



DOE OFFICE OF INDIAN ENERGY

# Tribal Renewable Energy Project Development and Financing Essentials



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Indian Energy



## 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.

# About the Speaker

## Elizabeth Doris

- Senior Project Leader at the National Renewable Energy Laboratory (NREL)
- Specializes in strategies for developing clean energy technologies in public and private markets
- Project manager for the DOE Office of Indian Energy project team at NREL





# Why Complete a Renewable Energy Project?

Income

Jobs

Experience

Cost savings

Cost stabilization

Tax revenue

Industry exposure

Energy reliability

Self reliance

Environmental sustainability

*Benefits vary based  
on the type and  
scale of project*



# ■ | Agenda

- Overview of training purpose and structure
- Project development and financing key concepts (addressed in context)
- Project development process and decision points



# PROJECT DEVELOPMENT AND FINANCING COURSES OVERVIEW: PURPOSE AND STRUCTURE



## ■ Purpose of Courses

- Provide a **framework** for renewable energy project development and financing for Tribes
- Set and manage **expectations** of project development
- Identify **decision points** and the information needed to effectively make **decisions**
- Pinpoint available **tools** for use in project development
- Provide **examples** of relevant projects





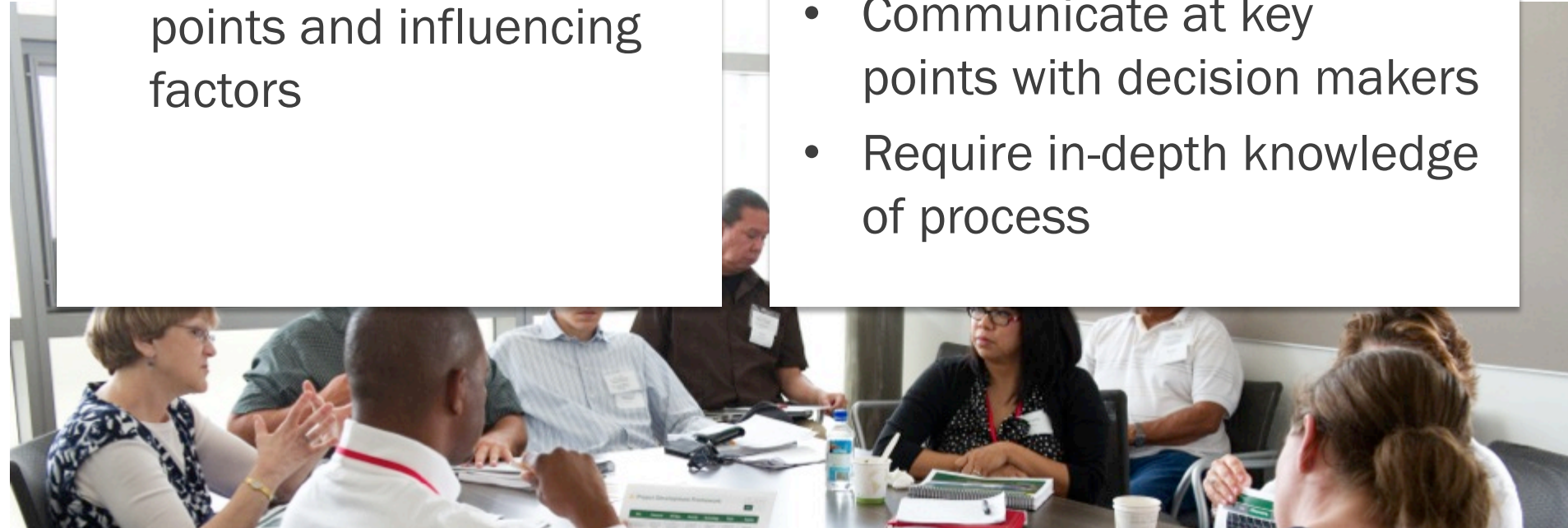
# Course Audiences

## Tribal Leaders

- Primary decision makers
- Understand terminology
- Understand key decision points and influencing factors

## Staff/Project Management

- May be self-managing project or managing consultants
- Communicate at key points with decision makers
- Require in-depth knowledge of process







# How This “Essentials” Course Fits

## Essentials

Basic process, decisions, and concepts for project development

**Audience:** All involved in project

## Advanced/In-Depth

Detailed academic information for deep understanding of concepts

**Audience:** Project and contract managers

## Facility

Comprehensive, in-depth process pathways for facility-scale project development and financing

**Audience:** Decision makers and project and contract managers

## Community

Comprehensive, in-depth process pathways for community-scale project development and financing

**Audience:** Decision makers and project and contract managers

## Commercial

Comprehensive, in-depth process pathways for commercial-scale project development and financing

**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: [Course Terminology Guide](#)



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

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



# Terminology: Project Scale

## Facility

**Definition:** single building system

**Primary motivation/purpose:** offset building energy use



## Community

**Definition:** multiple buildings, campuses

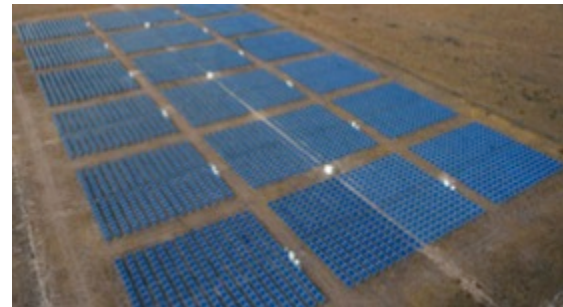
**Primary motivation/purpose:** offset community energy costs, energy self-sufficiency



