



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Energy Programs Office



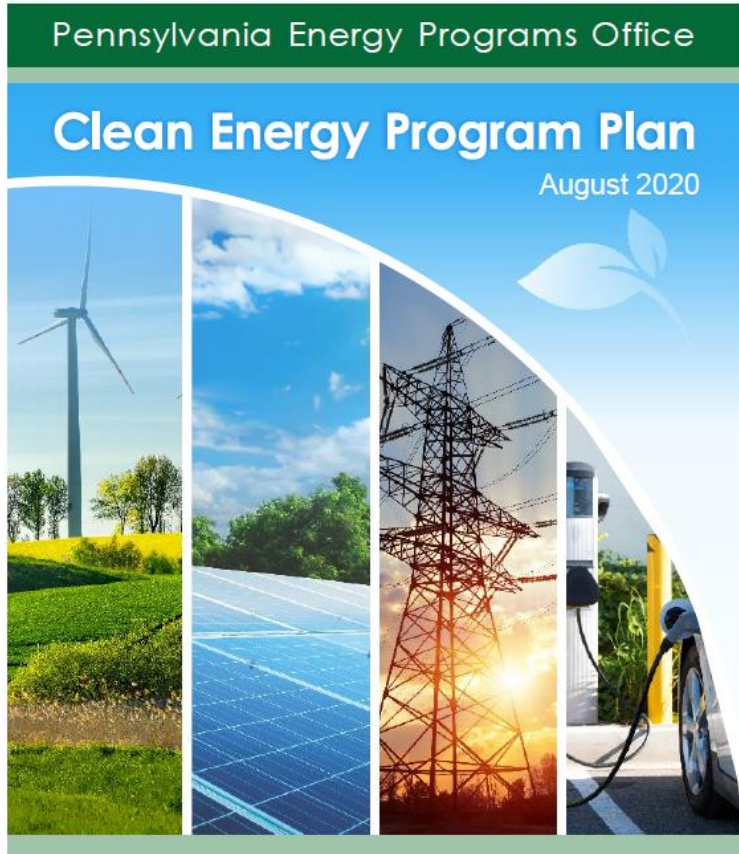
Perspectives on Grid-Scale Solar Development in Pennsylvania

for Citizens Advisory Committee
to the Chesapeake Executive Council

Pennsylvania Department of Environmental Protection
Energy Programs Office

May 18, 2022

DEP Energy Programs Office (EPO)



- EPO is the primary agency responsible for implementing clean energy programs in Pennsylvania.
- Responsible for supporting renewable energy, energy efficiency and conservation, climate change mitigation and adaptation, alternative transportation, energy assurance, and associated education, outreach and technical support efforts.
- Acts as State Energy Office for US Department of Energy

