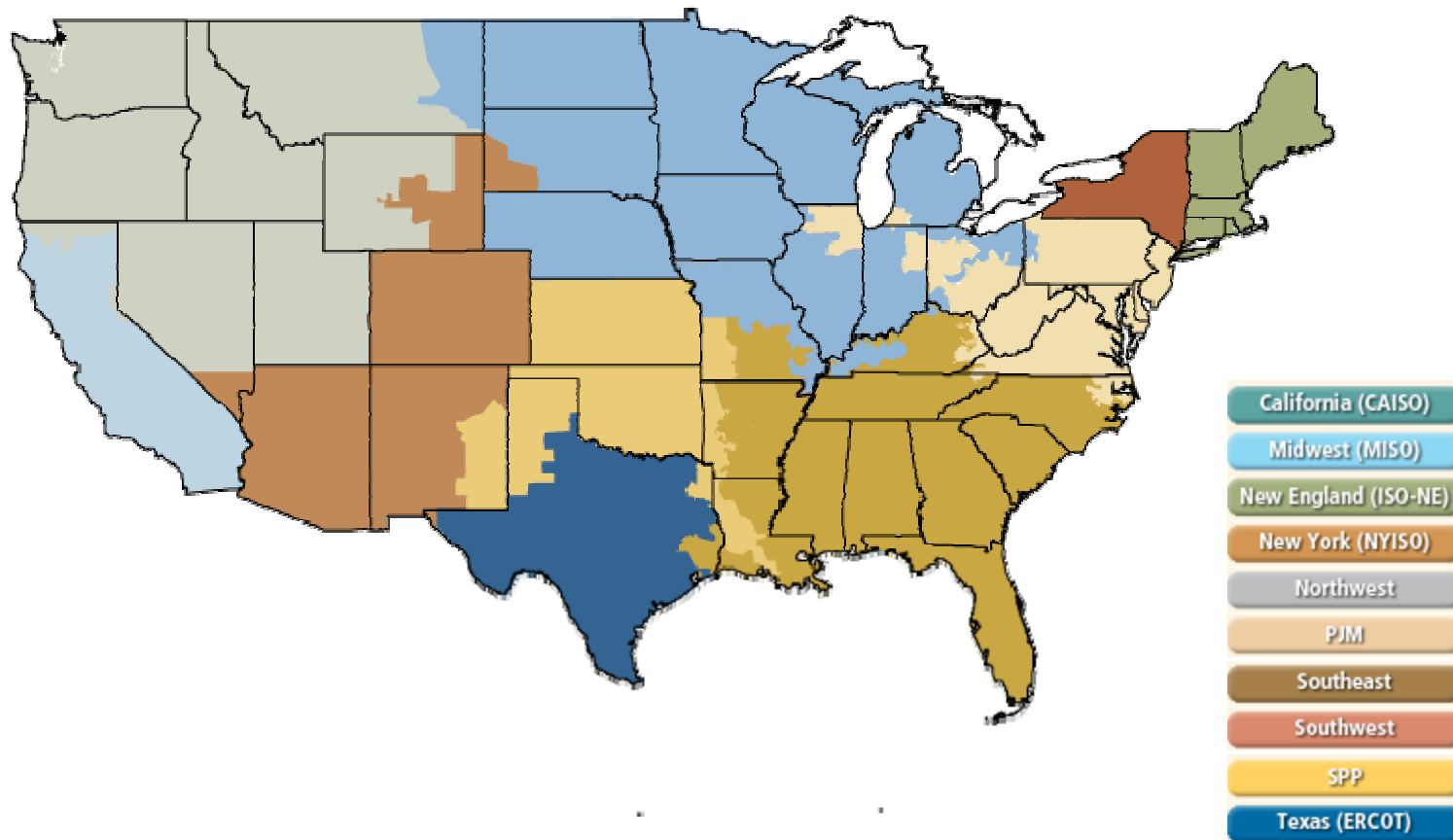
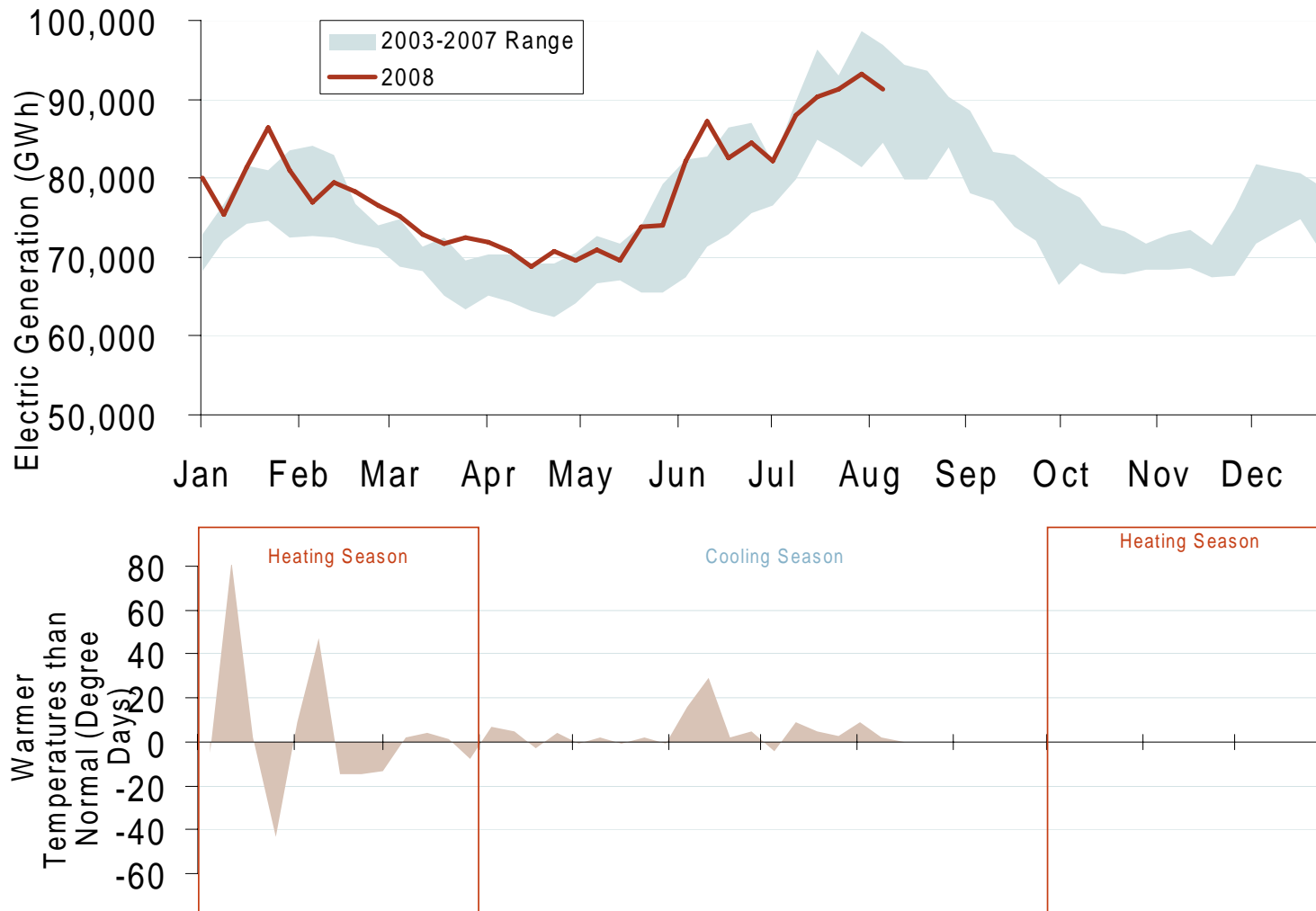


