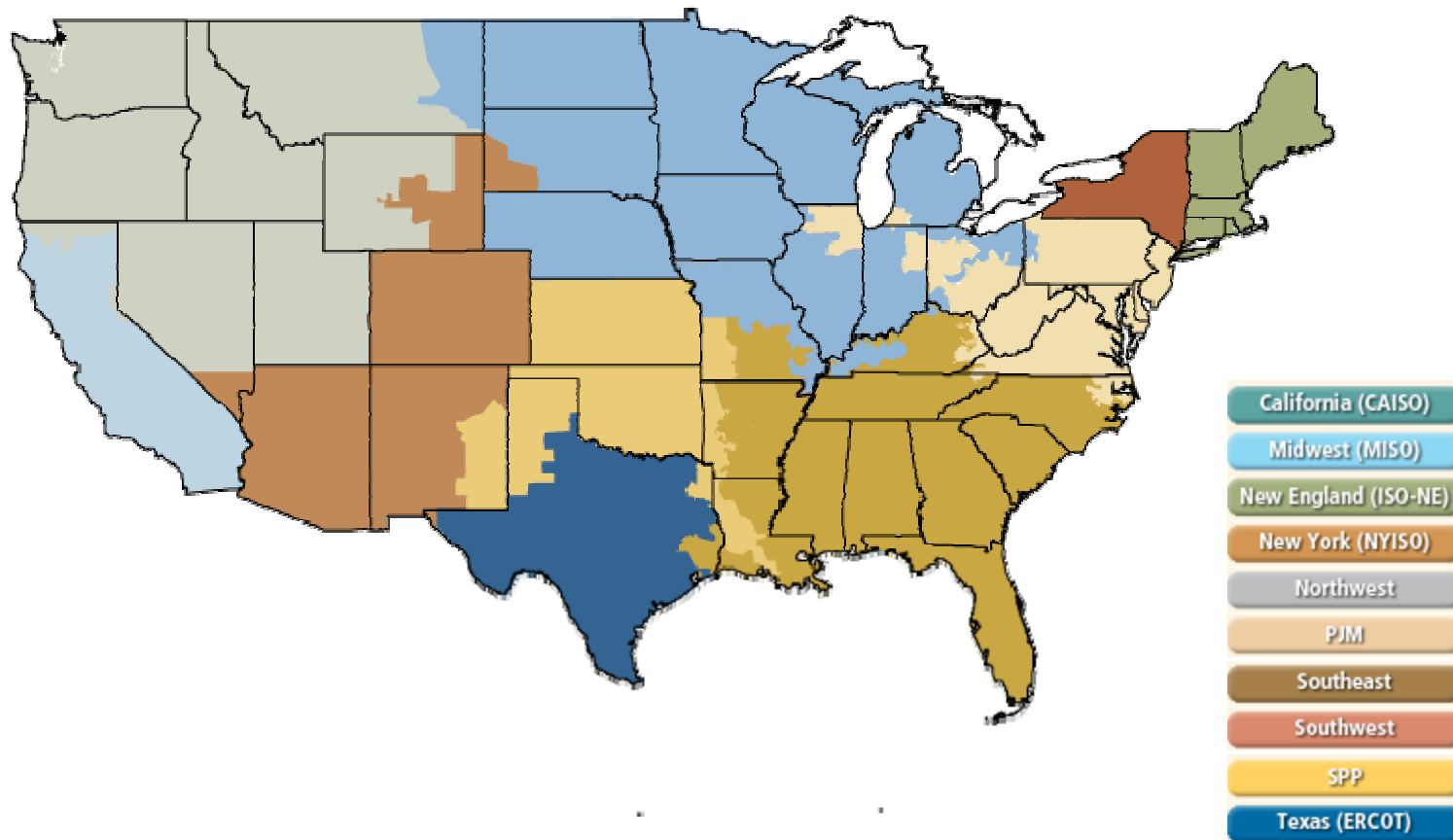
