



Welcome to the  
2022 OPSI Annual Meeting!



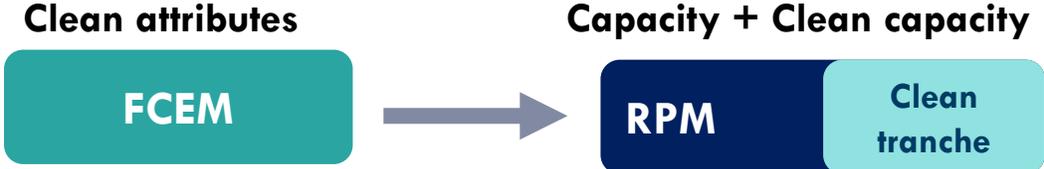
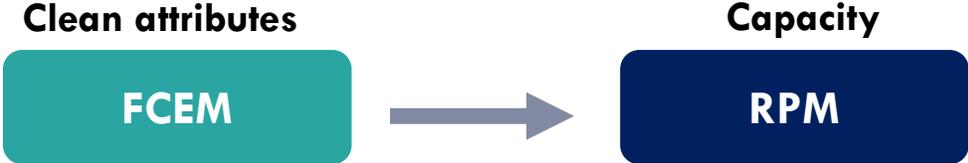
# Clean energy market design options

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Presented at OPSI 2022 Annual Meeting

# Clean procurement options

- Forward Clean Energy Market (FCEM)
- Integrated Clean Capacity Market (ICCM)
- Clean capacity constraint in RPM
- Hybrid of FCEM + clean capacity constraint



# Pros and cons of clean procurement options

## FCEM

### Pro:

As its own separate market, offers flexibility in implementation & governance

### Con:

May lose some of the benefit of a co-optimized market

## ICCM

### Pro:

Maximizes capacity value of clean procurements

### Con:

Implementation poses legal and logistical hurdles (further coordination with RASTF, etc.)

## Clean capacity credit

### Pro:

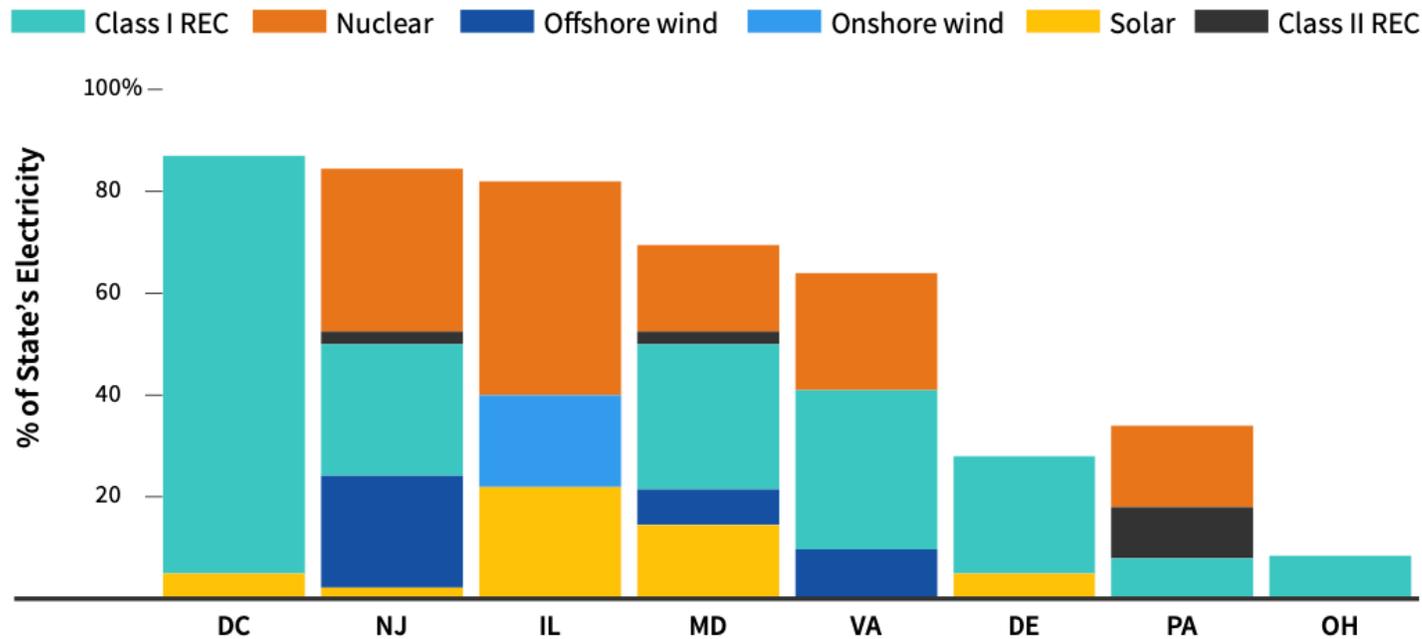
Incentivizes all non-emitting resources, including renewables, storage, and EE/DR

