WHO DECIDES A STATE’S ENERGY MIX

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2020 SPRING WEBINAR SERIES

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- Who Decides a State’s Energy Mix?
- New WOTUS Rule & States Response to Jurisdictional Changes
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SPEAKERS

Romany Webb  
Sabin Center,  
Columbia Law School

Jeff Dennis  
Advanced Energy Economy

Chairman Jason Stanek  
Maryland Public Service Commission
Who Decides a State’s Energy Mix?

NCSL Natural Resources and Infrastructure Committee Webinar – April 2020

Romany Webb
Associate Research Scholar, Columbia Law School
Senior Fellow, Sabin Center for Climate Change Law
Federal Regulation of Electricity

Section 201, Federal Power Act (16 U.S.C. § 824)

FERC has exclusive jurisdiction over:
• “the transmission of electric energy in interstate commerce” and
• “the sale of electric energy at wholesale in interstate commerce”
  – wholesale sales = sales for resale
  – sales in interstate commerce = sales where electricity is transmitted via an interstate grid
RTOs and ISOs

Source: FERC
- Profit-neutral corp., regulated by FERC
- Manages a regional grid, comprising >1,300 generators and > 84,000 miles of transmission, and serving 65 million customers
- Operates wholesale power markets, including energy markets and a capacity market

(Source: PJM)
Wholesale Power Markets

Resource that cleared the market
Operates at full output

Resource that partially cleared the market
 Operates at partial output

Resource that did not clear the market
 Does not operate

Demand

Price Setter

PRICE

MEGAWATTS

Source: ISO New England (2020)
Limits on Federal Authority

FERC “shall not have jurisdiction . . . over facilities used for the generation of electric energy or over facilities used in local distribution or [intrastate] transmission”

- Section 201, Federal Power Act (16 U.S.C. § 824)

States are authorized to “regulate local distribution plus the facilities used to generate power.” States may exercise that authority “even when their laws incidentally affect areas within FERC's domain”

- EPSA v. Star, 904 F.3d 518 (7th Cir. 2018)
State Policies Affecting Generation

Source: S&P Global (Mar. 2020)
Response to State Policies

- Calpine Corp. files complaint with FERC re: price suppressive impact of state subsidies (March 2016)
- PJM proposes market reforms to address impact state subsidies (April 2018)
- FERC finds PJM’s existing tariff unjust & unreasonable, rejects proposed reforms (June 2018)
- PJM submits revised proposal, involving expansion of the MOPR, coupled with a Resource Carve-Out (October 2018)
- FERC directs PJM to apply MOPR to all new & existing state-subsidized resources (with limited exceptions) (December 2019)
FERC’s View of State Policies

The integrity of PJM’s capacity market is “untenably threatened out-of-market payments provided or required by certain states for the purpose of supporting the entry or continued operation of preferred generation resources that may not otherwise be able to succeed in a competitive market. . .

An expanded MOPR with few or no exceptions, should protect PJM’s capacity market from the price-suppressive effects of” state policies

- FERC Order (June 2018)
The Minimum Offer Price Rule

PJM Electricity Capacity Market: Before and after changes to the Minimum Offer Price Rule (MOPR)

Before changes to MOPR

The “demand curve” line shows the prices PJM will pay for capacity, which start high and decrease as megawatts of capacity offered by power sources increase.

With state-supported sources like solar and wind offering low-cost electricity generation capability in PJM’s capacity market, the clearing price that all sources get paid for capacity is set lower, which helps keep capacity costs down.

After changes to MOPR

The “clearing price” is set at the point where total capacity offered hits the demand curve.

Capacity costs from state-supported resources are artificially inflated by a requirement that they offer at or above a high “minimum price.” This restricts market competition and raises the clearing price, increasing costs for consumers.