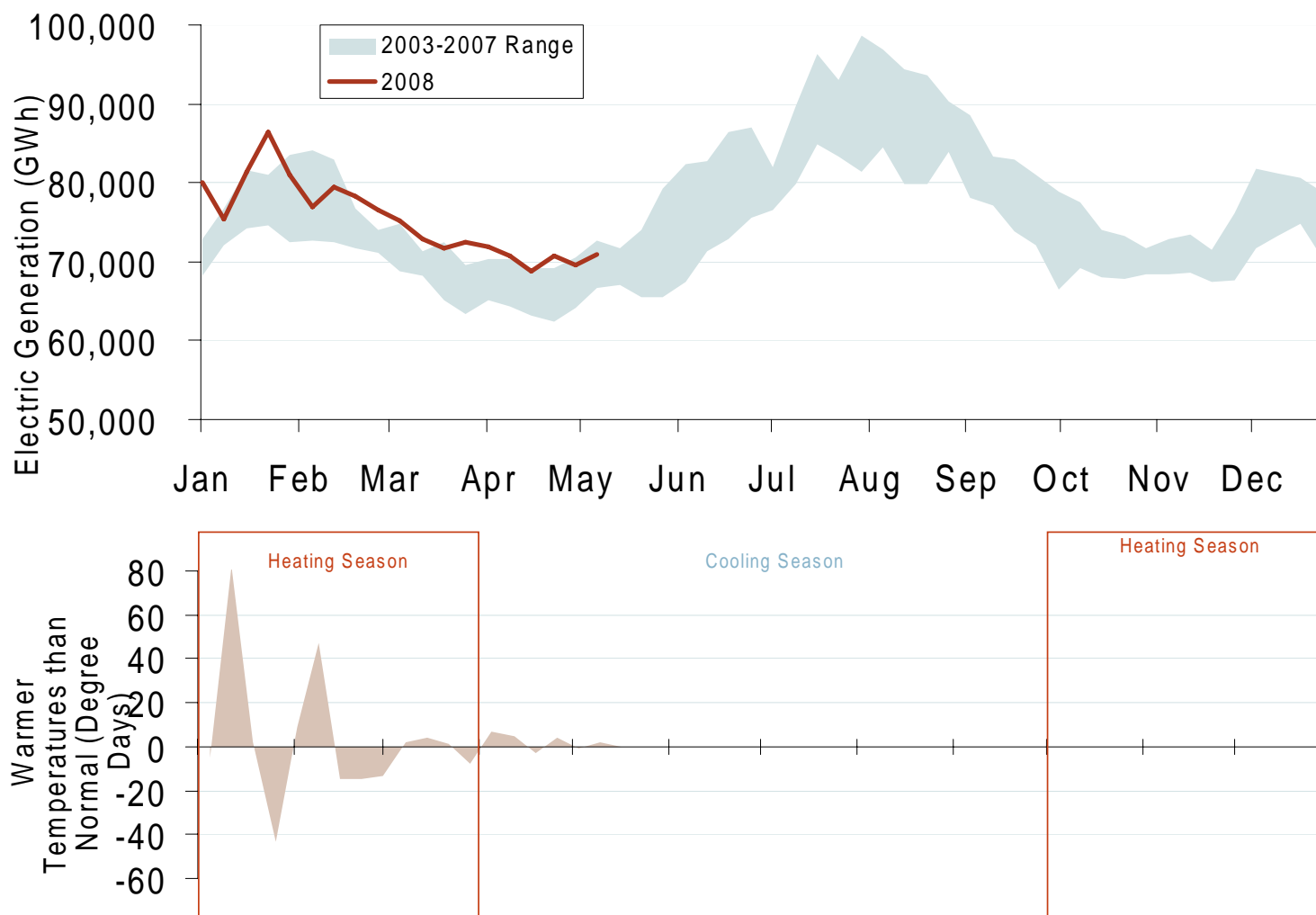


