

Pennsylvania Update

MSSIA – Annual Mtg
February 21, 2023



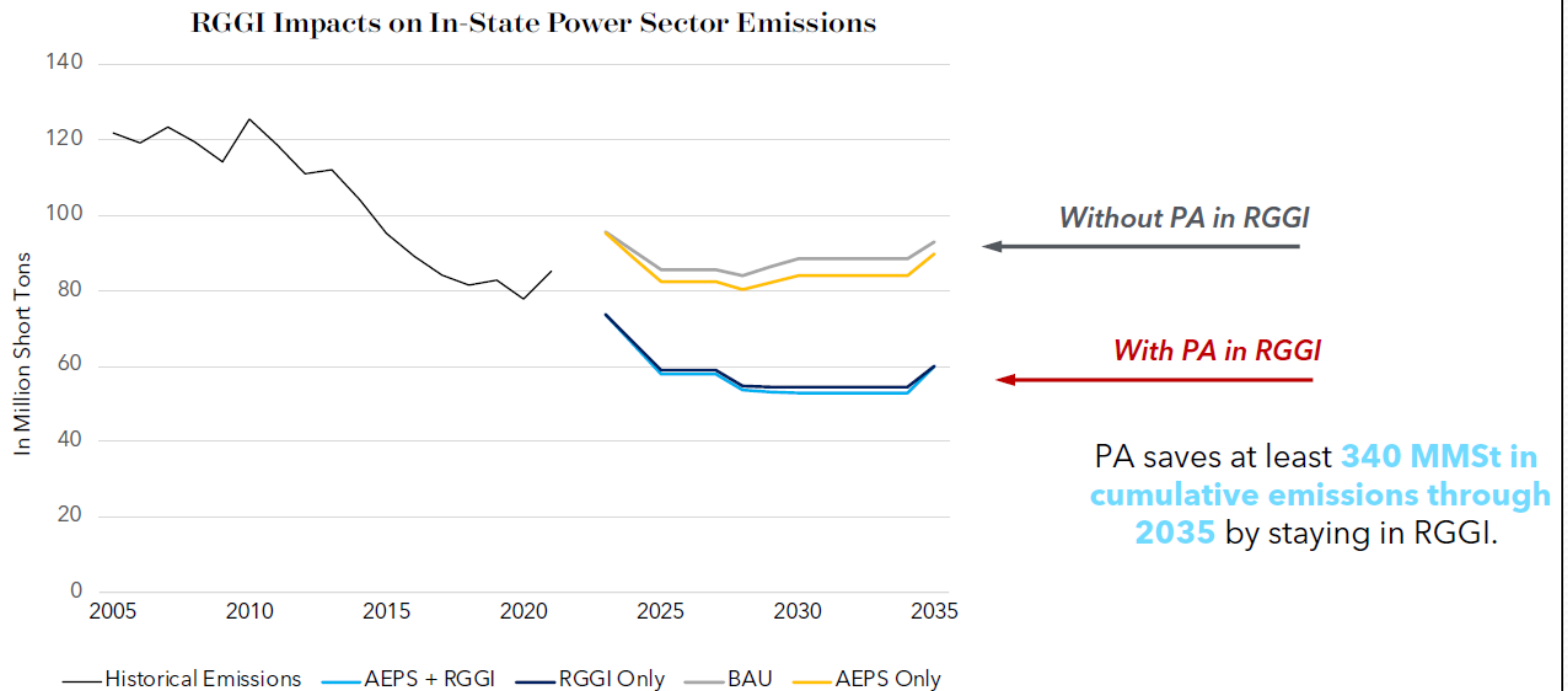
Ron Celentano , VP - Pennsylvania

Solar Update Highlights in PA – 2/21/2023

- Current in-state solar PV capacity in PA is **860 MW_{DC}**, from a total of 40,725 systems, as of 2/17/2023.
- In the first two weeks in September, 2022, there were 282 PV systems installed, totaling 50 MW, of which two of those systems were 20.3 MW and 24.6 MW, respectively.
- PJM Queue for PA – 22.1 GW (583 applications: Active, Engineering/Procurement, and Under Construction-including in partial service), of which 12 projects totaling 350 MW are under construction.
- Governor Shapiro took office on January 17, 2023 – Campaigned on achieving 30% Tier 1 renewable energy goals by 2030.
- House Democrats won a majority of seats (102-101) , followed up with crazy changes, special elections, confusion about the House Speaker, and committees have yet to be formed – but the House will get in order eventually!
- Co-sponsorship Senate Memo went out about introducing a community solar bill , very similar to last session's community solar bill (i.e., grid services & value stack).
- We (RW4PA) are preparing another expanding the AEPS bill, 30% Tier 1 renewable energy goals by 2030, including 14% in-state solar, which consists of 4% DG solar (including the current 0.5%), 2% community solar, and 8 % grid-scale solar. Working with Dem. Senators to put out a co-sponsorship Senate memo for this bill. Community solar mechanism is simpler in this draft bill (i.e., NO grid services & value stack).
- RGGI in PA Still On Hold – Because of ongoing legal challenges brought on by industry groups and Republican lawmakers, Pennsylvania was not be able to sell allowances during the recent RGGI auction. The auction could have raised tens of millions of dollars for the state, which could be put toward clean energy and pollution reduction programs. Concerns that the Shapiro Administration might compromise RGGI implementation with expanding the Alternative Energy Portfolio Standard (AEPS).

