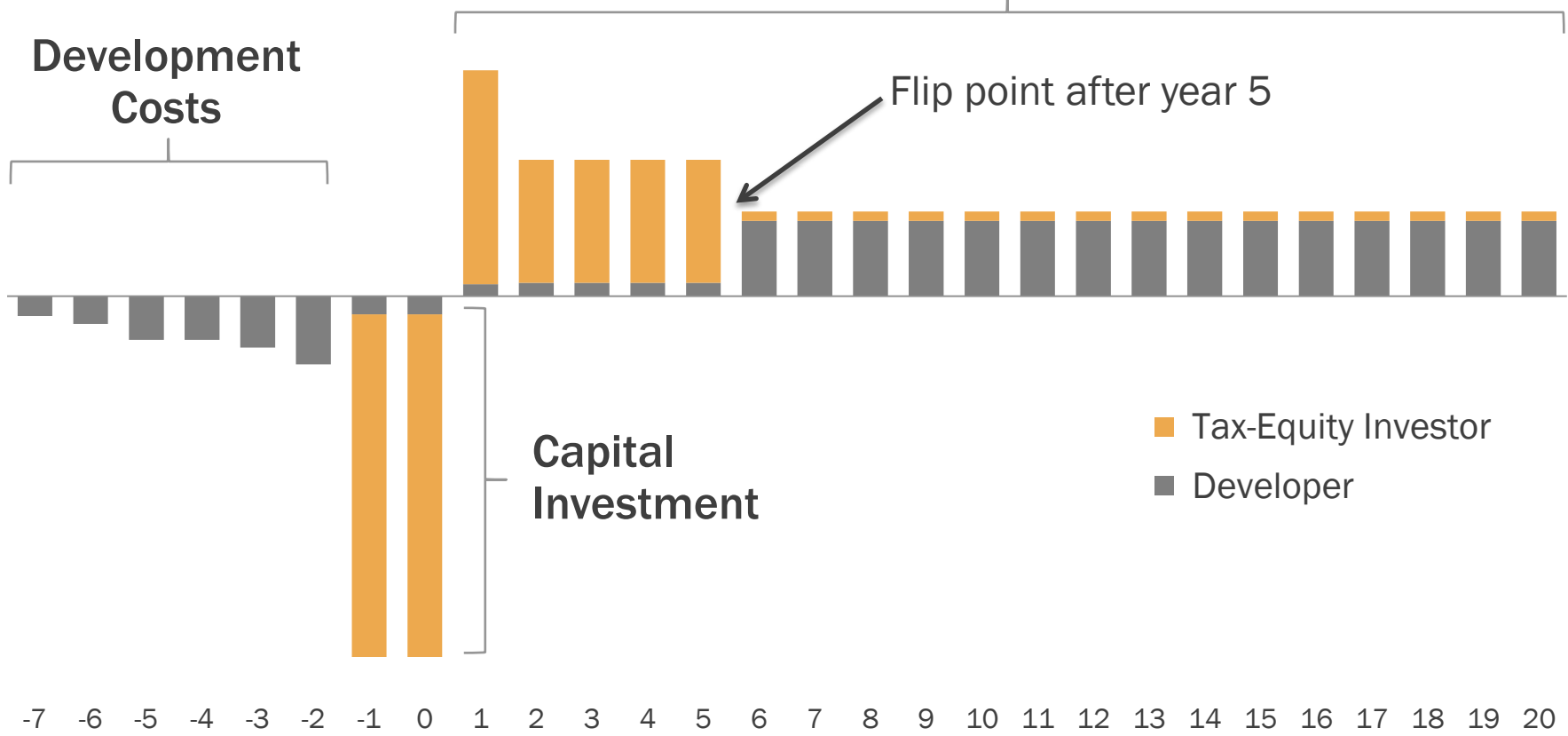
- Corporations
- ▲ Project Company/
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- ◆ Tax Equity
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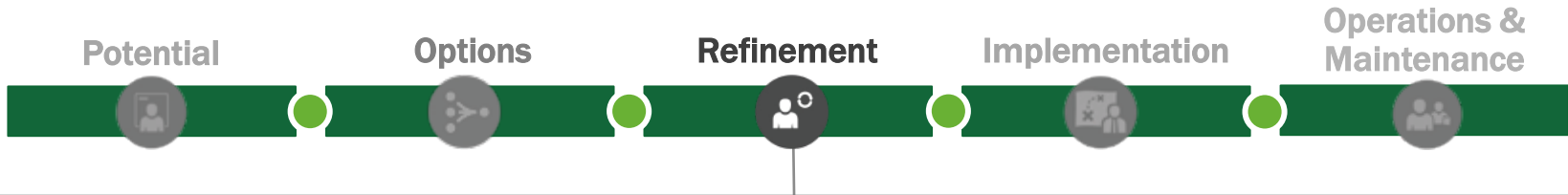
Cash Flow Example: Partnership Flip, No Debt



