

UNIVERSITY of VIRGINIA

SOLAR SITING AND PERMITTING IN VIRGINIA

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Introduction

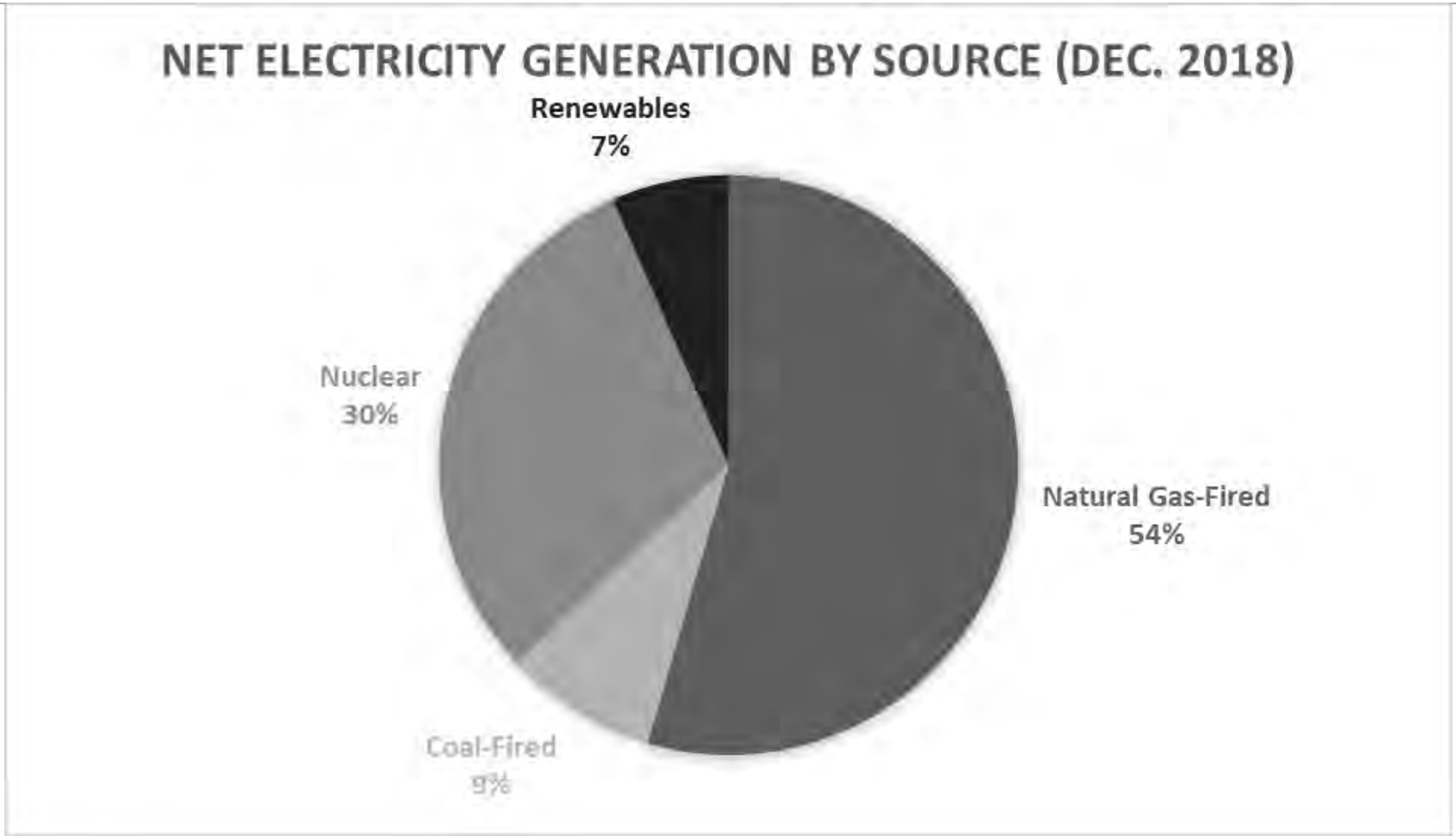
What's happening in energy, now?!

