

DOE OFFICE OF INDIAN ENERGY

# Step 3: Project Refinement

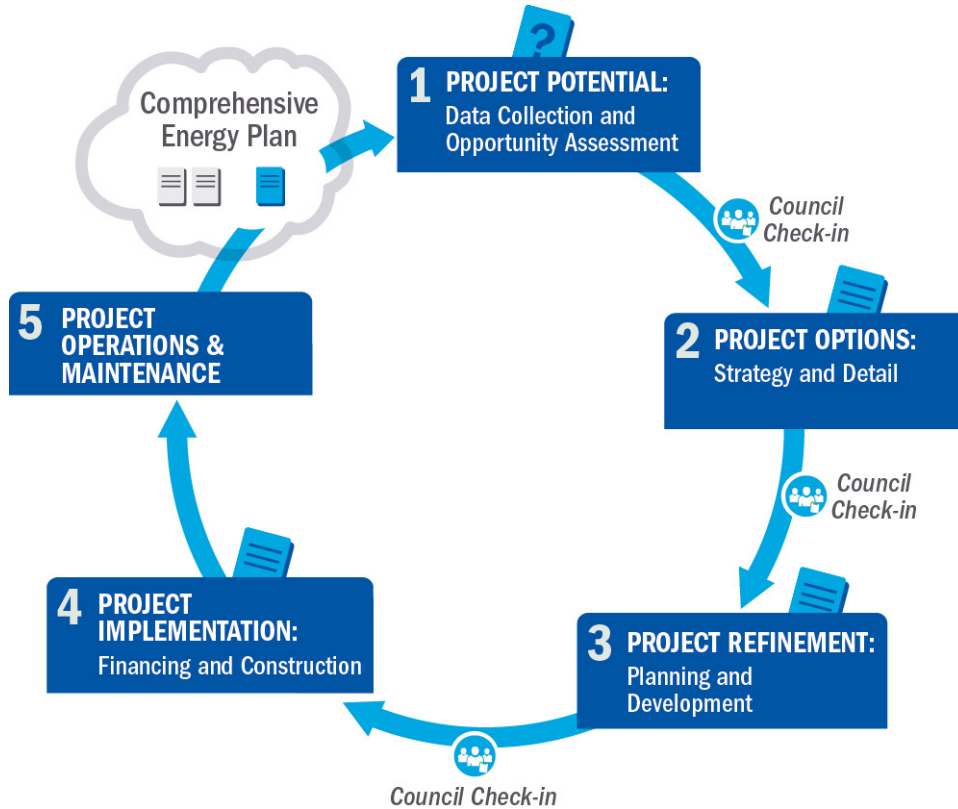
## Day 2

Selecting project financing, interconnection, and vendor procurement

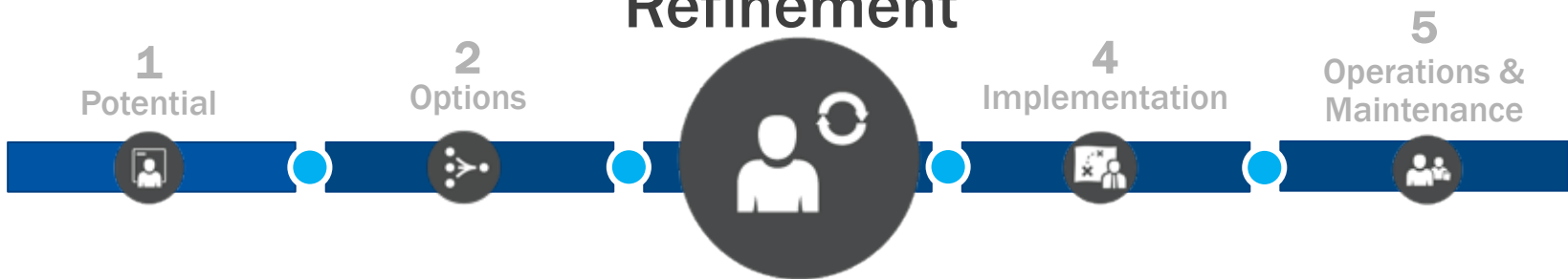


U.S. DEPARTMENT OF  
**ENERGY**

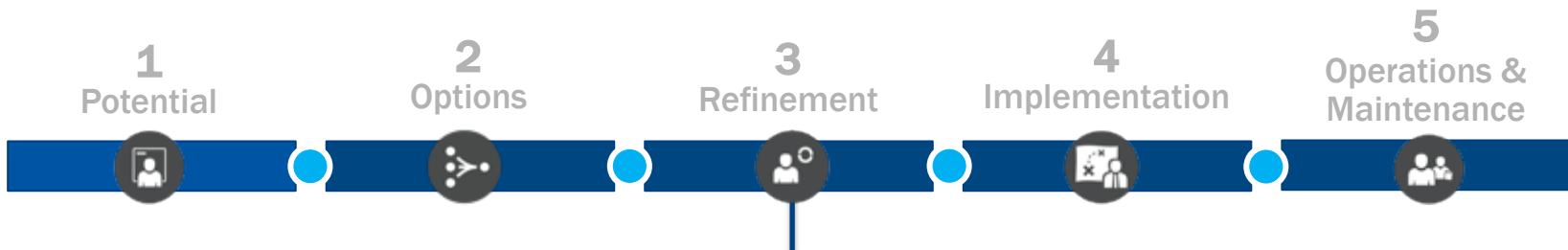
Office of  
Indian Energy



# 3 Refinement



## Step 3: Refinement



- Financing commitments
- Organization/business structure
- Detailed economic models
- Vendors selected
- Completed environmental reviews
- Finalized permits
- Interconnection agreement



## ■ Step 3: Refinement

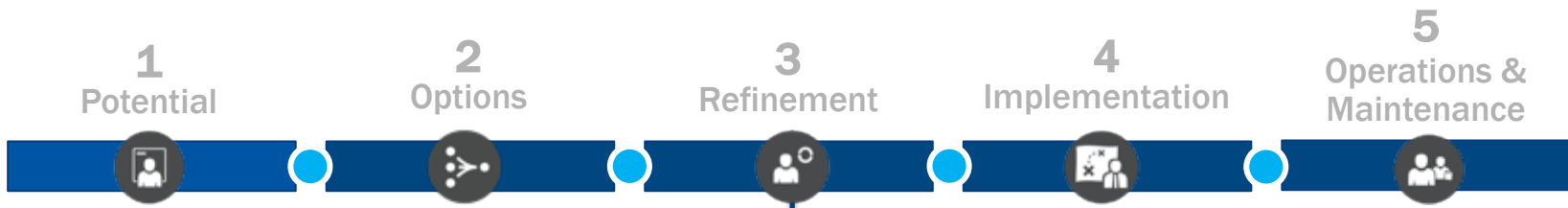
- Select Ownership and Business Structure
  - See slides from Step 2
- Finance
- Risks
- Interconnection Agreements
- Vendor Procurement

The image shows three wind turbines on a mountain peak. The turbines are white with three blades each. The mountain is covered in green grass, and there is a thick layer of white mist or clouds at the base of the turbines. The sky is a clear, bright blue. A large, semi-transparent blue rectangular box is overlaid on the bottom left portion of the image, containing the word "FINANCE" in white, bold, sans-serif capital letters.