NRDC: Impacts of RGGI and an Expanded AEPS in PA Integrated Planning Modeling (IPM) Results

RGGI Drives Significant Carbon Emissions Reductions



February 2023

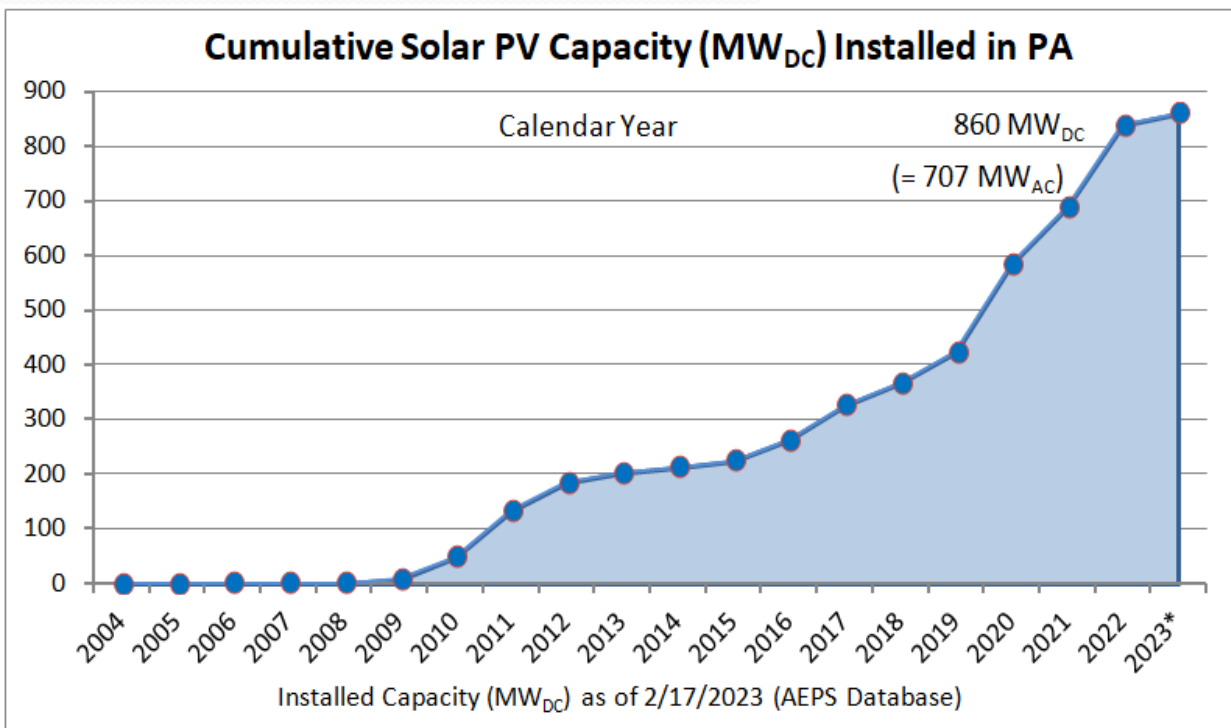
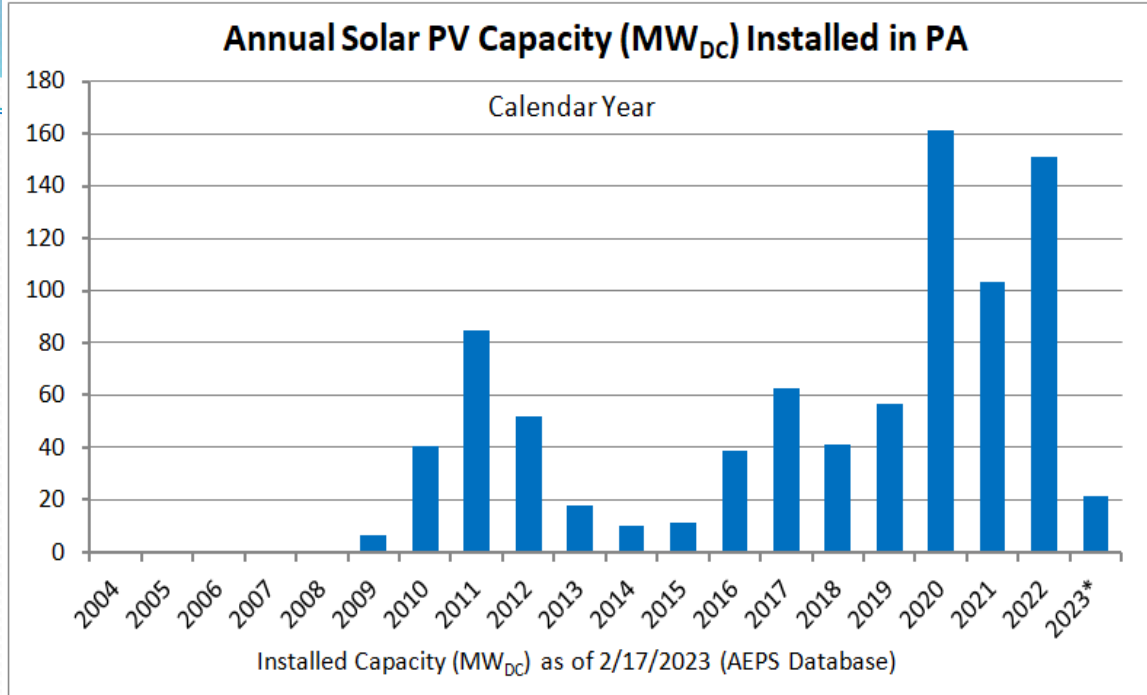
Impacts of RGGI and an Expanded AEPS in PA

