



SOLUNESCO



Connecting society's needs to sustainable, cost-competitive energy

SolUnesco Overview



Virginia-based SolUnesco is a leading local solar developer who also spearheads state and local policy development.

On-the-ground presence and decades of expertise allow SolUnesco to successfully navigate a nascent and complex Virginia solar market. SolUnesco operates in accordance with its “*Core Values*” of **Trust, Passion, Creativity, Community, and Expertise**.

Currently, SolUnesco is developing *11 solar power farms in Virginia*, for which it provides real estate, permitting, interconnection, and project management services.

Leadership Team



Francis Hodson
SolUnesco CEO & Co-founder

Expertise: 29+ years experience in energy wholesale markets (electricity, natural gas and petroleum), policy, land use, community relations, strategy, finance, and performance management.

MS, Business Administration, Finance, Massachusetts Institute of Technology - Sloan School of Management

BA, Economics, Colby College



Jon Hillis
SolUnesco President & Co-founder

Expertise: 30+ years operations, finance, human capital development, commercial construction, solar PV energy system installation, project management, construction engineering and estimating, CAD/GIS.

Architectural Engineering, Pennsylvania State University

Rooftop Photovoltaic Systems Installation, Pennsylvania State University



Support Team



Seth Maughan
**SolUnesco Director of
Project Development**

Expertise: Site procurement engagement with landowners, stakeholder relationship management, permitting, interconnection, and site work.

MS, Energy Policy and Climate, Johns Hopkins University

BS, Geology, Western Washington University



Aaron Morrow
Advisor, Markets and Analytics

Expertise: Financial modeling, finance, market assessment, quantification, and project valuation.

MBA, Tepper School of Business, Carnegie Mellon University

MS, Mechanical Engineering, Rensselaer Polytechnic Institute

BS, Mechanical Engineering, Montana State University



Lea Maamari
**SolUnesco Research &
Marketing Senior Associate**

Expertise: Policy research, marketing, urban planning, sustainability, environmental problem-solving.

BS, Environmental Policy & Planning, Virginia Polytechnic Institute and State University



Susan Posey
Administration

Expertise: Administrative management, executive C-suite support.



