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ISO-NE Capacity Auction Secures Sufficient Power System Resources, At a Lower Price, for Grid Reliability in 2019-2020

2016 auction clearing price is 25% lower than last year's auction

Holyoke, MA—February 11, 2016—New England's annual capacity auction concluded Monday with sufficient resources to meet demand in 2019-2020, at a lower price, and with more than 1,400 megawatts (MW) of new generating capacity that will help replace recently retired and retiring generators. The auction is run by ISO New England Inc. to procure the resources that will be needed to meet projected demand three years in the future.

The tenth Forward Capacity Market (FCM) auction (FCA #10) attracted significant competition among resources to provide reliability services in New England. Before the auction, a total of 40,131 MW of resources, including 6,700 MW of new resources, qualified to compete in the auction to provide the 34,151 MW Installed Capacity Requirement (ICR) for 2019-2020.

"Competition was robust in this year's Forward Capacity Auction," said Gordon van Welle, president and CEO of ISO New England. "The high participation in the auction demonstrates the interest in the New England marketplace and bodes well for meeting future resource adequacy requirements."

Recent and pending retirements of coal, oil, and nuclear power plants expected to shut down by 2019 total more than 4,200 MW, including the 680 MW Pilgrim Nuclear Power Station that announced its retirement before this auction.

"Developers were drawn to the New England marketplace because the price of capacity supports construction of new resources," continued van Welie. "It's important to have a capacity market that places an appropriate value on the product to maintain an adequate supply. This auction procured the resources needed to keep the lights on in New England at a price lower than last year's auction and, in fact, lower than the estimated cost of building a new power plant. More than 850 megawatts of new generating capacity cleared in the Greater Boston, Southeast Massachusetts and Rhode Island zone where the resources are needed most."

Preliminary results of FCA #10:

- About 35,567 MW of capacity cleared the auction to meet the 34,151 MW ICR for 2019-2020. (The region can
 acquire more or less than the specific capacity requirement, depending on reliability standards and price.)
 - o 31,371 MW of generation, including 1,459 MW of new generation
 - o 2,746 MW of demand-side resources, including 371 MW that is new
 - o 1,450 MW of imports from New York and Canada

Preliminary clearing price:

- The auction closed for resources within New England after four rounds of competitive bidding at \$7.03/kW-month, at the point on the demand curve where there were still sufficient resources to meet demand. The clearing price will be paid to all resources in both capacity zones in the region. [Clarification] Imports from Quebec over Phase II and Highgate also cleared at \$7.03/kW-month.
- The clearing price was more than 25% lower than last year's \$9.55/kW-month for most resources. The lower
 clearing price demonstrates strong competition among resources and also illustrates that the capacity market
 is continuing to work: higher prices resulting from resource shortfalls in earlier auctions provided the
 incentives for developers to bring new—and needed—resources to the market.

- o At \$7.03/kW-month, the total value of the capacity market in 2019-2020 will be approximately \$3 billion, compared to the estimated \$4 billion for 2018-2019.
 - The price of \$7.03/kW-month is less than the pre-auction estimate of the cost of building a new natural-gas-fired power plant in New England, at \$10.81/kW-month
- The auction continued for a fifth round for 181 MW of New Brunswick imports, which will receive \$4.00/kW-month. New York imports totaling 1,044 MW, which cleared in the fourth round, will receive a price of \$6.26/kW-month.

Highlights of FCA #10:

- Three large, new, dual-fuel power plants totaling 1,302 MW cleared the auction. The proposed plants are all near the region's largest population centers, and two are in the former Southeast Massachusetts/Rhode Island zone, where a capacity shortfall materialized before last year's auction for 2018-2019. All three will burn natural gas as their primary fuel, with oil as their secondary fuel:
 - o About 485 MW of the Burrillville Energy Center 3 in Burrillville, Rhode Island
 - o 484 MW at Bridgeport Harbor 6 in Bridgeport, Connecticut
 - o 333 MW at Canal 3 in Sandwich, Massachusetts
- 27 megawatts of new wind and 44 megawatts of new solar cleared the auction; in all, 135 MW of wind and
 65 MW of solar facilities cleared FCA #10

Several firsts, including:

- 6.8 MW from the first offshore wind farm under construction in the US cleared the auction: Deepwater Wind's 34-MW facility off Block Island, RI
- With the development of the first, multi-state, long-term forecast of solar growth in the nation, small-scale solar facilities around New England were incorporated into the calculation of how much capacity will be required. Forecasted demand reductions from solar reduced the ICR in 2019-2020 by 390 MW.
- Two large fuel cell facilities, providing 2.5 MW each, cleared the auction.