# Electric Market National Overview



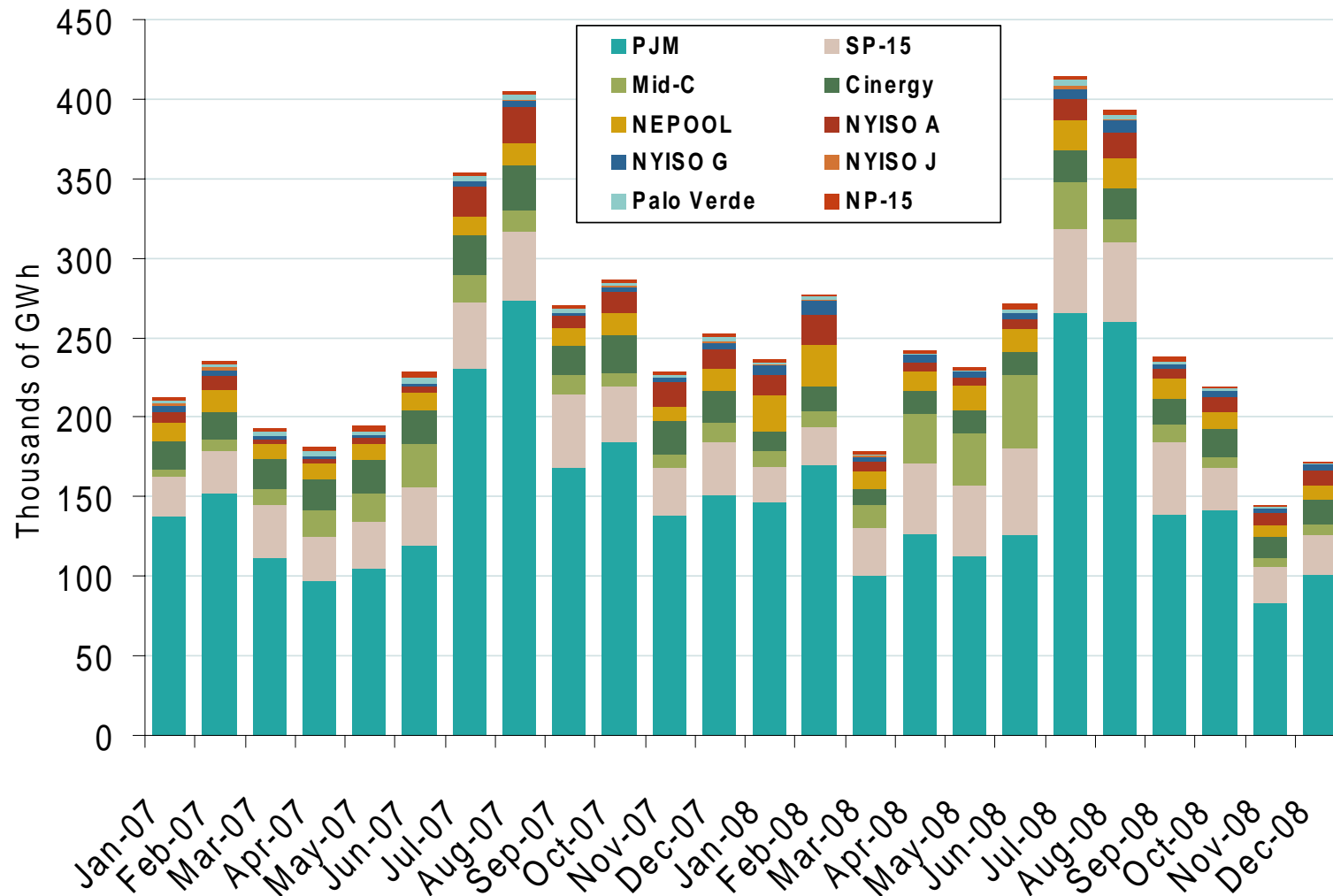
# Weekly U.S. Electric Generation Output and Temperatures



Source: Derived from *EI* and NOAA data.