### Con:

Capacity on its own does not guarantee clean energy generation or emissions reductions

# There is significant overlap between state clean energy products

**PJM states' renewable and carbon-free targets for 2030, based on current policy**



Source: "Comparison of Renewable Portfolio Standards (RPS) Programs in PJM States," PJM, January 3, 2022, <https://www.pjm-eis.com/-/media/pjm-eis/documents/rps-comparison.ashx>

- Aggregate state demand for clean energy is significant, and should be brought into PJM markets
- While state policies vary and prioritize certain resource types, Class I renewables and nuclear account for the bulk of carbon-free resource demand



# **2022 PROGRESS REPORT ON NEW JERSEY'S RESOURCE ADEQUACY ALTERNATIVES**

Update regarding Staff's Investigation of Resource Adequacy Alternatives, Docket #EO20030203

Board of Public Utilities Staff  
OPSI – October 17, 2022

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## Disclaimer

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**All viewers are responsible for ensuring that they rely only on current legal authority regarding the matters covered in the presentation.**



# Background on the *Investigations* Proceeding

- December 2019: FERC directs expanded mitigation of clean energy resources (“Expanded Minimum Offer Price Rule” or “Expanded MOPR”).
- March 2020: Board initiates proceeding to determine appropriate response to unprecedented interference with state clean energy goals.
- July 2021: Staff Report, with the Brattle Group, on Alternative Resource Adequacy Structures for New Jersey accepted by Board.
  - › The Board directed Staff to return in mid-2022 with an updated Report.
  - › On September 22, 2022, Staff issued the 2022 Progress Report.

## The Board’s charge to Staff was to examine:

*“whether New Jersey can achieve its long-term clean energy and environmental objectives under the current resource adequacy paradigm and, if not, recommend how best to meet New Jersey’s resource adequacy needs in a manner consistent with the State’s clean energy and environmental objectives, while considering costs to utility customers.”*

