

OE ENERGY MARKET SNAPSHOT

Western States Version – April 2011 Data

- **Special Report**
- **Weather**
- **Electricity Markets**
- **Natural Gas and Fuel Markets**

Office of Enforcement
Federal Energy Regulatory Commission
May 2011



Special Report:

- **2010 State of the Markets**

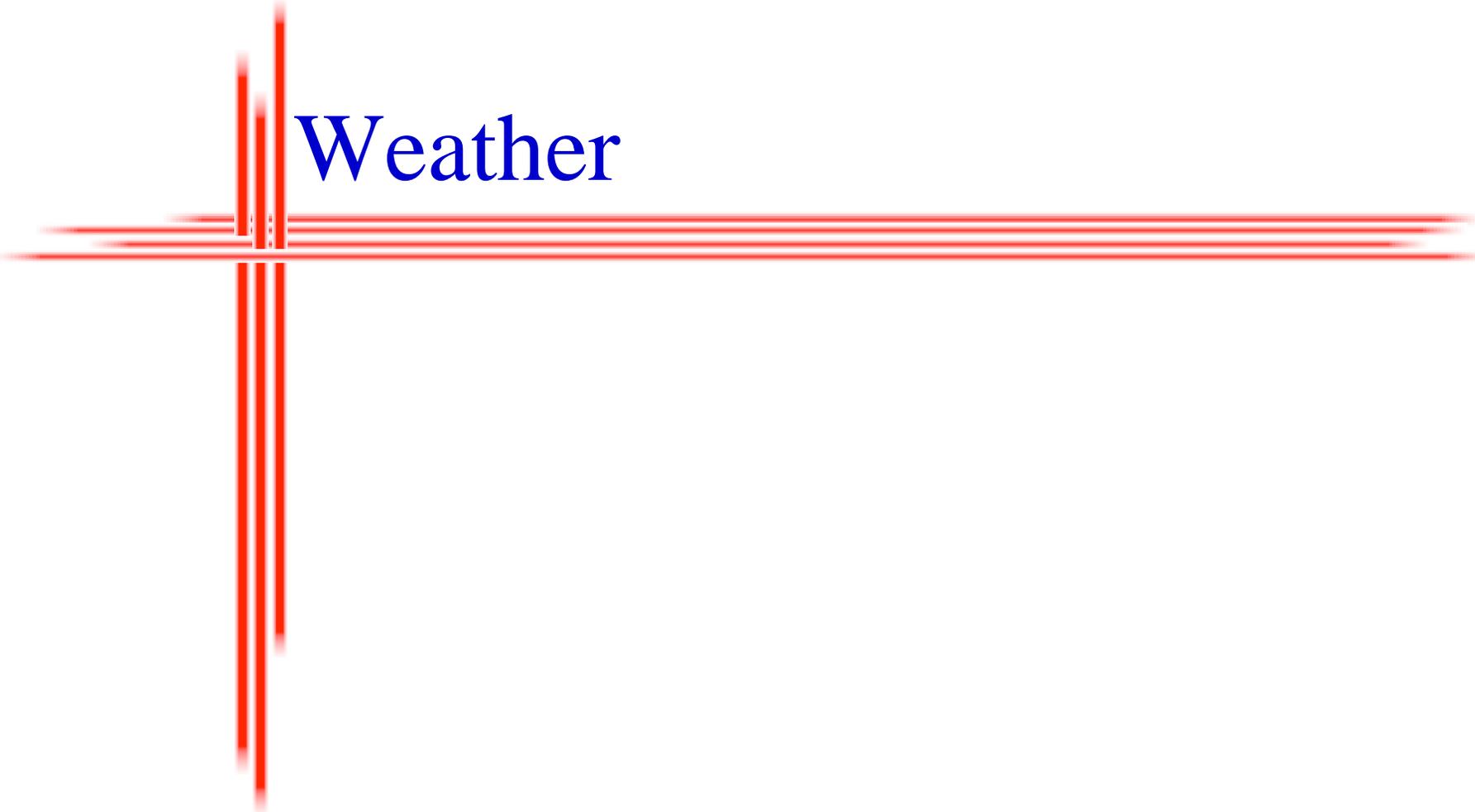


FEDERAL ENERGY REGULATORY COMMISSION

2010 State of the Markets

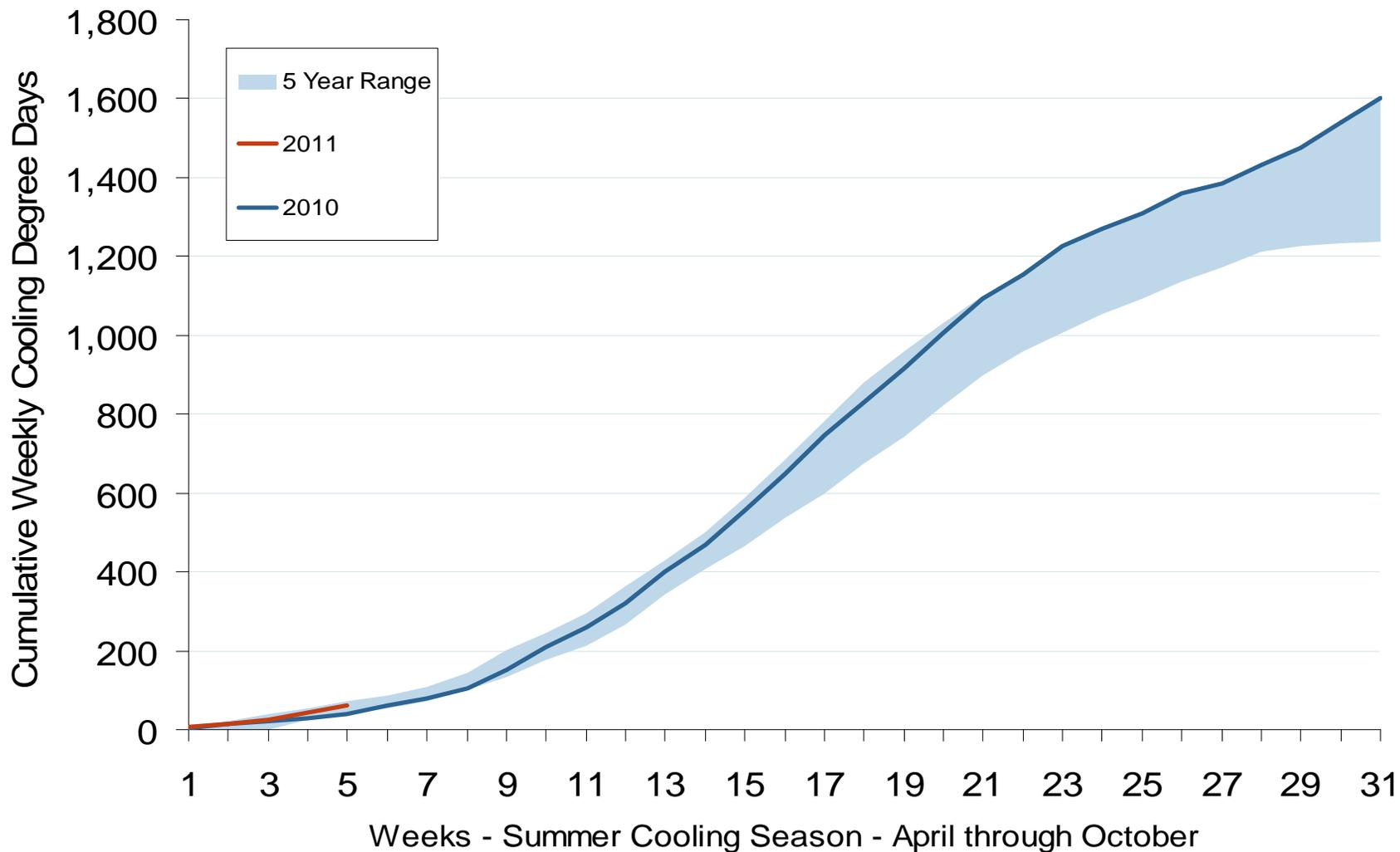
Item No: A-3
April 21, 2011

<http://www.ferc.gov/market-oversight/st-mkt-ovr/som-rpt-2010.pdf>



Weather

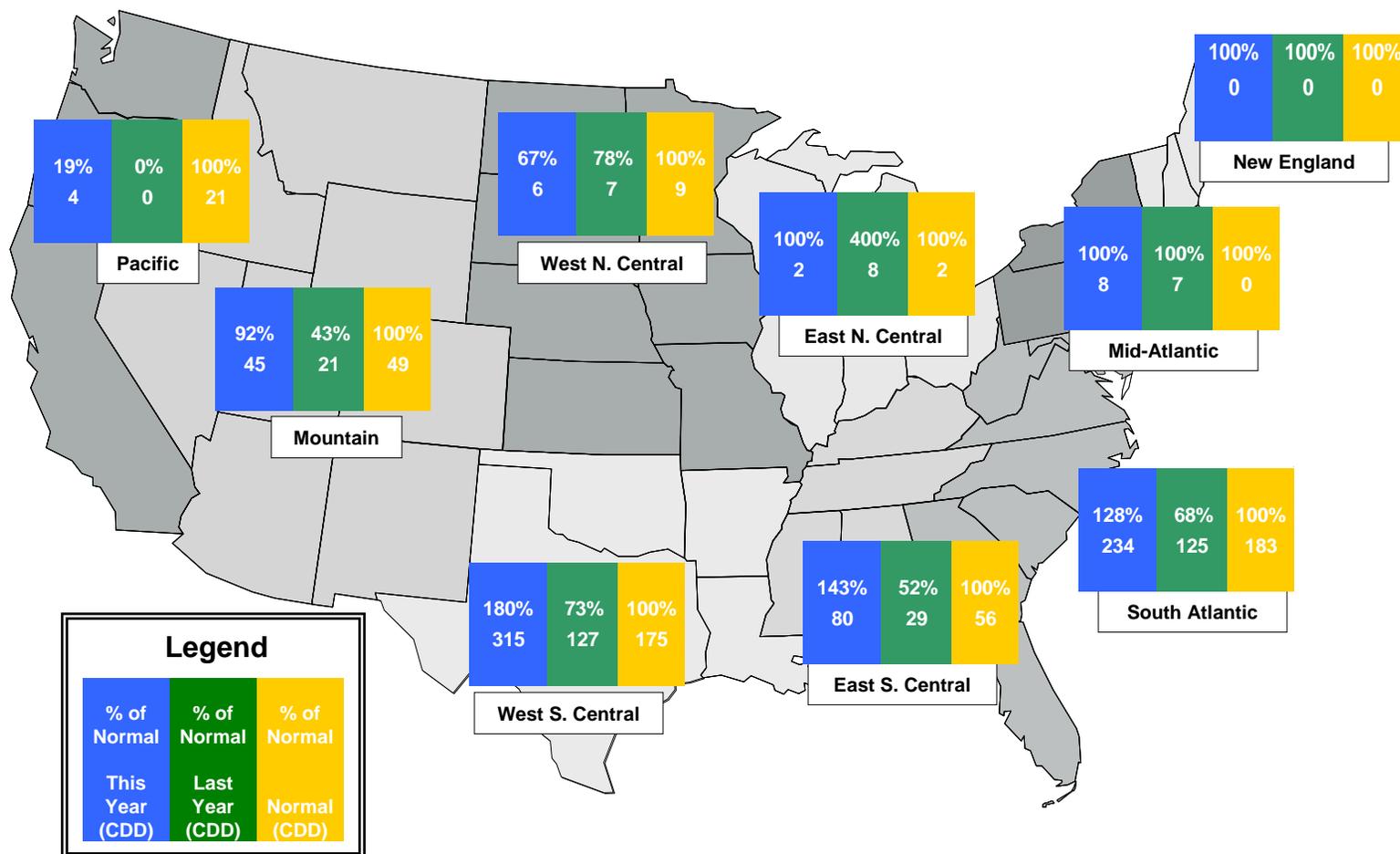
U. S. Summer Cumulative Cooling Degree Days - 2011



Source: Derived from NOAA data.

Updated May 6, 2011

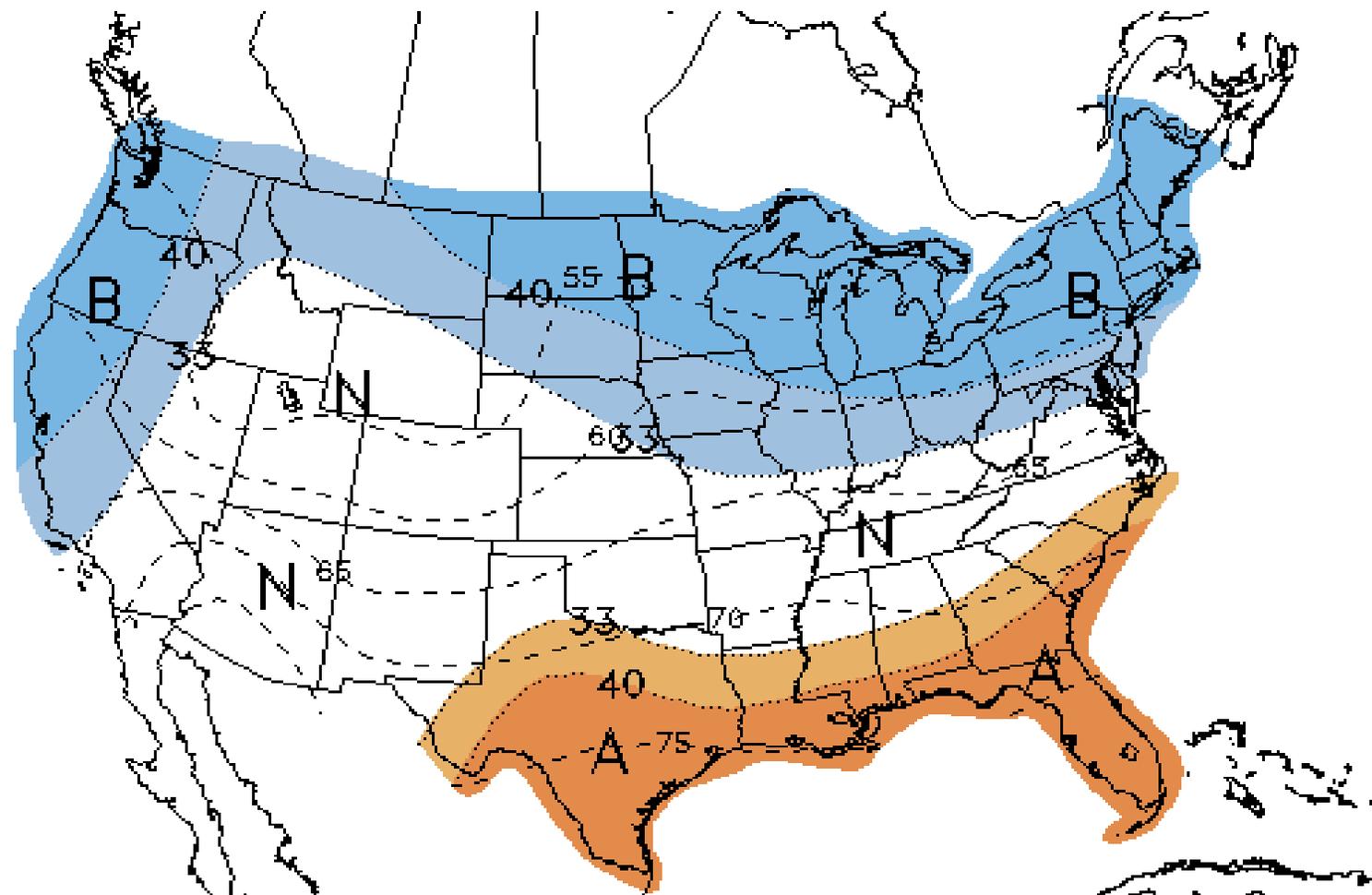
Regional Cooling Degree Days January Through April 2011



Source: Derived from NOAA data. Normal is based on a 30-year average of heating degree day data.
May 2011 Western Snapshot Report

Updated May 6, 2011

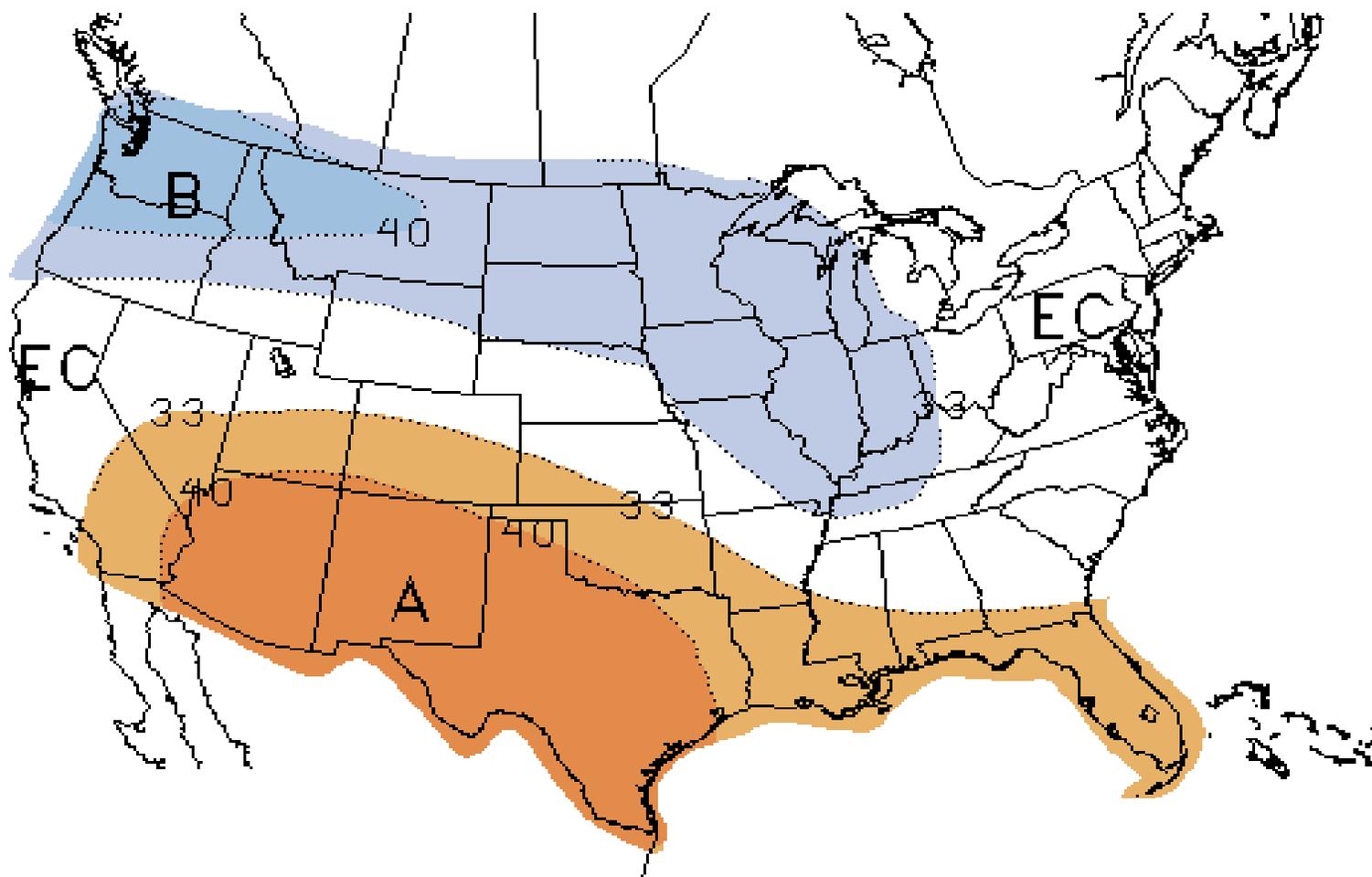
NOAA's 8 to 14 Day Temperature Forecast Made May 3, 2011, Valid for May 2011



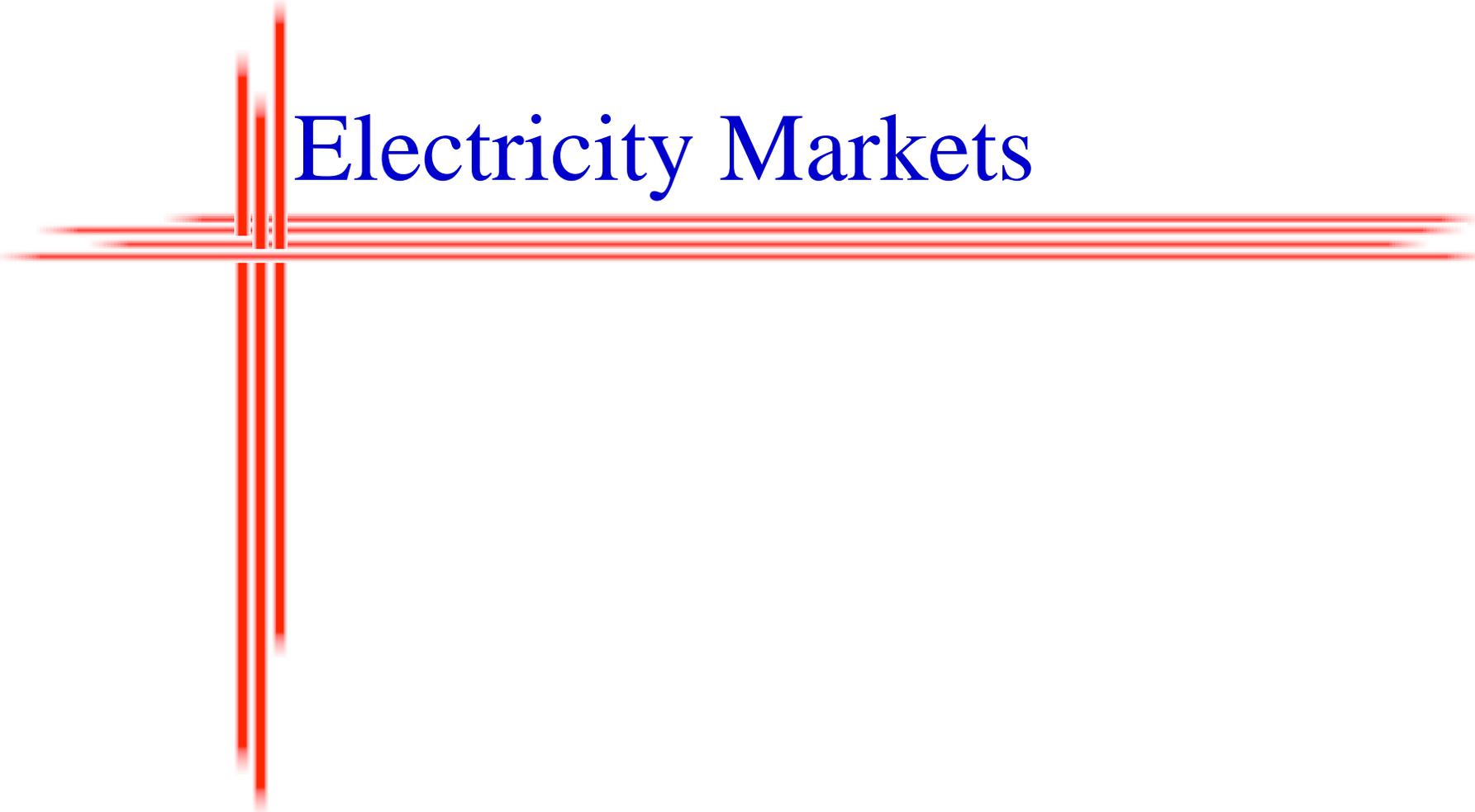
Note: "A" areas are above normal and "B" areas are below normal. Normal is based on the last 30 years of data.

