

CONTEXT AROUND RGGI DISCUSSIONS

RGGI STAKEHOLDER MEETING

MICHEL DI CAPUA

19 SEPTEMBER 2011



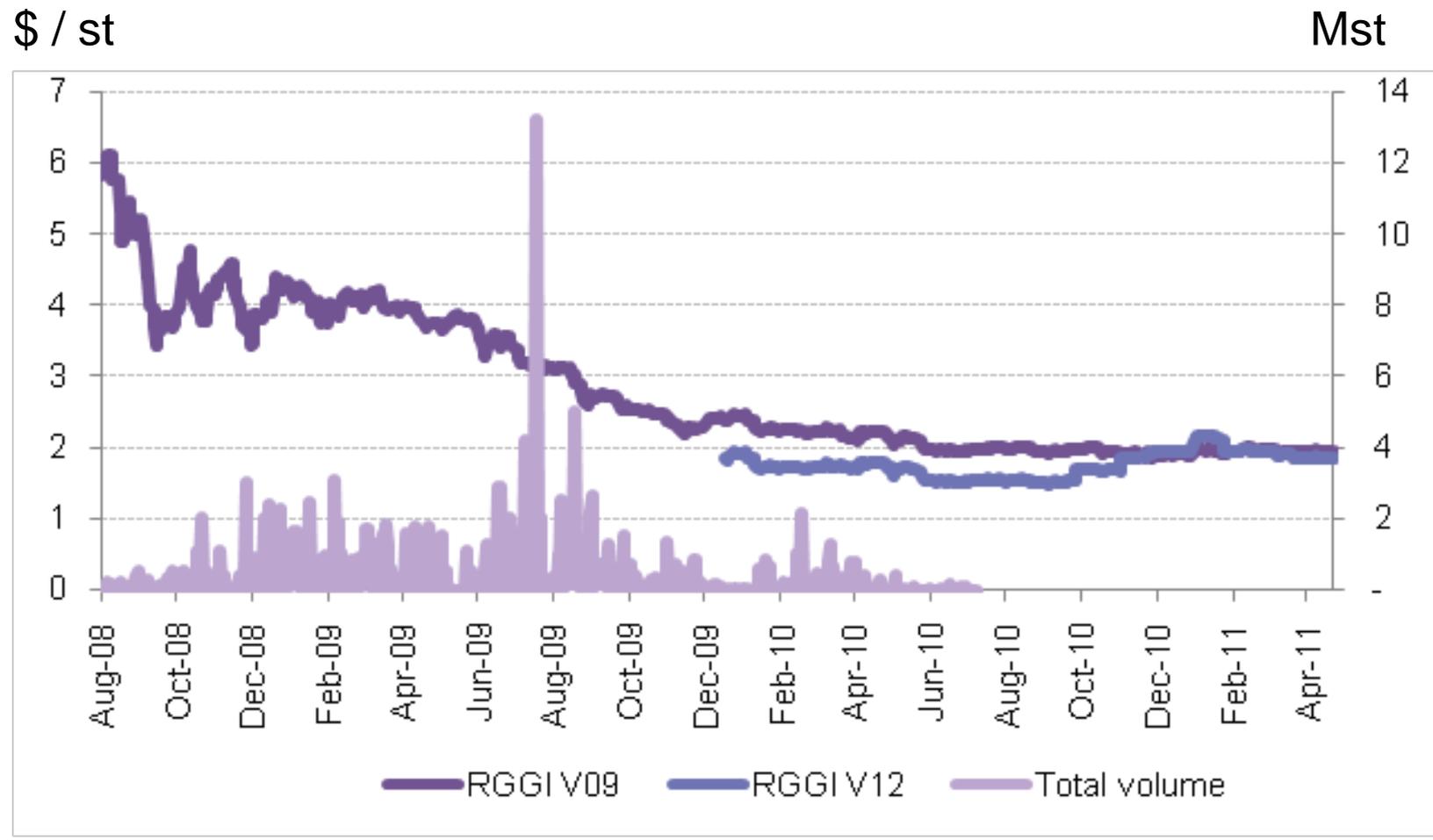
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Market size

Power and renewables in RGGI territory

Energy efficiency

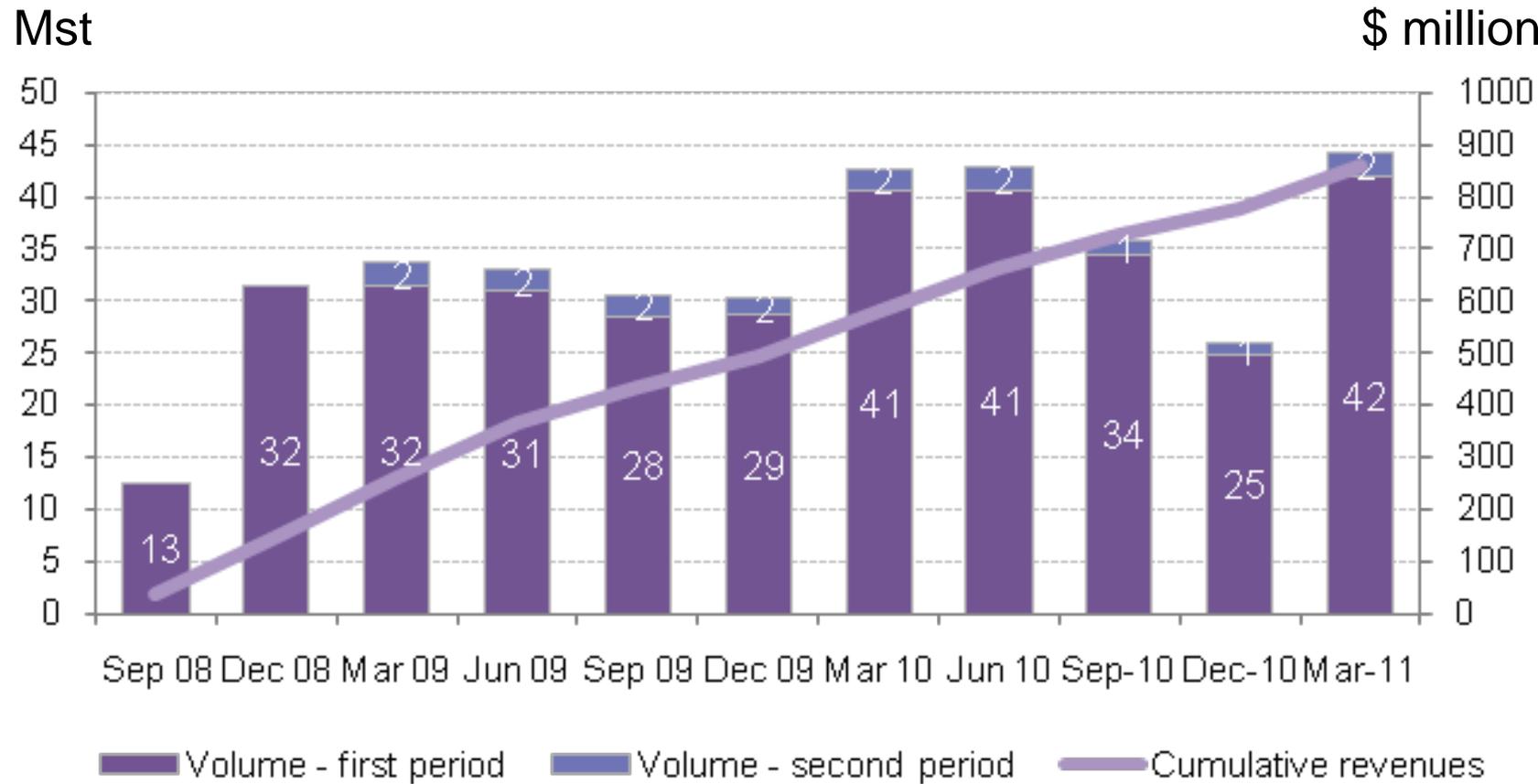
RGGI PRICES AND VOLUMES ON CCFE AND AUCTIONS



Note: st = short ton; the first control period is from 2009–11, second control period is from 2012–14

