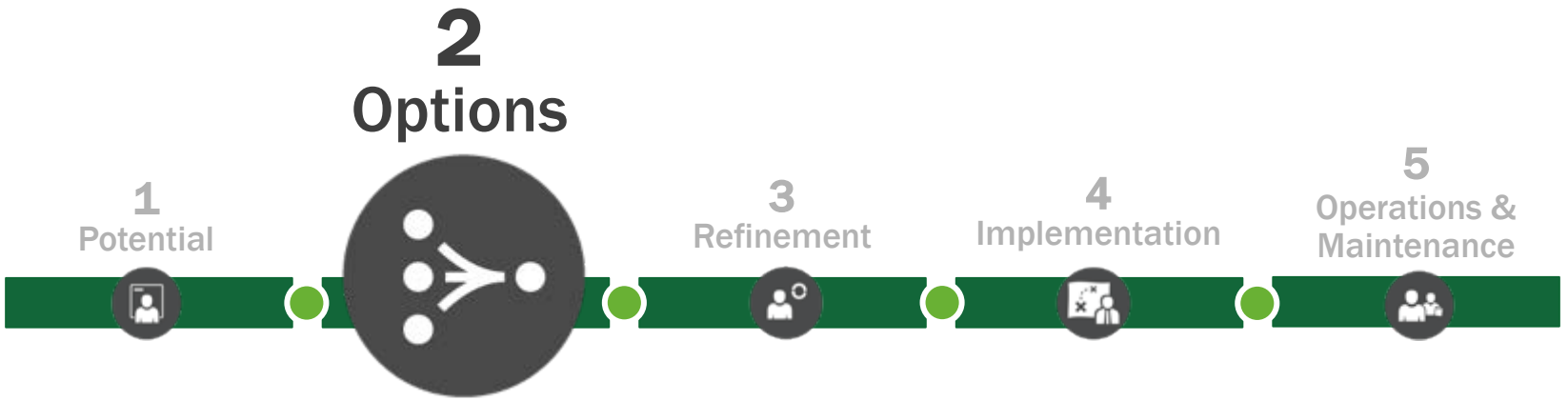
DOE OFFICE OF INDIAN ENERGY

Step 2: Project Options

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


Comprehensive Energy Plan
1 PROJECT POTENTIAL: Data Collection and Opportunity Assessment
Council Check-in
2 PROJECT OPTIONS: Strategy and Detail
Council Check-in
3 PROJECT REFINEMENT: Planning and Development
Council Check-in
4 PROJECT IMPLEMENTATION: Financing and Construction
5 PROJECT OPERATIONS AND MAINTENANCE
Project Development and Financing Strategy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Options
1
Potential
3
Refinement
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Implementation
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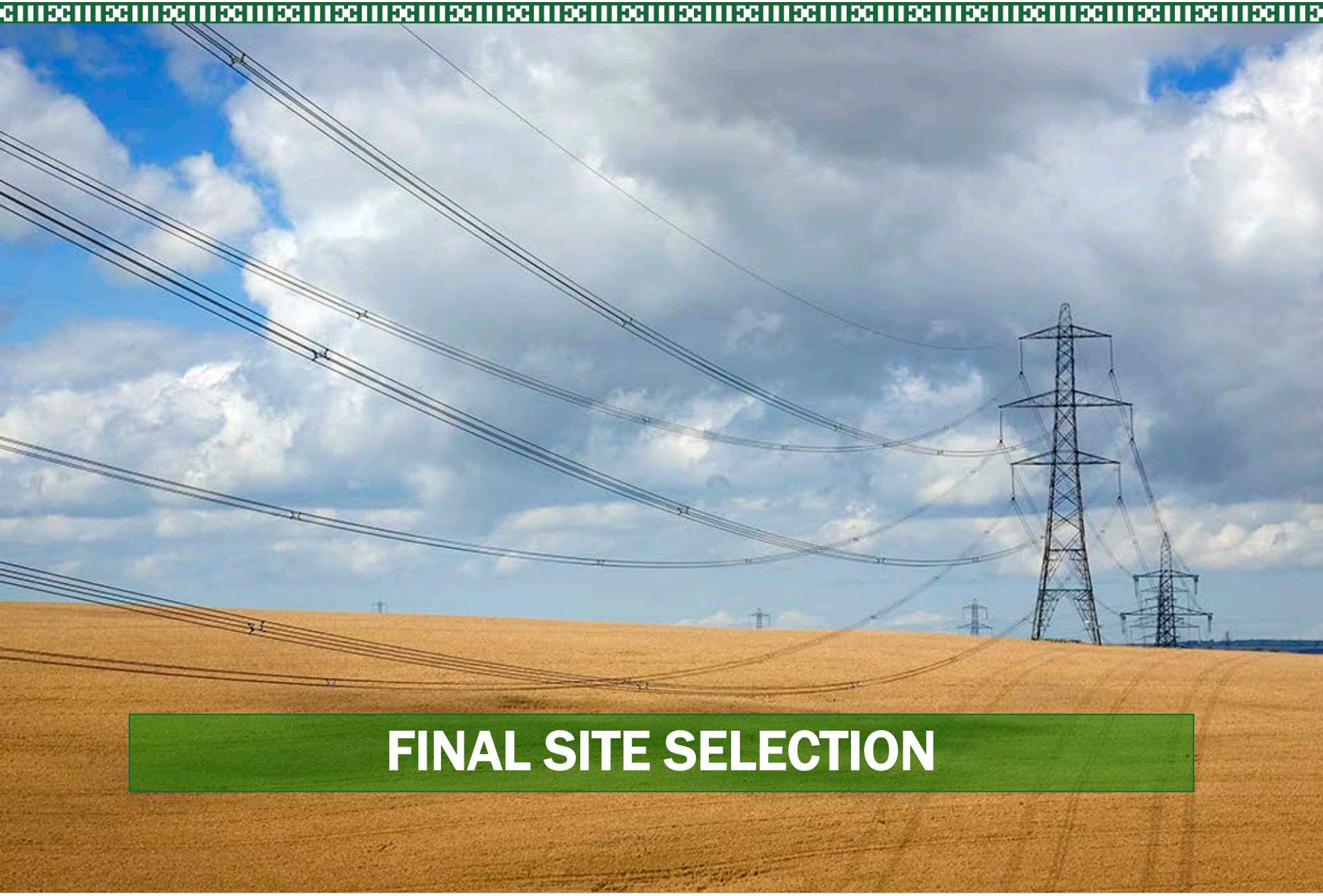
Operations & Maintenance