Pennsylvania Solar Energy Goals

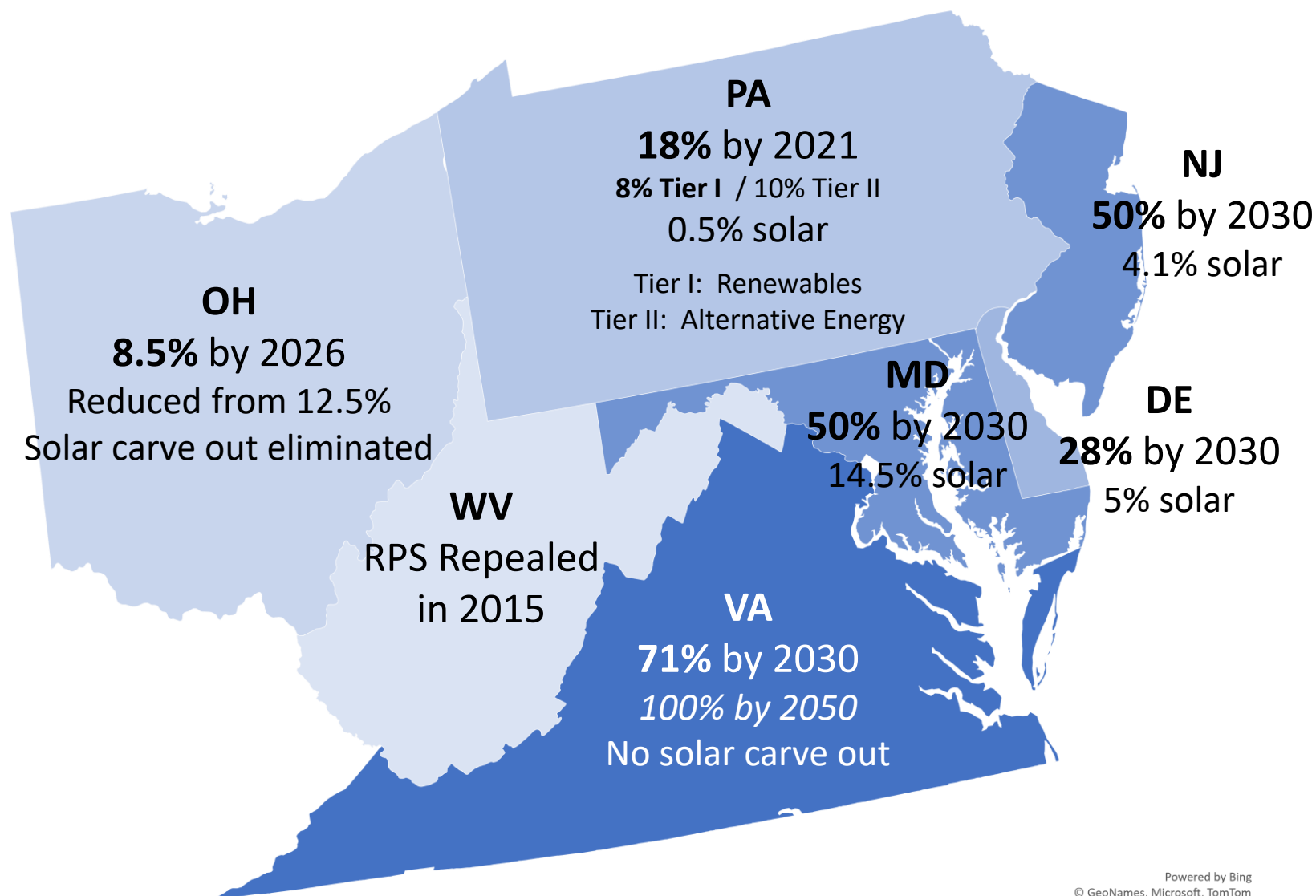
Pennsylvania's Solar Future Plan

Strategies to increase electricity generation from in-state solar energy

■ Pennsylvania's Solar Future Plan

- Target 10% electricity (11 GW) from in-state solar by 2030 (currently less than 0.5%)
- If 90% of in-state solar comes from grid-scale sources:
 - ~**10 GW** of solar generation
 - ~80,000 acres of land – this represents 0.3% of total land in Pennsylvania
- No community solar currently – pending legislation
- Current debate on joining Regional Greenhouse Gas Initiative (RGGI)
- Pending legislation around solar decommissioning

Regional Renewable Portfolio Standards



Three bills introduced in Pennsylvania to raise Tier I requirement up to 18% to 30% and solar carve out up to 2.5% to 10%

Factors Driving Grid-Scale Solar in PA



Access to Transmission Infrastructure



Technical Advances Improving Project Economics



Net Energy Exporter



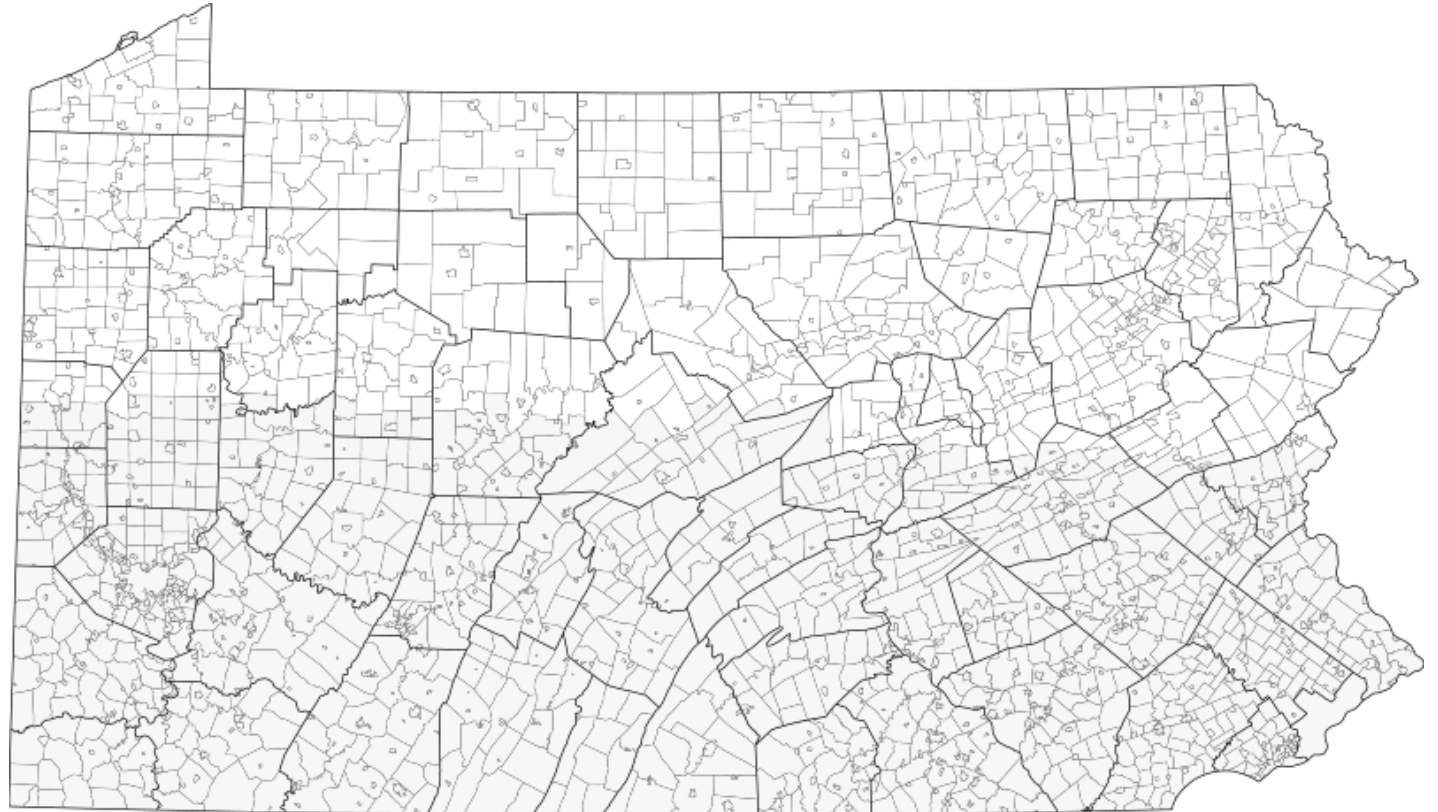
Availability of open land and marginal farmland