**- *In the Matter of: Resource Adequacy Alternatives, March 27, 2020***

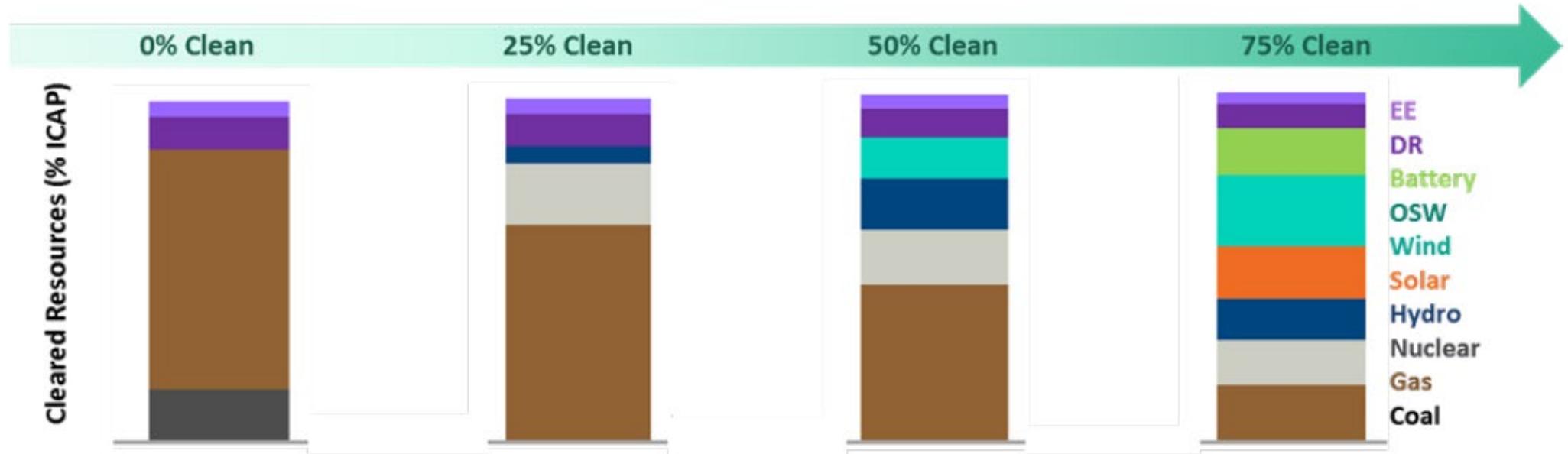


# Key Findings from 2021 Staff Report

- Incorporating New Jersey's clean energy goals in the regional market is the most efficient way to provide New Jersey consumers with reliable, affordable, *and* carbon-free electricity;
- Existing PJM markets have fulfilled their design objectives to maintain reliability at competitive prices, but have lagged behind in addressing state clean energy policies;
- Developments towards repeal of the Minimum Offer Price Rule (MOPR) make any decision to leave the capacity market premature at this time; and
- **If a PJM regional solution is delayed or proves infeasible**, New Jersey should continue to pursue the option to implement a single-state or multi-state ICCM under the Fixed Resource Requirement (FRR) alternative



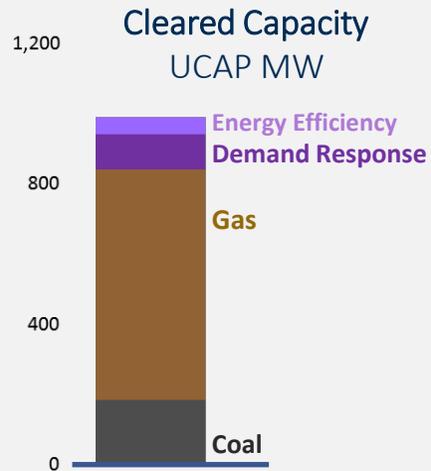
# How Regional Markets Can Drive Clean Energy Adoption



