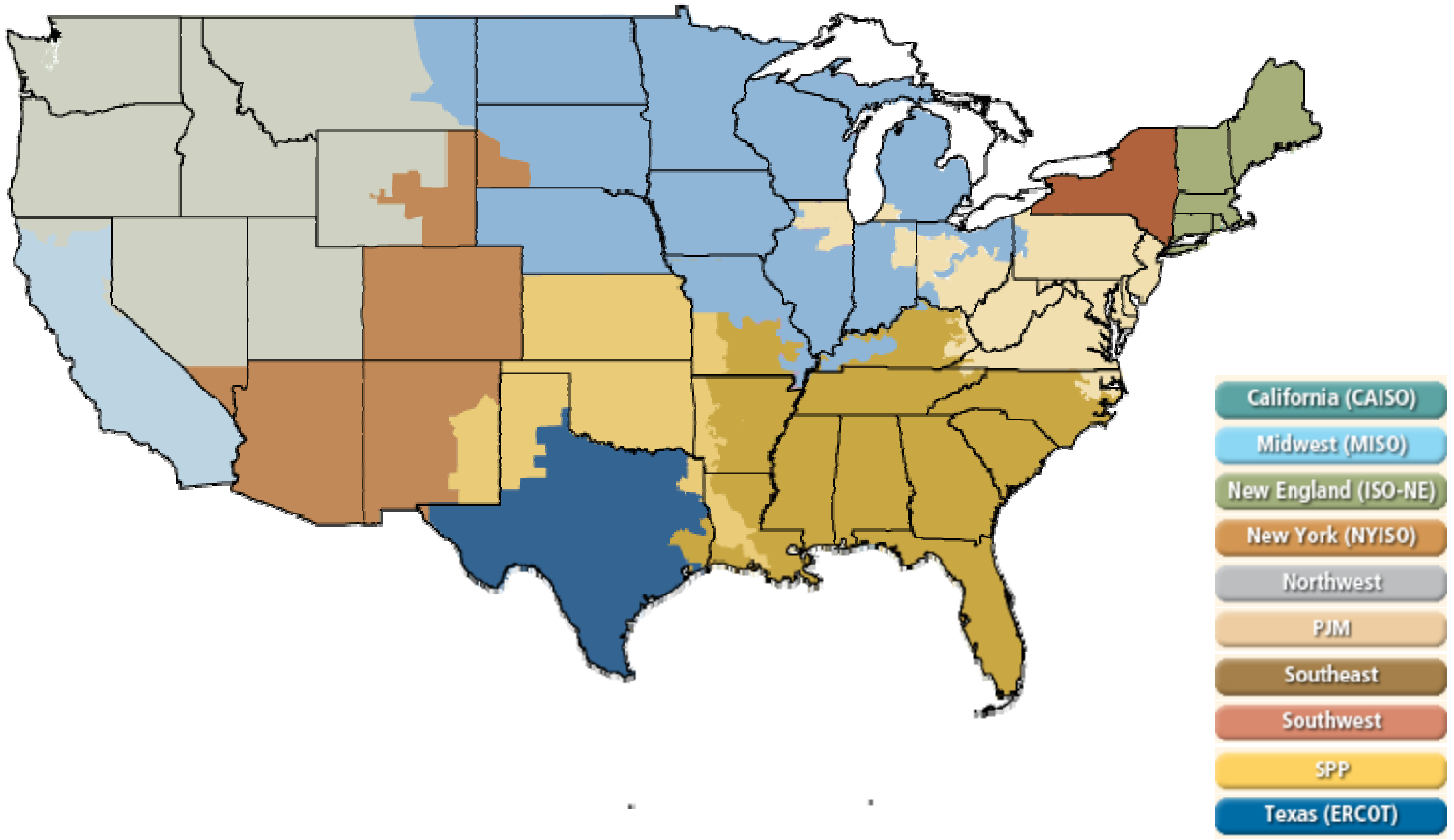
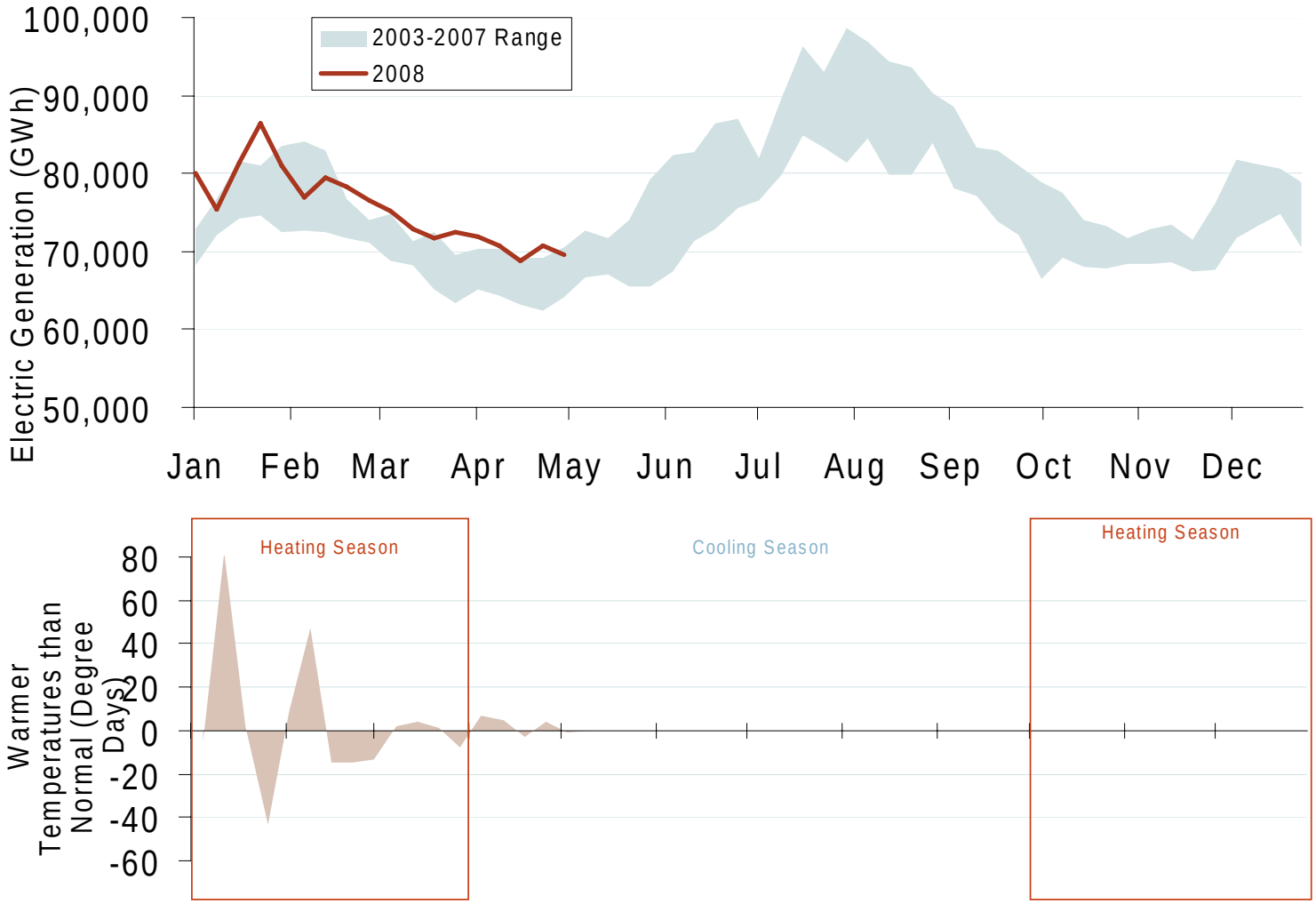
Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