Solar Permitting Requirements in Pennsylvania

State requirements (through DEP) limited to stormwater permitting – no solar specific regulations



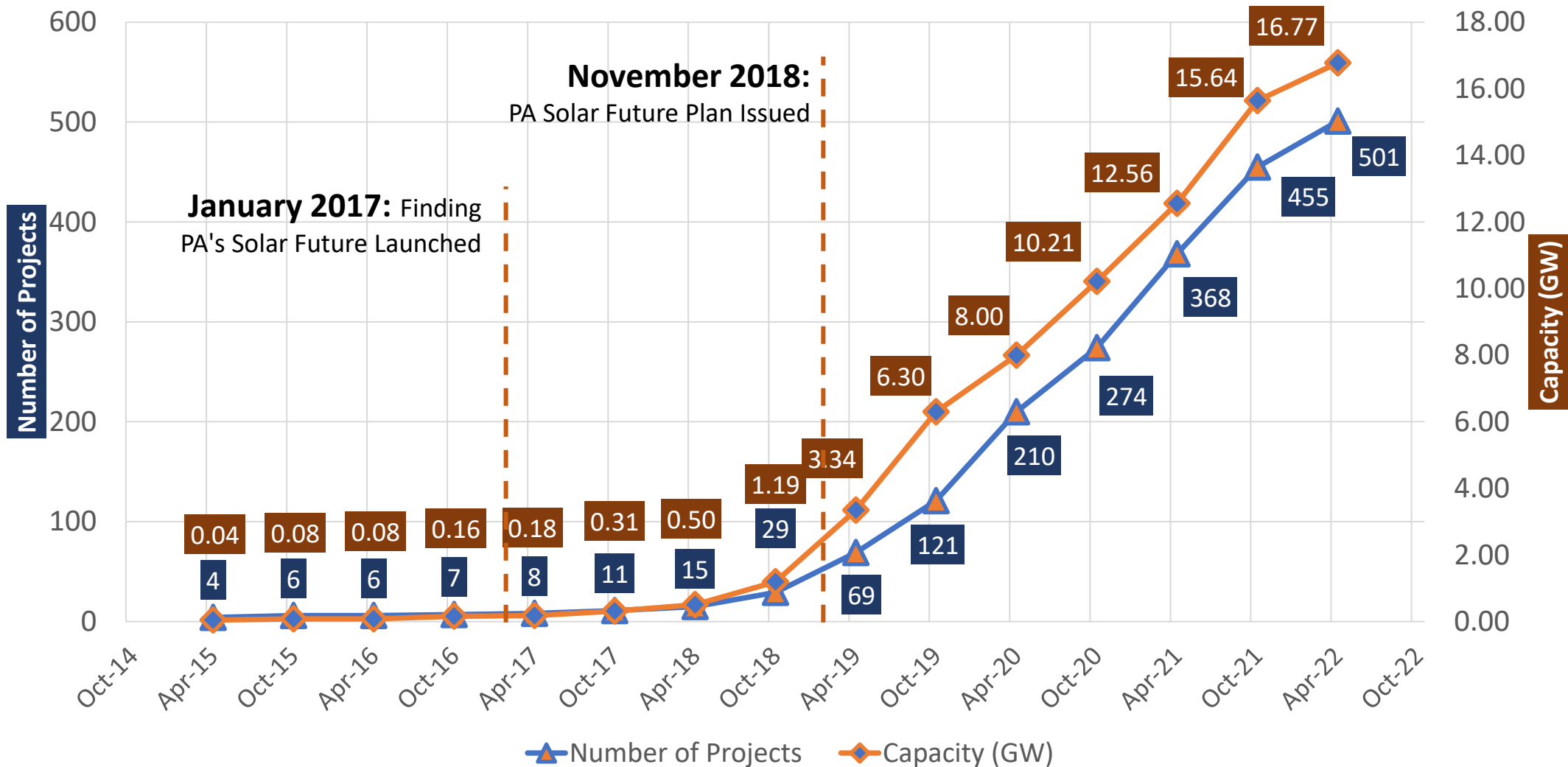
2,560 municipalities (cities, boroughs, townships) have ultimate authority on siting requirements through zoning and land use development ordinances – approximately only 8% have existing ordinances governing solar development