# FINANCE



# Step 3: Ownership and Financing Options



- Finance Considerations
- Direct ownership (cash)
- Grants
- Incentives
- Debt
- Energy savings performance contracts (ESPCs) and Utility Energy Savings Contracts (UESCs)
- Power Purchase Agreements (PPAs)
- Tax Incentives
- New Market Tax Credits
- Bonds

# ■ Financing Considerations: Givey

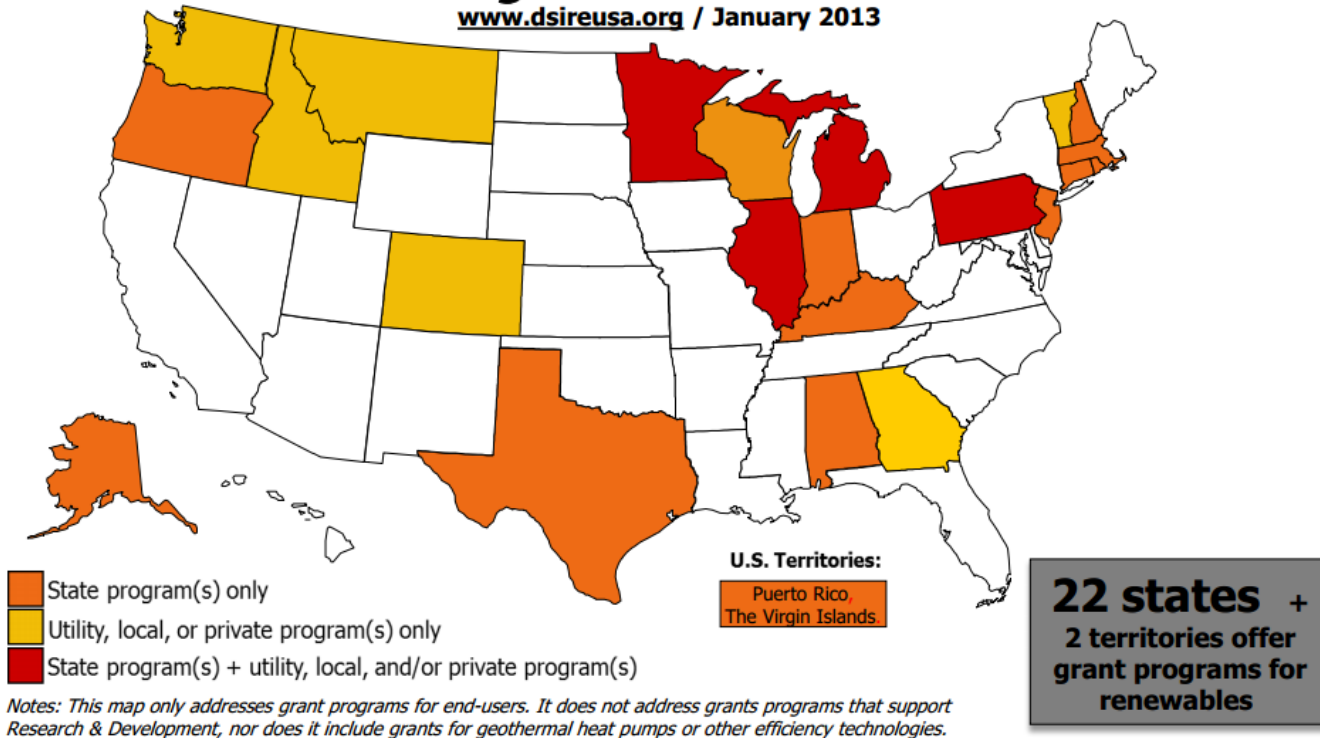
- Cost Avoidance
- Energy Efficiency
- Public Dollars – traditional grants are dwindling
- Private Dollars – ESCOs, loans
- Grant Writing – have a Strategic Energy Plan
- Project Management
- Tighten Procurement
- Be consistent with the STATE model
- Aggregation on the regional level (economies of scale)

# Grants: State, Local, Utility, & Private-Sponsored



## Grant Programs for Renewables

[www.dsireusa.org](http://www.dsireusa.org) / January 2013





# Grants: Federal Government Sponsored

Program	Type	Details
<p><b>Rural Energy for America Grant Program (USDA)</b></p>	<p><b>Grant</b></p>	<ul style="list-style-type: none"> <li>• \$2,500 - \$500,000 or 25% of project costs, whichever is less</li> <li>• Requirements: borrower must be rural small business or agricultural producer</li> <li>• Technology: biomass, solar, wind, hydro, hydrogen, geothermal</li> <li>• Applications: equipment, construction, permitting, professional service fees, feasibility studies, business plans, land acquisition</li> </ul>
<p><b>High Energy Cost Grant Program (USDA)</b></p>	<p><b>Grant</b></p>	<ul style="list-style-type: none"> <li>• \$75,000-\$5,000,000</li> <li>• Requirements: community's average home energy costs must exceed 275% of national average</li> <li>• Technology: solar, wind, biomass, hydro</li> <li>• Applications: Energy generation and transmission and distribution</li> <li>• No open solicitations</li> </ul>

# Grants: Federal Government Sponsored

Program	Type	Details
Tribal Energy Program Grant (DOE)	Grant	<ul style="list-style-type: none"><li>• Amount varies</li><li>• Requirements: varies by solicitation</li><li>• Technology: solar, wind, biomass, hydro, geothermal</li><li>• No open solicitations</li></ul>
Energy and Mineral Development Program (BIA)	Grant	<ul style="list-style-type: none"><li>• Amount varies</li><li>• Applications: Evaluation of energy and mineral resources on tribal lands.</li><li>• Annual solicitations</li></ul>

# Regional Corporations

Program	Type	Details
Partner with Regional Corporations (13 Regions)	Create	<ul style="list-style-type: none"><li>• Form a business plan</li><li>• Take advantage of tax incentives and rebates</li><li>• Collaborate with other villages</li><li>• Start from scratch</li></ul>
Alaska Native Village Corporations (Over 200 existing)	Join	<ul style="list-style-type: none"><li>• Seek an existing Regional Corp with experience in energy business</li><li>• Propose a renewable arm to an existing corporation</li></ul>

# Incentives: Rebates

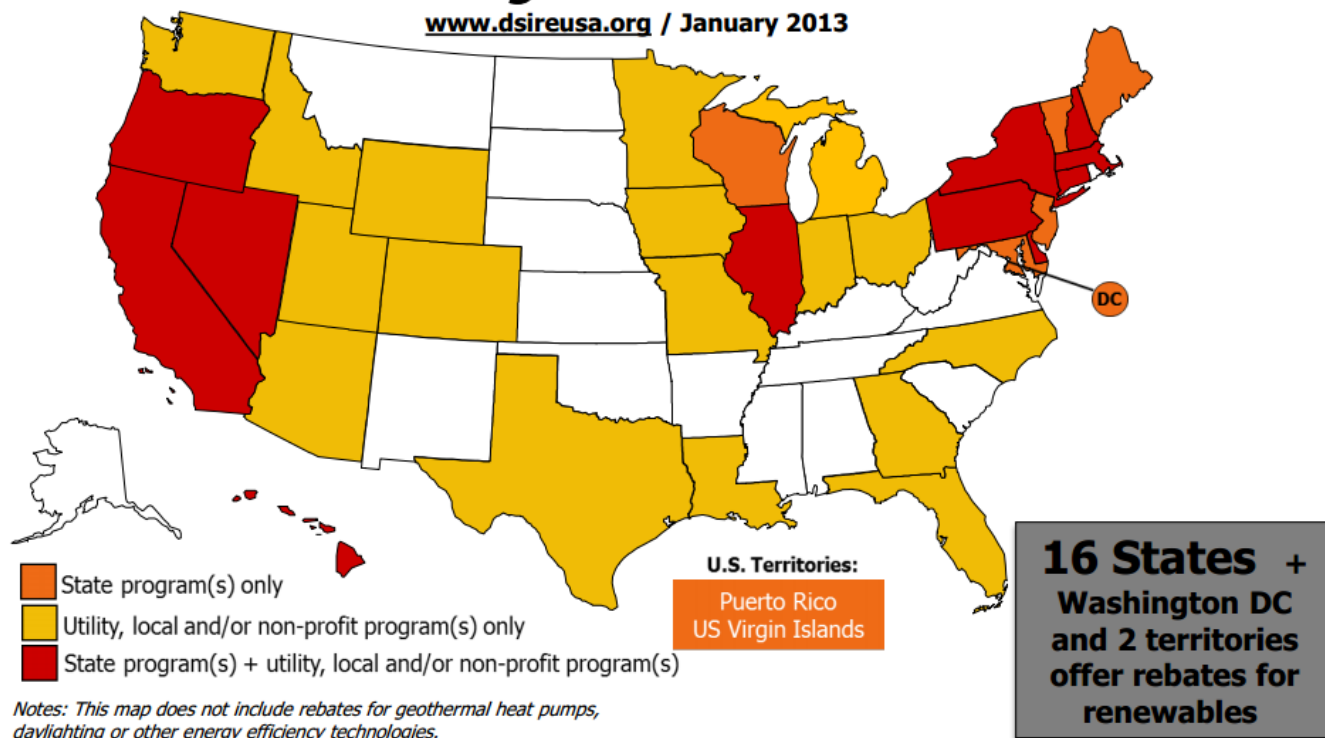
**DSIRE™**  
Database of State Incentives for Renewables & Efficiency