Solar policy in Virginia

Considerations for local governments

Discussion and Next Steps

Energy In Virginia



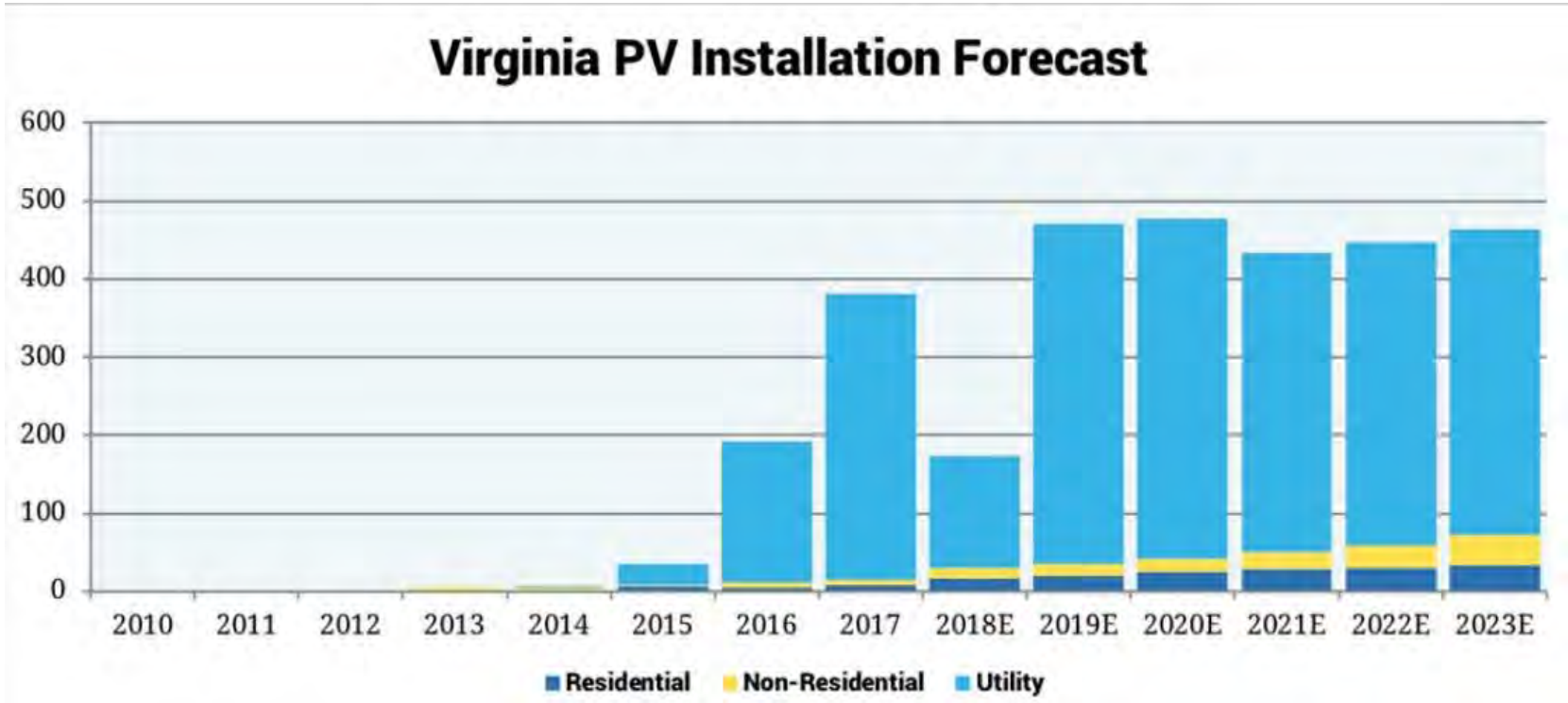
eia.gov

Introduction to Solar Power

Energy Needs

Carbon Emission Reductions

Economics



"Over the last five years, Virginia has seen a dramatic increase in its installed solar capacity, growing from 17 MW in 2014 to more than 320 MW installed and a total of ***750 MW of solar resources permitted through the PBR as of August 2018.****"*