For FCA #10, the region was divided into two zones: Rest of Pool (ROP) which includes Connecticut, western and central Massachusetts, Vermont, New Hampshire, and Maine; and Southeastern New England (SENE), which includes Northeast Massachusetts/Greater Boston and Southeast Massachusetts/Rhode Island. The SENE zone was created based on transmission limitations that restrict the level of power that can be imported into the area, as well as local resource levels and needs. The clearing price in FCA #10 applies to resources in both zones.

Market design changes now in effect

Several significant FCM enhancements went into effect with last year's auction, including Pay for Performance incentives. The market redesign work by ISO New England, market participants, policymakers and regulators, and others, is helping remove risks from the market and providing developers with the financial stability needed to invest in new resources. The enhancements also provide consumers with greater assurance that the region's power system will have sufficient capacity to keep the lights on, and that those resources will perform when called on. These market changes, as well as other steps taken by the ISO, helped incentivize the 1,302 MW of new, dual-fuel power plants that cleared FCA #10. These dual-fuel generators will enhance reliability because if one fuel is unavailable, they can turn to the second fuel.

Forward Capacity Market auction basics

The annual FCM auction is held three years before each capacity commitment period to provide time for new resources to be developed. Capacity resources can include traditional power generation, renewable generation, or

demand-side resources such as load management and energy-efficiency measures. Resources that clear in the auction will receive a monthly capacity payment in that future year in exchange for their commitment to provide power or curtail demand when called upon by the ISO. The capacity market is separate from the energy market, where resources compete on a daily basis to provide power, and are paid for the electricity they produce.

Next Steps

Finalized auction results will be included in a filing with the Federal Energy Regulatory Commission within the month. The finalized results filing will include resource-specific information.



Created in 1997, ISO New England is the independent, not-for-profit corporation responsible for the reliable operation of New England's electric power generation and transmission system, overseeing and ensuring the fair administration of the region's wholesale electricity markets, and managing comprehensive regional electric power planning.









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Auction Acquires Power System Resources Needed for 2020-2021 At a Lower Price

Competition to supply capacity allows region to buy surplus, for less

Holyoke, MA—February 9, 2017—New England's annual capacity auction concluded Monday with sufficient resources to meet demand in 2020-2021. Preliminary results indicate the clearing price was the lowest since 2013. The auction is run by ISO New England Inc. to procure the resources that will be needed to meet projected demand three years in the future.

The 11th Forward Capacity Market (FCM) auction (FCA #11) closed at a preliminary, system-wide clearing price of \$5.30 per kilowatt-month (kW-month), compared to \$7.03/kW-month in the previous auction for New England resources. No major generators retired in FCA #11 and no large new generators cleared in the auction, but 640 megawatts (MW) of new energy-efficiency and demand-reduction measures—the equivalent of a large power plant—cleared and will be available in 2020-2021.

FCA #11 began with significant competition among resources to provide reliability services in New England. Resources totaling 40,463 MW, including 34,505 MW of existing capacity and 150 new resources totaling 5,958 MW, competed to provide the capacity target of 34,075 MW. Forecasted demand reductions from the ISO's forecast of behind-the-meter solar PV growth reduced the capacity target by 720 MW.

This year's auction concluded with commitments from 35,835 MW to be available in 2020-2021, with 1,760 MW of surplus capacity. The auction rules allow the region to acquire more or less than the capacity target, providing flexibility to acquire additional capacity and enhanced reliability at a cost-effective price.

"The chief purpose of a capacity market—resource adequacy—was achieved through a competitive process that balances the needs of consumers and suppliers. The auction concluded at the lowest price that is still enough to keep the most efficient resources in business," said Robert Ethier, vice president of market operations at ISO New England. "The lower clearing price and surplus capacity are indicative of a market that works. In previous auctions, a supply shortfall pushed up prices after more than 3,000 MW of resources announced their retirements in 2013; the higher prices have attracted new competition, which has helped lower prices while keeping the lights on in New England."