Selecting project sites driven by relationships between developers and landowners with favorable site characteristics (flat, open, access to transmission infrastructure) greatest factor

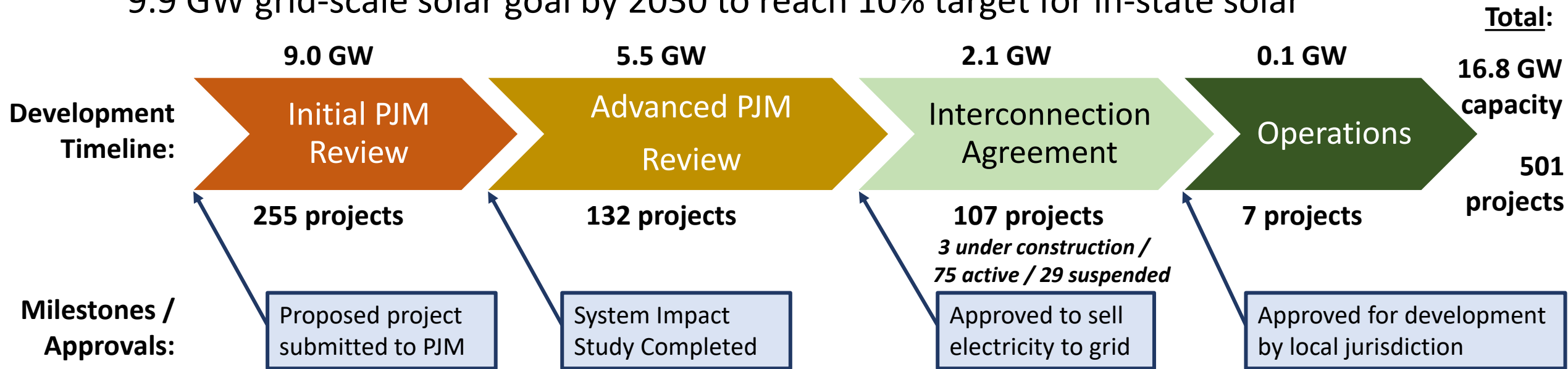
Growth of Grid-Scale Solar Proposals

Projects in PJM New Services Queue in Pennsylvania



Grid-Scale Solar Project Development Process

- Currently **16.8 GW** in new development queue – Finding PA's Solar Future Plan had 9.9 GW grid-scale solar goal by 2030 to reach 10% target for in-state solar



- Not all planned projects will be built, but to reach stage of development where project is reported in PJM queue, developers have made significant investments in project feasibility and design

Data from PJM New Services Queue (04/28/2022)

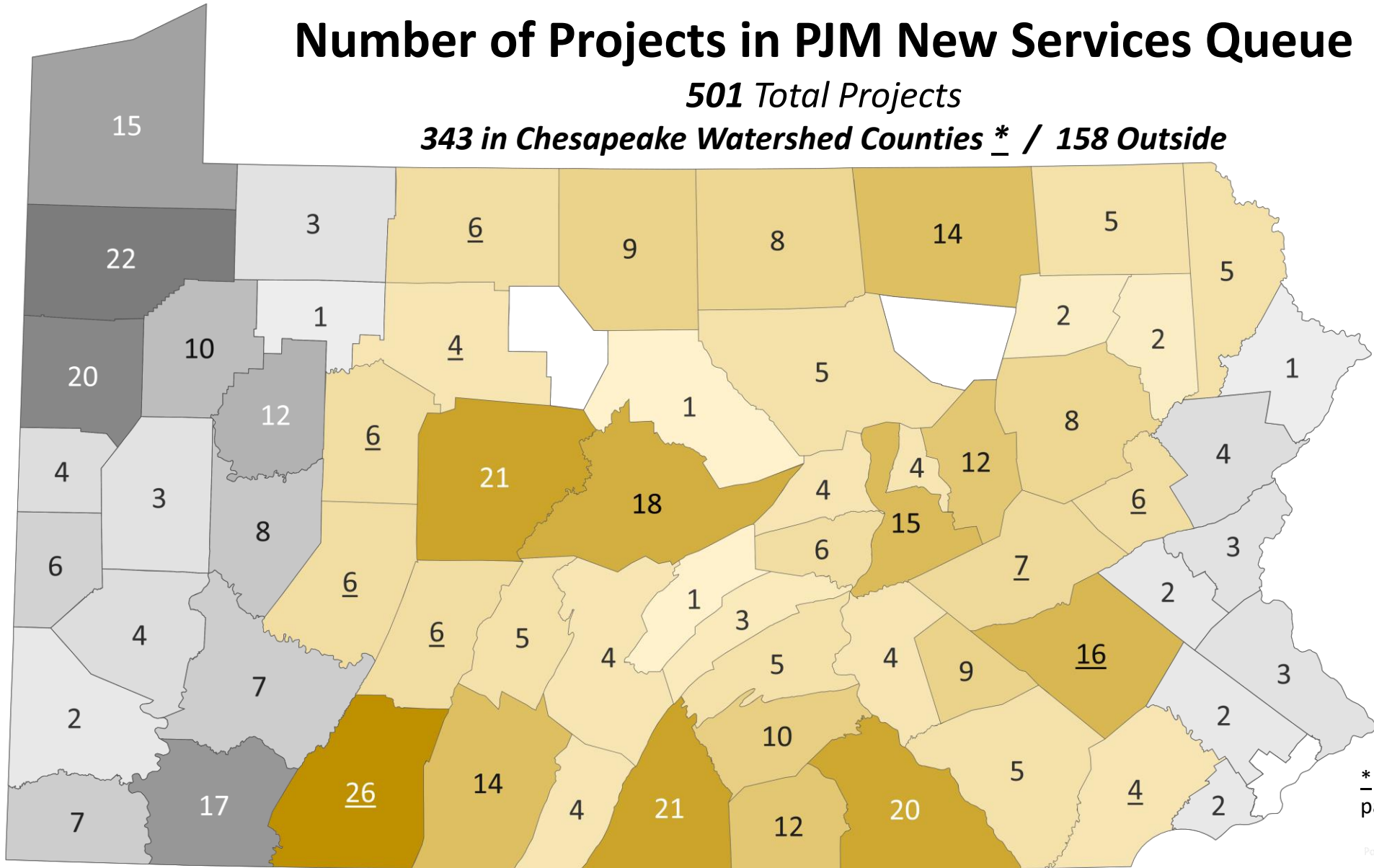
<https://www.pjm.com/planning/services-requests/interconnection-queues.aspx>