# Electric Market National Overview



# Weekly U.S. Electric Generation Output and Temperatures

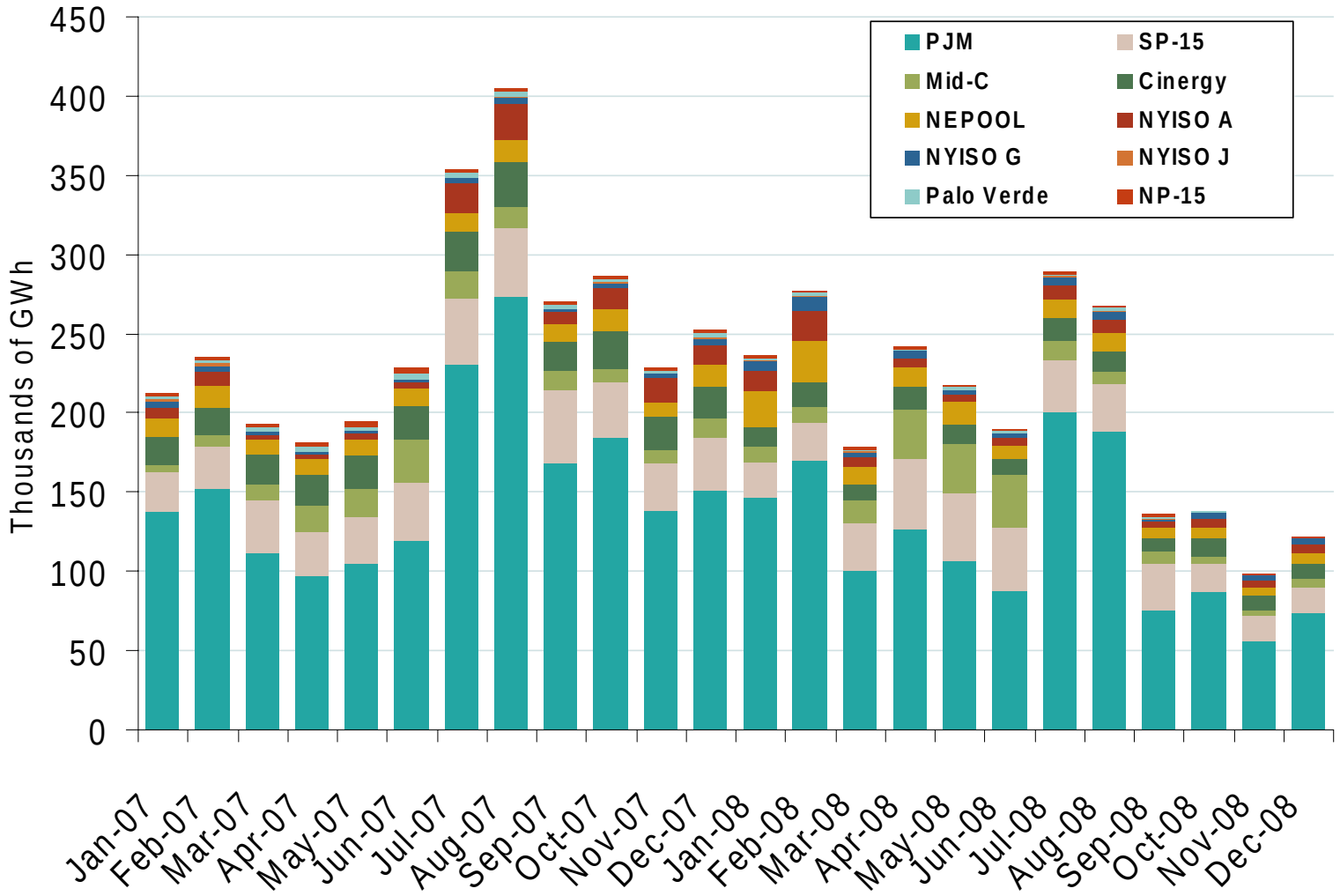



Source: Derived from *EEI* and *NOAA* data.

