



Energy Efficiency in ISO New England Capacity Markets

2015 ACEEE Intelligent Efficiency Conference

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ISO New England (ISO) Has Two Decades of Experience Overseeing the Region's Restructured Electric Power System

- **Regulated by** the Federal Energy Regulatory Commission
- **Reliability coordinator** for New England under the North American Electric Reliability Corporation
- **Independent** of companies in the marketplace and neutral on technology
- **Three core responsibilities** include: operating the regional power system, administering the region's competitive wholesale electricity markets, and planning for the regional power system



Energy Use Is Growing in New England, But Energy Efficiency Is Slowing the Growth Rate

- **6.5 million** households and businesses;
14 million population
- **28,130 MW** all-time summer peak demand set on August 2, 2006
- **22,818 MW** all-time winter peak demand set on January 15, 2004
- Region's *peak* demand forecasted to grow **1.3%** annually
- Region's *overall* electricity demand forecasted to grow **1.0%** annually
- Energy efficiency slows the growth in peak demand to **0.7%** annually and flattens the growth in overall electricity demand to **0.1%** annually *



* Growth rates in peak demand and overall electricity demand are also slowed by behind-the-meter solar photovoltaics (PV)

Ensuring Fair and Efficient Wholesale Markets Is a Major Responsibility for ISO New England

Energy Market

Daily market for wholesale customers to buy and sell electric “energy” – about \$5 to \$12 billion annually

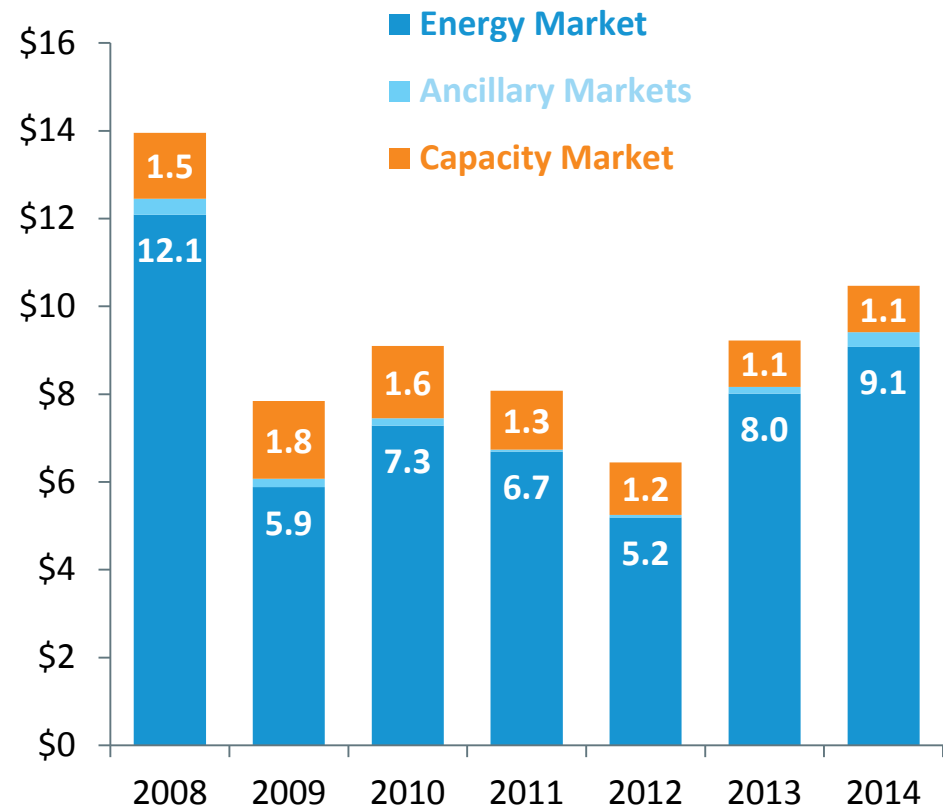
Forward Capacity Market

ISO determines capacity needs three years into the future and resources compete to sell capacity to system through annual auctions – about \$1 to \$2 billion annually

