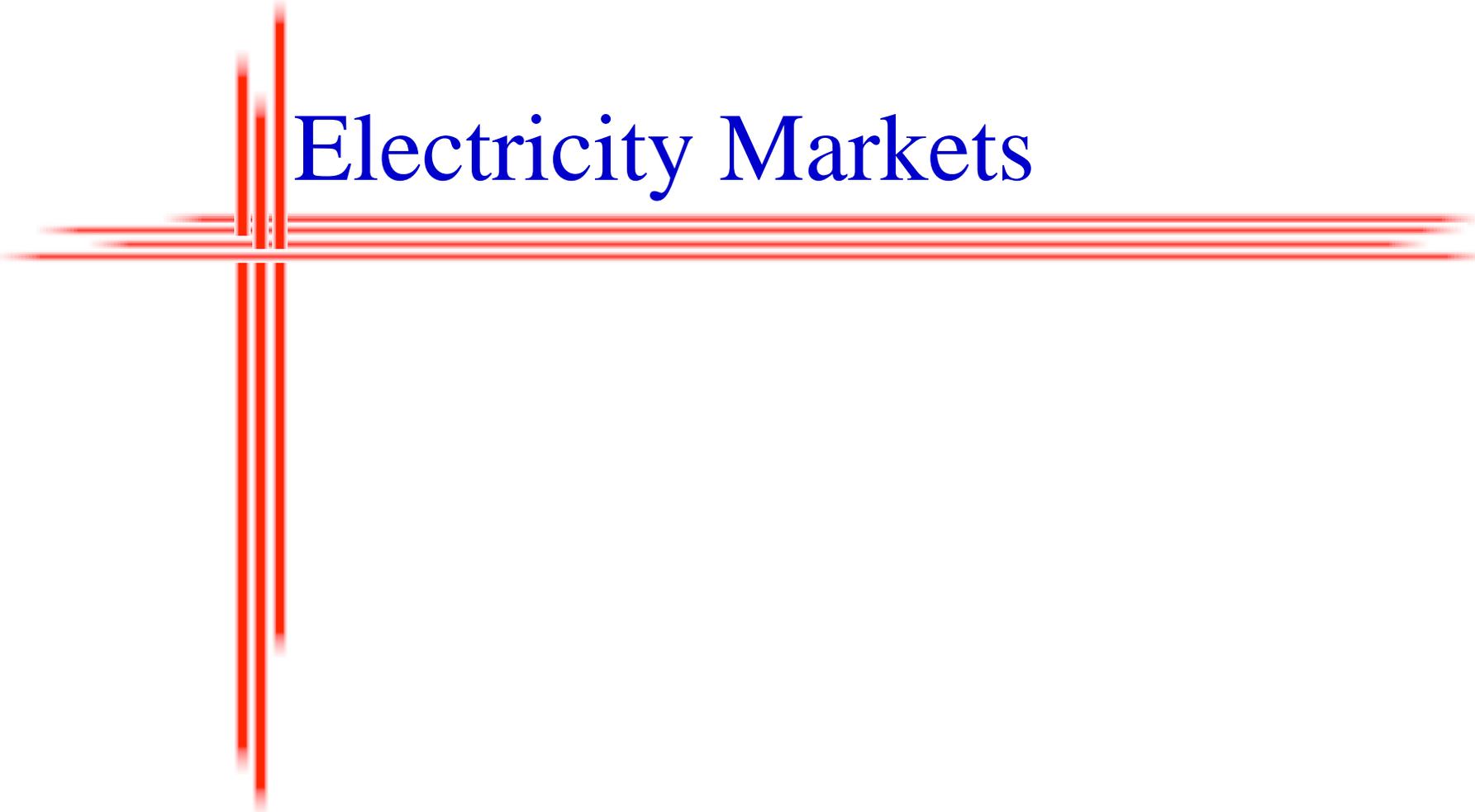


OE ENERGY MARKET SNAPSHOT

Western States Version – July 2010 Data

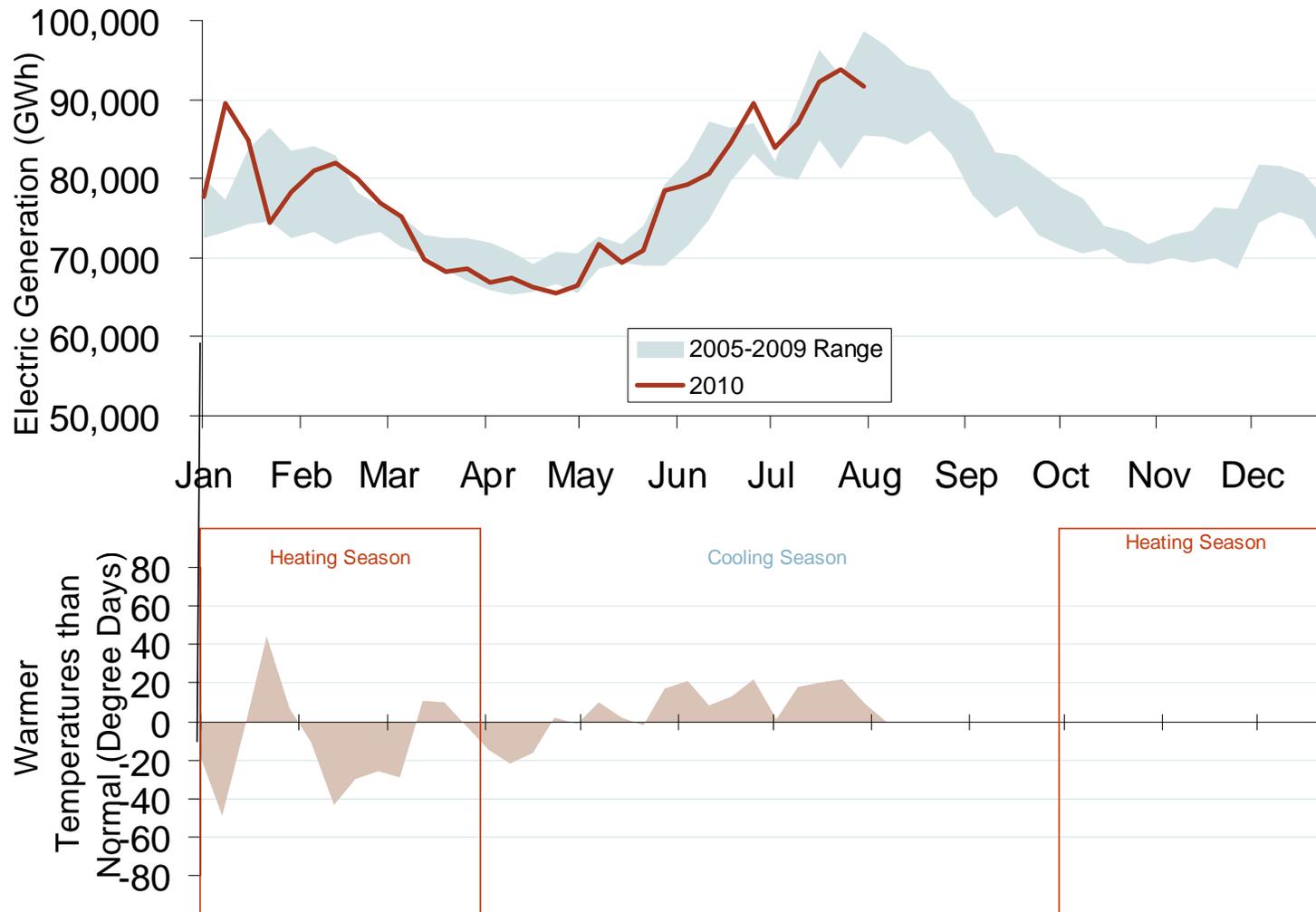
- **Electricity Markets**
- **Natural Gas and Fuel Markets**