*Updated May 6, 2008*

1110

# 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 May 6, 2008*

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# Renewable Energy Portfolio Standards (RPS)

**WA**: 15% by 2020

**OR**: 25% by 2025; small utilities 5-10%

**CA**: 20% by 2010; goal of 33% by 2020

**NV**: 20% by 2015; solar 5% per year

**UT**: 20% by 2025

**CO**: 20% by 2020; co-ops & munis 10% includes 4% solar

**AZ**: 15% by 2025; includes 30% DG

**NM**: 20% by 2020 co-ops 10%

**HI:** 20% by 2020, *and* goal of 70% RE by 2030

**OK**: Studying an RPS

**TX**: 5,880 MW by 2015

**MT**: 15% by 2015

**ND**: 10% by 2015

**KS**: 20% wind by 2020

**MN**: 25% by 2025 Xcel 30% by 2020

**IA**: 1,105 MW by 2011*

**MO**:11% by 2020

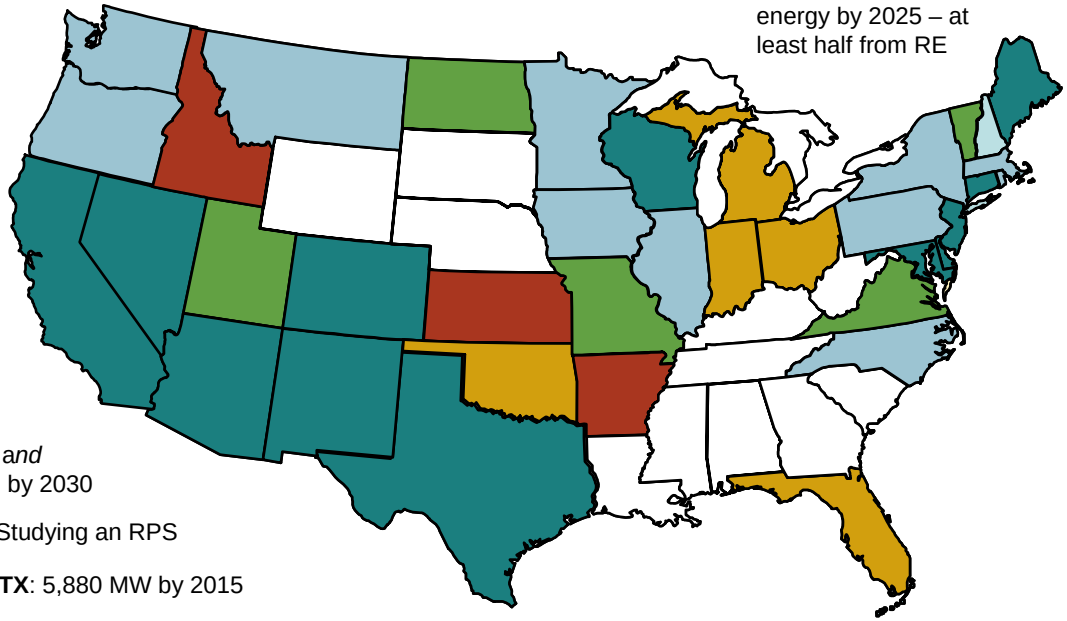
**MI**: 10% by 2015

**WI**: 10% by 2015

**IL**: 25% by 2025

**IN**: 10% by 2018

**OH**: 25% from advanced energy by 2025 – at least half from RE



**ME**: 40% by 2017

**NH**: 23.8% BY 2025

**VT:** 25% by 2025

**MA**: 4% by 2009

**RI**: 16% by 2019

**CT**:23% Class I/II by 2020 4% Class III by 2010

**NY**: 24% by 2013

**PA**: 8% Tier I, 10% Tier II by 2020; solar set-aside

**NJ**: 22.5% by 2020 includes 2% solar

**MD**: 20% by 2022; includes 2% solar

**DC**: 11% by 2022

**DE**: 20% by 2019, includes 2% solar

**VA**: 12% by 2022

**NC**: 12.5% by 2021 co-ops & munis: 10% by '18

**FL**: 20% by 2020

- 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.

*Updated April 22, 2008*

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# 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 $CO_2$ 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.