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Contracted & Future Team

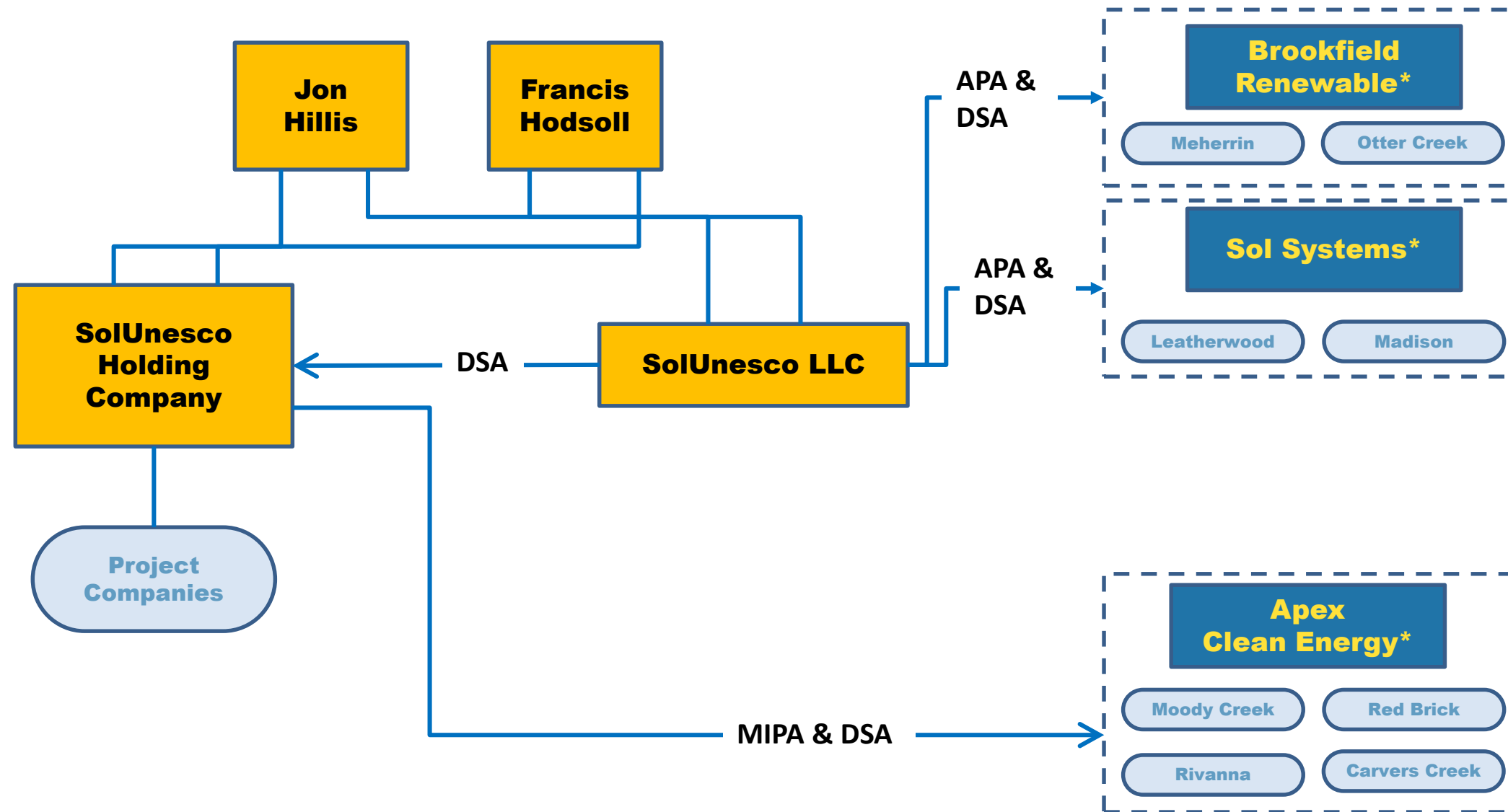
Additional Contract Positions

- **Controller:** Bart Rowe
- **Communications Support:**
Melody Gee
- **IT Support:** ETTE & Kyle Borg
- **Southside VA Representative:**
Lauren McCarty

Open & Future Positions

- **Interconnection:** Senior-level interconnection economics expert
- **GIS / Analyst:**
- **Summer Interns – R&D**

SolUnesco Structure



Projects and Milestones

July 2015	Hodsoll and Hillis form SolUnesco, entering the untapped utility-scale VA solar market (April 2015 Gov. McAuliffe signs Bill finding 500 MWs in the Public Interest and SolUnesco forms the VA Utility-scale Solar working group – 26 entities.)
Nov 2015	Joint Development Agreement with One Energy Renewables led to initiating six VA projects totaling 230 MWac.
Sep 2016	SolUnesco repurchased portfolio after Sun Edison bankruptcy forced One Energy to abandon Virginia.
Nov 2015— Mar 2017	Sold two 60MW.ac projects to Brookfield Renewable . Entered into Development Services Agreement (DSA), providing Brookfield's <i>Boots-on-the-Ground</i>
Nov 2016— Apr 2017	Sold four projects (120 MWac) to Sol Systems. Entered into a similar <i>Boots-on-the-Ground</i> DSA. Cypress Creek purchased two projects
Jul 2017— May 2018	Continued developing Brookfield and SolSystems projects and created a new early stage development portfolio consisting of four projects in Virginia totaling 380 MWac.
Mar 2018	Virginia General Assembly increases amount of solar/wind in The Public Interest to 5,500 MWs . SolUnesco represented the industry at the negotiating table and led the industry's working group supporting the negotiations
Jun-Sep 2018	Sold four projects to Apex Clean Energy
Mar 2019	Provided Enel 120 days Exclusivity for two projects



What Sets Us Apart

Staff

We hire the best, then carefully develop their talents to create a skilled and expert staff with a competitive edge.

Process

We are disciplined and adaptive, engaging with key stakeholders to gather intelligence, understand requirements, work collaboratively, and deploy resources to fully address every need in the development process.

Knowledge

We have a balanced focus on commercial and policy to drive the market and develop key relationships to access crucial information.