Source: Bloomberg New Energy Finance

RGGI AUCTION VOLUMES AND CUMULATIVE REVENUES



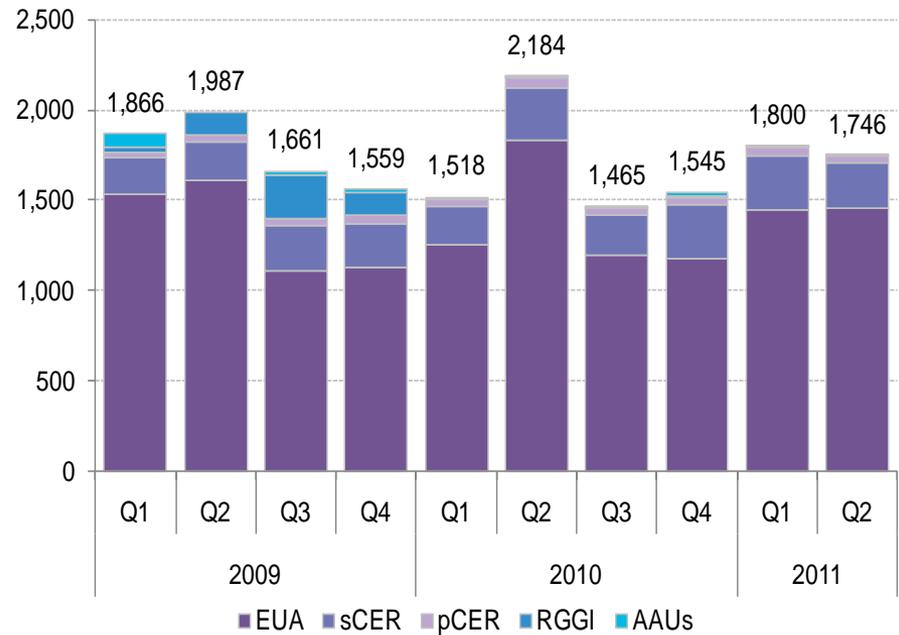
Note: st = short ton

Source: Bloomberg New Energy Finance, RGGI, Potomac Economics

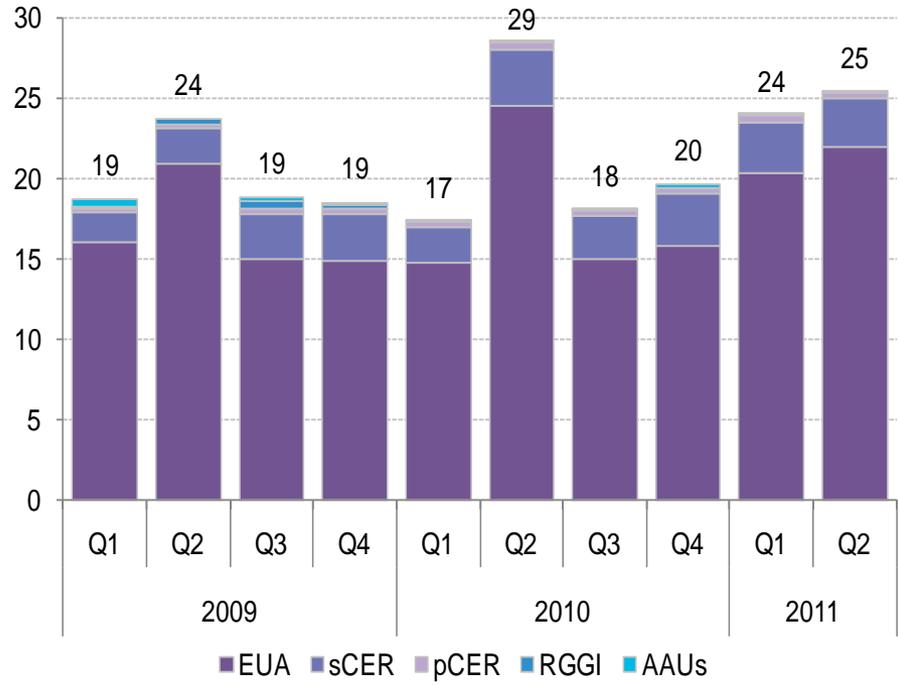
QUARTERLY FIGURES FOR MAIN CARBON MARKETS

Q1 2009-Q2 2011

VOLUMES (MT)



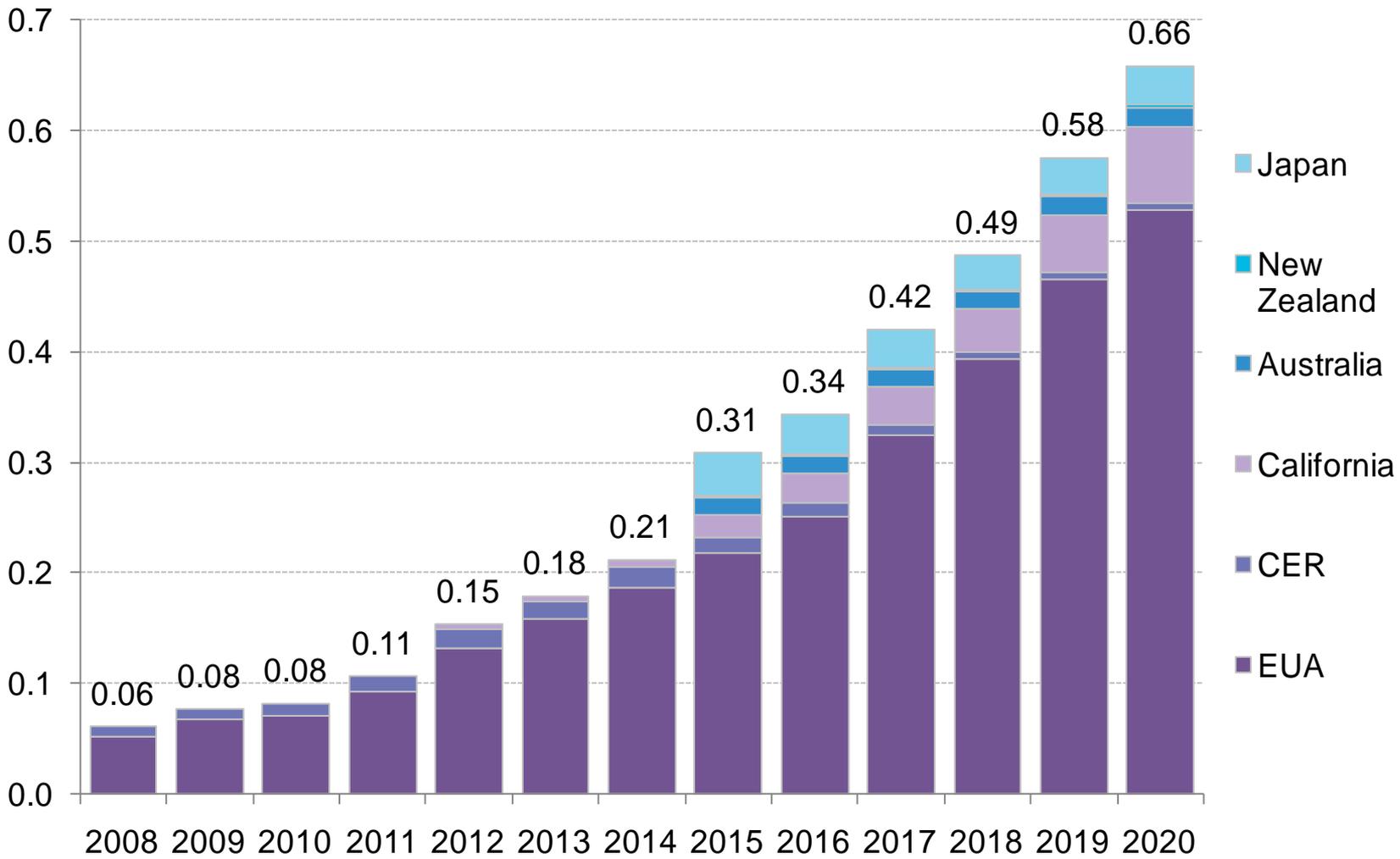
VALUES (€BN)



Note: Over-the-counter trades not traded on exchange are now excluded from this analysis. The figures for previous years have been reworked to compare like-for-like yearly changes.