## Commercial

**Definition:** stand-alone project

**Primary motivation/purpose:** revenue generation, financial self-sufficiency



Photos by NREL 09373, 18077, 13327



# Determining Project Scale: What is the Goal?



## Goal Examples:

- Offset costs
- Become energy self-sufficient
- Generate revenue

### Facility

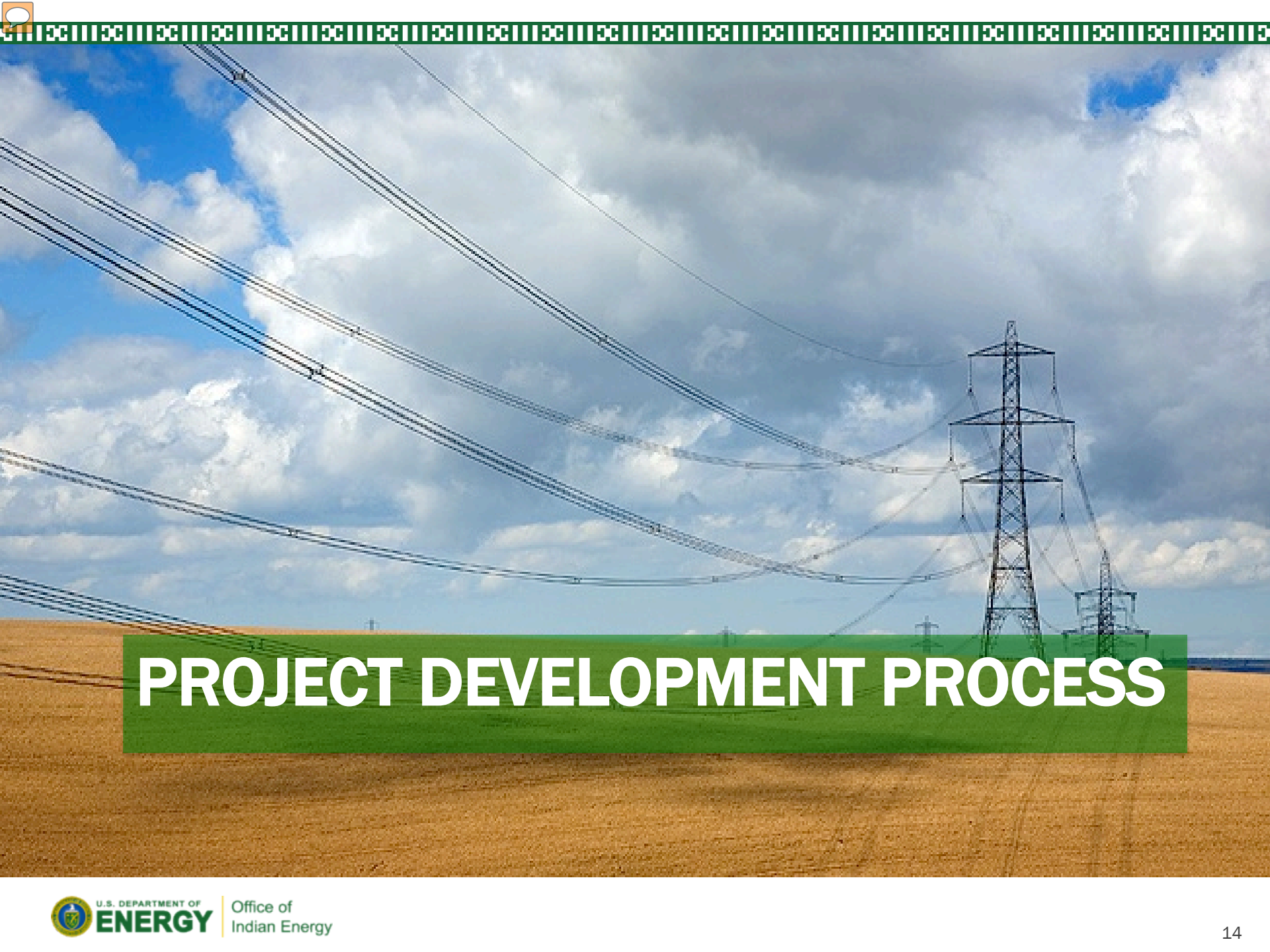
- Savings opportunity
- Self-power opportunity
- Utility interconnection
- 1 month to 1 year to develop

### Community

- Savings opportunity
- Self-power opportunity
- Utility interconnection
- 6 months to 2 years to develop

### Commercial

- Competing power price
- Offtaker options
- Transmission options
- 3 to 5 years to develop