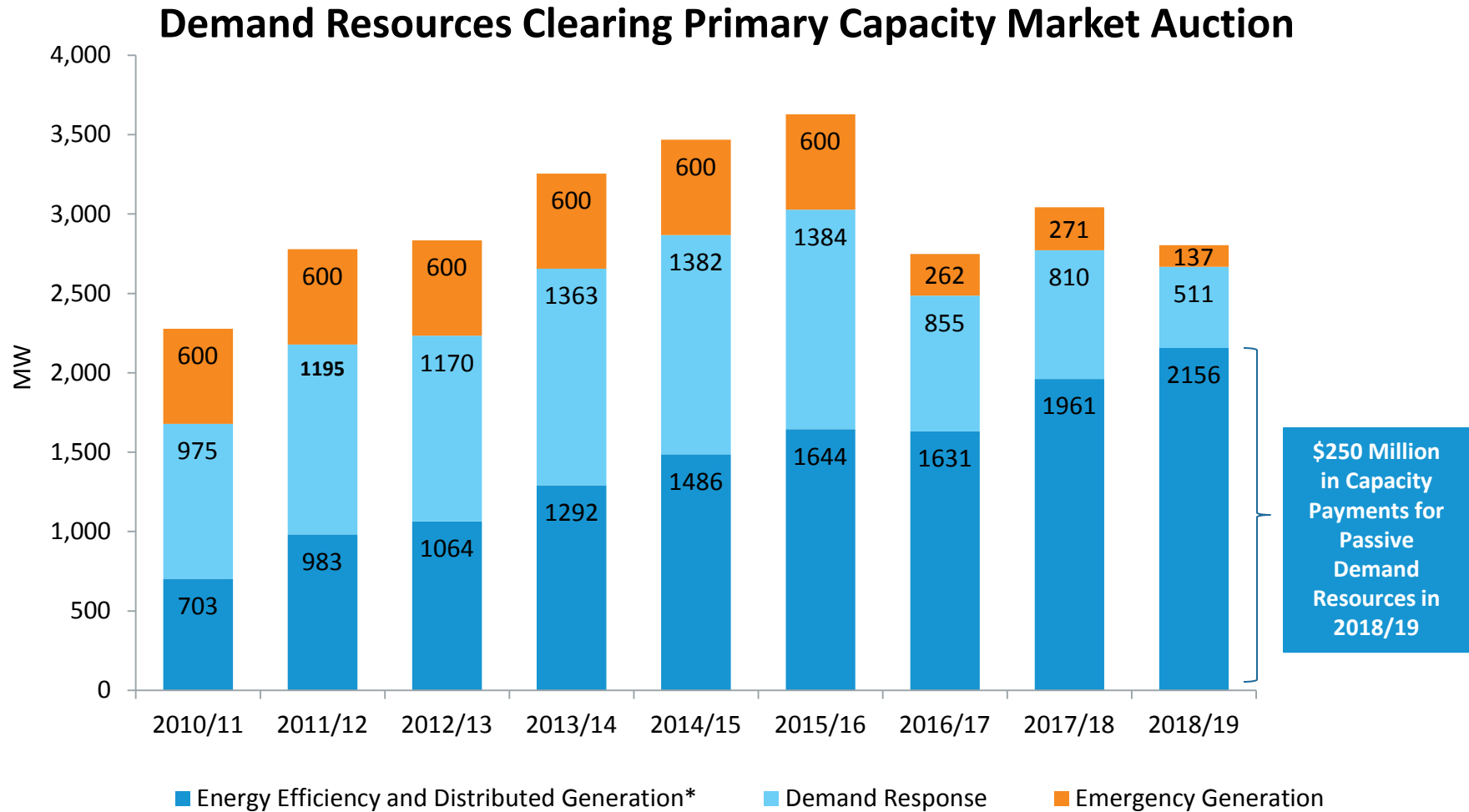
Ancillary Markets

Resources are compensated for providing regulation services and reserves to ensure the reliability of the transmission system in real time – about \$40 to \$370 million annually

Annual Value of Wholesale Electricity Markets
(in billions)