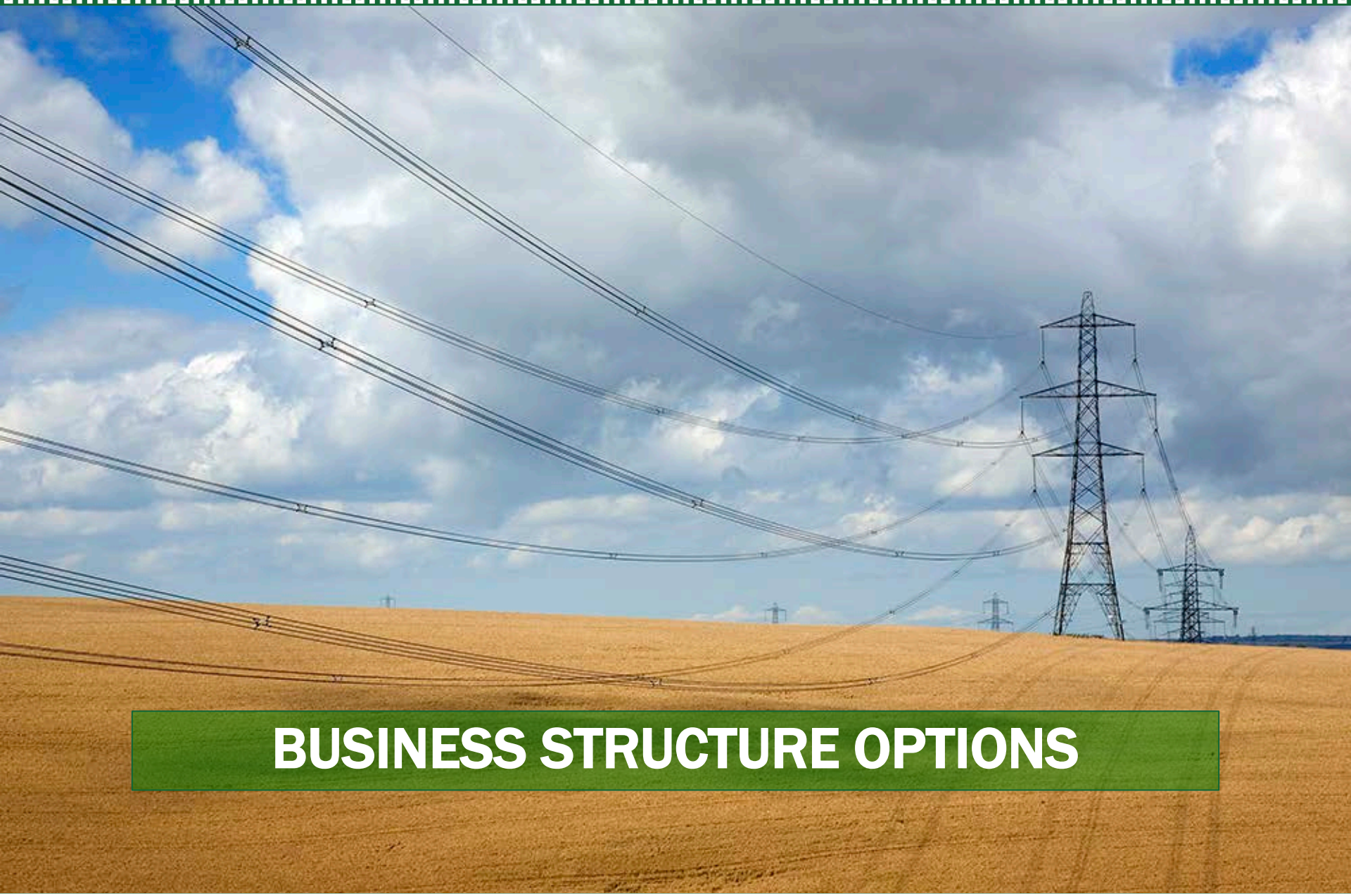
Agenda

- Final Site Selection
- Tribal Role Options
  - Business Structure Options
  - Project Role Options
  - Team Members
- Introduction to Financing: Tax Incentives and Up-Front Capital
- Partners and Procurement
- Permitting
- Interconnection and Transmission


FINAL SITE SELECTION

Small Group Exercise

- Review permitting, utility rules and SAM output to choose a single site to pursue



BUSINESS STRUCTURE OPTIONS

Importance of Choosing the Right Business Structure

- Protect Tribal assets
- Preserve Tribal sovereignty
- Minimize potential liability
- Leads to a successful project

Photo by Brian Hirsch, NREL 20893

Business Structure Options for Tribes

- Tribal government entities
  - Unincorporated instrumentalities
  - Political subdivisions
- Section 17 corporations
- Tribally chartered corporations
- State law entities
  - State law corporations
  - Limited liability companies (LLCs)
- Joint venture

Business Structure: Tribal Government Entities

Option 1: Unincorporated Instrumentalities

Advantages

- Easy to form
- Management is centralized
- Not subject to federal income tax
- Same privileges and immunities as Tribal government

Disadvantages

- Politics and business are not separated
- Assets and liabilities of the enterprise not separated from governmental assets
- May preclude equity ownership by outside investors

Option 2: Political Subdivisions

Advantages

- Exempt from federal income tax
- Retain sovereign immunity
- May issue tax-exempt bonds
- Ability to form a corporate board

Disadvantages

- Timely and costly to form the entity
- Not as much flexibility as corporations and LLCs
- May deter certain business partners

Source: Office of Indian Energy & Economic Development 2008

Business Structure: Section 17 Corporations

Tribes can form corporations under Section 17 of the Indian Reorganization Act of 1934

Advantages

- Same privileges and immunity as the Tribal government, including Tribal sovereign immunity
- Separates the assets and liability of the corporation from Tribal asset
- Not subject to federal income tax

Disadvantages

- Lengthy timeline to obtain a corporate charter
- Corporation must be wholly owned by a Tribe
- Example of Section 17 Corp: S&K Technologies, Inc.
  - Environmental restoration
  - Stream channel reconstruction
  - Native plant re-vegetation
  - Civil construction

Source: Office of Indian Energy & Economic Development 2008 and MacCourt 2010

Tour of the Ponnequin Wind Farm. Photo by NREL 09827

Business Structure: Tribally Chartered Corporations

- Formed by Tribal ordinance or Tribal corporation code
- Must select a name and draft articles of incorporation
- Best utilized to operate on reservation as an arm of the Tribal government
- Example: Ho-Chunk, Inc.
  - Information technology
  - Construction
  - Government contracting

Rooftop PV installation on the Forest Country Potawatomi Tribe administration building.
Photo from Forest County Potawatomi Tribe, NREL 20107

Source: Office of Indian Energy & Economic Development 2008 and MacCourt 2010

Business Structure: State Law Entities

State Law Corporations and LLCs (A.K.A. blocker corporations)

Advantages

- Quick and easy to organize
- Familiar to lenders and potential business partners
- Can be used to acquire or merge with an existing state-law entity

Disadvantages

- Subject to federal income tax
- May not issue tax-exempt debt

Source: Office of Indian Energy & Economic Development 2008 and MacCourt 2010

Weather Dancer 1 wind project in Alberta, Canada. Photo from Piikuni Utilities Corporation, NREL 13792

Business Structure: Joint Venture – LLCs or Limited Partnerships

Advantages

- Acquire energy project development expertise
- Secure project financing
- Enjoy benefits of federal incentives (e.g., tax credits)

Disadvantages

- Likely loss of sovereign immunity for the joint venture entity
- Inability to qualify for certain kinds of financing