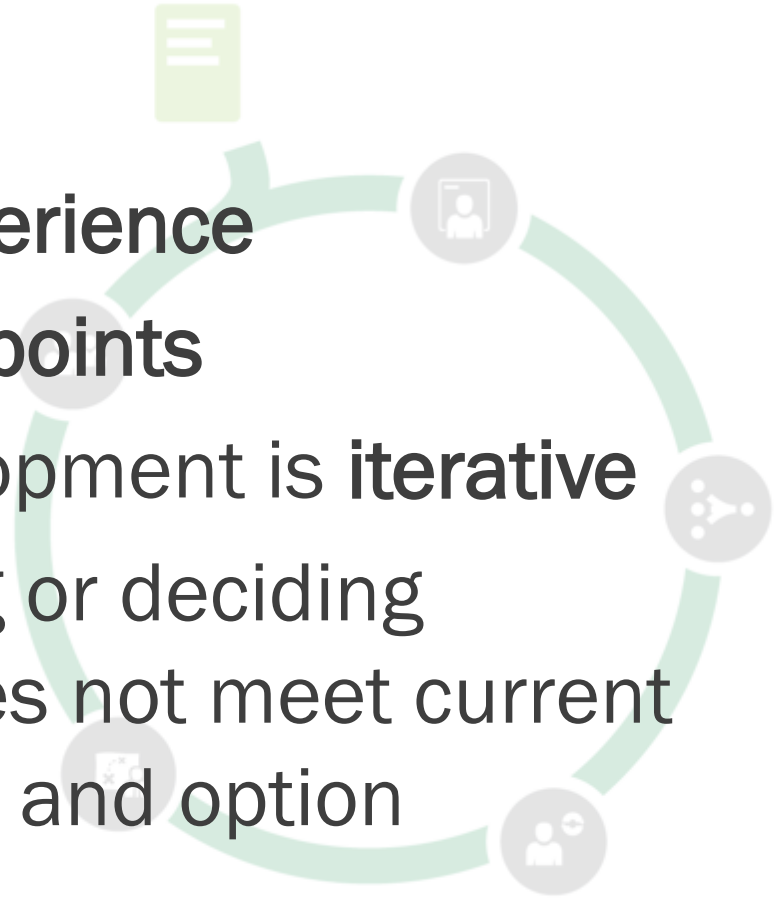


# PROJECT DEVELOPMENT PROCESS

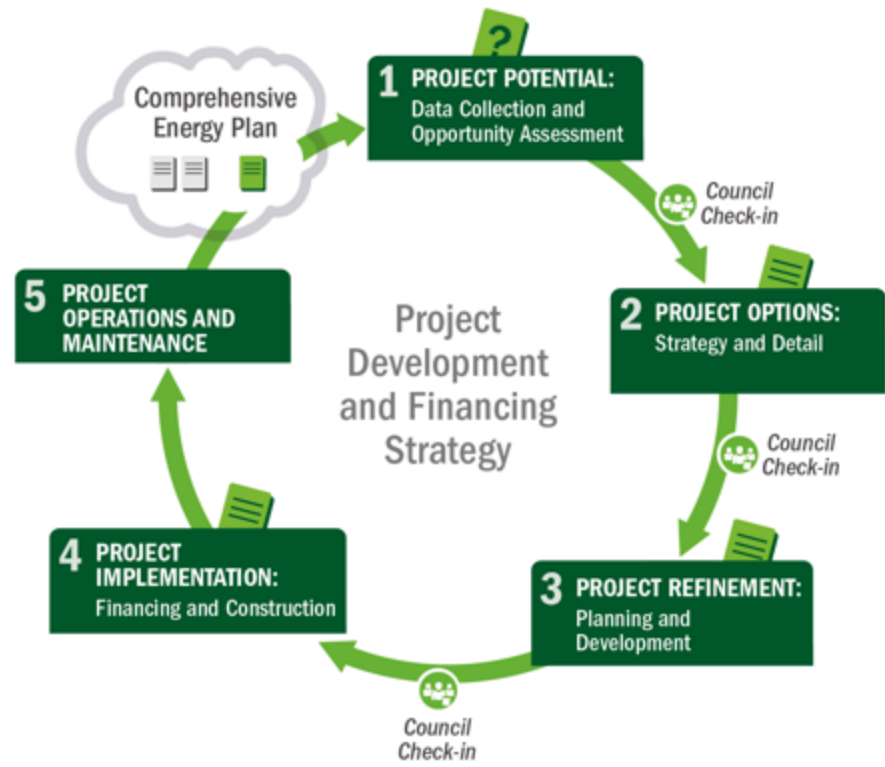


# Project Development Process: What Is It?

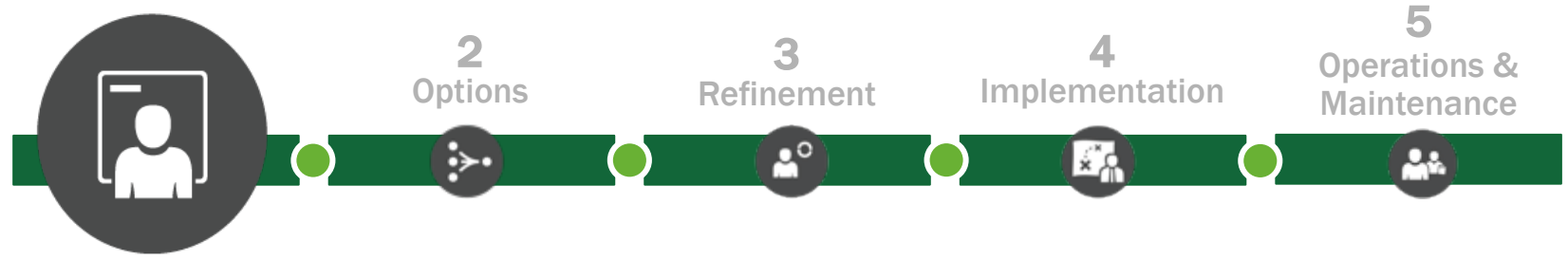
- Framework based on **experience**
- Focuses on key **decision points**
- Shows that project development is **iterative**
- Emphasizes that delaying or deciding against a project that does not meet current **goals** is a viable outcome and option







# 1 Potential





# Step 1: Potential



Purpose: Determine if the project is viable

Tasks:

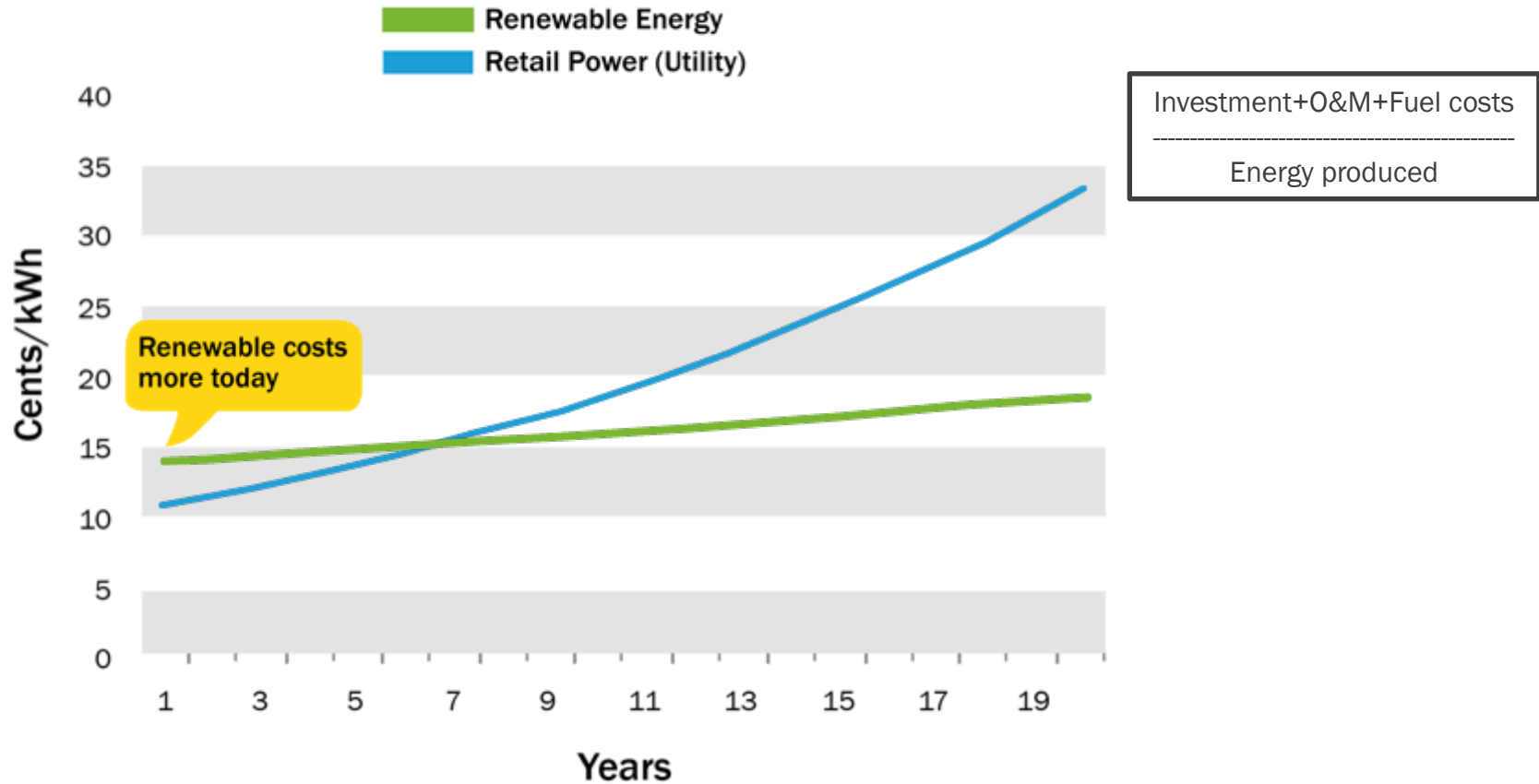
- Identify possible sites for project locations
- Confirm renewable energy resource
- Review tribal facility electric cost data, regulations, and interconnection requirements
- Evaluate potential markets and paths to market for project power and renewable sales

➡ Analyze risks: financing, permitting, construction costs

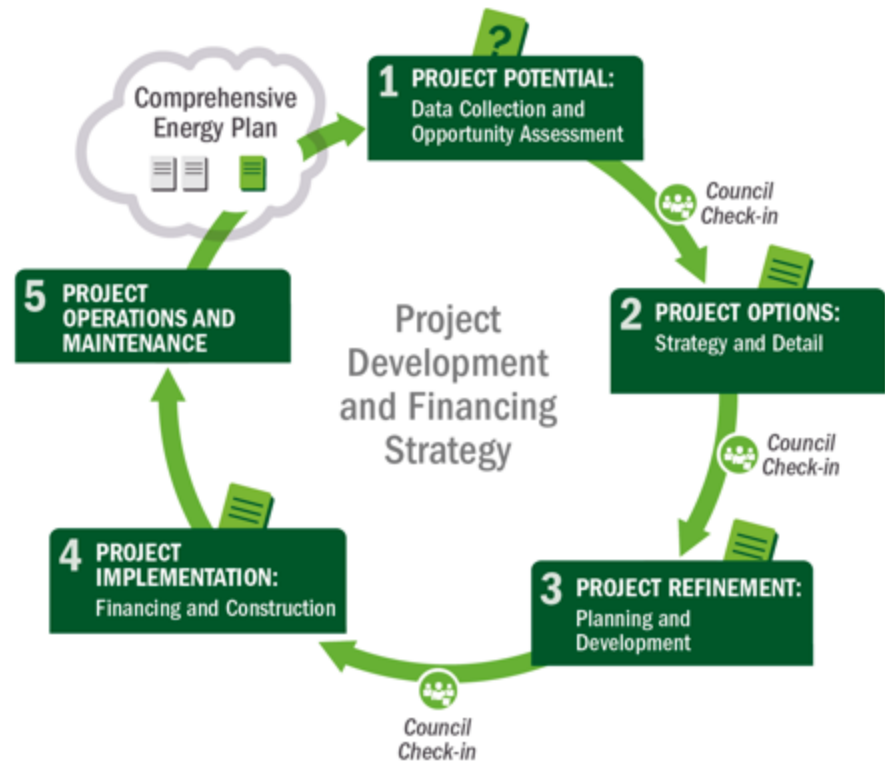
➡ Analyze utility rules: interconnection, net metering, transmission

