Weekly U.S. Electric Generation Output and Temperatures

Source: Derived from EEI and NOAA data.
Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Electric Market Overview: Financial Market Volumes

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
**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

**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*
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 CO₂ 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.
Electric Market Overview: Energy Efficiency

Energy Efficiency Resource Standards (EERS)

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

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

**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

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

**IA**: mandated study

**WI**: RPS requires utility EE

**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

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

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

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

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

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**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

May 2008
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.
  - 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 May 6, 2008
SO\textsubscript{2} and NO\textsubscript{x} Allowance Spot Prices

Source: Derived from Cantor Fitzgerald data.

Updated May 6, 2008
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)
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.