Office of Enforcement
Federal Energy Regulatory Commission
August 2010

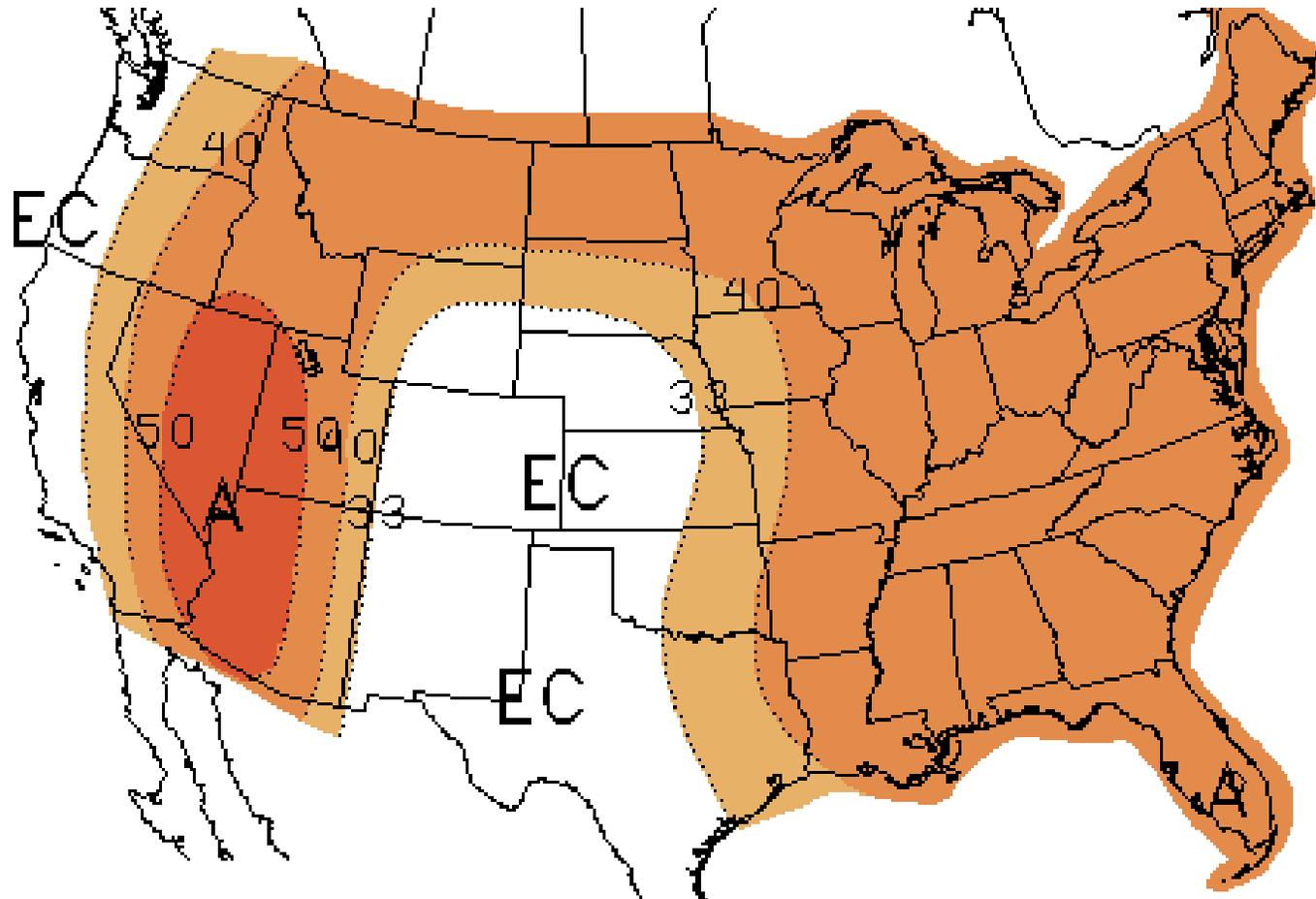


Electricity Markets

Weekly U.S. Electric Generation Output and Temperatures

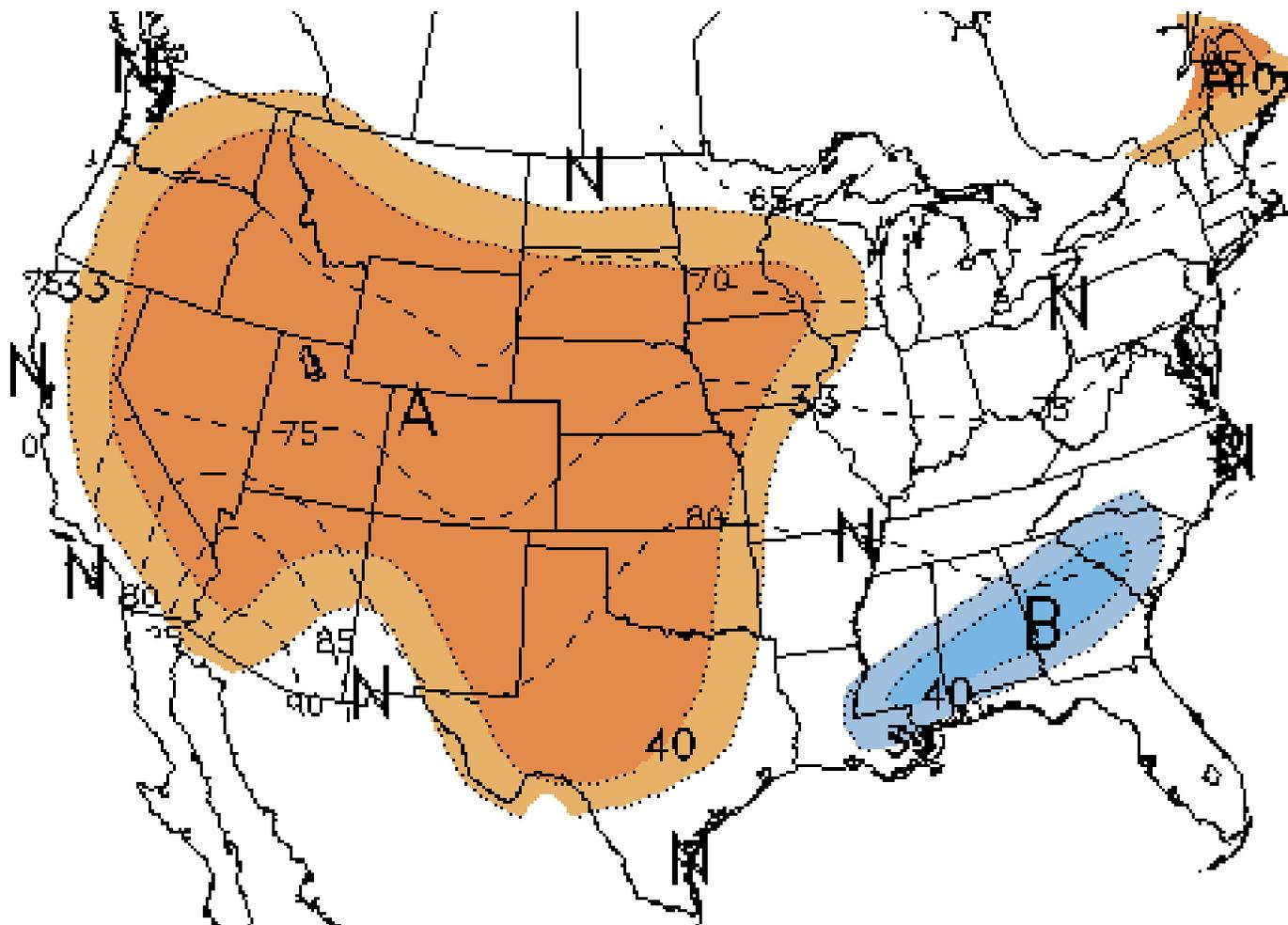