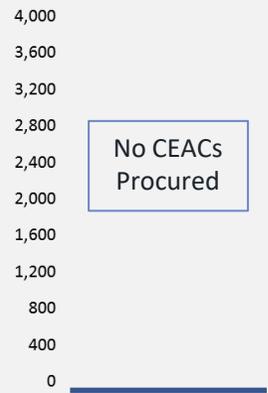


# How a Regional Market Can Drive Clean Energy Adoption (cont'd)

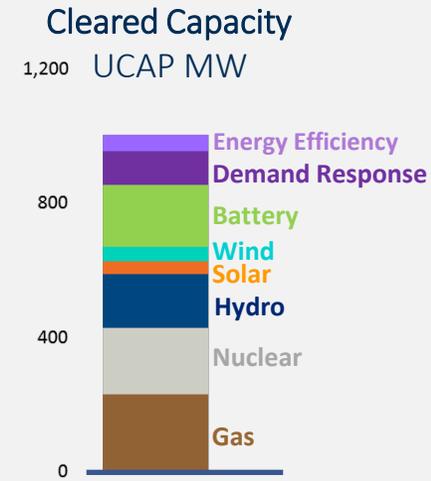
## Traditional Capacity Market



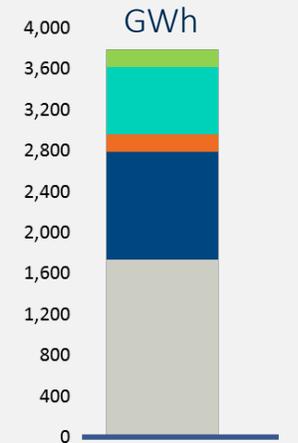
Cleared CEACs  
GWh



## Integrated Clean Capacity Market



Cleared CEACs  
GWh





# Regional Discussions

## OPSI: Competitive Policy Achievement Working Group

- Chartered in September 2021 “to develop a new, voluntary, market procurement process that facilitates state policy goals”
- Two consultants: RMI & Brattle
- Meet weekly and have been in discussion with PJM throughout its efforts
- Reached consensus on core market principles
- Reached consensus on certain components of any future market
- Potential standstill on remaining market design

## PJM: Clean Attribute Procurement Senior Task Force

- Chartered on April 27, 2022 to consider various clean attribute procurement proposals
- Only 4 meetings thus far
- Should have modeling of the options by beginning of 2023
- Should have a PJM solution developed by June 2023
  - › “no solution” is a solution
  - › Any solution is then subject to PJM voting and FERC approval



# Main Recommendations from 2022 Progress Report

- An Integrated Clean Capacity Market Would Result in Significant Cost Savings and Accelerate the Clean Energy Transition & New Jersey Should Continue to Advocate for its Adoption at the Regional Level;
- New Jersey Should Favor Procurement of Clean Capacity Over Capacity From Emitting Resources to Meet its Reliability Needs; and
- While Regional Efforts Continue Under Uncertainty, New Jersey Should Establish a Regional Voluntary Clean Energy Market.



# Reliability Remains Paramount Concern

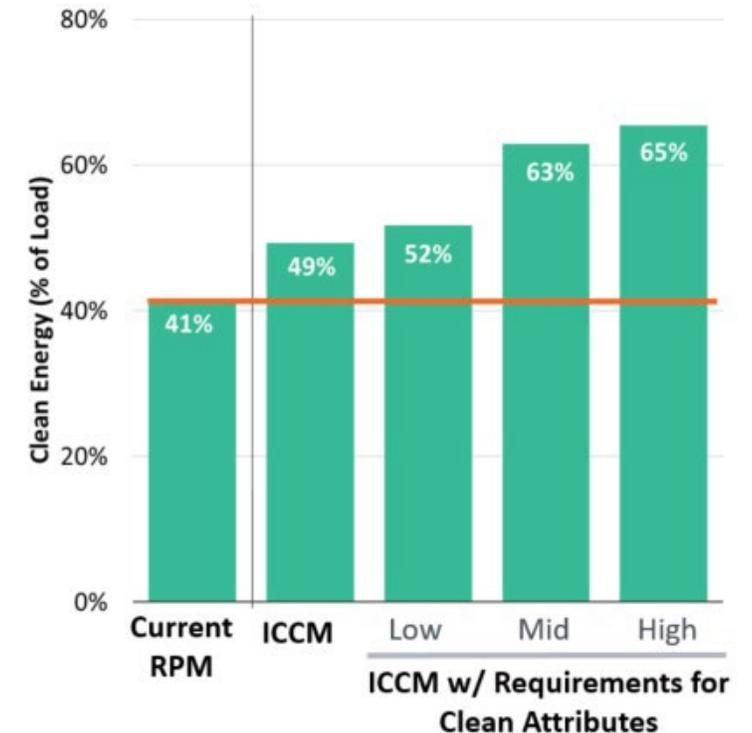
- Any regional clean energy (or capacity) market structure must continue to enforce existing PJM reliability metrics, as established by PJM and FERC.
  - › This includes appropriate reserve margins, enforcement of localized transmission and generation constraints, and other operational parameters that have historically led PJM to have a high degree of bulk system reliability.
  - › Staff notes that each of Staff's recommendations included in this report will allow PJM to secure the same high level of bulk system reliability that New Jersey consumers receive today.