Natural Resources Defense Council | 6

AEPS Scenario: PA expands its AEPS by raising the Tier 1 renewables goal to 30% by 2030, with 10% from in-state solar projects (as proposed by Senate Bill 300 from the 2021-22 legislative session)

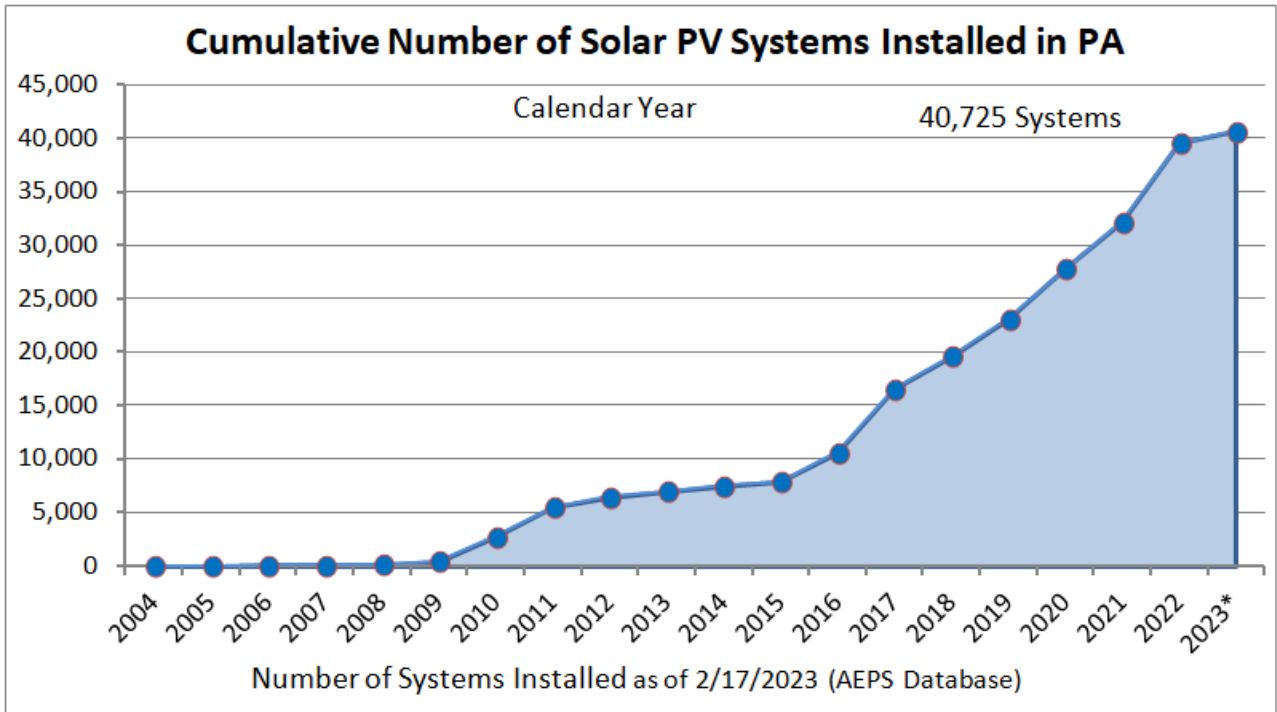
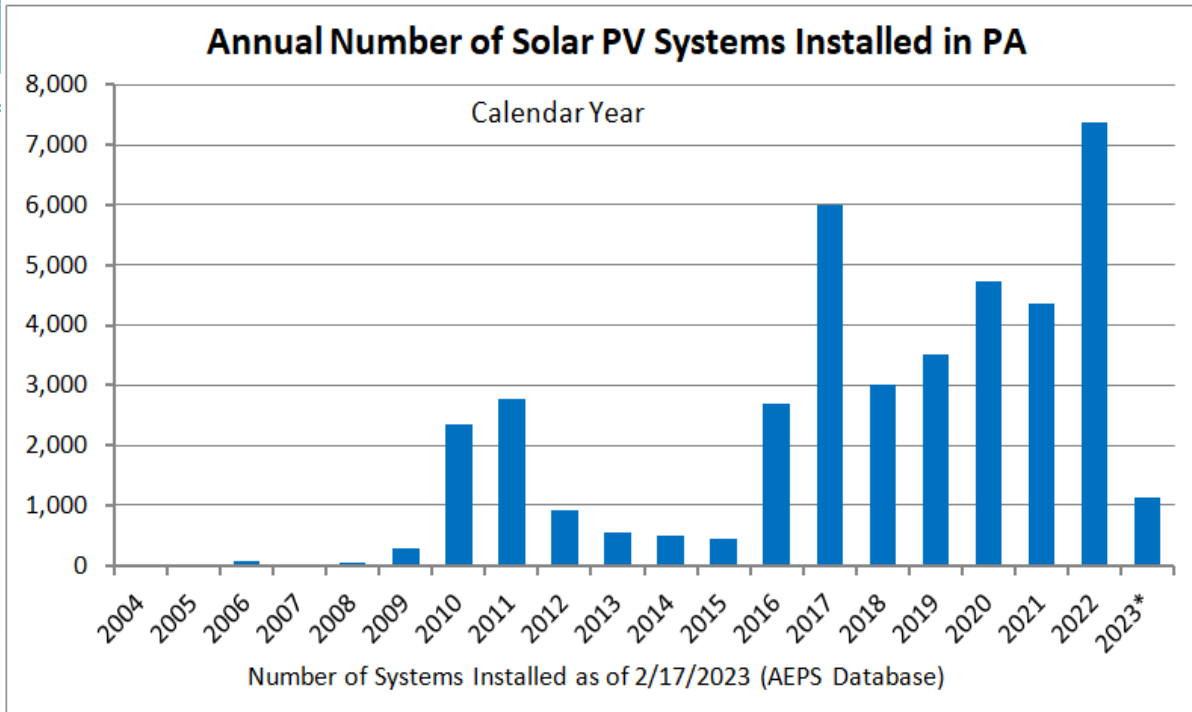
PV Capacity in PA Annual & Cumulative