Track Record

We were an early mover in the developing Virginia market, now with the largest market position in the state. Together with Intermix, we have the bandwidth to reach beyond and capture shares in new markets.

Team Expertise

Develop

utility-scale solar electric generators (typically > \$100 million) with smaller projects in lucrative markets.

Sell

development assets, once projects achieve significant milestones and are de-risked via site control, interconnection evaluations, state and local permits, and site surveys.

Leverage

market intelligence, consultant and expert relationships, local market expertise to identify opportunities and secure site rights.

Lead

market development and definition at State and Local levels to develop market intelligence.

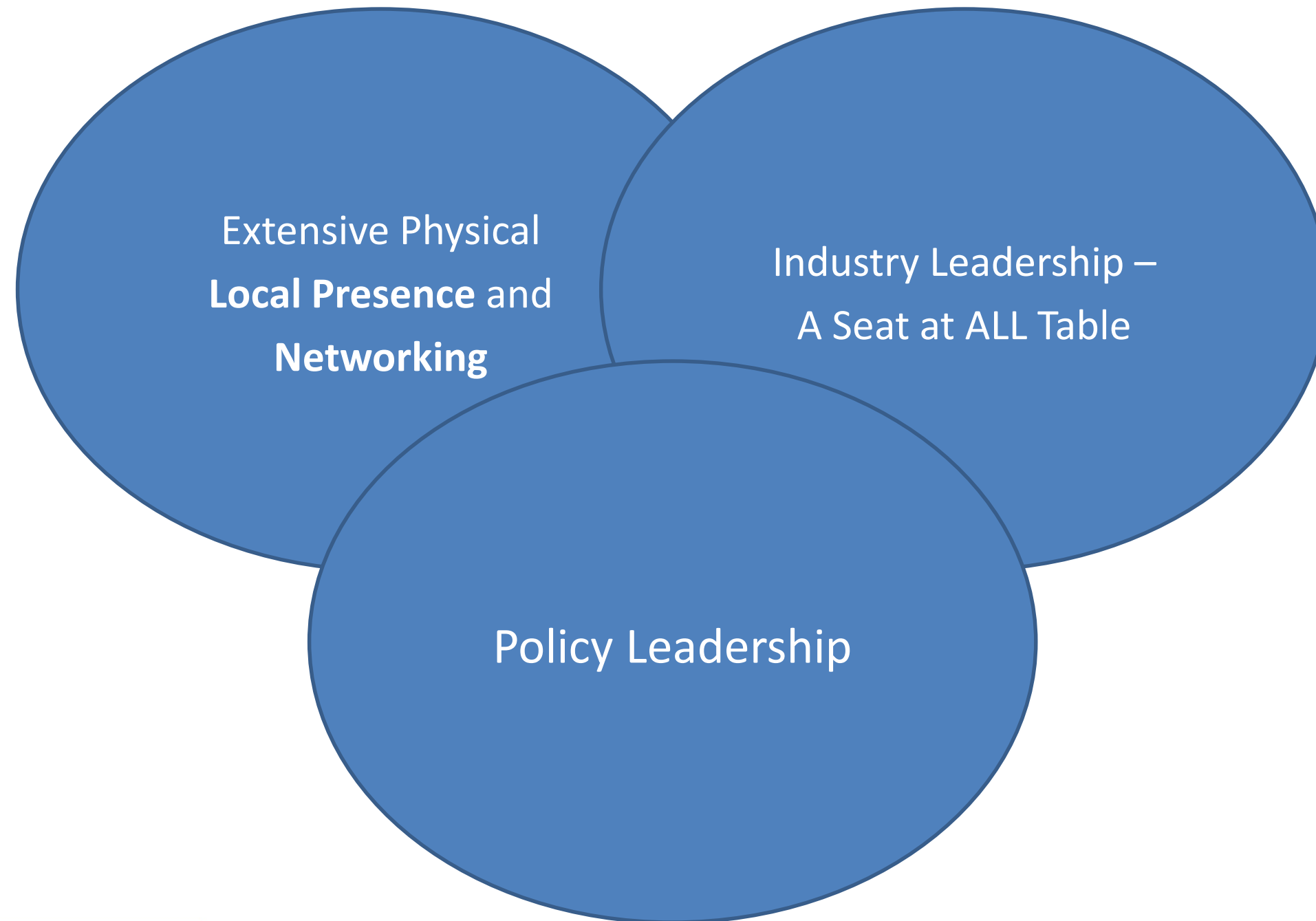
Network

within local markets to support development via identification, engagement, and outreach with local leaders.