An additional 58 Notices of Intent to apply in the ***PBR queue totaling 3,317 megawatts****.7 In addition to our state permitting process, PJM Interconnection lists 116 Virginia solar projects in their own New Services Queue totaling over* ***10 gigawatts***

- Virginia Energy Plan

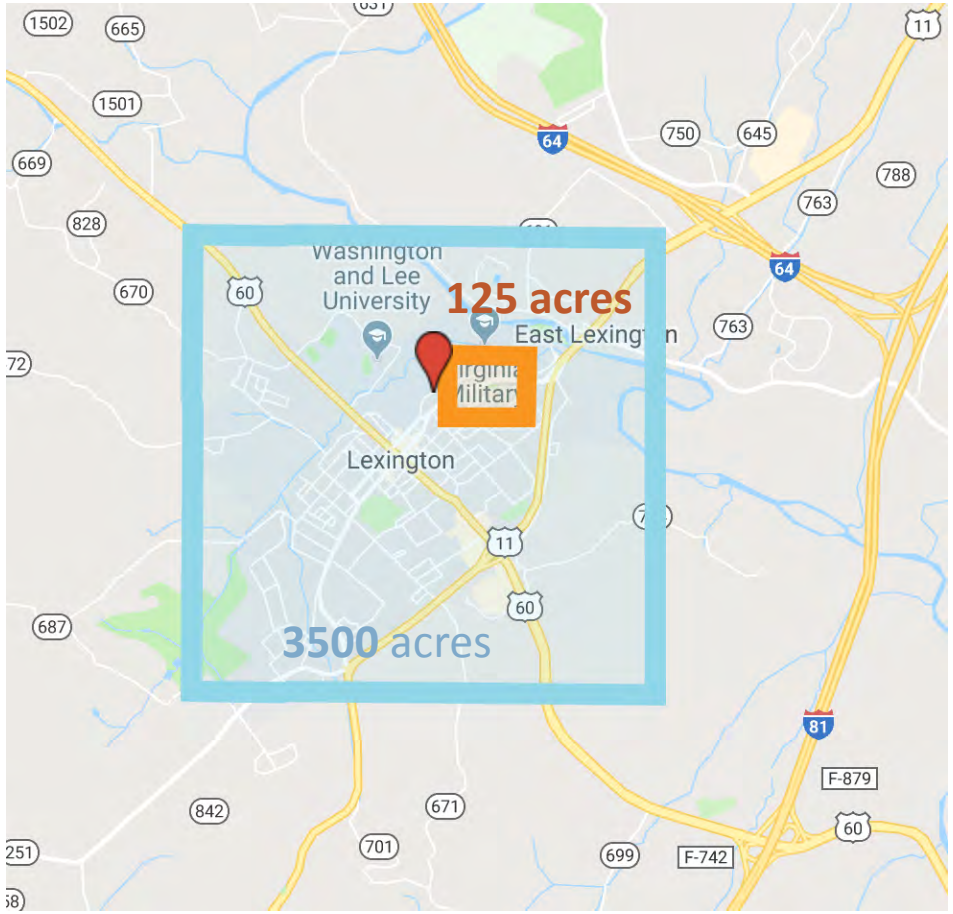
PV Solar Markets

- Net-metering (i.e. utility buys power from individual)
  - Residential <20kw
  - Non-residential <1MW
  - Ag. Generator (i.e. utility buys power from farm operation) up to 1.5MW but not more than 150 power required by the operation and not more than 25% of land owned.
- Schools & Non-Profits (i.e. power purchase agreements)
- Community Solar (i.e. group of users aggregate solar power purchase)
- Utility-scale (third-party developer or utility developed)

Side Note: Energy storage is now a thing! Behind or in front of the meter maters to utilities.