Development Potential (# of Projects)

Number of Projects in PJM New Services Queue

501 Total Projects

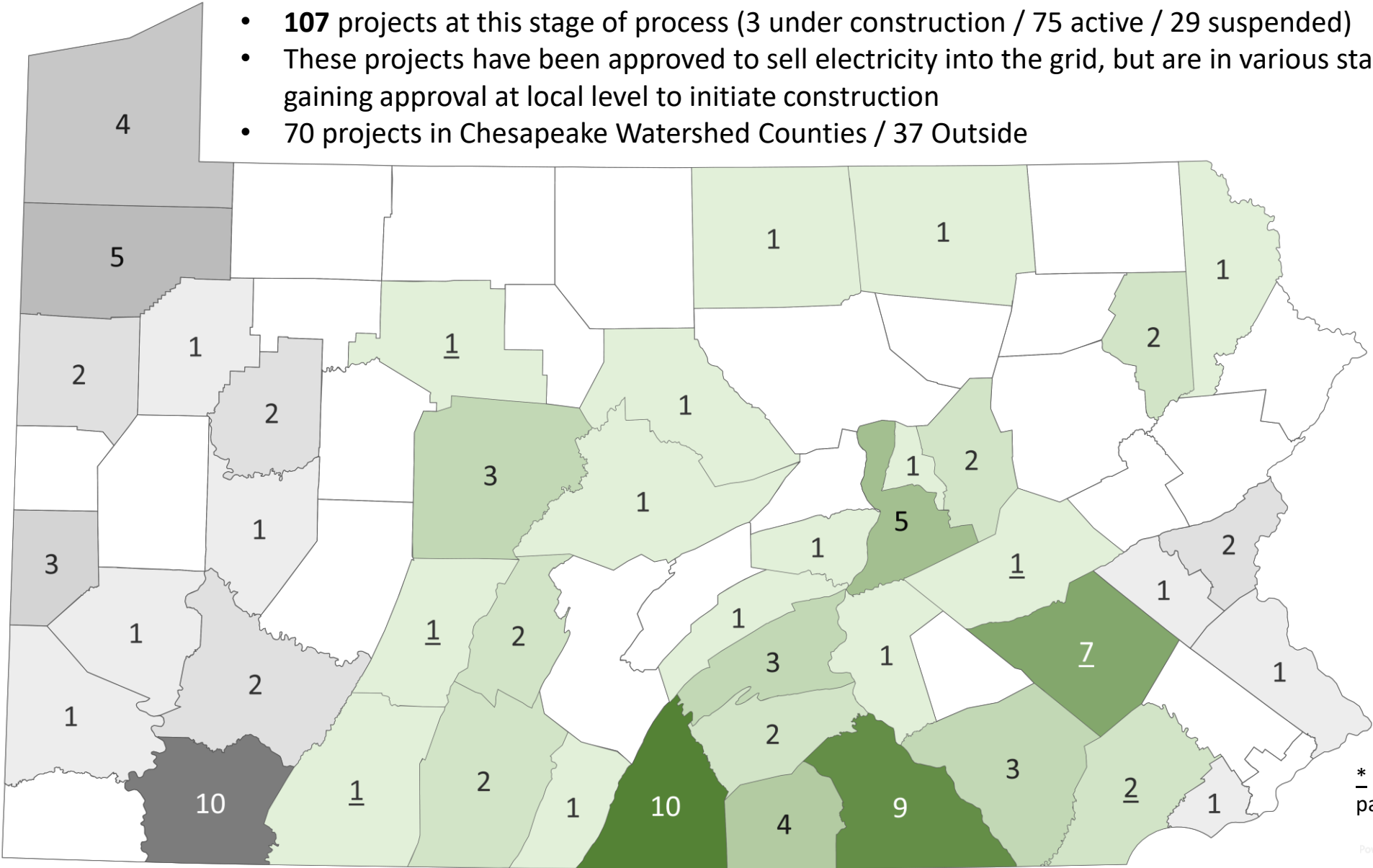
343 in Chesapeake Watershed Counties * / 158 Outside