Cash Flows and Tax Benefits*



Project Finance: Partnership Flip Tax-Equity Structure



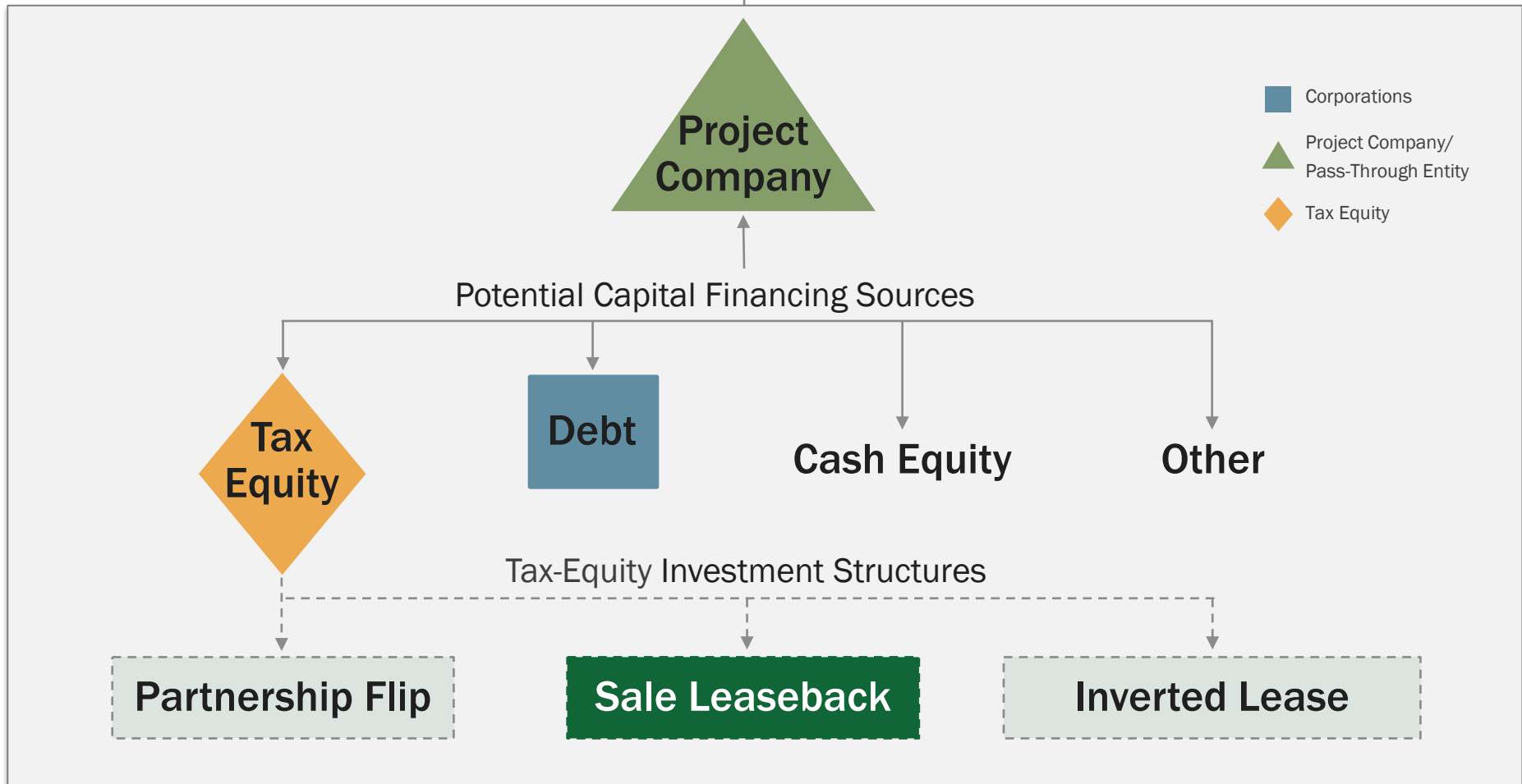
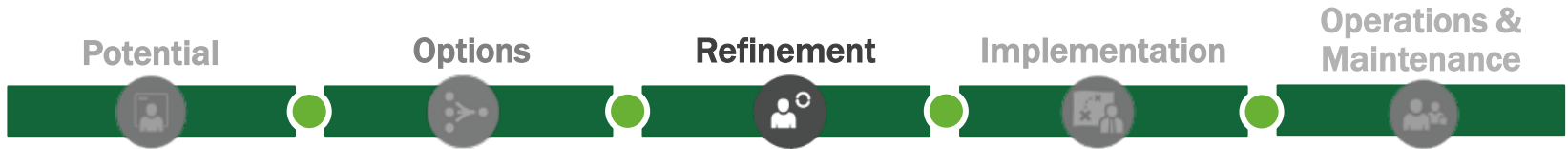
Advantages:

- Tax equity provides most of the capital up front
- Generally familiar structure for wind and solar industry, so many tax-equity investors have experience.
- Ability to buy-out tax equity (5%) after tax credits monetized

Challenges:

- Limited distribution payments to Tribe/developer until later in project (e.g., year 6-7 for solar; year 10-11 for wind)
- Still requires up-front capital contribution from Tribe/developer
- Developer must consult tax equity on major decisions

