



# ISO New England Update

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## *Consumer Liaison Group Meeting*

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VICE PRESIDENT, EXTERNAL AFFAIRS AND CORPORATE COMMUNICATIONS





## TODAY'S UPDATES

- ISO New England's 2018/2019 Winter Outlook
- ISO New England's preparations for the thirteenth Forward Capacity Auction #13 (FCA #13)
- Wholesale electricity market value projections for 2018
- Additional wholesale electricity market and retail rate information for New England



# 2018/2019 WINTER OUTLOOK

ISO New England Winter Outlook Press Release: [https://www.iso-ne.com/static-assets/documents/2018/11/20181128\\_pr\\_winter\\_outlook\\_final.pdf](https://www.iso-ne.com/static-assets/documents/2018/11/20181128_pr_winter_outlook_final.pdf)

# Winter 2018-2019 Outlook



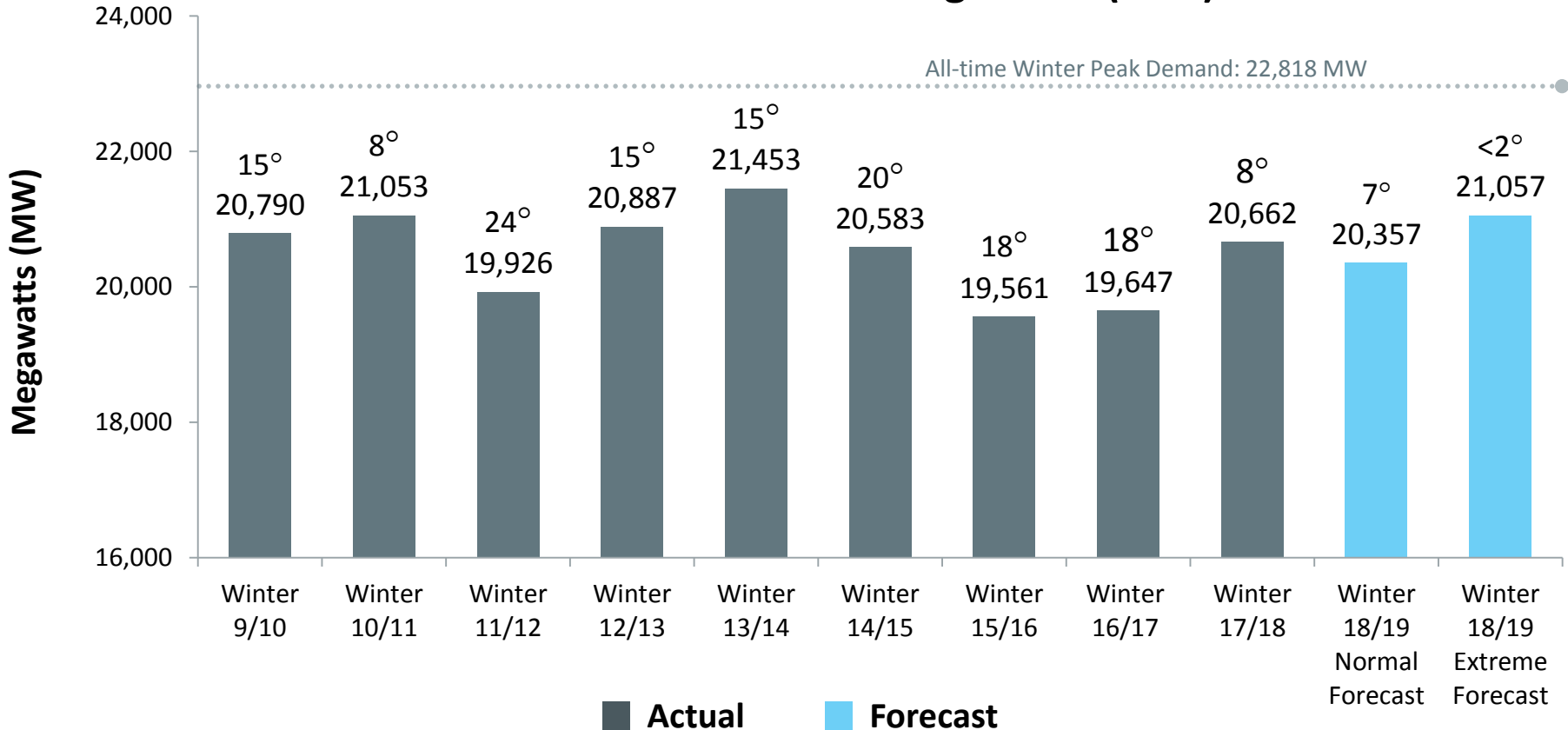
- Under normal weather conditions, the ISO expects to have adequate capacity to meet demand for electricity this winter
- What's new this winter?
  - The Winter Reliability Program, which incentivized oil- and gas-fired generators to secure fuel before the winter, has been discontinued as **Pay-for-Performance incentives** are now in place
  - A new **energy availability forecasting and reporting framework** has been added to the existing OP-21 procedure to improve situational awareness and encourage proactive measures to avoid forecasted energy deficiencies
  - A new **market mechanism** has been added to the daily energy market to allow generators to incorporate **opportunity costs** into their daily offers to help ensure that limited fuel supplies are used when they are most valuable for system reliability and cost-effectiveness



# Winter Peak Demand

And Corresponding Temperatures\*

## Winter Peak Demand in Megawatts (MW)



Source: [ISO-NE Seasonal Peaks Since 1980](#) and [COO NEPOOL Participants Committee Report](#) (November 2018)

\*Temperature is dry-bulb temperature in degrees Fahrenheit based on weighted average of eight New England weather stations.