* Includes counties with partial area in watershed

Projects With Interconnection Agreements

- **107** projects at this stage of process (3 under construction / 75 active / 29 suspended)
- These projects have been approved to sell electricity into the grid, but are in various stages of gaining approval at local level to initiate construction
- 70 projects in Chesapeake Watershed Counties / 37 Outside



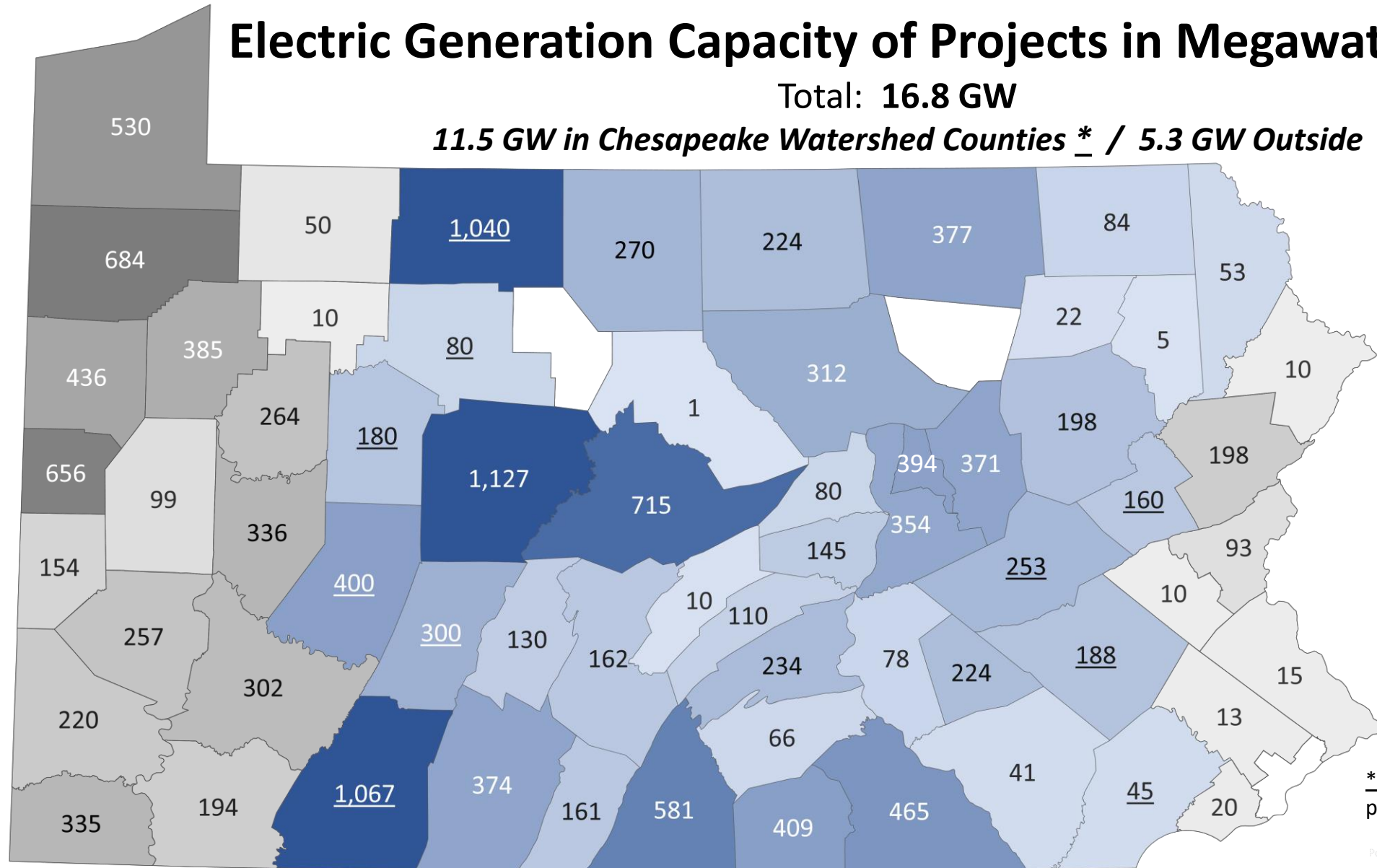
* Includes counties with partial area in watershed

Development Potential (# of Projects)

Electric Generation Capacity of Projects in Megawatts (MW)