Capital Structure with Tax Equity

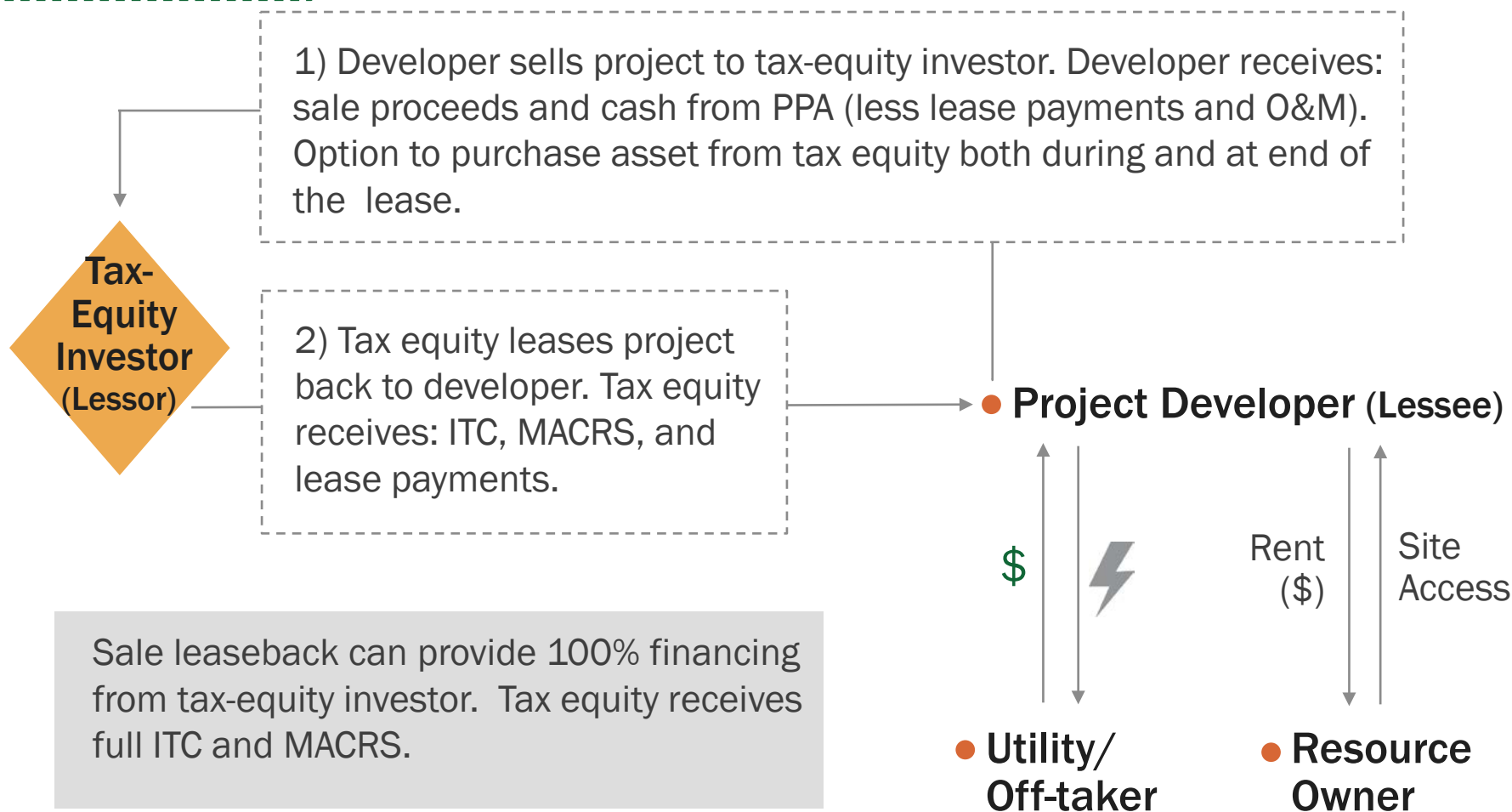


Sale Leaseback Structure

◆ Tax Equity

● Potential Tribal Role