# Clean Energy Market Benefits

- The evidence developed by Staff suggests that a regional market for clean energy attributes would:
  - › Reduce GHG emissions across the PJM footprint, beyond what could be achieved by New Jersey alone;
  - › Create a transparent, forward price for clean energy attributes that does not currently exist in today's energy markets;
  - › Create financeable offtake arrangements that drive low-cost renewables adoption; and
  - › Create substantial net benefits for New Jersey consumers.

**Energy Mix**  
Regional marketplace can substantially accelerate clean energy investment



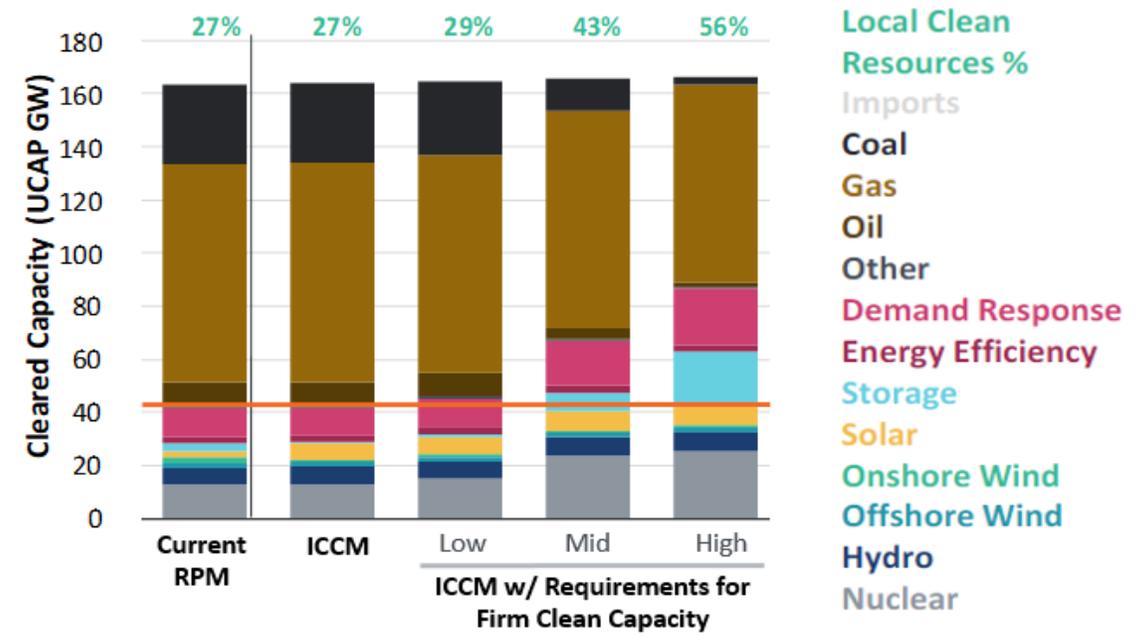


# Clean Capacity Credit Product

- A Clean Capacity Credit product will ensure reliability through the clean energy transition:
  - › Provides an additional revenue stream to resources with locational reliability value that are of specific interest to NJ.
- Open to other interested states and any voluntary clean energy buyers.
- Together with the FCEM, closely approximates the economic efficiencies implementing a PJM ICCM would provide.

