Financing Utility Scale Development

DOE 2017 National Tribal Energy Summit
What does “utility scale” mean?

> 25 kilowatts (kW) to greater than 50 megawatts (MW) – random Google search
> 50 MW – University of Michigan study, late 2000’s
> Greater than 1 MW – Solar Energy Industries Association; Borrego Solar
> Greater than 1.5 MW – SunPower
> 5 MW or greater – National Renewable Energy Laboratory
> 10 MW or greater – Wiki-Solar (unleaked version)

> For discussion purposes, let’s assume we are developing and financing a **100 MW** solar project that costs **$150 million**
Key players in utility scale development

> Developer/Sponsor
> Project company
> Power purchaser
> Site lessors/Easement grantors
> Interconnection provider
> Permitting authorities
> Tax equity investor
> Debt provider/Lender
> Equipment, procurement construction contractor
> Equipment supplier/BOP contractor
> Operator
Project development

> Concept development and site identification

> Prefeasibility study

> Feasibility study

> Permitting, financing and contracts

> Engineering, construction and commercial operation

### Project Development Stages

**Stage 1 – Site Identification / Concept**
- Identification of potential sites
- Funding of project development
- Development of rough technical concept

**Stage 2 – Pre-feasibility Study**
- Assessment of different technical options
- Approximate cost/benefits
- Permitting needs
- Market assessment

**Stage 3 – Feasibility Study**
- Technical and financial evaluation of preferred option
- Assessment of financing options
- Initiation of permitting process
- Development of rough technical concept

**Stage 4 – Financing / Contracts**
- Permitting
- Contracting strategy
- Supplier selection and contract negotiation
- Financing of project

**Stage 5 – Detailed Design**
- Preparation of detailed design for all relevant lots
- Preparation of project implementation schedule
- Finalization of permitting process

**Stage 6 – Construction**
- Construction supervision

**Stage 7 – Commissioning**
- Performance testing
- Preparation of as build design
Where can tribes create value?
(with minimal $$$ exposure)

> Developer/Sponsor
> Project company
> Power purchaser
> Site lessors/Easement grantors
> Interconnection provider
> Permitting authorities
> Tax equity investor
> Debt provider/Lender
> Equipment, procurement construction contractor
> Equipment supplier/BOP contractor
> Operator
Where can tribes create value? (with minimal $$ exposure)

> Concept development and site identification

> Prefeasibility study

> Feasibility study

> Permitting, financing and contracts

> Engineering, construction and commercial operation

<table>
<thead>
<tr>
<th>Project Development Stages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1 – Site Identification / Concept</strong></td>
</tr>
<tr>
<td>• Identification of potential sites</td>
</tr>
<tr>
<td>• Funding of project development</td>
</tr>
<tr>
<td>• Development of rough technical concept</td>
</tr>
<tr>
<td><strong>Stage 2 – Pre-feasibility Study</strong></td>
</tr>
<tr>
<td>• Assessment of different technical options</td>
</tr>
<tr>
<td>• Approximate cost/benefits</td>
</tr>
<tr>
<td>• Permitting needs</td>
</tr>
<tr>
<td>• Market assessment</td>
</tr>
<tr>
<td><strong>Stage 3 – Feasibility Study</strong></td>
</tr>
<tr>
<td>Technical and financial evaluation of preferred option</td>
</tr>
<tr>
<td>Assessment of financing options</td>
</tr>
<tr>
<td>Initiation of permitting process</td>
</tr>
<tr>
<td>Development of rough technical concept</td>
</tr>
<tr>
<td><strong>Stage 4 – Financing / Contracts</strong></td>
</tr>
<tr>
<td>Permitting</td>
</tr>
<tr>
<td>Contracting strategy</td>
</tr>
<tr>
<td>Supplier selection and contract negotiation</td>
</tr>
<tr>
<td>Financing of project</td>
</tr>
<tr>
<td><strong>Stage 5 – Detailed Design</strong></td>
</tr>
<tr>
<td>Preparation of detailed design for all relevant lots</td>
</tr>
<tr>
<td>Preparation of project implementation schedule</td>
</tr>
<tr>
<td>Finalization of permitting process</td>
</tr>
<tr>
<td><strong>Stage 6 – Construction</strong></td>
</tr>
<tr>
<td>Construction supervision</td>
</tr>
<tr>
<td><strong>Stage 7 – Commissioning</strong></td>
</tr>
<tr>
<td>Performance testing</td>
</tr>
<tr>
<td>Preparation of as build design</td>
</tr>
</tbody>
</table>
“Buckets of value” outside of the long term financier/owner