NOAA's Monthly Temperature Forecast Made July 31, Valid for August 2010



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.

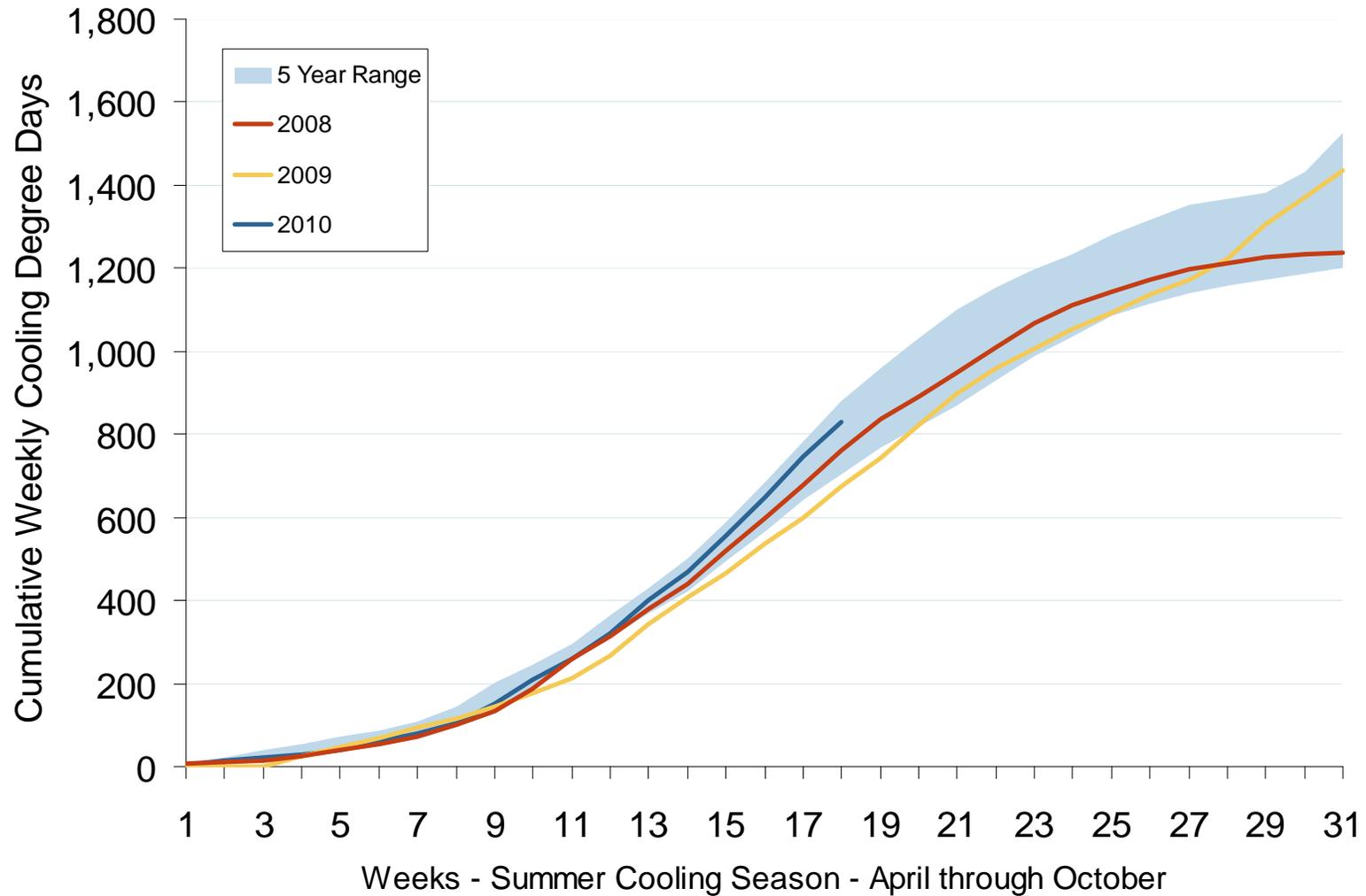
NOAA's 8 to 14 Day Temperature Forecast Made August 4, Valid for August 12-18, 2010