# Key Concept: Levelized Cost of Energy (LCOE)

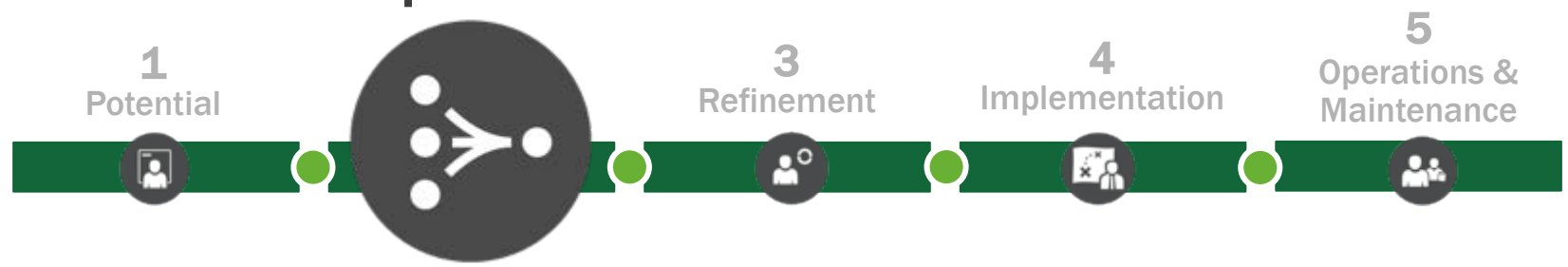
## Cost of Energy Comparison (constant demand)



Renewable energy has a lower LCOE, compared to retail LCOE. How much lower depends on project specifics.



# 2 Options





## Step 2: Project Options



Purpose: Narrow down the project options

### Tasks:

- Identify final resource
- Determine tribal role/ownership structure
- Clarify tax equity structure
- Narrow financing options
- Initiate procurement process
- Identify permits

### Resources:

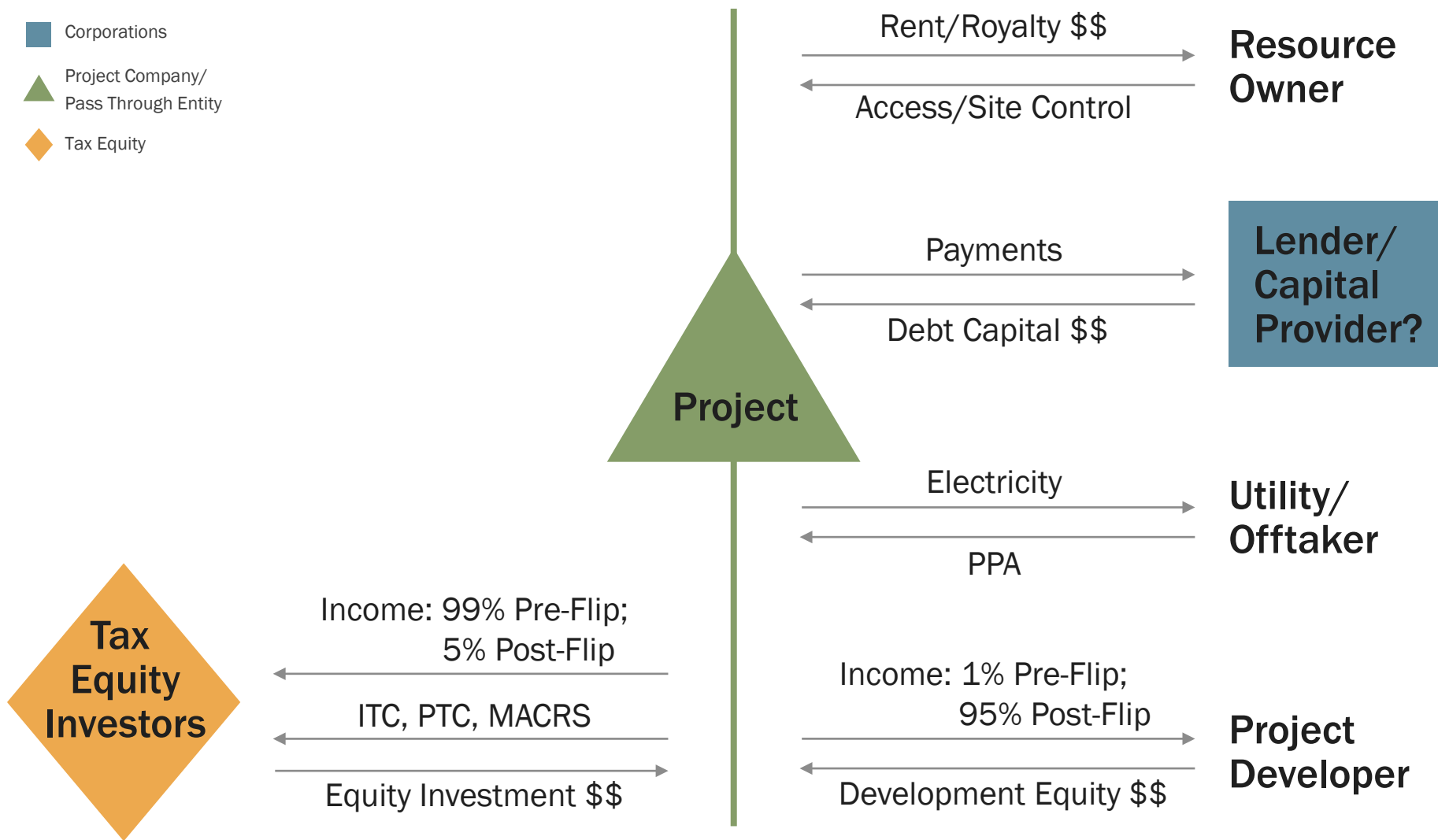
DOE-IE renewable energy technology specific webinars:

[www.energy.gov/indianenergy/resources/education-and-training](http://www.energy.gov/indianenergy/resources/education-and-training).