Updated August 14, 2008

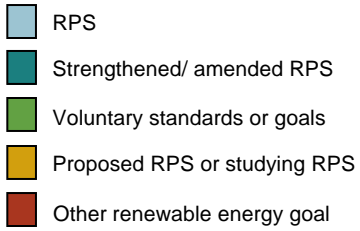
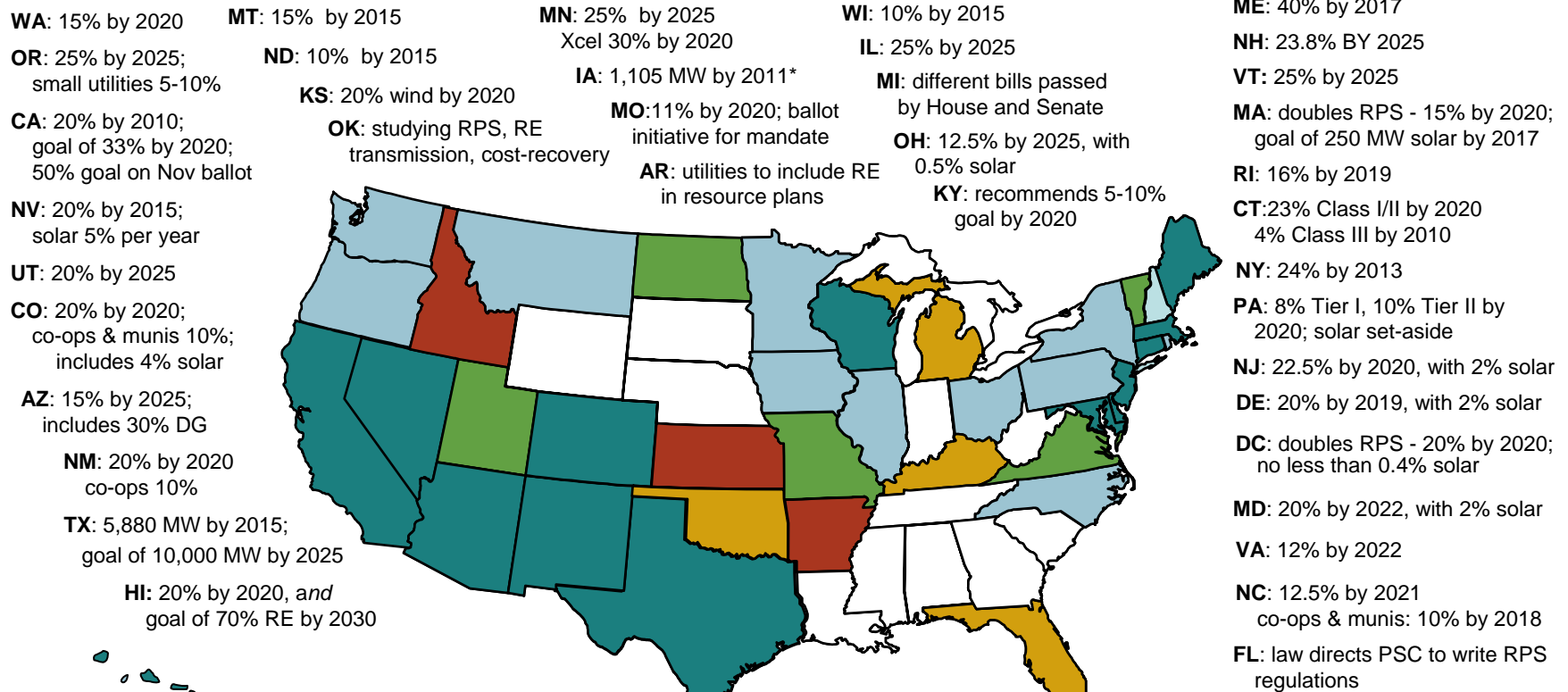
## Financial Trading on ICE



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

Updated August 14, 2008

# Renewable Energy Portfolio Standards (RPS)



Updates at: <http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-rps.pdf>

