



ISO-NEW ENGLAND'S FORWARD CAPACITY MARKET

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Similarities

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- **Mission:** transparent competitive market that, together with the energy and ancillary service markets, maintains reliability and resource adequacy at least cost.
 - While working efficiently with out-of-market forces (Climate Leadership Plan; New England State public policies)
- **Resource type eligibility is broad:** Generation, Demand Response, Imports, Self-Supply (storage? Wind and solar?)
- **Other:**
 - Must offer in the energy markets (day-ahead and real-time).
 - De-List bids for priced offers to exit the capacity market.
 - One year capacity obligation three years forward.
 - Mitigation of existing resources with undue market power.
 - Sloped demand curve, with Net CONE and UCAP values key variables.
 - Two-settlement design, with capacity resource base payments (established in the auction) adjusted according to performance during tight supply conditions relative to (adjusted) capacity obligation.
 - AESO: real-time performance also may affect UCAP value

Differences

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- Government Policy Resources and Resource Planning

- ISO-NE: Subsidized public policy resource may participate.
- AESO: Set be government policy.

- Qualified Capacity

- ISO-NE: Audited value to demonstrate max energy output (generation).
- AESO: Available capability or metered energy during historical tight supply conditions.

- Mitigation

- ISO-NE: Resource-specific, based on the market monitor's view of future energy and ancillary service revenues, costs, etc.
- AESO: $0.8 \times \text{Net CONE}$.

- Permanent De-Listing

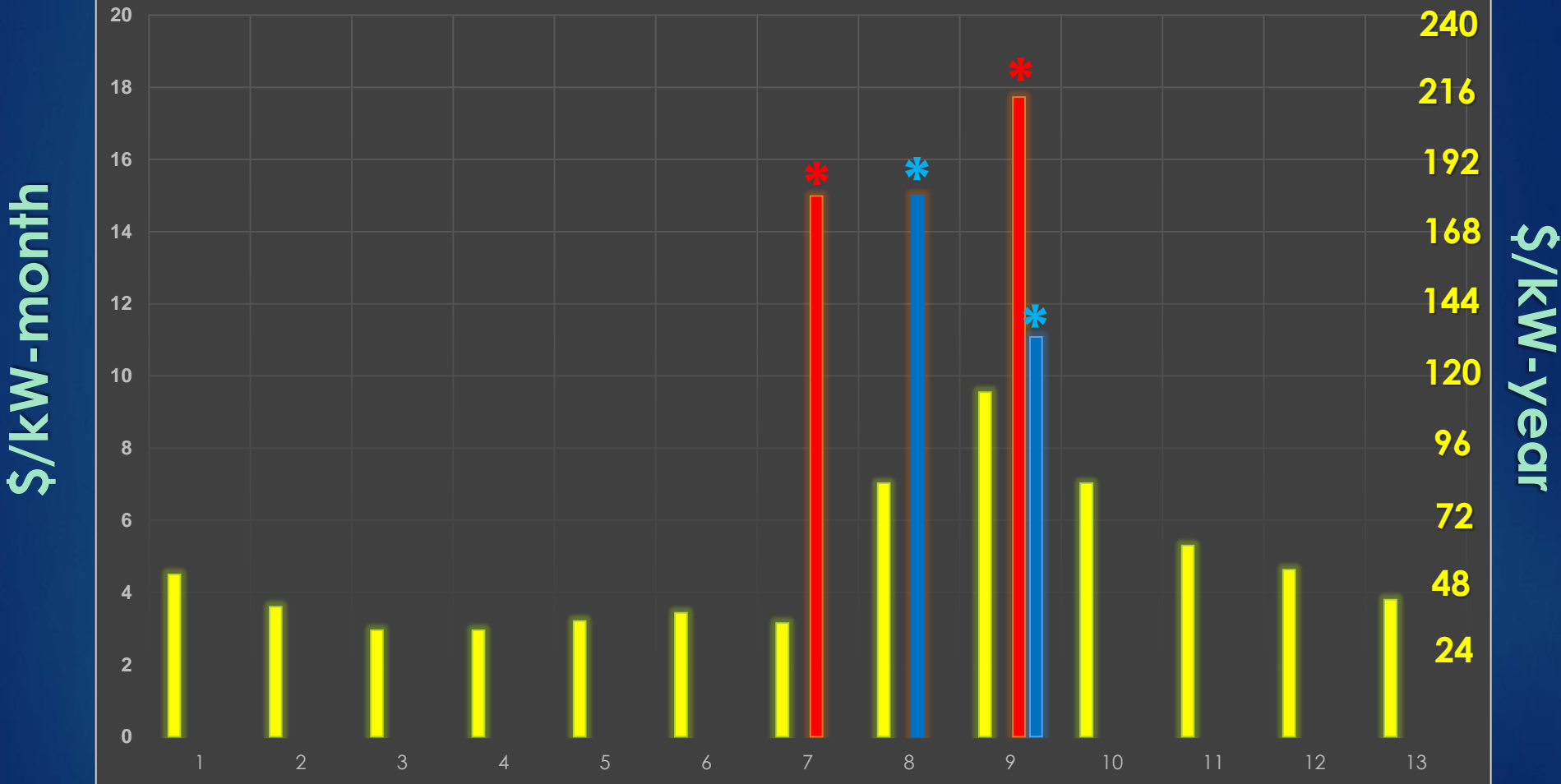
- ISO-NE: May be a priced offer into the FCA and may also reflect a “shadow price.”
- AESO: Appears to not be a priced offer.