For FCA #11, the region was divided into three zones: Northern New England (NENE), including Vermont, New Hampshire, and Maine; Southeast New England (SENE), including Northeastern Massachusetts, Greater Boston, and the former Southeastern Massachusetts and Rhode Island zone; and Rest of Pool (ROP), including Connecticut and western and central Massachusetts.

Preliminary results of FCA #11:

The auction closed for most resources after six rounds of competitive bidding at \$5.30/kW-month, the lowest
clearing price since the floor price was eliminated in the 2013 auction. The clearing price will be paid to all
resources in all three capacity zones in New England and 1,035 MW of imports from New York and Quebec.
Imports from New Brunswick, totaling 200 MW, will receive \$3.38/kW-month.



- Previous clearing prices (all per kilowatt-month): FCA #7 (2013), \$3.15 floor price, except \$14.99 for new resources in NEMA/Boston; FCA #8 (2014), \$15 new and \$7.025 existing; FCA #9 (2015), \$9.55 system-wide except SEMA/RI: \$17.73 and \$11.08 existing; FCA #10 (2016), \$7.03.
- At \$5.30/kW-month, the total value of the capacity market in 2020-2021 will be approximately \$2.4 billion.
- About 35,835 MW of capacity cleared the auction to meet the 34,075 MW net installed capacity target for 2020-2021.
 - 31,389 MW of generation, including 264 MW new, in the form of increased generating capability added at existing power plants
 - 3,211 MW of demand resources, including 640 MW that is new
 - 1,235 MW of imports from New York, and Quebec and New Brunswick, Canada
- Six megawatts of new wind and five megawatts of new solar resources cleared the auction; in all, 137 MW of wind and 66 MW of solar facilities cleared FCA #11 (most photovoltaic resources in New England are on the distribution system and don't participate in the wholesale markets).
- No large resources retired in FCA 11; a few small oil generators delisted during the auction, meaning they've
 dropped out of the capacity market for one year, but can sell energy during that time and can compete again
 in future auctions.

Forward Capacity Market auction basics

The annual FCM auction is held three years before each capacity commitment period to provide time for new resources to be developed. Capacity resources can include traditional power plants, renewable generation, imports, and demand resources such as load management and energy-efficiency measures. Resources that clear in the auction will receive a monthly capacity payment in that future year in exchange for their commitment to provide power or curtail demand when called upon by the ISO. The capacity market is separate from the energy market, where resources compete on a daily basis to provide power and are paid for the electricity they produce.

Next Steps

Finalized auction results, with resource-specific information, will be filed with the Federal Energy Regulatory Commission by the end of this month.



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New England's Forward Capacity Auction Closes With Adequate Power System Resources for 2021-2022

ISO will retain about 1,300 megawatts to ensure local reliability

Holyoke, MA—February 8, 2018—New England's annual capacity auction for power system resources concluded Tuesday with sufficient resources to meet peak demand in 2021-2022, and preliminary results indicate the clearing price was the lowest in five years due to a surplus of capacity in the region. The auction is run by ISO New England Inc. to procure the resources that will be needed to meet consumer demand for electricity in three years.

The 12th Forward Capacity Market (FCM) auction (FCA #12) closed at a preliminary clearing price of \$4.63 per kilowattmonth (kW-month) across New England, compared to \$5.30/kW-month in last year's auction.

Resources totaling 40,612 megawatts (MW), including 35,007 MW of existing capacity and 206 new resources totaling 5,605 MW, qualified to participate in the FCM, while the regional capacity target for 2021-2022 is 33,725 MW.

The auction concluded with commitments from 34,828 MW to be available in 2021-2022, with 1,103 MW of surplus capacity system-wide. The auction rules allow the region to acquire more or less than the capacity target, providing flexibility to acquire additional capacity and enhanced reliability at a cost-effective price.

While the auction secured sufficient capacity to meet demand system-wide for 2021-2022, some existing resources dropped out during the auction. Reliability reviews were conducted on resources totaling about 2,775 MW that submitted bids during the auction to withdraw from the capacity market for one year when the auction price fell below the level they needed to justify the financial risks of a capacity supply obligation (CSO) during 2021-2022. Resources with a CSO can be financially penalized for failing to perform during shortage events. Resources without a capacity obligation can still participate in the daily wholesale electricity markets.