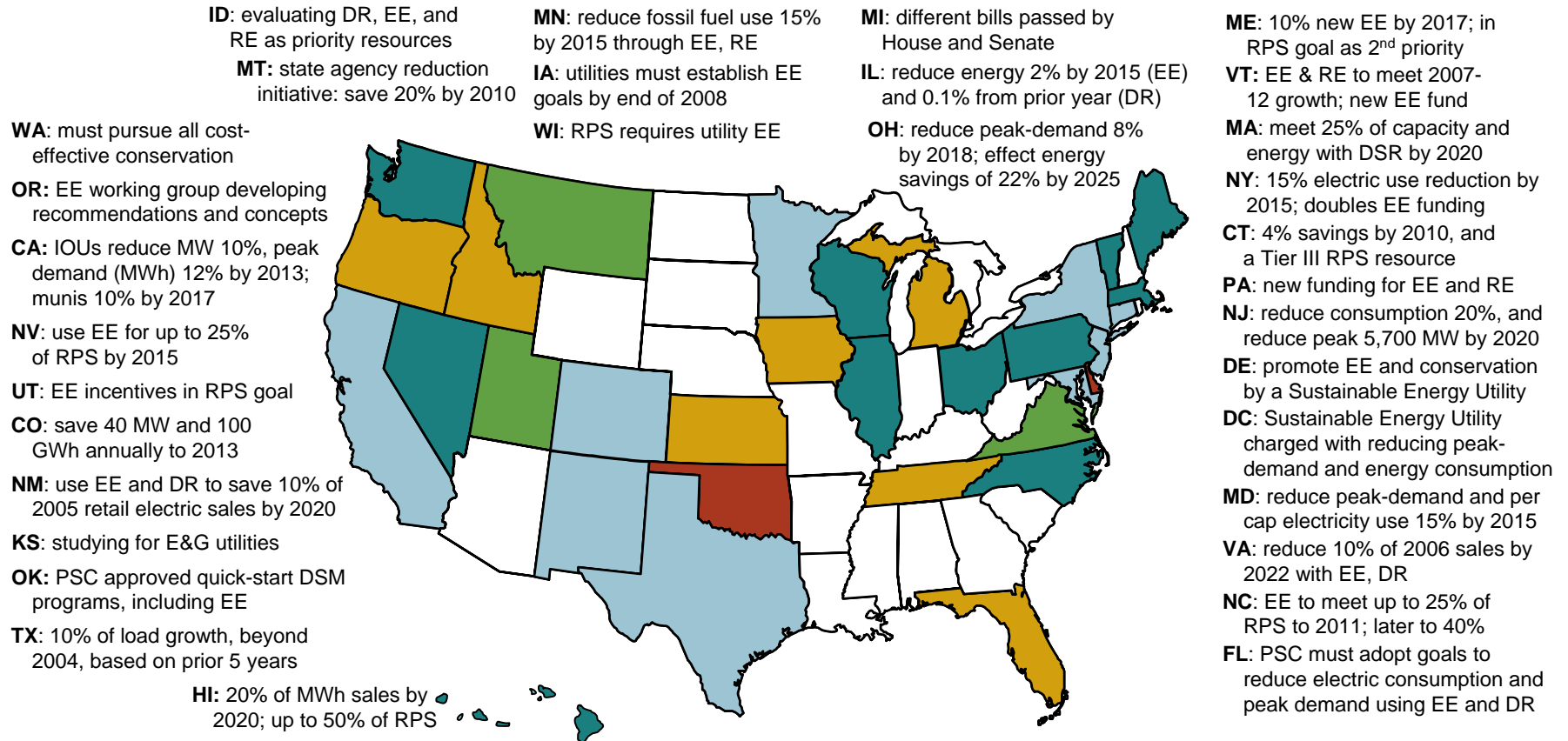
**Notes:** Alaska has no RPS; DG is distributed generation; \* Iowa has a goal of 1,000 MW of wind by 2010  
**Sources:** Derived from data in: EEI, EIA, LBNL, PUCs, State legislative tracking services, Database of State Incentives for Renewables and Efficiency, and the Union of Concerned Scientists.