Total: 16.8 GW

*11.5 GW in Chesapeake Watershed Counties * / 5.3 GW Outside*

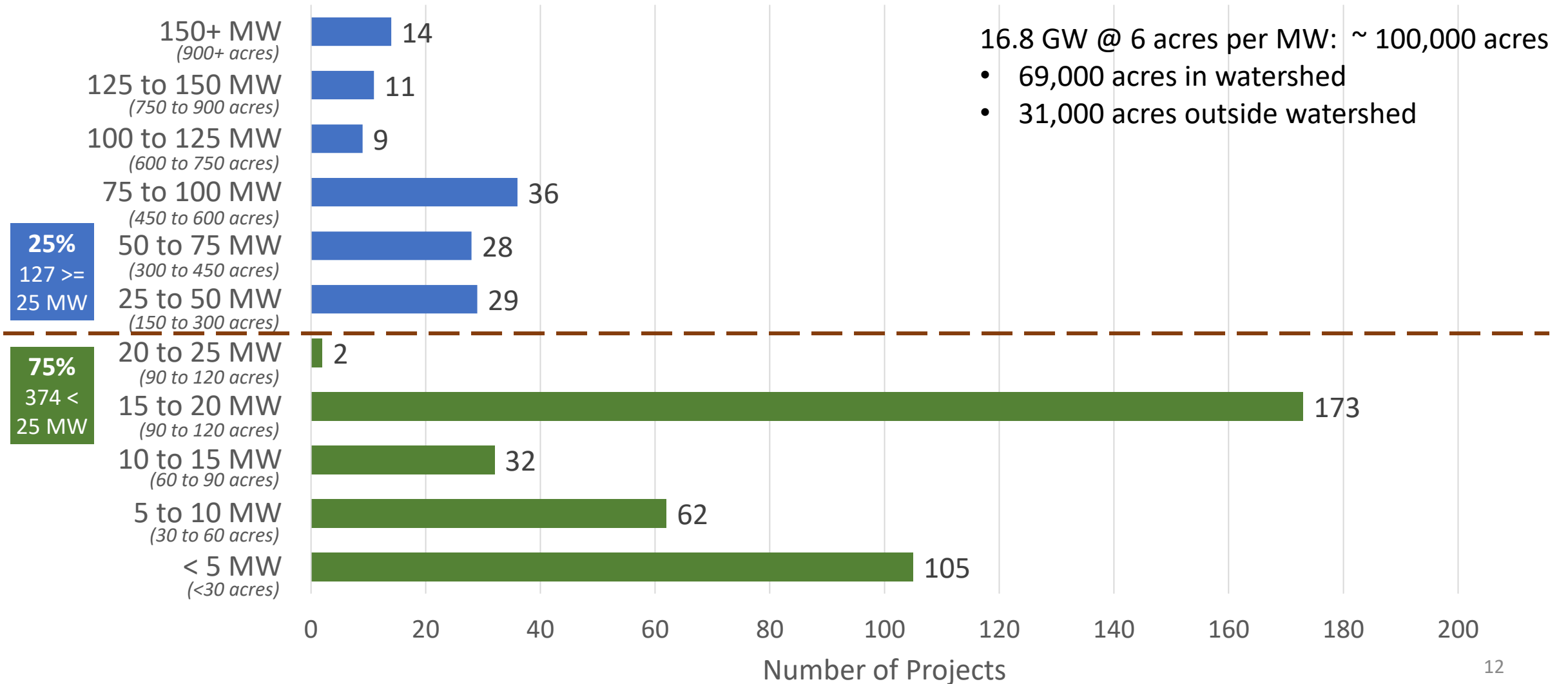


* Includes counties with partial area in watershed

Project Size and Land Use Impact

Planning Estimate:
6 acres per MW

Projects (by Capacity) in PJM New Services Queue



➤ Balancing Goals With Land Use & Water Quality

Inter-Agency Coordination

Conducting regular inter-agency meetings to coordinate on Commonwealth goals around solar development:

- **Agriculture:** Farmland Preservation
- **Conservation and Natural Resources:** Forest Conservation
- **General Services:** Energy Procurement
- **Community and Economic Development:** Job Creation and Land Revitalization

Intra-Agency Coordination

Coordinating with Mining Programs to conduct assessment of opportunities for solar development on previously mined lands

- **Requires input from private land owners, solar developers, NGOs**

Coordinating with Clean Water Program to share information about projects as they apply for stormwater permits

New Guidance: Stormwater



Chapter 102 Permitting for Solar Panel Farms

Frequently Asked Questions (FAQ)

January 2, 2019

Revised, April 30, 2021

Version 1.1

Background

With renewed interest in the development of clean, renewable energy in Pennsylvania, the development of solar photovoltaic installations is increasing in the state. Responsible development of solar farms must balance the growth of this valuable industry with the need to protect our natural resources, including addressing issues related to stormwater runoff. This FAQ document was developed to clarify the Department of Environmental Protection's (DEP's) interpretations concerning applicability and implementation of National Pollutant Discharge Elimination System (NPDES) permits for stormwater discharges associated with construction activities, including erosion and sediment control (E&S) and post-construction stormwater management (PCSM) for solar panel farms. This document provides recommended guidance for ground level solar projects with one acre or greater of earth disturbance.

Nothing in this document affects regulatory requirements. The interpretations herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the interpretations in this document that weight or deference. This document provides a framework within which DEP and delegated county conservation districts (CCDs) will exercise administrative discretion in the future. DEP reserves the discretion to deviate from the interpretations in this document if circumstances warrant.