# Electric Market National Overview

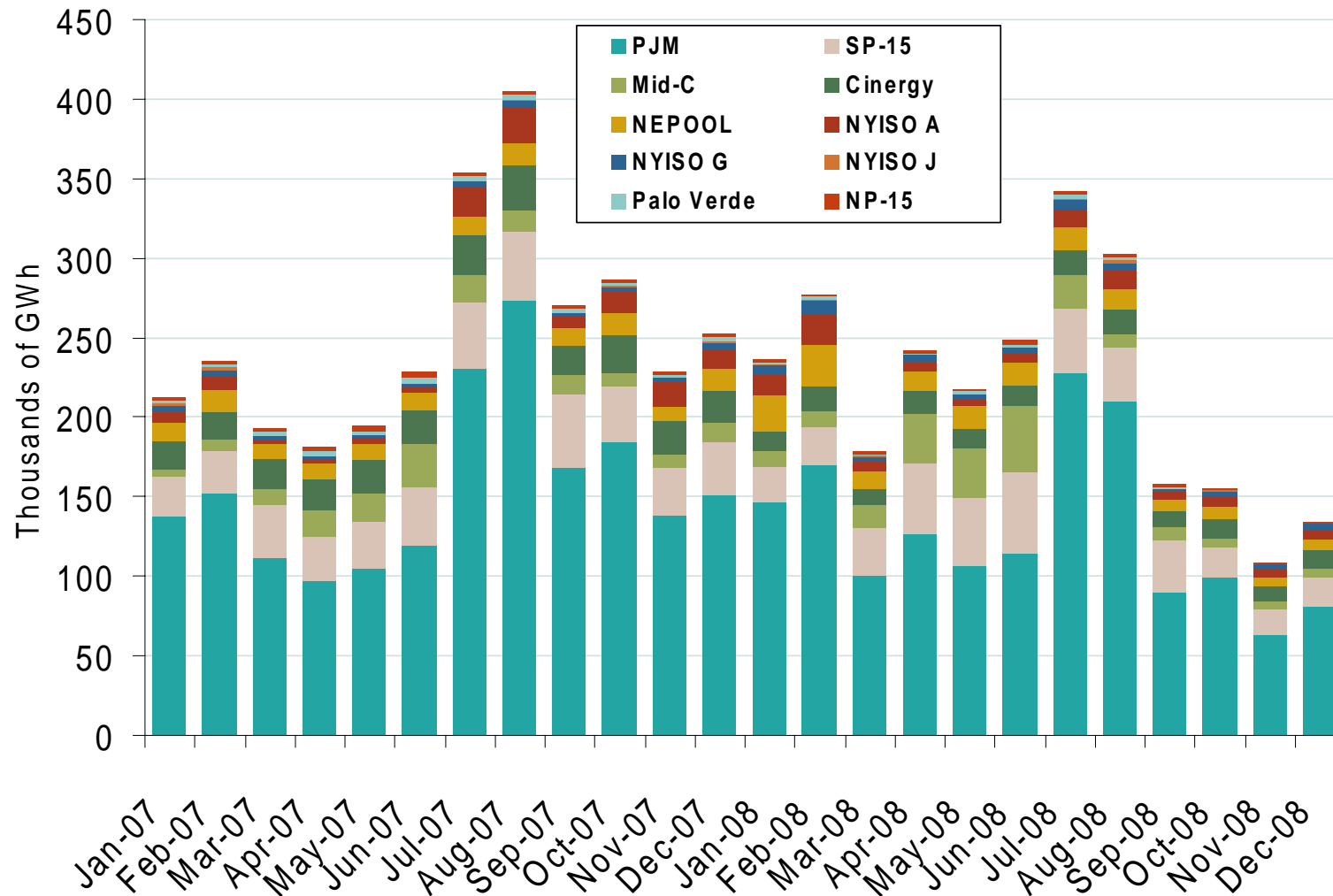


# Weekly U.S. Electric Generation Output and Temperatures



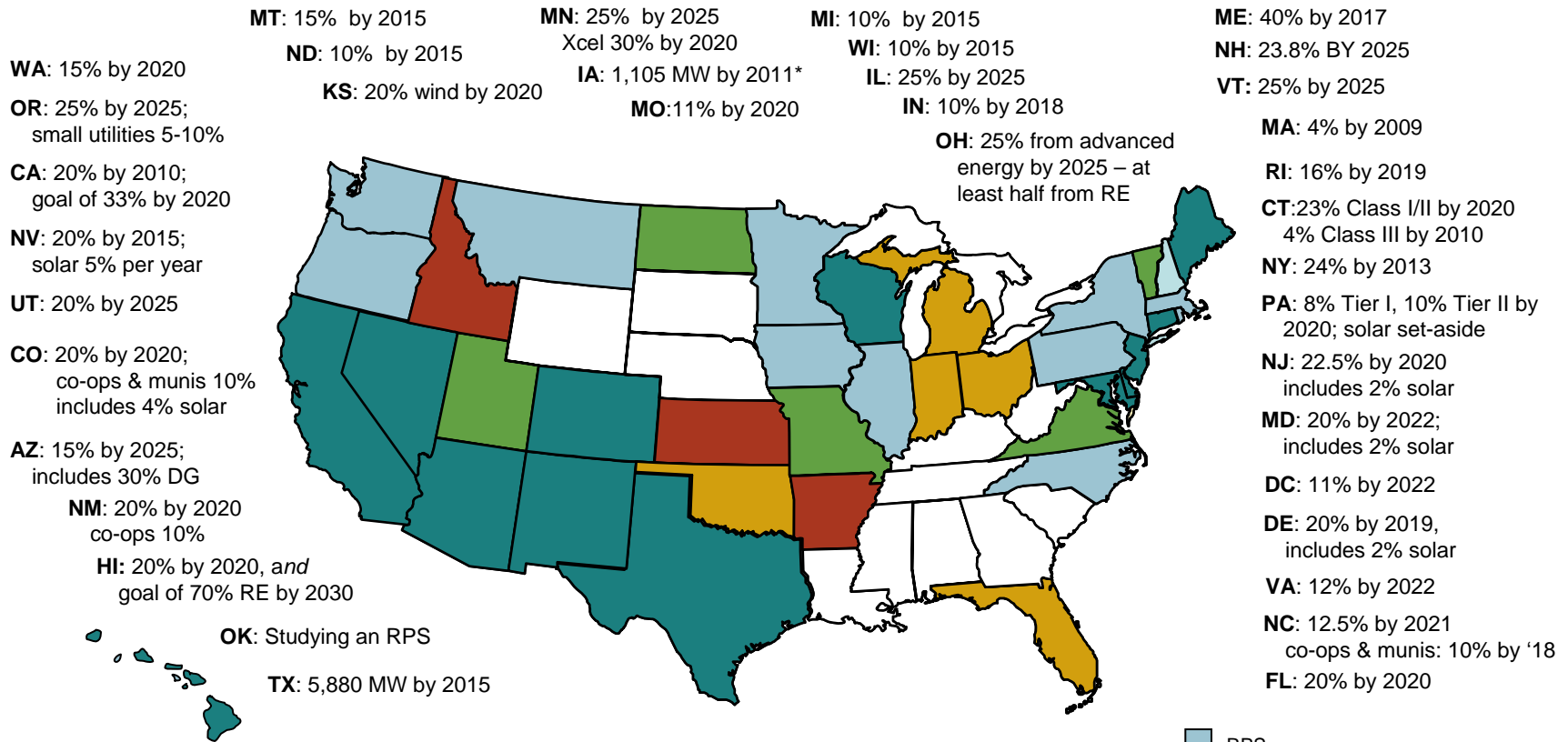
Source: Derived from *EEl* and NOAA data.