*Updated April 22, 2008*

# Energy Efficiency Resource Standards (EERS)

**ID**: evaluating DR, EE, and RE as priority resources

**MT:** state agency reduction initiative: save 20% by 2010

**MN**: reduce fossil fuel use 15% by 2015 through EE, RE

**IA**: mandated study

**WI**: RPS requires utility EE

**MI**: incremental savings beginning in 2009, increasing to 2012

**IL**: use cost-effective EE, DR to reduce energy 2% by 2015

**OH**: reduce peak-demand 8% by 2018; effect energy savings of 22% by 2025

**ME**: 10% new EE by 2017; in RPS goal as 2nd priority

**VT** EE & RE to meet 2007-12 growth; new EE fund

**MA**: pending bill - acquire all cost-effective resources

**NY**: goal - reduce 15% of forecast energy use by 2015

**CT**: 4% savings by 2010, and a Tier III RPS resource

**WA**: must pursue all cost-effective conservation

**CA:** IOUs reduce MW 10%, peak demand (MWh) 12% by 2013; munis 10% by 2017

**NV**: use EE for up to 25% of RPS by 2015

**UT**: EE incentives in RPS goal

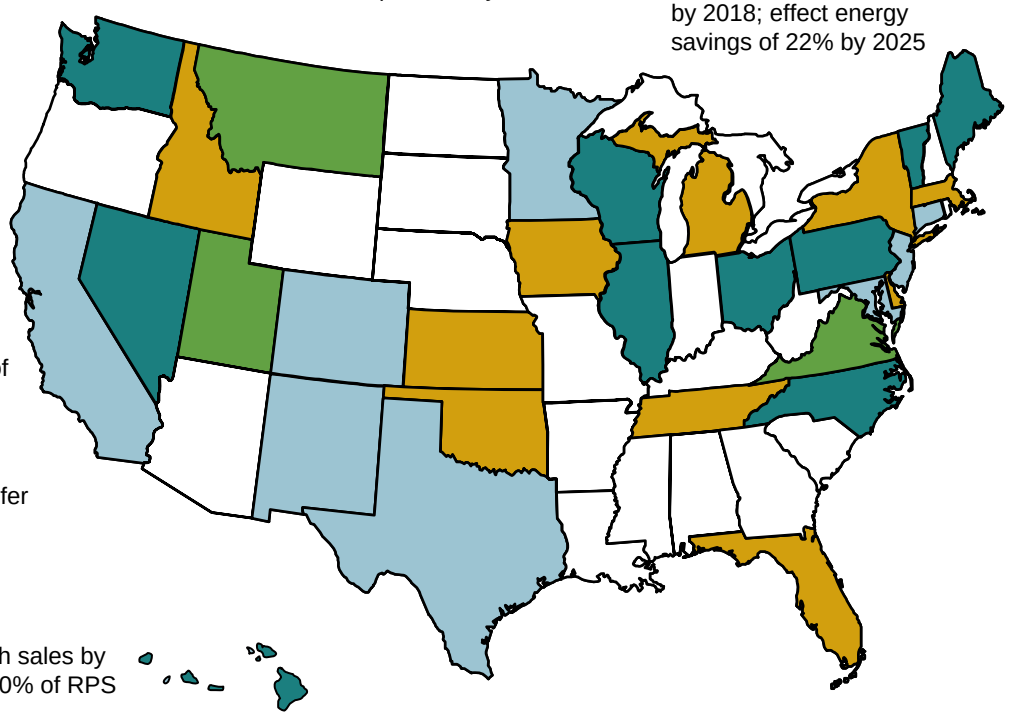
**CO**: save 40 MW and 100 GWh annually to 2013