As of 2/21/2023



SEIA reports 1,002 MW installed through Qrt 3-2022

Number of PV Systems in PA Annual & Cumulative As of 2/21/2023



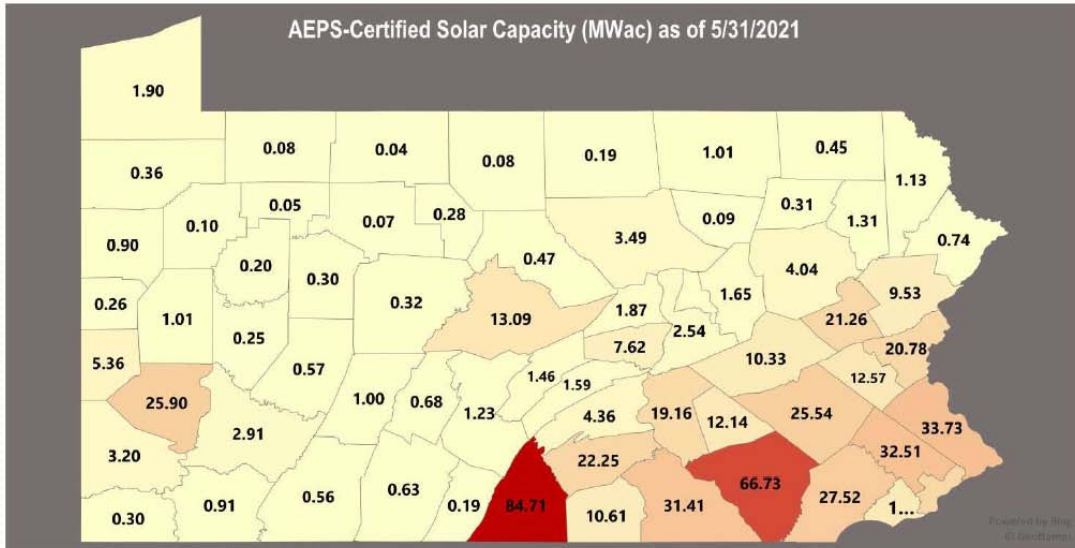
SEIA reports 53,000 systems installed through Qrt 3-2022

Breakdown Of PV Installations in PA

Cumulative PV Installed in PA		
Capacity (DC)	# of Systems	Total MW
≤ 15 kW	34,471	280
> 15 kW to ≤ 250 kW	5,987	184
> 250 kW to ≤ 1 MW	192	95
> 1 MW to ≤ 3 MW	50	78
> 3 MW to ≤ 5 MW	16	60
> 5 MW to ≤ 10 MW	1	6
> 10 MW	8	159
Total	40,725	860

* as of 2/17/2023 as per PA AEPS (PUC)

AEPS Report 2021 – Observations on Solar Resources

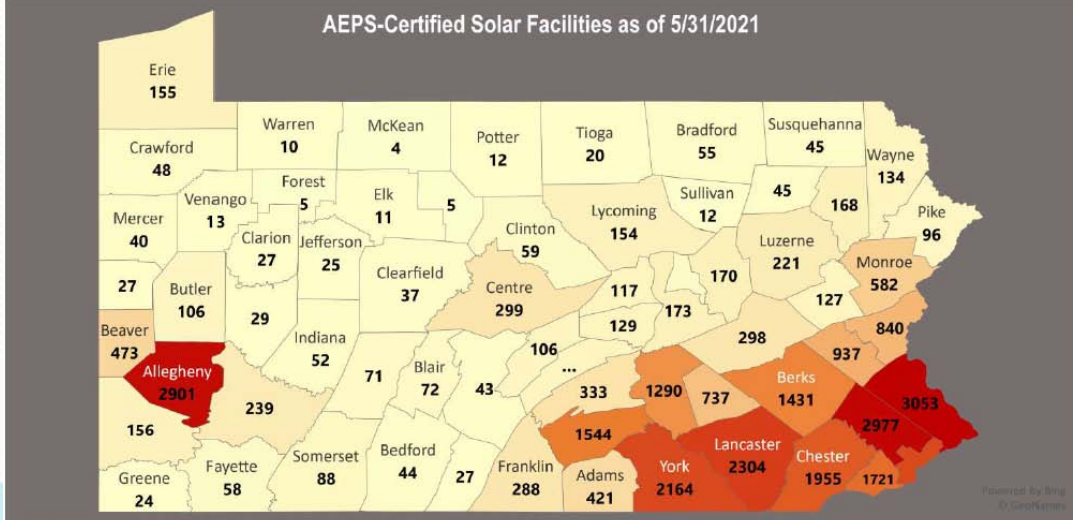


Note: As of 5/31/2021, the AEPS certified solar generation capacity was 11.90 MWac in Delaware County and 21.27 MWac in Philadelphia County.