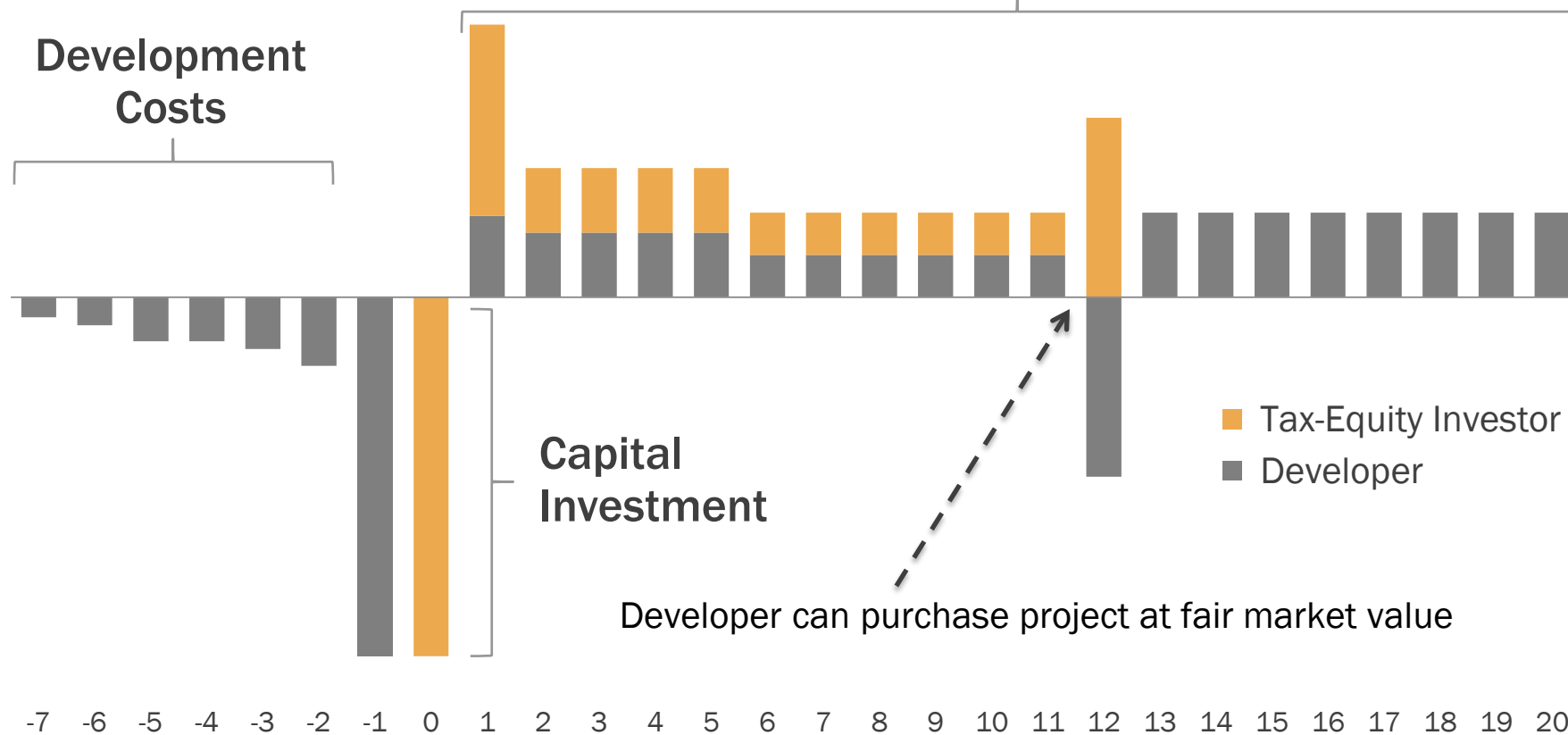
Sale Leaseback



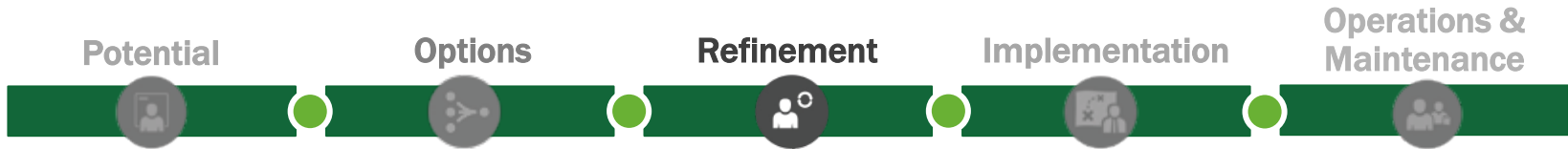
Cash Flow Example: Sale Leaseback, No Debt