## Financial Trading on ICE



Source: Derived from ICE data. ICE on-peak swaps (financial) volume include monthly, dual monthly, quarterly, and calendar year contracts traded for each month.

# Renewable Energy Portfolio Standards (RPS)



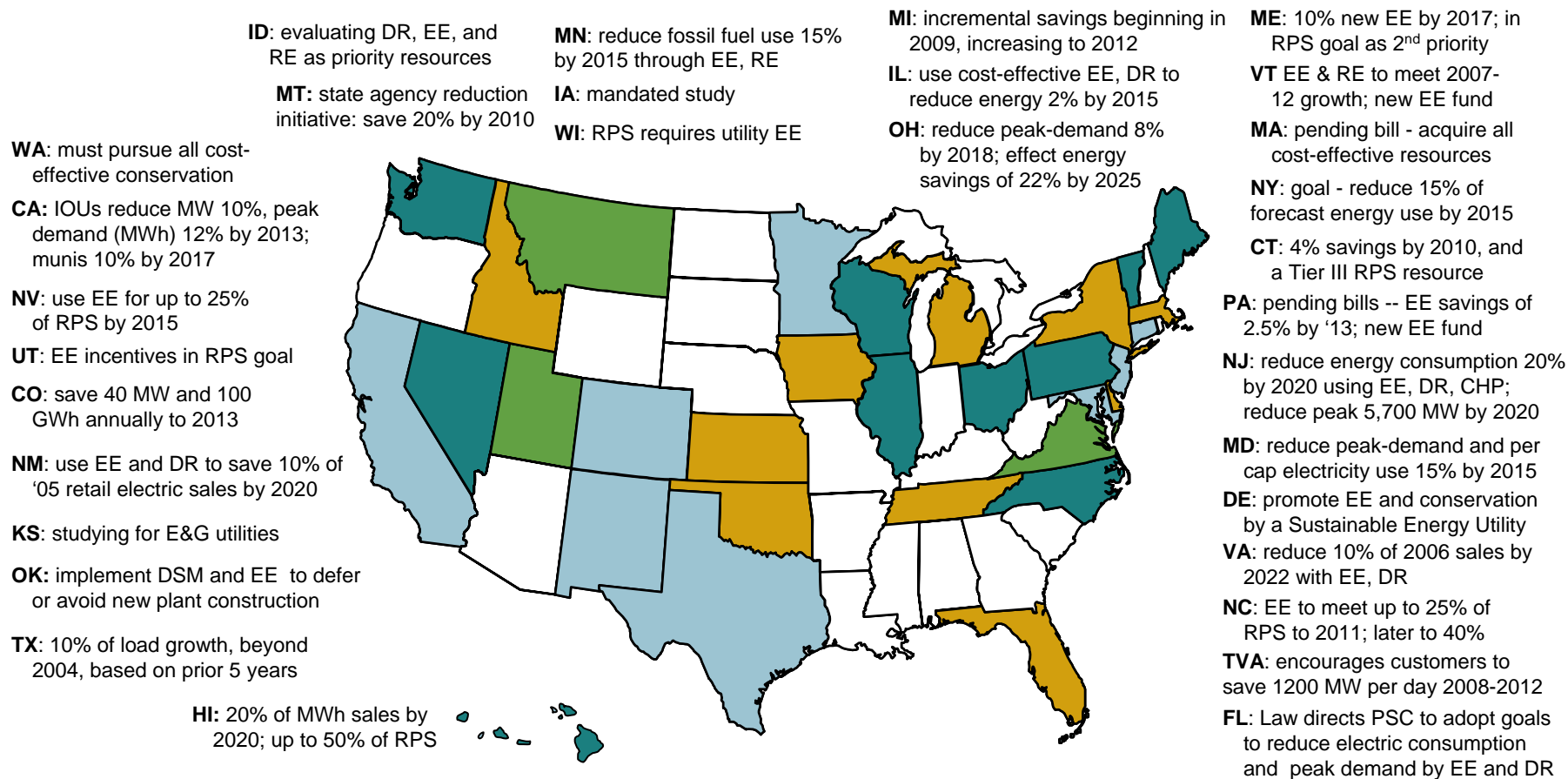
- RPS
- Strengthened/ amended RPS
- Voluntary standards or goals
- Proposed RPS or studying RPS
- Other renewable energy goal