Updated July 17, 2008

## Renewable Energy Portfolio Standards

- A Renewable Portfolio Standard (RPS) requires a percent of energy sales or installed capacity to come from renewable resources.
- **27** states and D.C. have renewable energy standards.
- Recent state developments include:
  - **Massachusetts** Governor Patrick signed the Green Communities Act on July 2, strengthening an existing RPS. It doubles the rate at which retail suppliers must supply renewable energy (kWh); creates a second class of renewable resources (after & before 12-31-1997); requires 10- to 15-year contracts with renewable energy developers to enhance financing terms; expands net metering for consumers with wind and solar power from 60 kW to 2 MW; and allows utilities to own customer-sited solar installations of 25 MW beginning in 2009, and 50 MW beginning in 2010.
  - **The District of Columbia** passed the Clean and Affordable Energy Act on July 15. It doubles the RPS to 20% by 2020, adds solar, and creates a Sustainable Energy Utility to administer renewable energy and energy efficiency programs for D.C. The Mayor must sign it and send it to Congress for a 30-day review before it can take effect.
  - **Michigan's** House and Senate passed different versions of an RPS and energy efficiency standard. They would need to be reconciled to go forward.
  - **Kentucky** decided against an RPS, finding there are insufficient in-state resources to support one. Instead it recommended a modest 5% - 10% renewable goal by 2020.
- **Five** states have enacted renewable goals without financial penalties.
- **Thirteen** states include energy efficiency in their RPS or renewable goals; more are considering energy efficiency additions or companion bills.
- The Western Governor's Association launched a project to identify common transmission needs and potential transmission costs to spur regional renewable energy resource development with Western Renewable Energy Zones (WREZ). Eleven U.S. states, two Canadian provinces, and areas of Mexico within the Western Interconnection will participate in the project. Similar renewable transmission zones have been identified in Texas to bring renewable generation from remote areas to load centers.

# Energy Efficiency Resource Standards (EERS)



Updates at: <http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-eeeps.pdf>

