



ISO-New England Forward Capacity Auction #9 Summary Price Forecast

December 2014

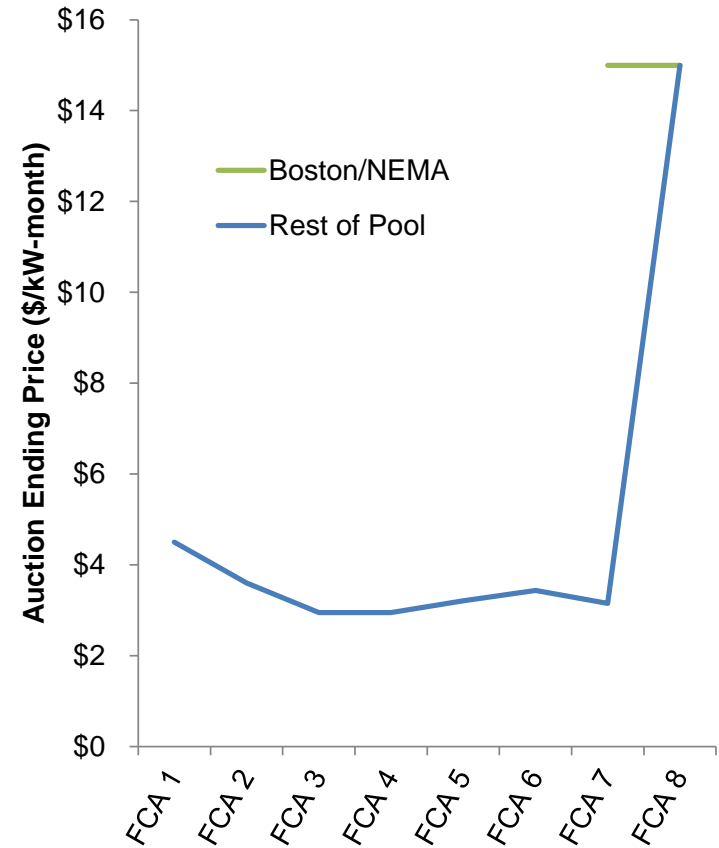
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ISO-New England's upcoming Forward Capacity Auction prices are likely to be in the range of \$8 to 11/kW-month

- ISO-NE's ninth Forward Capacity Auction, or FCA #9, will be held on Feb. 2, 2015, for the June 1, 2018 – May 31, 2019 Capacity Commitment Period.
- Auction clearing prices in most of the ISO-NE market are likely to be in the range of \$8-11/kW-month.
 - ✓ The most significant factors affecting the price will be how much new Demand Response (DR) participates in the auction, and at what prices.
- Prices in SEMA-RI are likely to be considerably higher.
 - ✓ This is due to limited supply compared to capacity requirements in that zone.
- In NEMA-Boston, the Capacity Carry Forward Rule is expected to apply again, resulting in prices somewhat higher than the ROP price.
 - ✓ The price is likely to be lower than the ISO-NE Net CONE value of \$11.08/kW-month.

The previous FCA (FCA #8) broke the pattern of very low prices

- FCA #1 – 7 all ended at the floor prices, between \$2.95 and \$4.50/kW-month.
 - ✓ The one exception was the NEMA/Boston zone in FCA #7 which cleared at \$15/kW-month.
 - ✓ Because the auction cleared at the floor, with more capacity accepted than required, the effective prices realized by suppliers typically were even lower than the Auction Ending Prices.
- FCA #8 resulted in a mix of prices, mostly \$7 and \$15/kW-month.
 - ✓ The capacity clearing price was set at \$15/kW-month, but because there was insufficient supply, most existing supply outside of NEMA/Boston was paid the administrative cap of \$7.025/kW-month.

