DOE OFFICE OF INDIAN ENERGY

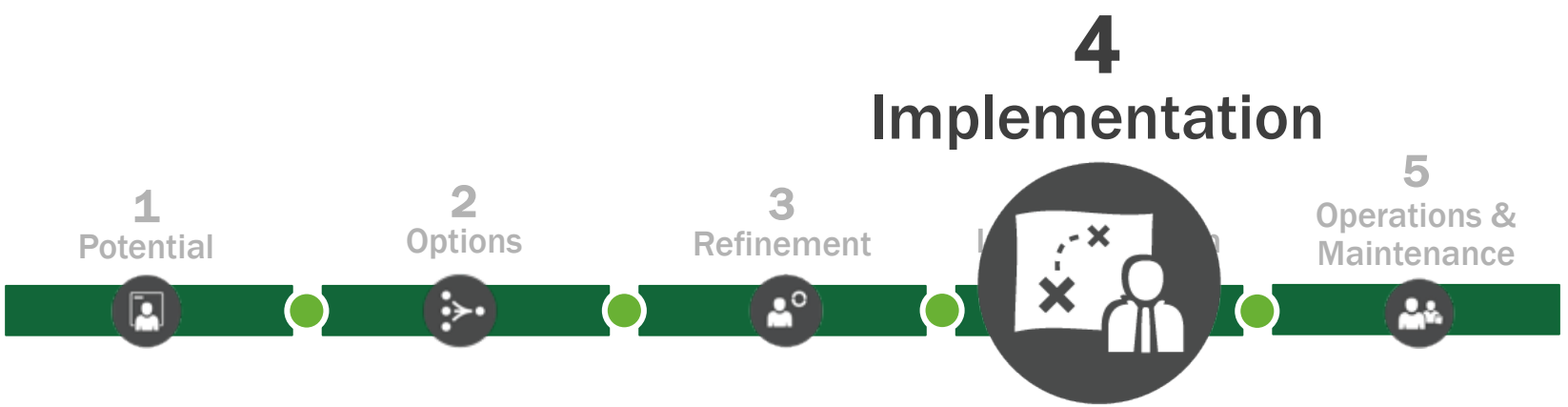
Step 4: Project Implementation

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

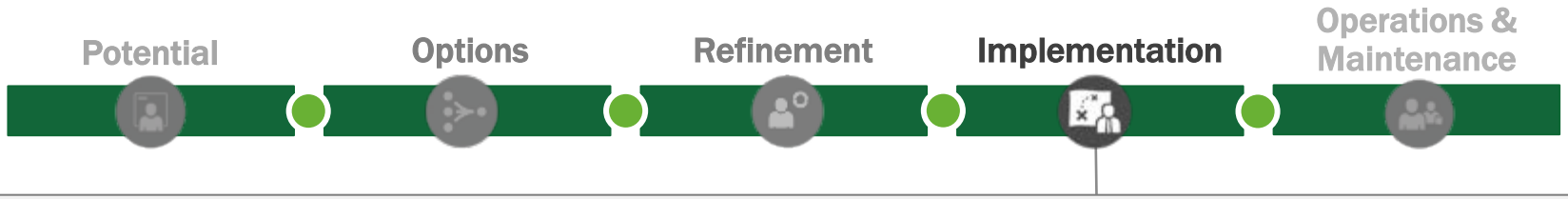
Small Group Exercise

- Review with a partner what you learned yesterday
- Partner 1 explains to Partner 2: **Step 2**
  - Tribal Role Options
  - Intro to Financing: Tax Incentives and Up-Front Capital
  - Partners and Procurement
  - Permitting, and Interconnection and Transmission
- Partner 2 explains to Partner 1: **Step 3**
  - Recap: Tax-Equity and Federal Tax Incentives
  - Project Financing Structures
    - Direct Ownership
    - Third-Party Financed PPA
    - Tax Equity Partnerships: Partnership Flip, Sale Leaseback, Inverted Lease