**Notes:** Alaska has no RPS; DG is distributed generation; \* Iowa has a goal of 1,000 MW of wind by 2010  
**Sources:** Derived from data in: EEI, EIA, LBNL, PUCs, State legislative tracking services, Database of State Incentives for Renewables and Efficiency, and the Union of Concerned Scientists.

## Renewable Energy Portfolio Standards

- A Renewable Portfolio Standard (RPS) requires a percent of energy sales or installed capacity to come from renewable resources.
- 26 states and D.C. have renewable energy standards.
- Five states have enacted renewable goals without financial penalties:
  - Utah enacted a goal in April. It includes incentives for energy efficiency and carbon capture, but has no non-compliance penalties.
  - Vermont changed the nature of its goal, specifying 25% renewable energy by 2025, especially using VT farms and forests.
- 54% of U.S. load is located in states with a renewable energy purchase obligation; an additional 6% is in states with a renewable energy goal.
- States revisit earlier RPS goals:
  - Maryland doubled its renewable resources requirement to 20% by 2022; a companion bill created a Strategic Energy Fund for short-term rate relief and long-term investments in energy efficiency, renewable energy and climate change programs. The funds will come from the auction of CO<sub>2</sub> allowances under RGGI.
  - Maine's Governor signed a bill setting a goal of 2 GW from wind by 2015 and 3 GW by 2020.
  - New Jersey has an initiative in its draft Master Energy Plan to develop up to 1 GW of offshore wind.
- Eleven states include energy efficiency in their RPS or renewable goals; more are considering energy efficiency additions or companion bills.

# Energy Efficiency Resource Standards (EERS)



**Abbreviations:** CHP – Combined heat & power; DR - demand response; DSM - demand side management; EE - energy efficiency; E&G: electric and gas utilities; RPS: Renewable Portfolio Standard