0.5% Solar PV Requirement = 518.4 MW_{AC} Solar PV Capacity

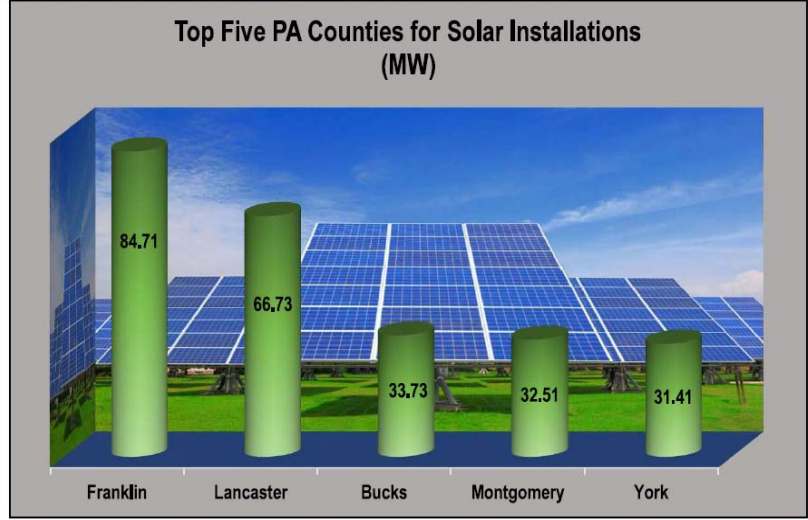
But, 534.4 MW_{AC} had been installed in PA by 5/31/2021

Currently, 707 MW_{AC} is installed (as of 2/17/2023), or the solar share = 0.68%



Note: As of 5/31/2021, Philadelphia County has 2,146 AEPS certified solar generation facilities.

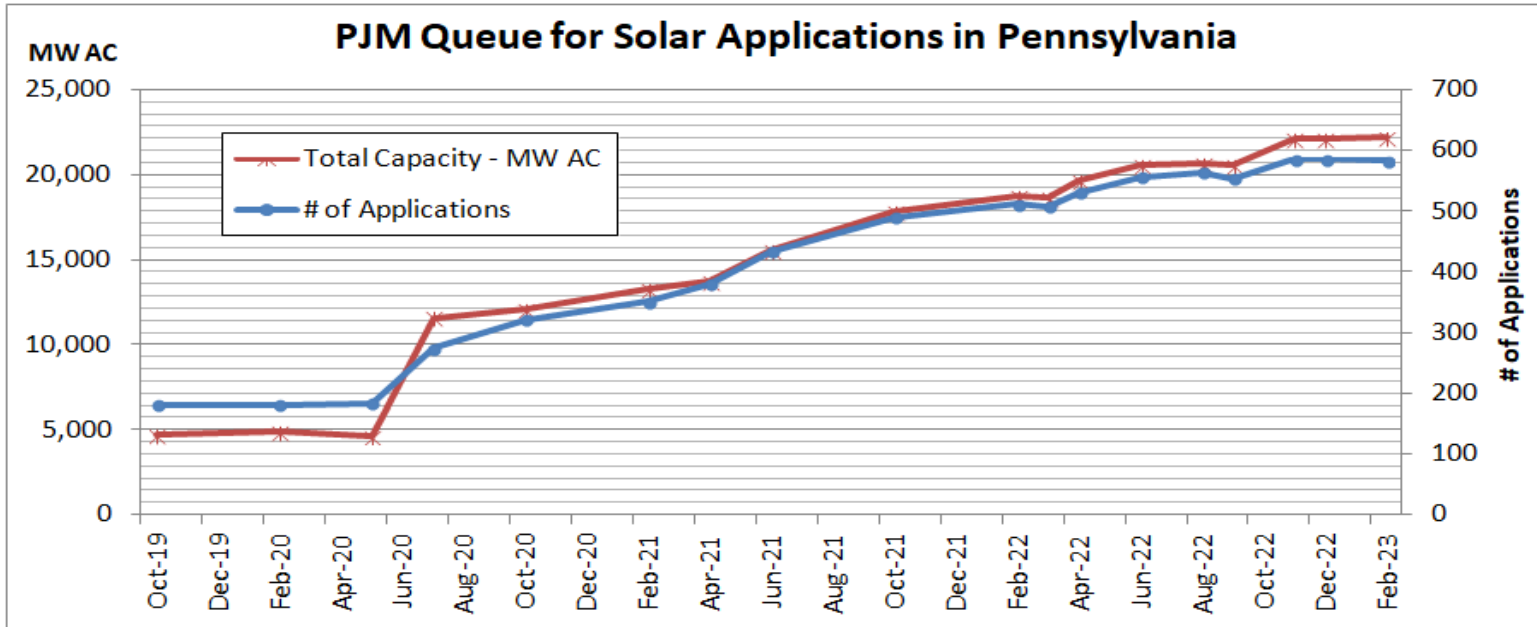
Chart 12: Top Five Pennsylvania Counties for Installed Solar Capacity



PJM Queue for PA Solar Applications

PJM Queue for PA		As of 2/21/2022			
Status	# of Apps	Max Facility Output (MFO)			Total Cap IC Queue Position
		Total Cap AC MW	Capacity Range		
			Min	Max	
Active	484	19,770	1.0	401.6	9,849
Engineering/Procurement Under Construction	87	2,045	0.2	150.0	1,053
Part in Srvc - Under Const	12	350	11.7	100.0	203
	0	-	-	-	-
Sub-Total	583	22,165			11,105
In Service	16	255	3.3	20.0	77
Grand Total*	599	22,420			11,182