U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy | IREC  
INSTITUTE FOR RENEWABLES & ENERGY CONSERVATION

 NORTH CAROLINA Solar Center

## Rebate Programs for Renewables

[www.dsireusa.org](http://www.dsireusa.org) / January 2013



# Database of State Incentives for Renewable Energy

The screenshot shows the DSIRE website interface. At the top, there is a red banner with the DSIRE logo and the text "Database of State Incentives for Renewables & Efficiency". To the right of the banner are logos for the U.S. Department of Energy, Energy Efficiency & Renewable Energy, IREC (Interstate Renewable Energy Council), and the North Carolina Solar Center. Below the banner is a navigation menu with links for Home, Glossary, Links, FAQs, Contact, and About. On the left side, there is a sidebar with a "DSIRE SOLAR" logo, a "solar policy information" button, and a "Resources" section with links for RPS Data, Summary Maps, Summary Tables, Library, What's New?, and Search. The main content area is titled "SEARCH" and contains a search form. The form includes a "Printable Version" link, a yellow instruction box, and several dropdown menus: "Select an Eligible Sector:" (All), "Select a State/Territory:" (All), "Select a Technology:" (All), "Select an Implementing Sector:" (All), and "Select Incentive/Policy Type:" (Net Metering). A red oval highlights the "Net Metering" option in the last dropdown menu. Below the dropdowns is a "Click to Search" button.

**DSIRE™**  
Database of State Incentives for Renewables & Efficiency

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

IREC | NORTH CAROLINA Solar Center

Home | Glossary | Links | FAQs | Contact | About

**DSIRE SOLAR**  
solar policy information

**SEARCH** Printable Version

Create a custom summary of incentives using the search criteria below. First, select the database(s) to search, then use the drop-down menus to make a selection under each category.

Choose one or both databases to search:  
 Renewable Energy  Energy Efficiency

Select an Eligible Sector:  
All

Select a State/Territory:  
All

Select a Technology:  
All

Select an Implementing Sector:  
All

Select Incentive/Policy Type:  
Net Metering

Click to Search

Check DSIRE:  
<http://dsireusa.org>

# Debt: Government Sponsored Loan Programs

Program	Type	Details
Rural Development Biorefinery Assistance Program (USDA)	Guarantee	<ul style="list-style-type: none"> <li>• Up to 90% of loan amount</li> <li>• Technology: commercial-scale bio refinery</li> <li>• Applications: equipment, construction, permitting, land acquisition, cost of financing</li> </ul>
Power Project Loan Fund (Alaska Energy Authority)	Loan	<ul style="list-style-type: none"> <li>• Amount varies</li> <li>• Technology: solar, wind, MSW</li> <li>• Applications: for development or upgrade of small-scale power production (&lt;10 MW), conservation facilities, and bulk fuel storage, includes transmission and distribution</li> </ul>
Indian Affairs Loan Guaranty, Insurance, and Interest Subsidy Program (BIA)	Guarantee	<ul style="list-style-type: none"> <li>• Max 90%; interest subsidy covers the difference between the lender's rate and the Indian Financing Act rate</li> <li>• Requirements: borrower must have 20% tangible equity in the project; this is for business development.</li> </ul>
Rural Energy for America Loan Guarantee Program (USDA)	Guarantee	<ul style="list-style-type: none"> <li>• Up to 85% of loan amount</li> <li>• Requirements: borrower must be rural small business or agricultural producer</li> <li>• Technology: biomass, solar, wind, hydro, hydrogen, geothermal</li> <li>• Applications: equipment, construction, permitting, professional service fees, feasibility studies, business plans, land acquisition</li> <li>• No open solicitations</li> </ul>

## ■ Energy Savings Performance Contracting (ESPC)

- Re-purpose money spent on wasted energy and maintenance into payment stream for capital improvements
- Energy Service Company (ESCO)
  - Identifies energy conservation measures
  - Designs, engineers and constructs measures
  - Guarantees savings
  - Pays any savings shortfalls

## ■ Typical ESPC Measures

- Lighting – indoor, outdoor, street lights
- Heating Ventilation & Air Conditioning (HVAC)
- Energy Management Systems
- Motors and Variable Speed Drives
- Building Envelope Measures
- Water Conservation Measures
- DG and CHP – renewable or fossil fuel
- Other Systems (kitchen, security, etc.)



# ESPCs

An ESPC is a no up-front cost contracting mechanism between a site customer and an energy service company (ESCO). Energy conservation measures and on-site generation are financed and implemented by an ESCO, which is repaid through energy savings. This would be done as a PPA, in conjunction with energy efficiency, to bring costs down.