**NM**: use EE and DR to save 10% of '05 retail electric sales by 2020

**KS**: studying for E&G utilities

**OK:** implement DSM and EE to defer or avoid new plant construction

**TX**: 10% of load growth, beyond 2004, based on prior 5 years



**HI:** 20% of MWh sales by 2020; up to 50% of RPS

**PA**: pending bills -- EE savings of 2.5% by '13; new EE fund

**NJ**: reduce energy consumption 20% by 2020 using EE, DR, CHP; reduce peak 5,700 MW by 2020

**MD**: reduce peak-demand and per cap electricity use 15% by 2015

**DE**: promote EE and conservation by a Sustainable Energy Utility

**VA**: reduce 10% of 2006 sales by 2022 with EE, DR

**NC**: EE to meet up to 25% of RPS to 2011; later to 40%

**TVA**: encourages customers to save 1200 MW per day 2008-2012

**FL**: Law directs PSC to adopt goals to reduce electric consumption and peak demand by EE and DR

- 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

**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

*Updated May 9, 2008*

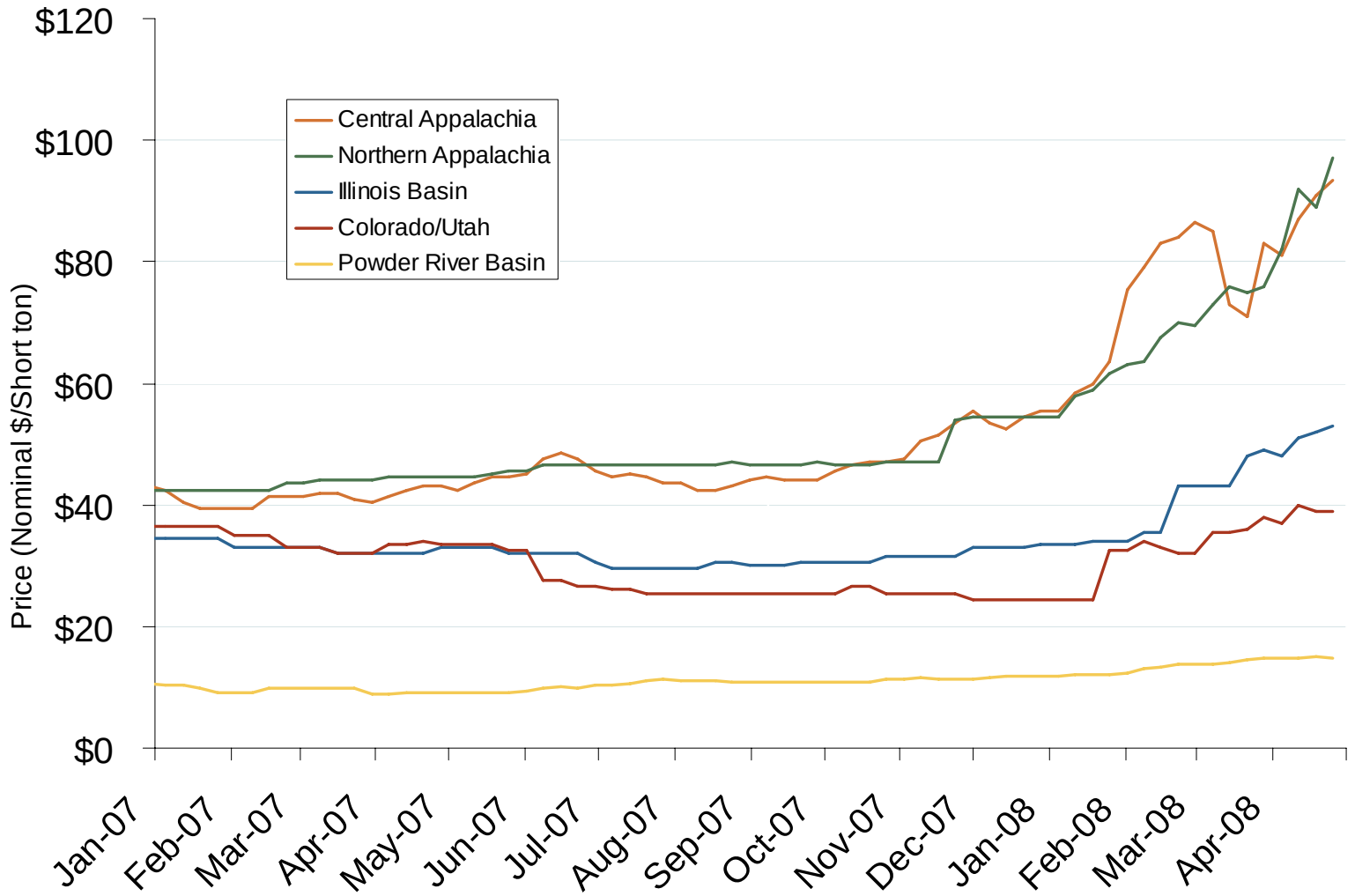
1126

# 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

*Updated May 9, 2008*

# Central Appalachian and Powder River Basin Coal Prices




Source: Derived from *Bloomberg* data.