Source: Derived from NOAA data.

NOAA's Monthly Temperature Forecast Made April 30, 2011, Valid for May 2011

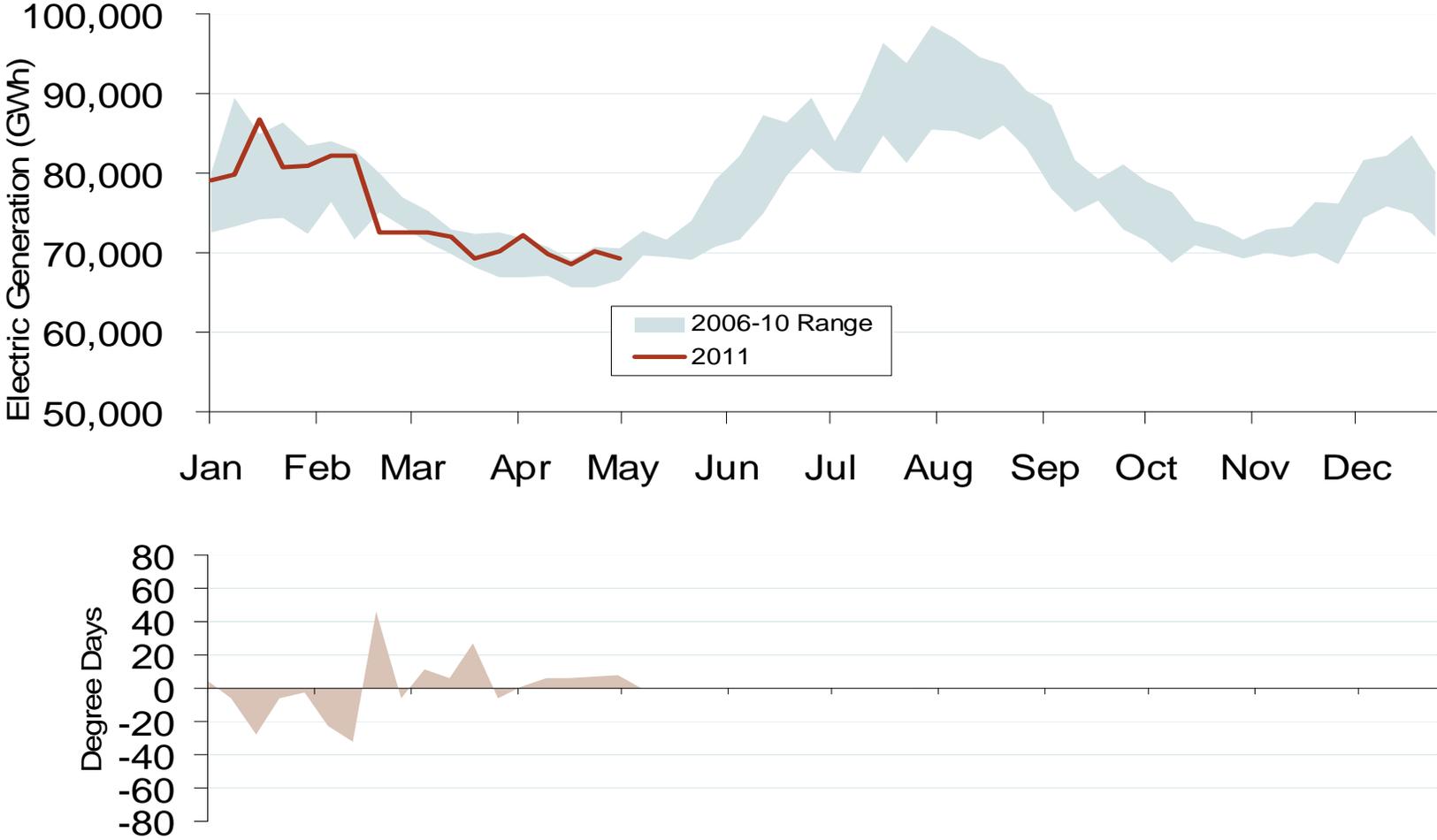


Note: "A" areas are above normal, "B" areas are below normal and "EC" means equal chance. Normal is based on the last 30 years of data.
Source: Derived from NOAA data.



Electricity Markets

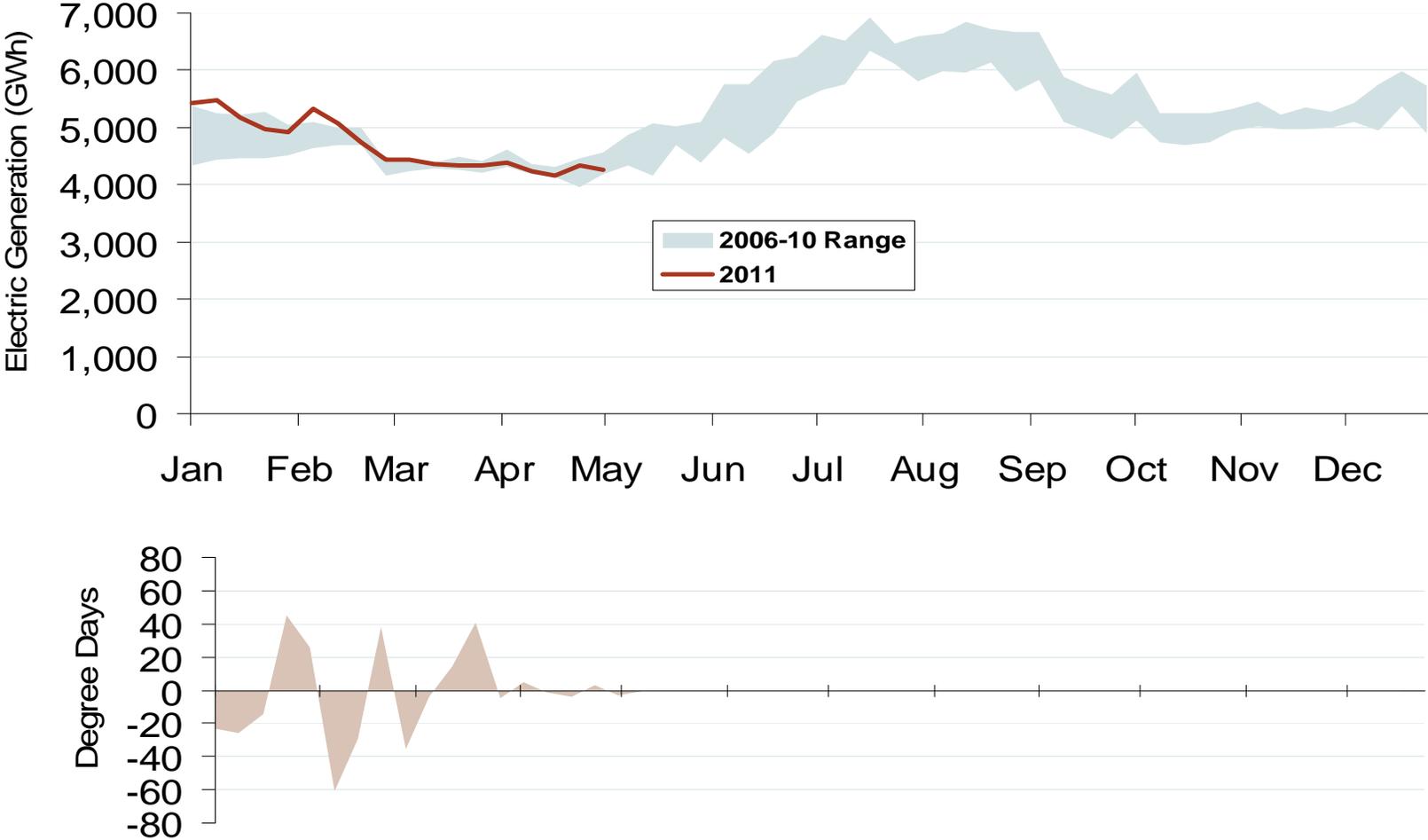
Weekly U.S. Electric Generation Output and Temperatures



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

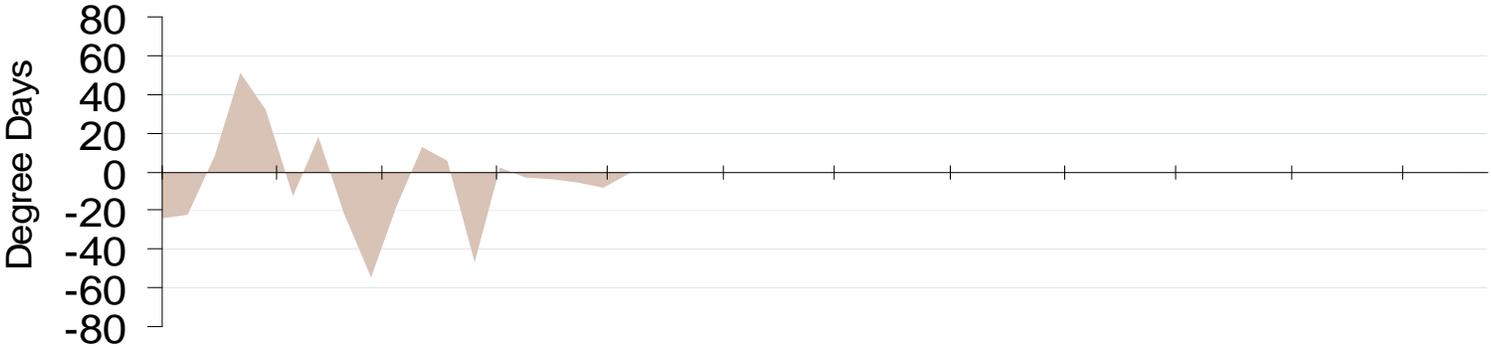
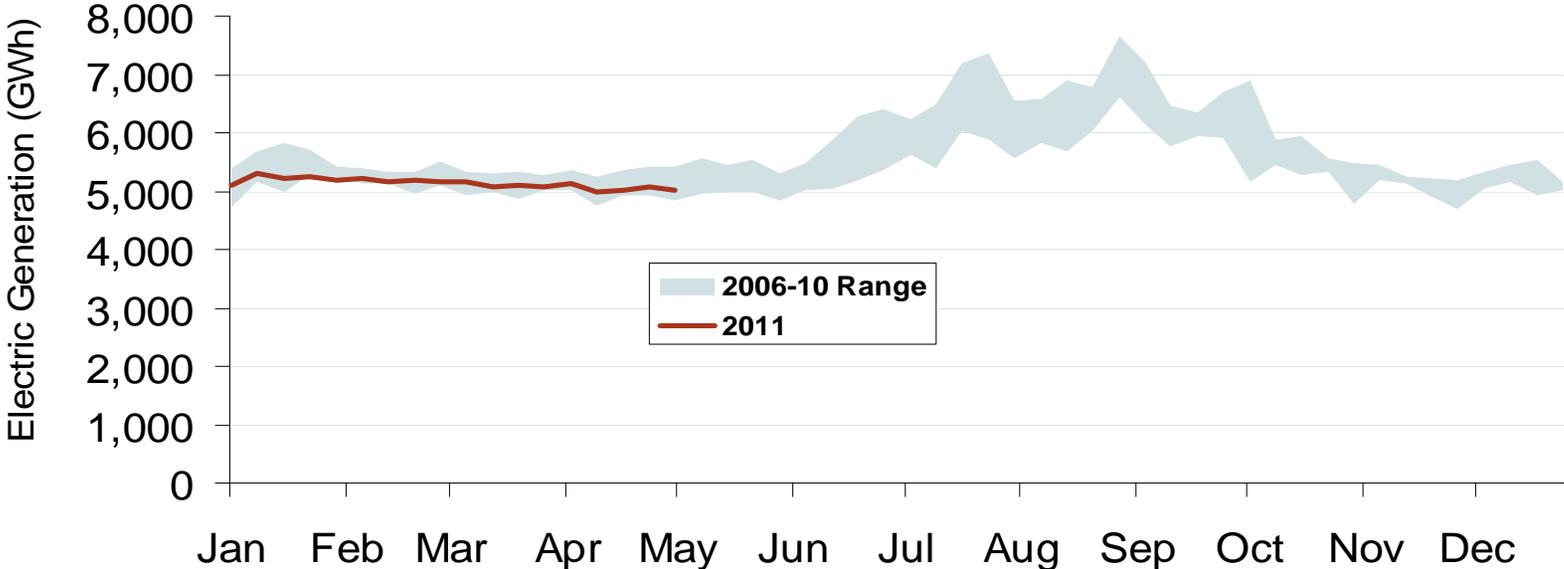
Updated May 6, 2011

Weekly Electric Generation Output and Temperatures Rocky Mountain Region



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

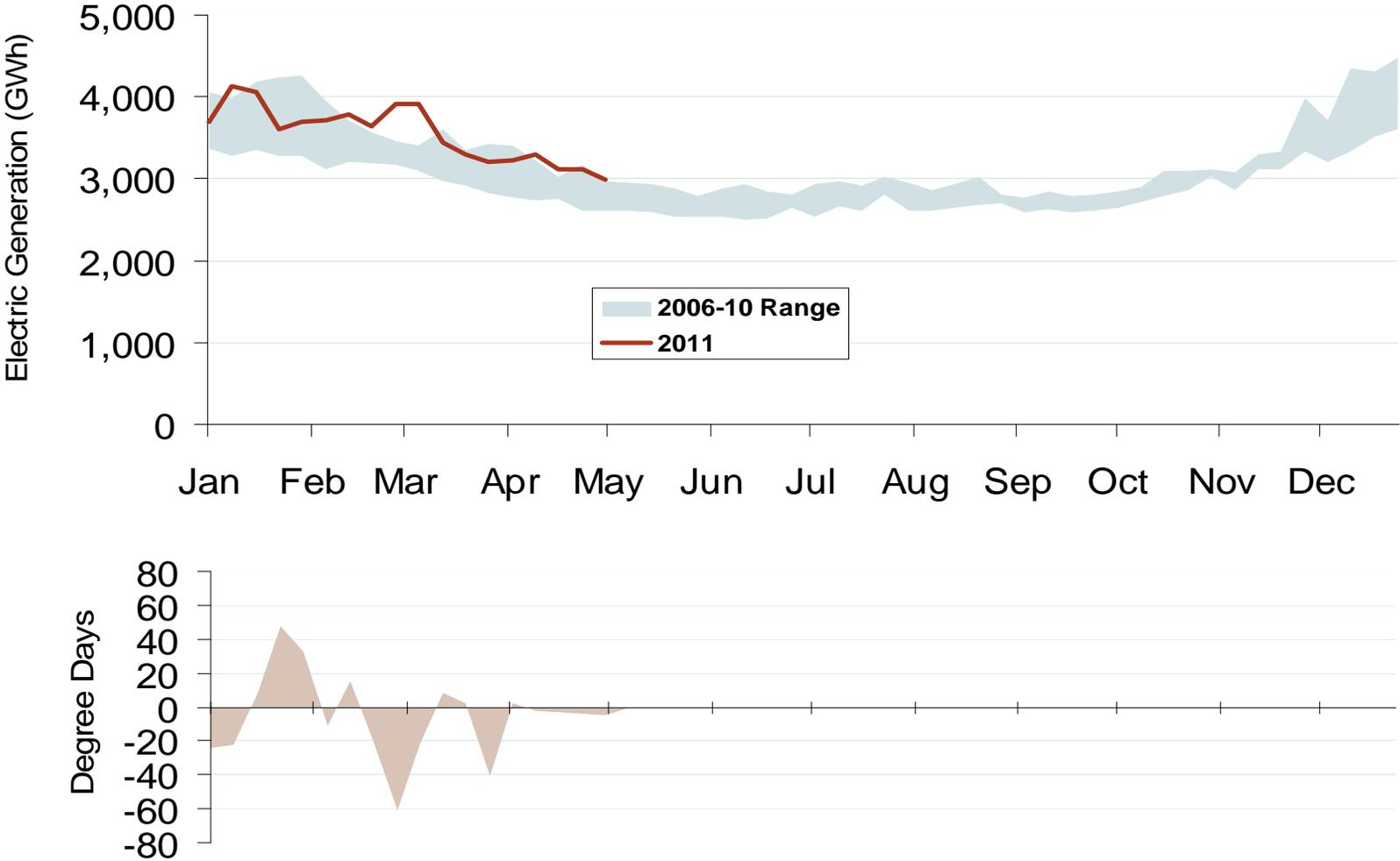
Weekly Electric Generation Output and Temperatures California



