NESCOE Market Design Alternatives

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Adapted FRR to Help New England Achieve Clean Energy and Resource Adequacy Goals at Lower Cost

New England States' Energy Vision Wholesale Market Design

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What is the Fixed Resource Requirement?

Fixed Resource Requirement (FRR): Carves out a certain amount of capacity that customer-serving utilities must procure from a mandatory centralized capacity market

FRR is **NOT** a full package alternative by itself.

It works with separate resource adequacy and state policy resource procurement mechanisms to avoid duplicative procurement of capacity.

What is the purpose of the FRR carveout?

FRR resolves the purported "tension" between state policies that provide preferential treatment to certain resources and the theoretical ideal of purely competitive markets where no resources receive subsidies

A core problem underlying this "tension"

- Mandatory capacity markets require all customers buy from the market, without allowing them to choose what they WANT to buy (e.g. clean or flexible capacity)

Carve-out (FRR) solution

Separates basic megawatt capacity procurement from state policy resource procurement

- Enables customers to choose whether and how much they want to buy in basic capacity or clean capacity from separate markets

No need for FRR carve-out for state policy if either:

Centralized capacity procurement is not mandatory

E.g. No mandatory enforced reserve margin or buyers can procure from outside of the Forward Capacity Market (FCM)

- Threshold question: how to determine what level of resources is adequate?
  - ERCOT: allows market forces to help determine the reserve margin

State policy resources (SPR) can participate in capacity market

E.g. FERC could

- Reset the Minimum Offer Price Rule (MOPR) to only address buyer-side market power and
- Reform capacity markets to better account for seasonal or duration-limited resources like wind, solar, demand response or storage

PJM FRR Participation Rules

Designed for large vertically integrated utilities to take advantage of RTO benefits without participating in capacity markets

1. Carve-out must be for **entire utility's service territory** or sub-territory bounded by wholesale metering
2. Utility must provide **sufficient capacity resources** to meet FRR utility's capacity obligation
3. **Minimum internal resource requirement:** a % of resources need to be from within FRR utility's service territory
4. FRR utilities must **stay out of the capacity market for 5 years minimum** to avoid drastic swings in market demand

PJM States: policies and FRR election

PJM's FRR less well suited for:

- Net importing utilities
- Utilities from which customers are free to leave

PJM's FRR not designed to accommodate state policies but could be adapted to do so

- FERC June 2018 PJM MOPR order entertained idea of resource-specific carve-out

PJM State	Restructured Electric Market	Renewable Portfolio Standard	Current FRR
Delaware	✓	✓	
Illinois	✓	✓	
Indiana		Voluntary	✓
Kentucky			✓
Maryland	✓	✓	
Michigan	✓	✓	✓
New Jersey	✓	✓	
North Carolina		✓	
Ohio	✓	✓	
Pennsylvania	✓	✓	
Tennessee			
Virginia	✓*	✓	✓
West Virginia			✓
District of Columbia	✓	✓	