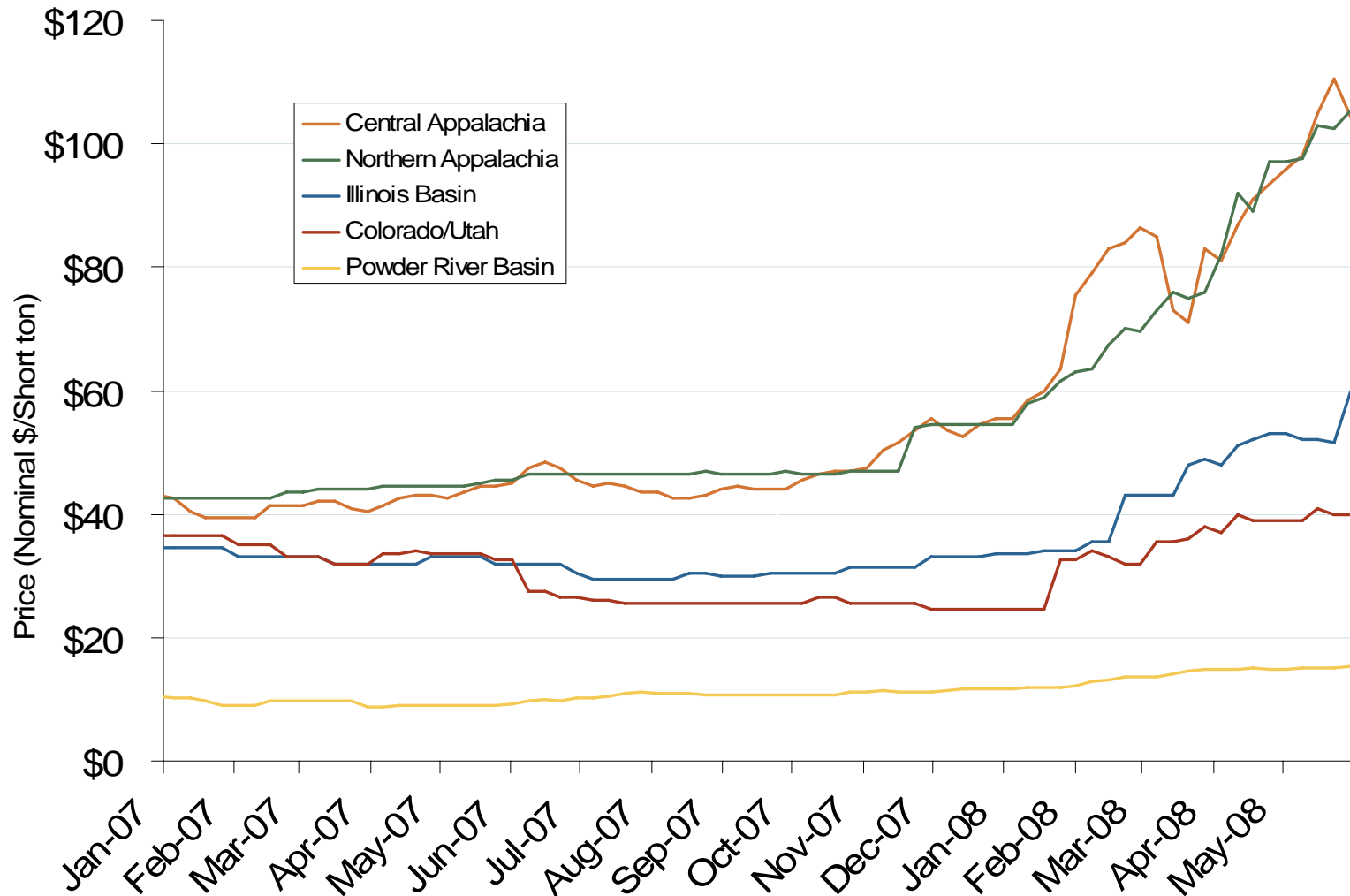
**Sources:** ACEEE, EPA, Regulatory Assistance Project, Union of Concerned Scientists, State legislative sites, trade press

- EERS by regulation or law (separate from RPS)
- Energy efficiency part of an RPS rule or goal
- Voluntary standards (in or out of RPS)
- Energy efficiency goal proposed / being studied

## Energy Efficiency Resource Standards (EERS)

- An energy efficiency resource - or portfolio - standard (EERS) aims to reduce or flatten electric load growth through energy efficiency measures.
- Goals may specify reductions in energy (MWh), demand (MW), or both.
- Twenty states have energy efficiency standards or goals; thirteen include energy efficiency as part of a renewable portfolio standard or goal.
  - Five states added an EERS in 2007: Minnesota, Virginia, North Carolina, Connecticut, and Illinois.
  - States that enacted significant energy efficiency legislation (standards or goals) in 2008 include: New Mexico, Vermont, Maryland, Utah, Ohio, Florida, and New Jersey.
- At least fourteen states include demand response as a means to reduce consumption or peak load, including: CA, FL, ID, IL, ME, MD, NJ, NM, OH, OK, PA, UT, VA, and VT.
- A number of states have successfully used decoupling mechanisms for gas distribution utilities' tariffs to encourage energy efficiency. Ohio's law includes decoupling for electric utilities; many others are studying its adoption.
- Ohio enacted energy efficiency standards as part of its hybrid restructuring bill, SB 221:
  - It set an overall energy reduction goal of at least 22% by the end of 2025
  - It set a 7.75% peak demand reduction requirement for electric distribution utilities by the end of 2018.
  - It advocates revenue decoupling for electric and gas utilities to promote energy efficiency.
- Florida's omnibus energy bill includes multiple measures to promote energy efficiency:
  - the PSC must set goals to increase the efficiency of energy consumption, to reduce growth rates of electric consumption, and to reduce growth of weather-sensitive peak demand.
  - It should also promote cost-effective demand- and supply-side efficiency and conservation programs.
  - It may allow efficiency investments in generation, transmission, and distribution, as well as in customer efficiencies.
  - It may allow IOUs to earn additional return on equity for exceeding EE and conservation goals