- Development fee
- Land lease
- Payment to local jurisdiction (e.g., property tax or payment in lieu of tax)
What is all this stuff worth? (In context of a tribe’s situation)

> “It depends,” but some examples for recent projects (solar)

> Land lease value = $325/acre
  – But a tribe is one contiguous landowner (premium)

> Payment in lieu of tax (PILOT)
  – $4,700/MW (Year 1) – consistent with local market

> Additional market “development fee”
What is all this stuff worth?

Development fee

> This portion of value is more arbitrary
  - How far was the project developed?
    » Site control
    » Environmental approvals
    » Local permits
    » Interconnection
    » Power offtake
What is all this stuff worth?

> Development fee – recent example (wind project, Midwest U.S.)
  – Site control
  – Environmental approvals
  – Local permits
  – No Interconnection, but general idea of capacity
  – No Power offtake

> Sale of development rights for above project = $25,000 per MW
Summary of development value

100 MW project

> Development fee = $2.5 million (one time payment at commissioning)

> Land lease = $250,000/year (annually for 25 years) = $6.25 million

> PILOT = $470,000/year (annually for 25 years) = $6.1 million

> Total investment = minimal out of pocket

> Total return to the tribe = $14.85 million
Development and finance decision tree

What is the cost of the project?

Based on proforma, how much equity investment is needed?

Do you have the money??

Determine development spend, risks, grant money

Proceed with development

Assuming no fatal flaws, implement development

Determine ownership must give up

Minority position?

Yes

No

Determine equity, debt $, Public $

Source grants for further feasibility

Run RFP for development partner

Select partner and implement project

Minority position?

Yes

No

Scale opportunities

Seek grant funding

Implement projects
Energy project returns – what should be expected?

> A “typical” market rate energy project return on investment is in the area of 8-12 percent, sometimes lower

> Why? Because when developed correctly, energy projects should have relatively low risk, and the return reflects that fact

> Incentives can impact returns significantly
Example project finance schematic
utility scale energy investment
Typical solar project example = 100 MW

> **$150 million** project cost
> Approximately 40 percent of this (**$60 million**) contributed by a tax investor who gets a 7-8 percent return on its investment via a 30 percent investment tax credit and accelerated depreciation
> The balance of funding (**$90 million**) comes in the form of equity from the owner
> Depending on factors (e.g., power price and solar resource), this **$90 million** equity investment might earn between 8 and 15 percent over a 25 year period
If I don’t have $90 million, can’t I just borrow it (non-recourse) against my power purchase agreement and the other project assets?

> Not really – tax equity and debt don’t play nice together
  – Tax equity needs to be able to step in to ensure the project keeps running (recapture rules)

> “Back leverage” is often used, but isn’t non-recourse
Tribes and energy tax credits

IRS private letter ruling 201310001 (March 2013)
> “Tribes may elect to pass investment credits associated with renewable energy assets to an unrelated third party”

IRS private letter ruling 201640010 (September 2016)
> “We are revoking private letter ruling 201310001”

Makes for direct funding structures with tax investors challenging
Capital procurement approach

Offer insight and knowledge through experience working with credits and incentives

Help identify more favorable terms

Provide a thorough approach to capital

Assist with implementation, not just suggestions

Equity

Mezzanine

Traditional financing

Other loan programs

Negotiated incentives

Tax credit programs
Choosing a development/funding partner

- Ability to complete all development and funding
- Flexible management team
- Experience working with tribes
- Willingness to listen and understand unique dynamics of tribal governments, and earn trust
Examples of active project developers/owners

Invenergy

NEXTera Energy Resources

Pattern

nrg

eDF Renewable Energy

e.on Renewables
A future without the ITC?