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

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

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

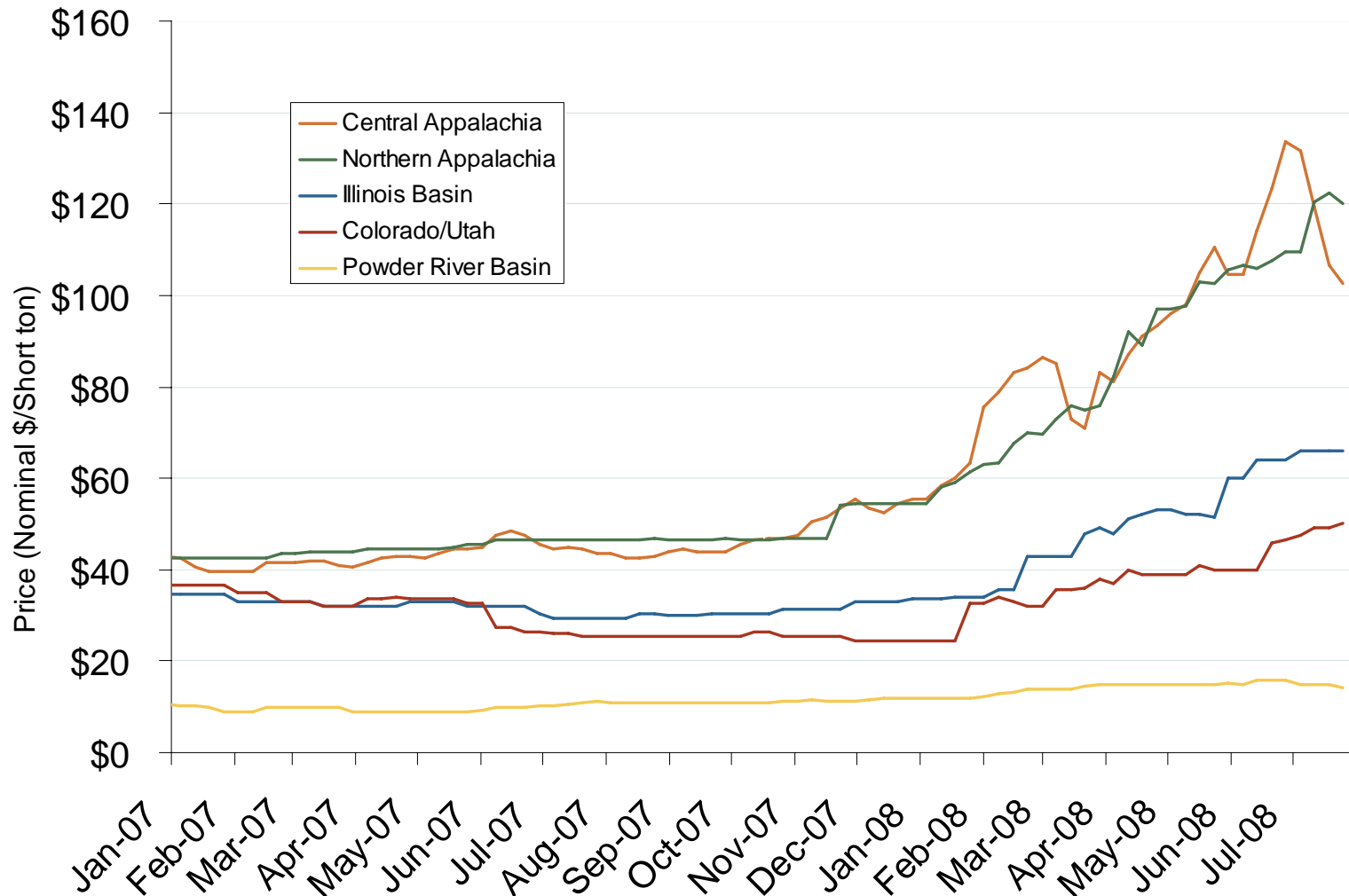
## Energy Efficiency Resource Standards (EERS)

- An **EERS** – energy efficiency resource or portfolio standard – aims to reduce or flatten electric load growth through energy efficiency (EE) measures. Goals may specify reductions in energy (MWh), demand (MW), or both. Many now specify overall energy reductions as well as peak-load reductions.
- Twenty-two states have an EERS or goal; thirteen include EE as part of a renewable standard or goal. States that enacted significant energy efficiency legislation in 2008 include: DC, FL, MA, MD, NJ, NM, NY, OH, UT, and VT.
- States that intend to use part of the RGGI auction proceeds to promote energy efficiency include CT, DC, DE, MA, and MD.
- **Massachusetts** enacted an “Act Relative to Green Communities” in July. Its goal is to meet 25% of its capacity and energy needs by 2020 with demand-side resources. Utilities must *first* use EE and demand reduction resources that are cost-effective or less expensive than supply. E&G utilities will assess EE system benefit charges and submit triennial EE plans.
- **Washington, D.C.** passed a “Clean and Affordable Energy Act” in July. It created a Sustainable Energy Utility to reduce per capita energy consumption, reduce peak electric demand growth, reduce the growth of energy demand of D.C.’s largest energy users, and increase RE generating capacity in D.C. The bill also includes titles permitting sub-metering in non-residential buildings, and requiring energy benchmarking for private and government buildings.
- **New York** adopted a “15 by 15” goal in June. Its EERS targets a 15% cut in electric use by 2015, and is a joint effort by the Public Service Commission and Research and Development Authority (NYSERDA). Without this effort, NY’s expected demand would be 11% higher by 2015 than now. The EERS set goals for E&G utilities and uses a system benefit charge to fund programs. NY is designing performance incentives, the role of demand response and distributed generation, and studying the impact on rental and low-income customers.
- A state “Energy Efficiency Utility” is an energy efficiency model:
  - **Efficiency Vermont** was established in 2000. It provides technical and financial incentives to households and businesses to use energy efficient construction, equipment, and lighting and is funded through a system benefit charge. “Vermont spends more than \$22.50 per capita and saves nearly 2% of its electric needs annually, more than any other state.”\*
  - **Delaware** created a Sustainable Energy Utility (SEU) in 2007 to use a market-based approach to address energy efficiency, conservation, and renewable energy.
  - **D.C.** created a SEU and Sustainable Trust Fund in its Clean and Affordable Energy Act; it needs Congressional approval to become effective.