# The ISO Has Procedures in Place to Maintain a Reliable Supply of Electricity on the Coldest Winter Days



Action During a  
Capacity Deficiency  
(OP-4)



Action in an  
Emergency  
(OP-7)



Cold Weather  
Operations  
(SOP-RTMKTS.0050.0007)



Energy Inventory  
Accounting and  
Actions During an  
Energy Emergency  
(OP-21)

## KEY UPDATE:

Recent changes to OP-21 will improve **situational awareness** and encourage **proactive measures** to avoid forecasted energy deficiencies

# ISO New England Launches New 21-Day Assessment of Forecasted Energy Availability this Winter

*Implemented as a revision to Operating Procedure 21 (OP-21)*

- The **energy assessment** will be based on New England generators' reports of their fuel inventories, emissions limitations, and other factors that could limit their availability
- Hourly forecast results compared against established thresholds to trigger the declaration of:
  - **Energy Alerts** (declared in Day 6-21 timeframe), or
  - **Energy Emergencies** (declared in Day 1-5 timeframe)
- Energy assessments will be published to the ISO website
  - **Weekly**, during winter months (**December – March**)
  - **Bi-weekly**, during non-winter months (**April – November**)
- During Energy Alert or Energy Emergency conditions, the ISO will publish energy assessments **on a daily basis**



# 21-Day Energy Assessment Raises Awareness About Energy Availability So Resources Can Take Action

- Resource owners and other stakeholders, including regulatory and government entities, will be made aware of actual or anticipated **energy deficiencies** over 21-day look-ahead period
  - For example, when oil or other fuels start running low or emissions limitations are constraining resource availability
- With up to three weeks' notice, resource owners have time to **evaluate status** of their resources and **take action** as needed to increase their availability
  - For example, make arrangements to have more fuel delivered or reschedule maintenance to transmission facilities
- This near-term initiative joins a group of extensive changes the ISO is undertaking to address **winter energy security** risks





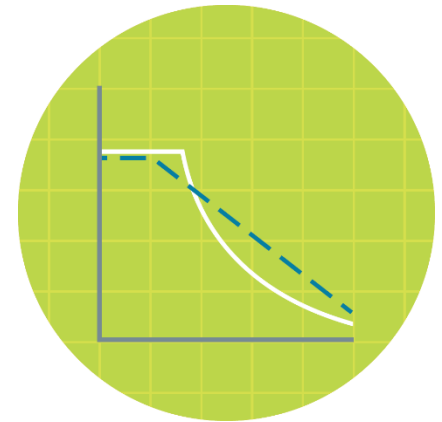
# FORWARD CAPACITY AUCTION #13

*June 1, 2022 – May 31, 2023 Capacity Commitment Period*



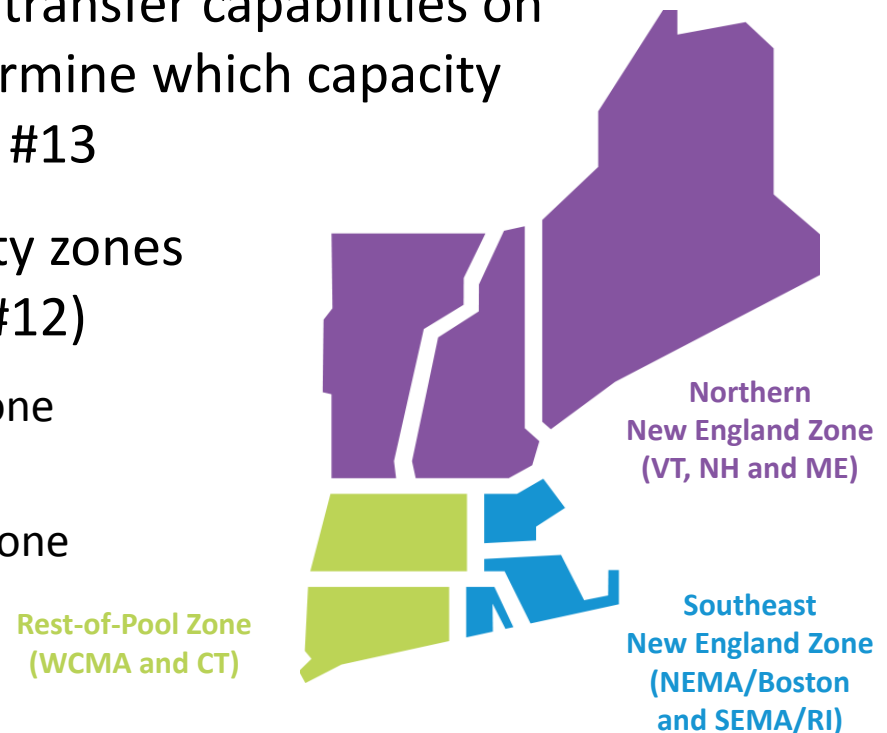
# Forward Capacity Auction #13 Is Scheduled to Take Place in February 2019

- **FCA #13** will procure the resources needed to meet the demand for electricity, plus reserve requirements, during the June 1, 2022 to May 31, 2023 capacity commitment period
- In **November**, the ISO submitted a pre-FCA informational filing with the Federal Energy Regulatory Commission (FERC) for review. The filing includes:
  - Capacity zones to be modeled in the auction
  - Resources qualified to participate in the auction
- All other FCA-related **calculations** and **determinations** were included in a separate filing for FERC review



# Three Capacity Zones Will Be Modeled in FCA #13

- The ISO studied constraints and transfer capabilities on the transmission system to determine which capacity zones would be modeled in FCA #13
- The ISO will model **three** capacity zones in FCA #13 (same zones as FCA #12)
  - Northern New England Capacity Zone
    - Export-Constrained
  - Southeast New England Capacity Zone
    - Import-Constrained
  - Rest-of-Pool Capacity Zone
- The installed capacity target for FCA #13 is **33,750 MW**
- Overall, **34,925 MW** of existing and **8,716 MW** of new resources have qualified to participate in FCA #13



# FCA #13 Will Feature the First Substitution Auction for Sponsored Policy Resources

- The first *Competitive Auctions with Sponsored Policy Resources* (CASPR) **substitution auction** will be held in conjunction with FCA #13 for state-sponsored resources seeking commitments in the 2022-2023 timeframe
- The CASPR design is intended to:
  - **Accommodate** sponsored policy resources into the Forward Capacity Market over time, and
  - **Preserve** competitively based capacity pricing for other resources
- The ISO qualified 14 demand bids, totaling 2,160 MW, and 86 supply offers, totaling 544 MW, to participate in the substitution auction