Photo from Bob Springer, NREL 21044

Source: Office of Indian Energy & Economic Development 2008 and MacCourt 2010

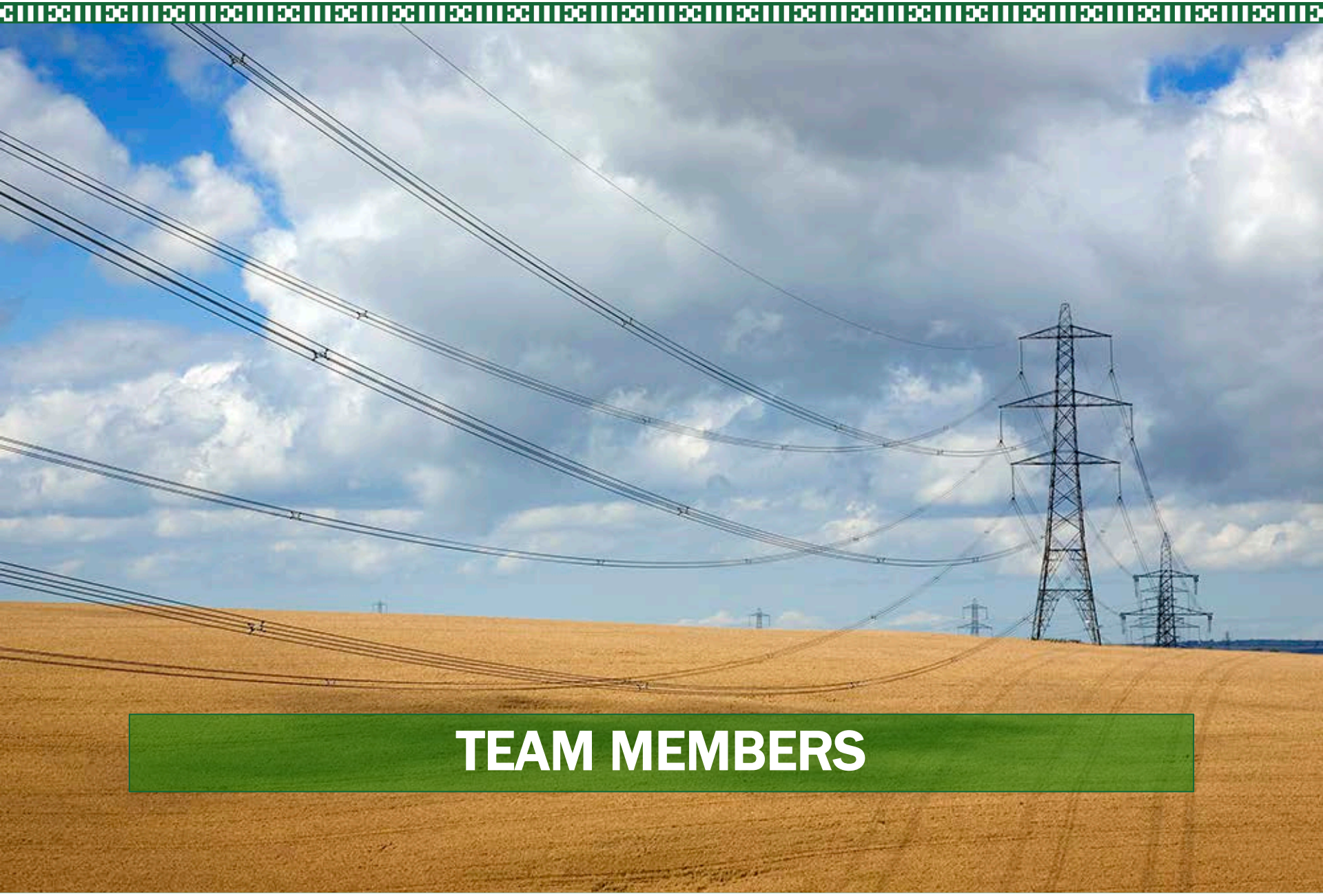
Evaluating the Options

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)			●		

PROJECT ROLE OPTIONS

Key Concept: Tribal Role Options

Role	Opportunity	Constraints	Comments
Resource/ Land Owner	Land rent/royalty, taxes. Low risk, known reward, consistent (small) income.	Limited project control. Must provide site access.	Limited upside potential, limited risk
Off-taker/ Energy User	Only pay if project becomes operational; security.	Only available to Tribes that own utility providers.	Still requires utility interconnection agreement. Med risk.
Project Operator/ O&M	Control and self-determination of project; potential for profits (and losses) is minimal	• Investors require experience • Only consider as a new business (act as operator for multiple projects in a portfolio)	• High risk, complex • Tribes may be best served by outsourcing
Lender/ Debt Provider	Help finance a project (e.g., cash or New Market Tax Credit (NMTC), or Qualified Energy Conservation Bonds (QECBs)) with lower risk	• 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 knowledge • Option for Tribes with limited lands, lots of $
Equity Investor/ Gen. Owner	Provide cash, NMTC or QECB for project development.	Higher risk than debt lending. Requires ready capital, or unique source of capital that provides market advantage (like NMTC).	• High risk, more complex • Competes with other investments • Option for Tribes with limited lands, lots of $
Project Developer	Self-determination of project; potential for profits (and losses) is highest. Tribes with cash on hand don't need investors, but could still consider engaging tax equity partners.	• Investors require experience • Only consider as a new business (act as developer for multiple projects in a diverse portfolio) • Tribes investing money may not want this high risk/return investment	• High risk, complex • Tribes may be best served by outsourcing • A project pipeline/portfolio mitigates some risks



TEAM MEMBERS

Potential Team Members

- Tribal Members
  - Leadership, staff, community members
  - Attorneys, engineers, professionals
- Developer
  - Business managers, engineers, permitting specialists, investors, banks, attorneys, accountants, power marketers, procurement specialists, communications, public relations, government relations, corporate finance, project finance, construction managers, O&M specialists, asset managers, etc.
- Utility
  - Engineers, attorneys, planning specialists, operations specialists, regulatory specialists, finance, accounting, public relations, communications, systems operators, construction and field personnel, maintenance and emergency operations, etc.
- Government
  - Tribal government, federal, state, local entities, regulating bodies (public utilities commission), Bureau of Indian Affairs, DOE, Federal Energy Regulatory Commission, etc.

Key Success Component

Identify and select an energy "champion" to shepherd the process

Photo by Dennis Schroder, NREL 21010

Project Champion's Role

Small Group Exercise

- Brainstorm pros and cons of different Tribal roles

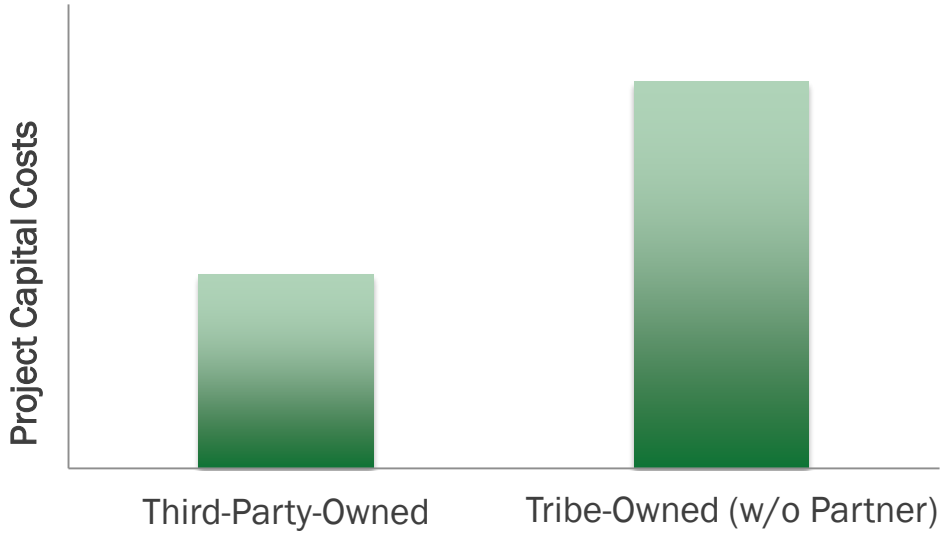
INTRO TO FINANCING: TAX INCENTIVES AND UP-FRONT CAPITAL

Key Concept: Tax-Equity Partnerships

- Tribe can benefit from tax-equity incentives without being taxable
- Tribes can partner with third-party tax investors and/or developers to gain this incentive/advantage
  - Recent IRS PLR supports Tribal partnerships with third-party tax equity
  - Even with IRS ruling, the Tribe needs capital to build a large renewable project
- Tax incentives (MACRS and either PTC or ITC) can represent up to half the project value, or reduce project's capital costs by ~50%
- Tribe benefits by offering a more competitive price for energy and 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