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

Source: NOAA

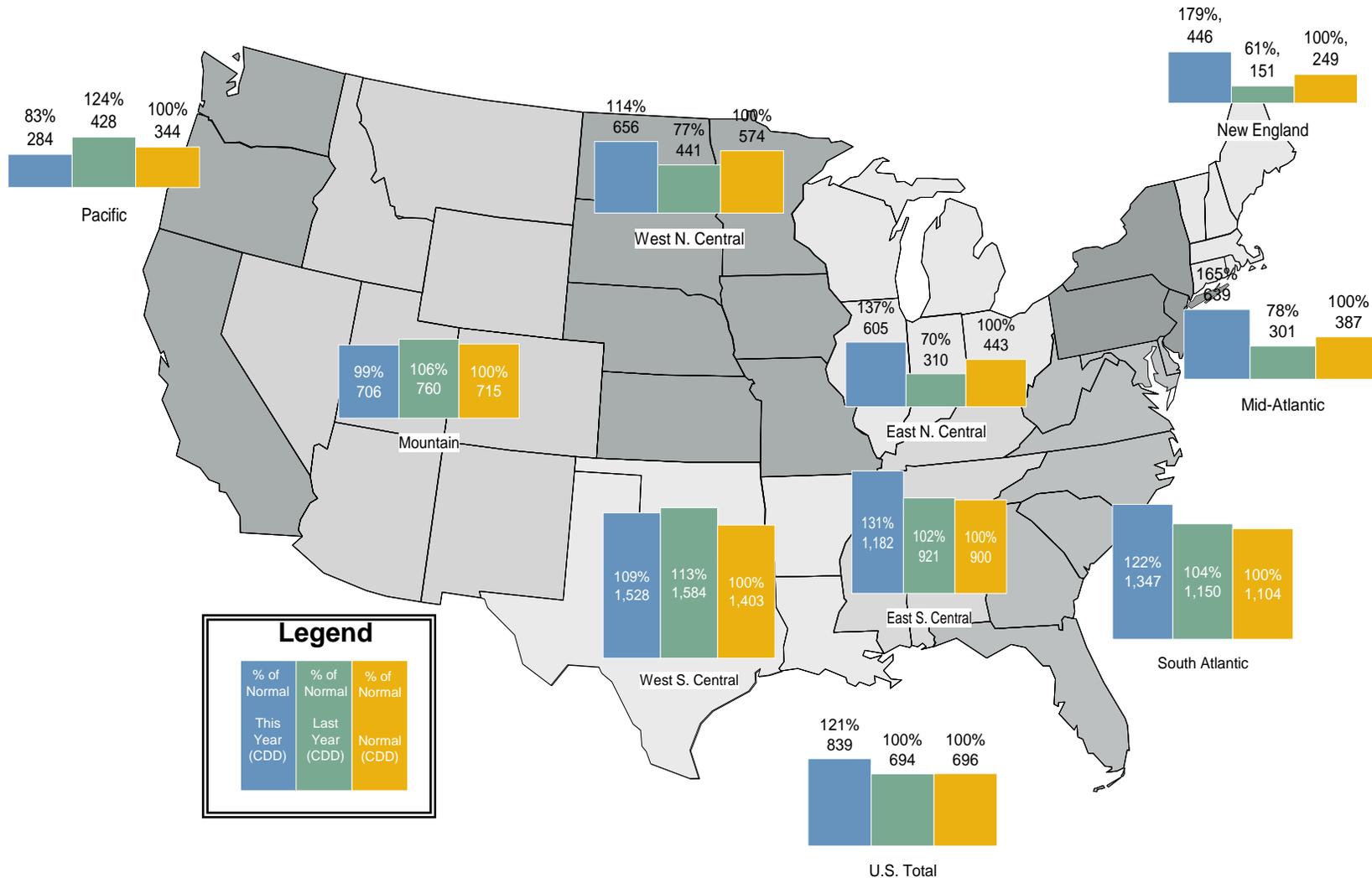
U. S. Summer Cumulative Cooling Degree Days - 2010



Source: Derived from NOAA data.