**Virginia excludes residential customers. RPS mandate recently was enacted.*

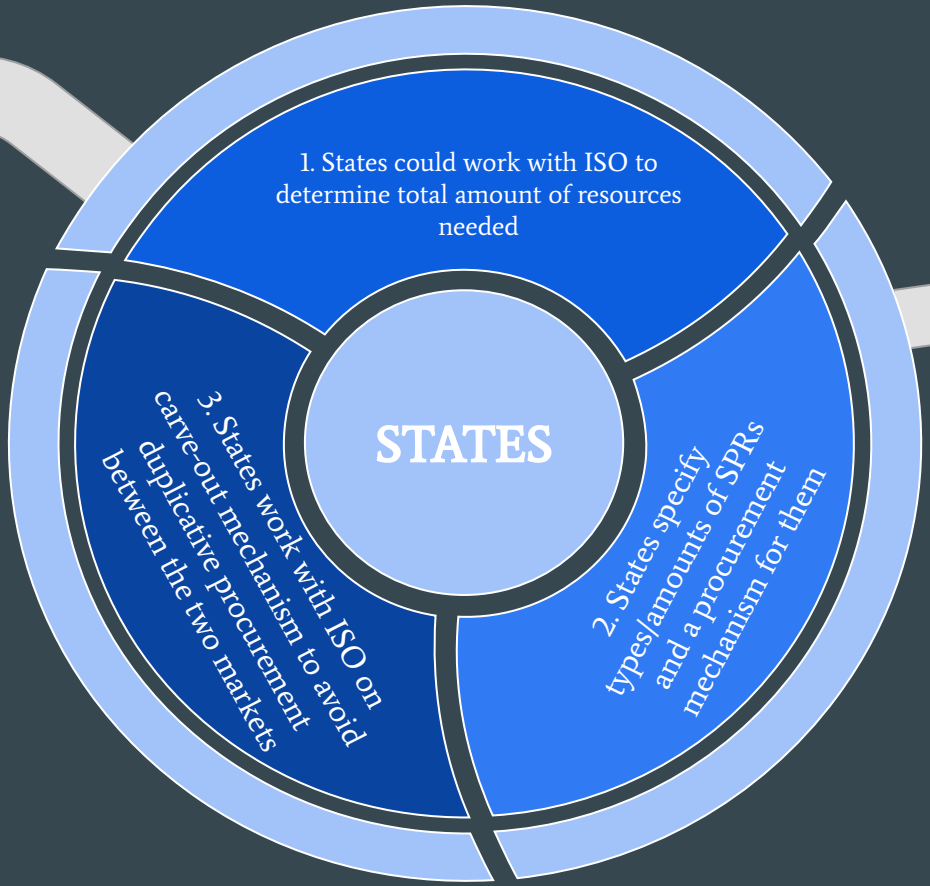
Source: NYU Law State Energy & Environmental Impact Center

Carve out SPR from Forward Capacity Market to avoid duplicative capacity procurement

- SPR could be procured in any manner, bilaterally or through centralized SPR market
  - Carve-out accounts for all SPR capacity value
  - Buyers who voluntarily procure more SPRs can procure less from FCM
  - States w/o mandatory SPR procurement requirements could also carve out voluntary SPR procurement
- Carve-out could work with a glidepath
  - A new SPR market could take time to set up, but a carveout could account for the capacity of SPR procured in any manner
- Enable multiple utilities across states to carve out of FCM together
  - Utilities can partially carve out
  - Carved out load could be the demand for a separate SPR market, which accounts for transmission constraints
  - Mitigates concerns with balkanization/market power under PJM FRR
- Rest of load and supply then participates in FCM to shore up resource adequacy needs

State Involvement in Resource Adequacy and SPR Procurement

Precedent for some degree of coordination exists in most RTOs



E.g., states could certify SPR auction results to ensure alignment with state policy goals, while ISO could administer auction to ensure it works well with FCM

Alignment with NESCOE's 5 principles (if complementary components to carve-out are well designed)

1	2	3	4	5
Use market-based mechanisms to meet States' decarbonization mandates + maintain resource adequacy at the lowest cost	Establish effective mechanisms that accommodate existing and future long-term contracts for clean energy resources executed pursuant to state law	Integrate distribution-level resources effectively and efficiently	Allow interested buyers and sellers to participate	Provide for an appropriate level of state involvement in market design and implementation
Enable regional market solutions for clean resources + resource adequacy while avoiding procuring duplicative capacity	- Flexibility in designing separate clean energy procurement - Could fashion longer term commitment periods tailored to specific generation profiles	- Procure DERs separately as SPR or participate in FCM (if no MOPR) - State can help integrate DERs by ensuring wholesale prices inform customer energy use	Participation rules must be designed appropriately in the resource adequacy and state policy resources markets	- State involvement in determining RA levels or rules related to RA - States determine types/min. amounts of SPR - States certify clean energy auction results - States certify remainder needed from FCM