Source: Derived from *EEI* and *NOAA* data.
May 2011 Western Snapshot Report

Updated May 6, 2011

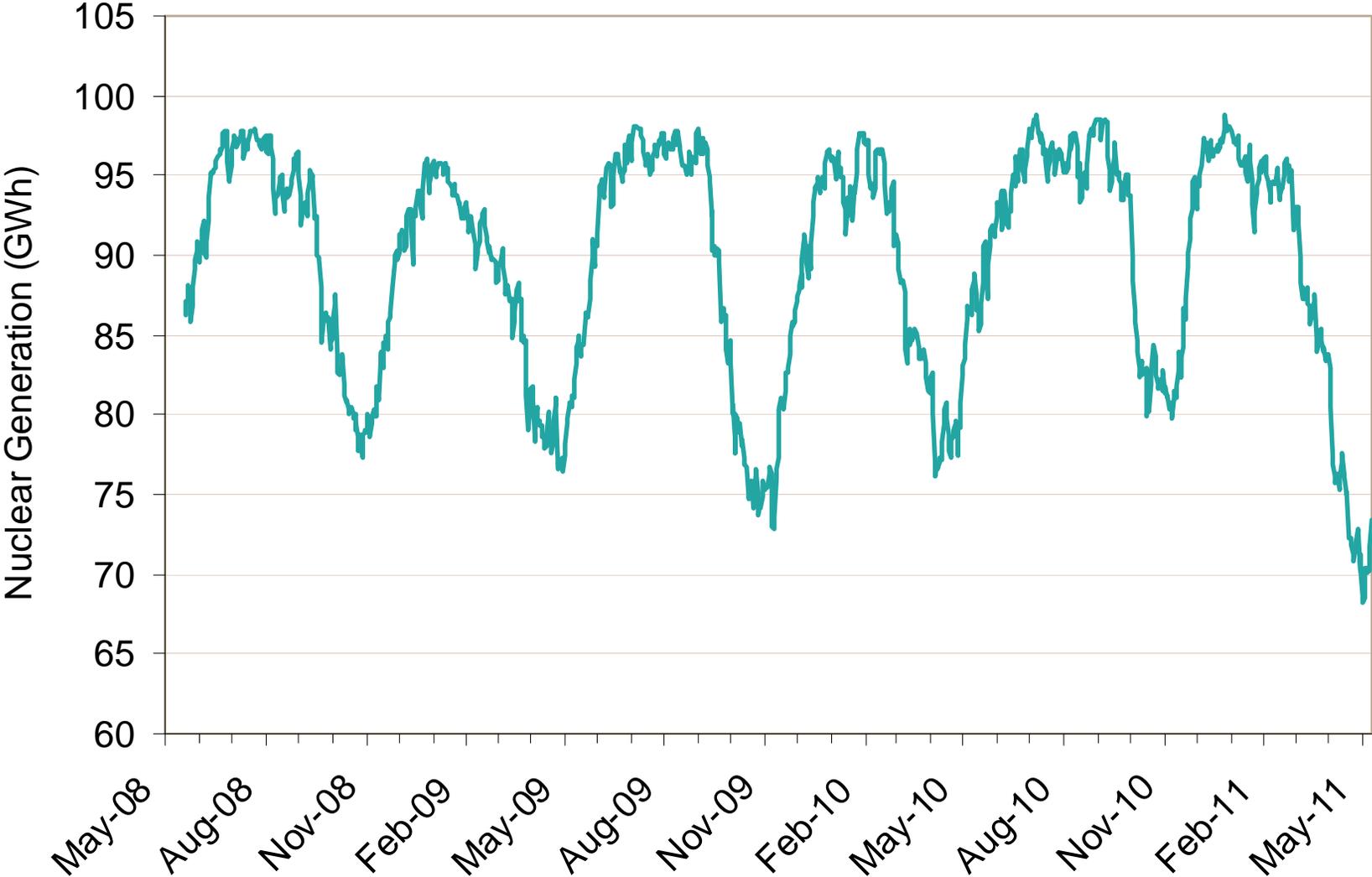
Weekly Electric Generation Output and Temperatures Pacific Northwest Region



Source: Derived from *EI* and *NOAA* data.
May 2011 Western Snapshot Report

Updated: March 08, 2011

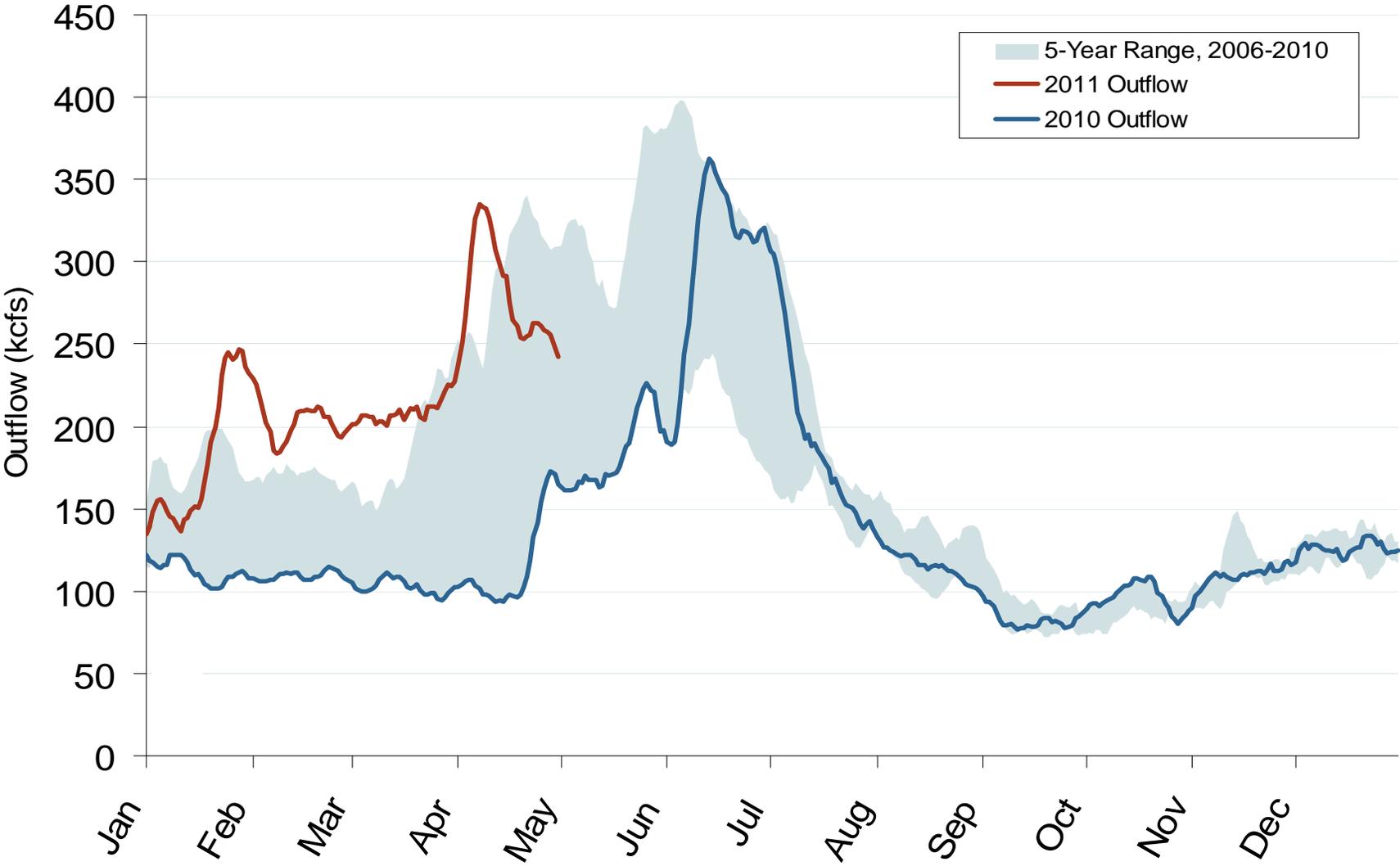
Spring 2011 Nuclear Outages Greater Than Usual



Source: Derived from Bloomberg Data

Updated May 9, 2011

Stream Flow at The Dalles Dam



Source: Derived from USACE data.

Data series are 7-day moving averages.

May 2011 Western Snapshot Report

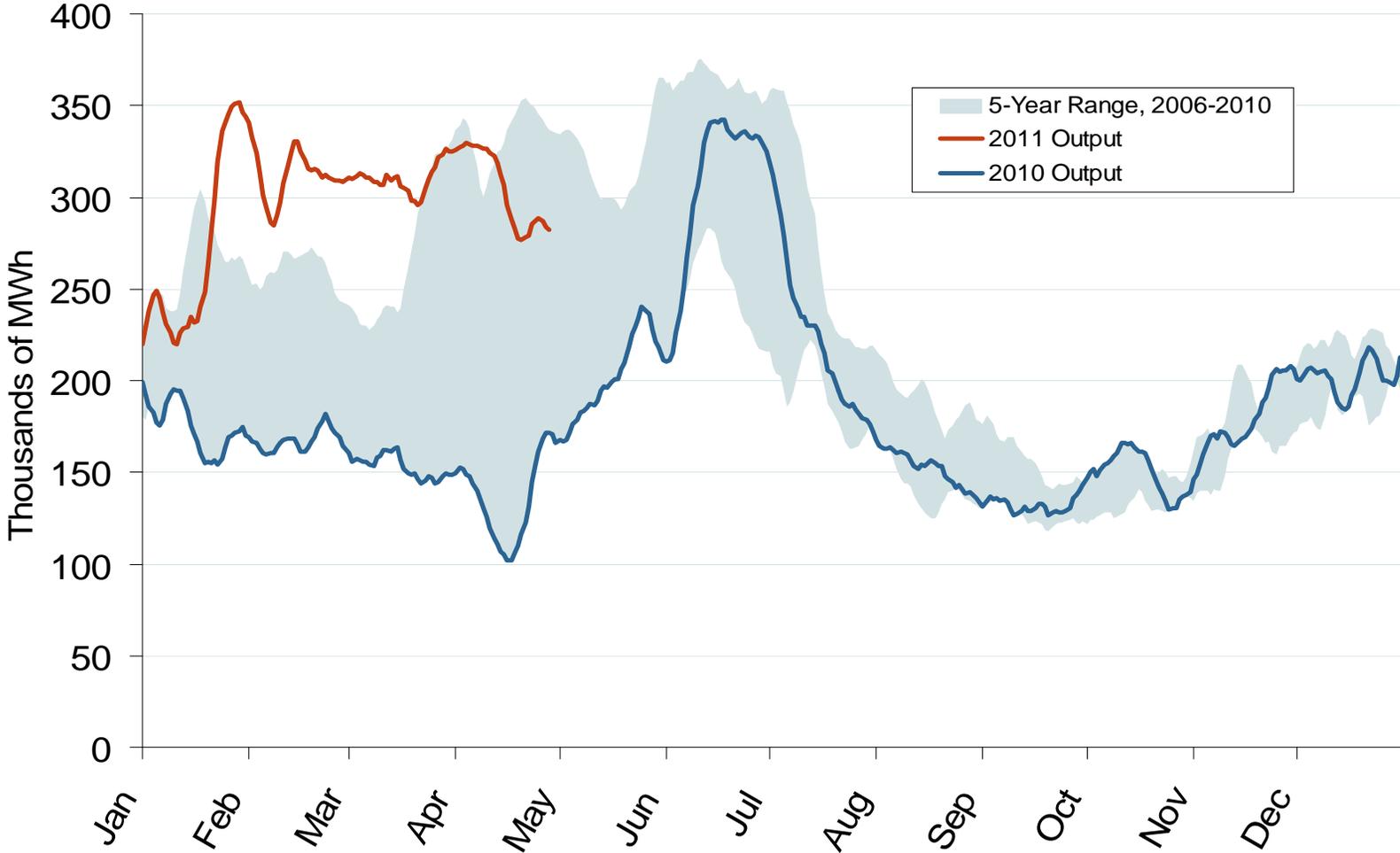
Updated May 16, 2011

Pacific/Northwest Hydro and Snowpack Levels

	Hydro Generation		Snow Water Equivalent ³		
	In-State Capacity (MW) ¹	Additional Capacity Created Downstream (MW) ²	One Month Ago (3/30/11) (% of historical average)	Current (4/28/11) (% of historical average)	% Change from One Year Ago
Washington	21,500	0	112%	148%	+36%
Oregon	9,100	0	130%	172%	+42%
California	10,400	0	166%	171%	+5%
Idaho	2,700	19,700	116%	153%	+37%
Montana	2,700	16,200	119%	151%	+32%
British Columbia	10,000	16,200	106%	131%	+25%

- ¹ Net summer capacity in megawatts by state (EIA).
- ² Approximate electric capacity created by water flow through the downstream states (EIA and BPA). The capacity estimates reflect the water flow pattern of the series of hydro facilities on the Snake and Columbia Rivers.
- ³ Snow Water Equivalent, in percent of the historical average for the same date, is the ratio of current snow water daily data (collected by the Natural Resources Conservation Services' Snowtel Telemetry sites) compared to the average snow water for the same day between 1961-1990. Total Hydro Capacity figures by state do not tie precisely to Snow Water Equivalent data due to such factors as snow basin terrain and complex distribution of run-off to neighboring state hydroelectric dams or shared facilities (e.g., Columbia River hydroelectric dams on the border of Washington and Oregon) (Bloomberg, California Dept. of Water Resource and Government of British Columbia Ministry of Environment).

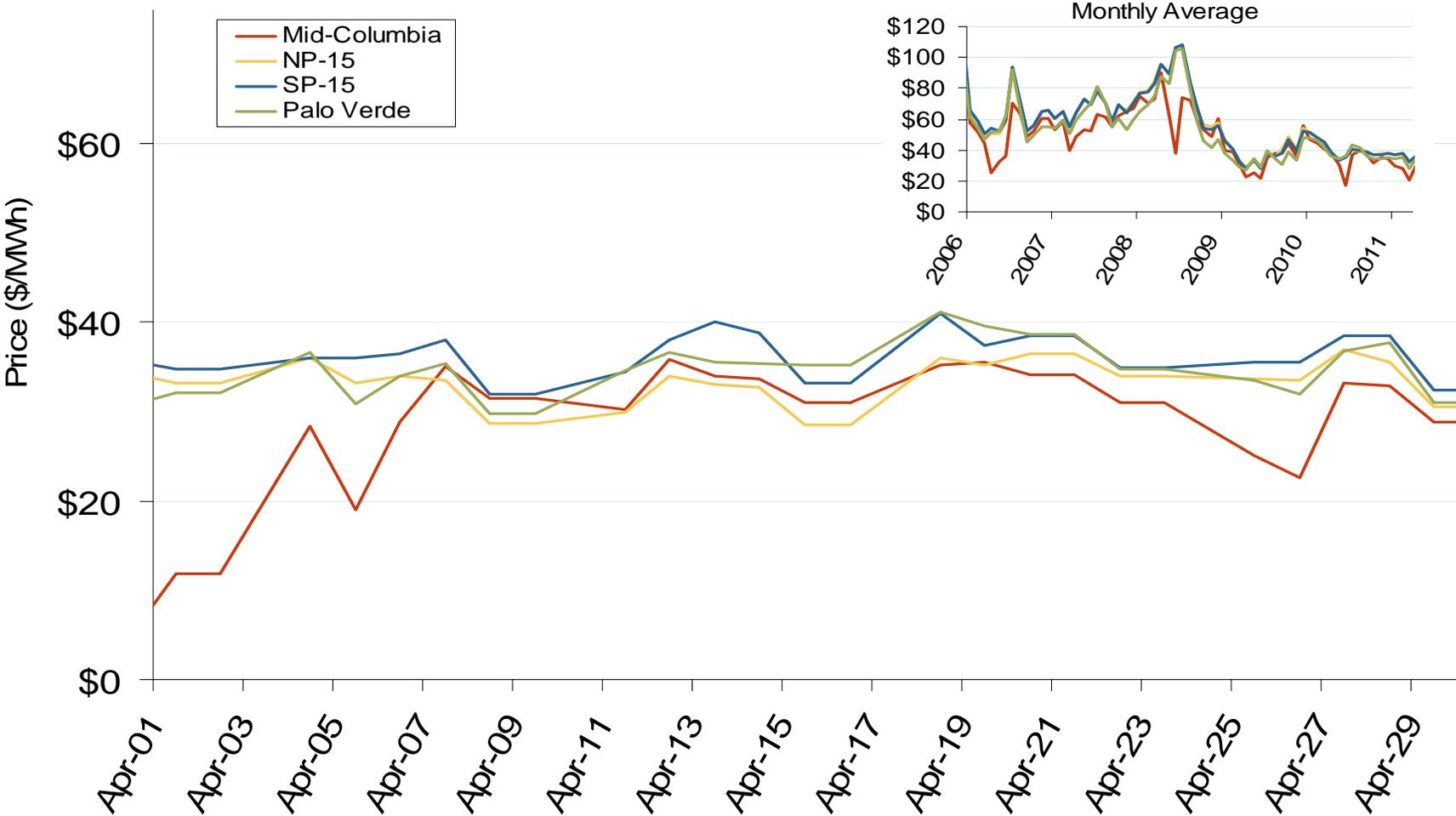
Pacific Northwest Hydroelectric Production



Source: Derived from USACE data reflecting the output of the 24 largest facilities.

Note: Trend lines are 7-day moving averages.

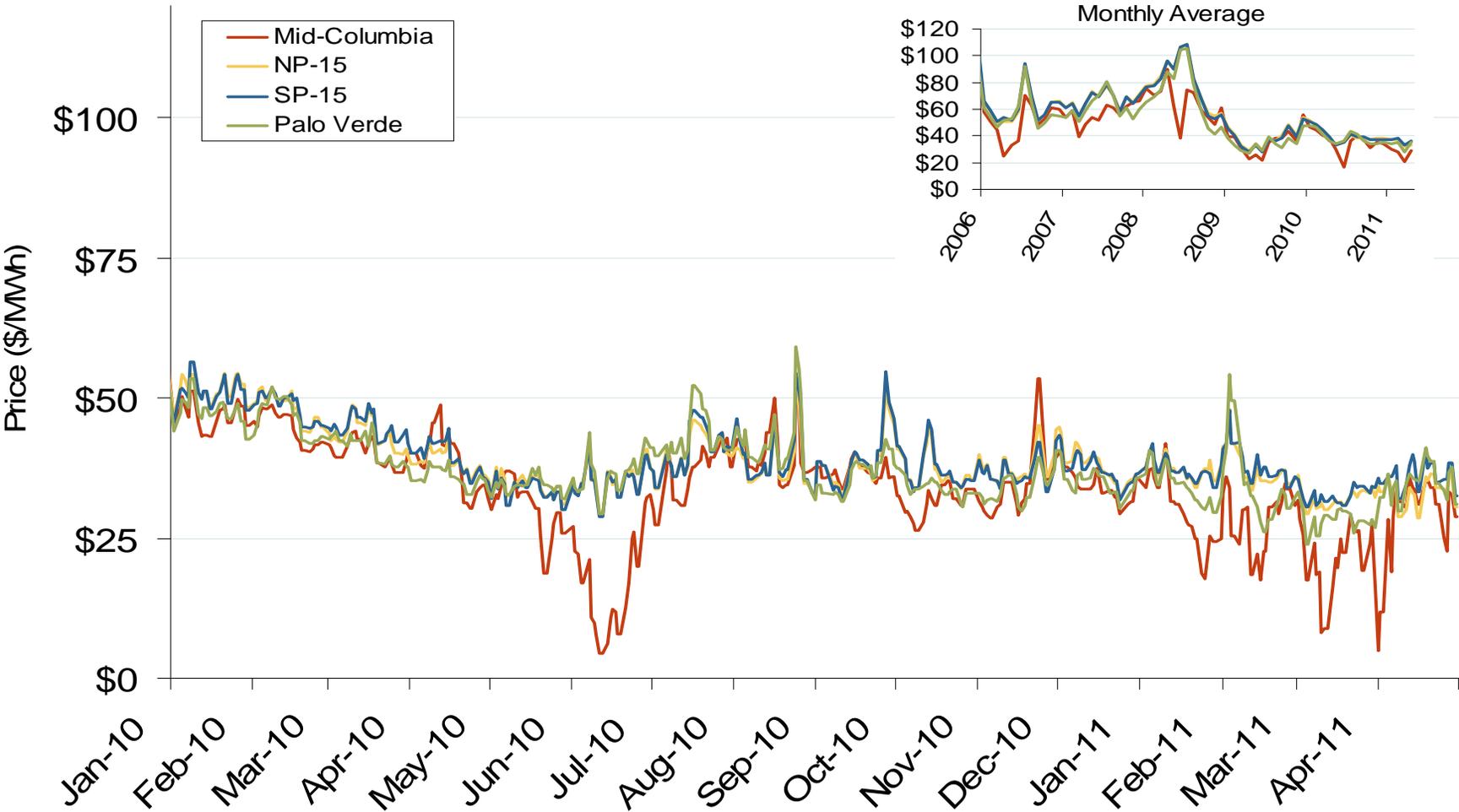
Western Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from Platts data.