Source: Sierra Club (Aug. 2019)
Covered Resources

• All new and existing resources that receive, or are eligible to receive, state subsidies
• State subsidies include out-of-market payments provided or required by states that “could have the effect of allowing a resource to clear in any PJM capacity auction”
• No showing that subsidy “actually allows a resource to uneconomically enter or remain in market”
• No materiality thresholds, e.g., for size of resource or state subsidy
Exemptions

• Existing resource exemptions
  – existing renewable resources that receive payments through state RPS programs
  – existing demand response, energy efficiency, and capacity storage resources
  – existing self-supply resources

• Competitive exemption
  – certain new and existing resources that agree to forego state subsidies

• Unit-Specific exemption
  – new and existing resources that can justify below-MOPR prices
Contact Information:

rwebb@law.columbia.edu
(415) 702-7902

Important Links:

- www.climate.law.columbia.edu
- www.climatecasechart.com
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WHO DECIDES A STATE’S ENERGY MIX?

The Impact of FERC’s “Broad MOPR” Rule

Jeff Dennis
Managing Director and General Counsel
Advanced Energy Economy
@EnergyLawJeff
About Advanced Energy Economy

• AEE represents more than 100 companies and organizations that span the advanced energy industry and its value chains.

• Technologies represented include energy efficiency, demand response, solar photovoltaics, solar thermal electric, wind, energy storage, electric vehicles, advanced metering infrastructure, transmission and distribution efficiency, fuel cells, hydro power, advanced nuclear power, combined heat and power, and enabling software.

• Used together, these technologies and services will create and maintain a higher-performing energy system—one that is reliable and resilient, diverse, cost-effective, and clean—while also improving the availability and quality of customer-facing services.
Key Takeaways

• How FERC’s Broad MOPR, as PJM proposes to implement it, will impact advanced energy resources supported by state policies

• The impact of MOPR on the energy mix, customers, and clean energy policies in the PJM region

• Considering the MOPR in context
The Impact of Broad MOPR on Advanced Energy Resources in PJM
Over 89 GW of advanced energy resources could be impacted by the Broad MOPR ruling

• Over 89 GW of solar and wind generation under development in the PJM interconnection queue are potentially exposed to ruling
  • This is comprised of over 60.6 GW of solar and 28.6 GW of wind interconnection requests
  • Many of these projects have invested significant capital into development and may have executed or be negotiating commercial arrangements that rely on capacity revenues

• New demand response, energy efficiency, energy storage, and other impacted advanced energy resources add to this amount

• Every state could be impacted

MW of Capacity Exposed to MOPR
Solar
Wind

IL
4,785
6,471
IN
6,097
2,124
OH
11,717
2,361
MI
635
MI
635
PA
7,726
635
NJ
913
8,699
MD
1,358
DE
367
431
WV
674
270
VA
14,124
5,220
NC
3,811
Note: Many areas of MI, KY, IN, and NC are not within PJM

Compiled by Apex Clean Energy in Feb. 2020
How do offer floors impact the ability of a resource to “clear” a centralized capacity market?

- **New resources:** price floor based on the “Net Cost of New Entry” (much higher than recent clearing prices for most new clean technologies, sometimes 2-5 times higher)
- **Existing resources:** price floor based on “Net Avoidable Cost Rate” (much lower going forward cost), unless exempted
Advanced energy resources provide valuable capacity to the power system

- Wind and solar perform well in meeting peak loads – solar generates on peak during the summer, wind generates consistently in the evenings and early mornings in the winter
- Demand response and energy efficiency help meet capacity needs by providing reliable demand reductions at peak times
- Capacity revenues are an important part of the equation when building a new wind or solar project, and help encourage more demand response and energy efficiency, whether or not they are supported by state policies; without those revenues, prices to consumers can go up
  - Developers pass on capacity revenues to their customers
  - Without capacity revenues, power purchase agreement prices may increase from 9% to 25%
  - These price increases are in addition to the costs of other, redundant capacity resources procured in their place
PJM developed a set of standard floor prices for various technology types in compliance with FERC’s order:

- These floor prices apply to new resources
- Supposed to reflect a “competitive offer” from a new resource
- FERC required PJM to use a methodology based largely on typical economics of natural gas plants

With historic capacity market clearing prices of $80 to $200/MW-day, most advanced energy resources at risk:

- Only Solar PV (Tracking) and Natural Gas CC in range

**Chart courtesy of Gabel Associates**
www.gabelassociates.com
The importance of plant-specific MOPR Floor Prices

• FERC required PJM to allow individual resources to develop a “unit-specific” floor price

• Resource owner must provide evidence to PJM to validate its calculation
  – Evidence and inputs are subject to review by PJM and the Independent Market Monitor