Source: Trading figures taken from ECX from Bloomberg, ECX, Bluenext, EEX, CCX, Nordpool, other sources include UNFCCC and our own Bloomberg New Energy Finance estimations.

PROJECTED GROWTH IN THE CARBON MARKET (€TRILLION)



Source: Bloomberg New Energy Finance

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Market size

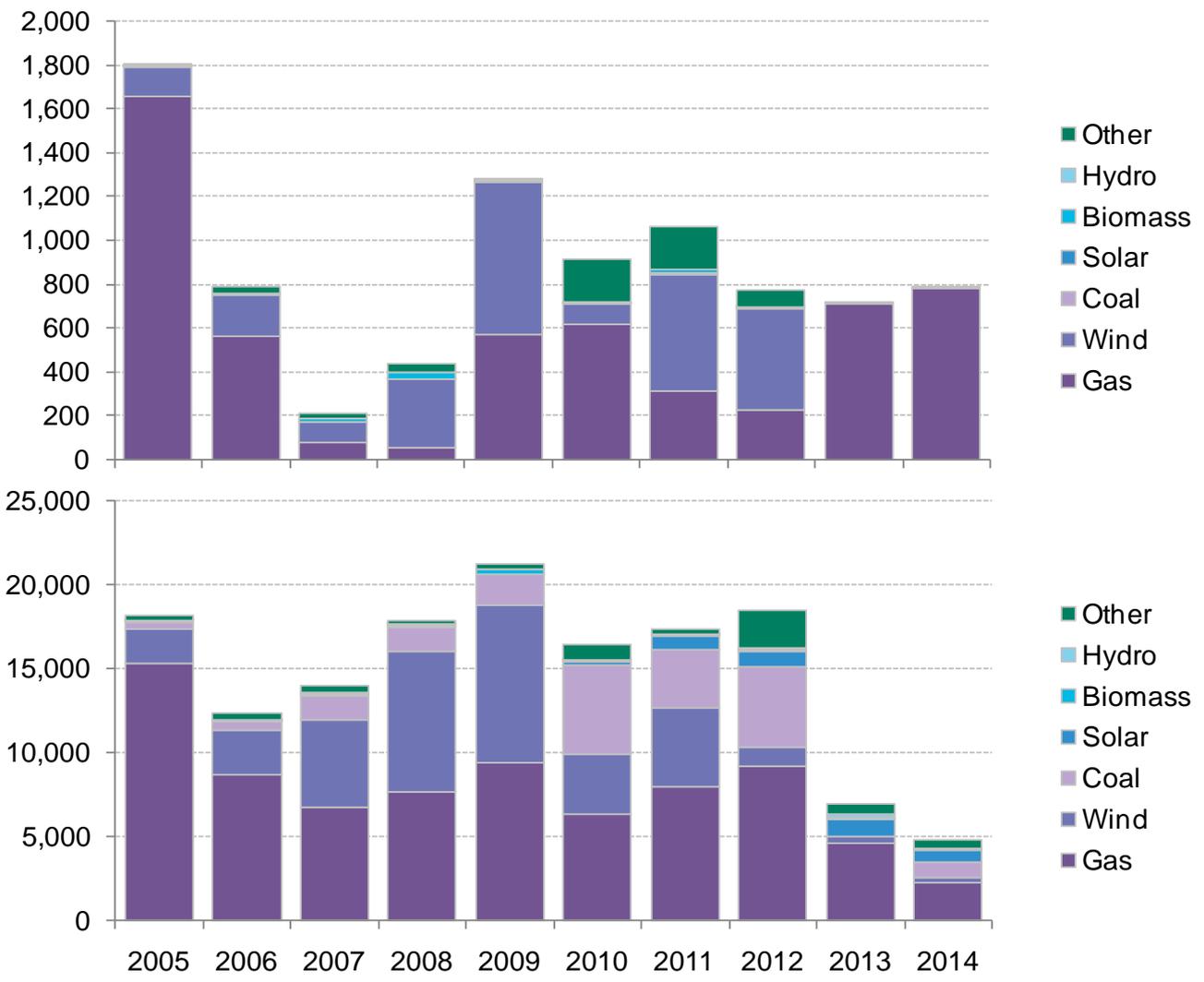
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NEW CAPACITY ADDITIONS (MW)