Updated May 6, 2011

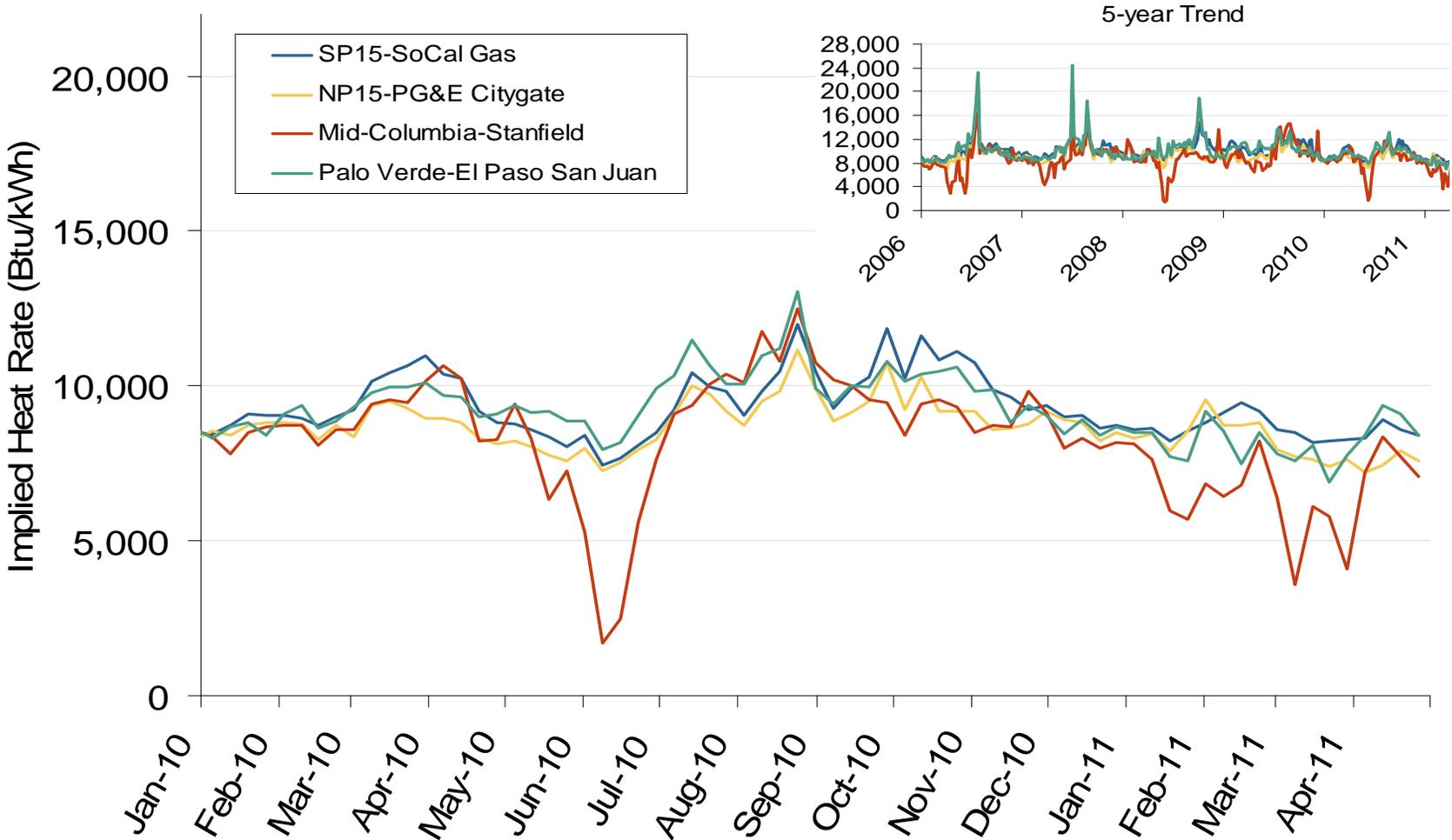
Western Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

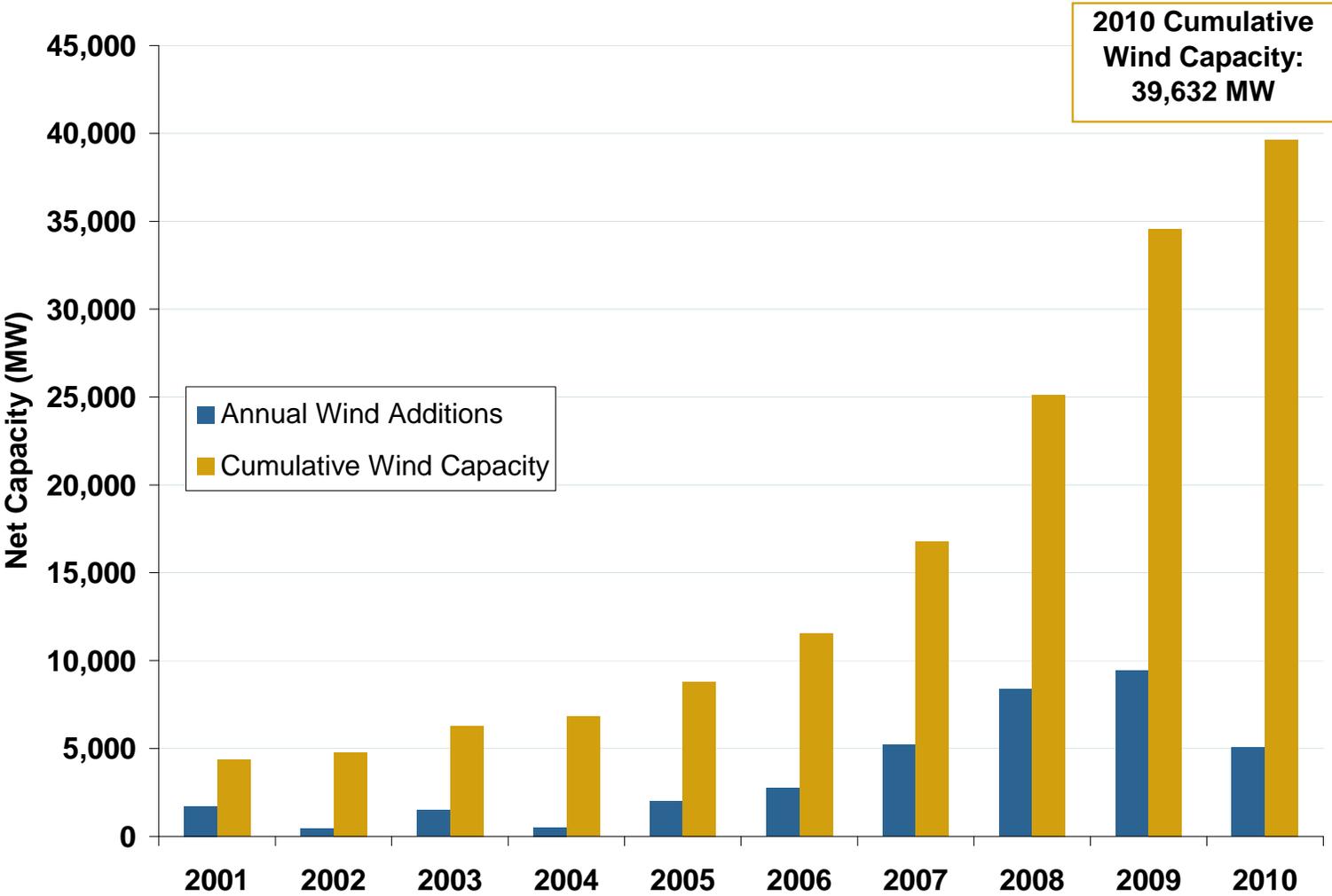
Updated May 6, 2011

Implied Heat Rates at Western Trading Points Weekly Averages



Source: Derived from *Platts* on-peak electric and natural gas price data.

U.S. Wind Capacity Growth, 2001 – 2010

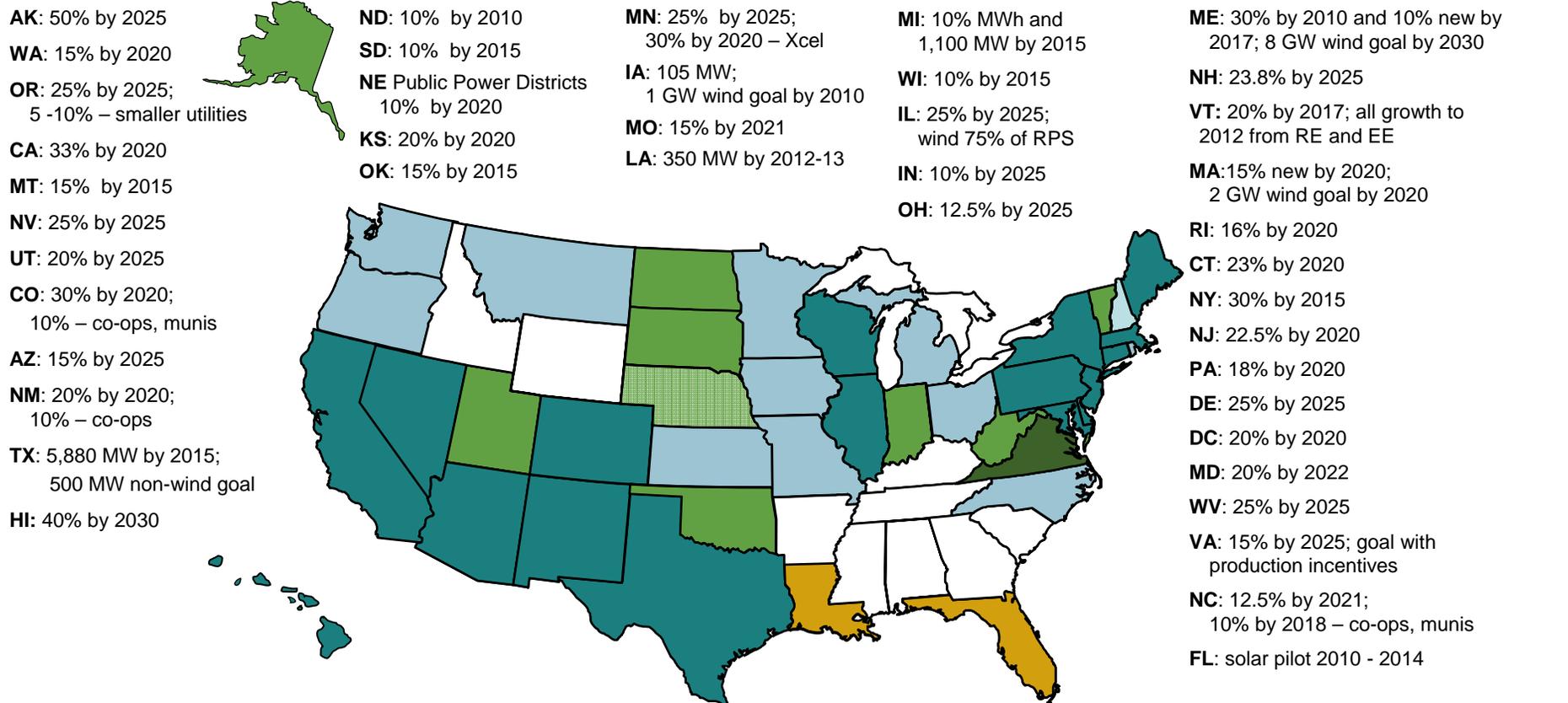


Source: Energy Velocity Generating Unit Capacity Dataset
May 2011 Western Snapshot Report

Updated May 4, 2011

Renewable Portfolio Standards (RPS) and Goals

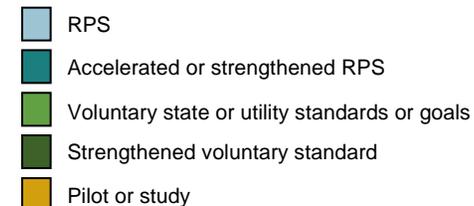
29 states and D.C. have RPS policies; 9 states and 3 power authorities have nonbinding goals



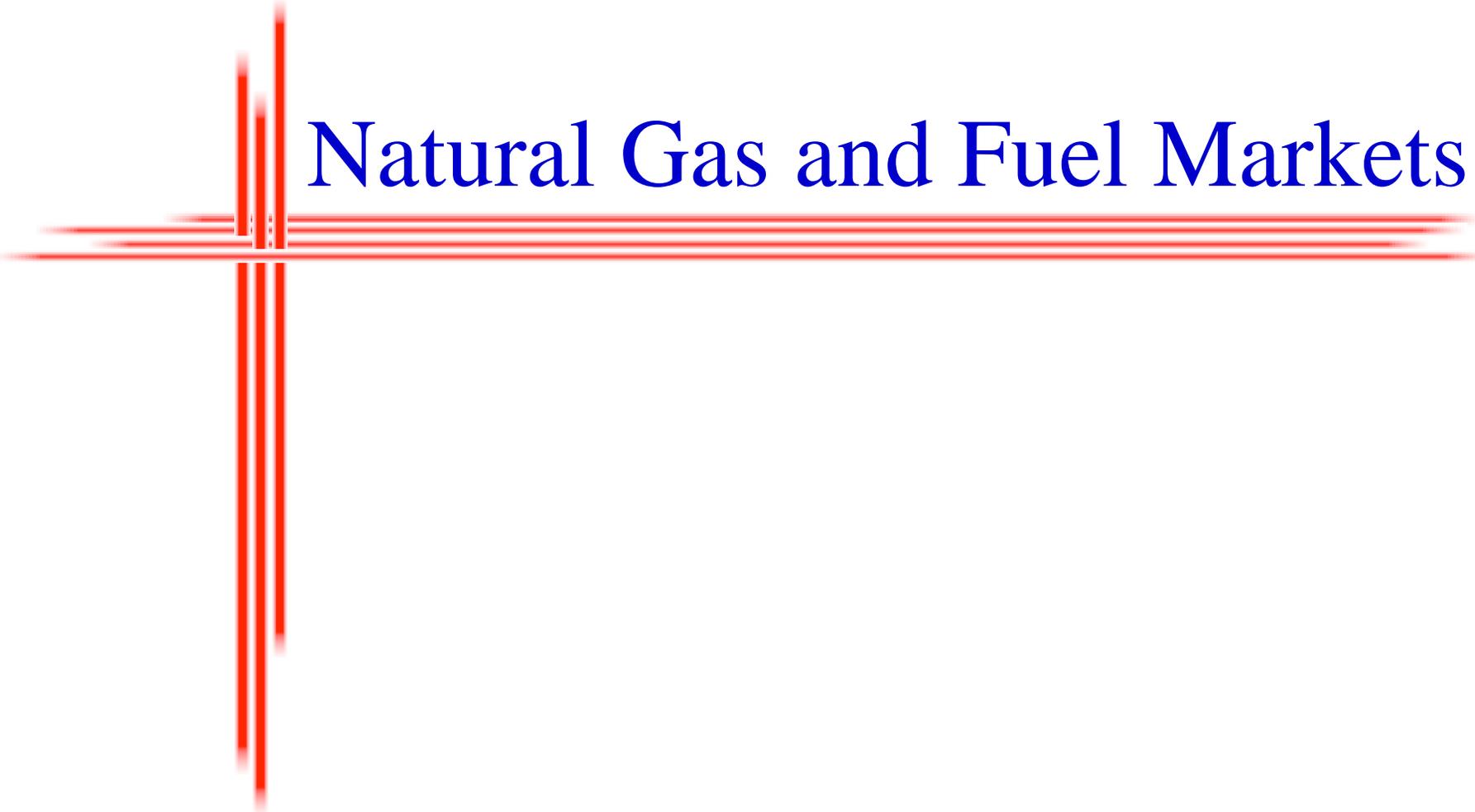
Updates at: <http://www.ferc.gov/market-oversight/othr-mkts/renew.asp>

Notes: A Renewable Standard requires a percent of an electric provider’s energy sales (MWh) or installed capacity (MW) to come from renewable resources; most specify sales (MWh). Map percents are final years’ targets. Nebraska’s two largest public power districts, which serve close to two-thirds of its load, have renewable goals. The Tennessee Valley Authority’s (TVA) goal across its 7-state territory is 50% zero- or low-carbon generation by 2020.

Sources: derived from data from: Lawrence Berkeley Labs, state Public Utility Commission (PUC) and state legislative tracking services, Pew Center. Details, including timelines, are in the *Database of State Incentives for Renewables and Energy Efficiency*: <http://www.dsireusa.org>



Updated May 3, 2011

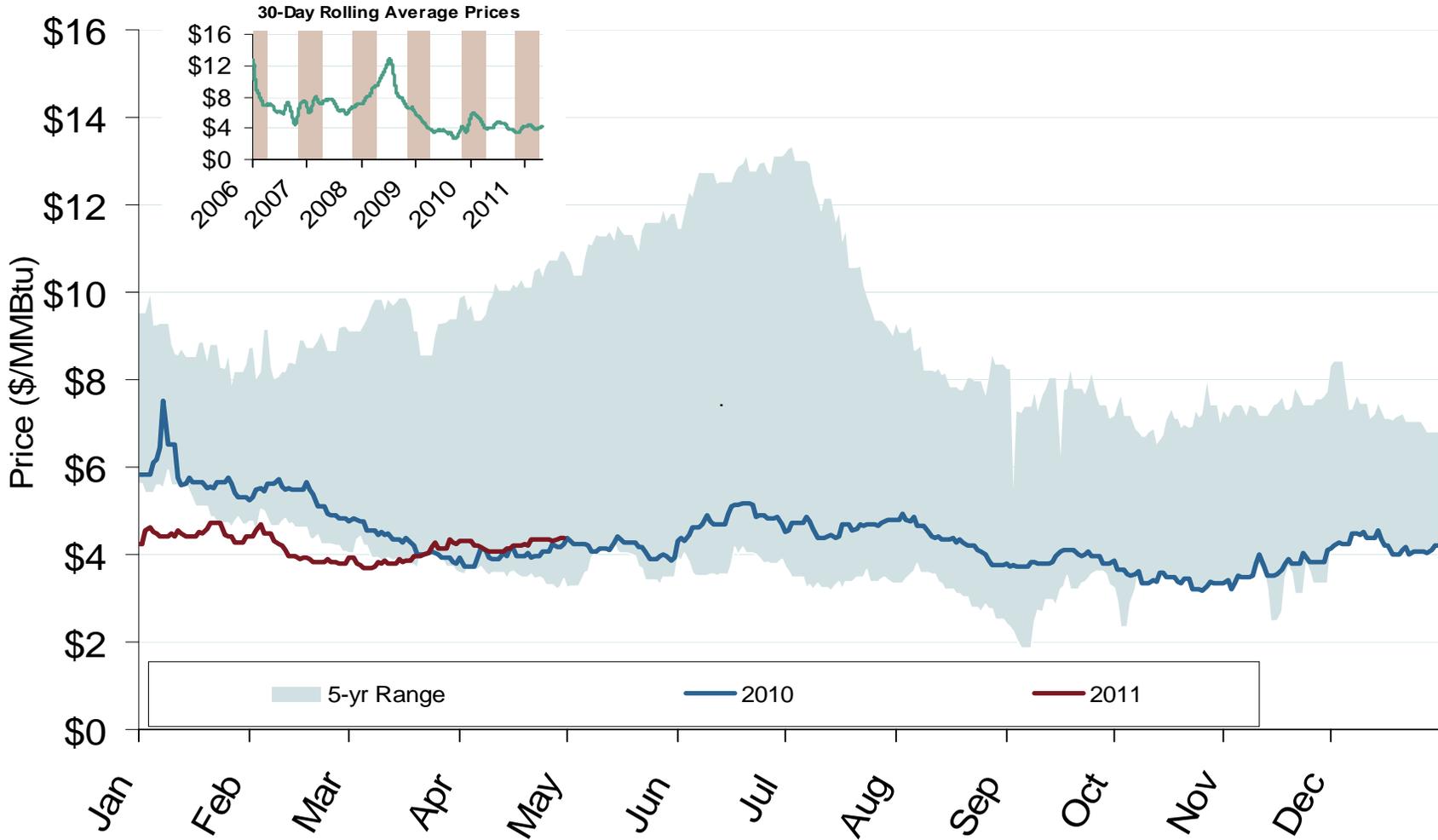


Natural Gas and Fuel Markets

Natural Gas Market Overview: 5 Year Range of Henry Hub Spot Prices

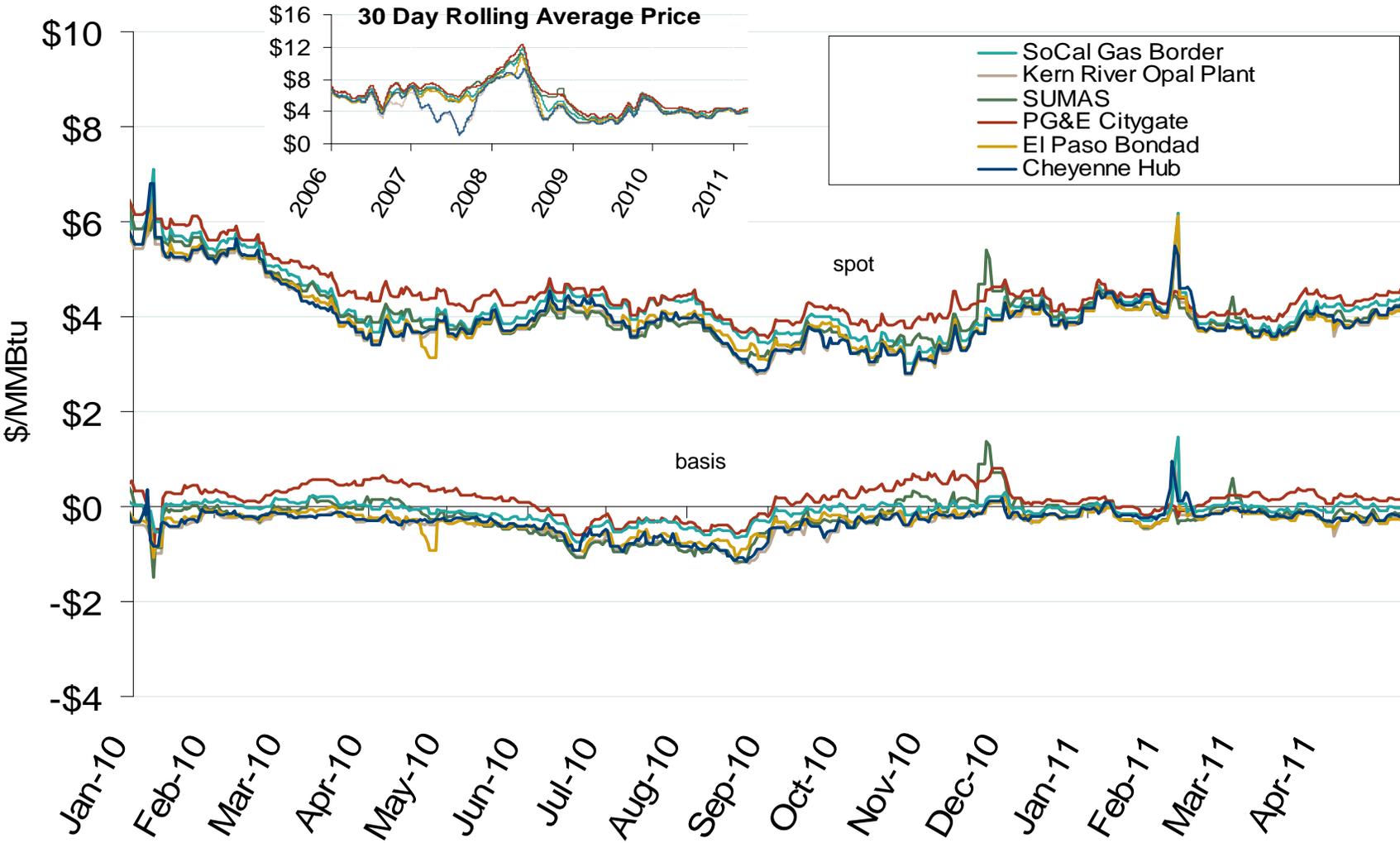
Federal Energy Regulatory Commission • Market Oversight • www.ferc.gov/oversight

Henry Hub Natural Gas Daily Spot Prices



Source: Derived from *Platts* data.