\* ACEEE-E075, State Energy Efficiency Scorecard, June 2007, pp. 9-10.

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

# Central Appalachian and Powder River Basin Coal Prices



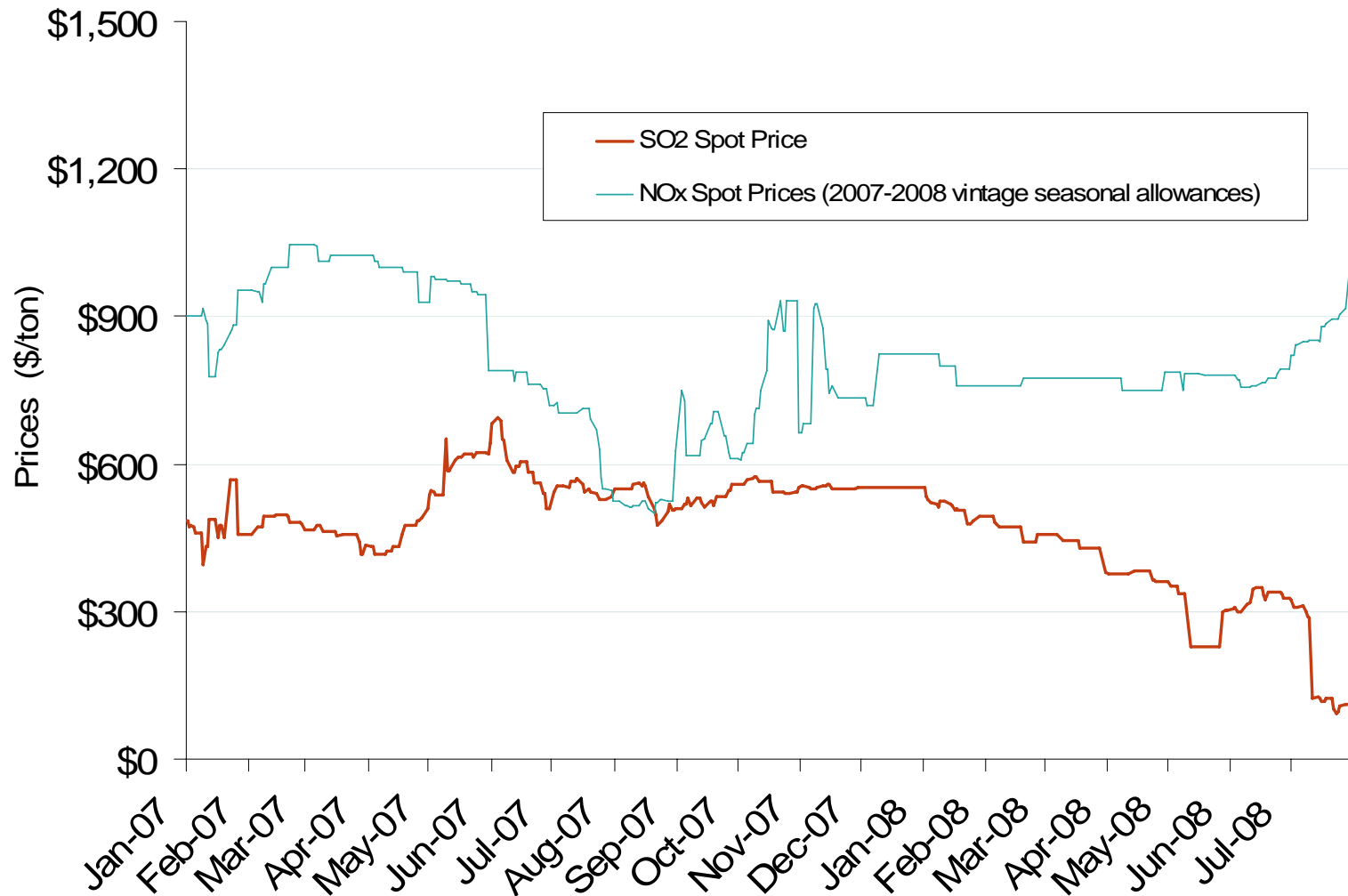
Source: Derived from Bloomberg data.