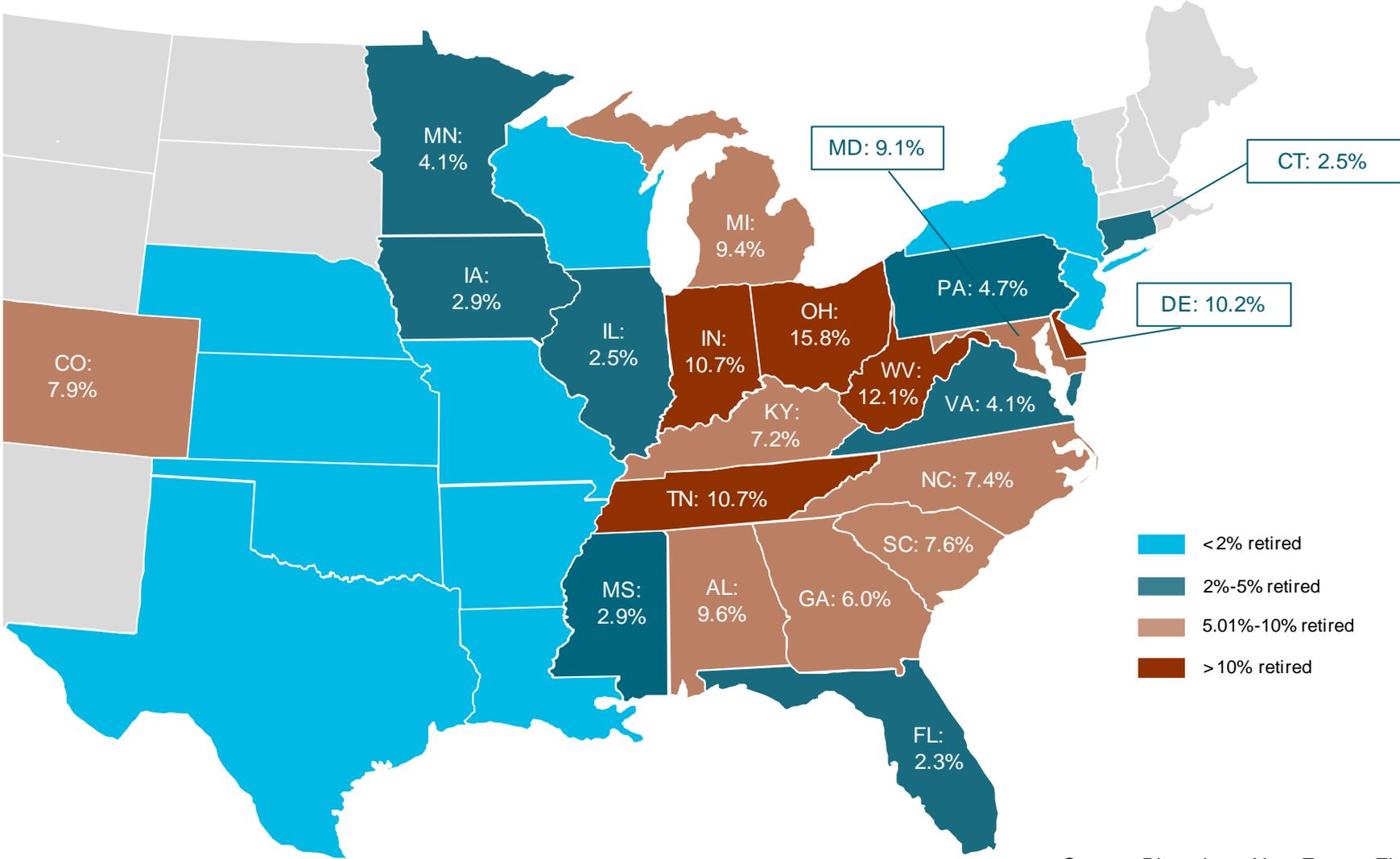
**NPCC REGION
(NORTHEAST US)**

TOTAL US



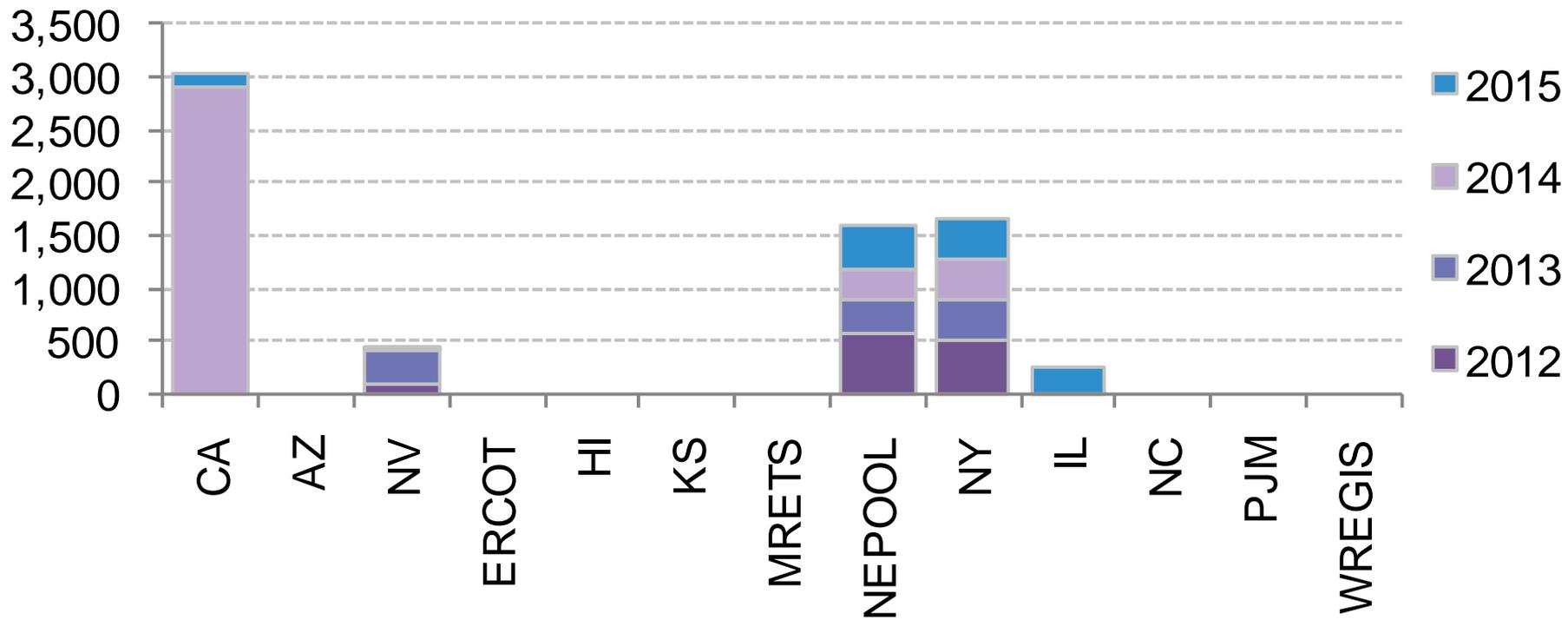
Source: Bloomberg New Energy Finance, EIA

COAL RETIREMENTS BY STATE AS % OF TOTAL CAPACITY



Source: Bloomberg New Energy Finance

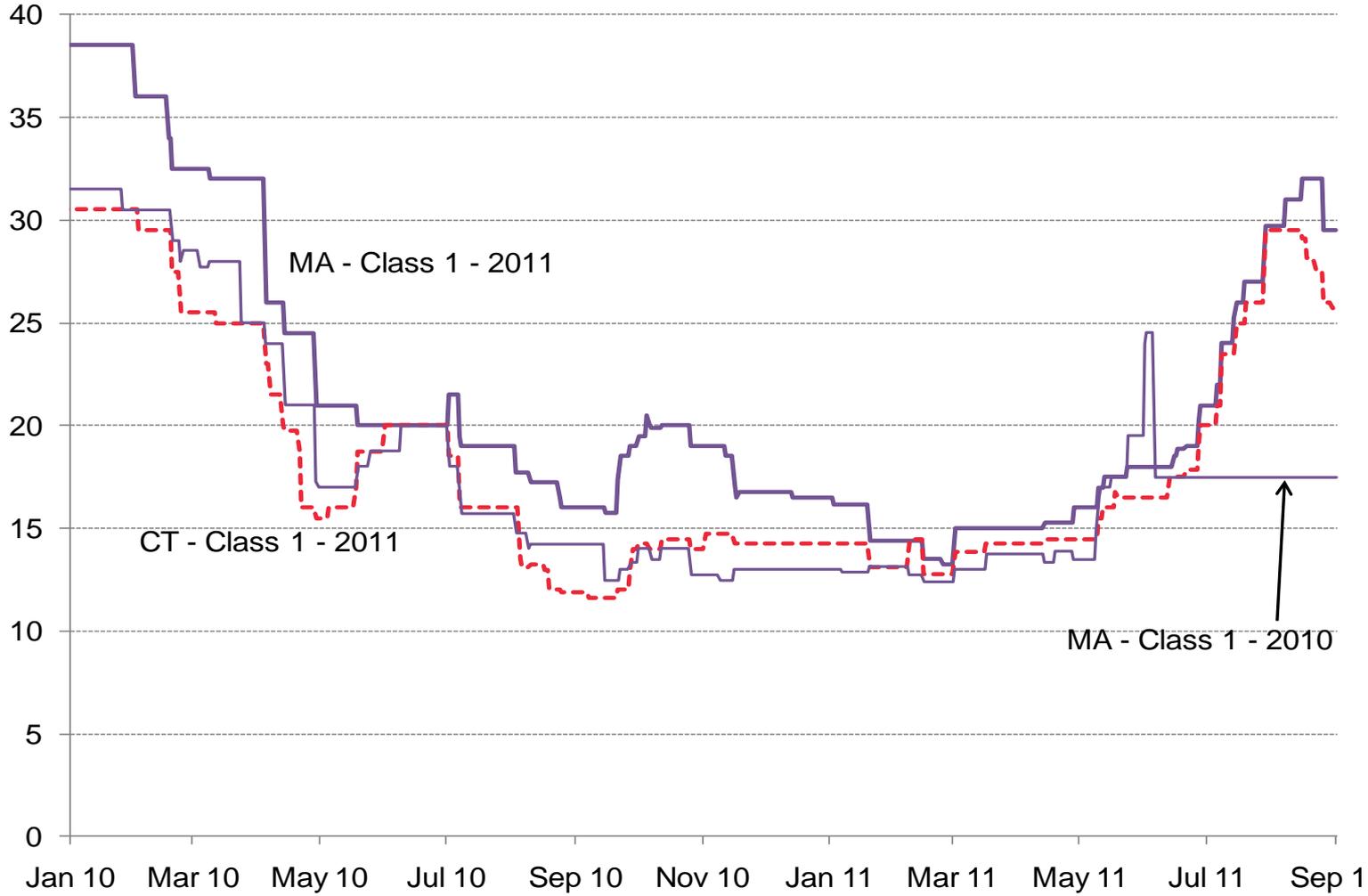
NEW BUILD REQUIRED TO MEET RPS TARGETS, 2012-15, ASSUMING NET RPS IS MET EXCLUSIVELY WITH WIND (MW)



Note: (1) North Carolina (NC) does have significant RPS demand, but it is highly unlikely to meet this demand with wind given the poor in-state wind resources. (2) Regions represent California (CA), Arizona (AZ), Nevada (NV), Texas (TX), Hawaii (HI), Kansas (KS), Midwestern states with binding RPS programmes not otherwise included in other regions (MRETS), New England excluding Vermont (NEPOOL), New York (NY), Illinois (IL), North Carolina (NC), PJM region excluding Illinois and North Carolina (PJM), and western region excluding California, Arizona, and Nevada (WREGIS)

