Large-scale Solar
Capturing the Solar Dollar

Joey James
Senior Strategist
Downstream Strategies

2019 Governor’s Energy Summit
October 8, 2019
DOWNSTREAM STRATEGIES

- Founded in 1997
- Staff of 16
- Based in Morgantown and Davis

Our Work:
- Strengthens economies
- Sustains healthy environments
- Builds resilient communities
Appalachian Solar Development helps landowners and developers identify, develop, and manage solar projects in this complicated geography. Our primary service areas are:

- site evaluation and land lease/purchase agreements,
- project permitting,
- site due diligence, and
- public outreach and corporate representation.
UGH, LARGE-SCALE SOLAR?

- It’s cloudy now
- Land intensive form of development
- More complicated and expensive deals
- Less jobs per unit of energy compared to distributed
- There have been some serious E&S problems in the region
- Unsightly to some (NIMBY)
WHY APPALACHIANS ARE INTERESTED IN LARGE-SCALE SOLAR

- We have similar solar insolation levels as the surrounding states
- Makes use of surplus of underutilized former mine land in Appalachia
- Favorable to long-term lease arrangements preferred by land holding companies
- Possible benefits for traditional fossil-fuel-based companies
- Good way to honor Appalachia’s heritage as an energy producer
- Long contemplated
Jobs! Jobs! Jobs!

<table>
<thead>
<tr>
<th>State</th>
<th>Solar Companies</th>
<th>Investment ( Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky</td>
<td>57</td>
<td>76.78</td>
</tr>
<tr>
<td>Maryland</td>
<td>241</td>
<td>3,186.38</td>
</tr>
<tr>
<td>North Carolina</td>
<td>287</td>
<td>8,129.34</td>
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<tr>
<td>Ohio</td>
<td>290</td>
<td>647.31</td>
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<tr>
<td>Pennsylvania</td>
<td>561</td>
<td>1,727.92</td>
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<tr>
<td>Tennessee</td>
<td>165</td>
<td>734.29</td>
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<tr>
<td>Virginia</td>
<td>257</td>
<td>1,064.36</td>
</tr>
<tr>
<td>West Virginia</td>
<td>19</td>
<td>29.64</td>
</tr>
</tbody>
</table>

Source: SEIA and 2018 Solar Jobs Census
Exploring a competitive advantage

Prospects for Large-scale Solar on Degraded Land, 2017
WHAT IS DEGRADED LAND?

- “Land that has lost some degree of its natural or potential economic productivity due to human-caused processes and physical changes to the landscape”
  - AML
  - Post-SMCRA
  - Landfills
  - Other brownfields
SITING CRITERIA

- Nameplate capacity greater than 300kW
- Greater than 3.5kWh/m²/day DNI
- <1 mile to transmission and graded roads
- Essentially the same criteria as RE-POWER (large-scale)

https://www.epa.gov/re-powering
~220 square miles (>140k acres) of viable “degraded” land that could be repurposed for large-scale solar. It takes around 6 acres of developable land to construct 1 MW of solar.
• Downstream Strategies found that if a concerted effort were made to install 230 MW of utility-scale solar over the next 10 years, an average of 212 jobs would be supported.
• The 230 MW number is based on a review of utility integrated resource planning documents. In other words, THIS IS ACHIEVABLE.
• 212 jobs is like a lot of jobs.
TYPES OF JOBS

- Installation
- Manufacturing
- Sales and distribution
- Project development
- Other

AOSSCI found that a project of ~400MW would provide sufficient incentive for relevant suppliers to locate in close proximity to the solar arrays.
CHALLENGES TO MAKING THIS HAPPEN IN WEST VIRGINIA

- Land ownership patterns
- Severed mineral rights
- Geotech considerations
- Real or perceived environmental liabilities
- Knowledge/experience gaps

**Policy** (If another state makes it easier, the jobs go there)
WV HB 2589 – THE MODERN JOBS ACT

- Bi-partisan bill
-Supported by the West Virginia Manufacturers Association
-“Opens up” West Virginia’s regulated electricity market in a very limited way
-Hopes to serve big power users – either existing industry or corporations that have renewable energy targets
-Failed to get out of committee
CONCLUSION

- Jobs are going to go somewhere
- There are efforts happening all around us to attract solar value-chain jobs to Appalachia
- If we want these jobs and these companies, we CAN bring them here.
- There are advantages to locating in West Virginia over other states. We just need to make them known.
Joey James
Downstream Strategies
(304) 292-2450
jjames@downstreamstrategies.com

www.AppSolar.org