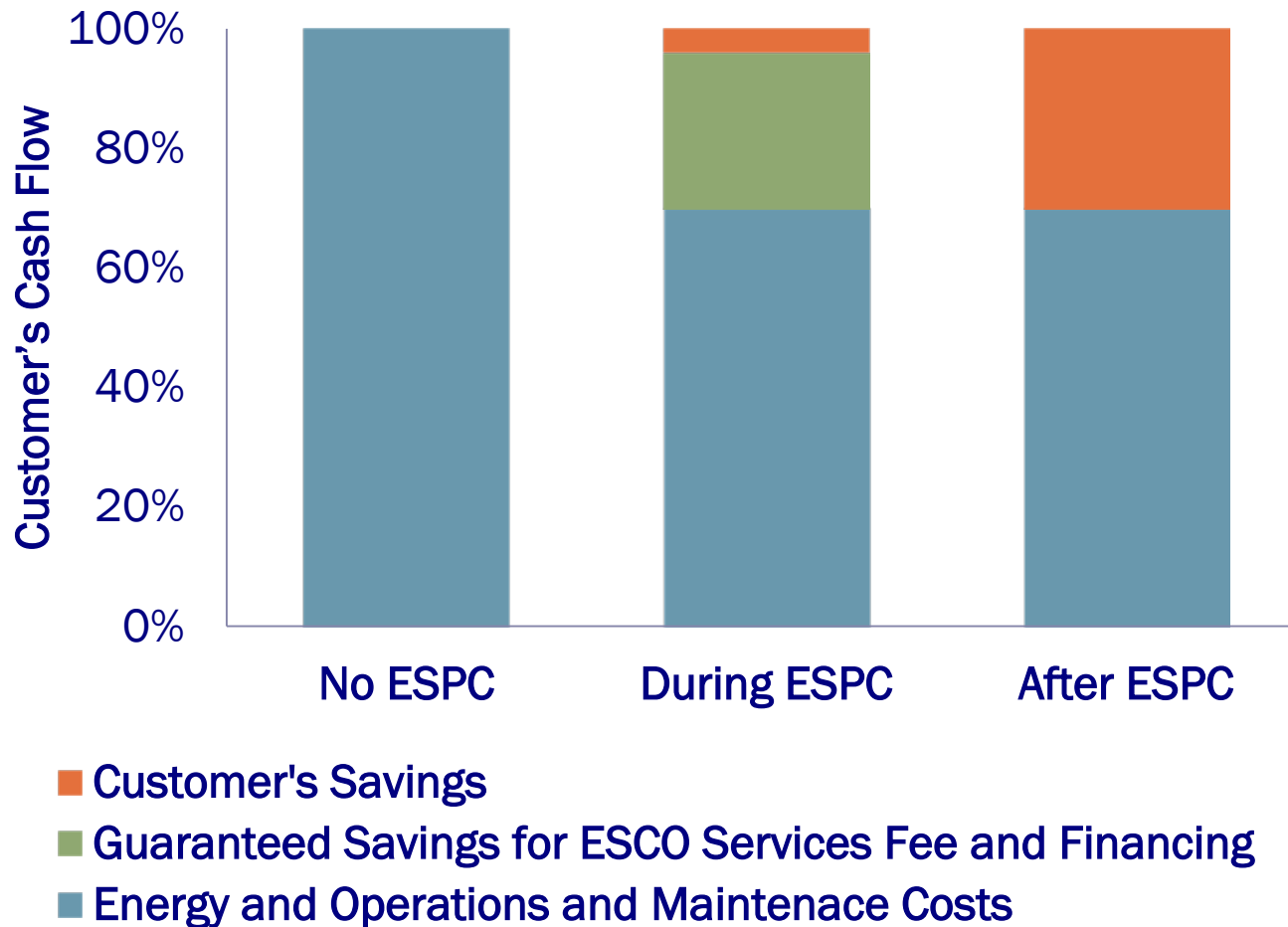


More Than 90 DOE-Qualified ESCOs,  
including:

Ameresco • McKinstry • Chevron • Siemens  
Honeywell • Tetra Tech • Johnson Controls •  
Trane

For full DOE Listing: <http://energy.gov/eere/femp/qualified-list-energy-service-companies>.

# ESPCs Reallocate Current and Future Energy Spending



## ■ GSA Pricing for the ENABLE program

- ESPC ENABLE program allows smaller low-risk projects to be funded through an ESCO contract using GSA pricing schedule
  - ESCOs that work on GSA ENABLE projects:  
<http://energy.gov/eere/femp/espc-enable-energy-service-companies>

# Utility Energy Service Contracts (UESCs)

UESCs are contracts that allow utilities to provide their federal customer agencies with comprehensive energy and water efficiency improvements and demand reduction services.

Utility provides analysis, design, installation, and may arrange financing.

## Types of UESCs

### 1. Area-wide Contracts (AWCs)

- Indefinite delivery, indefinite quantity (IDIQ)

### 2. Basic Ordering Agreements (BOAs)

- Not a contract
- Establishes general terms and conditions for future contracts

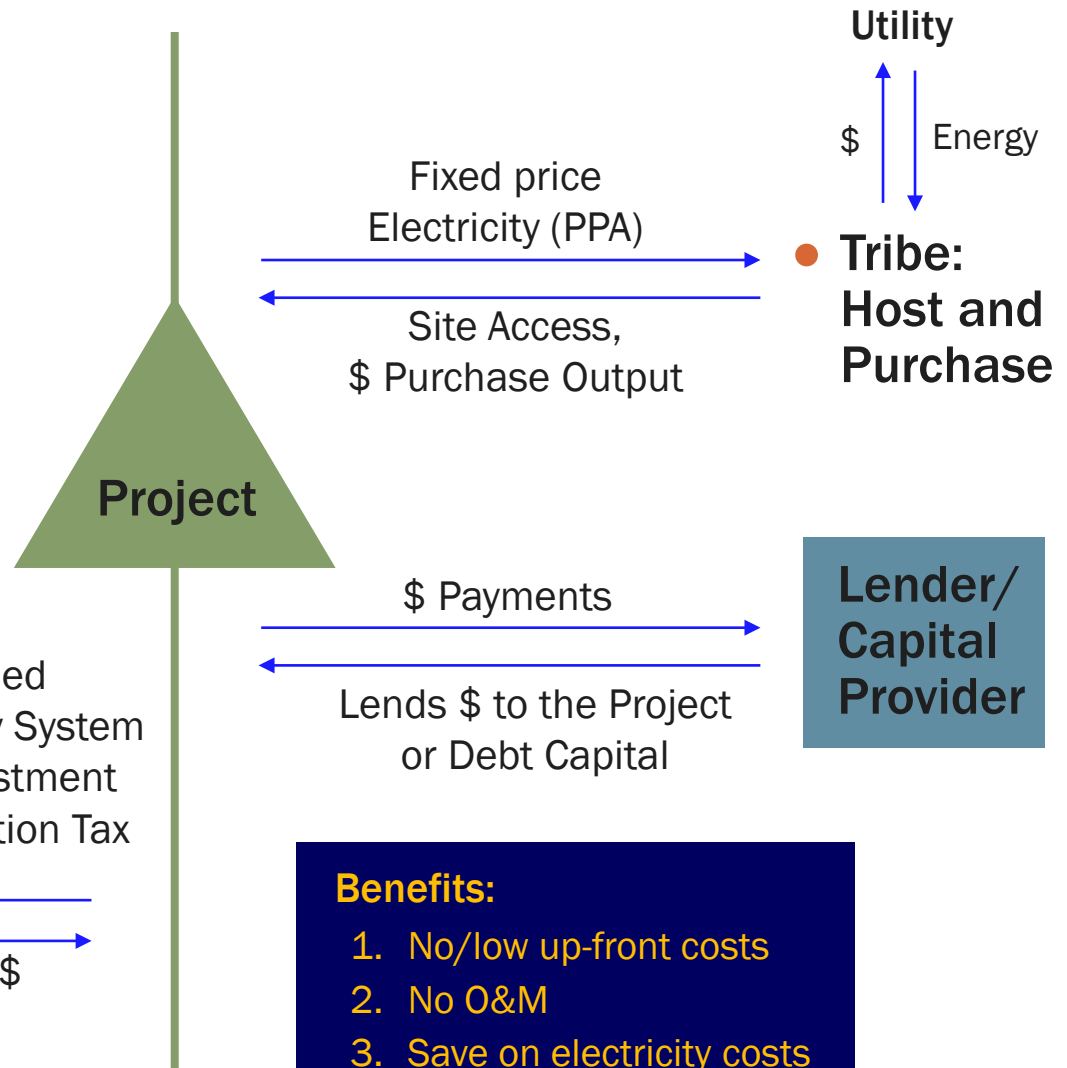
### 3. Model Agreements

- Template for agencies to use in establishing UESCs or as master agreements within an AWC
- Contain approved, required clauses for federal contracts
- Most comprehensive compilation of contractual language for UESCs available
- Can be added to an AWC or BOA
- Can also be used alone

# Third-Party Power Purchase Agreement (PPA)

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

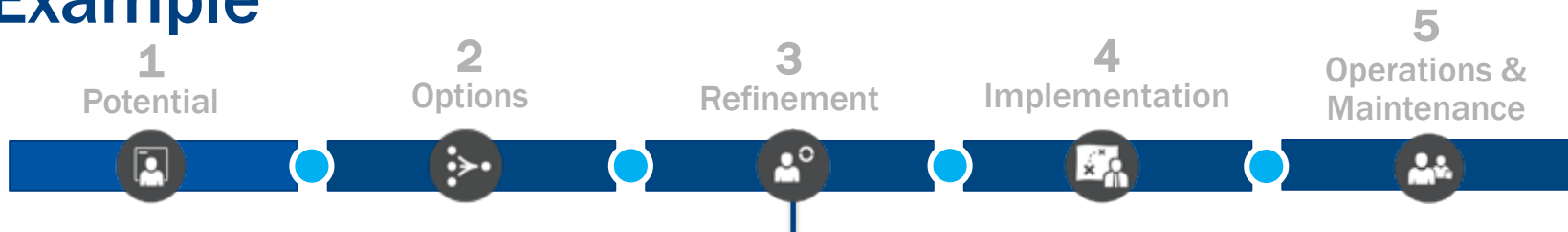
The Tribe is the host in this structure and agrees to buy electricity generated by the renewable energy system.