## Capacity Mix

Clean capacity requirements would shift away from fossil for reliability services

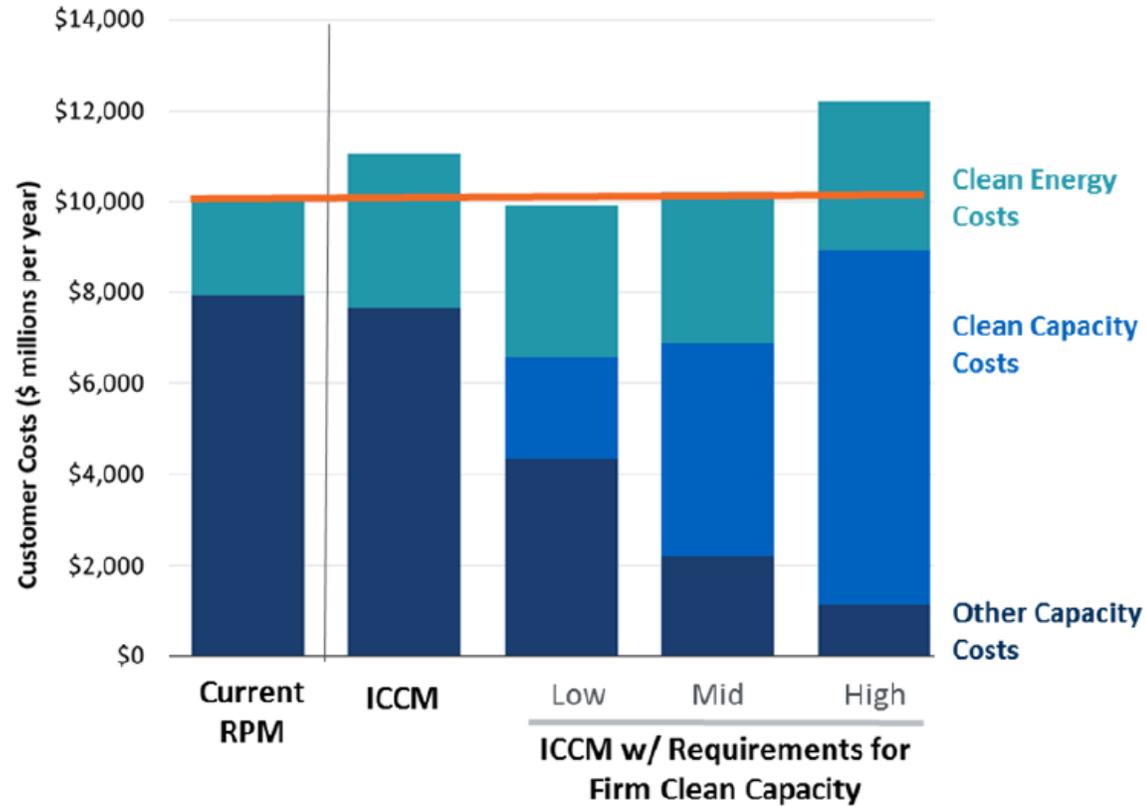


Implementable either through the PJM market or by NJ and/or interested states.



# New Jersey Should Establish Voluntary Regional Clean Energy Market

- In parallel with regional efforts, Staff recommends that New Jersey create a forward clean energy market.
- Awards backed by long-term price lock to minimize finance risk & lower costs.
- Provides forward price signaling to foster investment in clean energy resources
- Receives nearly all, but not 100%, of the economic benefits realized under an ICCM.
  - › Approx. 95% when paired with capacity constraint.





# State-Led FCEM Implementation vs. PJM Integration

## State-Led FCEM

- Sponsored by NJ and implemented outside of PJM's tariff.
- Open to other interested states and any voluntary clean energy buyers.
- Three-year forward auction, comparable to RPM.
- Establish a Clean Energy Market Purchase Obligation for NJ Load Serving Entities
  - › Similar to RPS implementation
- Aggregate regional demand of clean energy attributes
  - › Clean Energy Attributes in MWh (REC) and MW (CCC)

## PJM FCEM

- Slightly less economic efficiencies (<5%) when the capacity product and clean energy attribute product are separated into different markets.
- Economic benefit will depend on participation from those outside of NJ (not guaranteed)
- Governance/Jurisdiction:
  - › State agreement for a RGGI-like regime
  - › Within the existing PJM system under a state governance framework



# Governance Considerations

- Staff recommends that the Board examine a governance model that:
  - › Provides state regulators a clear role in overseeing any market comparable to the rights exercised by the existing PJM Board of Directors, including appropriate filing rights at the Federal Energy Regulatory Commission;
  - › Provides participants in the clean energy market, including buyers, sellers, consumer advocates and state regulators with a dominant share of stakeholder votes;
  - › Ensures that states retain primary jurisdiction over their clean energy policies;
  - › Relies, as much as possible, on the existing PJM system for tracking environmental attributes, known as the PJM-EIS Generator Attribute Tracking System (“GATS”); and
  - › Includes a fully qualified and equipped market administrator, potentially a neutral, third party, to conduct the design work and run the auction.