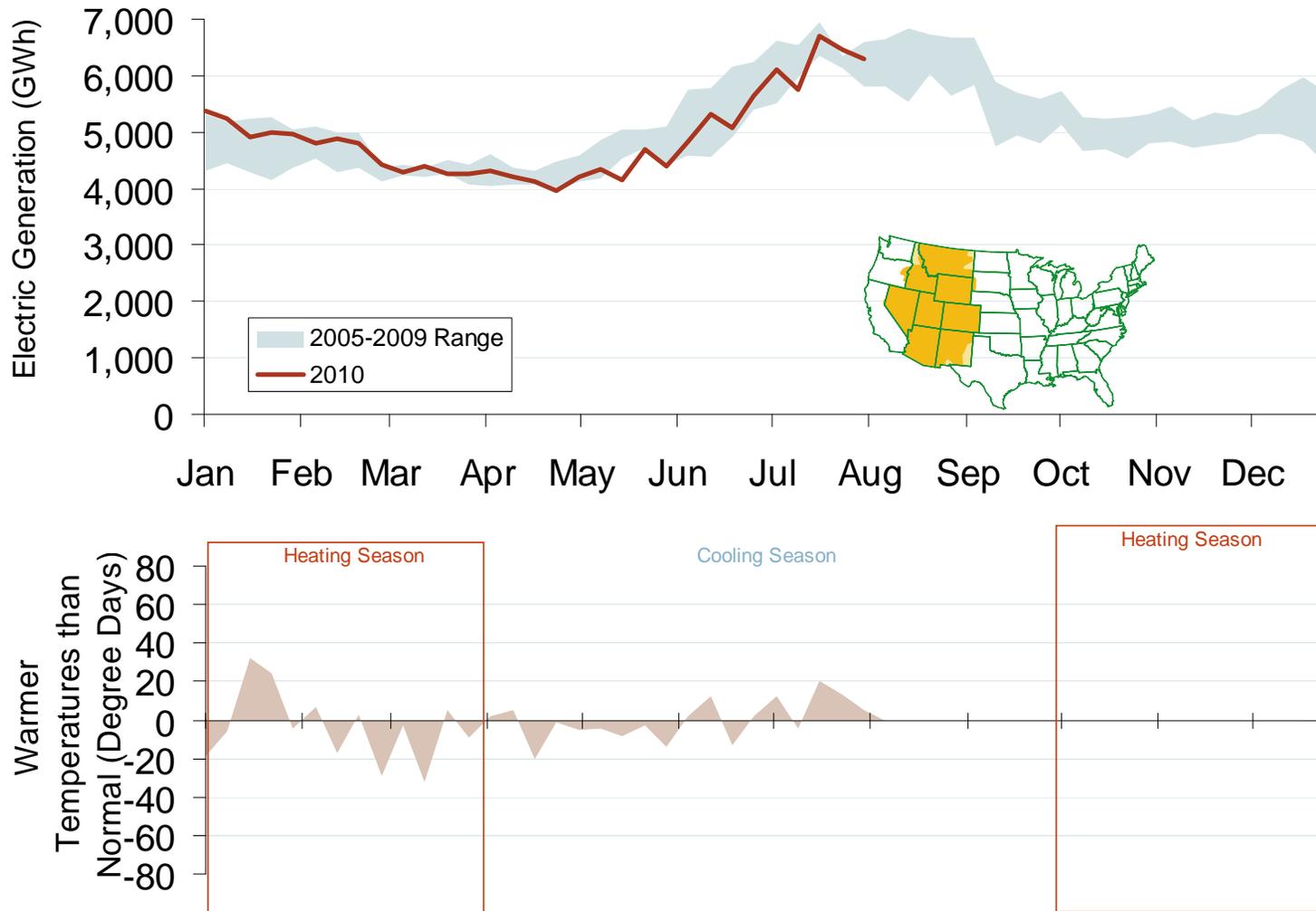
Updated August 6, 2010

Regional Cooling Degree Days: January – July 2010

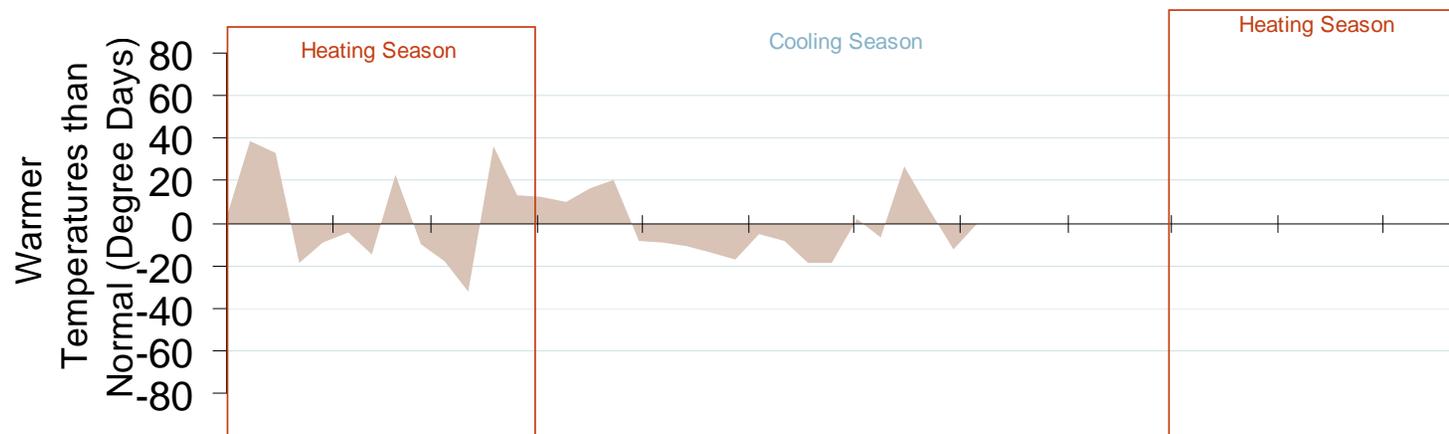
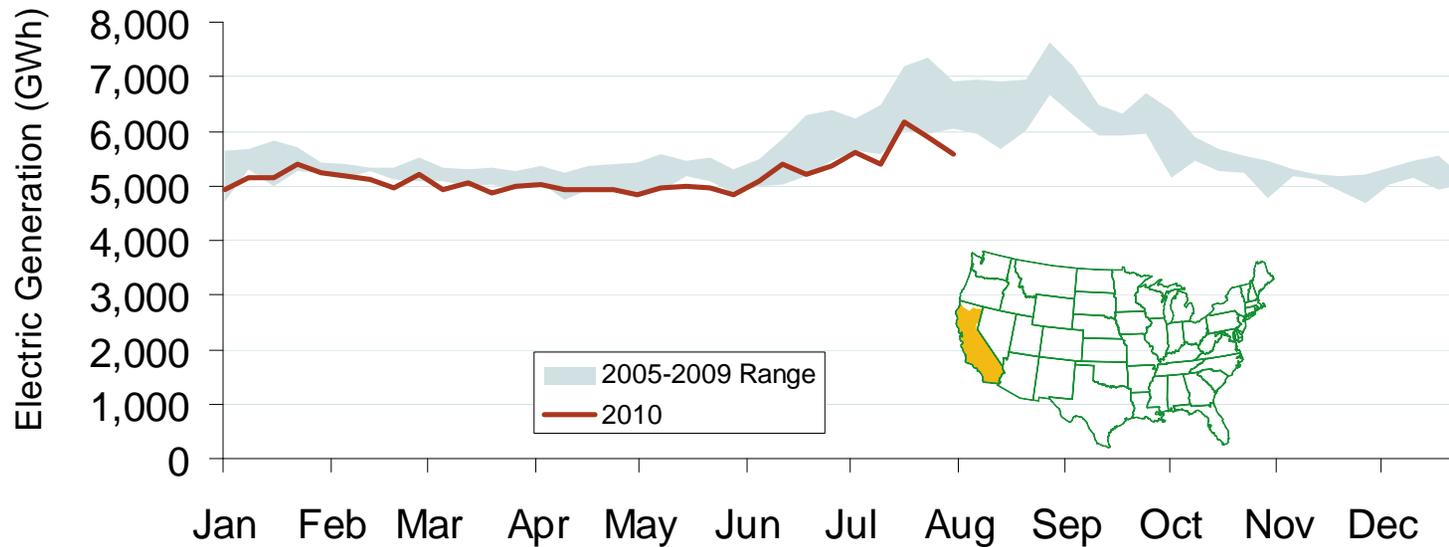