When a resource seeks to delist, or remove itself, from the capacity market, the ISO conducts a reliability review to determine if the power system will maintain system reliability without that resource, without overloading transmission lines. If transmission security could be jeopardized, the ISO can reject a one-year delist bid and retain a resource, with a capacity commitment, until it is no longer needed for reliability.

The reliability reviews of delist bids submitted during FCA #12 show that certain transmission lines could be overloaded if two units totaling about 1,300 MW were not available during stressed system conditions in 2021-2022.

"The forward capacity market is designed to ensure resource adequacy—that there are enough resources in the right places to meet peak demand. This auction procured sufficient resources at a competitive price," said Robert Ethier, vice president of market operations at ISO New England. "However, our analysis indicates that transmission lines in a particular sub-region could be overloaded in extreme summer weather, jeopardizing reliability, if about 1,300 MW of submitted delist bids were not available. The ISO will address that potential reliability risk by retaining the resources for the 2021-2022 capacity commitment period. All other delist bids, including other bids in that sub-region, were accepted."

For FCA #12, the region was divided into three zones: Northern New England (NNE), including Vermont, New Hampshire, and Maine; Southeast New England (SENE), including Southeastern Massachusetts, Rhode Island,



Northeastern Massachusetts, and Greater Boston; and Rest of Pool (ROP), including Connecticut and western and central Massachusetts. NNE was modeled as an export-constrained zone, while SENE was modeled as an import-constrained zone.

Preliminary results of FCA #12:

- The auction closed for most resources at \$4.63/kW-month after four rounds of competitive bidding. The
 clearing price will be paid to all resources in all three capacity zones in New England and 524 MW of imports
 from New York and 57 MW from one interconnection with Québec.
 - Imports over two other interconnections from neighboring regions, Québec and New Brunswick, continued into a fifth round, which closed at \$3.70/kW-month for 442 MW from Québec and \$3.16/kW-month for 194 MW from New Brunswick.
 - Previous clearing prices (all per kilowatt-month): FCA #7 (2013), \$3.15 floor price, except \$14.99 for new resources in the former Northeast Massachusetts/Boston zone; FCA #8 (2014), \$15 for new and \$7.025 for existing resources; FCA #9 (2015), \$9.55 system-wide except SEMA/RI: \$17.73 new and \$11.08 existing; FCA #10 (2016), \$7.03; FCA #11, \$5.30.
- At \$4.63/kW-month, the total value of the capacity market in 2021-2022 will be approximately \$2.07 billion (preliminary estimate).
- Capacity clearing the auction totaled 34,828 MW to meet the 33,725 MW net installed capacity target for 2021-2022
 - 30,011 MW of generation, including 174 MW new
 - No large new generators cleared in the auction, but included in the 174 MW of new generation is a new, 58-MW natural gas unit and a total of 87 MW of increased generating capacity at some existing power plants
 - 3,600 MW of energy-efficiency and demand-reduction measures, including 514 MW of new—the equivalent of a large power plant
 - o 1,217 MW total imports from New York, and Québec and New Brunswick, Canada
- In all, 132 MW of wind and 86 MW of solar facilities cleared FCA #12 (most photovoltaic resources in New England are on the distribution system and don't participate in the wholesale markets). Those totals include 1 megawatt of new wind and 21 megawatts of new solar facilities
- In all, 511 MW of resources, including one large generator, the 383-MW Bridgeport Harbor 3 coal-fired unit, submitted retirement bids that were accepted before FCA #12

Forward Capacity Market auction basics

The annual FCM auction is held three years before each capacity commitment period to provide time for new resources to be developed. Capacity resources can include traditional power plants, renewable generation, imports, and demand resources such as load management and energy-efficiency measures. Resources that clear in the auction will receive a monthly capacity payment in that future year in exchange for their commitment to provide power or curtail demand when called upon by the ISO. Resources that fail to meet their capacity commitment during a shortage event forfeit part of their capacity payment; the forfeited money goes to resources that over-performed during the shortage event. The capacity market is separate from the energy market, where resources with and without a capacity commitment compete on a daily basis to provide power and are paid for the electricity they produce.



Next Steps

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ABOUT ISO NEW ENGLAND

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