## Benefits:

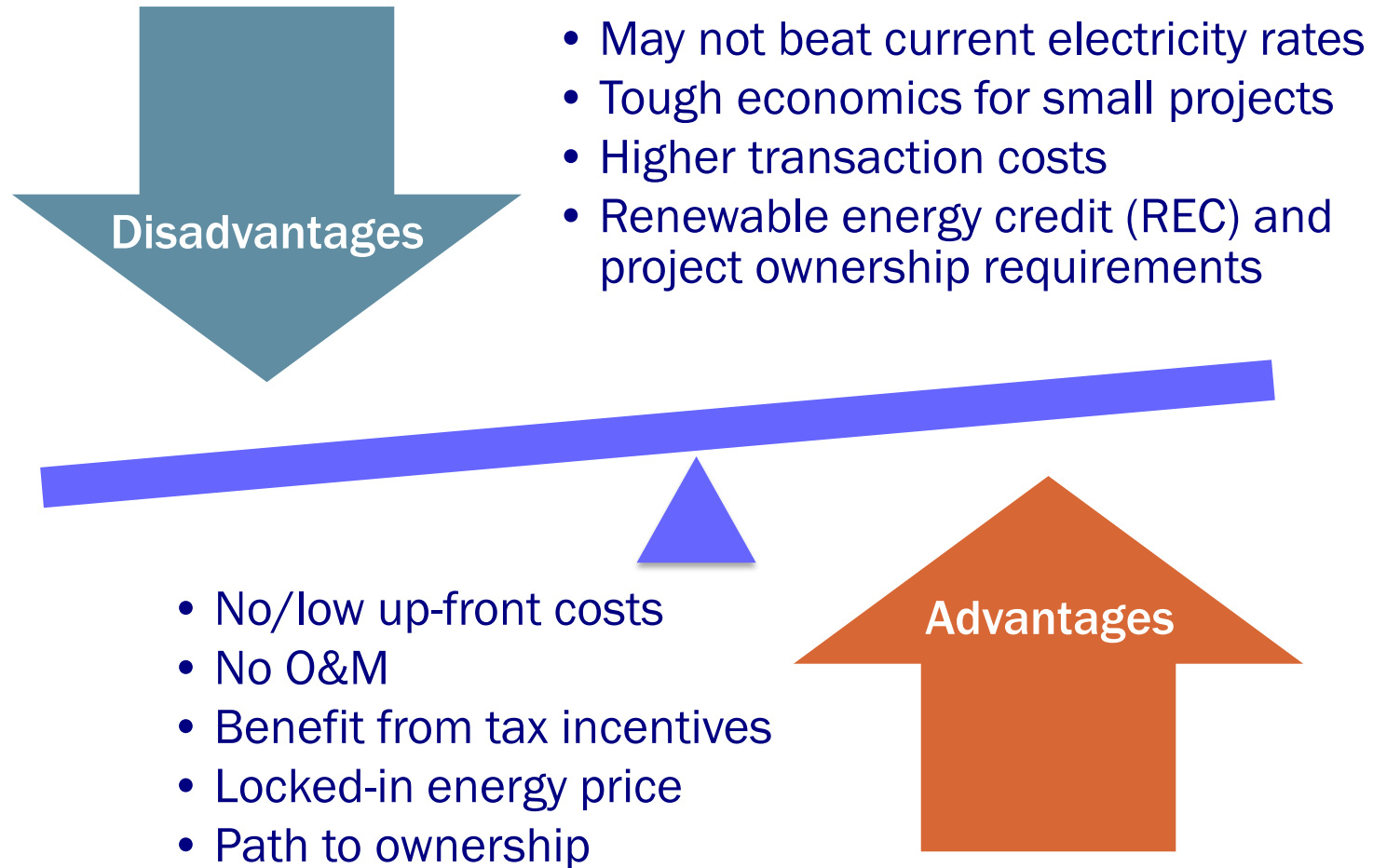
1. No/low up-front costs
2. No O&M
3. Save on electricity costs

# Community Projects PPAs: Eventual Tribal Ownership Example



- Developer and investor form a special purpose vehicle/entity to develop a solar/wind/biomass/MSW power plant
- Tribe executes a PPA with wind project to purchase power
  - Hopefully at a discount to current power price
  - Discount will depend on project economics and local rates
- At end of 6 years (ITC) or 10 years (PTC)
  - Investor ownership “flips” from 99% down to 5%
  - Developer buys investor 5% ownership at “fair market value”
- In year 7 or 11, developer can sell project to Tribe, which assumes the project’s debt
  - Project price is substantially reduced compared to Tribe project development from year 1

# PPA Considerations to Weigh



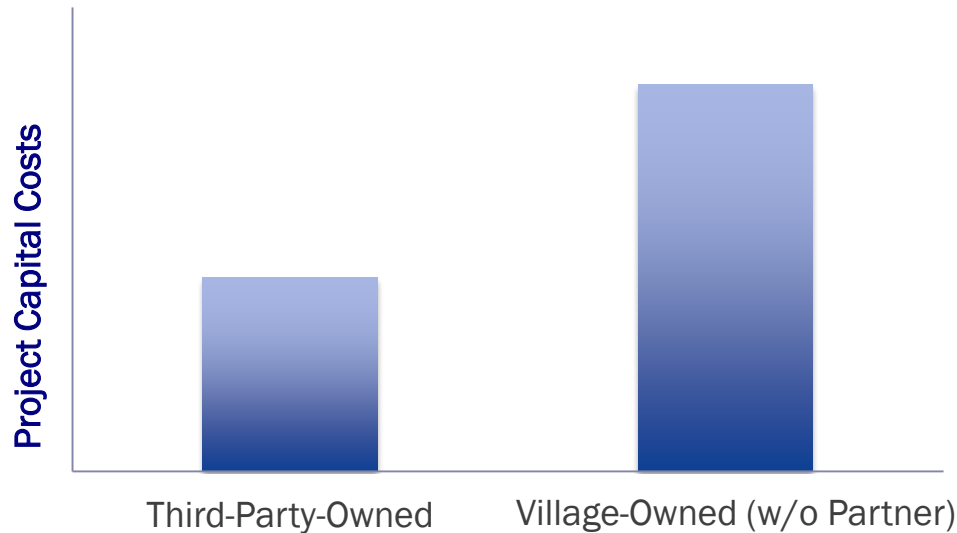
# Comparison of Tax Incentives

	Investment Tax Credit (ITC)	Accelerated Depreciation
Value	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"> <li>• Solar</li> <li>• Fuel cells</li> <li>• Small wind</li> <li>• Geothermal</li> </ul>	Depreciation can be taken with either PTC or or ITC
Basis	Eligible project cost. Credit taken at the time the project is placed in service. Can be combined with depreciation.	<p><b>MACRS:</b> 5-year depreciation schedule</p> <p><b>Bonus:</b> 50% first year accelerated depreciation on equipment</p>
Expiration	Placed in service before 1/1/2017*	<p><b>MACRS:</b> None</p> <p><b>Bonus:</b> 1/1/2014</p>



# So Why Seek a Tax-Equity Finance Partner?

- Tax incentives such as 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 capital costs by ~50%



- Tax incentives can help achieve a competitive price of power
- Many projects also require state-level incentives to be economic

## Bonds: CREBs cont.

### Challenges

- Not truly equivalent to interest-free bond
  - Assumes bond issuer is equiv. to AA corporate
  - Public entities with weaker credit must either:
    - Make supplemental interest payments, or
    - Sell the bond at a discount
- Transaction costs are high
  - Allocations made from smallest to largest projects
  - Solution: MA bundled 12 projects (1 MW)
- First principal payment due in December of the year the CREB is issued

# Bonds: Green Bonds

- Finance tool for green projects: projects and activities that promote climate and other environmentally sustainable purposes
  - Renewable energy
  - Energy efficiency
  - Sustainable waste management
  - Clean transportation
- Nascent market for institutional investors who have climate considerations in their investment objectives
  - Currently led by international organizations (World Bank, International Monetary Fund)
  - Some states beginning to look at these instruments (MA has issued some green bonds)

A photograph of three wind turbines on a mountain ridge. The turbines are white with three blades each. The mountain is covered in green grass, and a thick layer of white fog or mist is rolling over the ridge, partially obscuring the base of the turbines. The sky is a clear, bright blue. The overall scene is serene and suggests a clean energy project in a natural setting.