## Central Appalachian and Powder River Basin Coal Prices



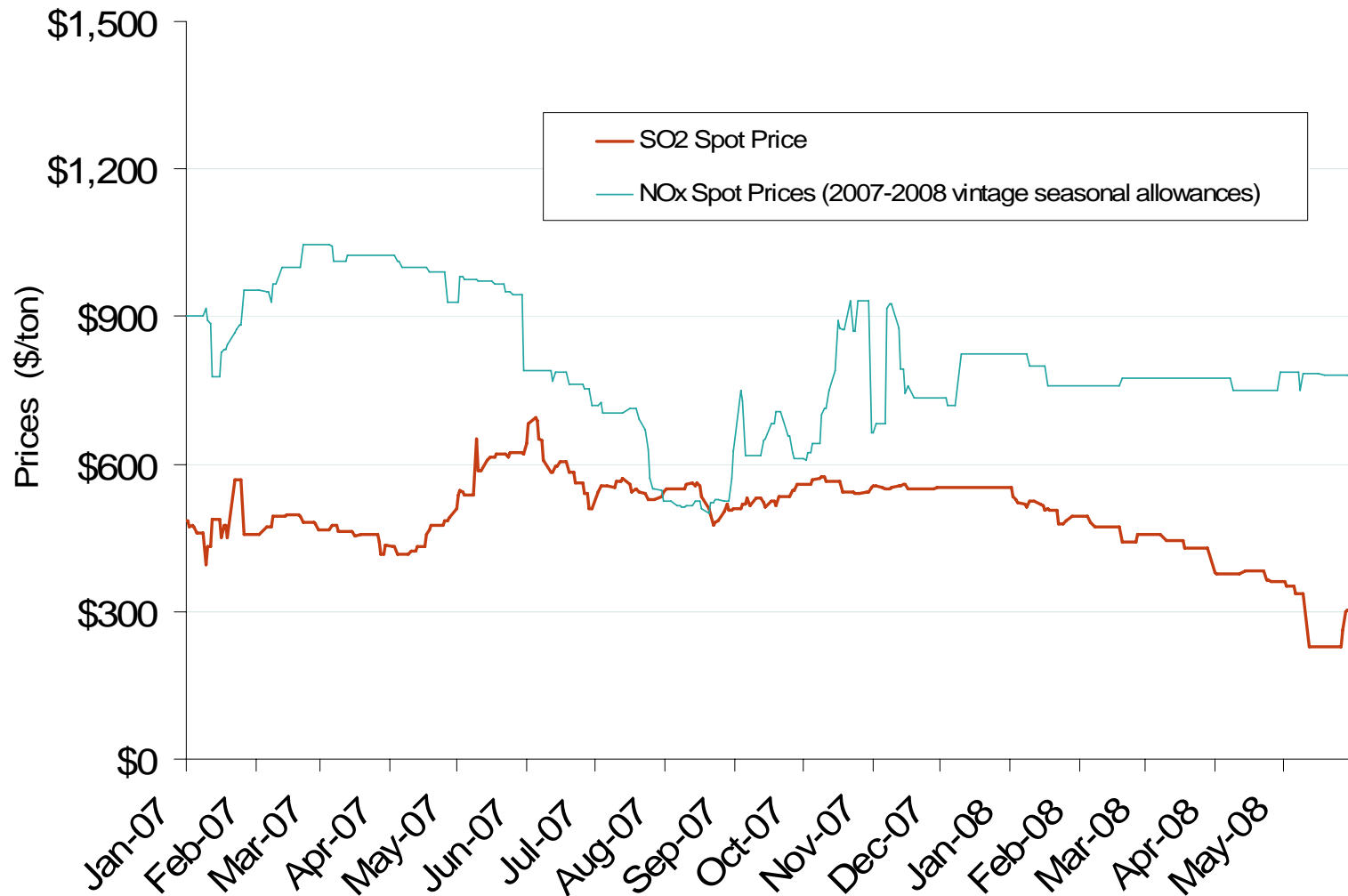
Source: Derived from Bloomberg data.