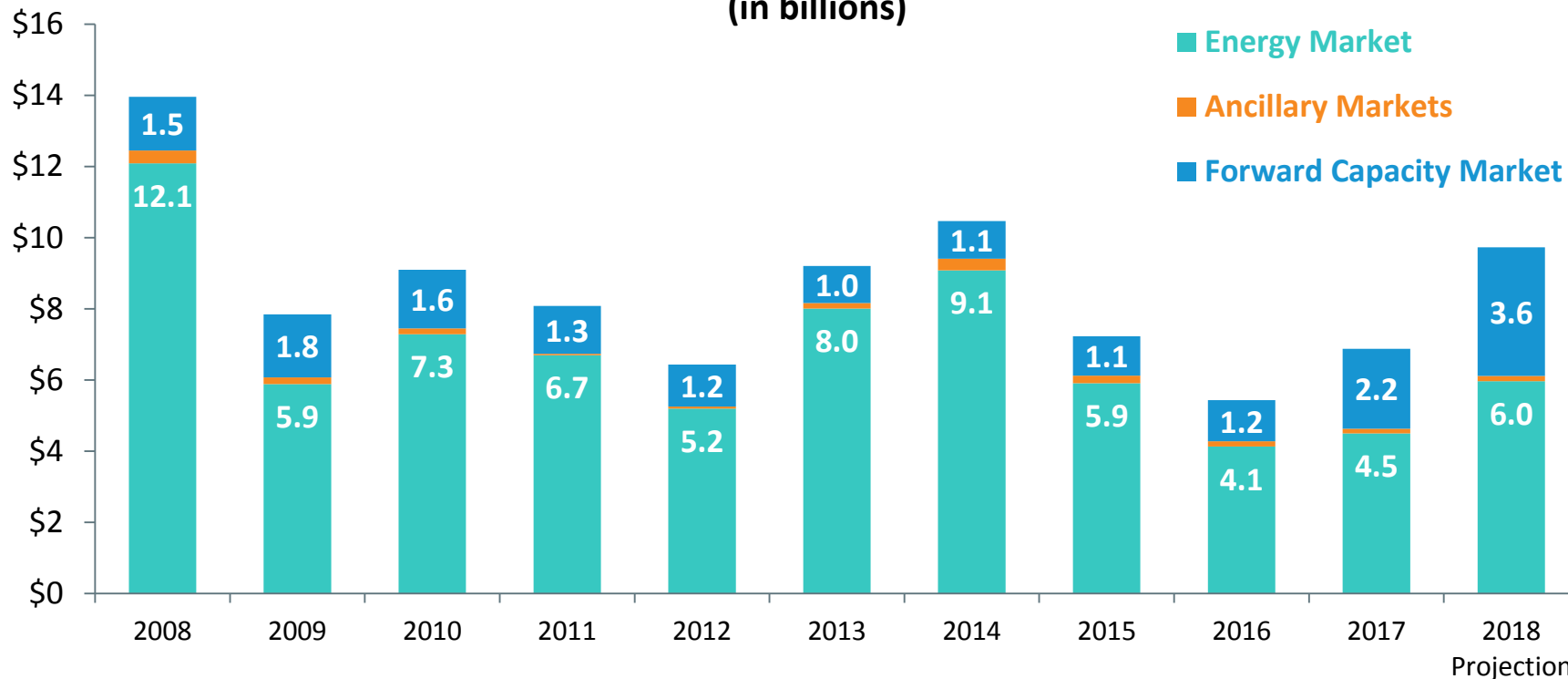


# WHOLESALE ELECTRICITY MARKET COSTS



# Energy Market Values Vary with Fuel Prices While Capacity Market Values Vary with Changes in Supply

Annual Value of Wholesale Electricity Markets  
(in billions)



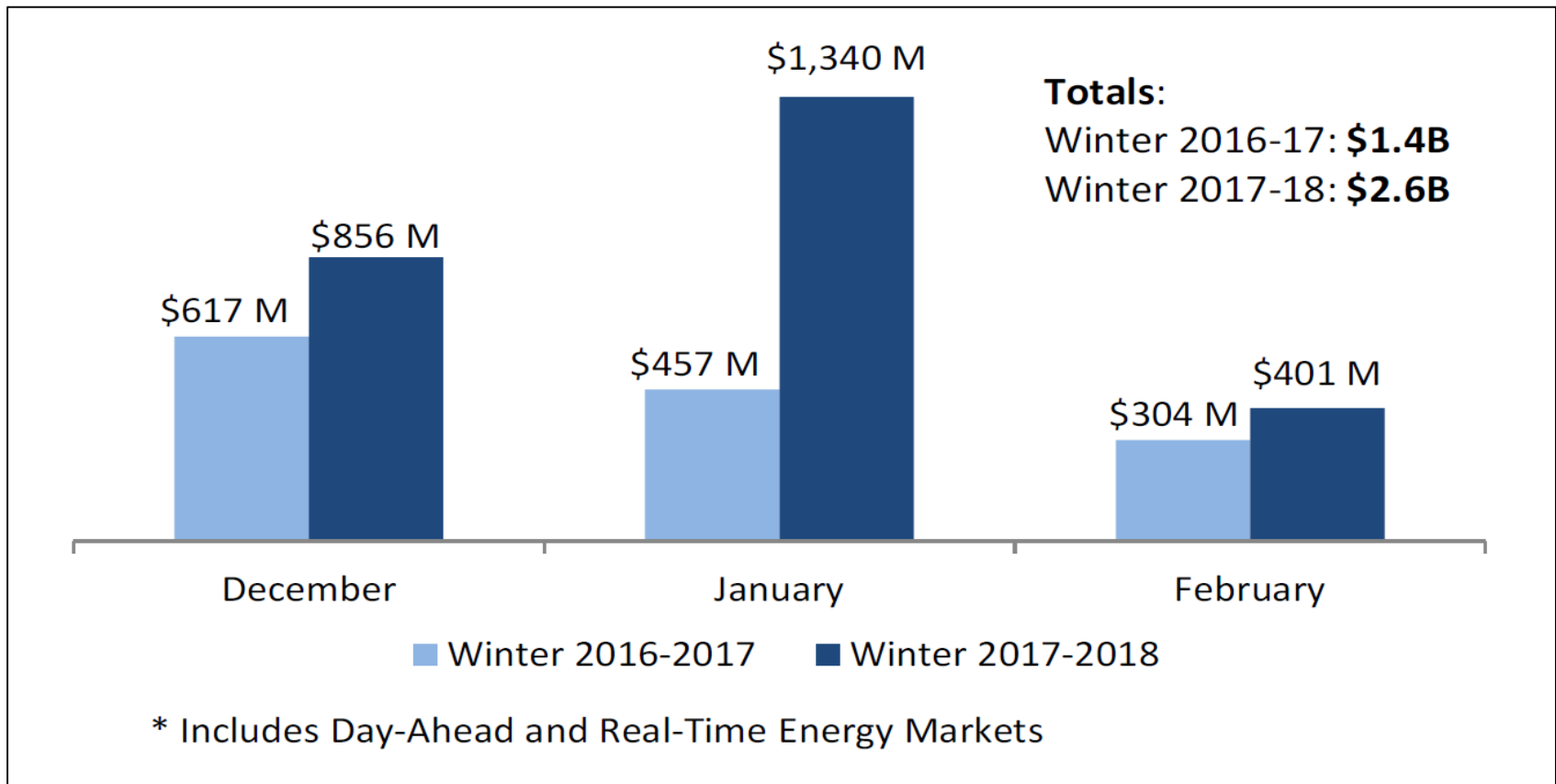
Source: [2017 Report of the Consumer Liaison Group](#); 2017 data is subject to adjustment