*Updated May 6, 2008*

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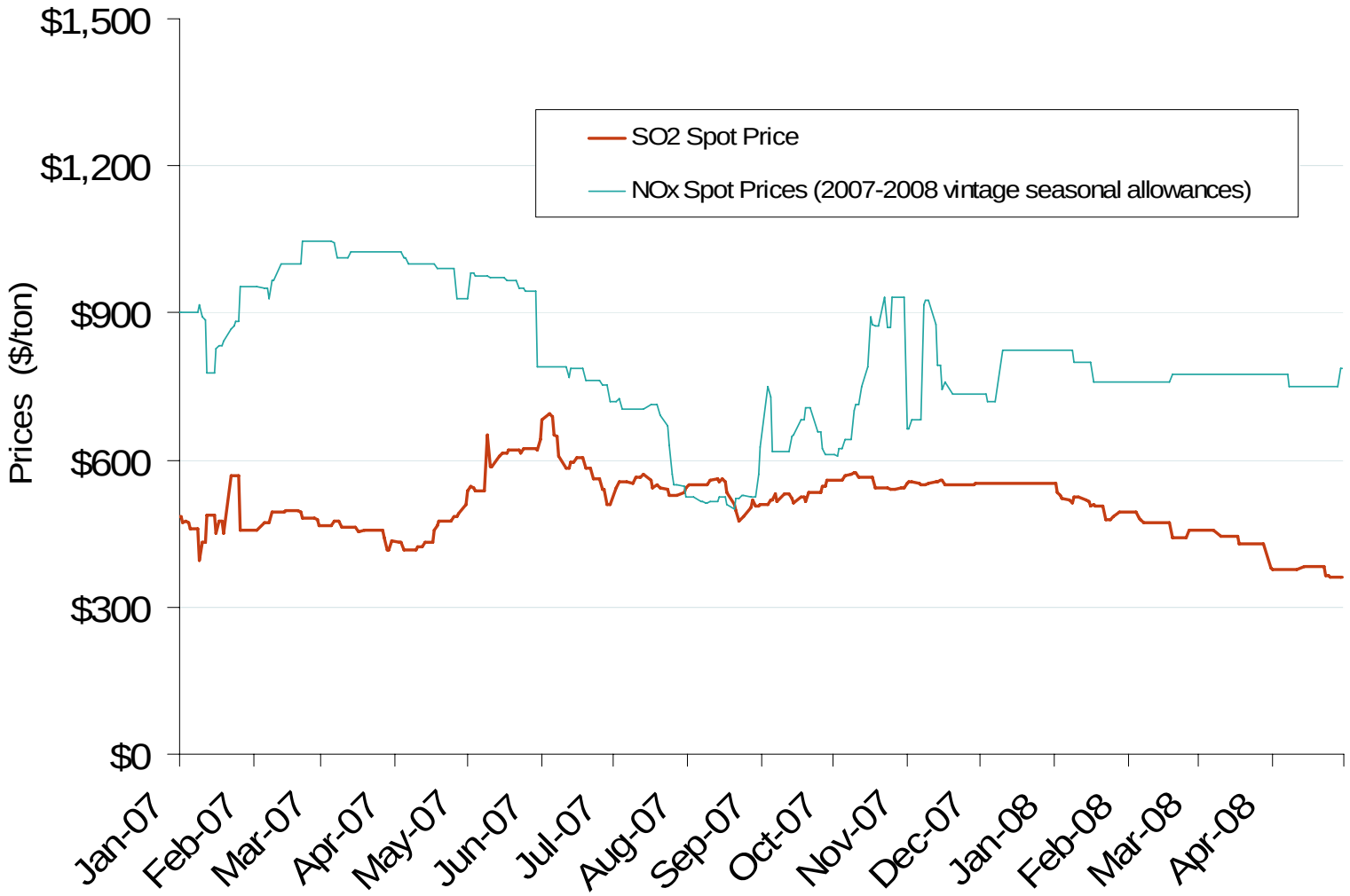
# $SO_2$ and $NO_x$ Allowance Spot Prices




Source: Derived from *Cantor Fitzgerald* data.