# PROJECT RISKS



# Project Risk: Community-Scale Post Step 3

	Risks	Risk Assessment Post Step 3
<b>Development</b>	<ul style="list-style-type: none"> <li>• Poor or no renewable energy resource assessment</li> <li>• Not identifying all possible costs</li> <li>• Unrealistic estimation of all costs</li> <li>• Incorrect estimation of long-term “community” energy use (energy efficiency first)</li> <li>• Utility rules and ability to offset use with centralized production</li> </ul>	<p>Low; site picked ✓  <u>Low; detailed model</u> ✓  <u>Low; detailed model</u> ✓            Low; final projection ✓</p> <p><u>Reduced</u> ✓</p>
<b>Site</b>	<ul style="list-style-type: none"> <li>• Structural (e.g., rooftop solar, wind loading, soil conditions)</li> <li>• Installation safety (e.g., wind tower, hazard for adjacent sites)</li> <li>• Site control for safety/security purposes</li> </ul>	<p><u>Assumed low; assessed EPC assumes risk</u>  <u>Low; site secure</u> ✓</p>
<b>Permitting</b>	<ul style="list-style-type: none"> <li>• Tribe-adopted codes and permitting requirements</li> <li>• Utility interconnection requirements</li> </ul>	<p><u>Low; complete</u> ✓  <u>Low; complete</u> ✓</p>
<b>Finance</b>	<ul style="list-style-type: none"> <li>• Capital availability</li> <li>• Incentive availability risk</li> </ul>	<p><u>Low; PPA complete</u> ✓  <u>Low; risk on developer</u> ✓</p>
<b>Construction/Completion</b>	<ul style="list-style-type: none"> <li>• EPC difficulties</li> <li>• Cost overruns</li> <li>• Schedule</li> </ul>	<p>Low; allocate to EPC or developer</p>
<b>Operating</b>	<ul style="list-style-type: none"> <li>• Output shortfall from expected</li> <li>• Technology O&amp;M</li> </ul>	<p>Assumed low, mitigable, or allocatable</p>

## Conclusion

- There is large potential for renewable energy development in Alaska. To date, projects in Alaska have been largely publicly financed, but there is opportunity to expand into private financing in order to capture more project potential.
- Renewable energy development often requires innovative financing structures in order to fully realize the tax benefits available and typically includes a combination of government-sponsored and private funding.

## Next Steps

- Evaluate options for sources of capital, tax equity partnerships, project terms, and ownership interest when selecting the optimal financing structure.
- Tax credits and accelerated depreciation are by far the most powerful government-sponsored drivers of renewable energy project development in the United States, as they attract the private capital necessary to ensure a project's economic viability.
- There are opportunities for tribal governments and Alaska Native corporations to participate in renewable energy project development, both independently and through tax-equity partnerships.

A photograph of three wind turbines on a mountain peak. The turbines are white with three blades each. The mountain is covered in green grass and is partially obscured by a thick layer of white fog or mist. The sky is a clear, bright blue. The overall scene is serene and suggests a clean energy source.

# INTERCONNECTION AND NET METERING





# What is Net Metering?

“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” for utility credit.

Source: Solar Energy Industry Association. *Issues and Policies: Net Metering*, accessed Aug 11, 2013. <http://www.seia.org/policy/distributed-solar/net-metering>

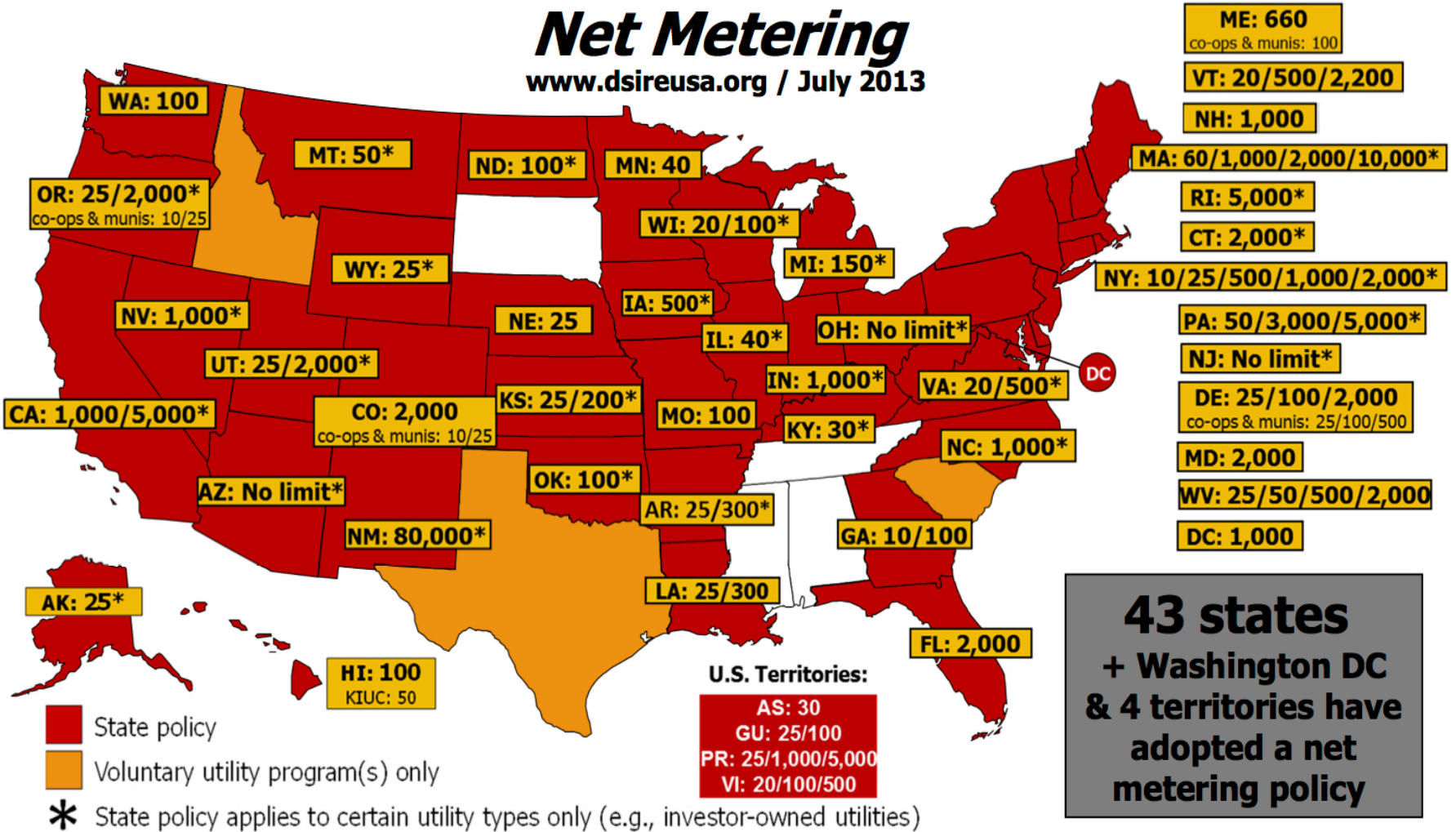


## ■ Interconnection & Net Metering

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

# Net Metering

www.dsireusa.org / July 2013



**43 states  
+ Washington DC  
& 4 territories have  
adopted a net  
metering policy**

Note: Numbers indicate individual system capacity limit in kilowatts. Some limits vary by customer type, technology and/or application. Other limits might also apply. Additionally, this map generally does not address statutory changes until administrative rules have been adopted to implement such changes.