Note: Forward Capacity Market values are based on auctions held roughly three years prior to each calendar year. The 2018 projection is the sum of preliminary 2018 January-October actuals and the November-December projected values. The November-December projections were derived as follows: on average, over the last five years (2013-2017), the value of the Energy Market and the Ancillary Markets accrued over the first ten months of the year was approximately 82.28% and 81.19% of the annual total for the respective market. These percentages were applied to the totals from the first ten months of 2018 to produce the November-December projections for these markets. The Capacity Market values reflect the October 2018 value held constant for the remainder of the year. Please note that this projection is for illustrative purposes only. Data are preliminary and subject to reconciliation.

# Electric Energy Costs Impacted by Two-Week Cold Snap

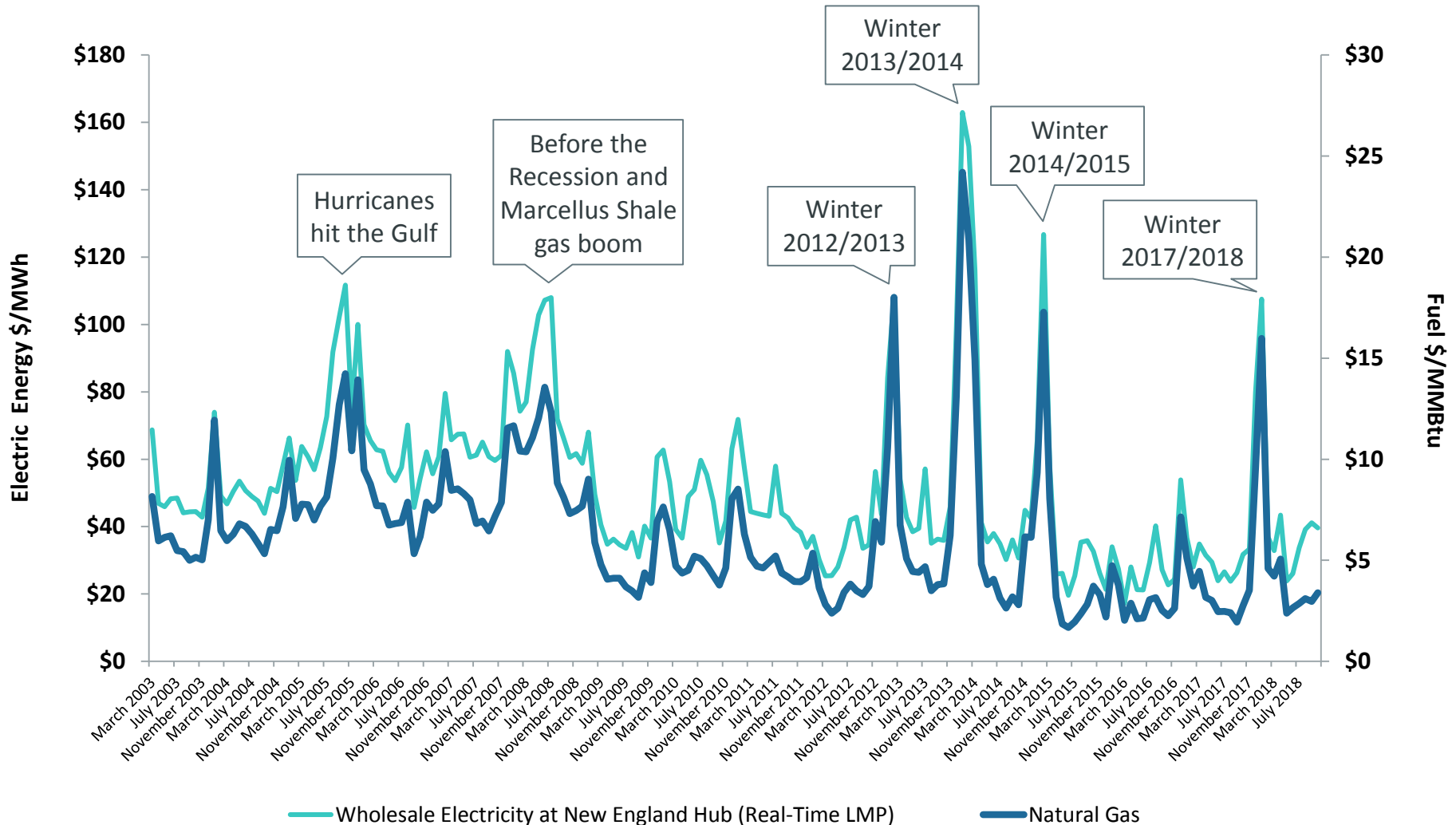
*Increase in natural gas prices had a direct impact on wholesale energy prices*

## Total Wholesale Electric Energy Costs for Winter 2017-2018 Compared to Winter 2016-2017 (in millions)\*



# Natural Gas and Wholesale Electricity Prices Are Linked

Monthly average natural gas and wholesale electricity prices at the New England hub