Source: Derived from NOAA data. Normal is based on a 30-year average of cooling degree days.
August 2010 Western Snapshot Report

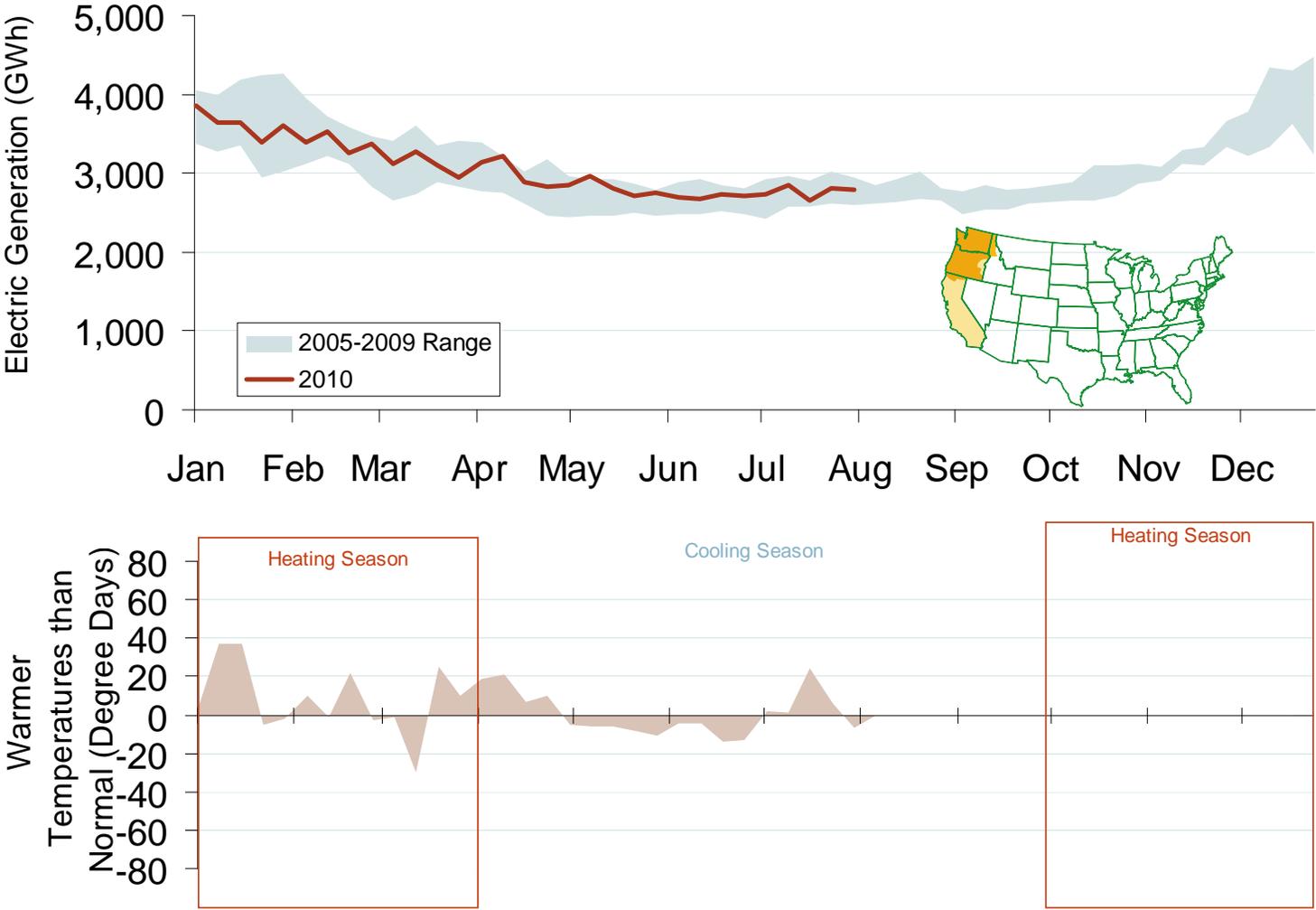
Weekly Electric Generation Output and Temperatures Rocky Mountains Region