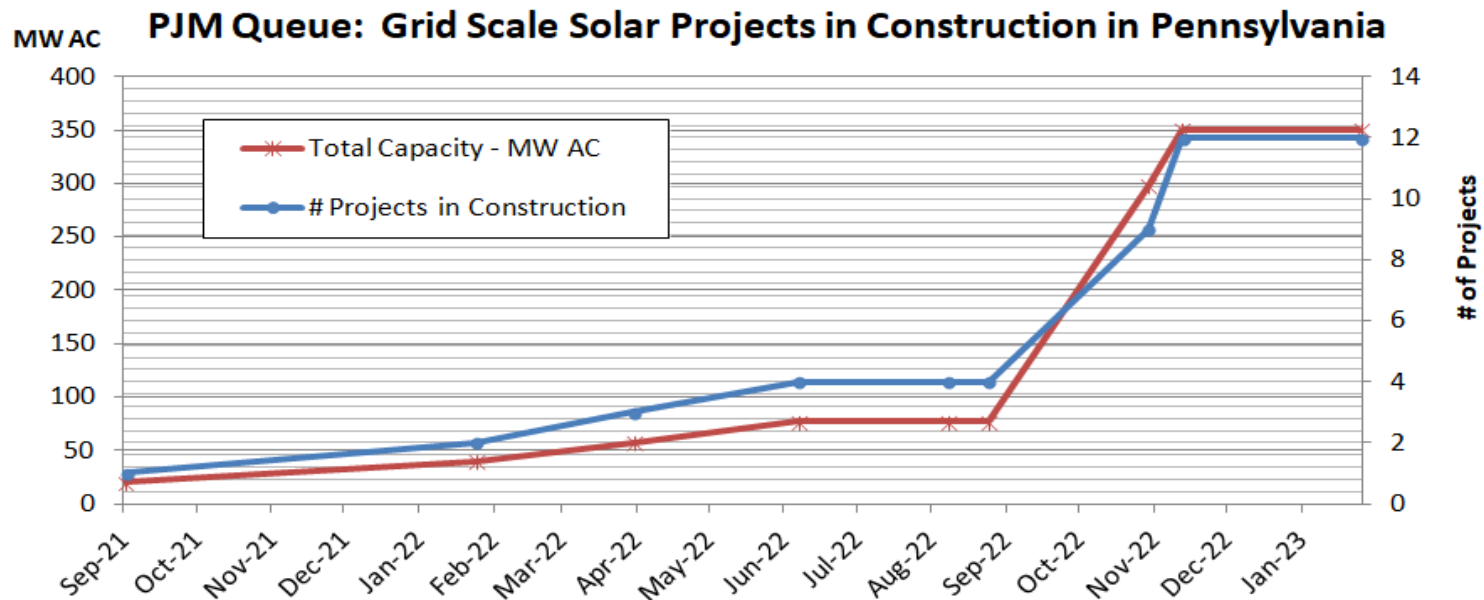
* Total Applications catagorized as "Solar & Storage" = 99



PJM Queue for PA Solar Facilities - Under Construction

Under Construction - Solar PV Facilities in PA- 2/21/2023

Name	Commercial Name	State	County	Transmission Owner	MFO Capacity MW
Clinton 23kV	Gaicho Solar	PA	Washington	DL	11.7
Clinton 23 kV II	Gaicho Solar	PA	Washington	DL	20.0
McConnellsburg 138 kV	Great Cover Solar LLC	PA	Fulton	APS	70.0
Hokes-Grantley 69 kV	Cottontail Solar 2	PA	York	ME	20.0
Hokes-Jackson 69 kV	Cottontail Solar 1	PA	York	ME	20.0
Hokes-Jackson 69 kV II	Cottontail Solar 8	PA	York	ME	20.0
Mifflintown Bus-Mifflintown Ta	Cottontail Solar 5	PA	Juniata	PPL	20.0
Midland 23 kV I	BE-PINE 1 Cain Road	PA	Beaver	DL	17.1
Midland 23 kV II	BE-PINE 2 Dam Road	PA	Beaver	DL	17.1
Stahlstown-Ligonier 25 kV	Stahlstown-Ligonier 25 kV	PA	Westmoreland	APS	13.8
Dubois-Curwensville 34.5 kV	CL-Viaduct	PA	Clearfield	PENELEC	20.0
Bearrock-Johnstown 230 kV	CPV Maple Hill Solar	PA	Cambria	PENELEC	100.0
Total					349.7