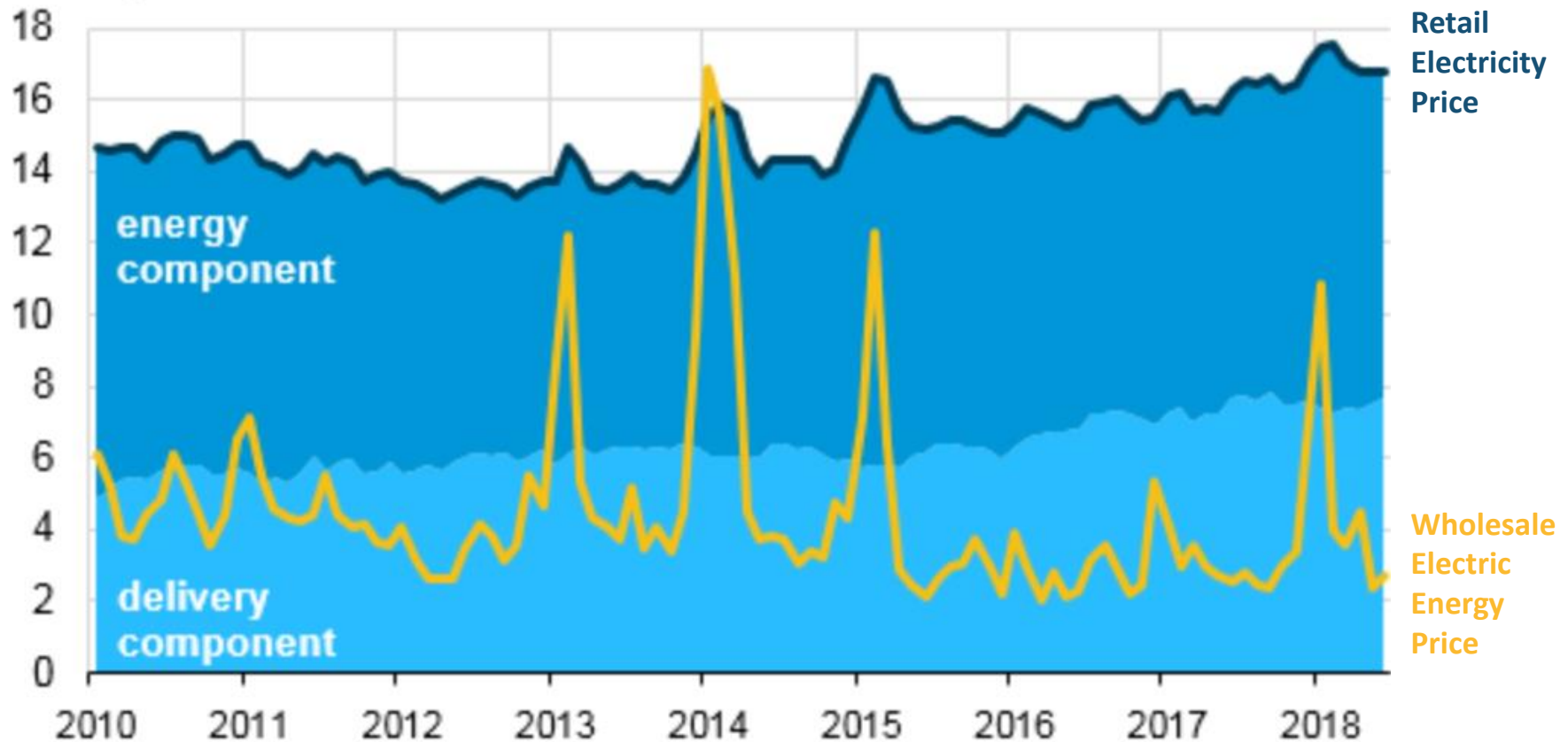
— Wholesale Electricity at New England Hub (Real-Time LMP)

— Natural Gas



# New England Wholesale and Retail Electricity Prices

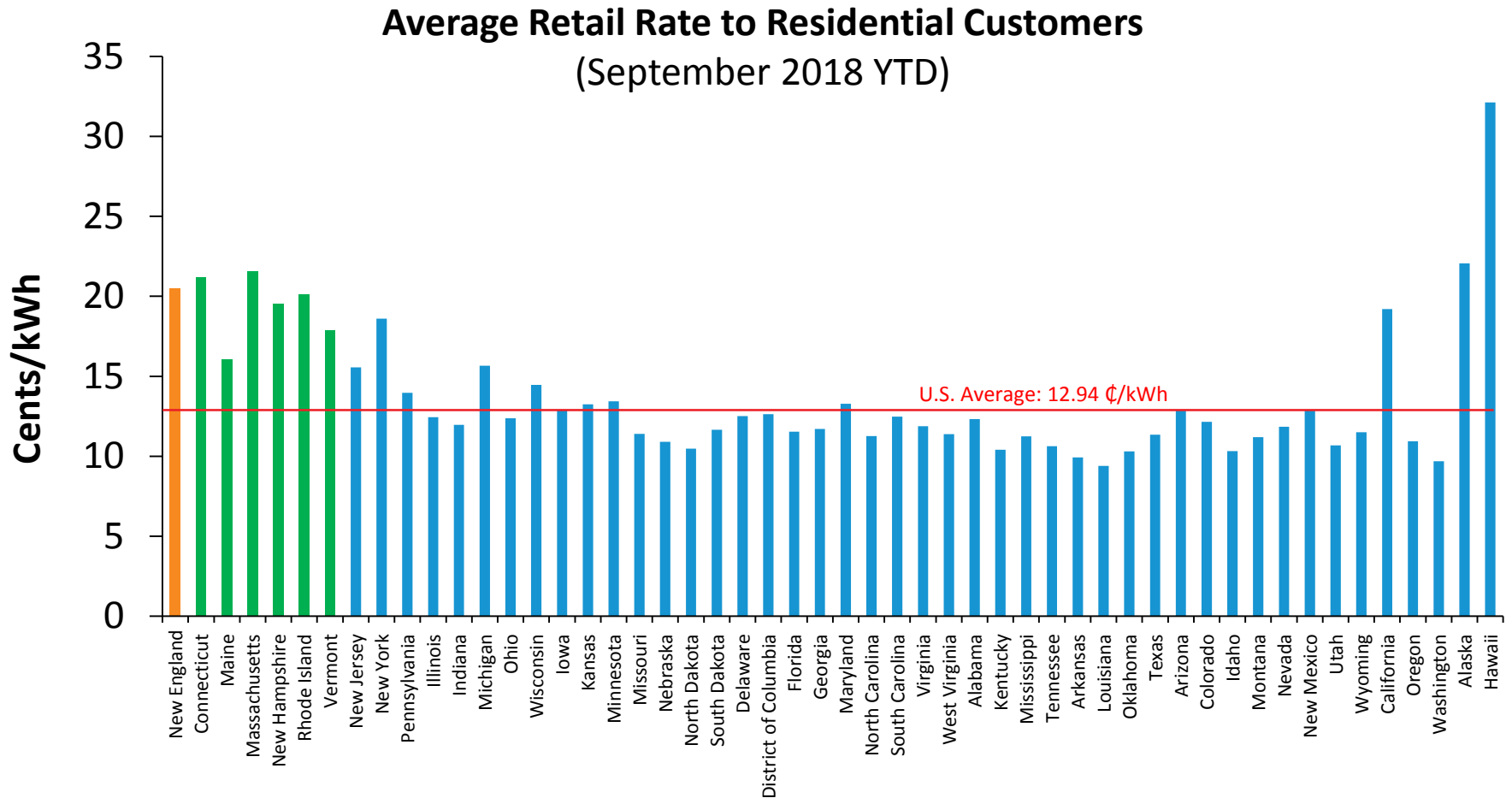
New England Unbundled Competitive Retail and Wholesale Electricity Prices  
(cents per kilowatt-hour)



