Large-scale Solar

Capturing the Solar Dollar

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Downstream Strategies
Ideas that sustain.

DOWNSTREAM STRATEGIES

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

Our Work:

- Strengthens economies
- Sustains healthy environments
- Builds resilient communities

Downstream Strategies

Ideas that sustain.

Background: USFWS Southeast Region

WWW.APPSOLAR.ORG

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.

Appalachian Solar Development

Background: USFWS Southeast Region

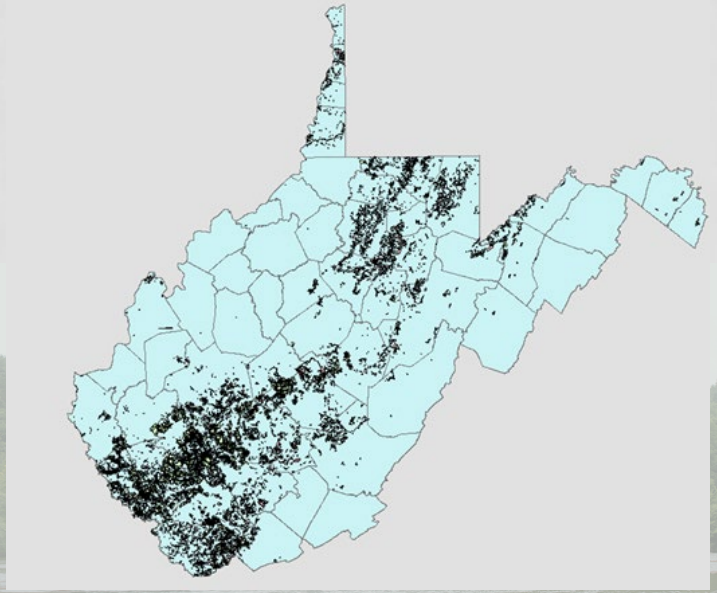
UGH, LARGE-SCALE SOLAR?

- 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)

Background: USFWS Southeast Region

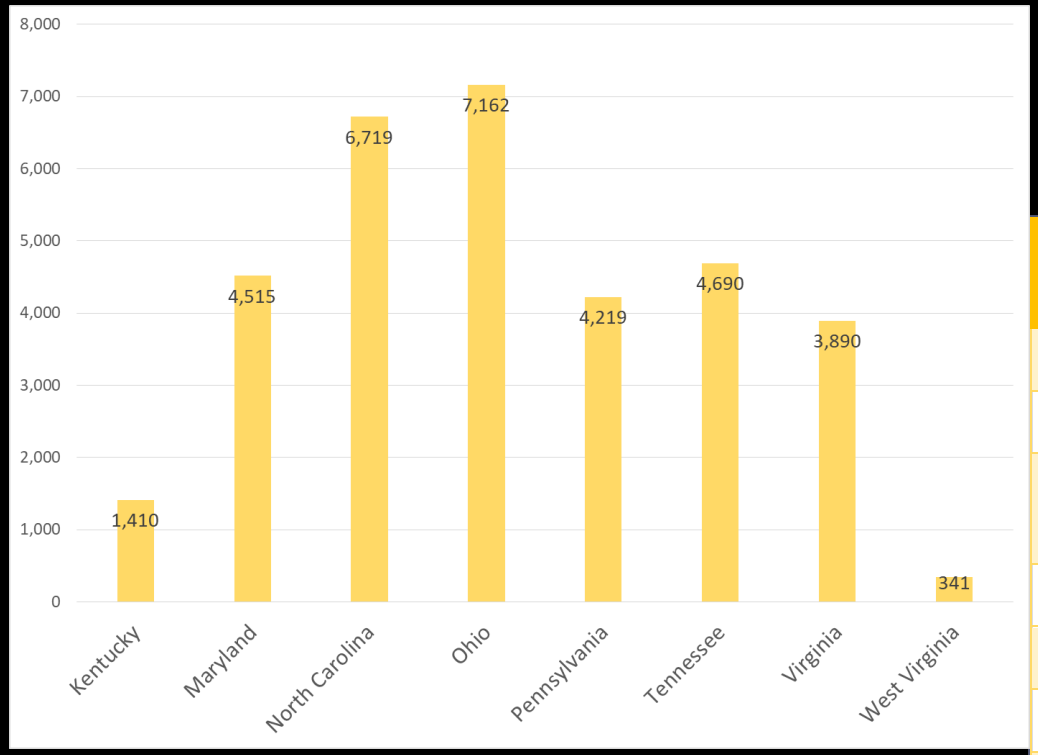
WHY APPALACHIANS ARE INTERESTED IN LARGE-SCALE SOLAR

- 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



Background: USFWS Southeast Region

Jobs! Jobs! Jobs!