Updated August 14, 2008

1148



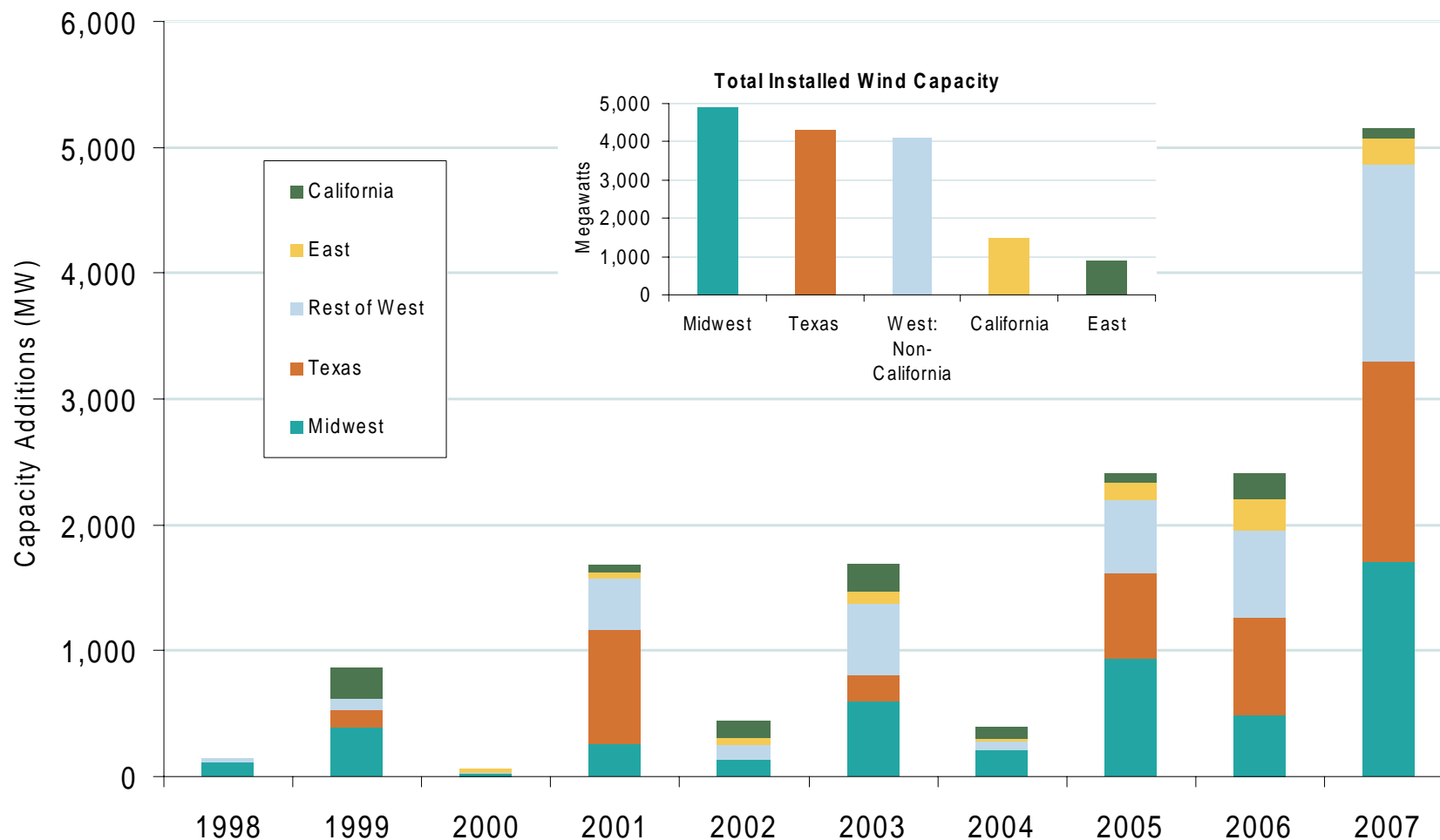
## SO<sub>2</sub> and NO<sub>x</sub> Allowance Spot Prices



Source: Derived from Cantor Fitzgerald data.

Updated August 14, 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.