Relative Size of Utility-scale Projects

Average Size: 20MW
Largest Proposed: 500MW



"3.5 to 10 acres per MW"

Limitations and Challenges

Economic “fit” (e.g. “peaker” plants)

Use Conflicts

Possible Unintended Consequences

- Landowner
- Community Goals and Taxation (M&T, Land Use, etc.)
- Environment (soil, water, ecology)

Misconceptions

Misconceptions of Solar

Looks

Toxicity

EMF/ Radiation

Sound

Glare

Property Values

End of Life

Grid Impacts

Solar Siting and Permitting in Virginia

Size	Regulation	Acres		Power (MW)	Requirements
"**Small**" <=150 MW (§ 10.1-1197.5)	9VAC15-60-130A	=< 2	or	=< 500KW	**No** DEQ Notice or Local Gov. Certification
	9VAC15-60-130B	>2 but <= 10	or	>500KW to <= 5MW	DEQ Notice and Local Gov. Land Use Certification
	9VAC15-60-30	>10	and	> 5MW to =< 150MW	PBR Application and Local Gov. Certification
"**Large**" >150 MW		N/A		> 150MW	Full Application (including SCC)

Solar Permit by Rule (PBR) Components

Notice of Intent

Local government Certification

Interconnection Studies

Interconnection Agreement

Certification project doesn't exceed 150MW

Analysis of NAAQS

Questions about PBR?

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Local Certification

Proposal Review Process

- Planning Commission
  - Impact Analyses
  - Public Hearing(s)
  - Recommendation to BOS or Council
- Board of Supervisors or Council
  - Public Hearing(s)
  - Proposal Determination
  - Local Certification (if approved)

Impact Considerations

Where do we want it to go on the landscape?

- Substations
- Transmission lines
- Properties for reuse or previously disturbed lands (avoid sensitive lands)
- Conservation goals

What are the potential costs/benefits and remedies?

- Intersection with other community goals
- Farmers/ Farming (sustainability as an industry)
- Habitat loss or impingement
- Workforce development