• PJM’s compliance filing allows resource owners to use a methodology more appropriate to their technology type
  – In other words, the owner of a solar plant can use assumptions more appropriate to solar technology and its project, rather than be forced into a methodology developed for conventional resources

• This process helps to alleviate some of the near-term impacts of the Broad MOPR on state-supported resources
  – Concern that the process could become administratively burdensome
  – Pending at FERC
How Could Broad MOPR Impact the Energy Mix, Consumer Costs, and State Policies in the PJM Region?
Impacts of Broad MOPR on the resource mix, consumer costs, and state policies

• If the Broad MOPR forces state-supported resources out of the capacity market, the capacity of those resources is not counted toward the region’s needs
  – Even if they are built, their capacity is effectively ignored

• The capacity market will procure other resources in their place, most likely natural gas plants or existing coal resources subject to low or no floor prices

• For states adopting policies to encourage clean advanced energy resources, Broad MOPR could add costs and limit effectiveness
  – Loss of capacity revenues results in higher power purchase agreement prices
  – Customers are forced to buy additional unneeded capacity in the centralized market, causing significant capacity oversupply
  – Higher-emitting, uneconomic aging resources that would otherwise retire will continue to operate, increasing costs and working against energy and environmental objectives
Cost estimates of Broad MOPR

- Commissioner Richard Glick (dissenting)
  - Estimated $2.4 billion per year increase in capacity payments in December 2019 dissenting opinion

- Grid Strategies LLC (consulting group)
  - Recently estimated $1.6 billion per year, citing figures from the PJM Independent Market Monitor
  - Earlier estimated up to $5.7 billion per year; exemptions in December 2019 moved that estimate downward

- PJM Independent Market Monitor
  - Concludes that Broad MOPR will have no impact on capacity market prices in the upcoming capacity auction
Potential state responses

- Opting out of the capacity market under an option known as a “Fixed Resource Requirement plan” (FRR)
  - Utilities submit plans to show PJM how they will meet their obligations; min. 5-year commitment
- Carbon pricing/Emissions trading
  - FERC has confirmed that RGGI does not trigger MOPR
- Moving more supported resources behind the customer meter
- Considering MOPR impacts in demand side management program designs
  - Reduce the need for capacity rather than supplying capacity
- Developing plant-specific methods with the Market Monitor in advance
- Working inside the PJM stakeholder process to pro-actively push broader reforms that better integrate clean energy goals into the market

*Patchwork of state-by-state constructs could harm customers and project development*
Putting Broad MOPR in Context
MOPR isn’t a national policy, and it won’t apply everywhere

• PJM, ISO New England, and New York Independent System Operator are the only regions with centralized capacity markets and MOPR
  – FERC’s Broad MOPR in PJM is the most stringent

• Other RTOs/ISOs use different mechanisms to ensure resource adequacy that don’t require MOPR rules
  – They have their own advantages and disadvantages

• FERC has consistently declined to force PJM-like capacity market features, including MOPR, on other regions
  – Most recently, in late 2018 FERC rejected a formal complaint seeking the imposition of a PJM-style capacity market with a Broad MOPR
Advanced energy technologies are now the most cost-effective option for power generation.
Broad regional wholesale power markets still provide significant benefits to consumers

• Well designed regional wholesale power markets are still an important tool in the transition to advanced energy
  – Coordinated dispatch of the most economic energy resources over a wide area
  – Greater competition between generating resources, reducing market power
  – Independent operation of the transmission system
  – Reduced transmission charges
  – Enhanced reliability and more efficient integration of variable renewable energy resources through sharing resources outside of individual utility control areas

• Regional wholesale power markets have been a platform for innovation
  – Reliability services can be provided by more technologies, with lower cost and higher quality

• These features bring consumers cost savings and enhanced reliability
THANK YOU!

Questions?

571-338-7547

jdennis@aee.net

Twitter: @EnergyLawJeff
WHO DECIDES A STATE’S ENERGY MIX

Chairman Jason Stanek
Maryland Public Service Commission
Questions and Answers

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Questions regarding this webinar?
Contact Kristy.Hartman@ncsl.org

Questions regarding the webinar series?
Contact Kristen.Hildreth@ncsl.org