# Net Metering Variations

- Net metering works best for
  - Home owners (not renters)
  - Single dwellings (not multi-unit homes/businesses)
  - Customers located in same utility territory
  - Distributed generation (DG) located in the same utility territory
- Variations on net metering allow for broader participation
  - Group billing
  - Virtual net metering
  - Joint ownership

# Group Billing

- Allows multiple participants to receive net metering credits from a single renewable energy facility
  - Great for multi-family homes or multi-tenant business buildings
  - Utility's rules must allow for group billing
- Utility plays an active role
  - Produces group bill for all energy consumption and charges
  - Output from net metered system is credited against group bill
  - Remaining costs are allocated according to participant agreement
- Requires
  - Customer representative as utility contact to do administrative work
  - Creditworthy customer representative
- Example: Vermont

# Virtual Net Metering

- Similar to group billing
  - Multiple participants receive net metering credits from a single renewable system
  - Offsets load at multiple retail electric accounts
  - Must be within a utility's service territory
- As with traditional net metering, credits appear on each individual customer's bill, instead of on a group bill
- Sometimes, the DG system is not required to be behind the customer's meter
- Examples: Colorado, Delaware, Massachusetts, and California

# Sample Net Metering Agreement

## MINNESOTA SOLAR\*REWARDS CUSTOMER CONTRACT

Application ID: \_\_\_\_\_

### Customer-Sited Photovoltaic (PV) Systems Greater than 0.5 kW and Less than 40 kW DC Nameplate Capacity

This Contract is made and entered into by and between Northern States Power Company, a Minnesota corporation, having a mailing address of 414 Nicollet Mall, Minneapolis, Minnesota 55401 ("Company"), and \_\_\_\_\_ (whether one or more, "Customer"), whose mailing address for billing and notice purposes is \_\_\_\_\_, concerning electric service at the following address: \_\_\_\_\_ (the "Service Address").

#### 1. Fact Background.

- a. Customer will be installing the electric generating facilities described in Exhibit 1 (the "PV System") and meeting the requirements stated in this Contract, with a nameplate capacity rated at greater than 0.5 kilowatts and less than 40 kilowatts direct current ("DC"), on property located at the Service Address.
- b. Customer's PV System also meets the requirements of the Minnesota Public Utilities Commission (the "Commission") Rules Chapter 7835 on Cogeneration and Small Power Production and any technical standards for interconnection the Company has established that are authorized by those Rules.
- c. Customer is prepared to generate electricity in parallel with the Company using the PV System.
- d. Customer has submitted to Company an application and paid an application fee of \$250.00, to participate in Company's Solar Rewards program using the PV System.
- e. The Company is obligated under federal and Minnesota state law to interconnect with Customer and to purchase electricity generated by Customer through qualifying facilities and offered for sale to Company by Customer.
- f. Customer and Company enter into this Contract which sets out the terms and conditions for the purchase and sale of the electricity generated by the PV System ("Solar Rewards Program"), and related matters.

Minnesota Solar Rewards Customer Contract  
Page 1 of 13

#### 2. Purchases and Sales of Electricity.

Customer and Company agree:

- a. Company will sell electricity to Customer under the rate schedule in force for the class of customer to which Customer belongs.
- b. Customer agrees to supply electricity generated by the PV System in the form of \_\_\_ phase, \_\_\_ wire, alternating current at the nominal frequency of 60 hertz, and at a nominal voltage of \_\_\_.
- c. Company will buy electricity generated by the PV System from Customer under the applicable Company rate schedule filed with the Commission. Customer elects to sell electricity generated by the PV System in excess of Customer's own use under the terms of the following Company tariff:
  - Net Energy Billing Service, Rate Code A50
  - Purchase and Sale Billing Service, Rate Code A51
  - Time of Day Purchase Service, Rate Code A52

A copy of the currently filed elected tariff is attached as Exhibit 2. The rates, terms and conditions for sales and purchases of electricity may be changed over the time this Contract is in force, due to actions of the Company or of the Commission, and Customer and Company agree that sales and purchases will be made under the rates in effect each month during the time this Contract is in force.

d. Customer will pay a monthly metering charge under the Company tariff elected by the Customer, provided in Exhibit 2, and according to meter installation requirements in Section 5b. The monthly metering charge pays for the cost and installation of a bi-directional meter at the Service Address which measures electricity delivered by the Company to the Customer and energy received by the Company from the Customer, and the associated billing, operating and maintenance expenses. The metering charge may be changed over the time this Contract is in force, due to actions of the Company or of the Commission, and Customer and Company agree that the metering charge will be under the rates in effect each month during the time this Contract is in force.

e. The Company will compute the charges and payments for purchases and sales of electricity for each billing period. If the payments for electricity generated by the PV System and sold to Company exceed the charges for electricity which the Company supplies and sells to Customer (i.e. net positive production by the PV System), the credit will accumulate on the Company's billing statement to Customer and will be paid by check to Customer within fifteen (15) days of the billing date once the accumulated credit exceeds \$25.00.

Minnesota Solar Rewards Customer Contract  
Page 2 of 13

<http://www.xcelenergy.com/staticfiles/xcel/Marketing/Files/MN-SR-Contract.pdf>

## What is Interconnection?

“The technical rules and procedures allowing customers to ‘plug in’ to the grid.”

Source: *Solar Energy Industry Association*. Issues and Policies: Net Metering, accessed Aug 11, 2013. <http://www.seia.org/policy/distributed-solar/net-metering>



## What is Interconnection? (cont.)

- 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

# 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>.

**DSIRE™**  
Database of State Incentives for Renewables & Efficiency

U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy

IREC | NORTH CAROLINA Solar Center

Home | Glossary | Links | FAQs | Contact | About

**DSIRE SOLAR**  
solar policy information

**Resources**

- RPS Data
- Summary Maps
- Summary Tables
- Library
- What's New?
- Search**

**SEARCH** Printable Version

Create a custom summary of incentives using the search criteria below. First, select the database(s) to search, then use the drop-down menus to make a selection under each category.