Low Mortality

with a team experienced in using risk-adjusted development processes and locational (model) attributes.

Boots On & Ears To the Ground



Our Track Record of Execution

When faced with project roadblocks, we find **creative solutions** to move projects to completion.



Between August 2015 and October 2018, we moved the **Meherrin Solar Project** to all new land, collaborated with businesses and other stakeholders to overcome strong NIMBY hesitation and doubts, and convinced Greenville County to allow letters of credit.



Between February 2017 and February 2018, we convinced Mecklenberg County to grandfather in the **Otter Solar Project** under prior ordinances and overcome NIMBY skepticism and fear.



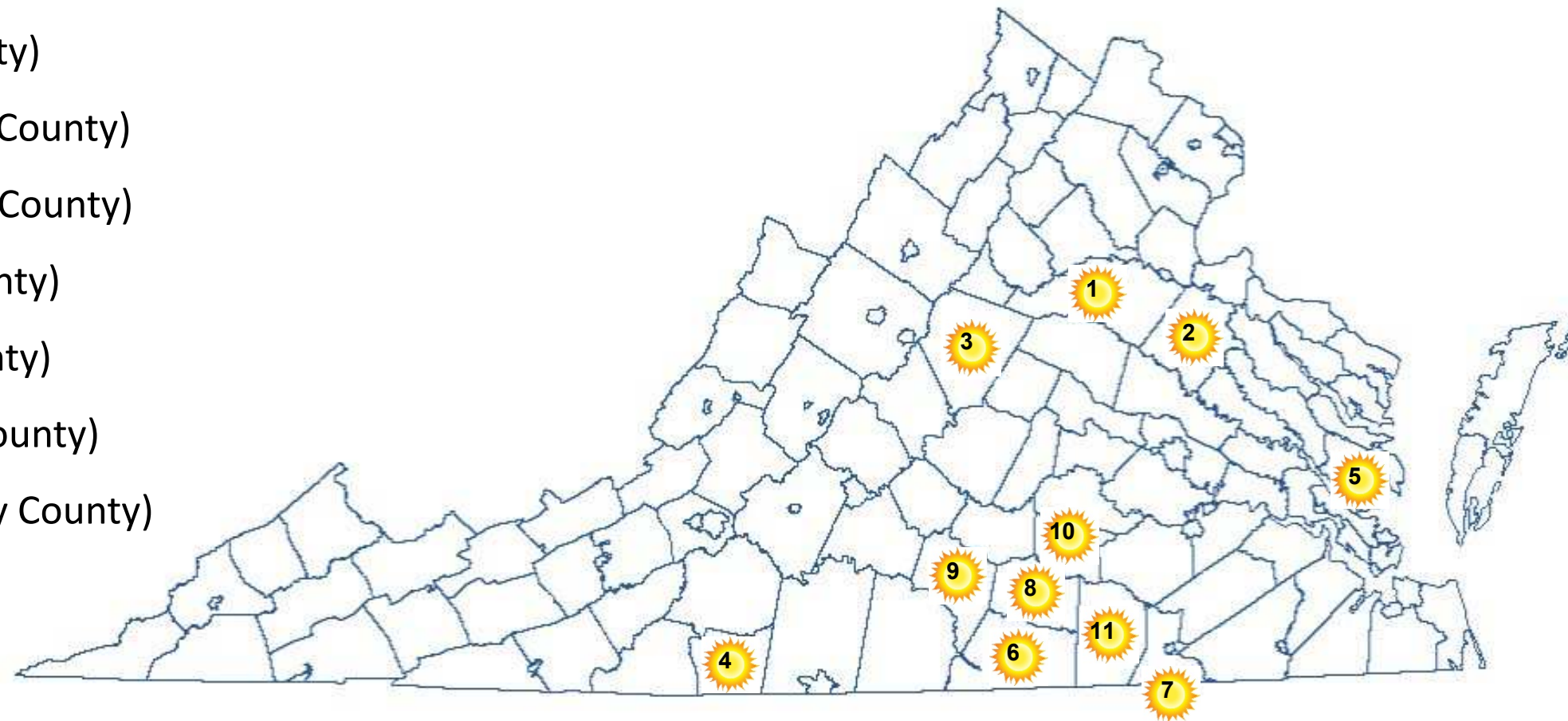
Between January and October 2018, we convinced Charlotte County to abandon old density and size restrictions to push forward the **Moody Solar Project**.