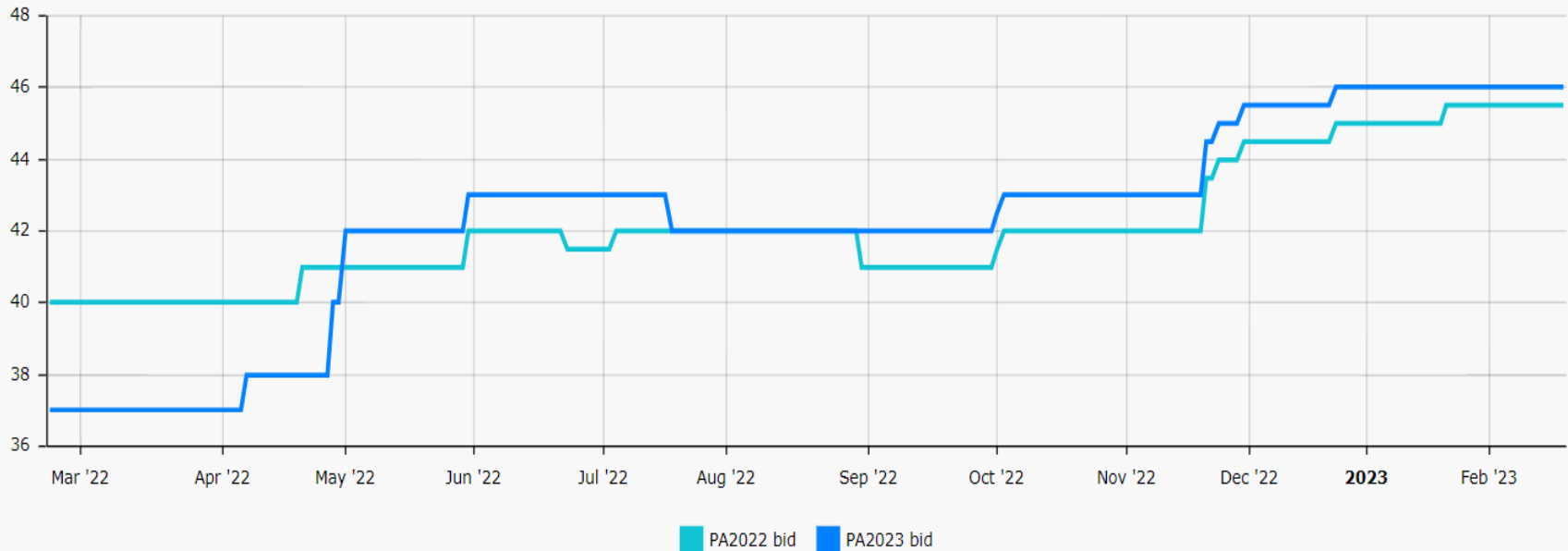
Current PA SREC Prices

Current PA SACP = \$82.90/SREC

PA

Latest Bid Price: \$46.00

Bid Prices for PA - Last Twelve Months (LTM)

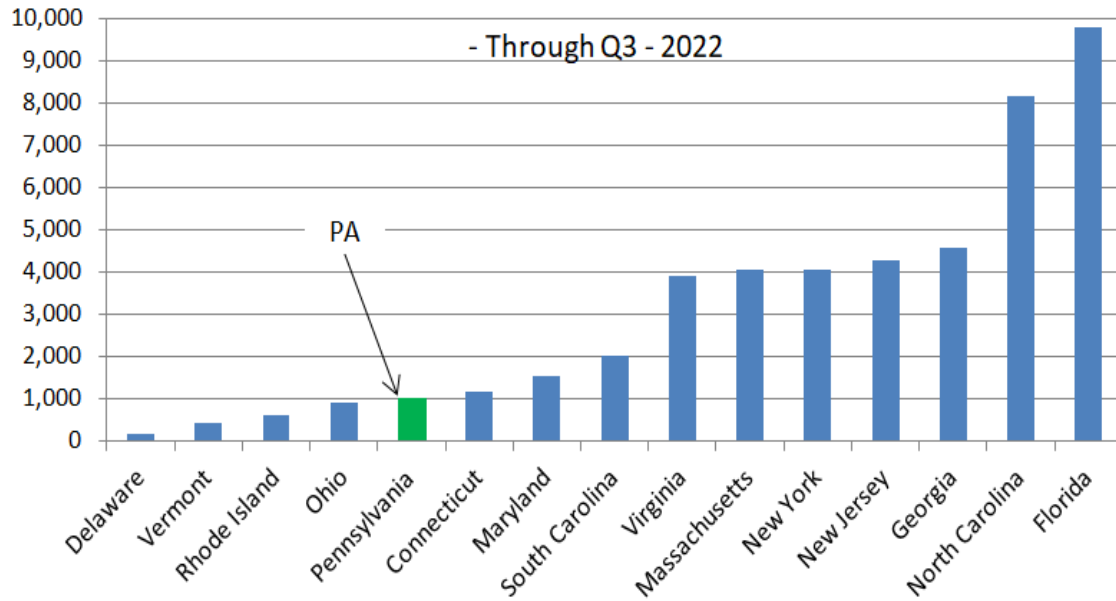


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Solar in Other East Coast States Compared to PA

Solar in Pennsylvania Ranks 24th in the Nation

Total Solar Capacity (MW_{DC}) Installed by State on the East Coast



Nat. Solar Energy Industries Assoc. - www.seia.org/states-map

State solar PV installation rankings, Q1-Q3 2022

State	Rank		
	2020	2021	Q1-Q3 2022
Pennsylvania	17	28	24

SEIA/Wood Mackenzie: US Solar Market Insight - Q4 2022

Total Solar PV Installed per Capita (MW_{DC}/Million)