Cash Flows and Tax Benefits



Project Finance: Sale Leaseback Tax-Equity Structure



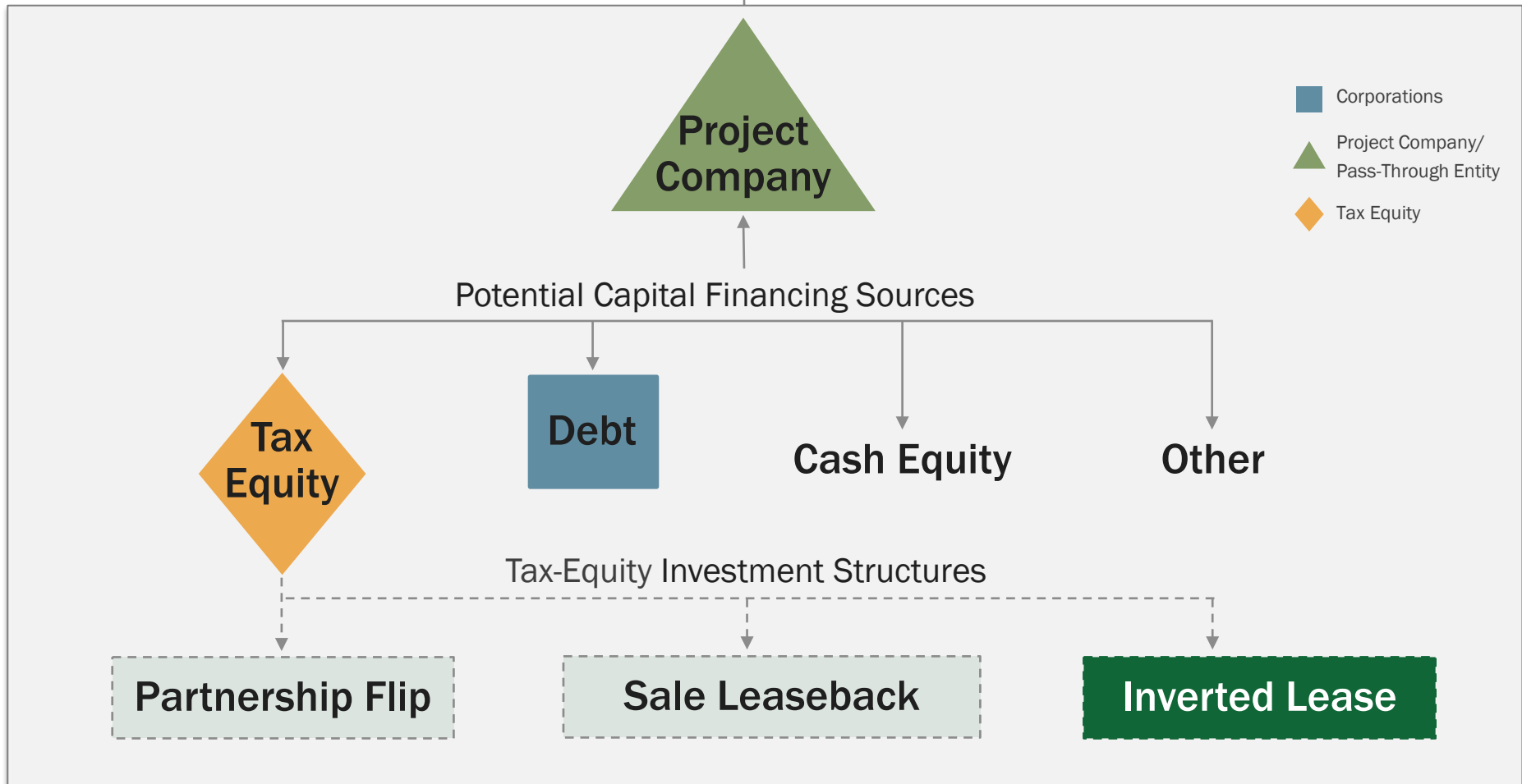
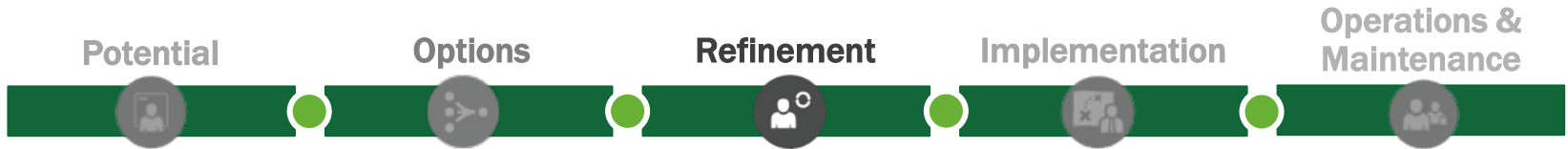
Advantages:

- Tax equity provides 100% of the financing (at time of sale)
- Efficiently monetizes the tax benefits
- Developer gets large cash distribution upon sale of project
- Familiar structure among solar community

Challenges:

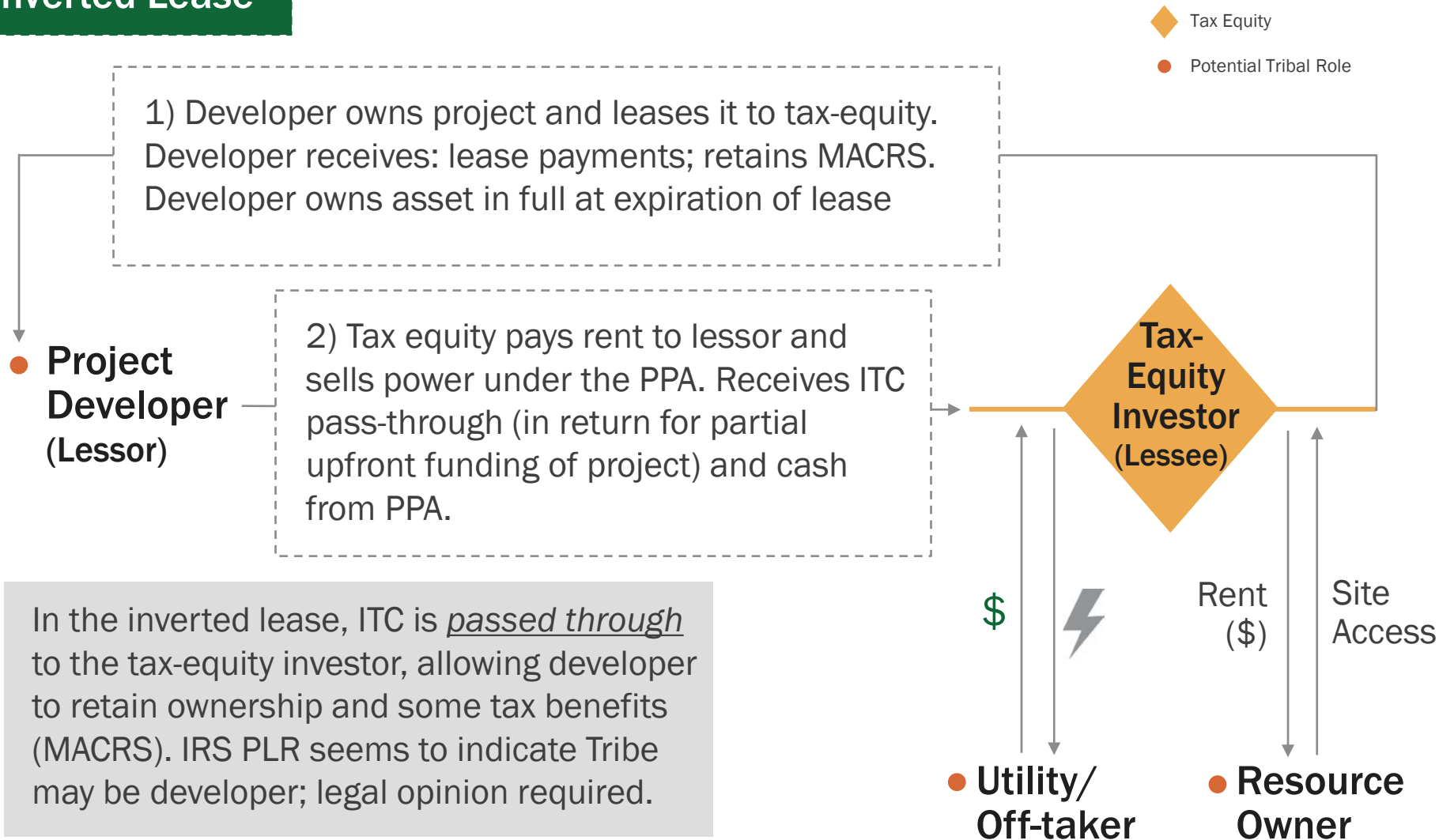
- Most costly for Tribe/developer to acquire long-term ownership of project (buy project back from lessor ~ after year 7)
- Tribe/developer operates the project
- Lessee on the hook for the lease payments regardless of system performance
- Not possible for PTC-based project (e.g., wind)