Key Concept: Tax-Equity Partnership – Federal Tax Incentives

Internal Revenue Code

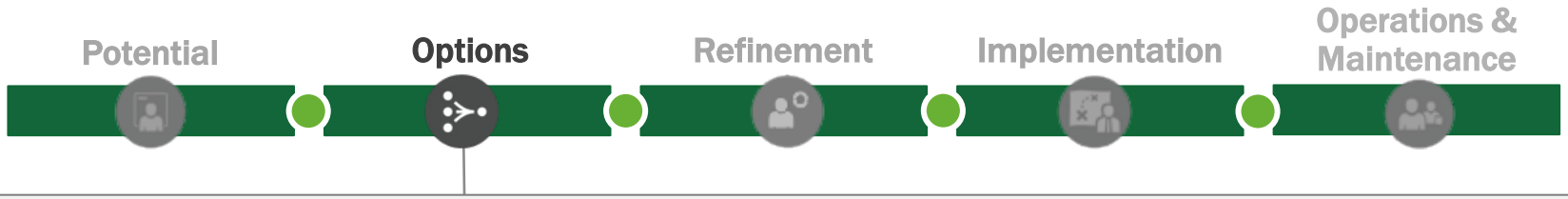
- Production Tax Credit (PTC); payment based on kWh produced
  - 10-year, 2.3¢/kWh for wind, geothermal, and closed-loop biomass technologies
  - "Start construction" before 12/31/2014
- Investment Tax Credit (ITC); payment based on % of up-front cost
  - One-time 30% or 10% tax credit (depending on technology) of eligible tax basis
  - "Placed in service" before 1/1/2017

→ Geothermal eligible for PTC and ITC; can only take one of them

- Cost recovery of plant through depreciation deductions
  - Often called "accelerated depreciation"
  - Officially called Modified Accelerated Cost Recovery System (MACRS)

→ Need to pay taxes and have enough of the right kind of tax liability to use federal tax incentives

Step 2: Project Options and Strategies



Financial Capital Sources

- Financing structure is highly dependent on capital used for a given project:
  - **Tribal capital:** Tribal investment ($$$) to purchase project equipment
  - **Tribe-private sector capital sharing:** Tribe contributes some resources ($) and partners with third-party capital to leverage tax equity ($$)
  - **Non-Tribe capital:** Developer equity, tax equity, bank debt. Tribe participates in other ways.
- Responsibility to generate capital, collect revenues, and monitor returns will vary according to project structure
- If all framework elements are fully developed and meet market conditions, the project is ready to attract capital


PARTNERS AND PROCUREMENT

Procurement Process

Commercial-Scale Projects

Potential Project Partners to Procure

- Project Developer
- Engineering Procurement and Construction (EPC) Contractor
- Environmental Permits Contractor

Outline of the RFP Process

- **Develop RFP**
  - Timeline: 1 month – 1 year (depends on project scale and site complexity)
  - Who creates the RFP: Project leader, contract officer/lawyer, site manager(s), energy manager and technology expert. RFP writers will receive input from utility, Tribal leaders, and stakeholders
  - RFP content
- **Issue RFP**
  - Tribal networks, federal networks and industry networks
- **Administer the RFP**
  - Proposal meeting(s)
  - Site tour(s) – can be concurrent with proposal meeting
  - Q&A process – ensure all developers get same information
- **Evaluate Criteria**
  - Should be a clear process with well defined criteria
  - Evaluation panel recommended to consist of an odd number of members (typically 3 to 7)
- **Award Contract**
  - Four approaches

Develop RFP

Key Elements of the RFP

- ☐ Type of procurement:
  - Purchase
  - PPA
  - Other finance structure
- ☐ Technical specification (scope of work)
- ☐ Criteria for evaluating proposals: 3–5 of most important project aspects
  - Proposed project solution that meets specified criteria
  - System performance guarantee
  - Developer experience, track record and customer satisfaction
  - Developer financial health/longevity
  - Maintenance plan
  - Reasonable timelines
  - Other

Develop RFP (continued)

Key Elements of the RFP

- ☐ Description of RFP administration process
  - Typically 2–5 months
  - Key dates: proposal meeting(s), sites visit(s), proposal due date
  - Description of how questions will be handled and answered
- ☐ Defining responsible parties
  - Who is responsible for permits
  - Who is responsible for interconnection agreements
  - Who is responsible for applying for incentives
- ☐ Any preferences on parties allowed to submit proposals
  - Small business
  - Minority-owned
  - Other
- ☐ Land use agreements
  - Address site access and land use issues as relevant to ownership model

Technical Specifications

Define Scope of Work

- What is the project scale
- Type of RE technology
- Site information:
  - Location
  - Interconnection requirements as known
  - Applicable codes and standards
  - Roof structure, soils, other (as applicable and available)
  - Site prep: fencing, roads, grading limitations, etc.
  - Installation requirements: min/max heights of equipment, vegetation mitigation, design standards for structural/electrical
- Equipment minimum standards and warranties
- Expected minimum performance (recommended) or capacity
- Commissioning plan

Evaluation Criteria

Two Typical Approaches

- Best value:
  - Typically 3–5 criteria with weighting based on importance
  - Score proposal on each criteria
  - Somewhat subjective and can lead to contentious, time-consuming evaluations but good method to capture best value
- Low price, technically acceptable
  - Proposals initially stripped of pricing/cost information
  - First evaluation determines proposals that meet technical hurdle
  - Technically acceptable proposal with lowest cost gets award
  - More transparent process but may not capture best value

Award Contract

Choose One of These Four Typical Approaches

- Award based on proposal
  - Awarded solely on merits of proposal
- Award with discussion
  - Awarded on proposal but contingent on clarifying discussions
- Award with discussion and negotiation
  - Awarded on proposal but contingent on further negotiation
- Award with best proposal
  - Best proposals are short-listed
  - Short-listed proposals asked for best final proposal revision
  - Award based on final proposal revision