Source: Bloomberg New Energy Finance

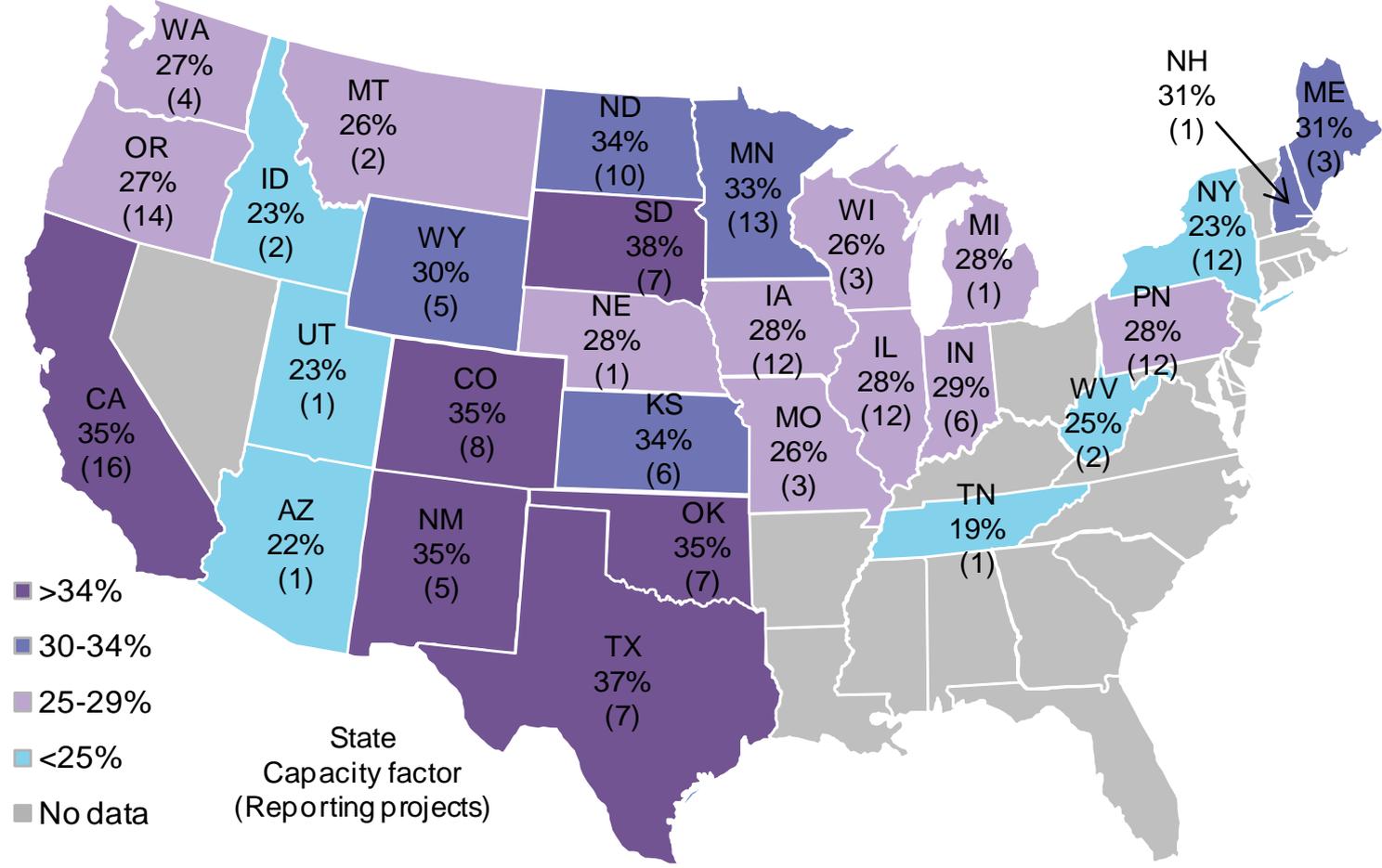
PRICES OF SELECTED NEPOOL RECS (\$/MWH)



Note: On the data labels, the year indicates vintage; class indicates portion of the state's RPS carve-out for which the REC qualifies

Source: Bloomberg New Energy Finance, Spectron Group, Evolution Markets

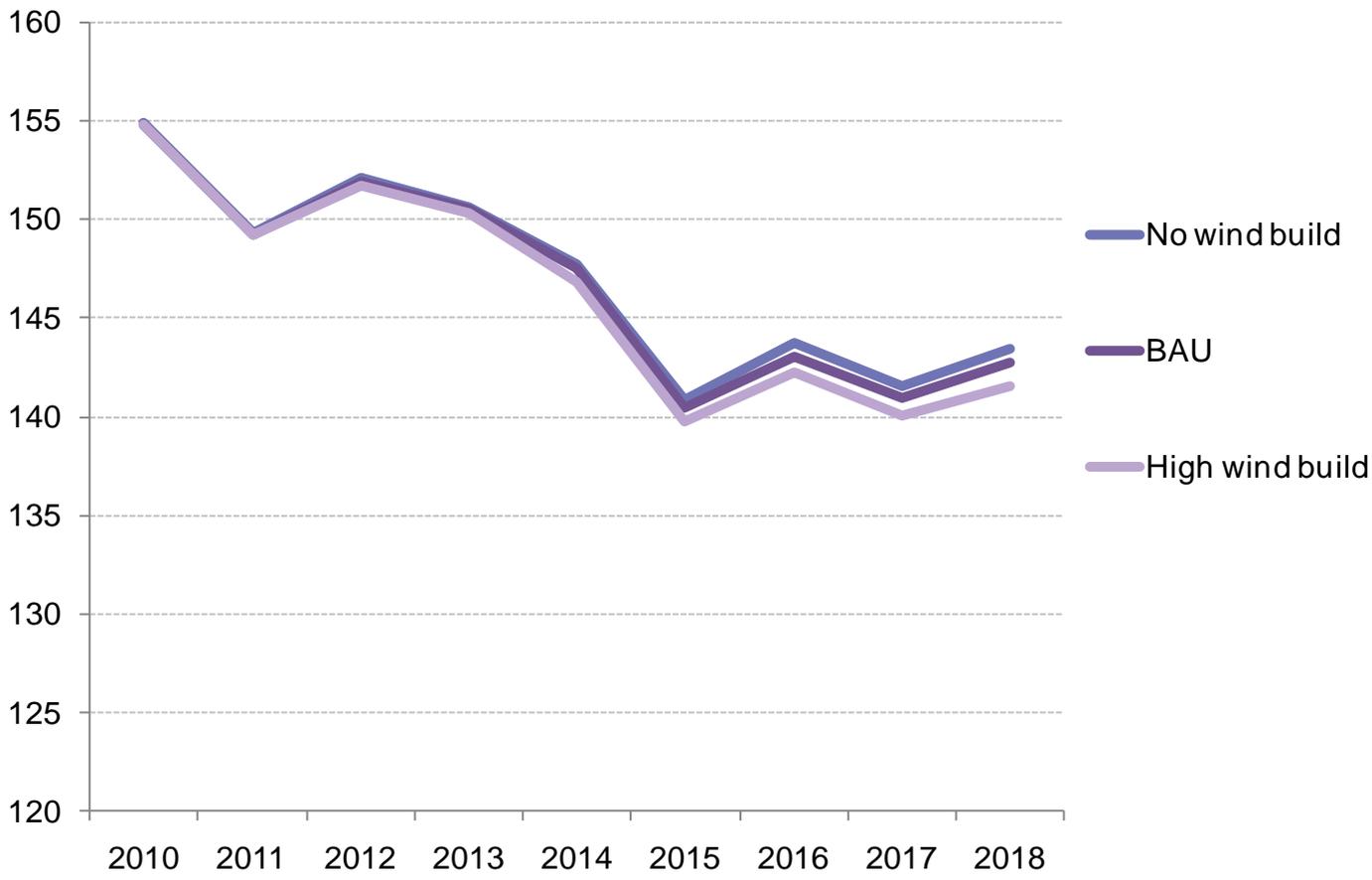
AVERAGE WIND PROJECT CAPACITY FACTOR, 2010



Note: Sample sizes are small for some state and should not represent general wind resources. Capacity factors are averaged over the life of a project. Only includes projects operating for at least one year.

Source: Bloomberg New Energy Finance, FERC

CONSEQUENCES FOR NORTHEAST POWER SECTOR EMISSIONS (MTCO2E) UNDER NEW ENGLAND RENEWABLE BUILD SCENARIOS



Notes: (1) BAU assumes 1.7GW of wind build in New England between 2010-2018. (2) High wind build scenario assumes 500MW of annual wind build from 2012 onwards, broadly in line with what is needed for RPS. (3) All cases assume 378MW of offshore wind build through 2018.