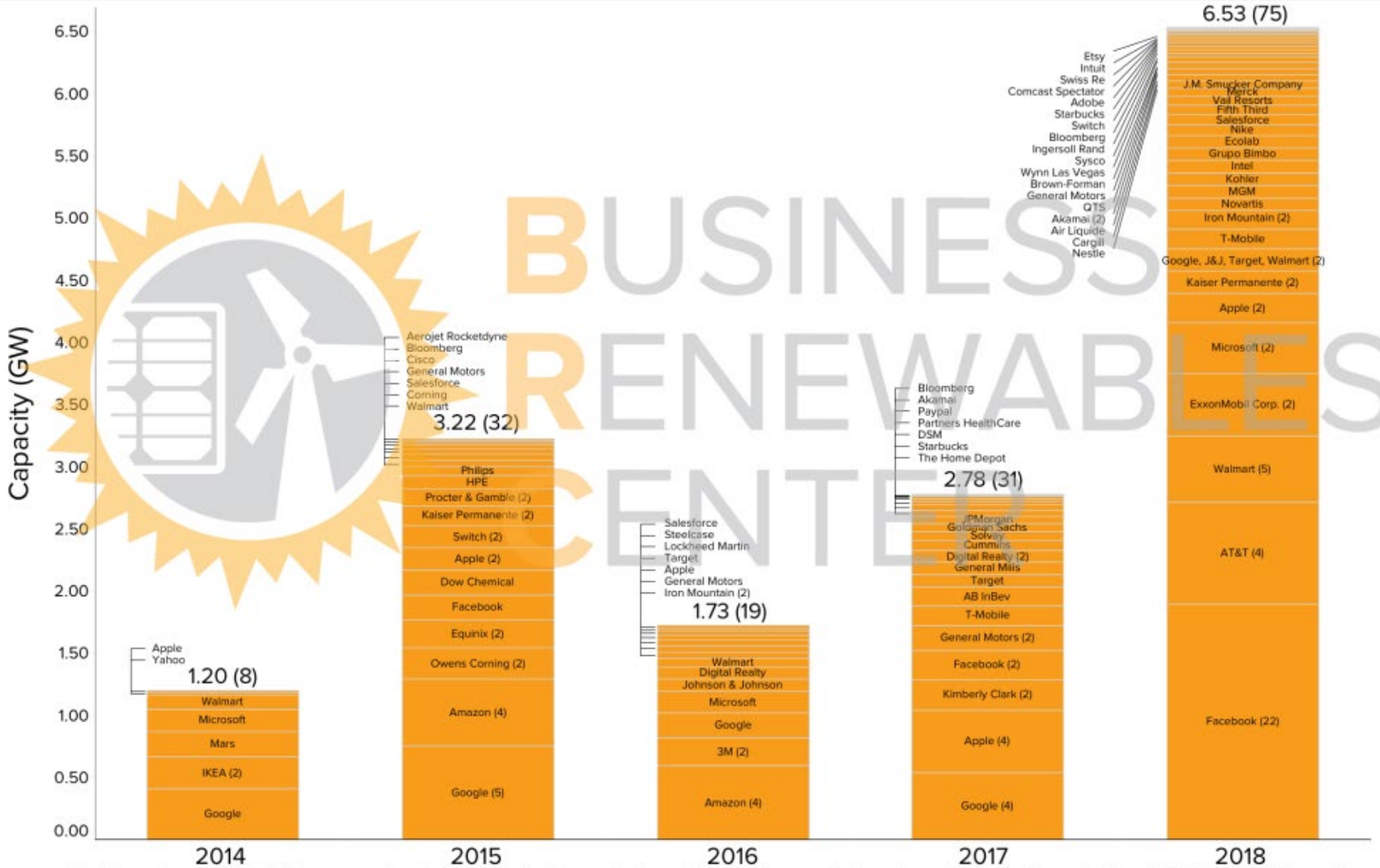
	Solar Companies	Investment (Millions)
Kentucky	57	76.78
Maryland	241	3,186.38
North Carolina	287	8,129.34
Ohio	290	647.31
Pennsylvania	561	1,727.92
Tennessee	165	734.29
Virginia	257	1,064.36
West Virginia	19	29.64