Source: U.S. Energy Information Administration, *Monthly Electric Power Industry Report* (Form EIA-861M) and ISO New England  
<https://www.eia.gov/todayinenergy/detail.php?id=37415#>

# Residential Retail Electricity Rates Across the U.S.

*New England's retail electricity rates are among the highest in the country*



Source: U.S. Energy Information Administration *Electric Power Monthly* report issued November 27, 2018 with data through September 2018

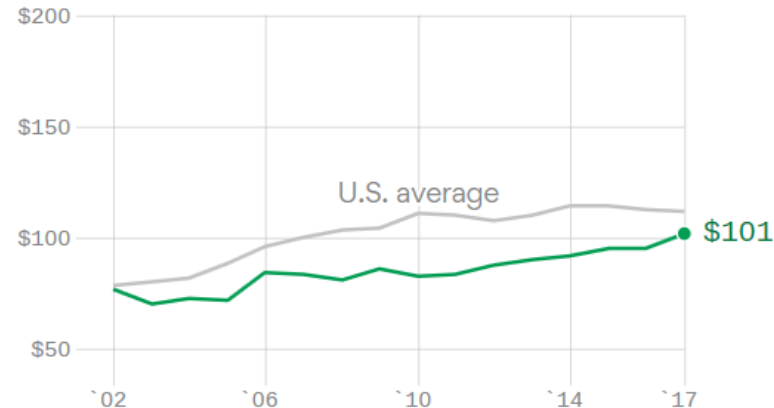
<http://www.eia.gov/electricity/monthly/>

# But What About Average Monthly Electricity Bills?

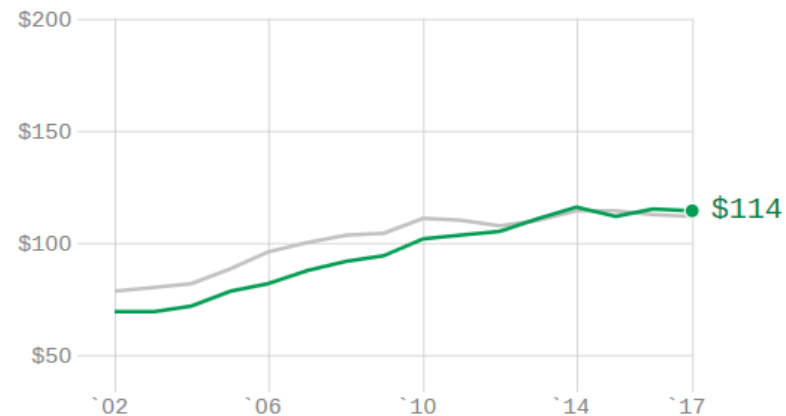
**2017 Average Monthly Bills**  
Residential Customers

State	Average Monthly Bill
Connecticut	\$139.97
Massachusetts	\$116.86
New Hampshire	\$114.95
Rhode Island	\$105.76
Vermont	\$95.02
Maine	\$87.21

CALIFORNIA



INDIANA



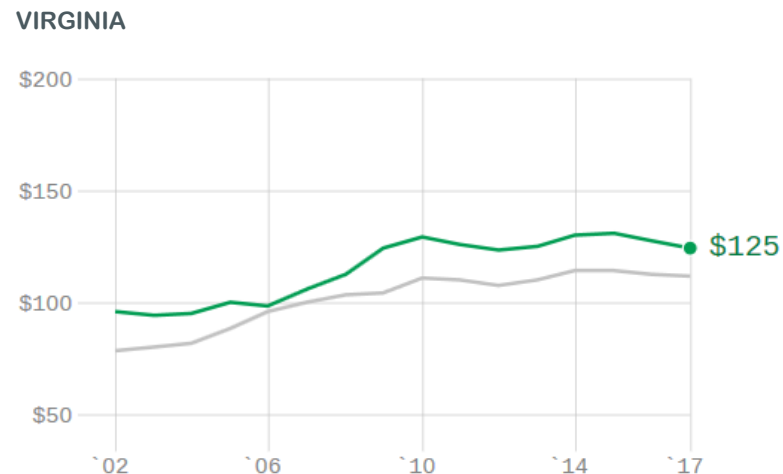
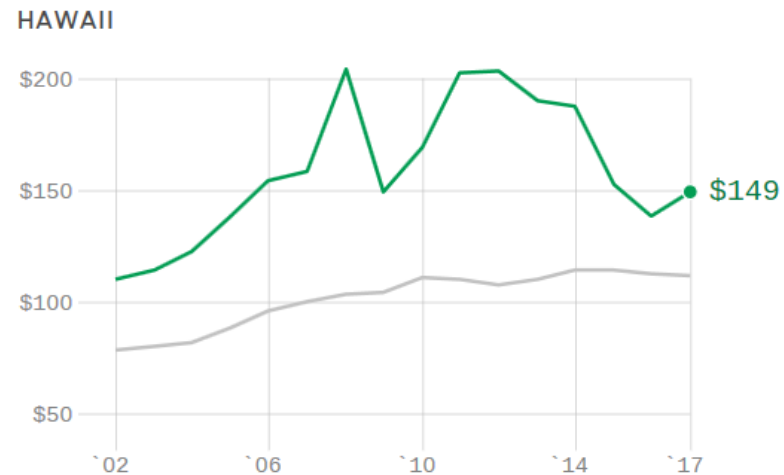
Source: U.S. Energy Information Administration (Forms EIA-861 and EIA-861U) and Axios