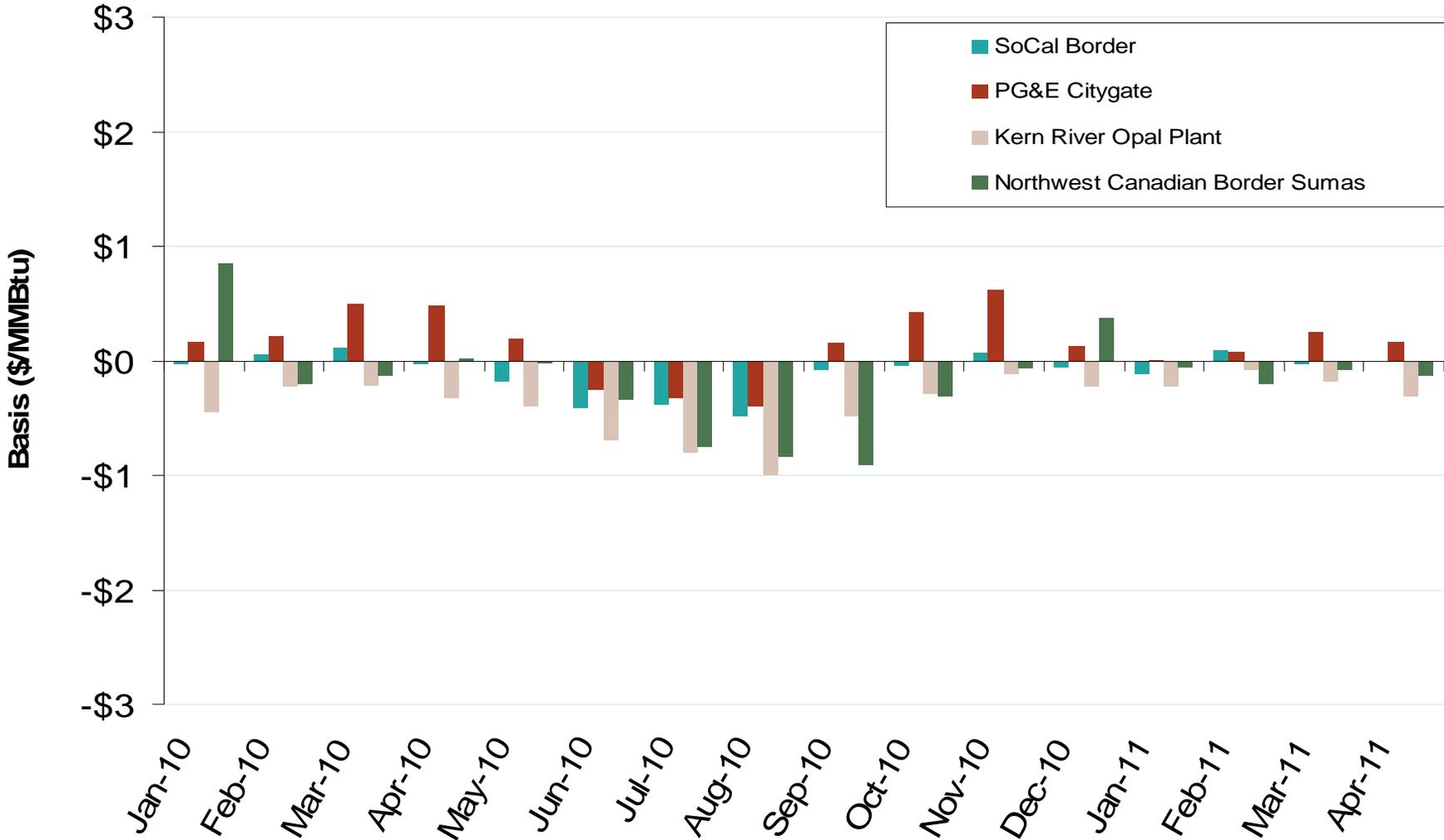
Western Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated May 16, 2011

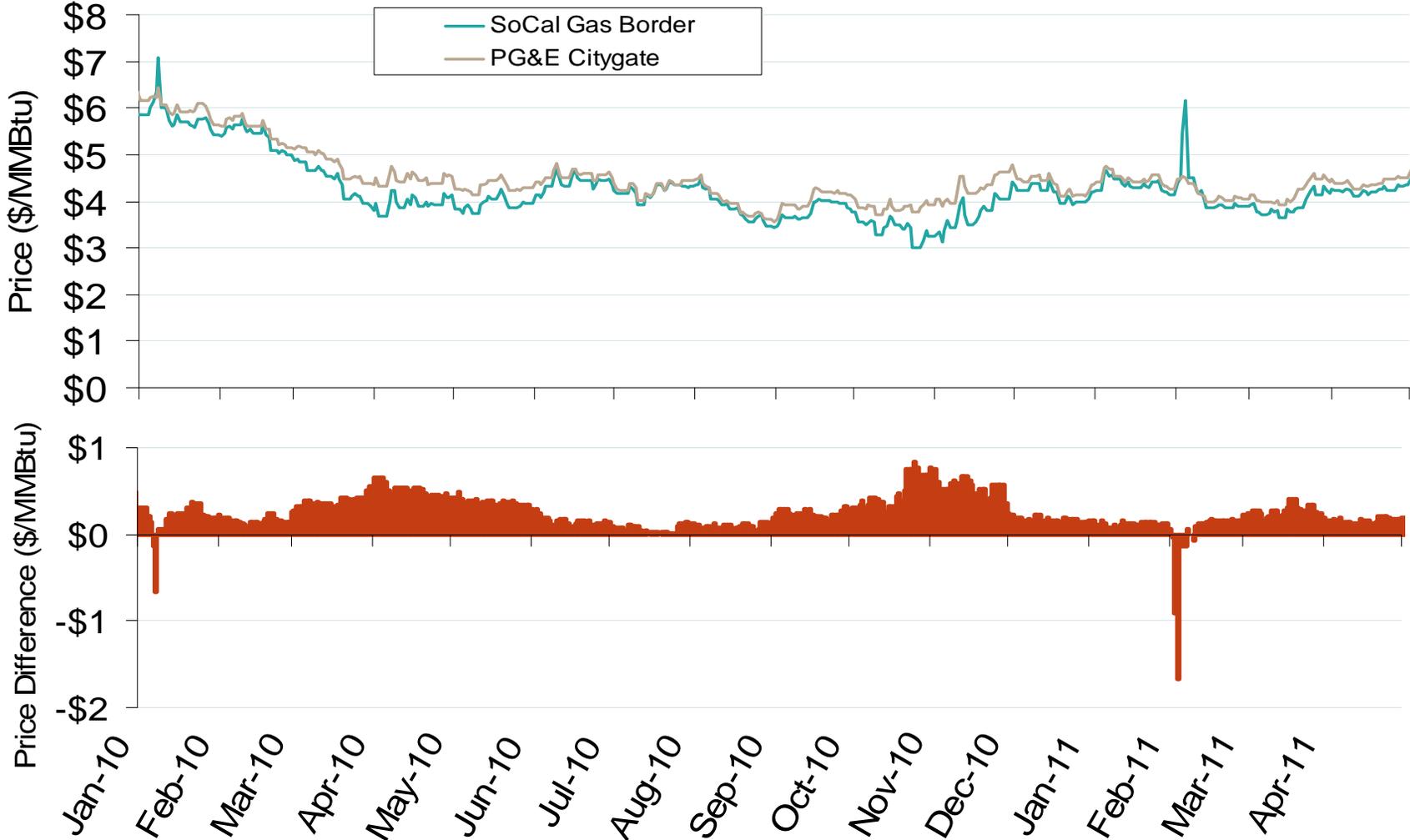
Western Monthly Average Basis Value to Henry Hub



Source: Derived from Platts data.
May 2011 Western Snapshot Report

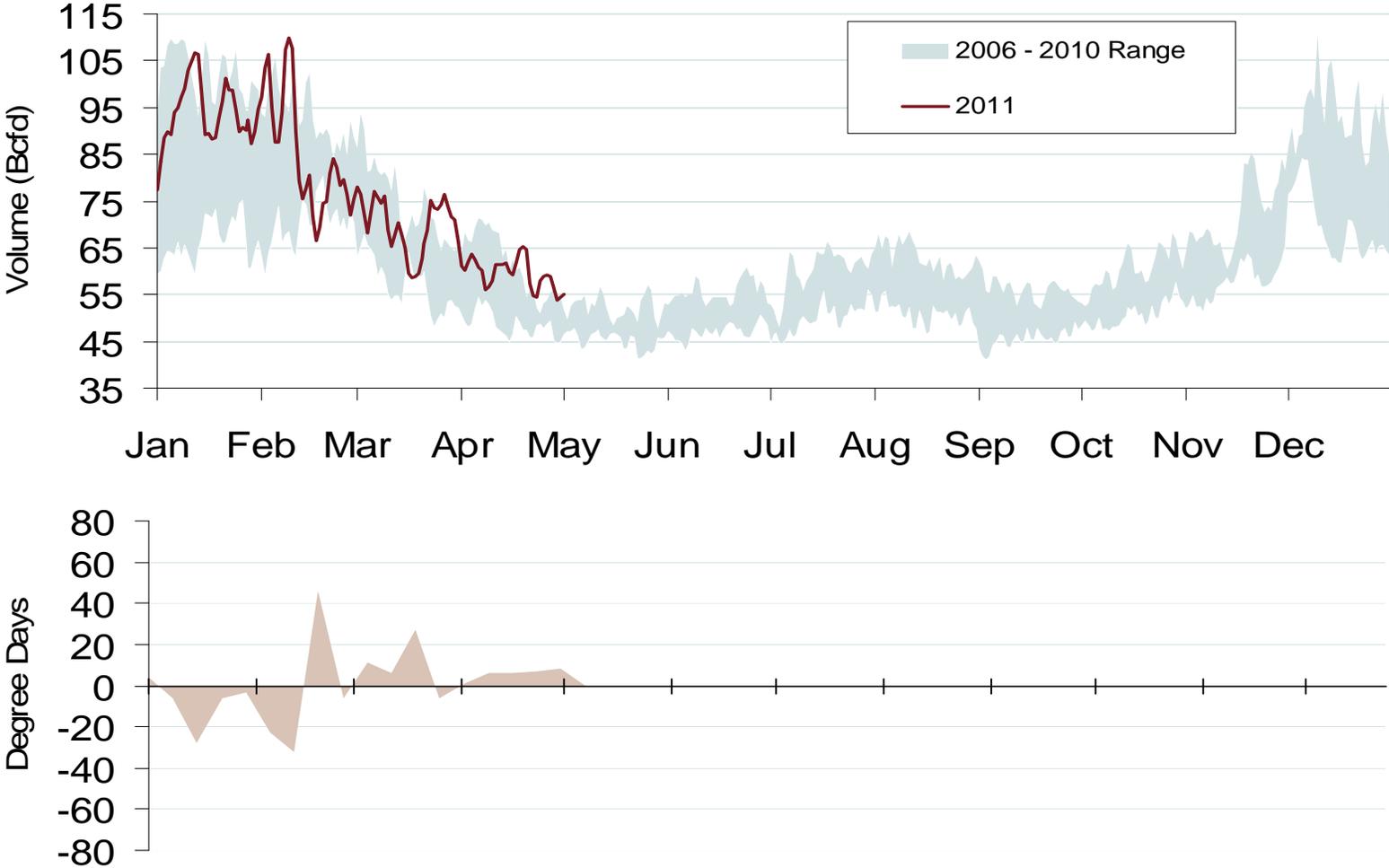
Updated May 6, 2011

Difference in Northern and Southern California Daily Spot Prices



Source: Derived from *Platts* data.

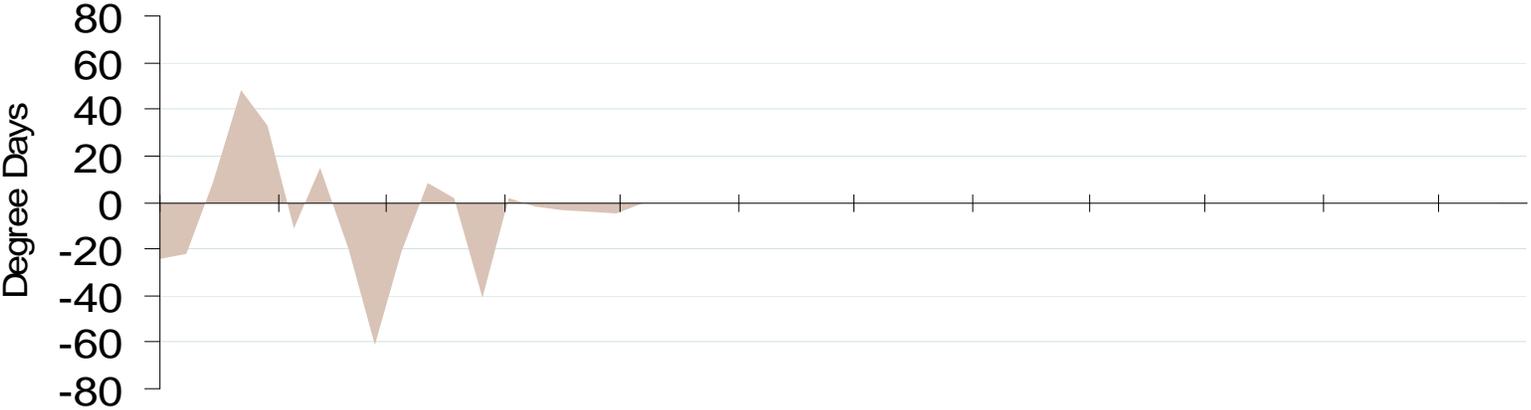
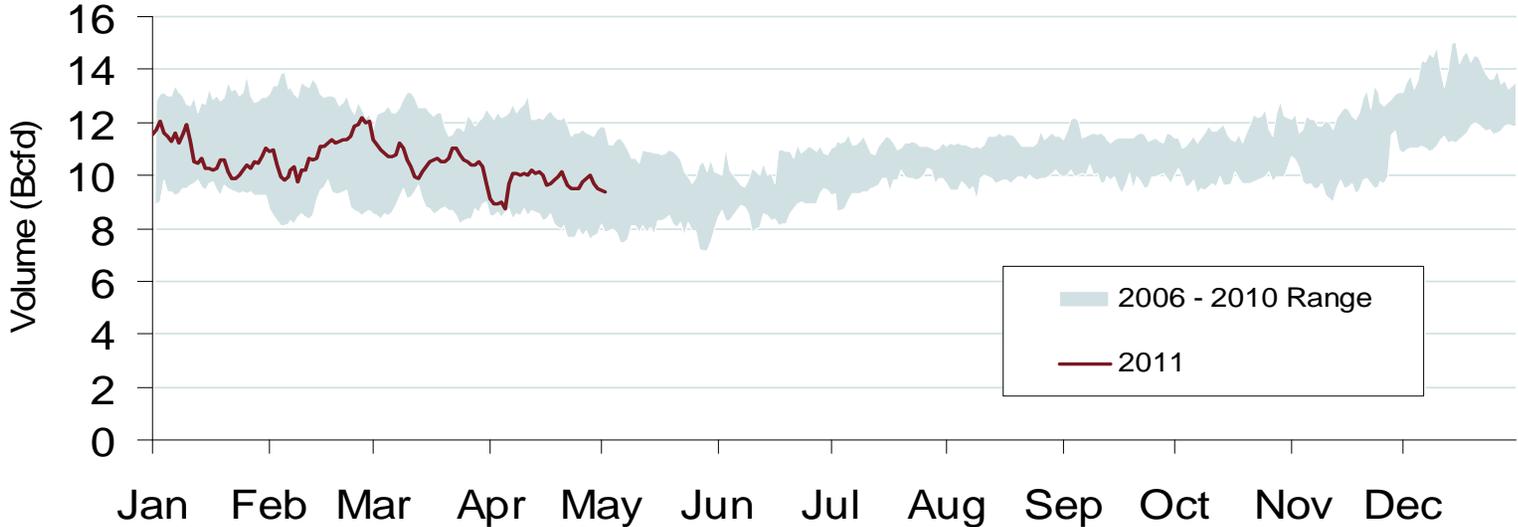
Total U.S. Natural Gas Demand (All Sectors) and Temperatures



Source: Derived from *Bentek Energy* and *Weekly NOAA* data.