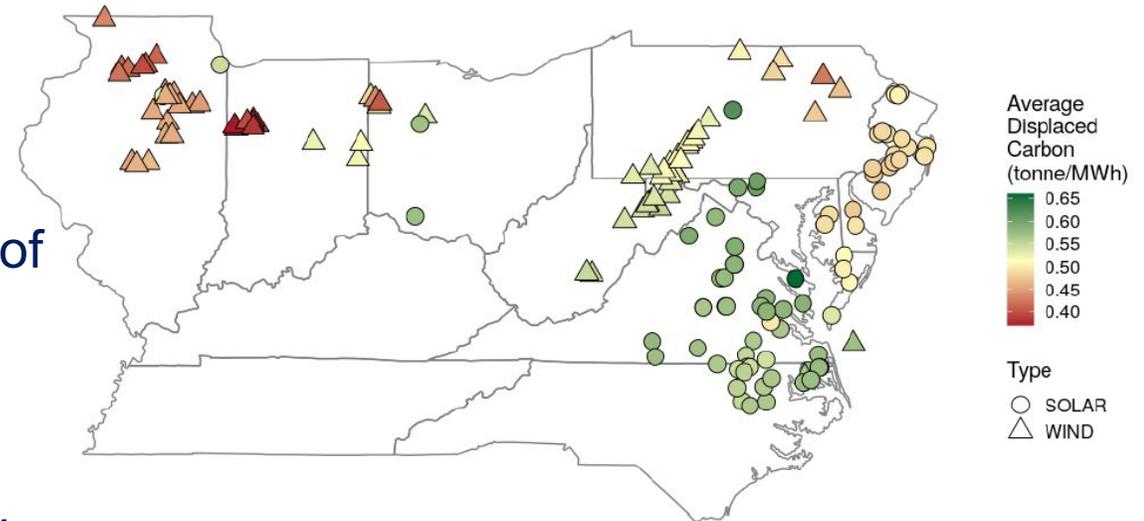
# Secondary Recommendation: Consider Carbon Indexing of Clean Energy Credits

- Consider indexing clean energy compensation to the carbon intensity of the grid at the time the clean energy is produced.

› Indexing would allow NJ to provide higher compensation for clean energy produced when emissions are high, while providing lower levels of compensation to clean energy produced during times when the grid is relatively clean.

› See Energy Storage Straw Proposal and Energy Master Plan’s discussion of “time-bound environmental credits or other mechanisms for emissions abatement verification...” (p. 104)

Jan. 2021 - Aug. 2022 Displaced Carbon by PJM Project



Illustrative carbon values; Resurety, GhG Abatement Product, PJM CAPSTF



# Written Stakeholder Comment Guidelines

- The deadline for comments on the 2022 Progress Report is 5:00 p.m. ET on October 25, 2022.
- Please submit comments directly to Docket No. [EO20030203](#), using the “Post Comments” button on the Board’s Public Document Search tool.
- Comments are considered “public documents” for purposes of the State’s Open Public Records Act and any confidential information should be submitted in accordance with the procedures set forth in N.J.A.C. 14:1-12.3.
- Written comments may also be submitted to:

Acting Secretary of the Board  
44 South Clinton Avenue, 1st Floor  
Post Office Box 350  
Trenton, NJ 08625-0350  
Phone: 609-292-1599  
Email: [board.secretary@bpu.nj.gov](mailto:board.secretary@bpu.nj.gov)



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