DevTeam Project Statistics



Virginia Solar Projects

1. **Madison** (Orange County)
2. **Racehorse** (Caroline County)
3. **Rivanna** (Albemarle County)
4. **Leatherwood** (Henry County)
5. **Carvers Creek** (Gloucester County)
6. **Otter Creek** (Mecklenburg County)
7. **Meherrin** (Greensville County)
8. **Red Brick** (Lunenburg County)
9. **Moody Creek** (Charlotte County)
10. **Dickerson Creek** (Nottoway County)
11. **Boxcar** (Brunswick County)



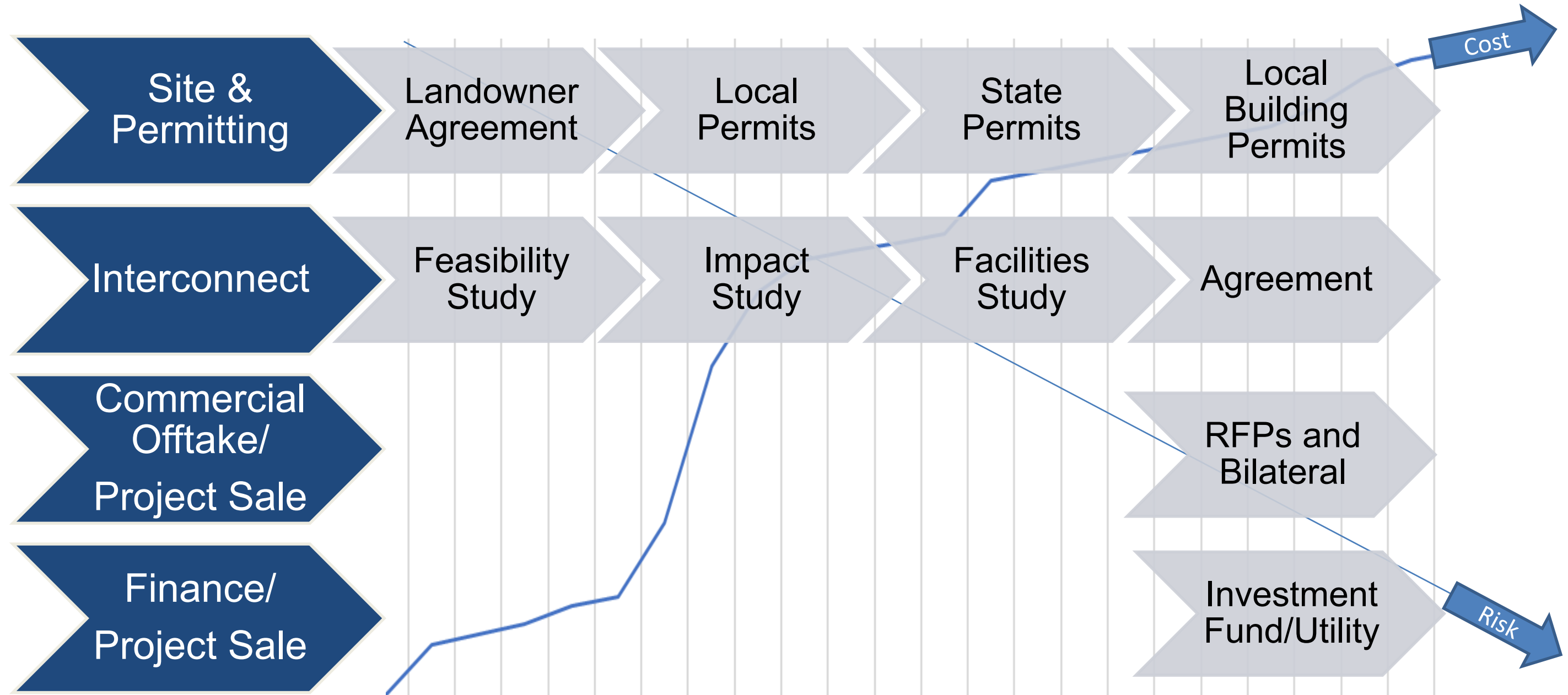
Our Development Process

We develop projects with a process that is **streamlined, proactive, consistent, and highly efficient.**

We expertly approach land control, resource management, state and local permitting, interconnection, and asset sales.



Our Process: Tested & Refined



Development Considerations

Location

- Current Competitive Landscape
- **Utilities' Market Power**
- Interconnection process and cost
- **Marketability of power**
- State Policy & Regulation
- **Energy costs & solar resource**
- State & Local Permitting

Size

- Interconnection Processes, Timing & Congestion
- **Market History and Trends**
- Permitting Limitations