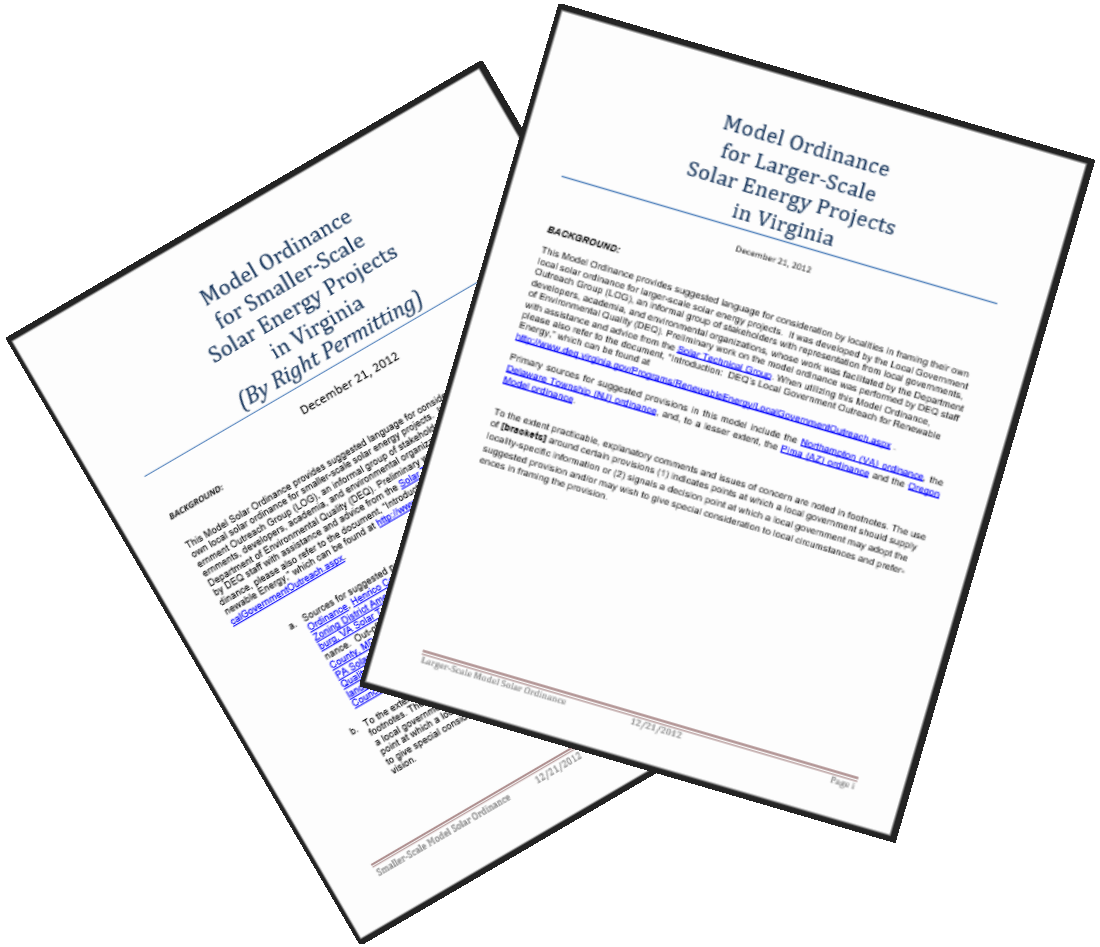
Managing the Local Government Challenges within PBR

Comprehensive Plan
- Community Energy Plan
- Impact analysis studies

Permitting and Ordinances
- Zoning Code Amendments
- Site Plan Requirements
- Building Code and E&S Inspections

Decommissioning Agreement
- Bonding, surety measures

Taxation
- M&T taxes
- ~~Impacts on Local Composite Index~~



Zoning best practices for solar

Definition	Include storage and solar hot water heating installations and in the definition of “solar” or otherwise allow in the code
Height	Allow rooftop solar an exemption from or allowance above building height restrictions
By-right accessory use	Allow small rooftop and ground mount solar in all major zoning districts
Accessory uses	Exempt solar from counting toward accessory uses maximum
Aesthetic requirements (e.g. screening)	• Exempt solar from rooftop equipment screening requirements • Allow PV installations to be seen from public roadways • Limit screening or aesthetic requirements to historic districts
Ground -mounted	• Include small ground-mounted systems as accessory structures • Require conditional use permit for principal use, ground-mounted systems
Lot coverage	Exempt ground mount solar from lot coverage restrictions that apply to buildings
Setbacks	Avoid applying principal building setbacks
Roof coverage	Include fire code setback requirements in coordination with fire officials
Glare	Glare studies not needed unless solar is on or adjacent to airport, in which case it will be regulated by FAA, not the local jurisdiction
Regulate based on impact/area	• Not capacity (kW) as efficiencies and technologies change over time • Not where used (e.g. on-site) as it has no bearing on the impact

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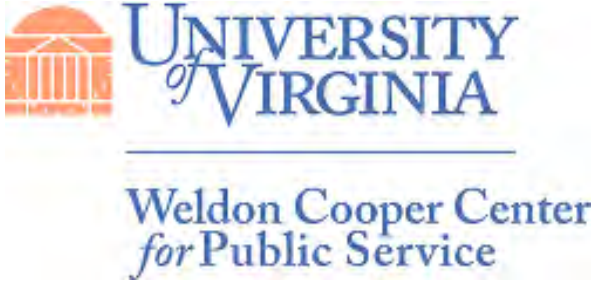

Thank You!

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