Updated June 6, 2008

1148



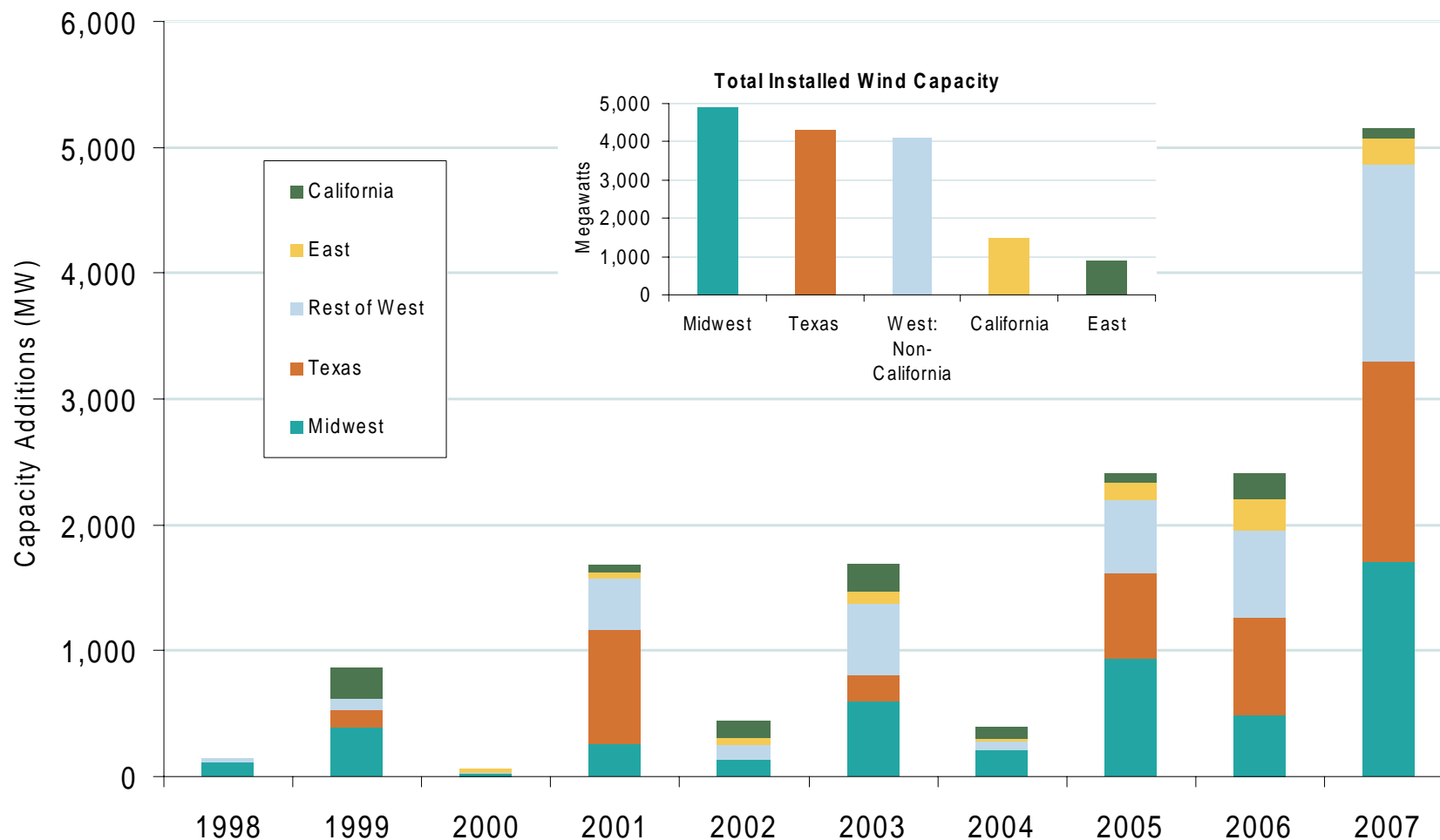
## SO<sub>2</sub> and NO<sub>x</sub> Allowance Spot Prices



Source: Derived from Cantor Fitzgerald data.

Updated June 6, 2008 1149

## Growth of U.S. Installed Wind Capacity (MW)



Midwest includes: IL, IA, KS, MI, MN, MS, NE, ND, OH, OK, SD, WI

East includes: ME, MA, NH, NJ, NY, PA, RI, TN, VT, WV

Source: American Wind Energy Association (AWEA)

Updated March 7, 2008

## 2007 Review of Wind Generation

- Installed wind capacity grew 5,244 MW from 11,603 MW in 2006 to 16,818 MW in 2007, a 45% increase.
- More new wind capacity was added in 2007 than any prior year.
- Just over half of new capacity – 2,704 MW – was installed in states with the highest wind potential. 59 percent of that – 1,588 MW – was in Texas.
- Installed capacity grew 150% from 2004 to 2007, while:
  - the number of states (including D.C.) with a renewable portfolio standard grew from 21 to 27, and
  - the wind production tax credit did not lapse.
- The top five states by capacity added in 2007 were: Texas (1,618 MW), Colorado (776), Illinois (592), Oregon (447), and Minnesota (405). Texas moved into 1st place in installed wind capacity in 2006, passing long-time leader California.
- The top 10 states by cumulative installed capacity have 14,366 MW of wind, or 85% of U.S. capacity. Nine of them had a Renewable Portfolio Standard (RPS) in 2007.
- The rapid growth of wind generating capacity has led to a backlog in many interconnection queues. The Commission held a Technical Conference on December 11, 2007 (AD08-2-000) to re-examine the Large Generator Interconnection Rule. Many ISO/RTOs reported that the queuing procedures specified by Order 2003 impede the timely interconnection of wind resources.