- **General Land Characteristics: Slope, Parcel Sizes**
- Bigger Tends to be Better

Site

- Interconnection Capacity & Known Congestion
- **Property value**
- Environmental and Physical Characteristics
- **Potential for NIMBY**
- Zoning & Local Permitting
- **Parcel Sizes & Ownership Diversity**
- Cultural resources, gravesites, historic preservation
- **Previous uses of property**

Life Cycle of a Solar Site



Selling Solar

A sampling of **6** solar projects across **5** VA counties projected to contribute:

Nearly **1,600** full-time equivalent jobs

\$75 million in direct spending on labor

\$210 million in additional economic output

1 GW of energy

*Meherrin, Otter Creek, Spotsylvania, Moody Creek, Red Brick, and Charlotte Solar Projects
**Greenville County, Charlotte County, Mecklenburg County, Spotsylvania County, Lunenburg County
***Reports commissioned by Mangum Economics and Global Energy Analytics

Local Permitting

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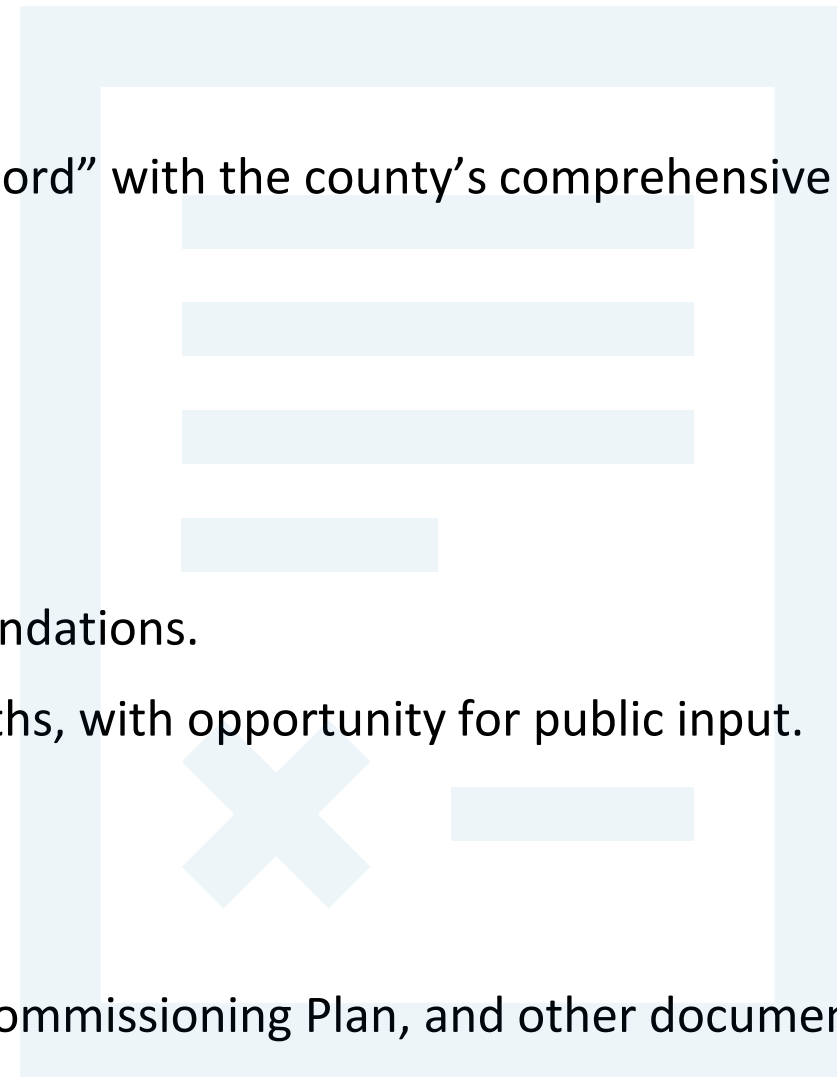
Planning Commission found the project to be “substantially in accord” with the county’s comprehensive plan. The Board of Supervisors accepted this finding on April 10th.

