Step 4: Project Implementation
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
4 Implementation

1 Potential
2 Options
3 Refinement
4 Implementation: Financing and Construction
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

<table>
<thead>
<tr>
<th>Category</th>
<th>Risks</th>
<th>Risk Assessment Post Step 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Development</strong></td>
<td>• Poor or no renewable energy resource assessment</td>
<td>Low; site picked</td>
</tr>
<tr>
<td></td>
<td>• Not identifying all possible costs</td>
<td>Low; detailed model</td>
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<tr>
<td></td>
<td>• Unrealistic estimation of all costs</td>
<td>Low; detailed model</td>
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<tr>
<td></td>
<td>• Community push-back and competing land use</td>
<td>None; detailed model</td>
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<tr>
<td><strong>Site</strong></td>
<td>• Site access and right of way</td>
<td>None; site secure</td>
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<td></td>
<td>• Not in my backyard (NIMBY)/build absolutely nothing anywhere (BANANA)</td>
<td>None; opposition addressed</td>
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<td></td>
<td>• Transmission constraints/siting new transmission</td>
<td>None; addressed</td>
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<tr>
<td><strong>Permitting</strong></td>
<td>• Tribe-adopted codes and permitting requirements</td>
<td>Low; complete</td>
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<tr>
<td></td>
<td>• Utility interconnection requirements</td>
<td>Low; complete</td>
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<tr>
<td></td>
<td>• Interconnection may require new transmission, possible NEPA</td>
<td>None; complete</td>
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<tr>
<td><strong>Finance</strong></td>
<td>• Capital availability</td>
<td>None; finalized</td>
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<tr>
<td></td>
<td>• Incentive availability risk</td>
<td>None; finalized</td>
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<tr>
<td></td>
<td>• Credit-worthy purchaser of generated energy</td>
<td>None; finalized</td>
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<tr>
<td><strong>Construction/Completion</strong></td>
<td>• EPC difficulties</td>
<td>None; contracted</td>
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<tr>
<td></td>
<td>• Cost overruns</td>
<td>None; construction complete</td>
</tr>
<tr>
<td><strong>Operating</strong></td>
<td>• Output shortfall from expected</td>
<td>Assumed low, mitigable, or allocatable</td>
</tr>
</tbody>
</table>
Big Group Exercise

- Play Jeopardy! Win cash (bars) prize!