Post-Procurement

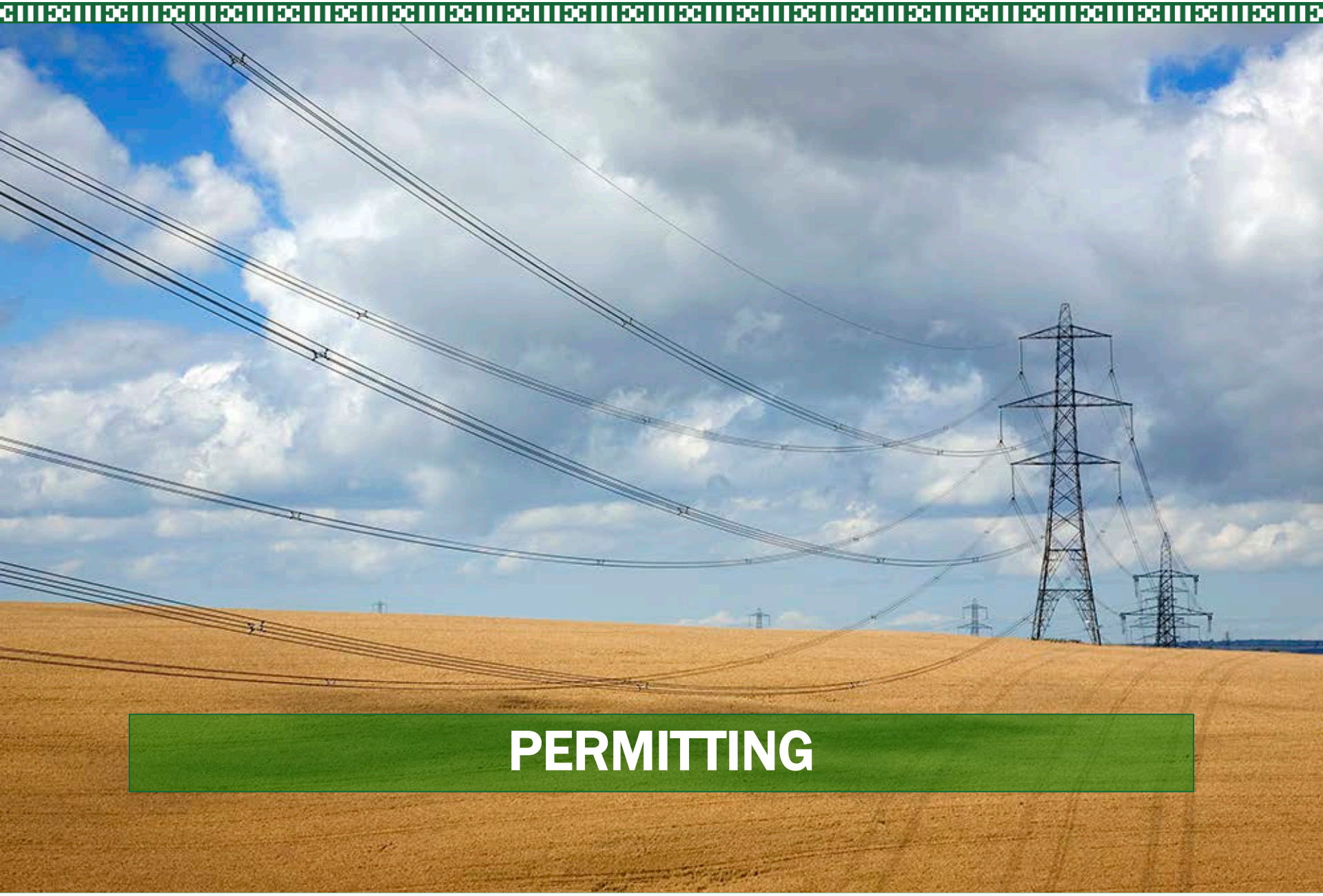
Project Gets Built

Project Gets Commissioned

Ongoing Monitoring and Maintenance

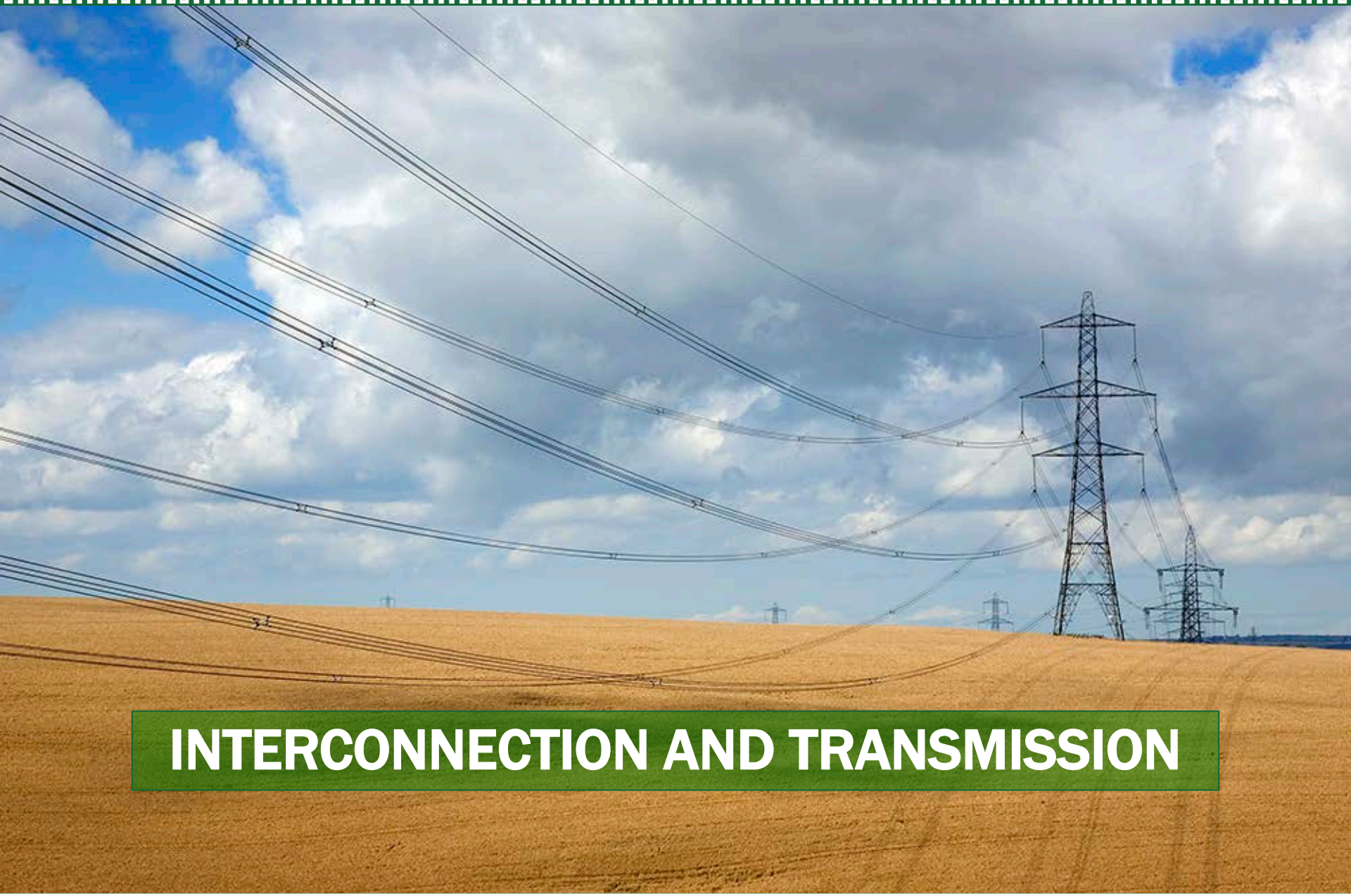
Summary: Project Procurement and Implementation

- Procurement strategy will vary depending on the project scale and financing solution selected
- Increasingly more complex for larger projects
- Post procurement issues are critical as these are very long term assets and relationships


PERMITTING

Permitting

- Permitting Example – City Level
- Permitting Example – Federal Level
- Permitting Checklists and Guide Examples
- Hiring a Consultant
- Common Missteps and Caveats


INTERCONNECTION AND TRANSMISSION

What is Interconnection?