Conditional Use Permit (CUP)

- CUP Application submitted November 2018.
- County staff are currently reviewing and making recommendations.
- Public hearings (PC and BOS) are expected in coming months, with opportunity for public input.

Building Permits

Prior to construction, the project will submit a final Site Plan, Decommissioning Plan, and other documentation required by county ordinance and Conditional Use Permit.



State & Federal Permitting



VA Department of Environmental Quality

Permit by Rule (PBR): Comprehensive project review with public hearing and comment period, Includes consultation with DGIF, DCR, and DHR.

Stormwater: Project will submit documentation of expected impacts and mitigation plan for DEQ approval.



Southside Soil and Water Conservation District

Erosion and Sediment Control: Project will submit documentation of expected impacts and mitigation plan for Southside Soil and Water Conservation District approval.



US Army Corps of Engineers

Wetland delineation and USACE confirmation.

Nationwide Permitting expected due to minimized impacts to water bodies.

Permit by Rule Process

The Virginia Department of Environmental Quality's (DEQ) Permit by Rule (PBR) process is designed to thoroughly assess any solar project's impact on the environment, including wetlands, historic and natural resources, and wildlife.

To proceed with project construction, a developer must meet the requirements of the DEQ Permit by Rule process, provide all required project-related information, and develop and implement mitigation plans when necessary.



Good Neighbor Practices



Communication

An informational open-house was held for adjoining landowners & key stakeholders in February 2019.



Preserving Agricultural Heritage

- Most land between solar panels is left undeveloped, leaving opportunity to plant native grasses and wildflowers.
- Upon decommissioning, land will be restored and made available for original agricultural use.



Protecting Neighbors' Viewsheds

- Project will be built behind existing vegetation where possible to minimize impacts on viewsheds
- Evergreen trees will be planted where no tree buffer currently exists
- Setbacks of a minimum of 150' will be maintained from residential property lines and roads.



Minimal Activity

- Minor maintenance projects are expected to occur only a few times per year.
- The project will have low or no impact on County services - no new roads, utilities or impact on law enforcement.

Credibility & Expertise => Success



HOME ABOUT PROJECTS LANDOWNERS

Best Practices for Utility-Scale Solar Decommissioning in Virginia Pt. 2

by Lea Maamari and Melody S. Gee

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Fiscal Impact on the County: How does Solar Compare to other Land Uses?