Updated May 6, 2011

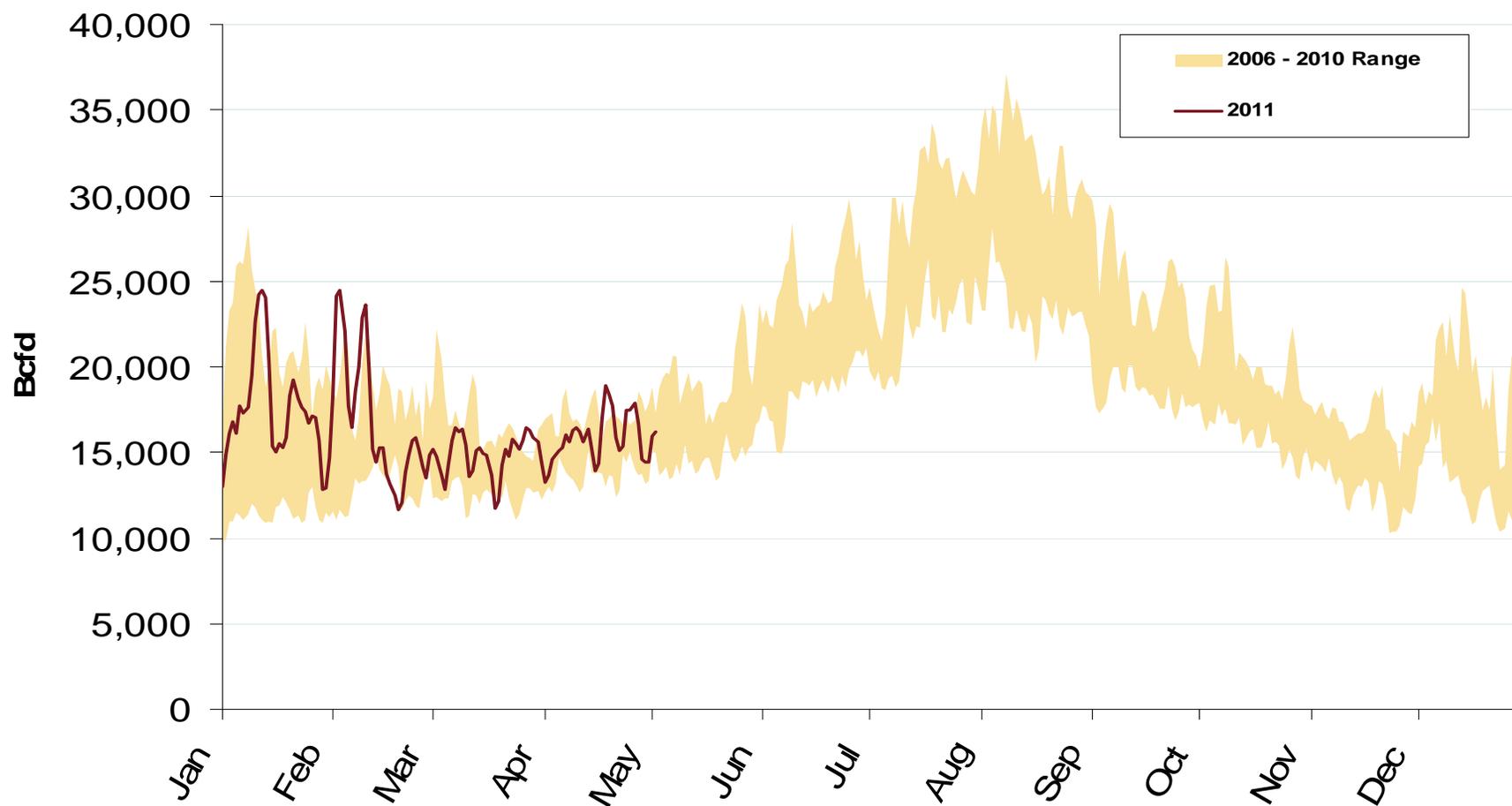
Daily Western Natural Gas Demand - All Sectors



Source: Derived from *Bentek Energy* and *Weekly NOAA* data.

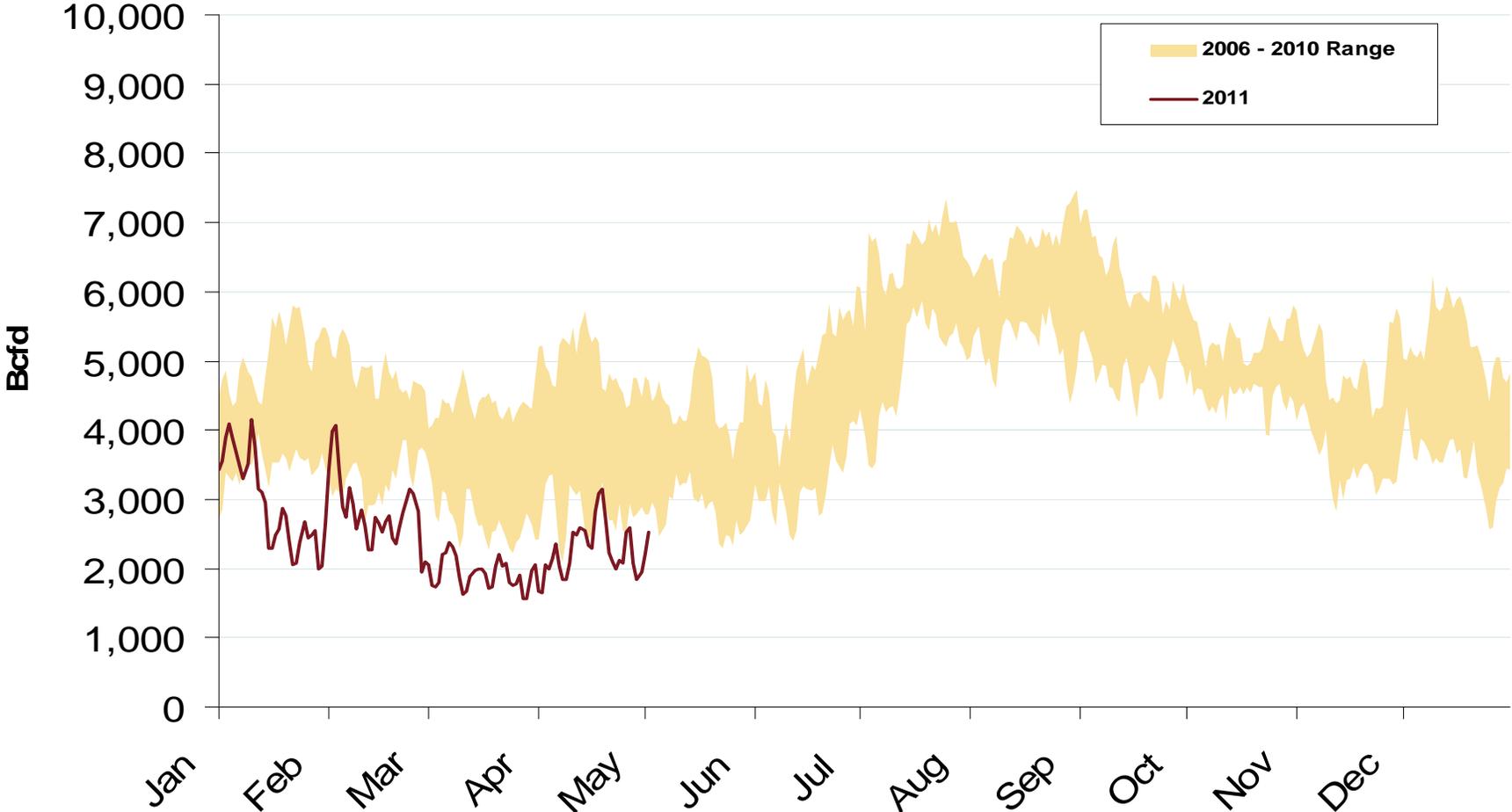
Updated May 6, 2011

U.S. Natural Gas Consumption for Power Generation



Source: Derived from *Bentek Energy* data.

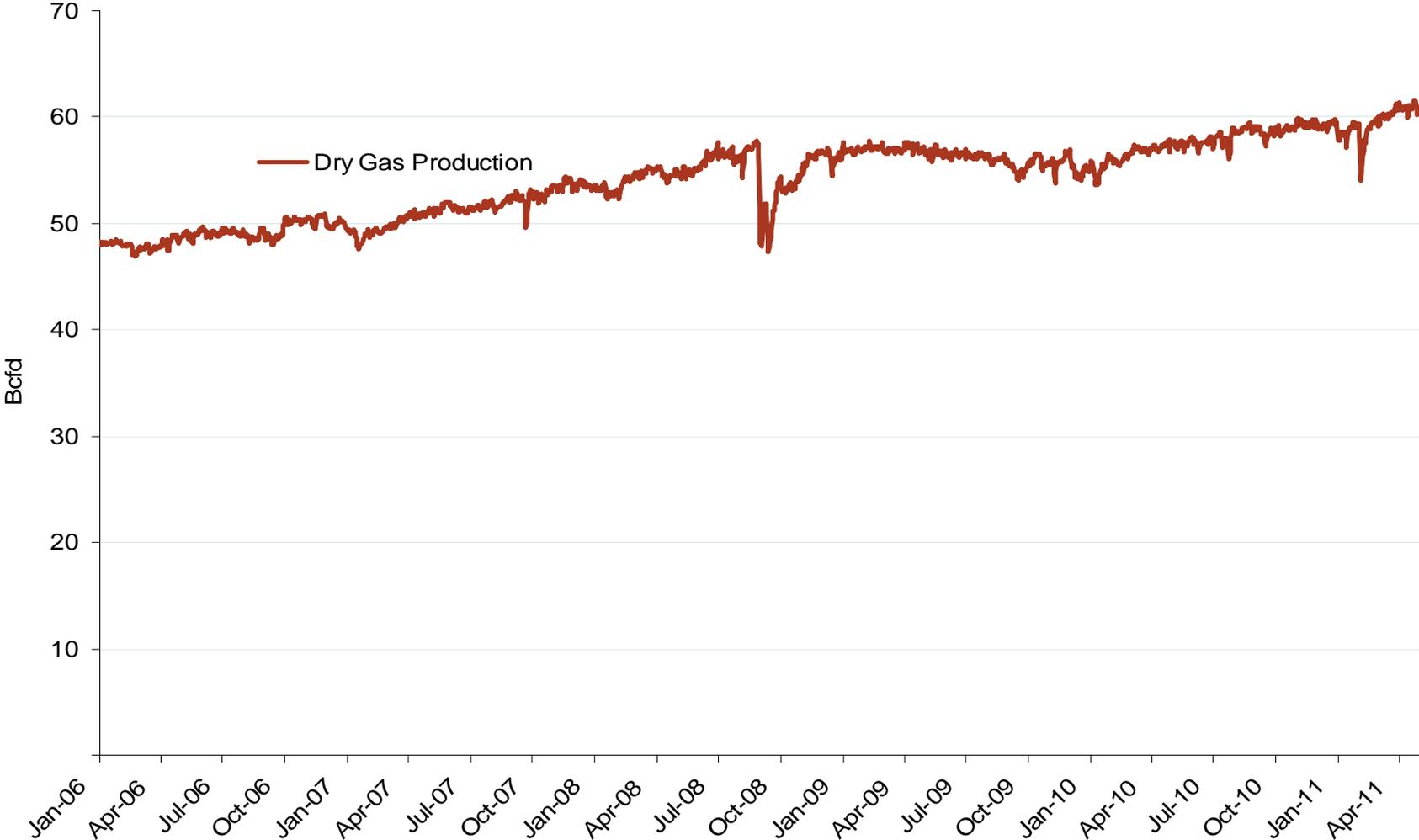
Western Natural Gas Consumption for Power Generation



Source: Derived from *Bentek Energy* data.

Updated May 6, 2011

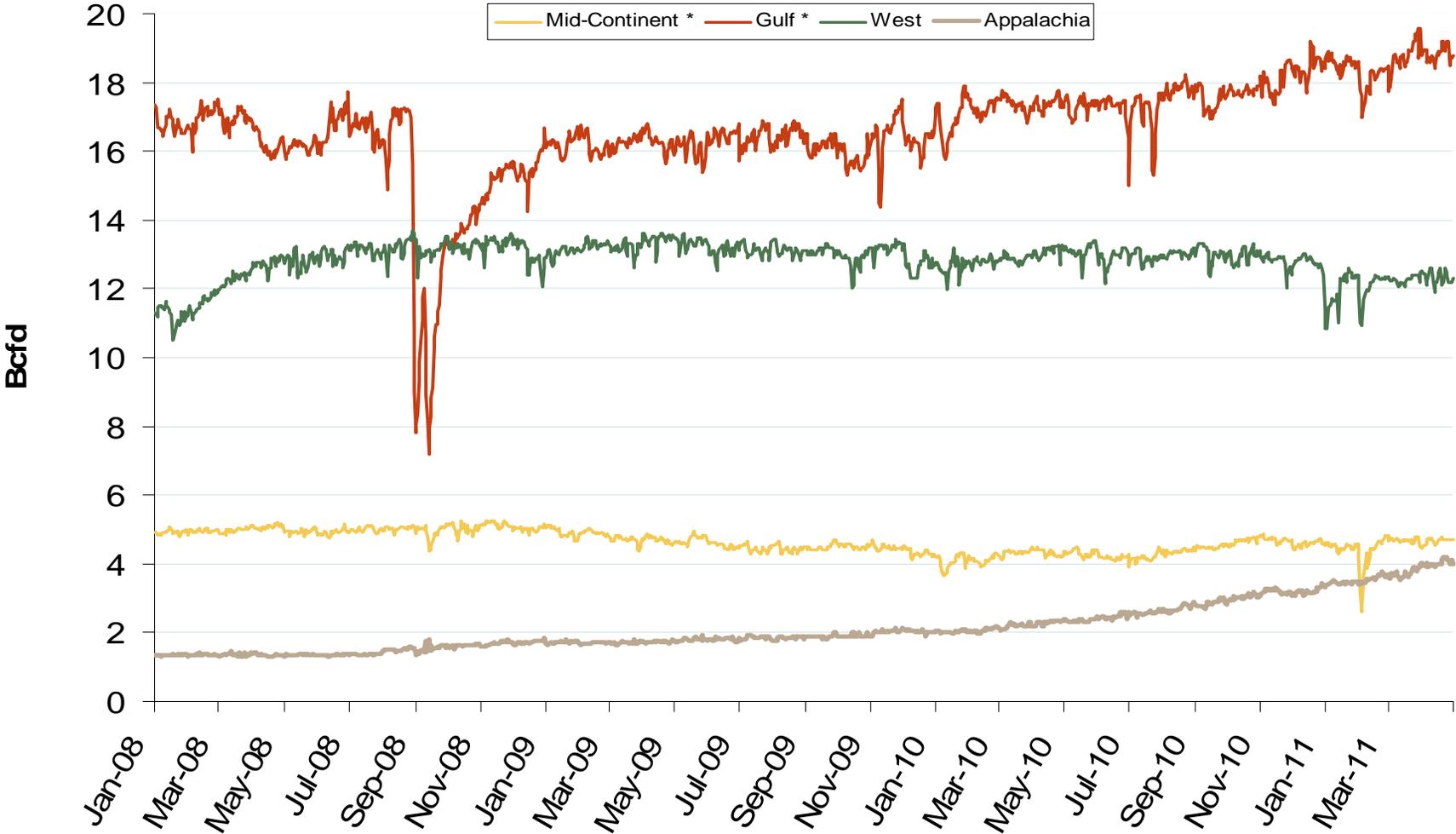
U.S. Dry Gas Production



Source: Derived from *EIA and Bentek data*.
May 2011 Western Snapshot Report

Updated May 6, 2011

Regional Natural Gas Production



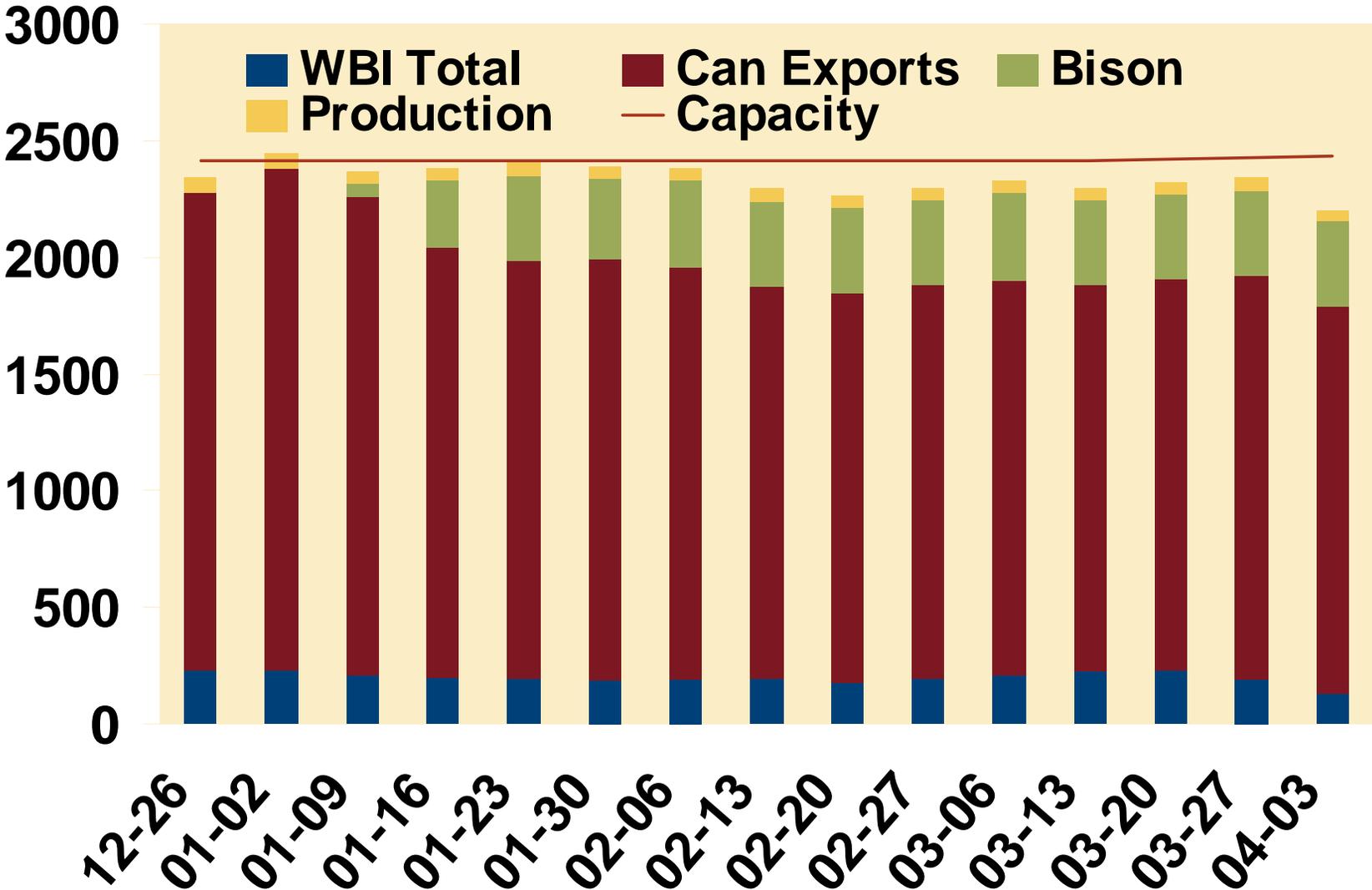
Source: Derived from Bentek data.

* On July 1, 2009 Bentek redefined its regions, moving some of the southern Midcontinent production to the Southeast, which is included in Gulf series.