"The technical rules and procedures allowing customers to 'plug in' to the grid."

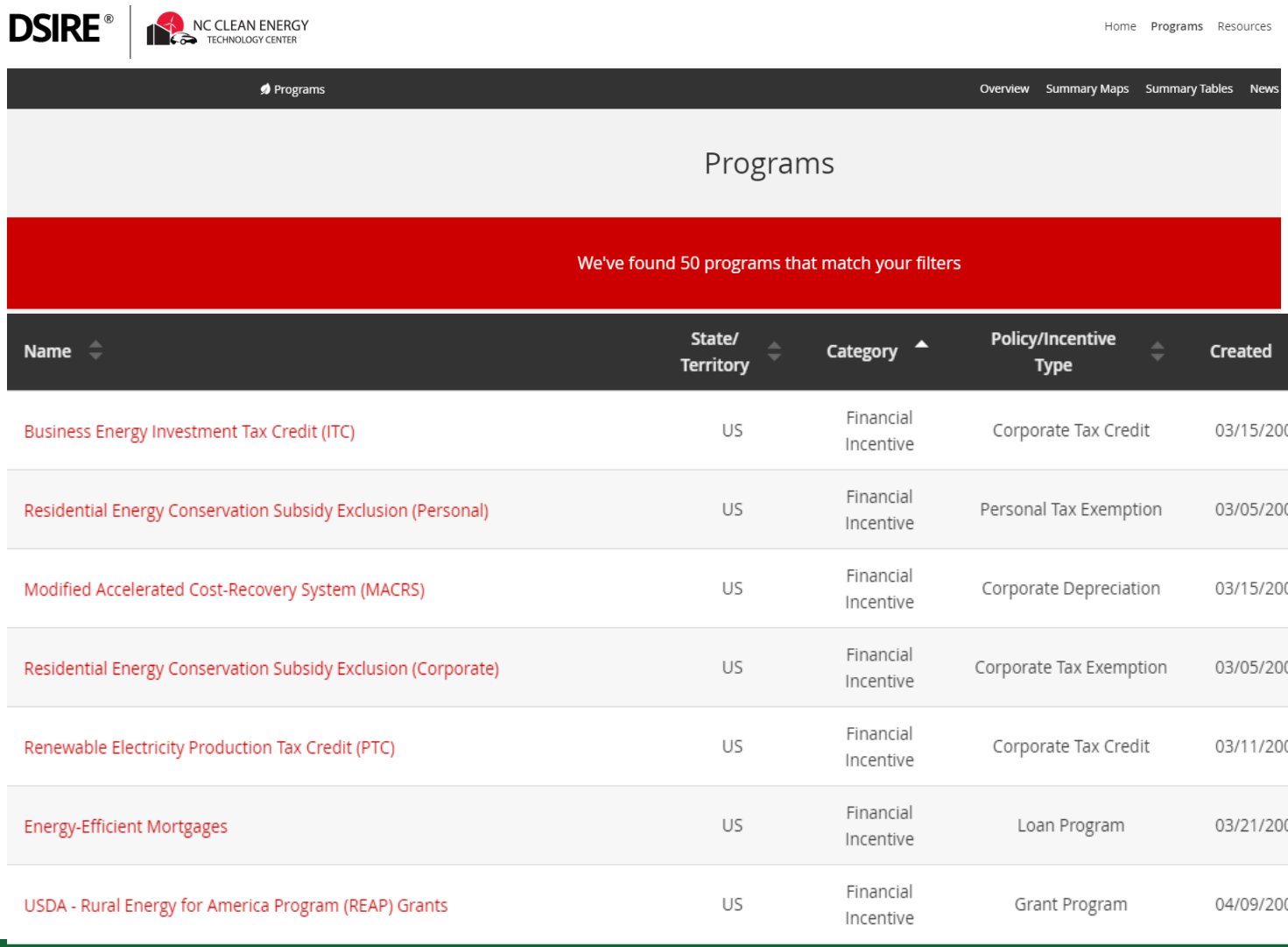
Source: Freeing the Grid 2013. http://freeingthegrid.org/wp-content/uploads/2013/11/FTG_2013.pdf

Common Interconnection Elements

- Application
- Designated interconnection utility representative
- Generator size thresholds
  - Different tracks for generators of certain sizes
  - Fast-track procedure for systems smaller than a certain size (generally ~2 MW)
  - Technical screens, feasibility studies, etc., for larger, more complex systems
- Timelines for each step
- Standard agreement between utility and customer