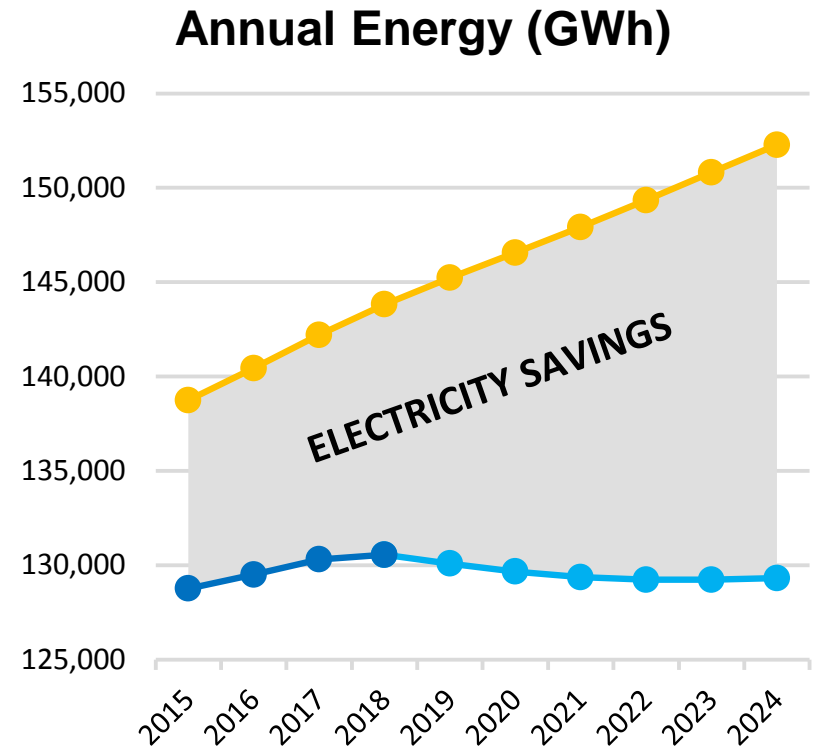
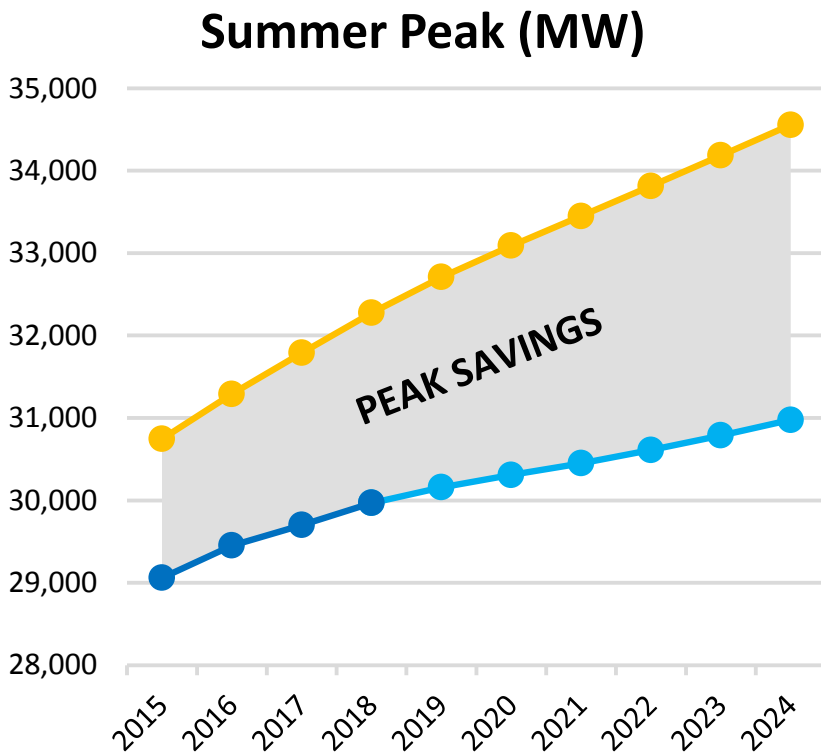
Energy Efficiency Programs Continue to Grow Steadily in the Region's Forward Capacity Market (FCM)



*DG less than 5% of total Passive DR



Energy Efficiency Is Slowing Peak Demand Growth and Flattening Energy Use



The gross forecast of peak demand and energy use



The forecast minus the impact of EE participating in the Forward Capacity Market to date



The forecast minus anticipated EE growth

Source: [Final ISO New England EE Forecast for 2019-2024](#) (April 2015)

Opportunities and Challenges Exist for Demand Resource

- **Energy efficiency continues to be an integral component** of the regional planning process
- **Energy efficiency is a gateway** to deploying dispatchable load control measures – leveraging equipment and processes that are suited to remote control
- **Expanded use of metering infrastructure** as part of grid modernization provides access to new sectors previously not fully engaged in wholesale markets due to high cost for measurement and verification
- The implementation of **time-of-use rates** can create incentives for more price-responsive demand