- Rebalancing Auctions

- ISO-NE: Three annual reconfiguration auctions prior to the delivery period.
- AESO: Two rebalancing auctions prior to delivery period.

Historical System-Wide Clearing Prices (Yellow Bars)

Forward Capacity Auction Clearing Prices



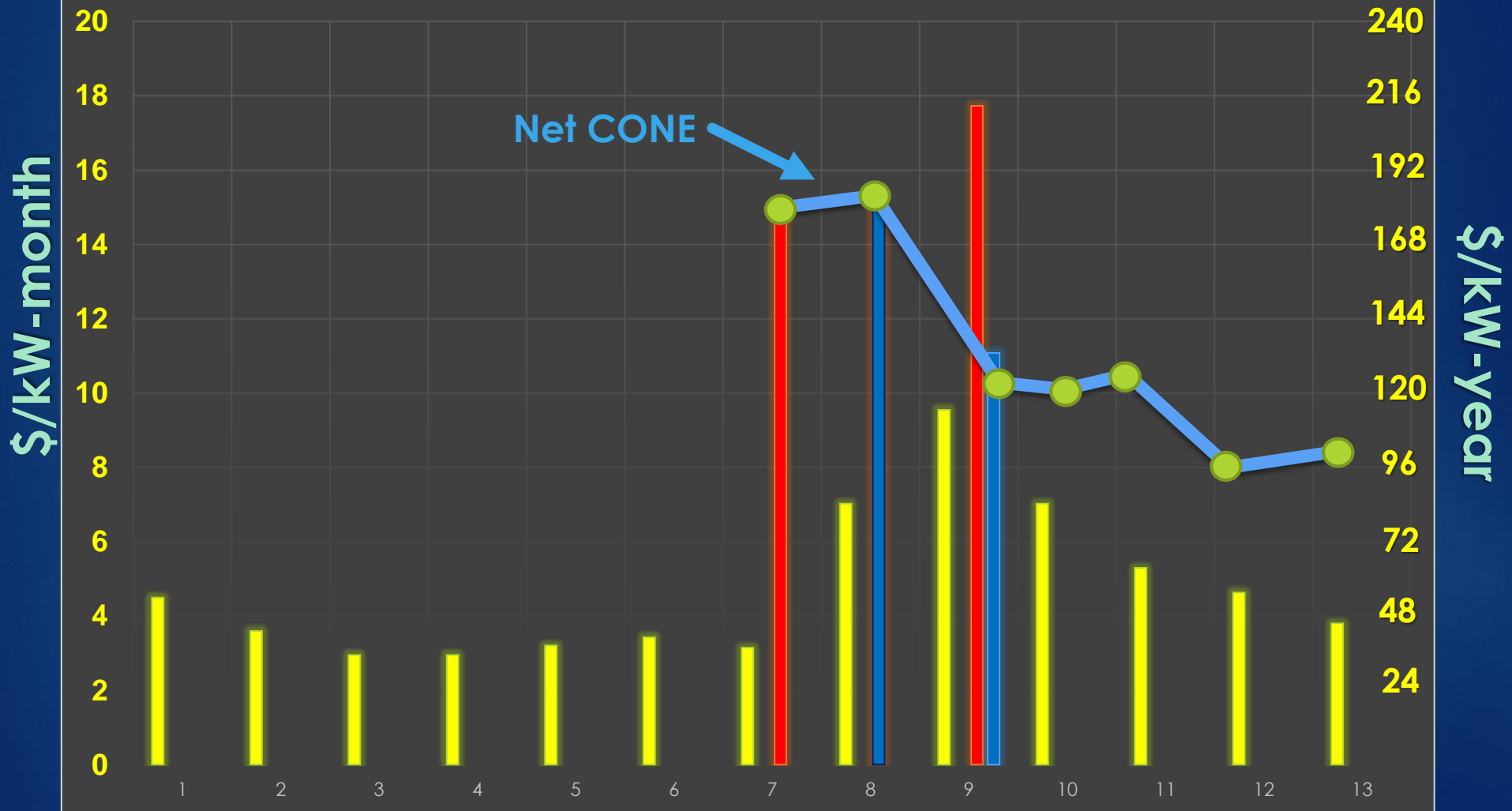
* Local Zone Price-Separated

FCAs 1 - 13

* For New Resources Only

Historical System-Wide Clearing Prices Against Net CONE

Forward Capacity Auction Clearing Prices



Forward Capacity Auctions 1 through 13

Quick Thoughts on Some Areas of Interest

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- ▶ Failure to define the capacity product according to the actual reliability needs has had multiple adverse impacts on the markets.
 - ▶ Ancillary service market development relatively stagnant.
 - ▶ Relying on interim, out-of-market compensation mechanism to meet need until market design changes to meet the need.
- ▶ Incumbent generators have cleared new resources in the capacity market – market knowledge and balance sheet financing are key drivers. New developers as well have cleared new resources.
- ▶ Capacity market has largely acted as designed – until recent administrative actions undermined competitive pricing.
- ▶ Net CONE has decreased over time – may even more so in the future.
 - ▶ Reference technology is CT (previously a CC) – could it be a wind resource in the future?
 - ▶ Greenfield projects have cleared below Net CONE in recent years.

Lessons Learned

- ▶ Mitigation must respect market participant commercial judgment for there to be competitive market outcomes.
 - ▶ Respect and rely on competitive discipline.
 - ▶ Allow the market to work.
- ▶ Must precisely and thoughtfully define the capacity product.
- ▶ Change is slow.
- ▶ Deficiencies in one part of the market design can have major consequences on the clearing price.
- ▶ Proper procedural posture before the decision-making authority is critical to competitive clearing prices.