*Updated May 6, 2008*

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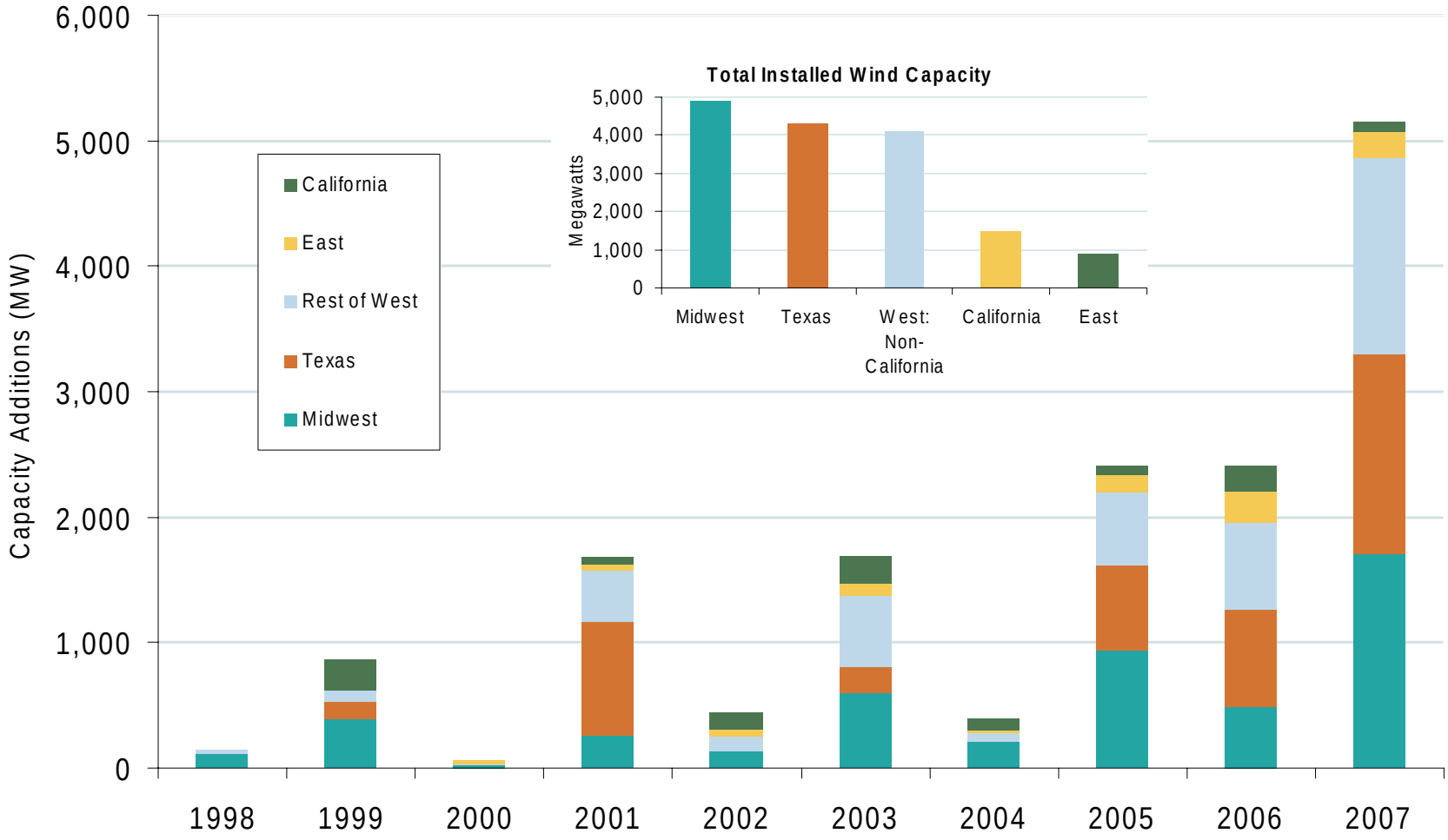
# Growth of U.S. Installed Wind Capacity (MW)




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*

3022

# 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.

*Updated March 7, 2008*