Source: Bloomberg New Energy Finance

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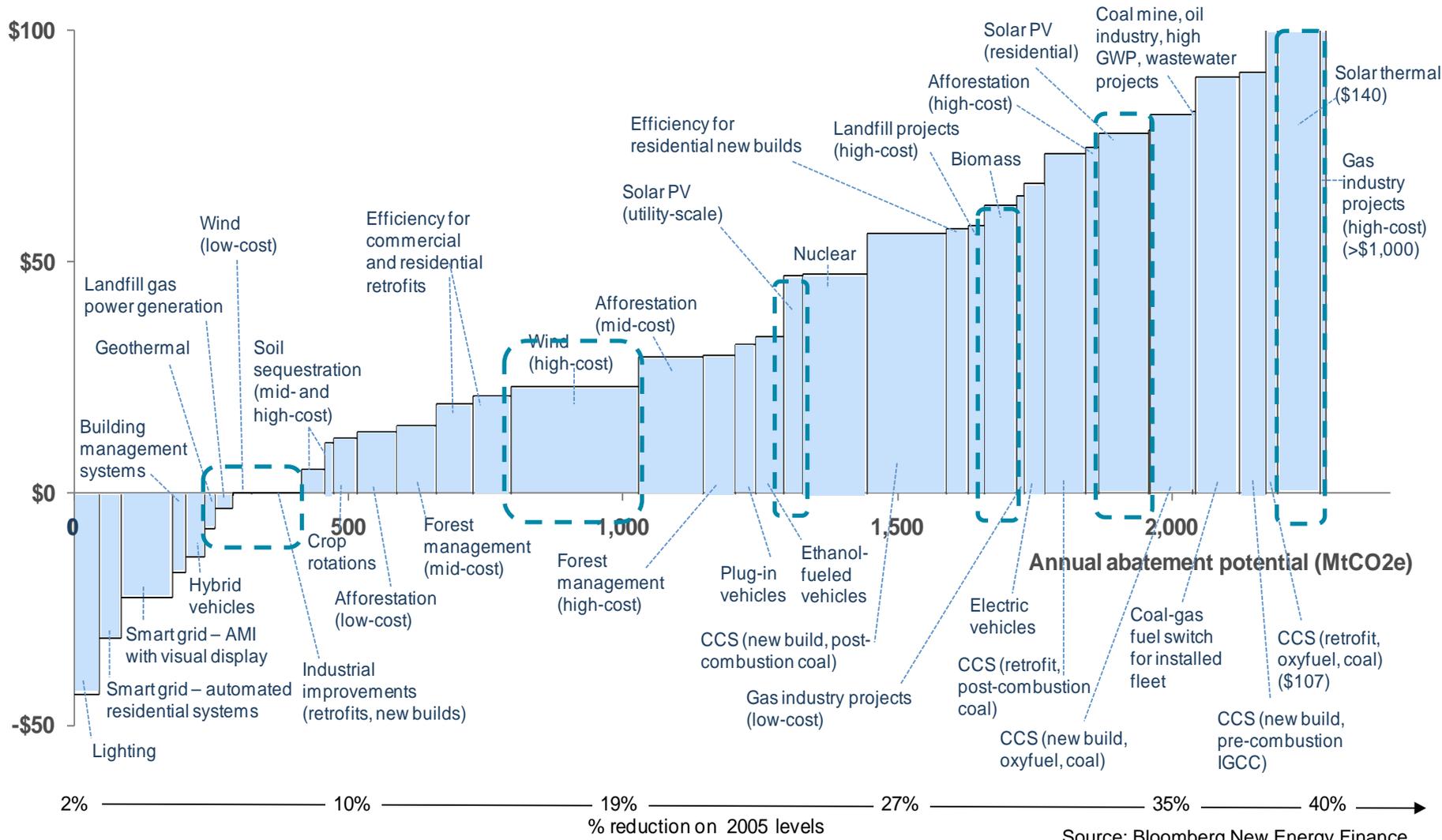
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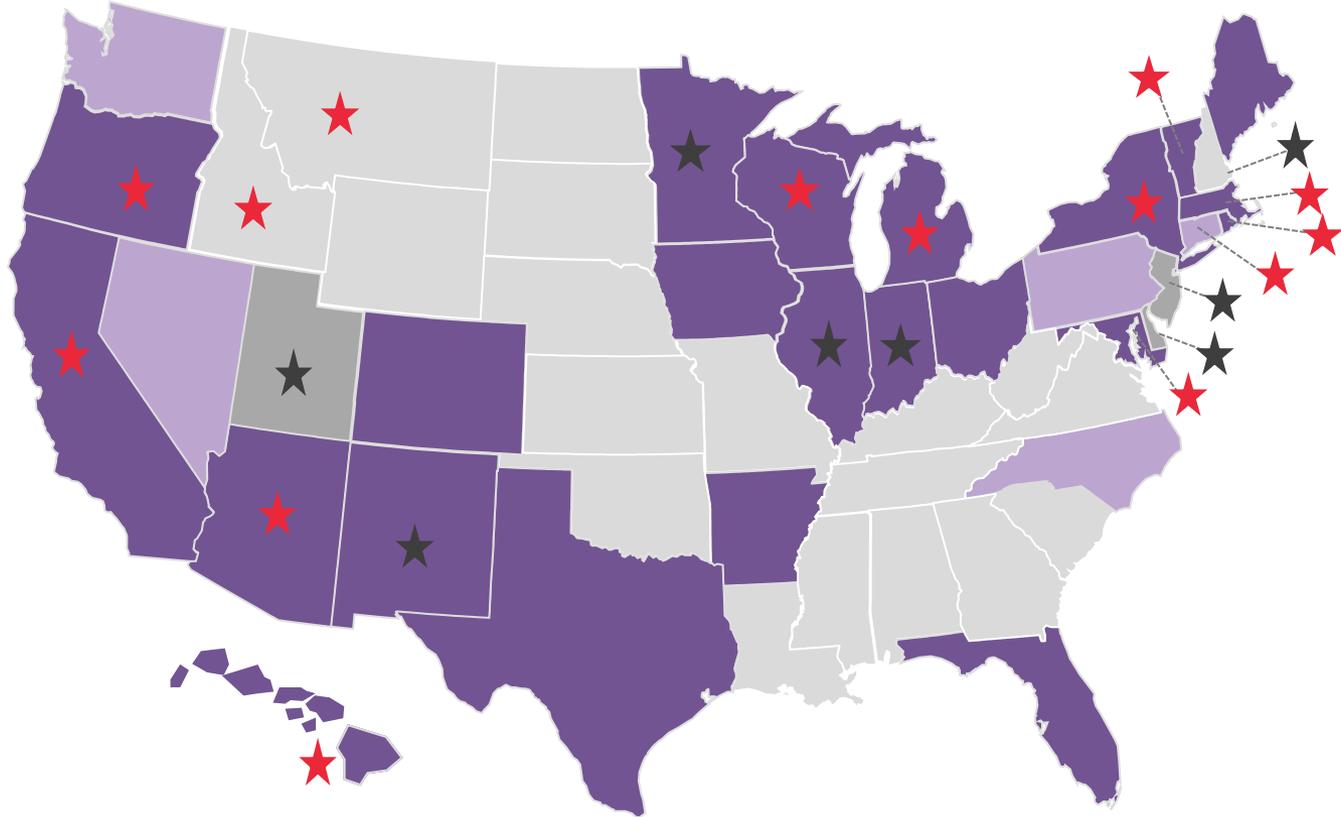
2030 US MARGINAL ABATEMENT COST CURVE (MACC)

ACCOUNTING FOR IMPROVING CARBON INTENSITY, KEY RECENT POLICIES, AND SECTOR-SPECIFIC DISCOUNT RATES



Note: Y-axis units are 2009 \$/tCO₂e. % reduction on 2005 levels includes abatement achieved by key recent policies (RPS,CAFE) Source: Bloomberg New Energy Finance