Weekly Electric Generation Output and Temperatures California



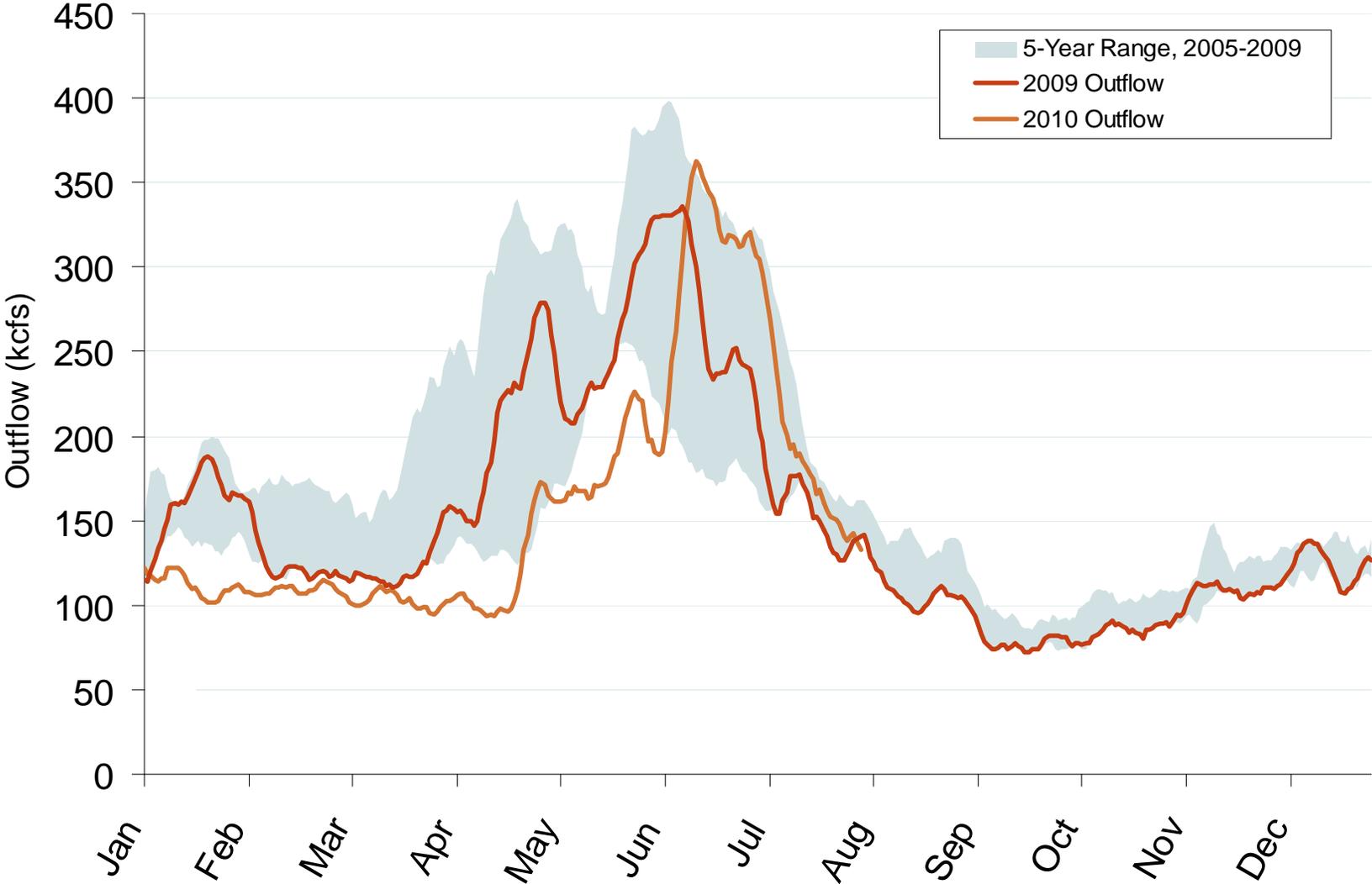
Weekly Electric Generation Output and Temperatures Pacific Northwest Region