Capital Structure with Tax Equity



Inverted Lease/Lease Pass-Through Structure

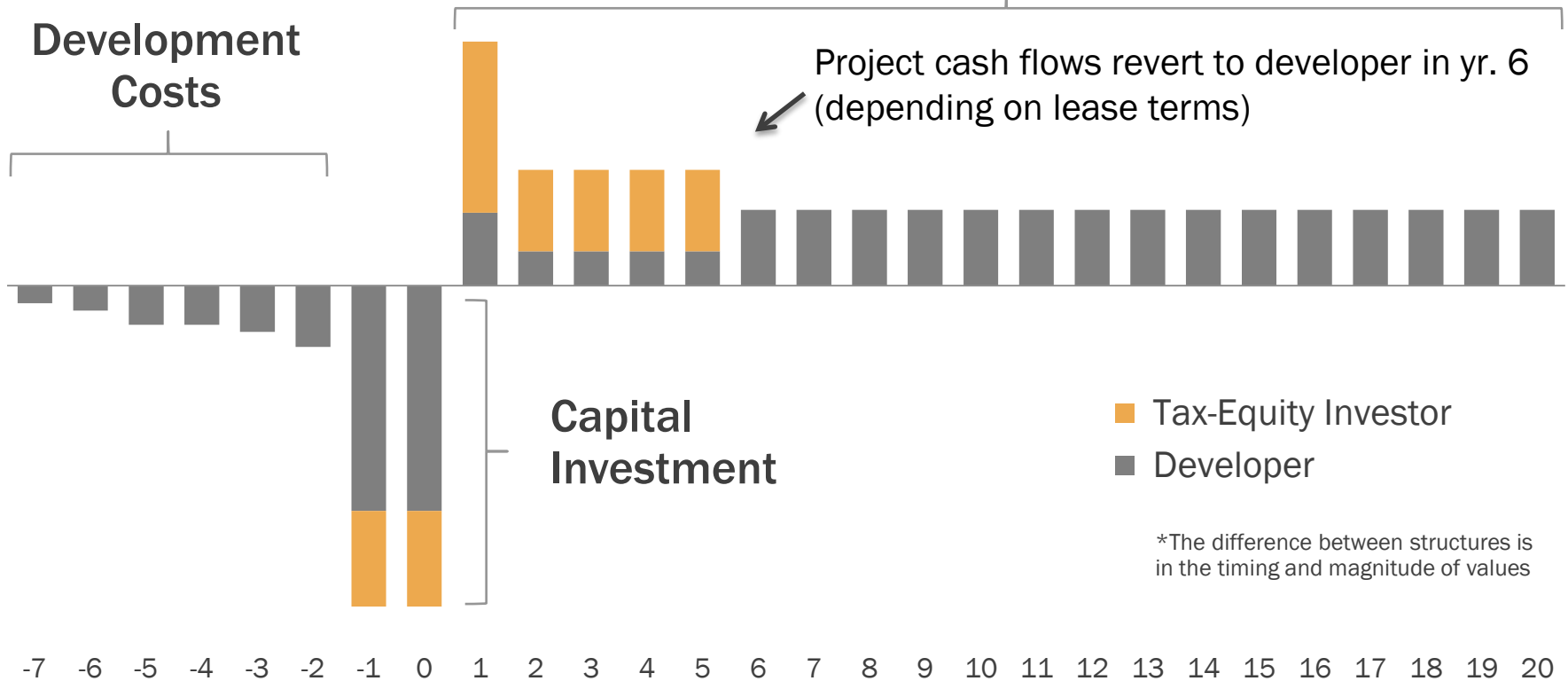
Inverted Lease



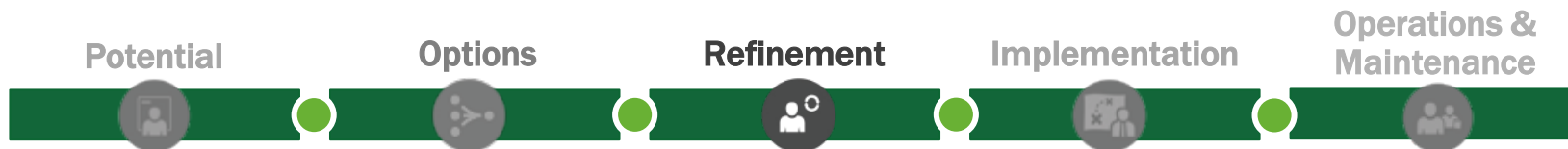
Cash Flow Example: Inverted Lease/Lease Pass-Through, No Debt



Cash Flows and Tax Benefits*



Project Finance: Inverted Lease Tax-Equity Structure



Advantages:

- PLR creates opportunities for Tribe's to consider this structure
- Tribe/developer maintains controlling interest and ownership in project
- Cash flows to Tribe/developer from beginning (lease payments)
- The developer resumes control of the project after the expiration of the lease term

Challenges:

- Most complicated of all three tax-equity structures
- Not possible for PTC-based project (e.g., wind)
- Limited upside for tax-equity investor

Private Letter Ruling

What is it?

A private letter ruling, or PLR, is a written statement issued to a taxpayer that interprets and applies tax laws to the taxpayer's represented set of facts. A PLR is issued in response to a written request submitted by a taxpayer. A PLR may not be relied on as precedent by other taxpayers or by IRS personnel.*

March 2013 IRS PLR supports Tribal partnerships with third-party tax equity (<http://www.irs.gov/pub/irs-wd/1310001.pdf>)

Private Letter Ruling

March 2013 IRS PLR

“Based on your representation that the Renewable Energy Assets qualify as energy property under § 48 and our conclusion that an Indian tribal government is neither a governmental unit described in § 50(b)(4) nor an organization exempt from tax imposed by Chapter 1 for purposes of § 50, we conclude that Tribe may elect to pass investment credits associated with the Renewable Energy Assets to Lessee under § 50(d)(5).”

Creates opportunity for Tribes to consider inverted lease transactions (and possibly sale leaseback transactions) and take a more active role in project development/ownership.

