

Ensuring a Reliable Energy Transition

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PJM – Primary Focus



pjm

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...





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



Value Proposition



— All numbers are estimates. —



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Reliability Papers and Studies





Energy Trai	ing Grid – Addend	nerging Characterist dum	cs of a		
Introduction		111	N.		
This document contai	is supporting information for the F	PJM white paper, En			
Characteristics of a D described below were	carbonizing Grid (PDF), based o	n stakeholder quest			🛋 Ain
be a living study, in w	ich assumptions are continually r	refined based on inte			「「「「「」」「「」」
Puture phases of the t	tudy will include updates to core	assumptions and ad			
Scenario Dev	elopment				
State and Corpo	rate Policy Analysis			1	
In order to inform scen	ario development, PJM analyzed	goals and policies t			
and potential generati referenced medium-te	on reprenents. PJM used two tim rm policy goals through 2035, and	e trames to inform the d the Accelerated ca			
The goals and policies began in 2021. As the	of states and utilities described to se policies and goals continue to	celow were updated evolve. PJM will car			
inform the assumption	s in future phases of the study.				
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Forecasted Retirements (2022–2030)

Total For 2022	ecas	ted Retirement Announced	t Capacity	(GW)	
Policy					
Economic	C				
0	5	10	15	20	25
		This 40 21% of	GW repr PJM's c	resents current	

192 GW of installed generation



*Other includes diesel, etc.

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PJM Forecasted New Entry (2022-2030)





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

www.pjm.com | Public



Initial Actions To Support Reliability

CIFP/RASTF	FP/RASTFResPrioritiesCert		Load Following/		Short-Term	
Priorities			Dispatchability		Forecasting	
Proactive Plan	ning:	Proactive Planning:		Proact	Proactive Planning:	
LTRTP		Resilience		Inte	Interregional	
LDA		RMR P		Reliability	Continued Queue	
Modeling Im		provements S		Measures	Improvements	
Energy Assurance		Gas/E Coordi	lectric nation	Pla	*Elliott ceholder*	

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Ensuring a Reliable Energy Transition