<https://www.axios.com/electricity-prices-united-states-infographic-3b6de9f7-b238-4eef-8f67-30d310bab57f.html>

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# Mark Your Calendars!

Consumer Liaison Group Meeting Dates for 2019:

March 14, 2019

June 13, 2019

September 5, 2019

December 5, 2019



# Questions

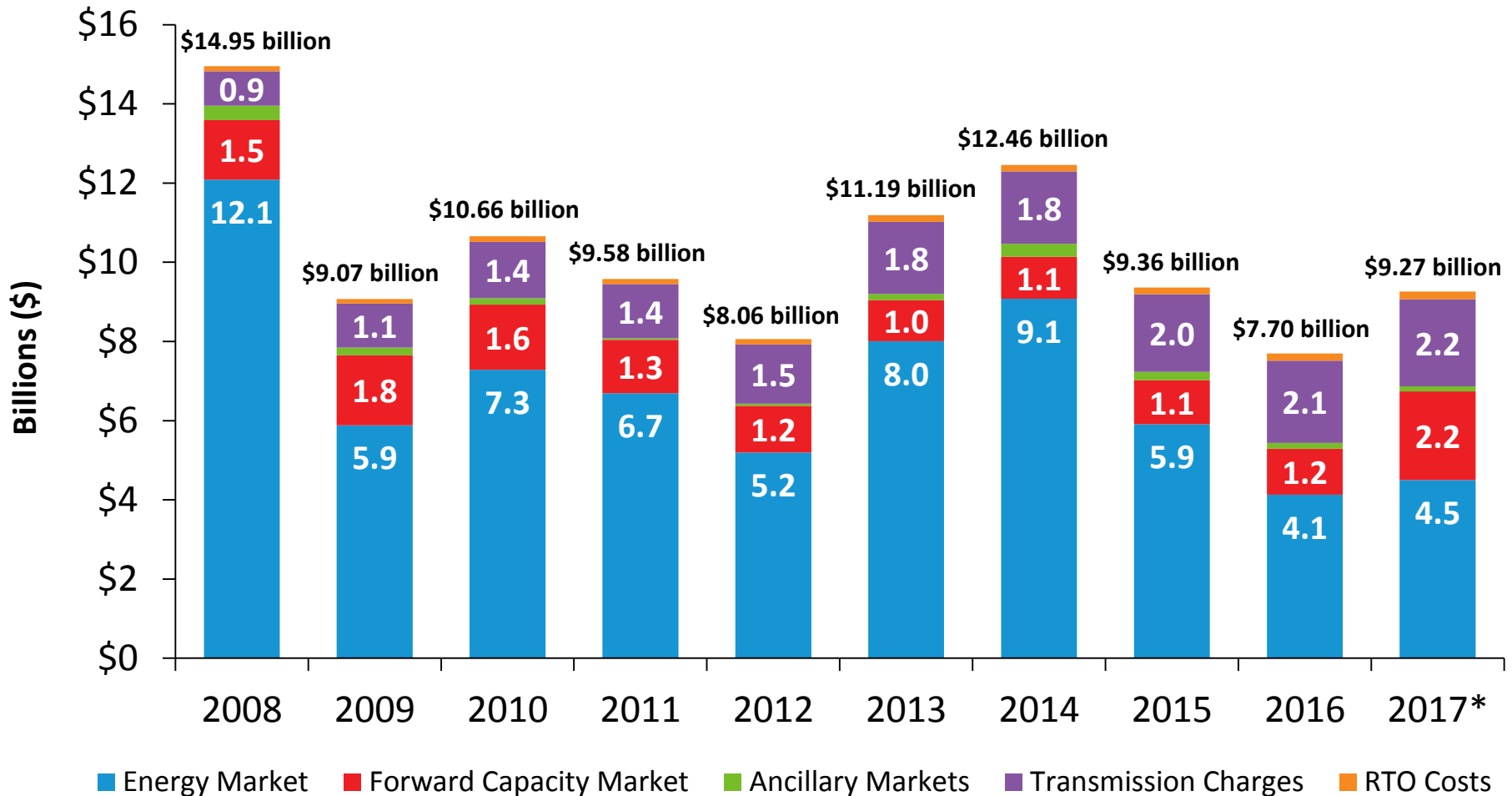


# APPENDIX



# New England Wholesale Electricity Costs

Annual wholesale electricity costs have ranged from \$7.7 billion to \$15 billion



Source: [2017 Report of the Consumer Liaison Group](#); \* 2017 data is subject to adjustment

Note: Forward Capacity Market values shown are based on auctions held roughly three years prior to each calendar year.