Choose one or both databases to search:  
 Renewable Energy  Energy Efficiency

Select an Eligible Sector: All

Select a State/Territory: All

Select a Technology: All

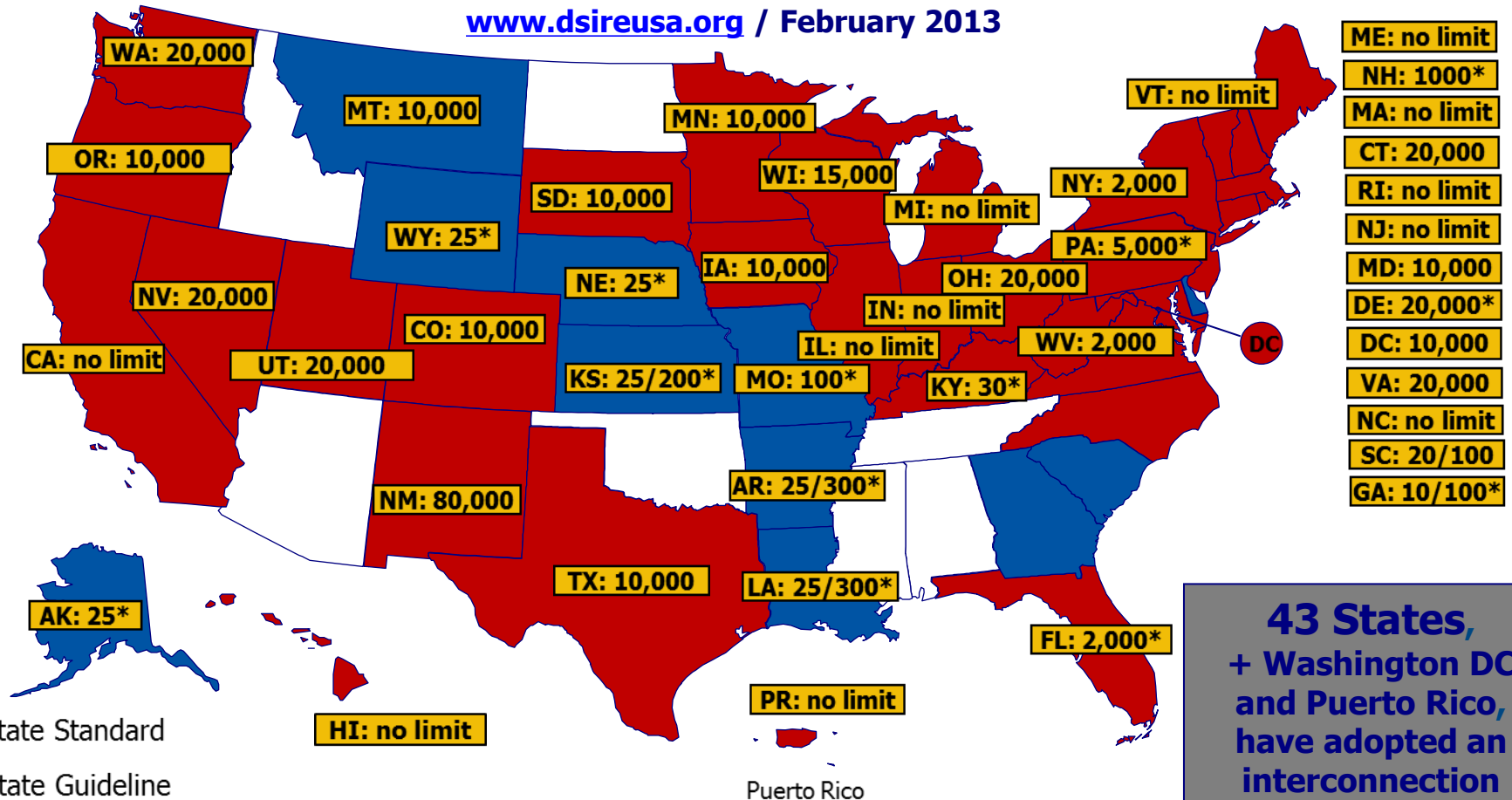
Select an Implementing Sector: All

Select Incentive/Policy Type: Interconnection Standards

Click to Search

# Interconnection Policies

[www.dsireusa.org](http://www.dsireusa.org) / February 2013



**43 States,  
+ Washington DC  
and Puerto Rico,  
have adopted an  
interconnection  
policy.**

■ State Standard  
■ State Guideline  
 \* Standard or Guideline only applies to net-metered systems

*Notes: Numbers indicate system capacity limit in kW. Some state limits vary by customer type (e.g., residential versus non-residential). "No limit" means that there is no stated maximum size for individual systems. Other limits may apply. Generally, state interconnection standards apply only to investor-owned utilities.*

# Sample Interconnection Agreement (<10 kW)

## EXHIBIT JA

### 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.

28

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.

29

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



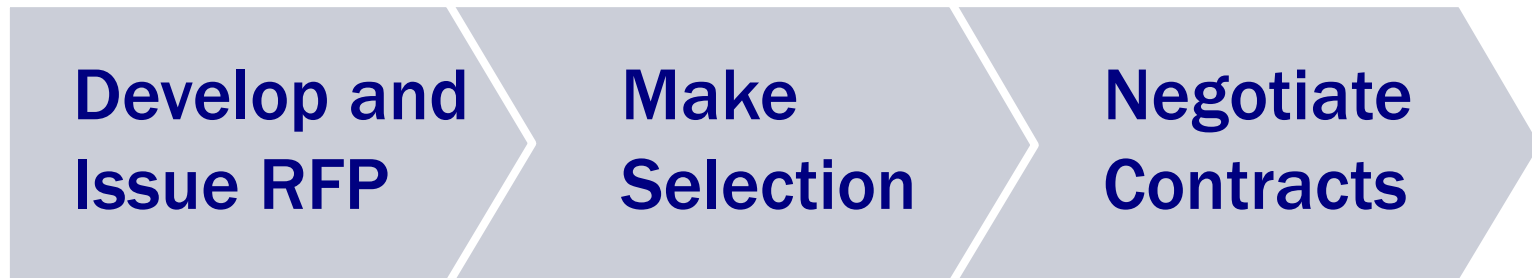
The image shows three wind turbines on a mountain peak. The turbines are white with three blades each. The mountain is covered in green grass and is partially obscured by a thick layer of white mist or fog. The sky is a clear, bright blue. A large, semi-transparent blue rectangular box is overlaid on the bottom left of the image, containing the word "PROCUREMENT" in white, bold, uppercase letters.

# PROCUREMENT



# Procurement Process

## Facility- and Community-Scale Projects



- Potential Procurement Roles
  - Consider the General Services Administration (GSA) as a resource for procurement:  
<http://www.gsa.gov/portal/category/20998>
  - Project developer
  - Engineering, procurement, and construction (EPC) contractor
  - Environmental permits contractor
    - May apply to some community projects, but not to others

# Outline of the RFP Process

## 1. Develop RFP

- Timeline: 1 month to 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

## 2. Issue RFP

Tribal, federal, and industry networks

## 3. Administer the RFP

- Proposal meeting(s)
- Site tour(s) – can be concurrent with proposal meeting
- Q&A process – ensure all developers get same information

## 4. 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)

## 5. Award Contract

- Four approaches



<b>Native American Tribes</b>
Overview
Getting Started
How GSA Helps Customers
Property Transfer & Public Sales
Real Property Transfer
Vehicle Sales
NHPA Section 106 Tribal Consultation
Feedback and Comments
Send Comment
Mailing List

## Native American Tribes

GSA offers a range of services available to federally recognized Native American Tribes, from surplus property donations to vehicle purchases. In addition, recognized tribes can use this page to receive notice of GSA actions and policies that affect tribes, as well as provide comment.

### GETTING STARTED



[How It Works](#) - New to dealing with GSA? Here's how it works.

### HOW GSA HELPS CUSTOMERS



### REAL PROPERTY TRANSFER



Federal property available for transfer ranges from undeveloped land to commercial property to single- and multiple-family housing.

- Introduction to Real Property Transfer for Tribes
- Real Property Transfer
- Finding Federal Property
- Outleasing

**CONTACTS**

**Erin Mewhirter**  
(202) 357-9537

- [erin.mewhirter@gsa.gov](mailto:erin.mewhirter@gsa.gov)
- [View Contact Details](#)

**Florence Francis**

- [florence.Francis@gsa.gov](mailto:florence.Francis@gsa.gov)
- [View Contact Details](#)

### RESOURCES

- [eBuy](#)

# Develop RFP

## Key Elements of the RFP

- **Type of procurement for EERE projects**
  - Purchase renewable equipment & installation
  - Power Purchase Agreement (PPA)
  - ESCO
- **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

# RFP Technical Specifications

## Define Scope of Work

- What is the project scale
- Type of renewable energy 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
- Strategy for training maintenance and operations staff
- Commissioning plan

# RFP 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

# RFP Award Contract

## Choose One of These Four Typical Approaches

1. Award based on proposal: awarded solely on merits of proposal
2. Award with discussion: awarded on proposal but contingent on clarifying discussions
3. Award with discussion and negotiation: awarded on proposal but contingent on further negotiation
4. Award with best proposal:
  - Best proposals are short-listed
  - Short-listed proposals asked for best final proposal revision
  - Award based on final proposal revision

# 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
- Utilize GSA pricing to save time and money
- Review NREL's RFP packet before procurement is started

A photograph of three wind turbines on a mountain ridge. The turbines are silhouetted against a bright, hazy sky. The foreground is filled with thick, white fog or mist that partially obscures the lower parts of the turbines and the mountain. The overall scene is serene and atmospheric.

# OPERATIONS AND MAINTENANCE





## Project Refinement: O&M

- Evaluation criteria for RFP should consider O&M
- Budget for maintenance, repairs, and operations and include in the financial plan
- See O&M Step 5 for excellent resources