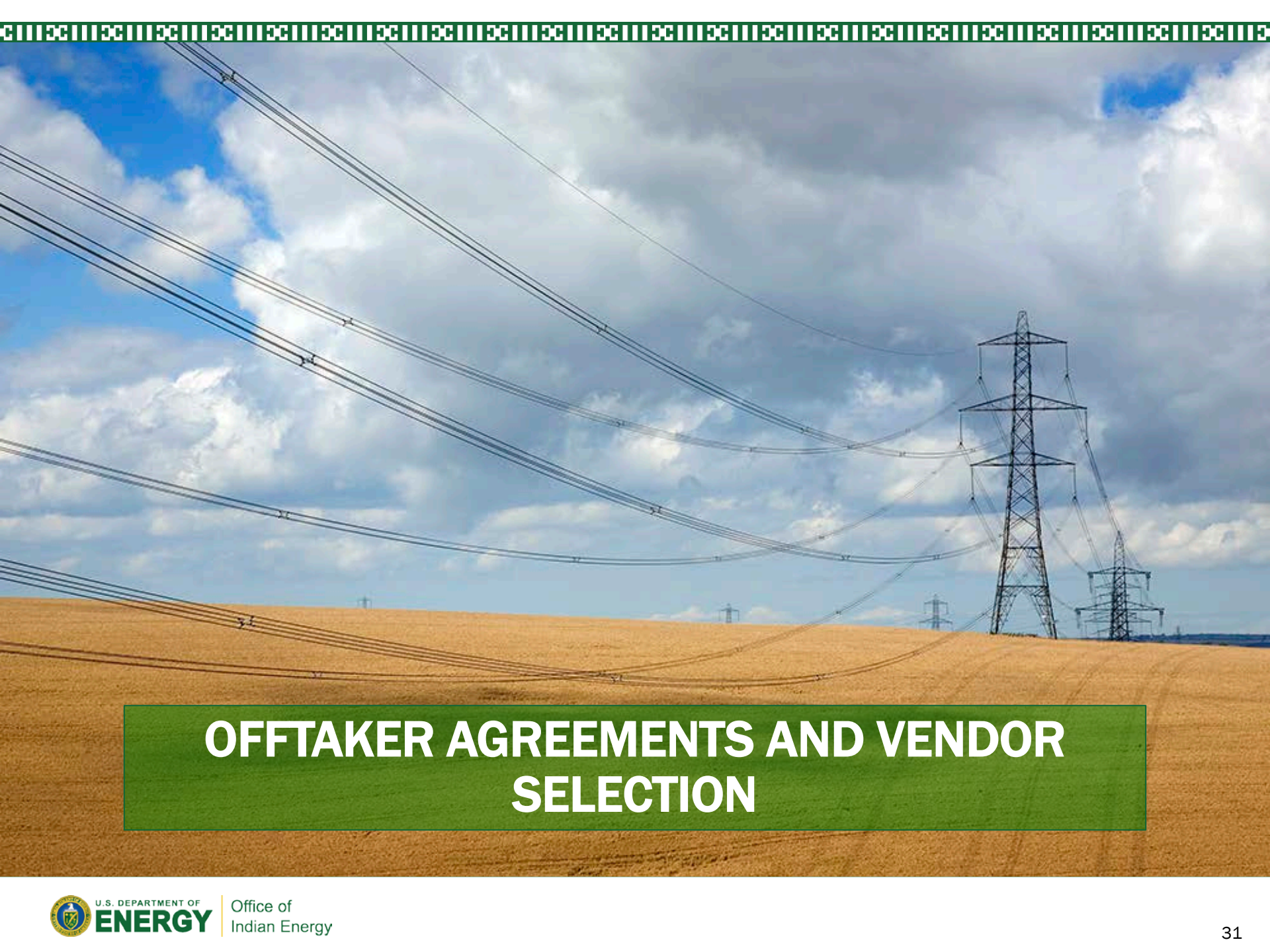
Despite the favorable ruling, we understand that the tribe who got the PLR didn't pursue it and instead went with a different project structure.

Potential Tribal implications:

<http://www.renewableenergyworld.com/rea/news/article/2013/05/solar-tax-credit-opportunity-for-indian-Tribes>

Financing Structures and Tribal Implications

	Direct Ownership	Partnership Flip	Sale Leaseback	Inverted Lease/Lease Pass-Through
Financing	Corporate entity self-finances system and takes tax credits	Investor can provide up to 99% financing. Debt can also be part of capital stack.	Investor provides 100% financing. Debt can also be part of capital stack, commonly at developer level.	Investor provides partial financing. Debt is a common part of capital stack.
Ownership	User-owned	Co-ownership by developer and investor	Developer has option to purchase assets at lease term	Assets revert to developer at the end of lease term
Tax Credit	PTC or ITC, and MACRS if taxable. N/A in not taxable	PTC or ITC, and MACRS	ITC and MACRS	ITC and MACRS
Investor Preference	Certain firms have preferences for/familiarity with particular structures and/or technologies. Project specifics may also dictate financial structure selected.			



OFFTAKER AGREEMENTS AND VENDOR SELECTION



Offtaker Agreements and Vendor Selection

- Identify and address outstanding risks
- Finalize off-take agreement; PPA in place
- Complete environmental reviews and finalize permits
- EPC vendor selected – criteria applied
- Transmission/interconnection agreement with utility
- Financing structure determined

Commercial-Scale Project Risks – Post Step 3

	Risks	Risk Assessment Post Step 3
Development	<ul style="list-style-type: none"> • Poor or no renewable energy resource assessment • Not identifying all possible costs • Unrealistic estimation of all costs • Community push-back and competing land use 	<p><u>Low</u> ; site picked</p> <p><u>Low</u>; detailed model</p> <p><u>Low</u>; detailed model</p> <p><u>None</u>; addressed</p>
Site	<ul style="list-style-type: none"> • Site access and right of way • Not in my backyard (NIMBY)/build absolutely nothing anywhere (BANANA) • Transmission constraints/siting new transmission 	<p><u>Low</u>; site secure</p> <p><u>None</u>; opposition addressed</p> <p><u>Low</u>; process started</p>
Permitting	<ul style="list-style-type: none"> • Tribe-adopted codes and permitting requirements • Utility interconnection requirements • Interconnection may require new transmission, possible NEPA 	<p><u>Low</u>; complete</p> <p><u>Low</u>; complete</p> <p><u>Low</u>; identified</p>
Finance	<ul style="list-style-type: none"> • Capital availability • Incentive availability risk • Credit-worthy purchaser of generated energy 	<p><u>Low</u>; PPA complete</p> <p><u>Low</u>; risk on developer</p> <p><u>Low</u>; PPA complete</p>
Construction/Completion	<ul style="list-style-type: none"> • EPC difficulties • Cost overruns • Schedule 	<p>Low; allocate to EPC or developer</p>
Operating	<ul style="list-style-type: none"> • Output shortfall from expected • Technology O&M • Maintaining transmission access and possible curtailment 	<p>Assumed low, mitigable, or allocatable</p>