Source: SEIA and 2018 Solar Jobs Census

BUSINESS RENEWABLES CENTER

Corporate Renewable Deals

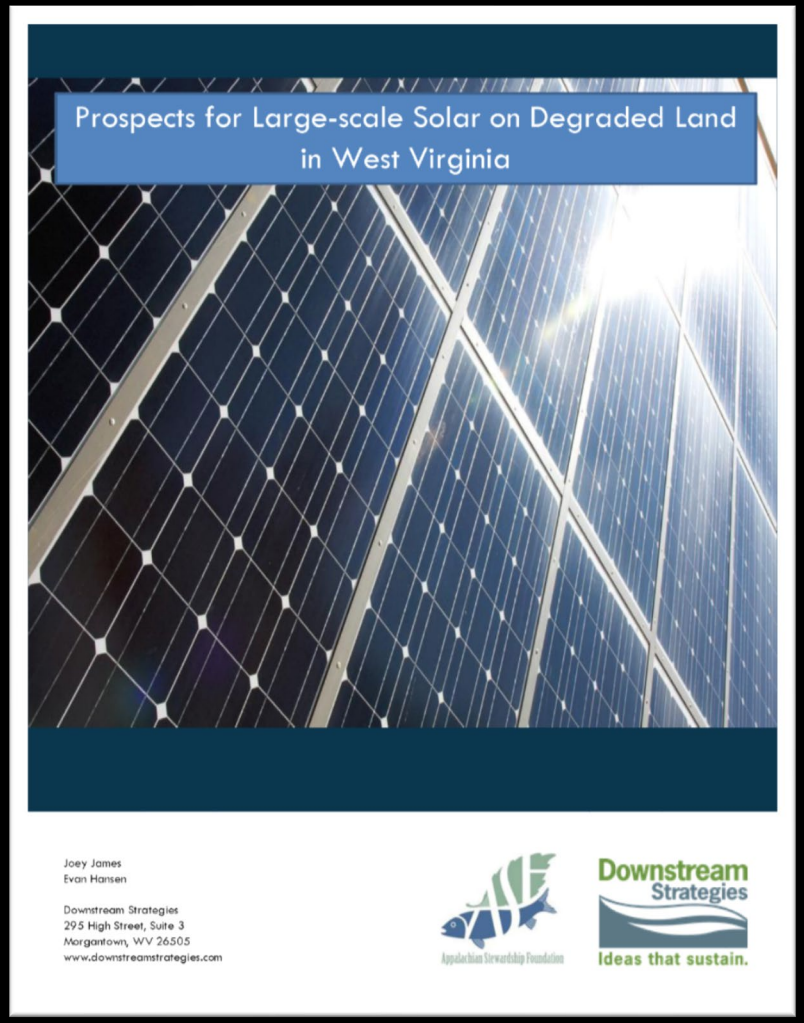
2014 – 2018



As of December 31, 2018. Publicly announced contracted capacity of corporate Power Purchase Agreements, Green Power Purchases, Green Tariffs, and Outright Project Ownership in the US, 2014 – 2018. Excludes on-site generation (e.g., rooftop solar PV) and deals with operating plants. (#) indicates number of deals each year by individual companies.