For additional information on solar energy, visit DEP's website at:

<http://www.dep.pa.gov/Citizens/Energy/Renewables/Pages/Solar.aspx>

FAQ #1: Is NPDES permit coverage required for the development of a solar panel farm?

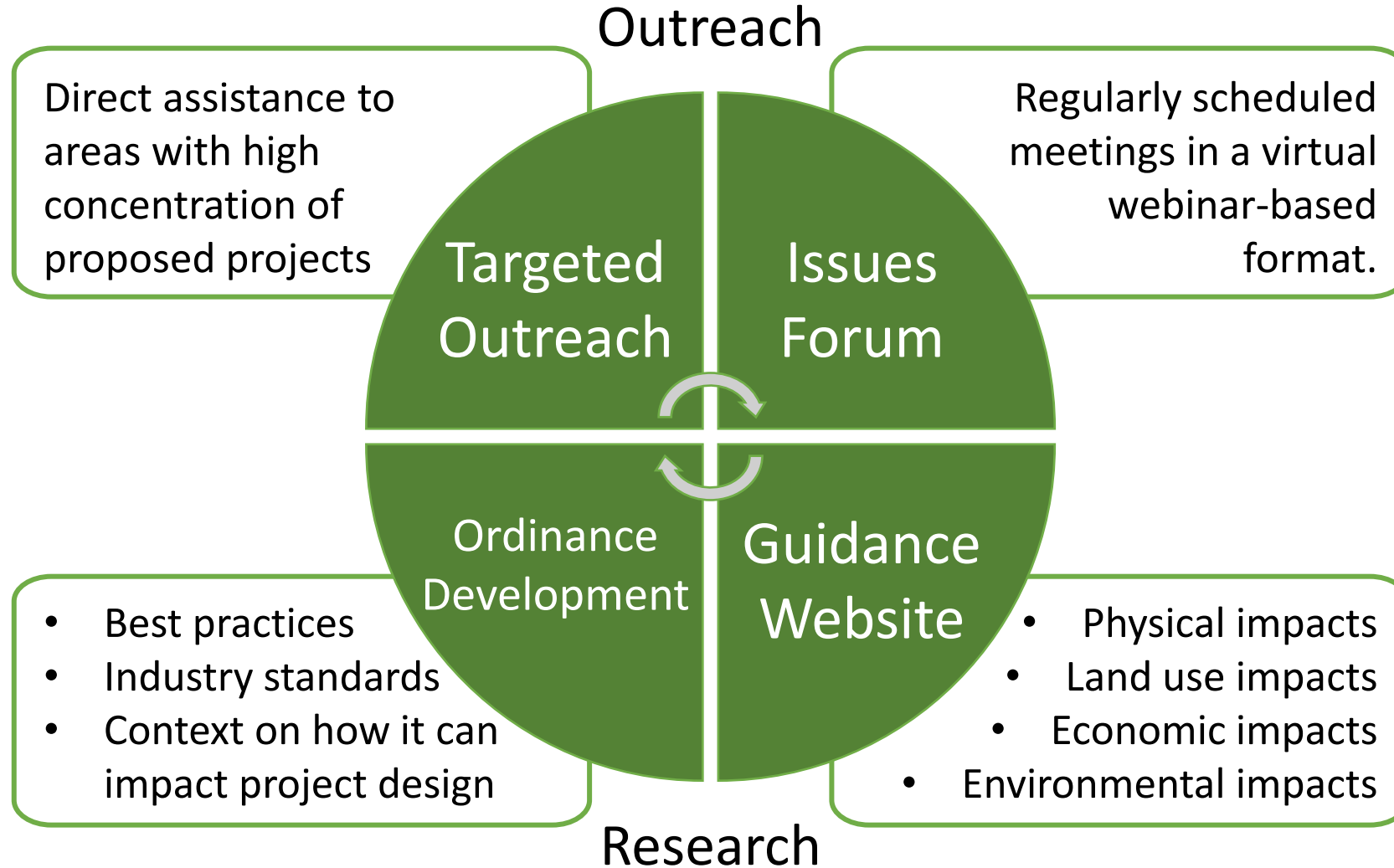
If the earth disturbance associated with the construction of a solar panel farm, over the life of the project, will be 1 acre or greater, NPDES permit coverage is required pursuant to [25 Pa. Code § 102.5\(a\)](#). Please refer to [FAQ #2](#) for more information.

Solar Panel Farms FAQ / Revised, April 30, 2021 / Page 1

Chapter 102 Permitting for Solar Panel Farms FAQ

- PA DEP Bureau of Clean Water issued guidance to clarify interpretations of NPDES, E&S, and PCSM for large scale solar development (*issued January 2019, revised April 2021*)
- Provides framework which DEP and delegated county conservation districts (CCDs) can exercise administrative discretion
- Identifies relevant BMPs
- Addresses topics such as vegetative cover, slopes, roadways and support structures, allowances for agrivoltaics
- Provides recommendations regarding panel size and placement, foundations, vertical clearances
- Provides criteria for when more in-depth analysis is required

New Guidance: Local Official Outreach





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Questions?

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