

PJM Introduction and Ensuring a Reliable Energy Transition

Maryland Senate Education, Energy & Environment Committee

Asim Z. Haque

SVP, State Policy and Member Services

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PJM as Part of the Eastern Interconnection



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The History of PJM





How Is PJM Different from Other Utility Companies?

PJM Does:

- Direct operation of the transmission system
- Remain profit-neutral
- Maintain independence from PJM members
- Coordinate maintenance of grid facilities

PJM Does NOT:

- Own any transmission or generation assets
- Function as a publicly traded company with shareholders and concerns around "earnings"
- Perform maintenance on generators or transmission systems (e.g., repair power lines)
- Serve or direct any end-use customers (retail)

PJM Open Access Transmission Tariff (OATT)

Reliability Assurance Agreement

Transmission Owner (TO) Agreement PJM Operating Agreement



PJM – Primary Focus





PJM's Role as a Regional Transmission Organization

PLANNING



Planning for the future like...



OPERATIONS



Matches supply with demand like...



MARKETS



Energy Market Pricing like...













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Reliability Papers and Studies





Decarbonizing Grid – Addendum Introduction This document contains supporting information for the PAM while paper. En Contracted and a Decarbonizing Grid (PCP). Issued on stakeholder quals decreded below were used in the scale of based on basel who have been been been been been been been be	- 1 -
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Scenario Development	
State and Corporate Policy Analysis in onthe Internet sevental development. PM analysed goals and policies is and poleratial generation references. PM neads to time frames to inform to referenced methodine-temp policy goals. The Amale Accelerated on The posts and policies of tattes and stiffeed described below were updated begins in 2027. A time policies and states controls to evelow, PM will con- trols and policies of tattes and stiffeed described below were updated begins in 2027. A time policies and states controls to evelow, PM will con-	
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State Renewable Portfolio Standards (1975) require suppliers to use wind, s serve increasing parcentages of bald demand. The following RPS policies s phase of enangles:	
NJ 0 0C 1 10% by 2030 10% by 2030 10% by 2050 1	
MD PA PA NC P	
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Forecasted Retirements (2022–2030)

Total Fo	oreca	sted Reti	rement C	Capacit	y (GW)			
2022		Annound	cea				E Contraction of the second se	
Policy								
Econom	ic							
						I		
)	5	1	0	15	2	. 0	25	
This 40 GW represents								
21% of PJM's current								
192 GW of installed generation								



*Other includes diesel, etc.

30



PJM Forecasted New Entry (2022–2030)





Interconnection Queue Projects By Year





Interconnection Process Reform Timeline





A pj	m°	Pro	jects To Clear PJM Interconnection Process in 2024 and 2025
By State	Number of Projects	Total Nameplate Capacity (in MW)	Solar + Storage, 14.1%
DE	5	1,184	
IL	82	13,798	Storage, 12.7%
IN	69	13,475	
KY	39	4,125	By Technology/ — Wind, 6.1%*
MD	6	1,288	Fuel Type
MI	8	887	Total Nameplate O - Merchant Transmission , 5.7%
NC	25	1,775	Capacity Other 2 4%**
NJ	25	1,528	72,090 MW
OH	72	8,613	Offshore Wind , 8.2%
PA	108	5,055	
VA	162	19,012	Solar , 50.8%
WV	15	1,350	
Total	616	72,090	*Includes one combined Wind & Solar facility of 199 MW **Other: Natural Gas (1.647 MW, 2.3%) and Hvdro (51 MW, 0.1 %)



U.S. Interconnection Queues – S&P Global

Average time from queue date to proposed online date (months)



As of June 28, 2023. Active queues only. Only includes interconnection queues for which sufficient details were available. Source: Public company reports (see Excel attachment for details). © 2023 S&P Global.



Positive values represent exports and negative values represent imports.



What Problem(s) Are We Solving For?

RELIABILITY



The PJM fleet has adequate resources and enough essential reliability services, but we need our generators to perform when called upon. **Energy Transition in PJM:** Resource Retirements, Replacements & Risks Feb. 24, 2023

For Public Use

Generation retirements may outpace new entry with a simultaneous likelihood of load increasing, thereby creating resource adequacy concerns. Energy Transition in PJM: Frameworks for Analysis Dec. 15, 2021

For Public Use

We will continue to need some amount of thermal generation to provide certain essential reliability services until a replacement technology is deployable at scale.



The Immediate Concern



Support

Resource Performance

The Near-Term The Upcoming Concern Concern **Energy Transition in PJM: Energy Transition in PJM:** Resource Retirements, Replacements & Risks **Frameworks for Analysis** Feb. 24, 2023 Dec. 15, 2021 For Public Use For Public Use **Ensure Maintain & Attract** Resource **Essential Reliability** Adequacy **Services**

Our Reliability Concerns



Initial Actions To Support Reliability

CIFP/RASTF		Res	erve	Load Following/		Short-Term	
Priorities		Cert	ainty	Dispatchability		Forecasting	
	Proactive Planning:		Proactive Planning:		Proac	Proactive Planning:	
	LTRTP		Resilience		Int	Interregional	
LDA		RI	/IR	Policy	Reliability	Continued Queue	
Modeling In		Improv	ements	Safety	Measures	Improvements	
	Energy Assurance		Gas/E Coordi	lectric ination	Winter	Storm Elliott Report	

"pjm"





Ensuring a Reliable Energy Transition





Maryland Policy Takeaways

- Avoid policies meant to push generation resources off of the system during these years where we are waiting for significant renewable construction.
- Analyze your state/local challenges in the deployment of new generation resources and electricity infrastructure, and *enact* policy to facilitate greater/quicker construction.
- PJM is a resource to assist in your policy discussions.
- Government intervention in Brandon Shores/Wagner issue is required to allow for units to run until 2028 to avoid the risk of customer shut-offs.