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

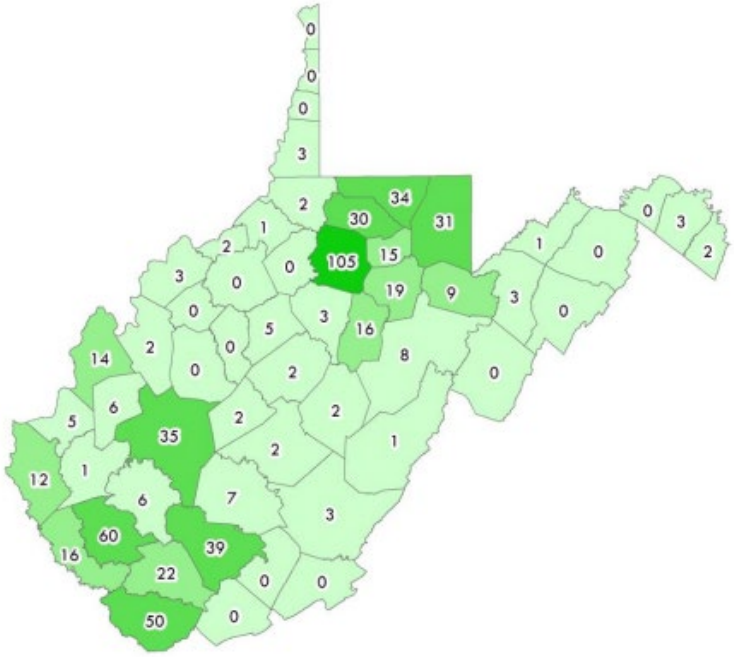
Background: USFWS Southeast Region

SITING CRITERIA

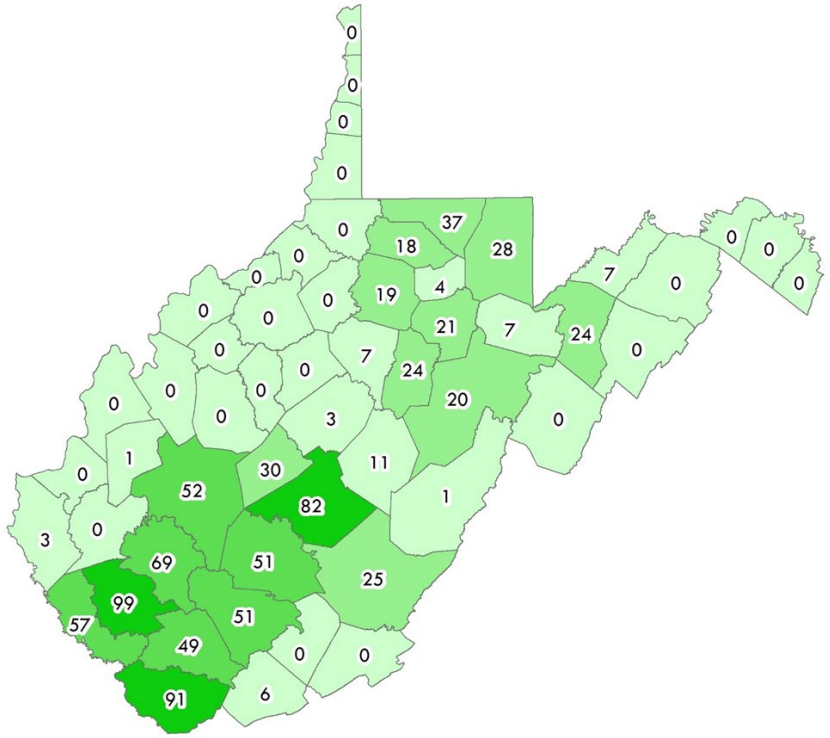
- Nameplate capacity greater than 300kW
- Greater than 3.5kWh/m^2/day DNI
- <1 mile to transmission and graded roads
- Essentially the same criteria as RE-POWER (large-scale) https://www.epa.gov/re-powering

Background: USFWS Southeast Region

Pre-SMCRA



Post-SMCRA



~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.

WHAT DOES THIS MEAN?

- 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.

SOLAR WORKGROUP
of Southwest Virginia

Background: USFWS Southeast Region

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.

SOLAR WORKGROUP
of Southwest Virginia

Background: USFWS Southeast Region

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)

Background: USFWS Southeast Region

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

Background: USFWS Southeast Region

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.

Background: USFWS Southeast Region

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