Database of State Incentives for Renewable Energy

Check DSIRE: http://dsireusa.org



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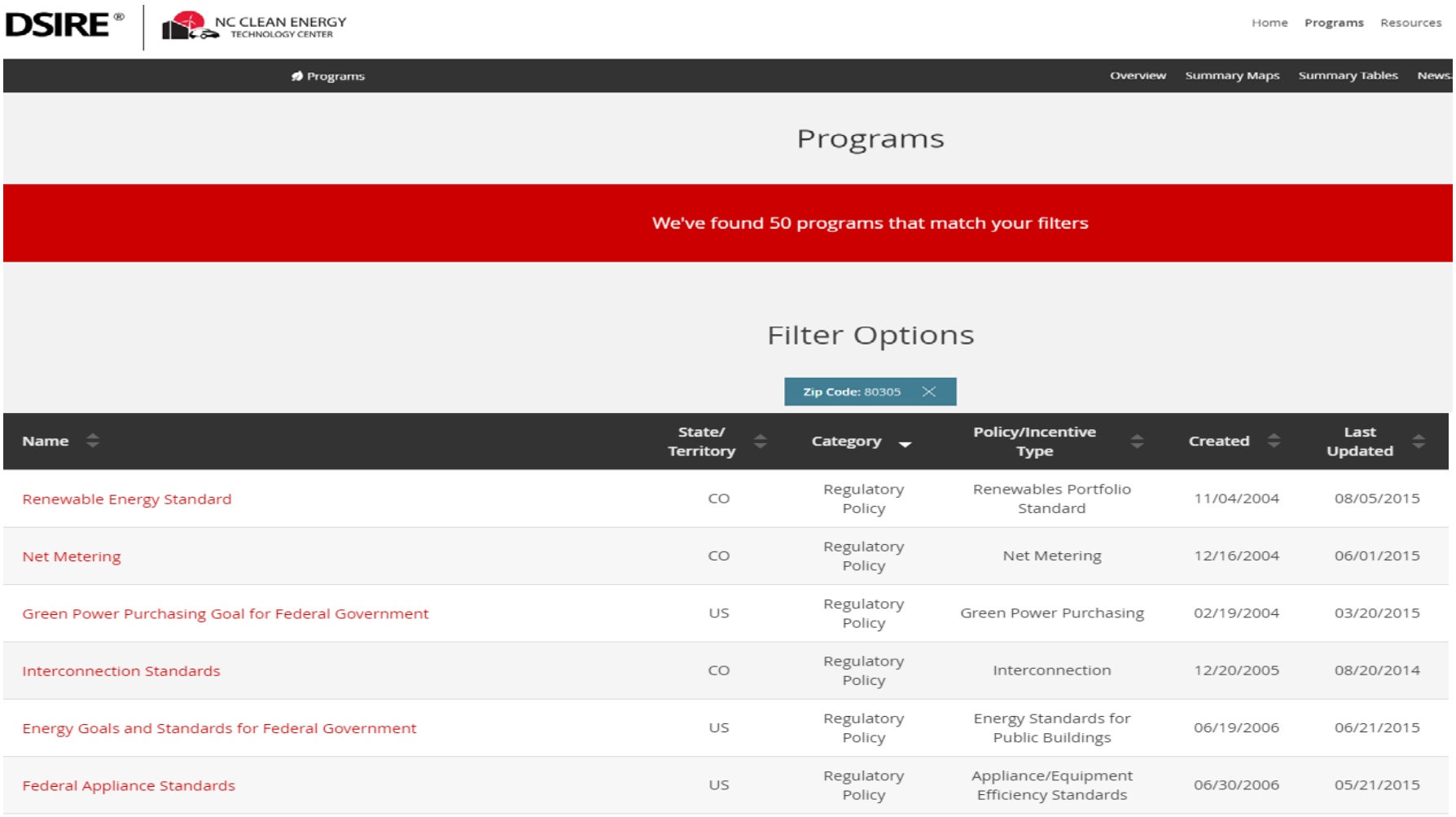
Name	State/ Territory	Category	Policy/Incentive Type	Created	Last Updated
Business Energy Investment Tax Credit (ITC)	US	Financial Incentive	Corporate Tax Credit	03/15/2002	05/13/2015
Residential Energy Conservation Subsidy Exclusion (Personal)	US	Financial Incentive	Personal Tax Exemption	03/05/2002	02/16/2015
Modified Accelerated Cost-Recovery System (MACRS)	US	Financial Incentive	Corporate Depreciation	03/15/2002	12/23/2014
Residential Energy Conservation Subsidy Exclusion (Corporate)	US	Financial Incentive	Corporate Tax Exemption	03/05/2002	04/24/2015
Renewable Electricity Production Tax Credit (PTC)	US	Financial Incentive	Corporate Tax Credit	03/11/2002	04/13/2015
Energy-Efficient Mortgages	US	Financial Incentive	Loan Program	03/21/2002	06/24/2015
USDA - Rural Energy for America Program (REAP) Grants	US	Financial Incentive	Grant Program	04/09/2003	08/08/2015

Database of State Policies for Renewable Energy

Check DSIRE: http://dsireusa.org



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Name	State/ Territory	Category	Policy/Incentive Type	Created	Last Updated
Renewable Energy Standard	CO	Regulatory Policy	Renewables Portfolio Standard	11/04/2004	08/05/2015
Net Metering	CO	Regulatory Policy	Net Metering	12/16/2004	06/01/2015
Green Power Purchasing Goal for Federal Government	US	Regulatory Policy	Green Power Purchasing	02/19/2004	03/20/2015
Interconnection Standards	CO	Regulatory Policy	Interconnection	12/20/2005	08/20/2014
Energy Goals and Standards for Federal Government	US	Regulatory Policy	Energy Standards for Public Buildings	06/19/2006	06/21/2015
Federal Appliance Standards	US	Regulatory Policy	Appliance/Equipment Efficiency Standards	06/30/2006	05/21/2015

Sample Interconnection Agreement

http://xcelenergy.com/staticfiles/xe/Marketing/Files/NM-Small-Program-%20Interconnection-Agreement.pdf

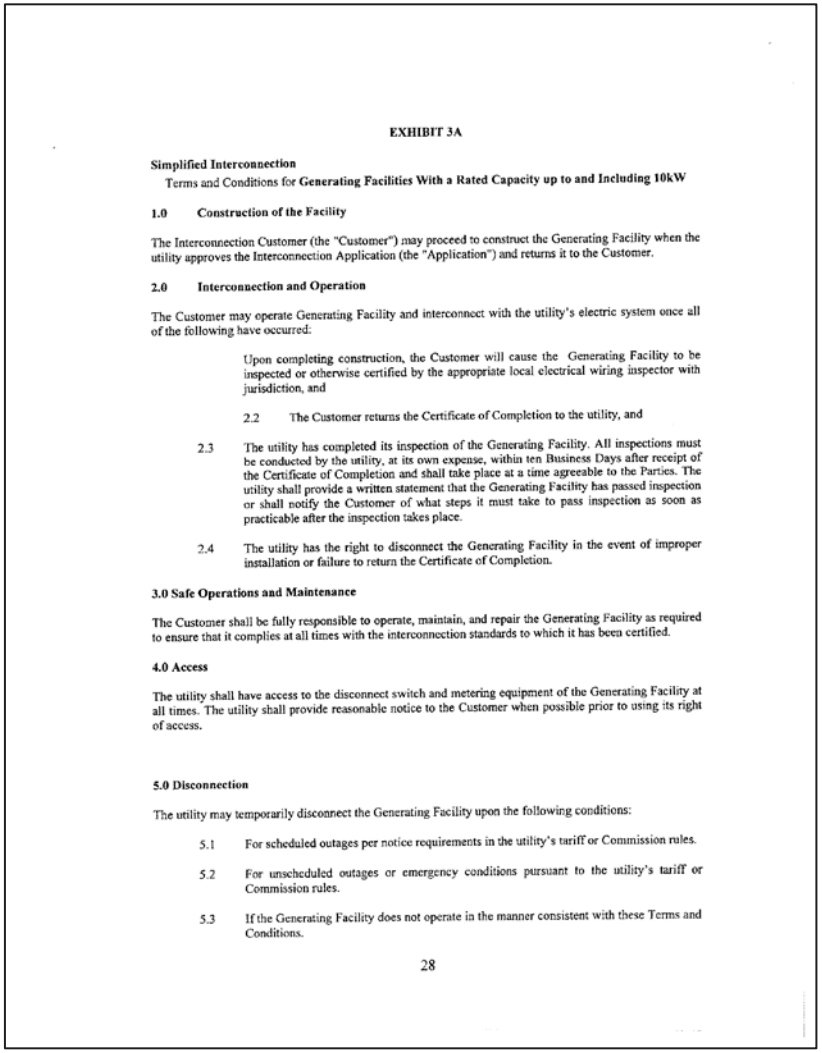

EXHIBIT 3A

Simplified Interconnection
Terms and Conditions for **Generating Facilities With a Rated Capacity up to and Including 10kW**

1.0 Construction of the Facility

The Interconnection Customer (the "Customer") may proceed to construct the Generating Facility when the utility approves the Interconnection Application (the "Application") and returns it to the Customer.

2.0 Interconnection and Operation

The Customer may operate Generating Facility and interconnect with the utility's electric system once all of the following have occurred:

Upon completing construction, the Customer will cause the Generating Facility to be inspected or otherwise certified by the appropriate local electrical wiring inspector with jurisdiction, and

2.2 The Customer returns the Certificate of Completion to the utility, and

2.3 The utility has completed its inspection of the Generating Facility. All inspections must be conducted by the utility, at its own expense, within ten Business Days after receipt of the Certificate of Completion and shall take place at a time agreeable to the Parties. The utility shall provide a written statement that the Generating Facility has passed inspection or shall notify the Customer of what steps it must take to pass inspection as soon as practicable after the inspection takes place.