Embracing Solar Can Attract Business Investment to Virginia



Queue Position	Project MFO	Queue MFO	IC kV	Project \$/w.ac	ISA Fully Executed	Project Status	Will Be Responsible (Project Costs) Attach Facts & Direct Network Upgrades	Non Direct Network	May Have Contribution (Non Direct System Upgrade Costs) Feasibility	Impact Study	Facility Study	Q Close to Feas	Q Close to SIS	Q Close to Fcty or Current Date	Q Close to ISA
6	W1-003	80	138kV	\$ 0.0365	6/6/2017	In Service	\$ 2,916,497	\$ -				#VALUE!	#VALUE!	1,598	2,624
7	AA2-088	100	115kV	\$ 0.0805	6/6/2017	In Service	\$ 6,039,524	\$ 2,008,624				107	351	626	768
8	AA2-177	80	230kV	\$ 0.0944	7/10/2017	Withdrawn	\$ 6,533,986	\$ 1,017,736				107	320	716	802
9	AB1-173	59.6	115kV	\$ 0.0818	2/8/2018	In Development	\$ 3,514,981	\$ 1,358,175				136	320	897	831
10	AB2-015	91	115kV	\$ 0.0805	3/7/2019	In Development	\$ 5,289,784	\$ 2,038,355	\$ 18,615,000			107	411	959	1,041
11	AB2-040	80	115kV	\$ 0.0596	8/8/2018	In Development	\$ 3,237,653	\$ 1,531,275	\$ 25,615,000			107	411	745	830

GLOBAL ENERGY ANALYTICS	
Baseline Locality	
12 True Value	\$716,461,134
13 True Value (with Project)	\$758,874,545
14 Adjusted Gross Income	\$160,981,807
15 Taxable Retail Sales	\$42,405,153
16 ADM	1399.62
17 Population	11804
State	
19 True Value	\$1,170,092,111,099
20 True Value (with Project)	\$1,170,134,524,510
21 Adjusted Gross Income	\$269,067,675,605
22 Taxable Retail Sales	\$100,207,273,998
23 ADM	1,239,781
24 Population	8,382,993
Baseline Composite Index	
26 ADM Composite Index	0.5207
27 PC Composite Index	0.4174

Inputs	
Project Location	GREENSVILLE
Project Investment	\$100,000,000
Project \$/kW.ac subject to M&T	\$1,000/kW-ac
Project Size mW.ac	100 MW-AC
Assessment Ratio	94.0%
Nominal Tax Rate	\$0.67 per \$100
State Exemption	60%
Project Life	35 years
Assumed Discount Rate (County)	3.0%
Assumed Discount Rate (Project)	8.0%
Capacity Factor	17%
Degradation	0.250%
Tax \$ / mW Hr	\$0.01/MWh
Annual Tax Escalator	2.000%

Lifetime Impact	
NPV of Revenue Changes	\$3,052,836
Sum of Revenue Changes	\$5,709,592

Year 1 Fiscal Impacts	
Net Revenue Change	\$223,304
Value of Project	\$90,000,000
Taxable Value	\$33,840,000
Increase in Land Value	\$8,573,411
Local Tax Revenue	\$284,170

County Impacts			
Case	County Net (Year 1)	County Net (Year 20)	County Net (35-yr)
Base	\$134,468	\$89,084	\$2,283,5
Scenario 1	\$223,304	\$103,279	\$3,052,8
Scenario 2	\$233,174	\$138,007	\$3,620,8
Scenario 3	\$233,174	\$170,544	\$4,094,1
Scenario 4	\$267,267	\$115,614	\$3,535,3
Scenario 5	\$280,287	\$158,570	\$4,244,1
Scenario 6	\$280,287	\$198,787	\$4,837,0
Scenario 7	\$312,139	\$127,041	\$4,015,1
Scenario 8	\$327,400	\$178,224	\$4,868,3
Scenario 9	\$327,400	\$227,938	\$5,579,3

County Delta			
Case	County Net (Year 1)	County Net (Year 20)	County Net (35-yr)
Base	\$0	\$0	\$0
Scenario 1	\$88,836	\$14,196	\$768,8
Scenario 2	\$98,706	\$48,923	\$1,336,5
Scenario 3	\$98,706	\$81,460	\$1,810,6
Scenario 4	\$132,800	\$26,531	\$1,251,7
Scenario 5	\$145,819	\$69,486	\$1,960,8
Scenario 6	\$145,819	\$109,703	\$2,553,0
Scenario 7	\$177,672	\$37,957	\$1,731,1
Scenario 8	\$192,932	\$89,140	\$2,584,7
Scenario 9	\$192,932	\$138,854	\$3,295,3



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SolU's Drive

Our company highlights and milestones demonstrate a **deep knowledge** of **market conditions**, the agility and resources to make **strategic and early moves**, our capacity and expertise in **developing and monetizing projects**, and our creative and committed approaches to **overcoming roadblocks**.