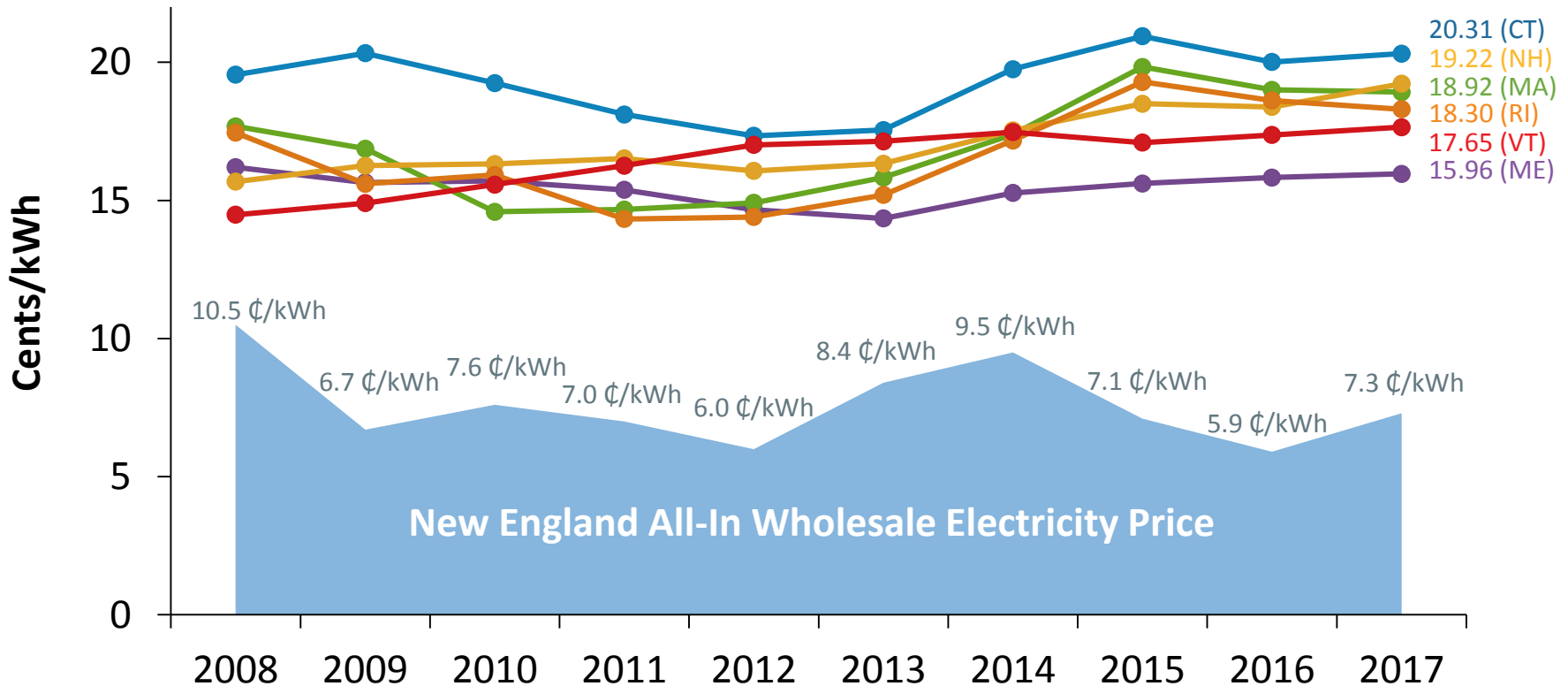
# New England Wholesale Electricity Costs<sup>(a)</sup>

	2013		2014		2015		2016		2017*	
	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh
<b>Wholesale Market Costs</b>										
<b>Energy (LMPs)<sup>(b)</sup></b>	\$8,009	6.0	\$9,079	6.9	\$5,910	4.5	\$4,130	3.2	\$4,498	3.5
<b>Ancillaries<sup>(c)</sup></b>	\$152	0.1	\$331	0.3	\$210	0.2	\$146	0.1	\$132	0.1
<b>Capacity<sup>(d)</sup></b>	\$1,039	0.8	\$1,056	0.8	\$1,110	0.8	\$1,160	0.9	\$2,245	1.8
<b>Subtotal</b>	\$9,200	6.9	\$10,466	8.0	\$7,229	5.5	\$5,437	4.2	\$6,875	5.4
<b>Transmission Charges<sup>(e)</sup></b>	\$1,822	1.4	\$1,828	1.4	\$1,964	1.5	\$2,081	1.6	\$2,199	1.7
<b>RTO Costs<sup>(f)</sup></b>	\$167	0.1	\$165	0.1	\$165	0.1	\$180	0.1	\$193	0.2
<b>Total</b>	<b>\$11,189</b>	<b>8.4</b>	<b>\$12,459</b>	<b>9.5</b>	<b>\$9,358</b>	<b>7.1</b>	<b>\$7,698</b>	<b>5.9</b>	<b>\$9,267</b>	<b>7.3</b>

- (a) Average annual costs are based on the 12 months beginning January 1 and ending December 31. Costs in millions = the dollar value of the costs to New England wholesale market load servers for ISO-administered services. Cents/kWh = the value derived by dividing the dollar value (indicated above) by the real-time load obligation. These values are presented for illustrative purposes only and do not reflect actual charge methodologies. **\* The wholesale values for 2017 are subject to adjustment.**
- (b) Energy values are derived from wholesale market pricing, and represent the results of the Day-Ahead Energy Market plus deviations from the Day-Ahead Energy Market reflected in the Real-Time Energy Market.
- (c) Ancillaries include first- and second-contingency Net Commitment-Period Compensation (NCPC), forward reserves, real-time reserves, regulation service, and a reduction for the Marginal Loss Revenue Fund.
- (d) Capacity charges are those associated with the transitional Installed Capacity (ICAP) Market through May 2010 and the Forward Capacity Market (FCM) from June 2010 forward.
- (e) Transmission charges reflect the collection of transmission owners' revenue requirements and tariff-based reliability services, including black-start capability, voltage support, and FCM reliability. In 2017, the cost of payments made to these generators for reliability services under the ISO's tariff was \$35.4 million. Transmission charge totals for years 2010 forward reflect the refund of Schedule 1 TOUT charges to regional network load.
- (f) RTO costs are the costs to run and operate ISO New England and are based on actual collections, as determined under Section IV of the *ISO New England Inc. Transmission, Markets, and Services Tariff*.

# Comparing New England Wholesale Electricity Prices and Retail Electricity Rates Over Time

Annual Average Retail Price of Electricity for Residential Customers in Each New England State (cents/kWh)



Source: U.S. Energy Information Administration, *Electric Power Monthly*, Average Retail Price of Electricity to Ultimate Customers by End-Use Sector, by State; [2017 Report of the Consumer Liaison Group](#), the New England all-in wholesale electricity price is derived by dividing total wholesale electricity costs by real-time load obligation (presented for illustrative purposes; does not reflect actual charge methodologies)