Uncompleted Wells by Shale Regions

<u>Shale Formation</u>	<u>Estimate of Uncompleted and Shut-in Well Count</u>	<u>Production Potential (Bcfd)</u>
Marcellus	900	3.4
Barnett	950	2.5
Eagle Ford	650	4.6
Total	2500	10.5

Bison Pipeline Displaces Canadian Gas

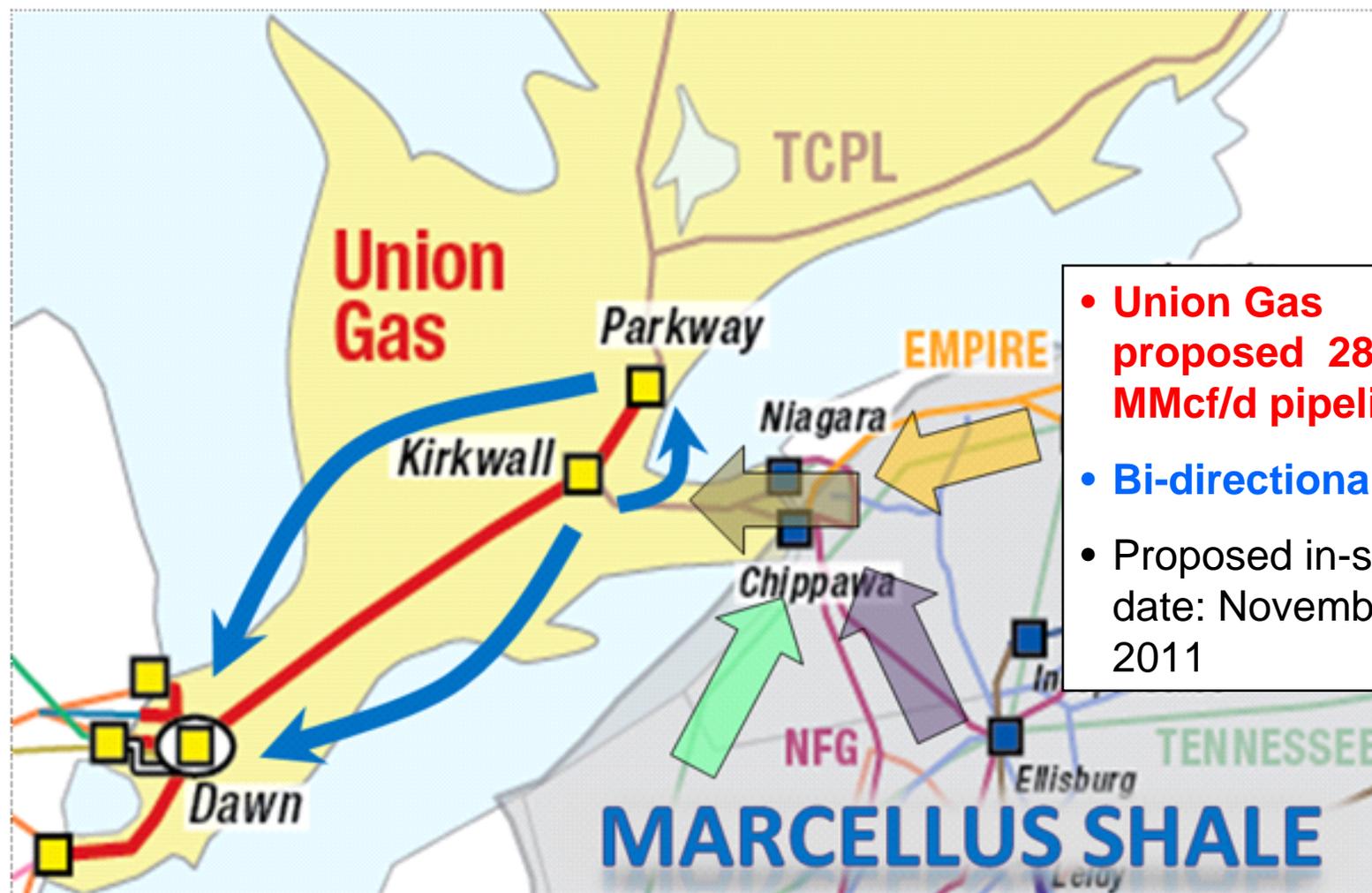


Source: Derived from Bentek Energy Data

WBI = Williston Basin Pipeline
May 2011 Western Snapshot Report

Updated May 5, 2011

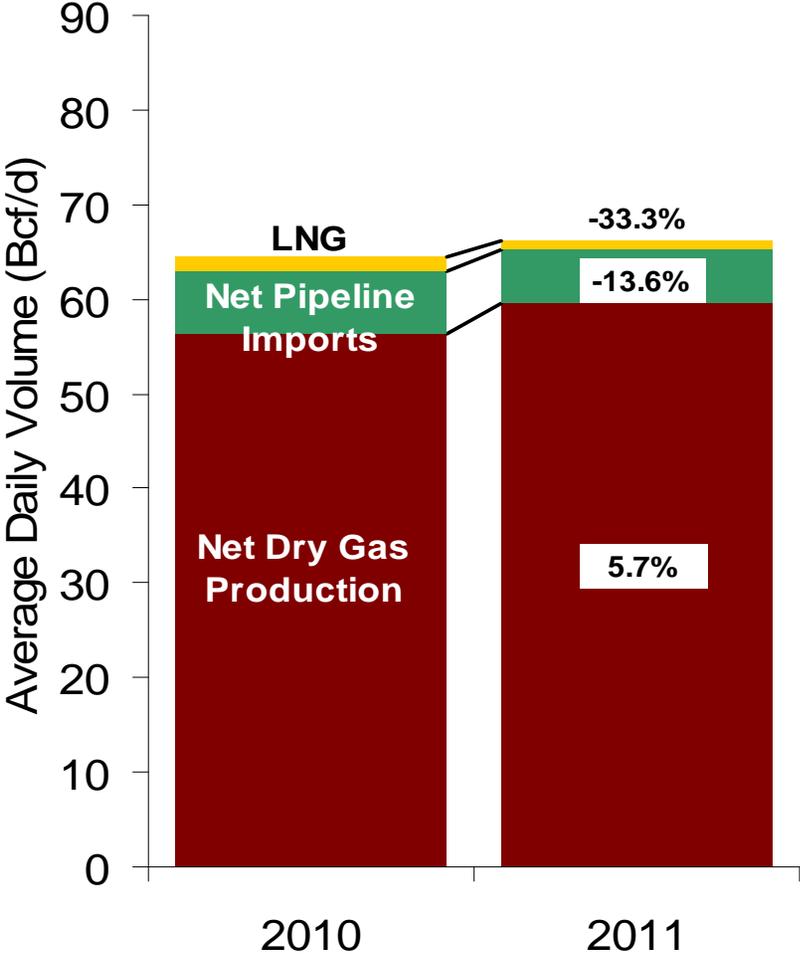
Proposed Pipeline Could Revive Trading at Dawn



U.S. Natural Gas Supply and Demand 2010 vs. 2011: January - April

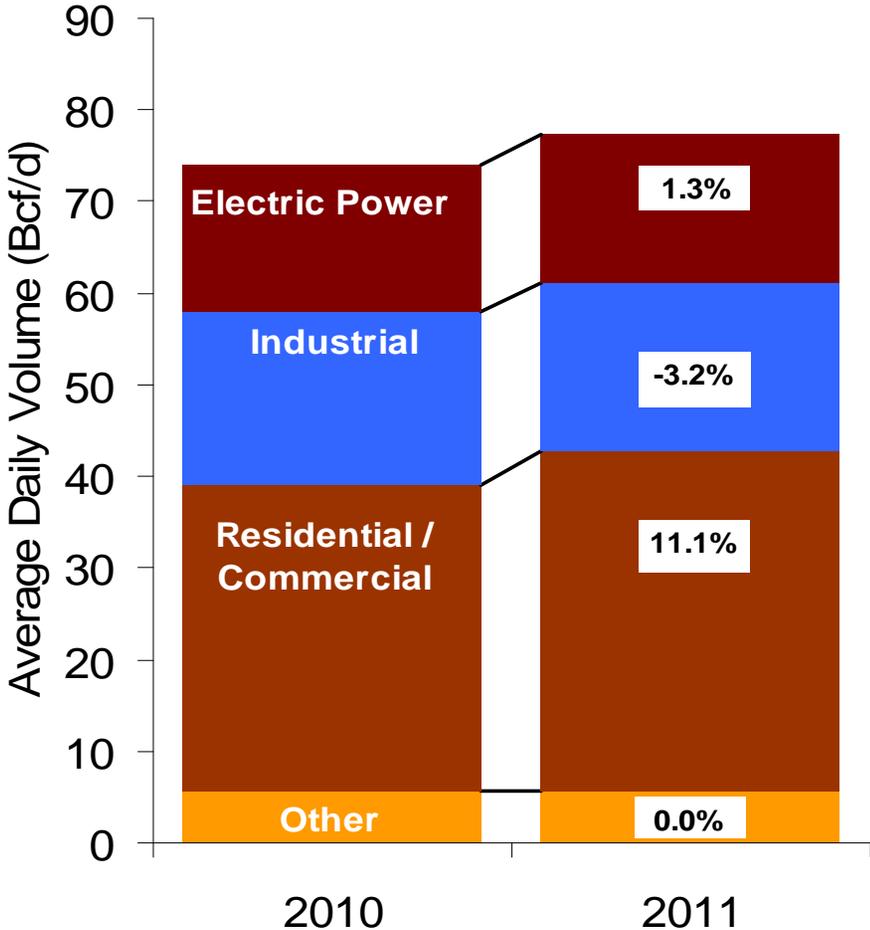
US Natural Gas Supply

Total Change in Supply 3.4%



US Natural Gas Demand

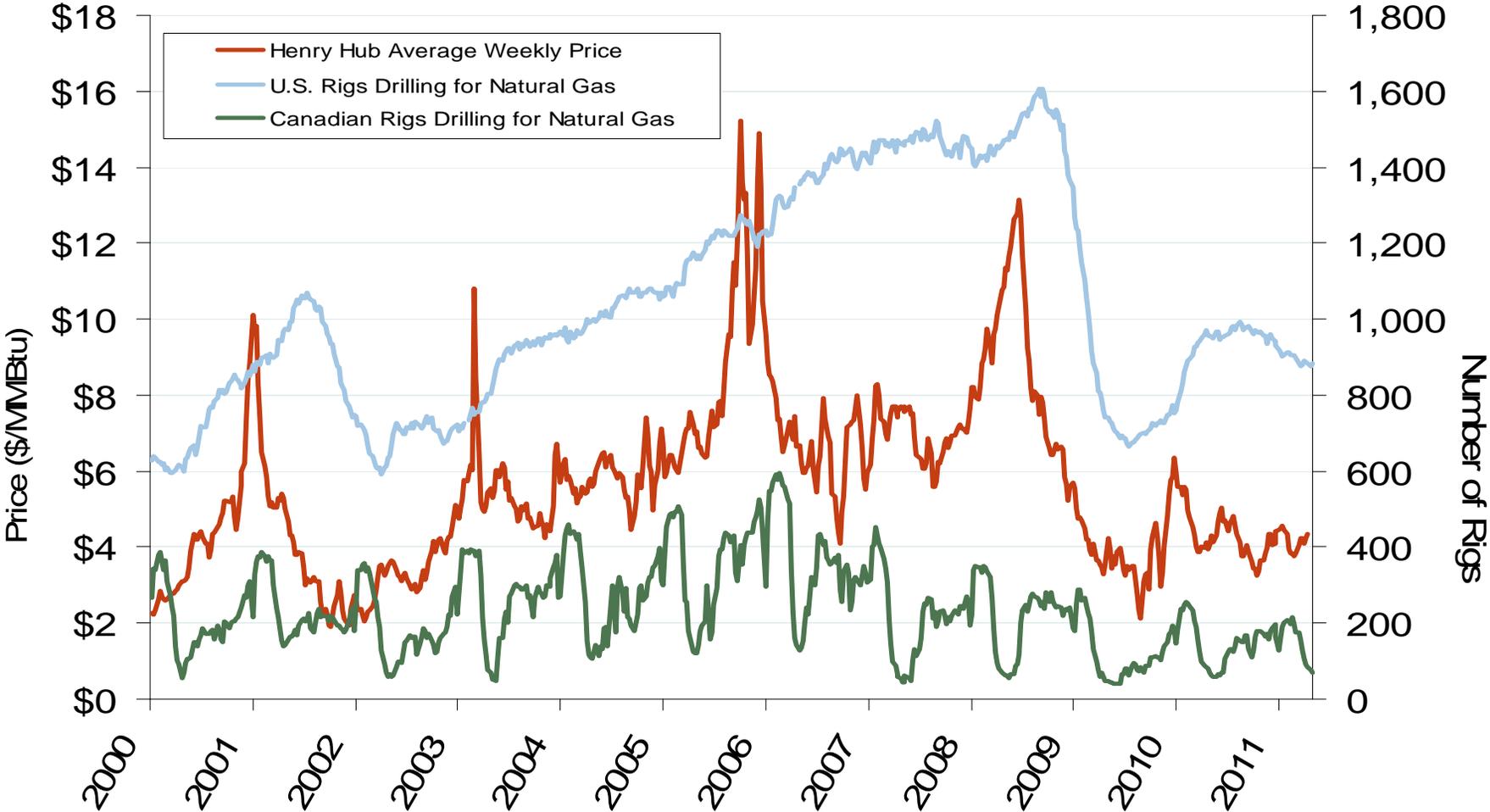
Total Change in Demand 4.7%



Source: Derived from Bentek data.
May 2011 Western Snapshot Report

Updated May 6, 2011

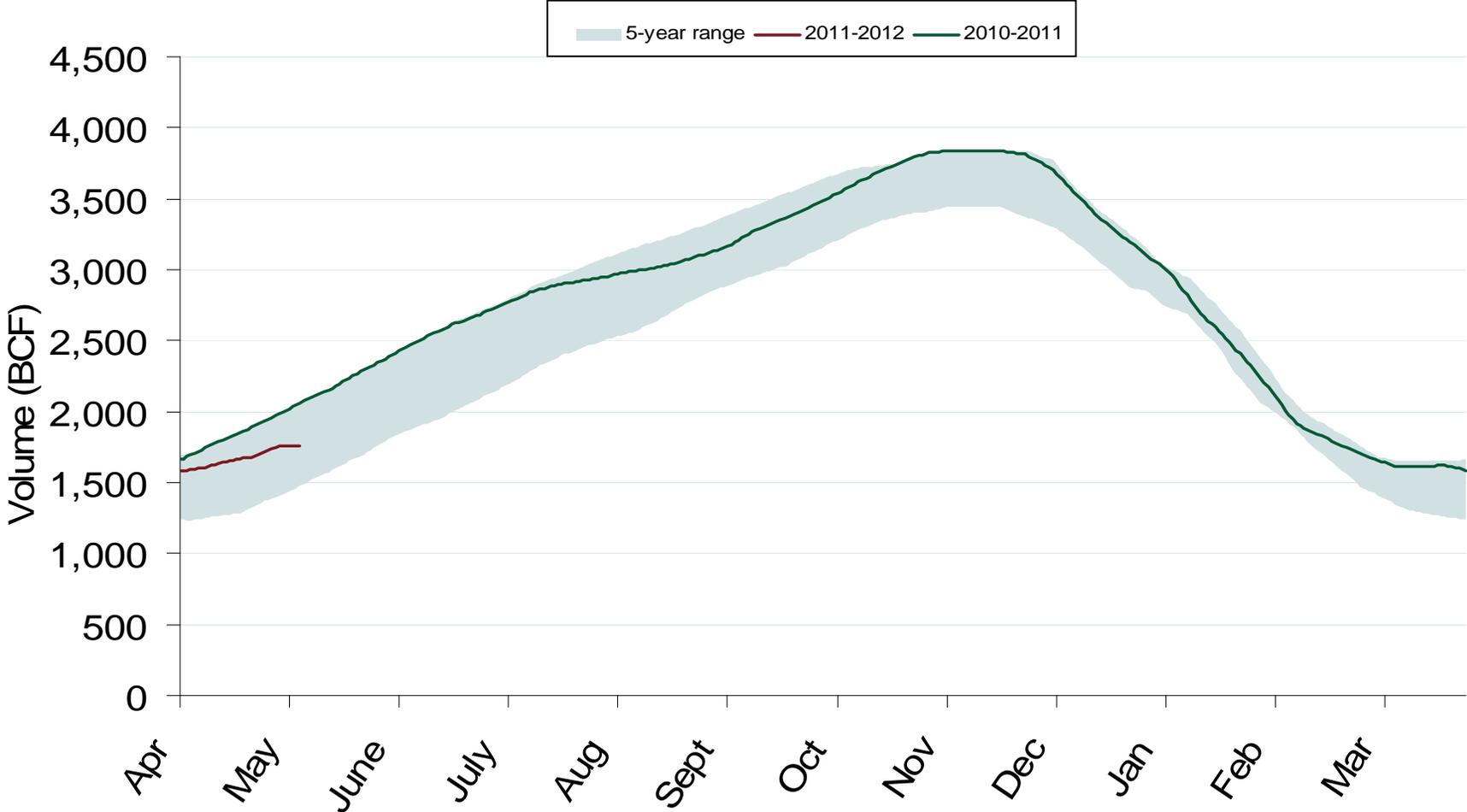
U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



Source: Derived from *Platts* and *Baker Hughes* data.

Updated May 6, 2011

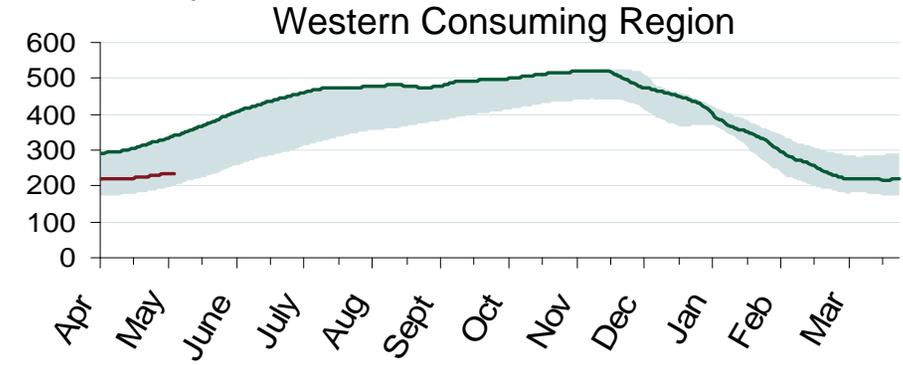
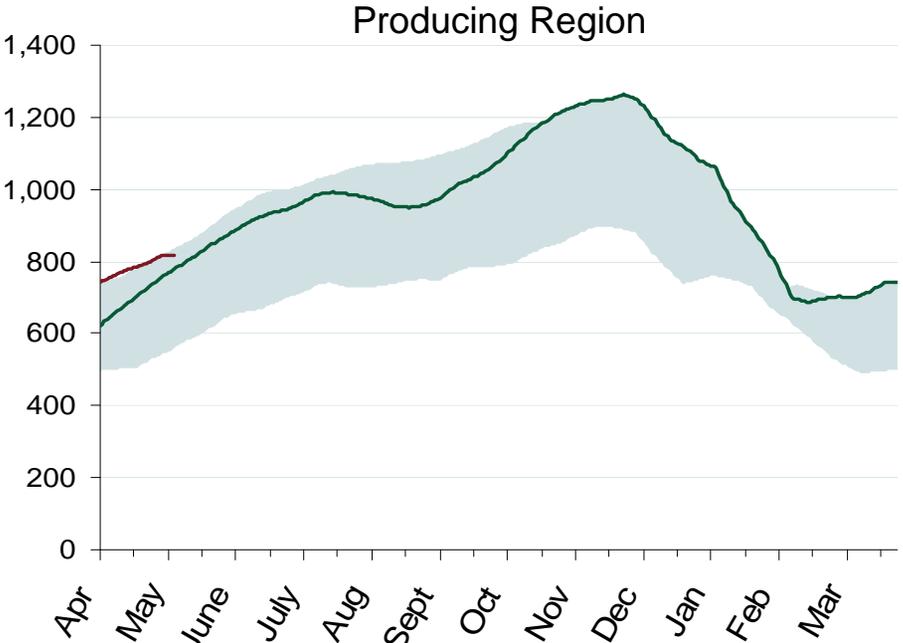
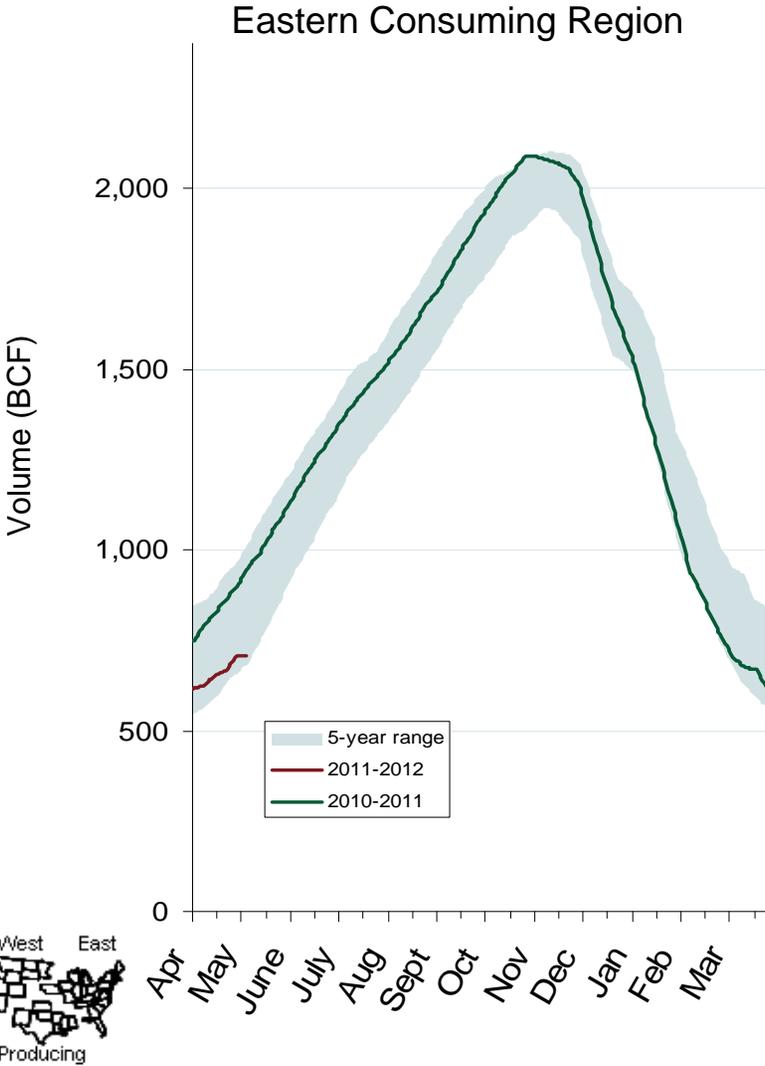
Total U.S. Working Gas in Storage