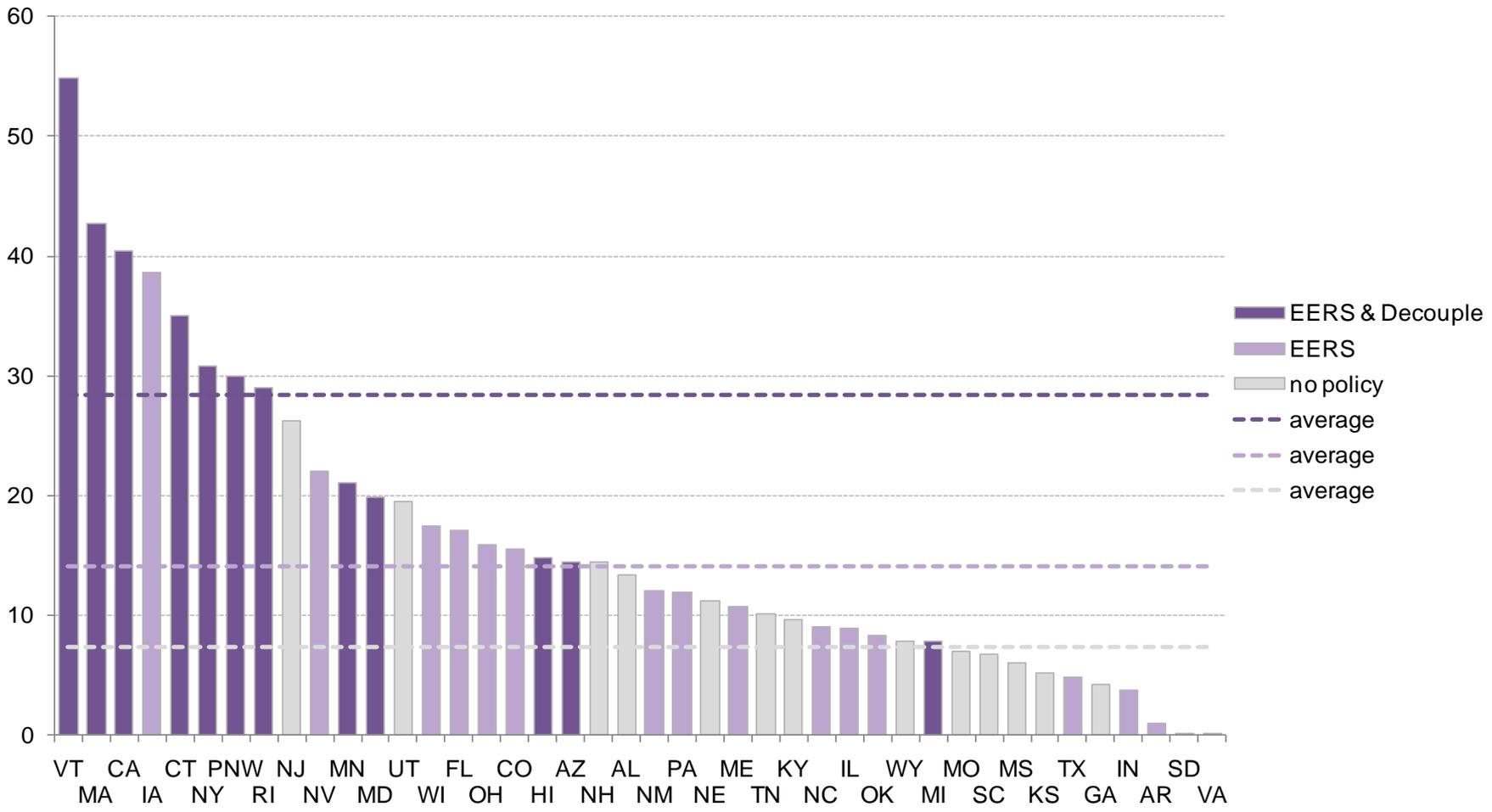
ELECTRIC UTILITY EFFICIENCY POLICY IN THE US



- EERS
- RPS/EERS
- Pending EERS
- Decoupling
- Pending decoupling

Source; NRDC, DSIRE, regulatory filings, Bloomberg New Energy Finance

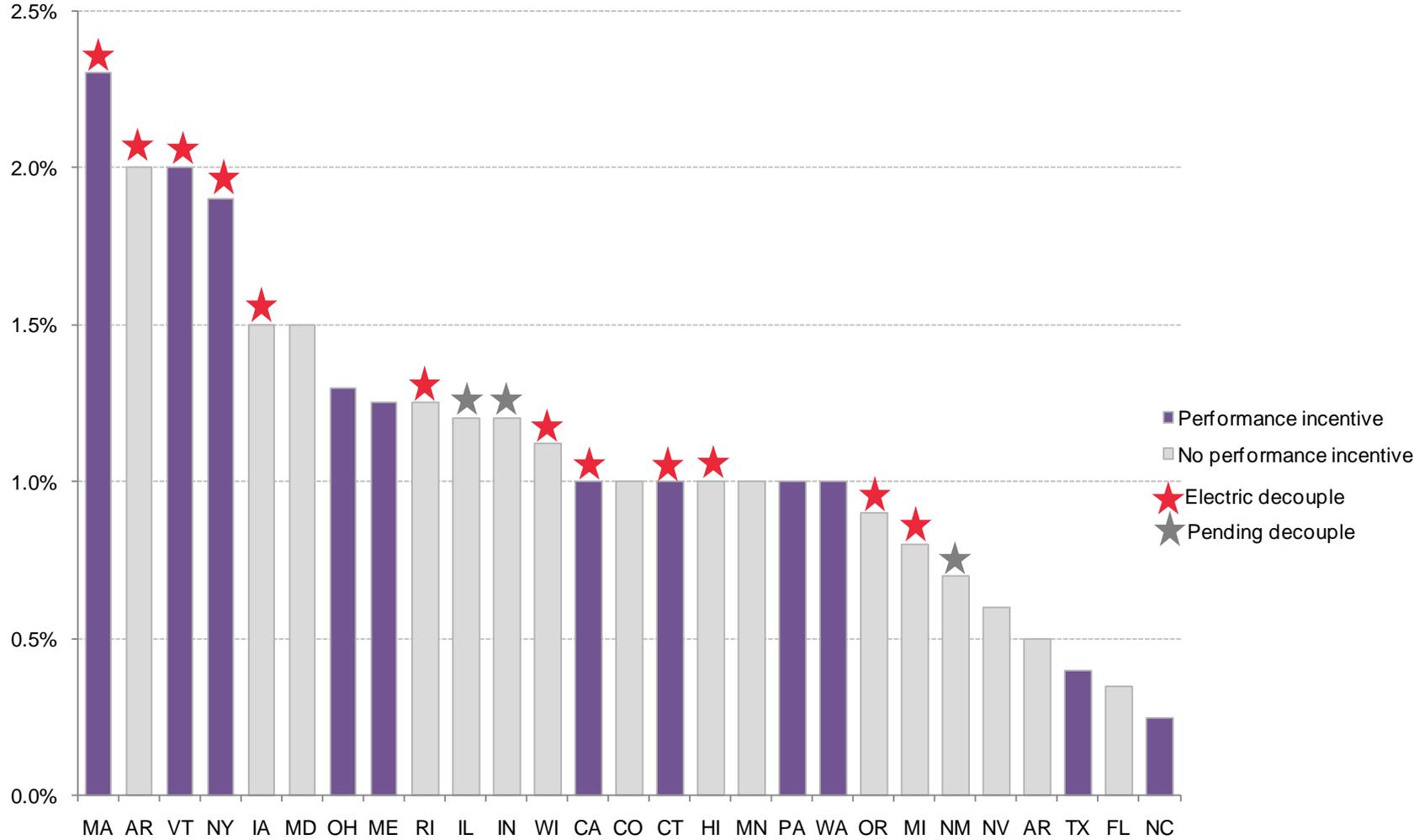
ELECTRIC PROGRAM BUDGETS, ENERGY EFFICIENCY & LOAD MANAGEMENT 2010, \$/CAPITA



Note: CEE's data is collected via voluntary survey. A few states that did not provide information (DE, LS, WV & AK). PNW represents the Pacific Northwest states of ID, OR, WA & MT.