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


4
Implementation
1
Potential
2
Options
3
Refinement
5
Operations & Maintenance

Step 4: Project Implementation - Tasks



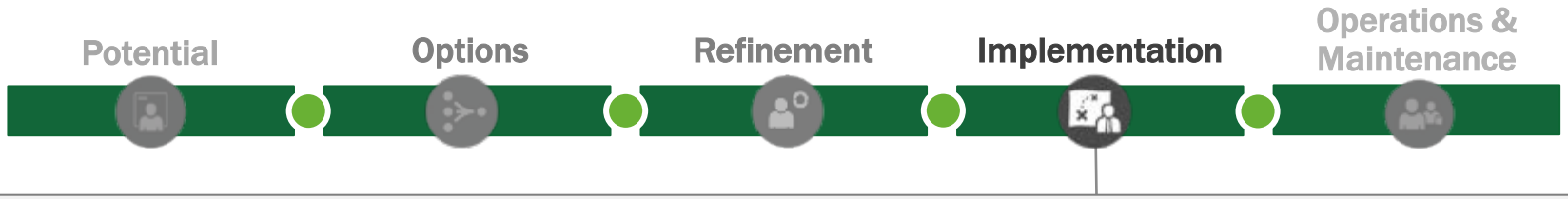
Purpose: Contract for, realize physical construction of project

Tasks:

- Finalize project agreements
- Finalize vendor contracting process
- Finalize preconstruction tasks
- Realize construction and equipment installation
- Realize interconnection
- Realize project commissioning leading to commercial operations

Output: Completed project (commercial operation)

Step 4: Project Implementation - Checks



Check:

- Ensure permitting is complete
- Ensure on-site activities will not interfere with construction and vice versa
- Communicate and plan with the vendor/contractor

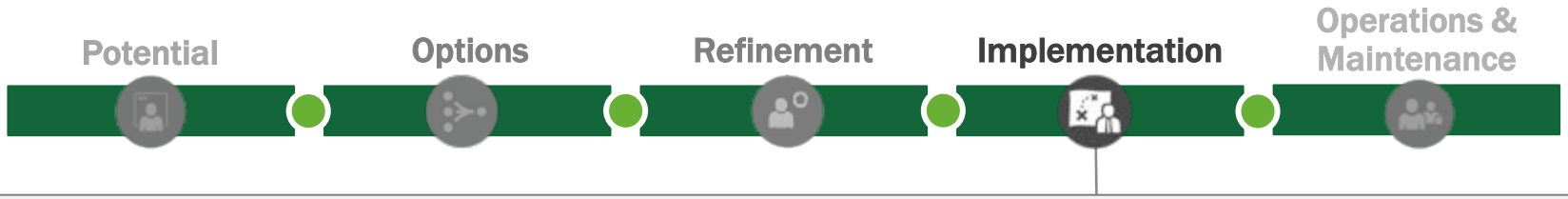
Interconnection:

- Sometimes contracted and completed by system owner in cooperation with utility
- Sometimes involves host
- Often coordinated by contractor/system owner

Construction/commissioning: diligence of each party as appropriate to its assumption of risk as:

- PPA energy seller (or purchaser) – least diligence for tribal entity – economic due diligence needed
- Energy system seller (or purchaser/owner) – technical diligence and capability for tribal entity

Step 4: Project Implementation– Outputs



- ✓ Completed and operating project
- ✓ New ownership organization completed (if needed)

Commercial Operating Date (COD) Success

- Project generating electricity
- Project developed within budget

Photo by Dennis Schroeder, NREL 21512

Commercial-Scale Project Risks – Post Step 4

	Risks	Risk Assessment Post Step 4
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	Low; site picked Low; detailed model Low; detailed model None; addressed
Site	• Site access and right of way • Not in my backyard (NIMBY)/build absolutely nothing anywhere (BANANA) • Transmission constraints/siting new transmission	None; site secure None; opposition addressed None; addressed
Permitting	• Tribe-adopted codes and permitting requirements • Utility interconnection requirements • Interconnection may require new transmission, possible NEPA	Low; complete Low; complete None; complete
Finance	• Capital availability • Incentive availability risk • Credit-worthy purchaser of generated energy	None; finalized None; finalized None; finalized
Construction/ Completion	• EPC difficulties • Cost overruns • Schedule	None; contracted None; construction complete
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.

Big Group Exercise

- Play Jeopardy! Win cash (bars) prize!