Source: Derived from EIA data.
May 2011 Western Snapshot Report

Updated May 6, 2011

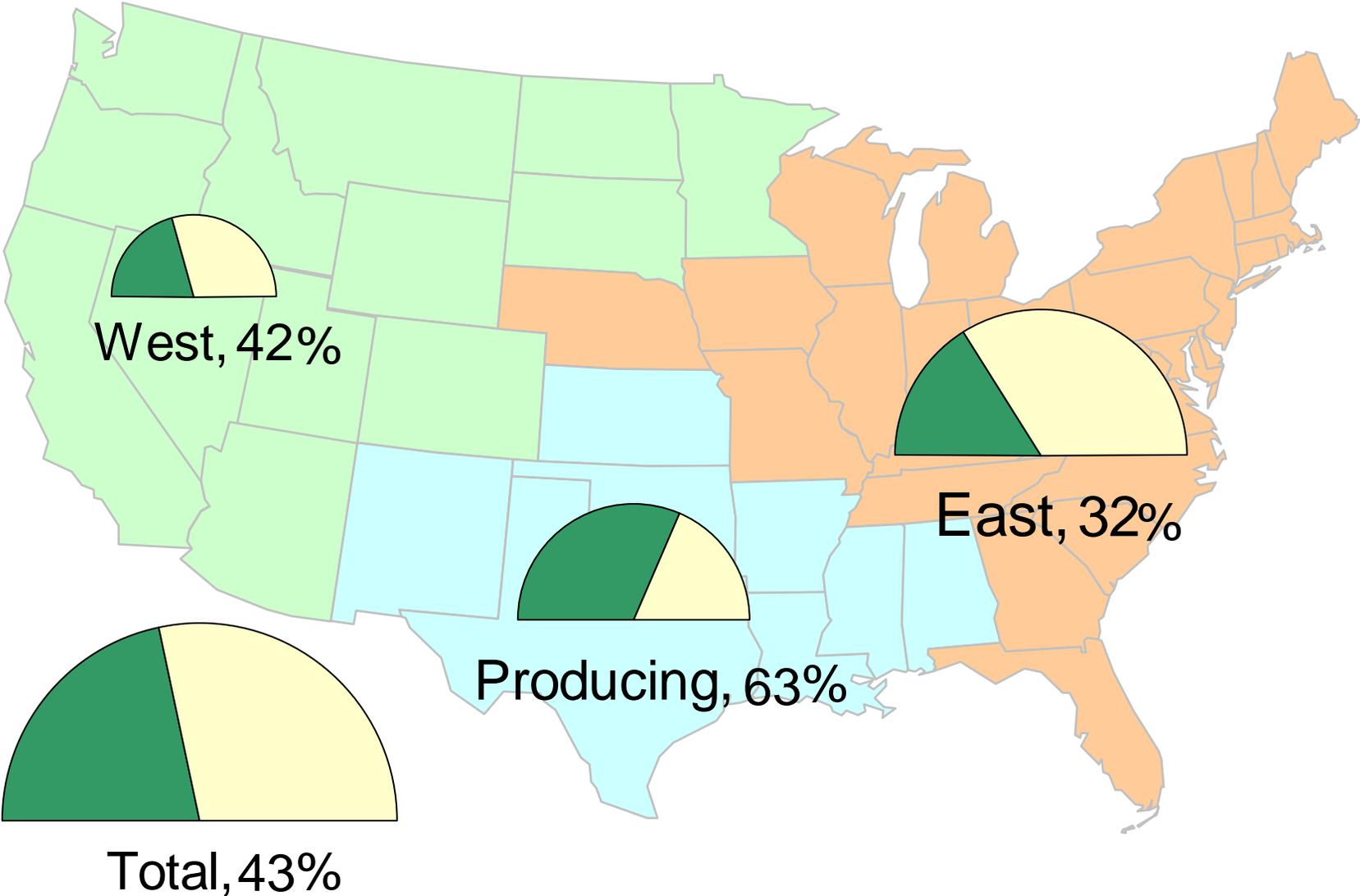
Regional Totals of Working Gas in Storage



Source: Derived from EIA data.
May 2011 Western Snapshot Report

Updated May 6, 2011

Natural Gas Storage Inventories – April 29, 2011



Source: Derived from *EIA Storage and Estimated Working Gas Capacity* data.
May 2011 Western Snapshot Report

World LNG Estimated June 2011 Landed Prices

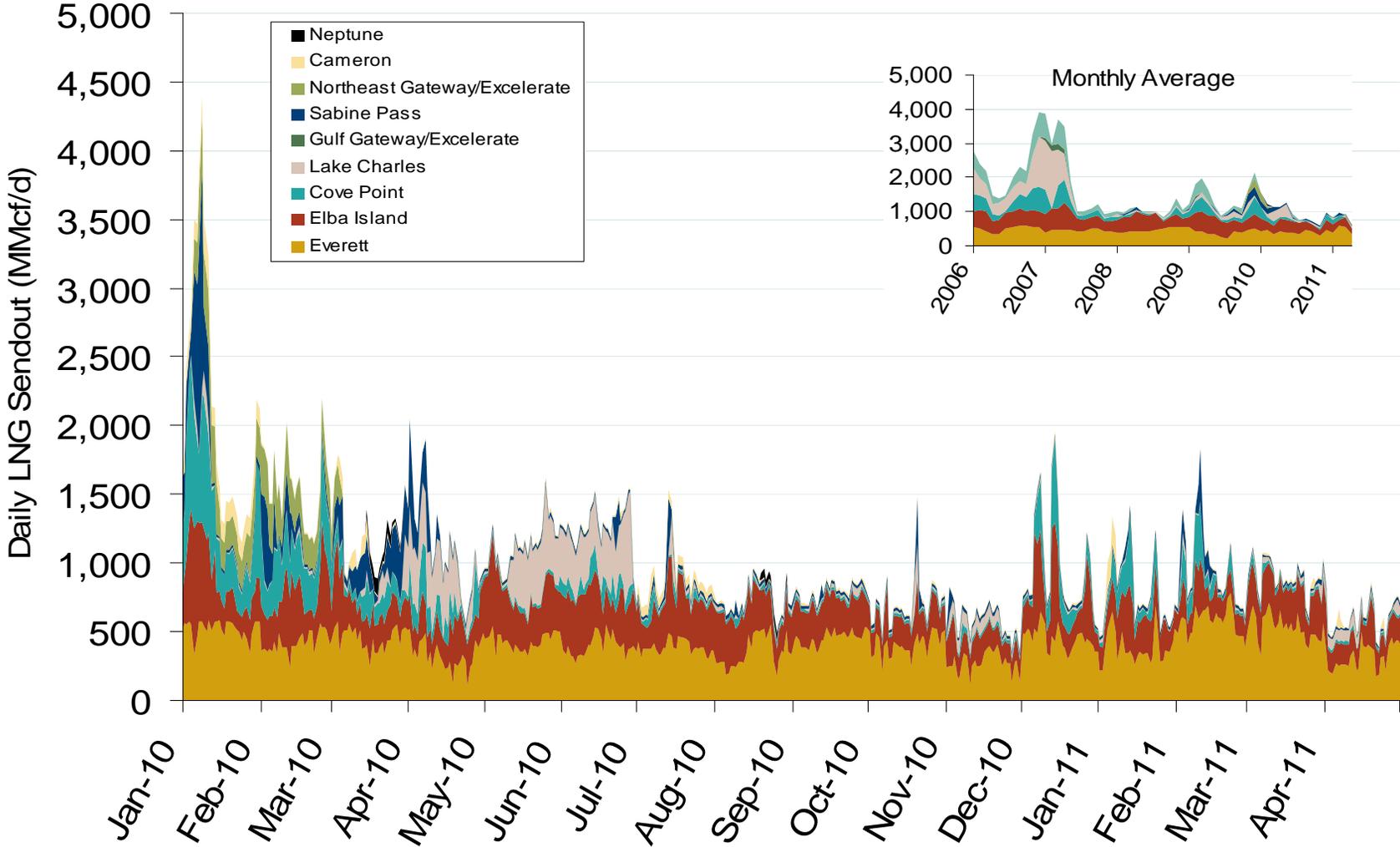


Source: *Waterborne Energy, Inc.* Data in \$US/MMBtu.

May 2011 Western Snapshot Report

Updated May 6, 2011 3024

Daily Gas Sendout from Existing U.S. LNG Facilities*

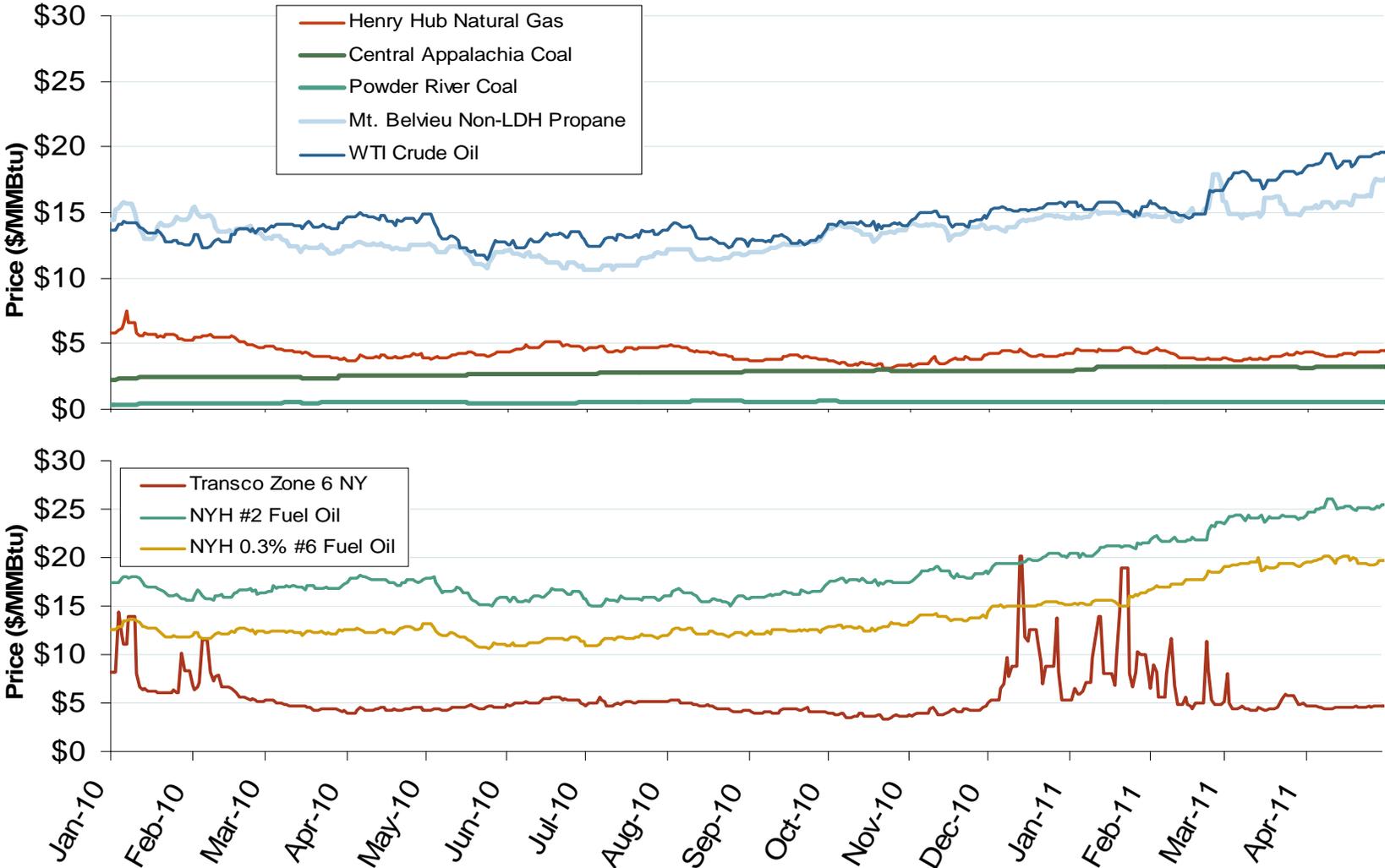


Source: Derived from Bentek data.

* Everett data includes flows onto the AGT and TGP interstate lines, plus estimates of flows to the Mystic 7 power plant, Keyspan Boston Gas, and LNG trucked out of the terminal. Excludes Freeport LNG which flows via intrastate pipelines.

Updated May 6, 2011

Oil, Coal, Natural Gas and Propane Daily Spot Prices

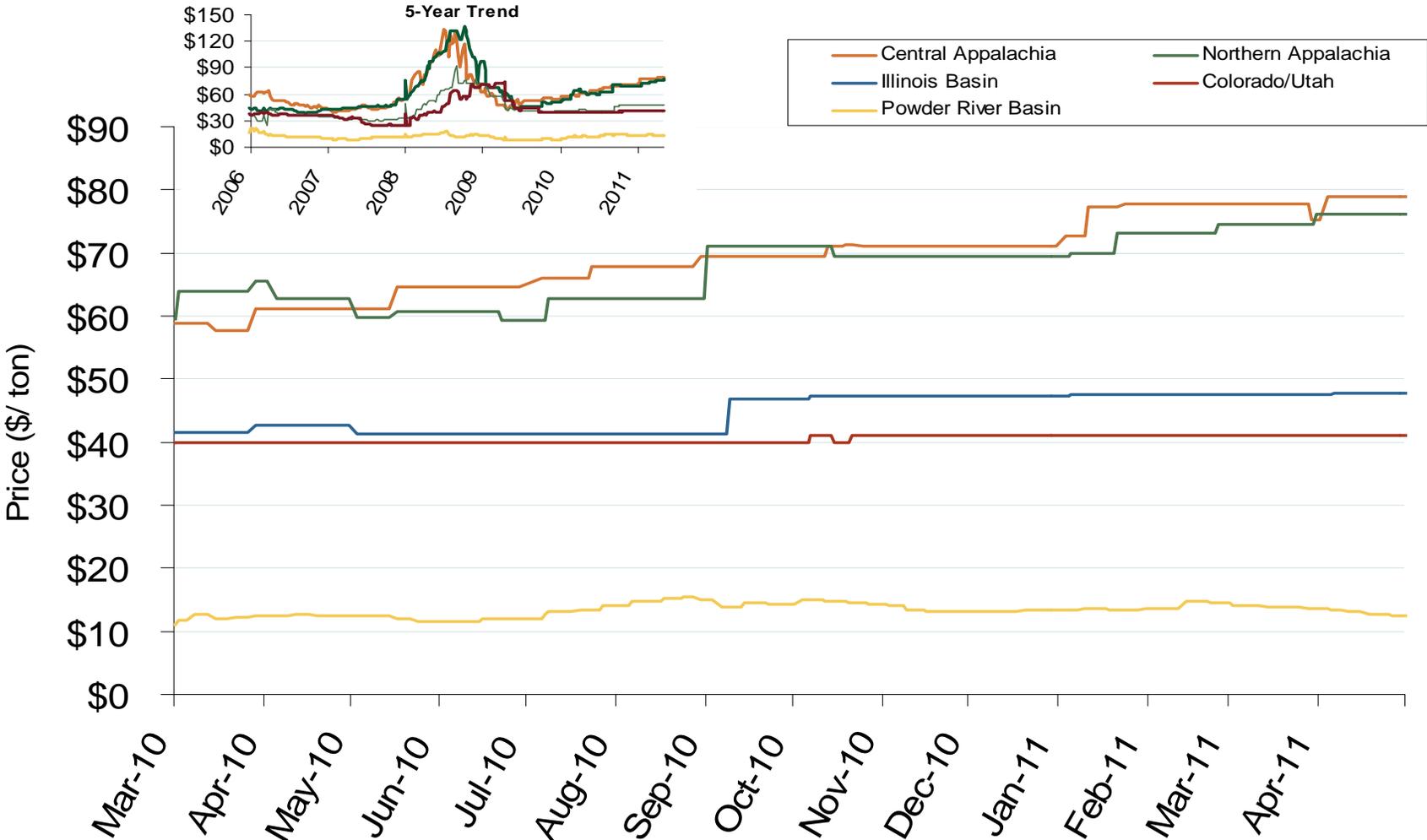


Source: Derived from ICE and Bloomberg data.

Note: Coal prices are quoted in \$/ton. Conversion factors to \$/MMBtu are based on contract specifications of 12,000 btus/pound for Central Appalachian coal and 8800 btus/pound for Powder River Basin coal.

Updated May 6, 2011

Regional Coal Spot Prices

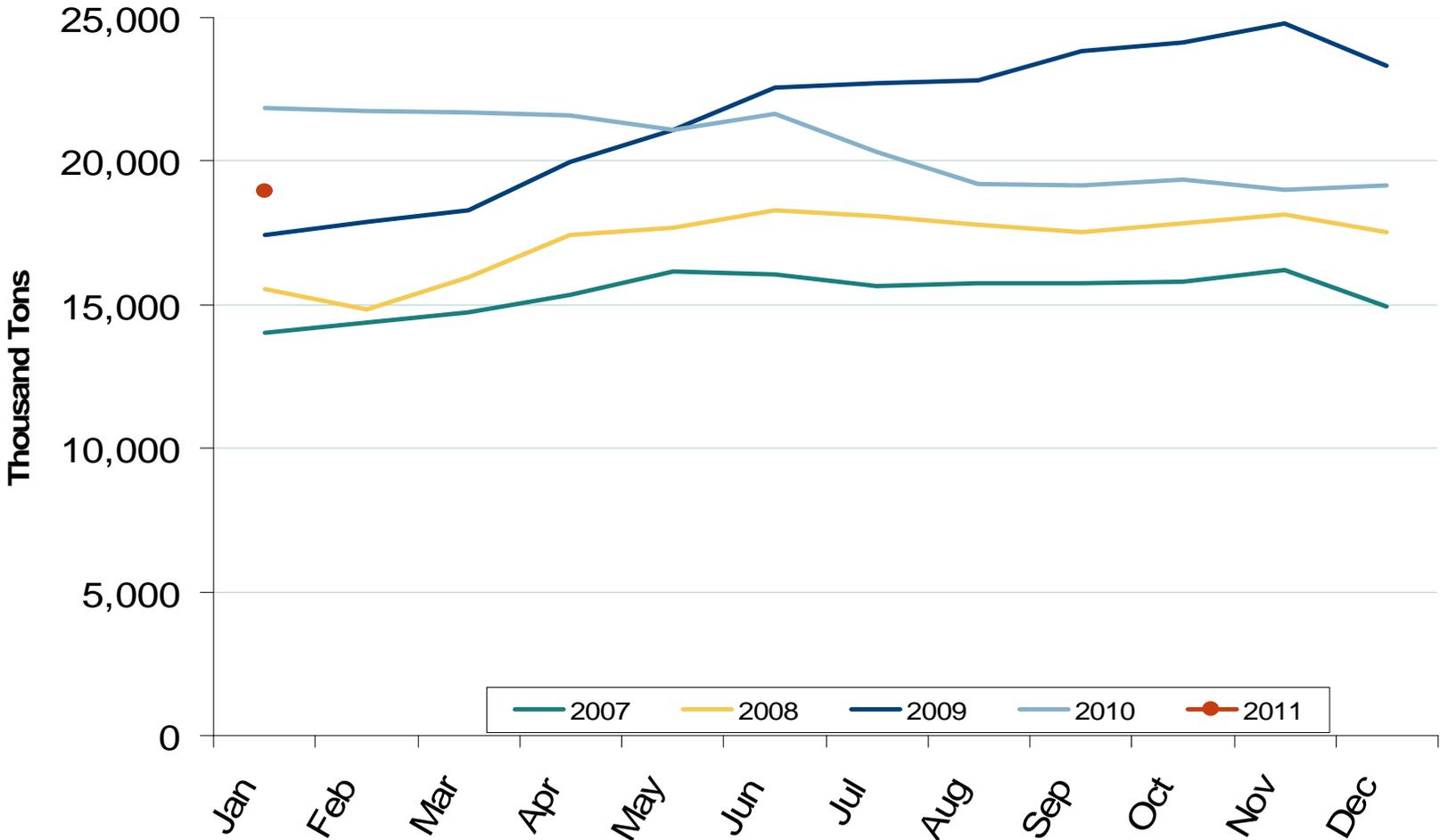


Note: the Central Appalachian (CAPP) coal is priced at Big Sandy. All others are mine mouth prices. Prices do not include transportation costs to a plant, as those can vary widely by contract specifications. Prices exclude incremental cost of emissions allowances.

Source: Derived from *Bloomberg* data.
May 2011 Western Snapshot Report

Updated May 6, 2011

Western Coal Stockpiles at Electric Power Generating Facilities



Source: Derived from Energy Information Administration. Excludes Industrial and Commercial Plants.