2.4 The utility has the right to disconnect the Generating Facility in the event of improper installation or failure to return the Certificate of Completion.

3.0 Safe Operations and Maintenance

The Customer shall be fully responsible to operate, maintain, and repair the Generating Facility as required to ensure that it complies at all times with the interconnection standards to which it has been certified.

4.0 Access

The utility shall have access to the disconnect switch and metering equipment of the Generating Facility at all times. The utility shall provide reasonable notice to the Customer when possible prior to using its right of access.

5.0 Disconnection

The utility may temporarily disconnect the Generating Facility upon the following conditions:

5.1 For scheduled outages per notice requirements in the utility's tariff or Commission rules.

5.2 For unscheduled outages or emergency conditions pursuant to the utility's tariff or Commission rules.

5.3 If the Generating Facility does not operate in the manner consistent with these Terms and Conditions.

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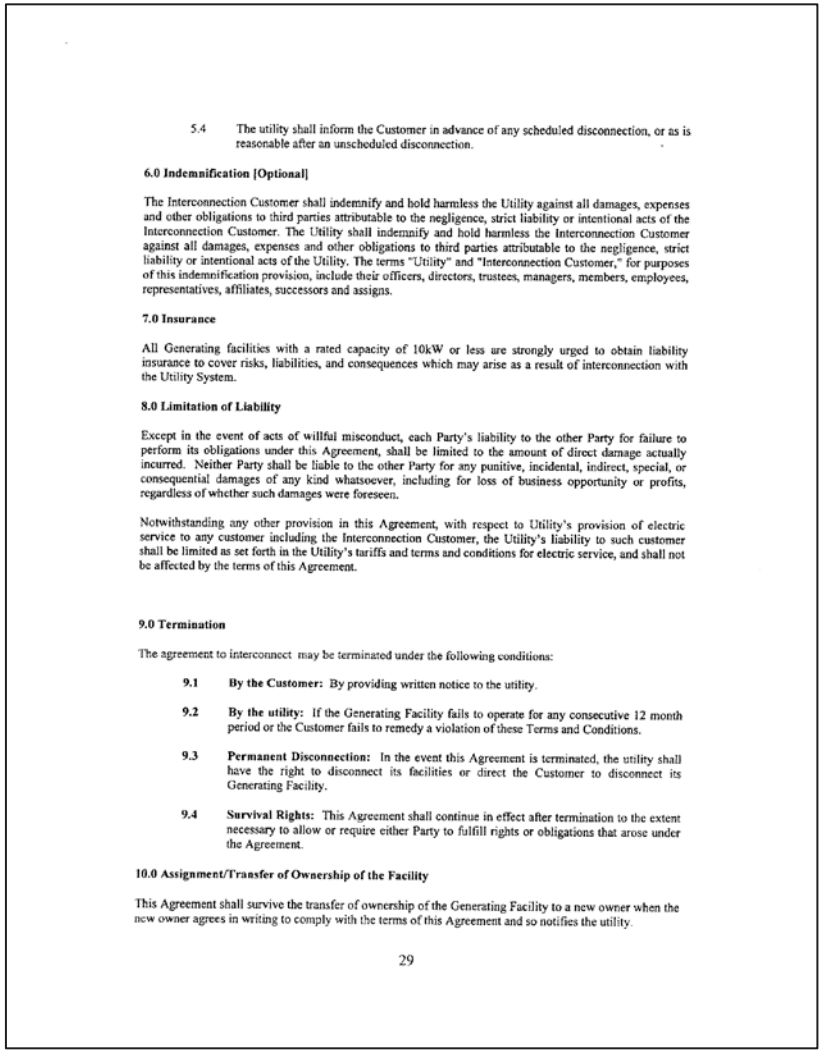

5.4 The utility shall inform the Customer in advance of any scheduled disconnection, or as is reasonable after an unscheduled disconnection.

6.0 Indemnification [Optional]

The Interconnection Customer shall indemnify and hold harmless the Utility against all damages, expenses and other obligations to third parties attributable to the negligence, strict liability or intentional acts of the Interconnection Customer. The Utility shall indemnify and hold harmless the Interconnection Customer against all damages, expenses and other obligations to third parties attributable to the negligence, strict liability or intentional acts of the Utility. The terms "Utility" and "Interconnection Customer," for purposes of this indemnification provision, include their officers, directors, trustees, managers, members, employees, representatives, affiliates, successors and assigns.

7.0 Insurance

All Generating facilities with a rated capacity of 10kW or less are strongly urged to obtain liability insurance to cover risks, liabilities, and consequences which may arise as a result of interconnection with the Utility System.

8.0 Limitation of Liability

Except in the event of acts of willful misconduct, each Party's liability to the other Party for failure to perform its obligations under this Agreement, shall be limited to the amount of direct damage actually incurred. Neither Party shall be liable to the other Party for any punitive, incidental, indirect, special, or consequential damages of any kind whatsoever, including for loss of business opportunity or profits, regardless of whether such damages were foreseen.

Notwithstanding any other provision in this Agreement, with respect to Utility's provision of electric service to any customer including the Interconnection Customer, the Utility's liability to such customer shall be limited as set forth in the Utility's tariffs and terms and conditions for electric service, and shall not be affected by the terms of this Agreement.

9.0 Termination

The agreement to interconnect may be terminated under the following conditions:

9.1 By the Customer: By providing written notice to the utility.

9.2 By the utility: If the Generating Facility fails to operate for any consecutive 12 month period or the Customer fails to remedy a violation of these Terms and Conditions.

9.3 Permanent Disconnection: In the event this Agreement is terminated, the utility shall have the right to disconnect its facilities or direct the Customer to disconnect its Generating Facility.

9.4 Survival Rights: This Agreement shall continue in effect after termination to the extent necessary to allow or require either Party to fulfill rights or obligations that arose under the Agreement.

10.0 Assignment/Transfer of Ownership of the Facility

This Agreement shall survive the transfer of ownership of the Generating Facility to a new owner when the new owner agrees in writing to comply with the terms of this Agreement and so notifies the utility.

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Interconnection and Transmission

- Required Agreements
- General Process for Interconnection
- How to Find Utility Rules on Interconnection
- Common Missteps and Caveats

Small Group Exercise

- Utility scavenger hunt! Identify the interconnection rules and process for your identified utility and project size

Commercial-Scale Project Risks – Post Step 2

	Risks	Risk Assessment Post Step 2
Development	• Poor or no renewable energy resource assessment • Not identifying all possible costs • Unrealistic estimation of all costs • Community push-back and competing land use	Finalized resource Reduced Reduced Reduced
Site	• Site access and right of way • Not in my backyard (NIMBY)/build absolutely nothing anywhere (BANANA) • Transmission constraints/siting new transmission	Reduced Reduced Reduced
Permitting	• Tribe-adopted codes and permitting requirements • Utility interconnection requirements • Interconnection may require new transmission, possible NEPA	Reduced Reduced High risk, reduced
Finance	• Capital availability • Incentive availability risk • Credit-worthy purchaser of generated energy	High risk, reduced Reduced Reduced
Construction/ Completion	• EPC difficulties • Cost overruns • Schedule	Low; allocate to EPC or developer
Operating	• Output shortfall from expected • Technology O&M • Maintaining transmission access and possible curtailment	Assumed low, mitigable, or allocatable

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

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