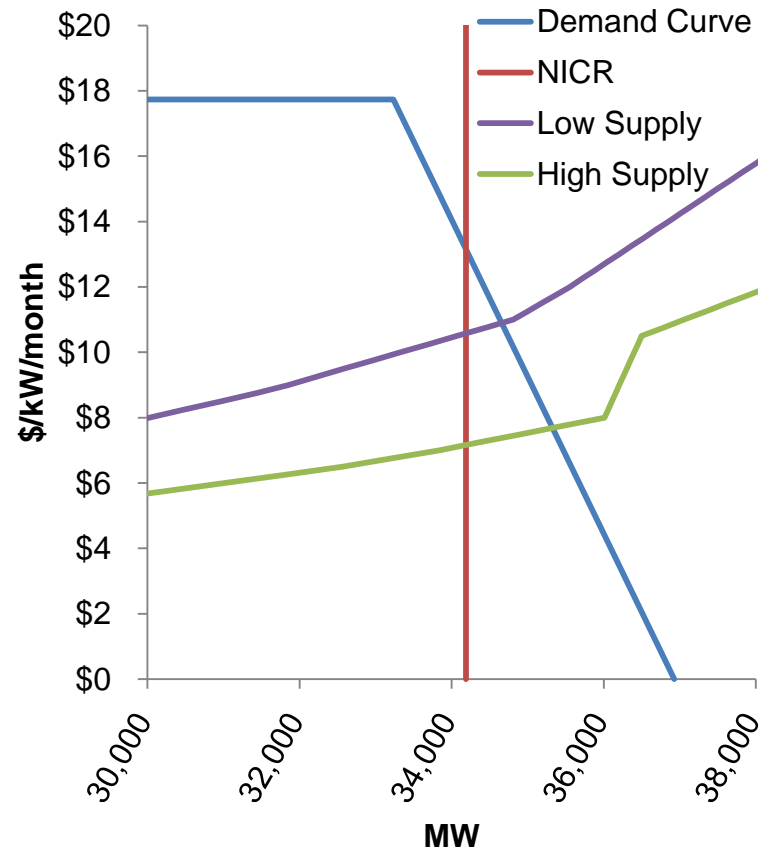


FCA #9 has attracted unprecedented interest from suppliers

- 8,998 MW of new capacity is likely to ultimately qualify to participate in the auction
 - ✓ ISO-NE initially announced that 8,547 MW of new capacity had qualified to participate in the auction.
 - ✓ In addition to this, one of the plants that was not qualified, Hawkes Meadow (451 MW), filed a waiver request regarding specific qualification deadlines with FERC. ISO-NE effectively supported Hawkes Meadow's waiver request; however FERC has not yet ruled on whether they will be qualified for FCA #9. Price impact would likely be minimal.
- Of this new supply, approximately 4,170 MW is likely to be gas-fired plants (mostly new plants but also expansions of existing plants), and approximately 100 MW is likely to be new renewables, as discussed below.
 - ✓ This leaves approximately 4,700 MW as new demand response (DR) and imports.
 - ✓ How much of this new supply consists of DR, and at what prices it will be offered, are the big unknowns in the upcoming auction.

One very important change in FCA #9 is the use of a sloped demand curve

- All previous auctions were based on procuring a fixed amount, the Net Installed Capacity Requirement (NICR), which for FCA #9 is 34,189 MW.
- Sloped demand curves are expected to reduce price volatility and the potential for the exercise of market power.
- However, a sloped demand curve results in greater stability to the market and in a market which is relatively tight the sloped demand curve limits the range of plausible prices at which the market will clear.



A second important change in FCA #9 is Pay for Performance

- Capacity revenues to be linked to performance during reserve deficiencies by establishing a Capacity Performance Payment.
 - ✓ A resource that clears in the FCA takes on a “forward position,” meaning that it acquires both a physical obligation to offer the MW amount of its Capacity Supply Obligation into the energy market, as well as a financial obligation to cover the resource’s share of the system’s total energy and reserve requirements during Capacity Scarcity Conditions, i.e., whenever the real-time energy price includes a Reserve Constraint Penalty Factor.
 - ✓ The Capacity Performance Payment is determined for each resource by measuring its performance against its forward position (i.e., its share of the system’s requirements at the time of each Capacity Scarcity Condition). If a resource provides more than its share of energy and reserves, it will receive a positive Capacity Performance Payment; if it provides less than its share, it will receive a negative Capacity Performance Payment. The Capacity Performance Payment is calculated using the Capacity Performance Payment Rate, which is initially set at \$2,000/MWh and increases to \$5,455/MWh by June 1, 2024.
 - ✓ The second aspect to determining the Capacity Performance Payment is based on the resource’s Capacity Performance Score, for each five-minute interval in which a Capacity Scarcity Condition exists in the Capacity Zone in which the resource is located. It equals the resource’s Actual Capacity Provided during the interval minus the product of the resource’s Capacity Supply Obligation and the applicable Capacity Balancing Ratio, which considers the severity of system conditions (e.g., current load versus anticipated peak load).

Owners of large portfolios may have an incentive to increase delist bids

- A supplier with a large enough portfolio could in theory benefit by withholding part of their supply, or bidding it in at a price above the expected auction clearing price even though its true cost was lower.
- For example, consider a supplier with a portfolio of 2,000 MW of existing supply, including an older 100-MW generation unit with fixed costs, risk premiums, and opportunity costs of \$7/kW-month. If the auction-clearing price was at \$7.50 and this older unit was bid in at \$7 the plant would clear.
 - ✓ If the supplier submitted a delist bid for this unit at \$8 instead of \$7, it would not clear, and based on Power Advisory's supply stack, the auction clearing price would increase by approximately \$0.03/kW-month, to \$7.53/kW-month.
 - ✓ The price impact could conceivably be greater. We have assumed that there will be a number of import offers in this price range so that an increase in price is muted by additional supply.
 - ✓ At the old price, the supplier would have netted \$0.50/kW-month for the older unit (the difference between the auction clearing price and the cost of continuing to operate the unit), so by bidding higher, the supplier would lose \$50,000/month on this unit. However, it would earn \$0.03/kW-month more (the difference between the old price and the new price) on the remaining 1,900 MW in its portfolio – a total of \$57,000. Under our assumptions regarding the composition of the supply curve, the supplier thus has an incentive to increase its delist bid for this unit.

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 - ✓ Particular emphasis on Ontario, Northeast U.S., Maritimes, and Alberta
 - ✓ Specializing in electricity market analysis, demand and supply forecasts, price and costs to customer forecasts, business strategy, market design, rate design, investment strategies, project acquisition, project development, project feasibility assessment, project due diligence, power procurement, and policy development
- Power Advisory has offices in Toronto and Boston and advises clients across North America
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 - ✓ Forecasts and projections of all components of costs to customers, including generation by fuel type, transmission and distribution, regulatory charges, and debt retirement charges for Ontario

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