# Key Concept: Tribal Role Options



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

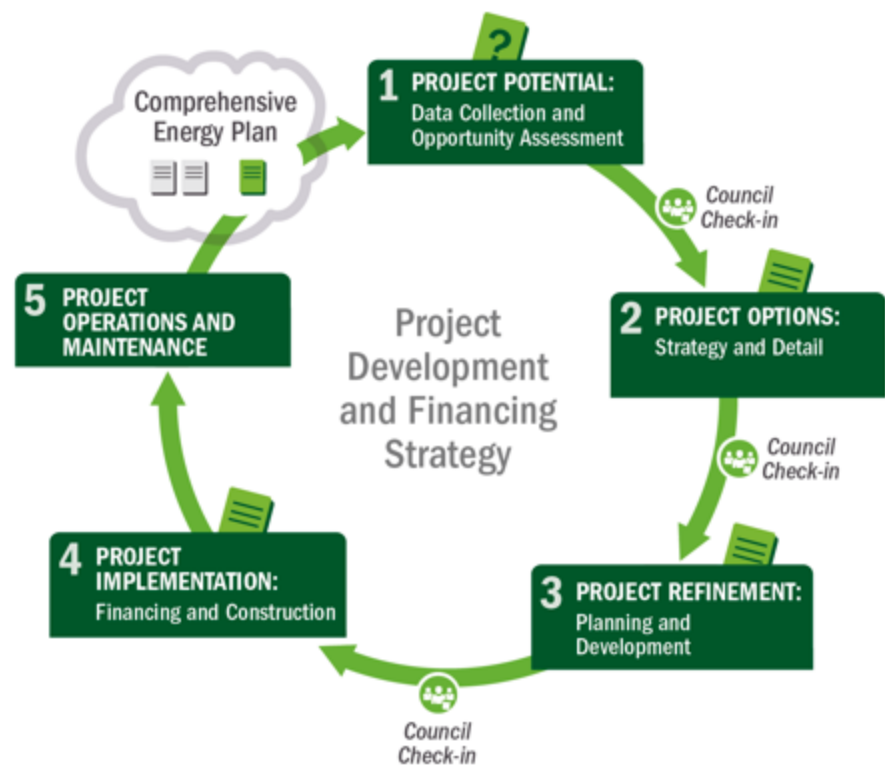


# Key Concept: Tax Equity Partnerships



- Tribe can benefit from tax equity incentives without being taxable
- Tax equity can lower capital costs for a qualifying project significantly (40%-50%)
- Tribe benefits by either reduced electricity costs from the renewable project, or offering a more competitive price for energy or renewable energy attributes (commonly referred to as “RECs”) from the project
- Tribes can partner with third-party tax investors and/or developers to gain this advantage



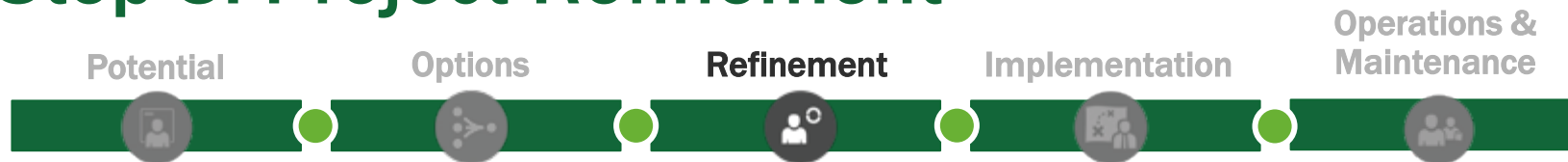


# 3 Refinement





# Step 3: Project Refinement



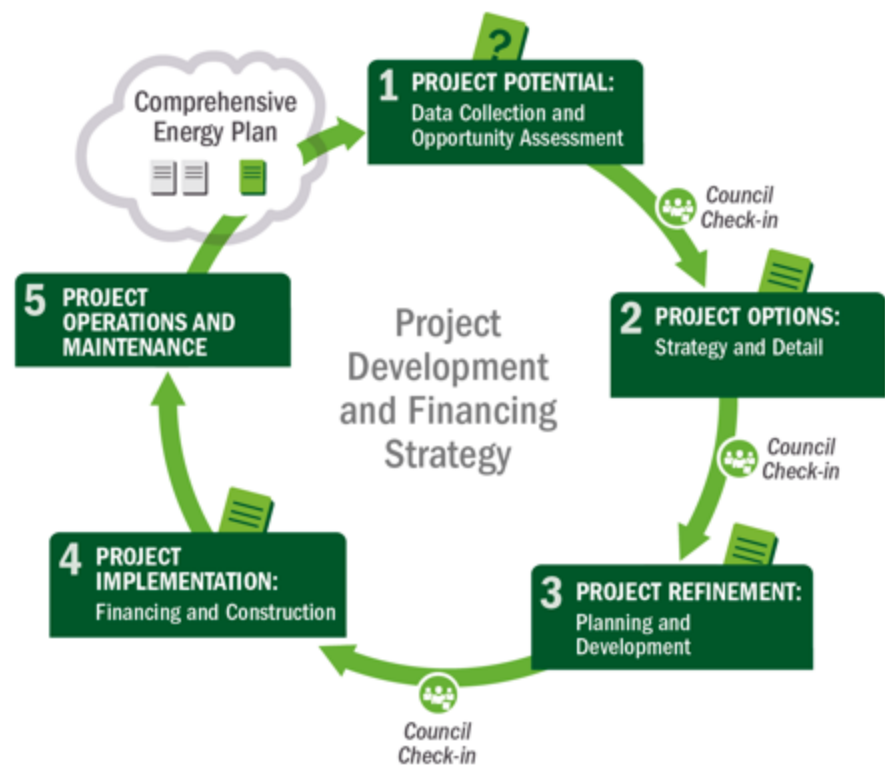
Purpose: Make decisions

Tasks:

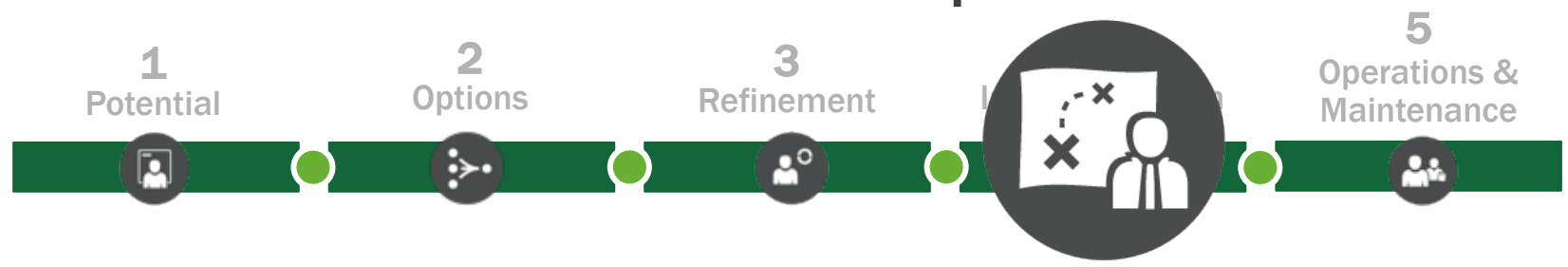
- Finalize ownership structure and project team identification
- Finalize permitting (including environmental reviews), interconnection
- Finalize technology, financing, and development costs

Outputs:

- Proposed financing/commitments and organization structure
- Detailed economic models
- Vendors selected
- Completed environmental reviews and finalized permits
- Offtake and transmission/interconnection agreement

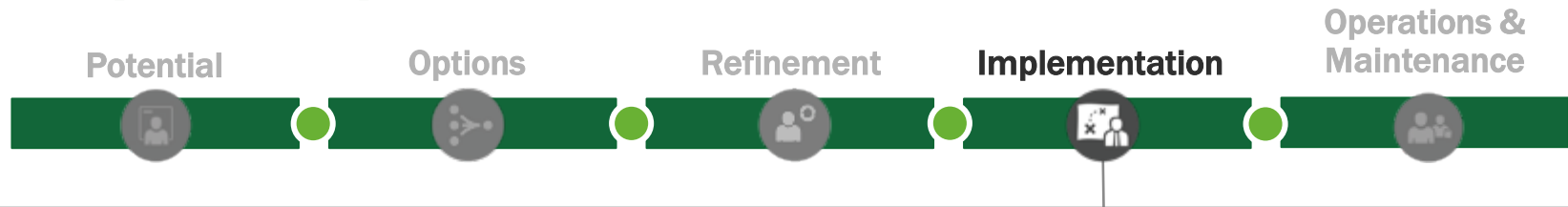


# 4 Implementation





# Step 4: Implementation



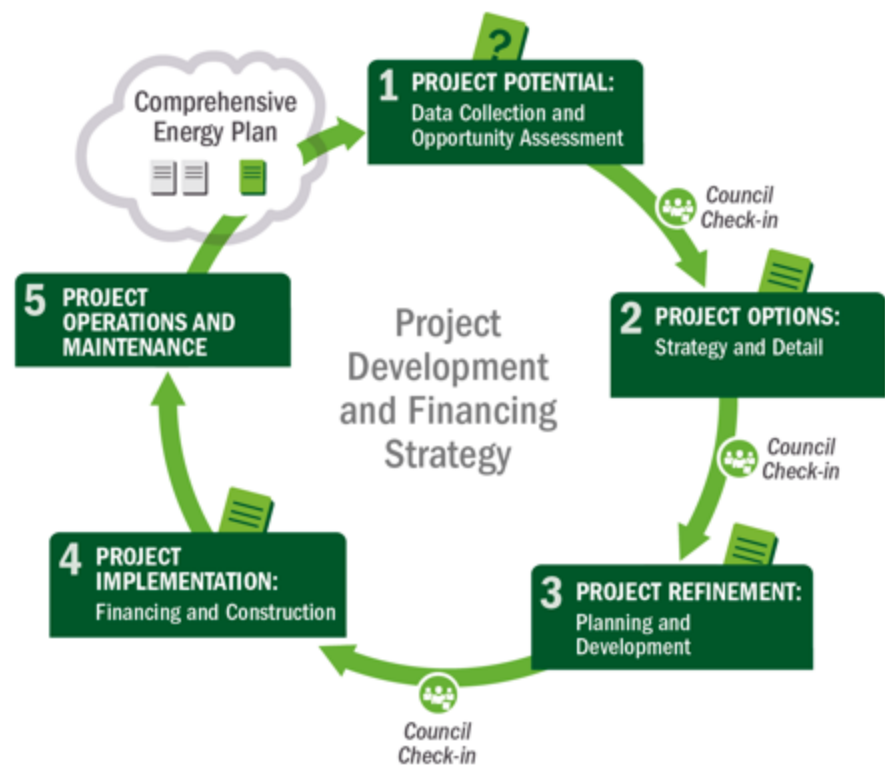
Purpose: Complete physical construction of project

Tasks:

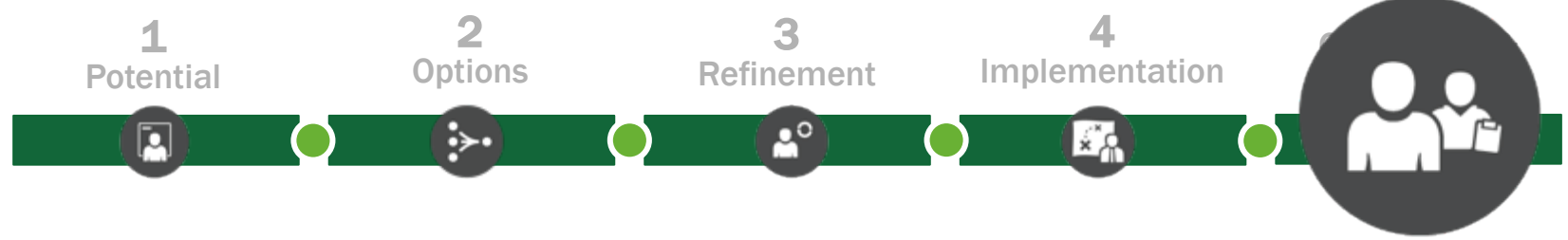
- Finalize project agreements
- Finalize vendor contracting process
- Finalize pre-construction tasks
- Complete construction and equipment installation
- Complete interconnection
- Commission project leading to commercial operations

Output:

- Completed project (commercial operation)

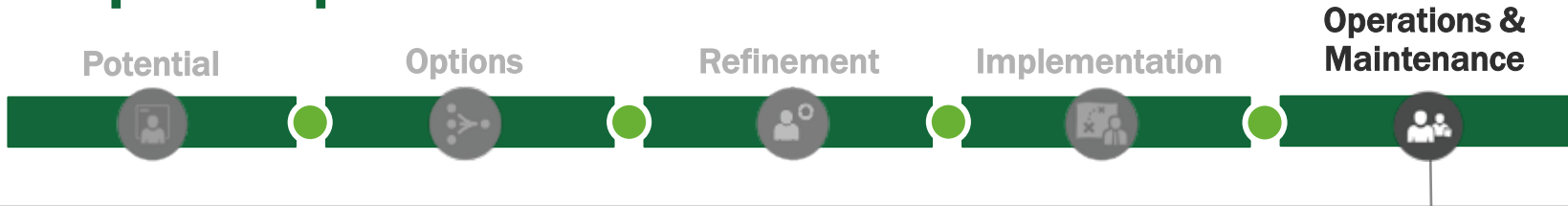


# 5 Operations & Maintenance





# Step 5: Operations and Maintenance



Purpose: Implement operations and maintenance plan (O&M) (contract or self)

O&M Costs:

- Equipment maintenance and upkeep
- Inverter replacement
- Insurance
- Labor and staffing
- Extended warranty agreements.



Photo by NREL 14952



# Not Quite Done!

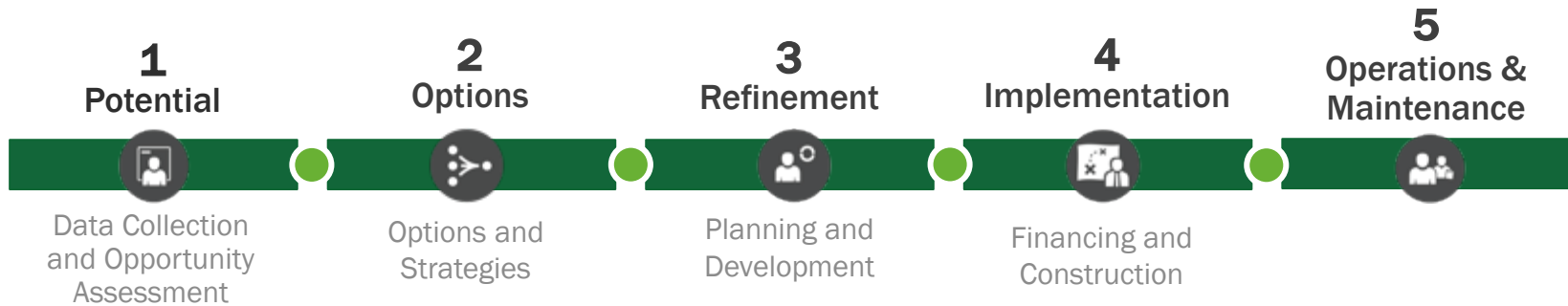
- Check back in with planning document – update as necessary
- Identify next potential project from plan







# Summary of Actions by Step



**Step 1:** Gather all relevant data in order to make first pass at potential project; understand tribal role options

**Step 2:** Estimate value to Tribe; begin to identify offtakers, partners, vendors

**Step 3:** Finalize economic assumptions and roles, interconnection and offtake agreements, partnerships, ownership structure

**Step 4:** Financial close and construction, vendor contracting completion, project commercially delivered

**Step 5:** Maintenance plan implementation

Celebrate!

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, Elizabeth Doris, Mike Elchinger, Sara Farrar-Nagy, Bill Gillies, Paul Schwabe, Bob Springer, 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](mailto:indianenergy@hq.doe.gov)

For More Information: [www.energy.gov/indianenergy](http://www.energy.gov/indianenergy)

Additional Courses: [www.nerlearning.org](http://www.nerlearning.org)

# THANK YOU



# INFORMATION ON THE CURRICULUM PROGRAM & OFFERINGS

# Curriculum Structure & Offerings

## Foundational Courses

- Overview of foundational information on renewable energy technologies, strategic energy planning, and grid basics

## Leadership & Professional Courses

- Covers the components of the project development process and existing project financing structures

# Foundational Courses

## Energy Basics

Assessing Energy Resources

Electricity Grid Basics

Strategic Energy Planning

## Renewable Energy Technology Options

Biomass

Building Heat & Hot Water

Geothermal

Hydroelectric

Solar

Wind

All courses are presented as 40-minute Webinars online at

[www.energy.gov/indianenergy](http://www.energy.gov/indianenergy)