Installed solar cost ($/W_{DC})

27 percent decline in installed solar cost between 2015 to 2020
## Levelized cost of energy (unsubsidized)

![Graph showing levelized cost of energy for different energy sources](https://www.lazard.com/media/438038/levelized-cost-of-energy-v100.pdf)

### ALTERNATIVE ENERGY

<table>
<thead>
<tr>
<th>Energy Type</th>
<th>Levelized Cost ($/MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV—Rooftop Residential</td>
<td>$138</td>
</tr>
<tr>
<td>Solar PV—Rooftop C&amp;I</td>
<td>$88</td>
</tr>
<tr>
<td>Solar PV—Community</td>
<td>$78</td>
</tr>
<tr>
<td>Solar PV—Crystalline Utility Scale</td>
<td>$61 $92 $92</td>
</tr>
<tr>
<td>Solar PV—Thin Film Utility Scale</td>
<td>$46 $56 $92</td>
</tr>
<tr>
<td>Solar Thermal Tower with Storage</td>
<td>$119 $182 $237</td>
</tr>
<tr>
<td>Fuel Cell</td>
<td>$106 $167</td>
</tr>
<tr>
<td>Microturbine</td>
<td>$76 $89</td>
</tr>
<tr>
<td>Geothermal</td>
<td>$79 $117</td>
</tr>
<tr>
<td>Biomass Direct</td>
<td>$77 $110</td>
</tr>
<tr>
<td>Wind</td>
<td>$32 $62 $118</td>
</tr>
</tbody>
</table>

### CONVENTIONAL

<table>
<thead>
<tr>
<th>Energy Type</th>
<th>Levelized Cost ($/MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel Reciprocating Engine</td>
<td>$68 $212 $281</td>
</tr>
<tr>
<td>Natural Gas Reciprocating Engine</td>
<td>$68 $101 $165 $217</td>
</tr>
<tr>
<td>Gas Peaking</td>
<td>$94 $165 $210</td>
</tr>
<tr>
<td>IGCC</td>
<td>$97 $136</td>
</tr>
<tr>
<td>Nuclear</td>
<td>$60 $143</td>
</tr>
</tbody>
</table>

**Levelized Cost ($/MWh)**:

- **$0** to **$300**

---

*Sources and notes: [Link](https://www.lazard.com/media/438038/levelized-cost-of-energy-v100.pdf)*
Solar power purchase agreements

Sample includes 136 contracts totaling 9.1 GW_{AC}

4 of 5 regions now have projects <$50/MWh (Midwest <$60/MWh)
Concluding thoughts

> It’s very difficult to develop and own large scale energy projects without substantial capital reserves.

> However, tribes can play the role of project developer and have several inherent advantages versus typical developers.

> Several areas of value extraction are available to tribes for utility scale projects, which can be created with relative minimal risk:
  - Land lease payments
  - Payment in lieu of tax
  - Development fees
Baker Tilly at a glance/Industry experience

> Ranked as one of the top 12 largest accounting and consulting firms in the U.S. with over 2,500 professionals

> Energy consulting team primarily based in Madison, Chicago and Austin

- Serving more than 400 utility clients
- Serving more than 100 electric utilities
- More than 40 years of industry experience
- More than $2 billion in projects developed
Connect with us

Joel Laubenstein
2801 Via Fortuna
Suite 300
Austin, Texas
512-975-7282
joel.laubenstein@bakertilly.com
Pursuant to the rules of professional conduct set forth in Circular 230, as promulgated by the United States Department of the Treasury, nothing contained in this communication was intended or written to be used by any taxpayer for the purpose of avoiding penalties that may be imposed on the taxpayer by the Internal Revenue Service, and it cannot be used by any taxpayer for such purpose. No one, without our express prior written permission, may use or refer to any tax advice in this communication in promoting, marketing, or recommending a partnership or other entity, investment plan, or arrangement to any other party.

Baker Tilly refers to Baker Tilly Virchow Krause, LLP, an independently owned and managed member of Baker Tilly International. The information provided here is of a general nature and is not intended to address specific circumstances of any individual or entity. In specific circumstances, the services of a professional should be sought.

© 2016 Baker Tilly Virchow Krause, LLP