Source: Bloomberg New EnergyFinance, CEE

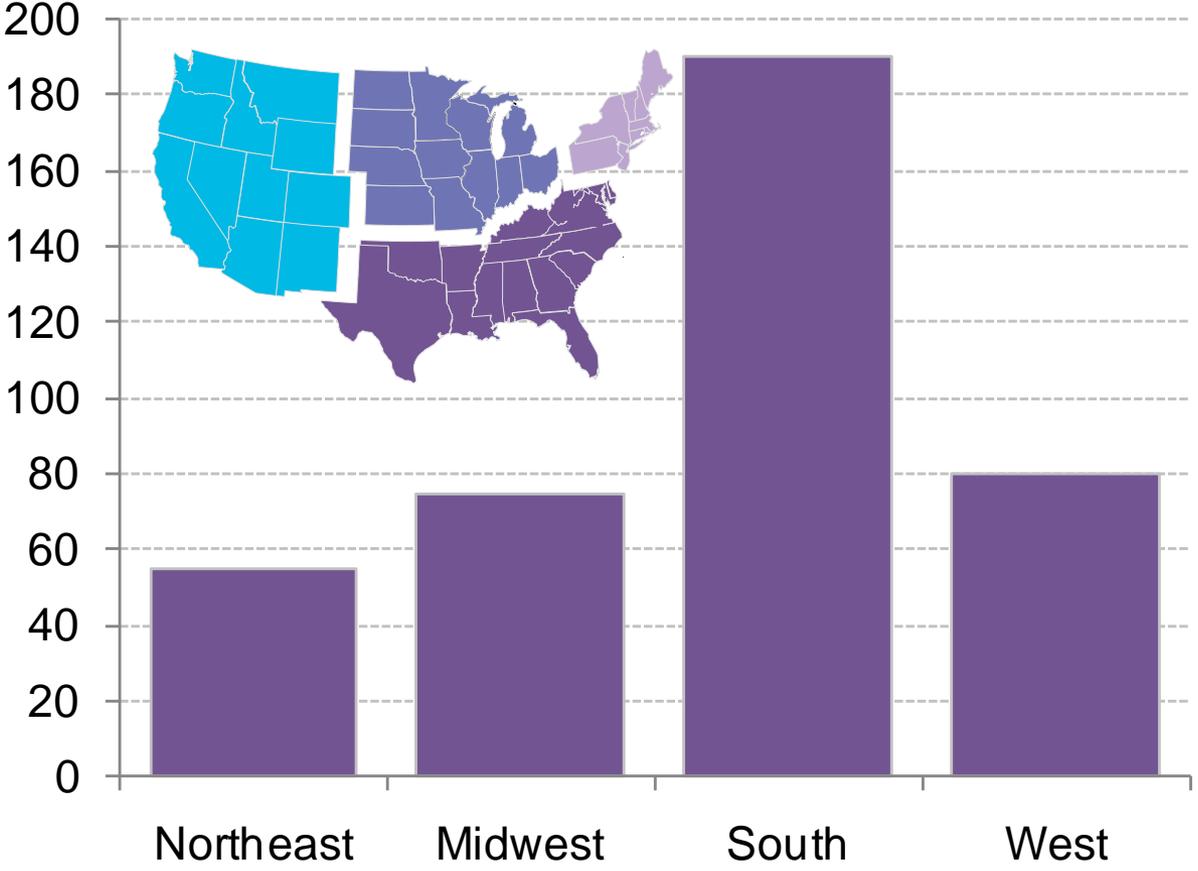
EERS ANNUAL REDUCTION TARGETS, % OF KWH SALES



Note: Targets represent a weighted average over the lifetime of a policy

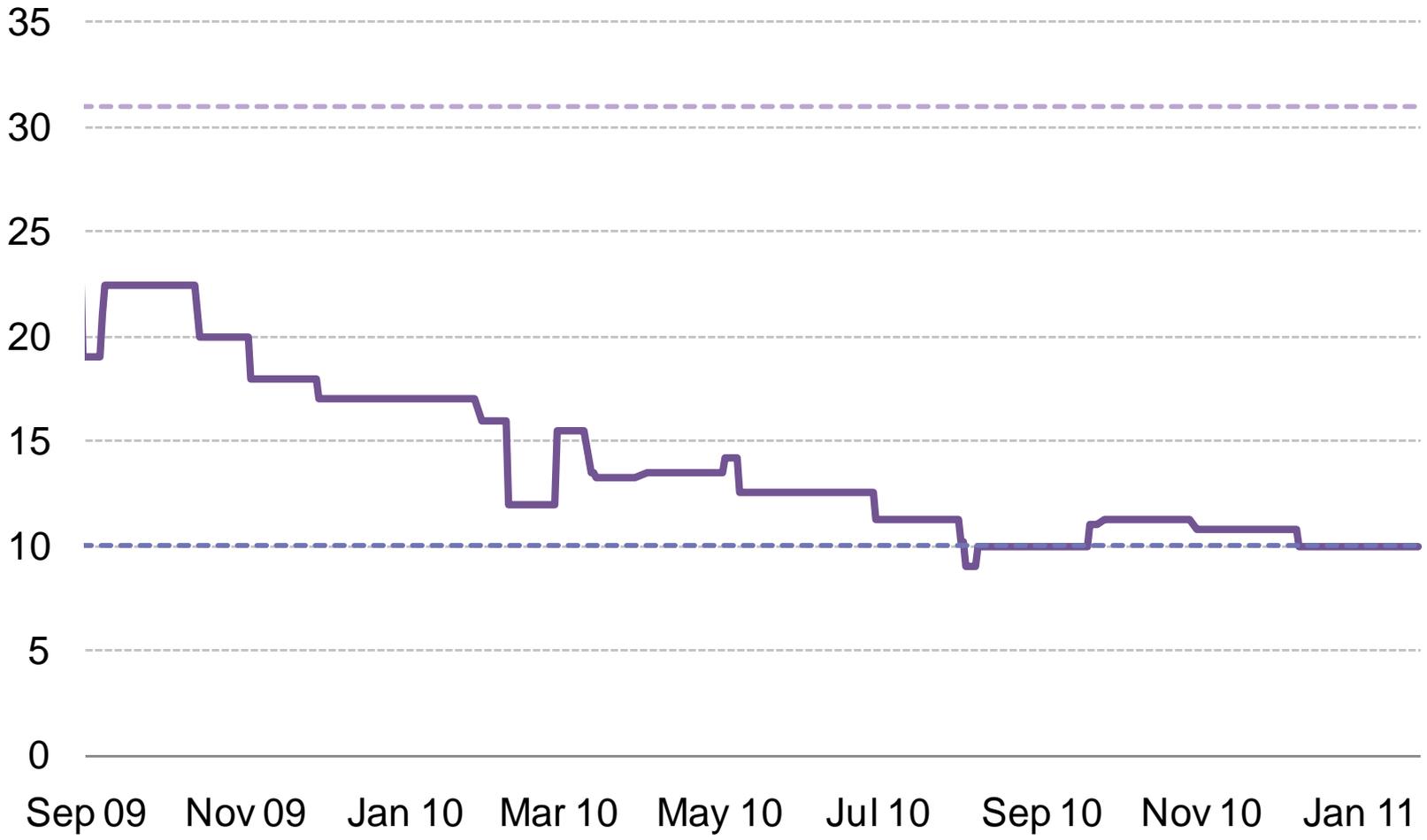
Source: Bloomberg New Energy Finance, ACEEE

END-USE ENERGY EFFICIENCY POTENTIAL 2020, TWH



Source: EPRI, Bloomberg New Energy Finance

CONNECTICUT TIER III ESC MARKET (\$/MWH)



Source: Evolution Markets, Bloomberg New Energy Finance

Note: Dashed lines represent the floor and ceiling price of Connecticut's Tier III REC market.

THANK YOU

MICHEL DI CAPUA, MDICAPUA@BLOOMBERG.NET

MARKETS

Renewable Energy

Carbon Markets

Energy Smart Technologies

Renewable Energy Certificates

Carbon Capture & Storage

Power

Water

Nuclear

SERVICES

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Industry Intelligence: data & analytics

News & Briefing: daily, weekly & monthly

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info@bnef.com

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