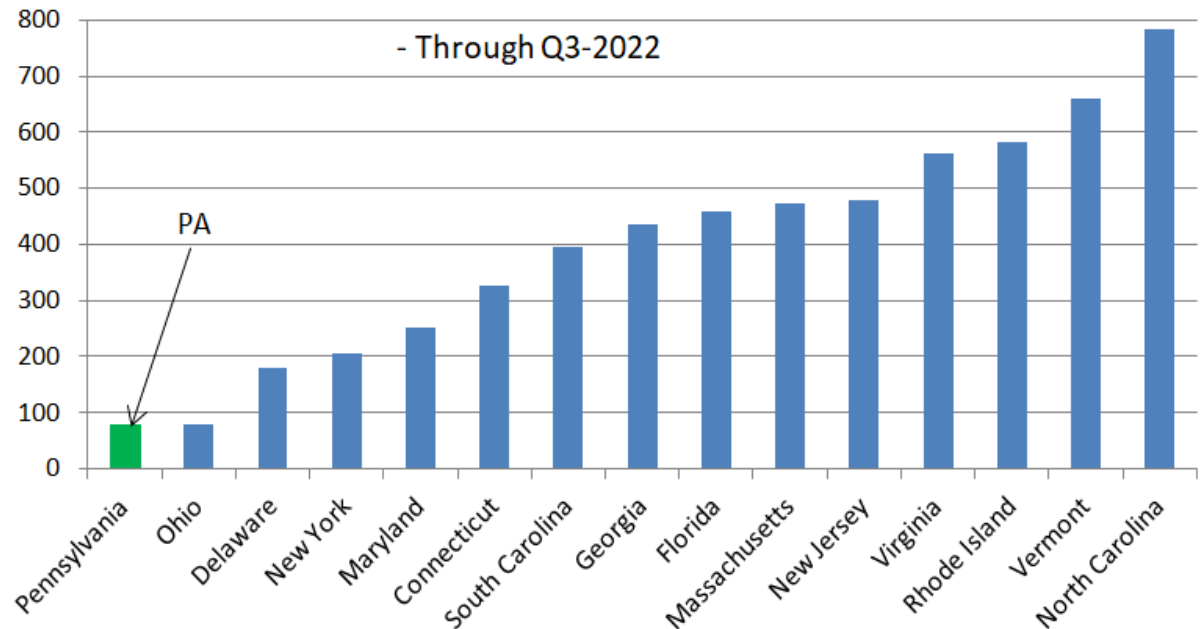
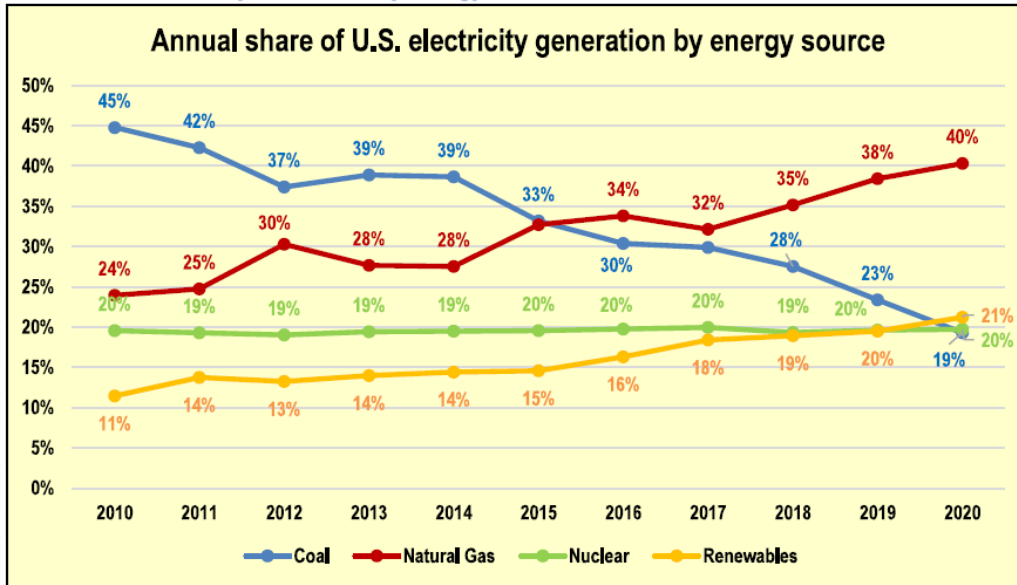


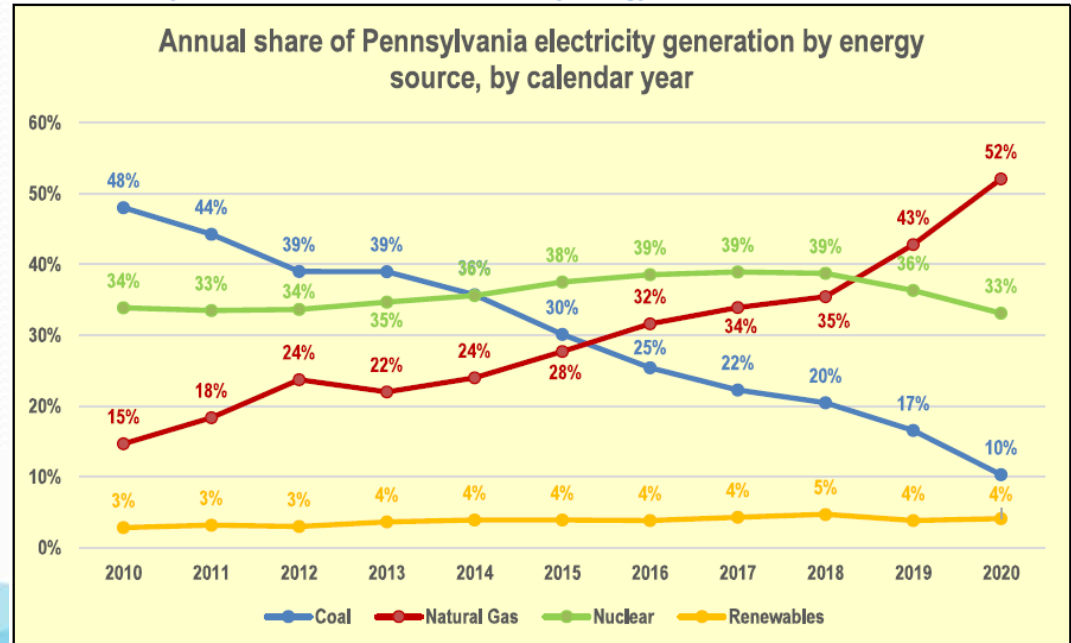
Chart 6: U.S. Electricity Generation by Energy Source, 2020 Calendar Year



Source: Energy Information Administration Electricity Data Browser

AEPS Report 2021 – Observations on Solar Resources

Chart 7: Pennsylvania Annual Electric Generation by Energy Source



Source: Energy Information Administration Electricity Data Browser