Source: Derived from *EEl* and *NOAA* data.
August 2010 Western Snapshot Report

Updated August 6, 2010

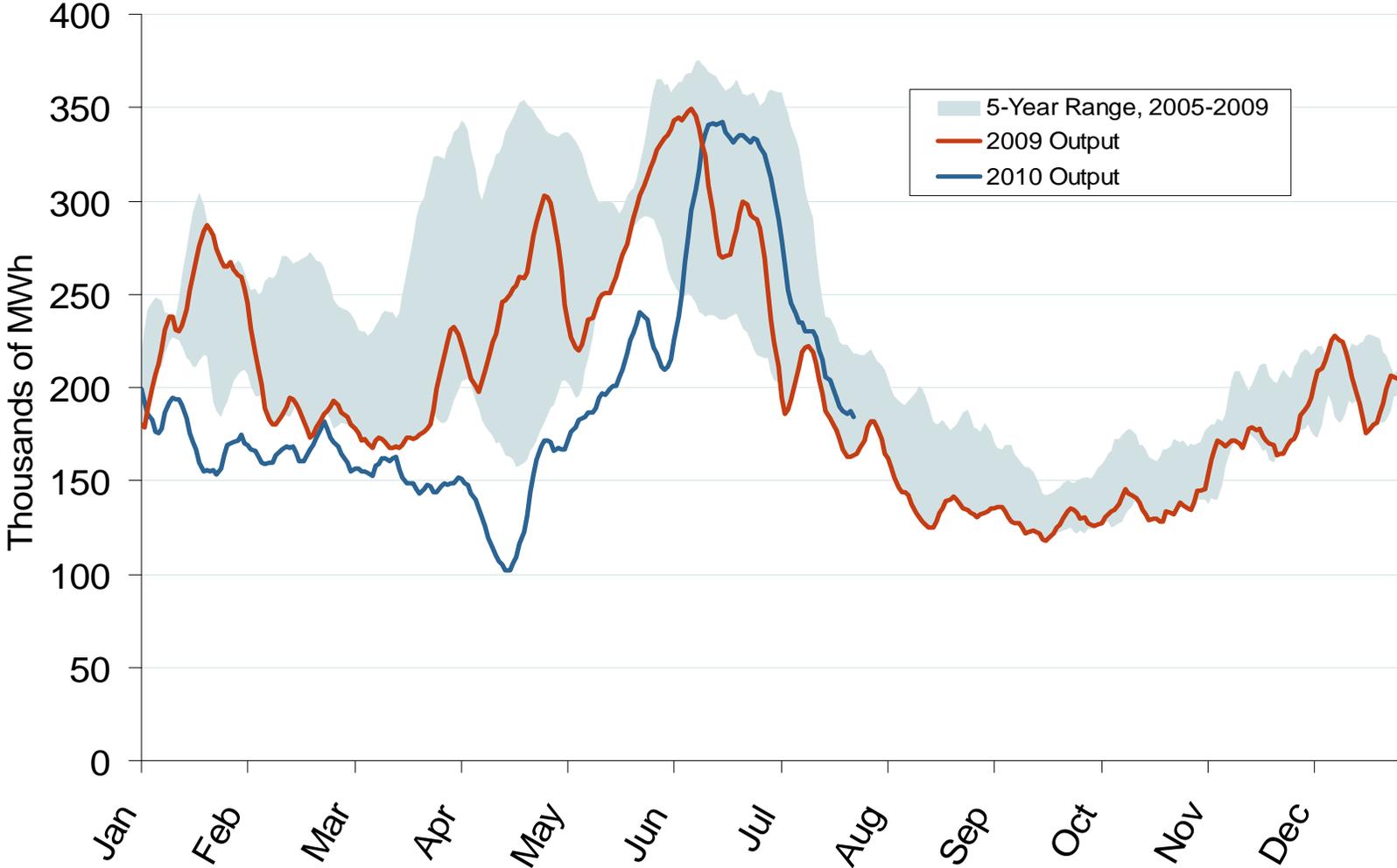
Stream Flow at The Dalles Dam



Source: Derived from USACE data.

Trend lines are 7-day moving averages.

Pacific Northwest Hydroelectric Production



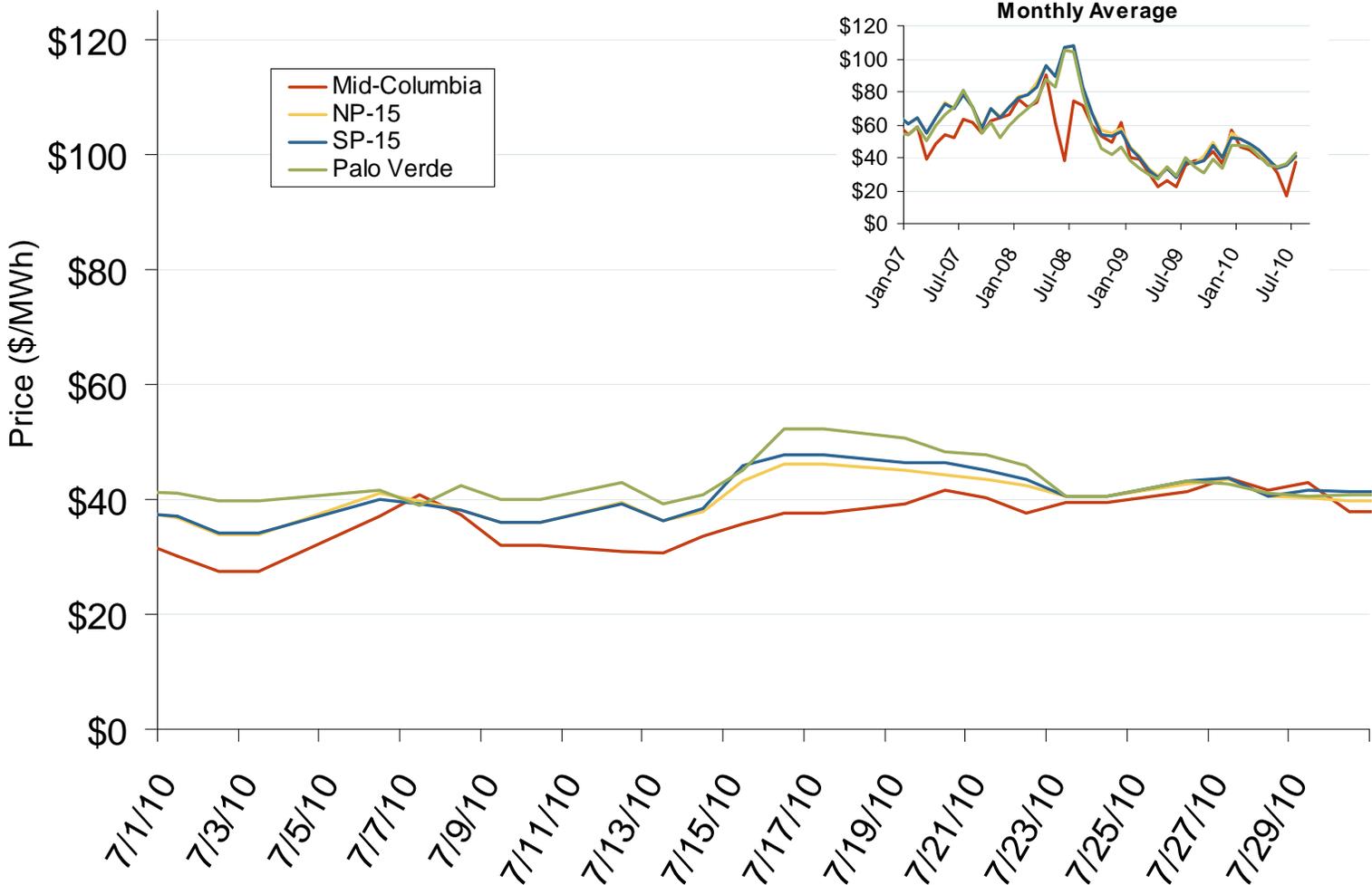
Source: Derived from USACE data reflecting the output of the 24 largest facilities.

Trend lines are 7-day moving averages.

August 2010 Western Snapshot Report

Updated August 6, 2010

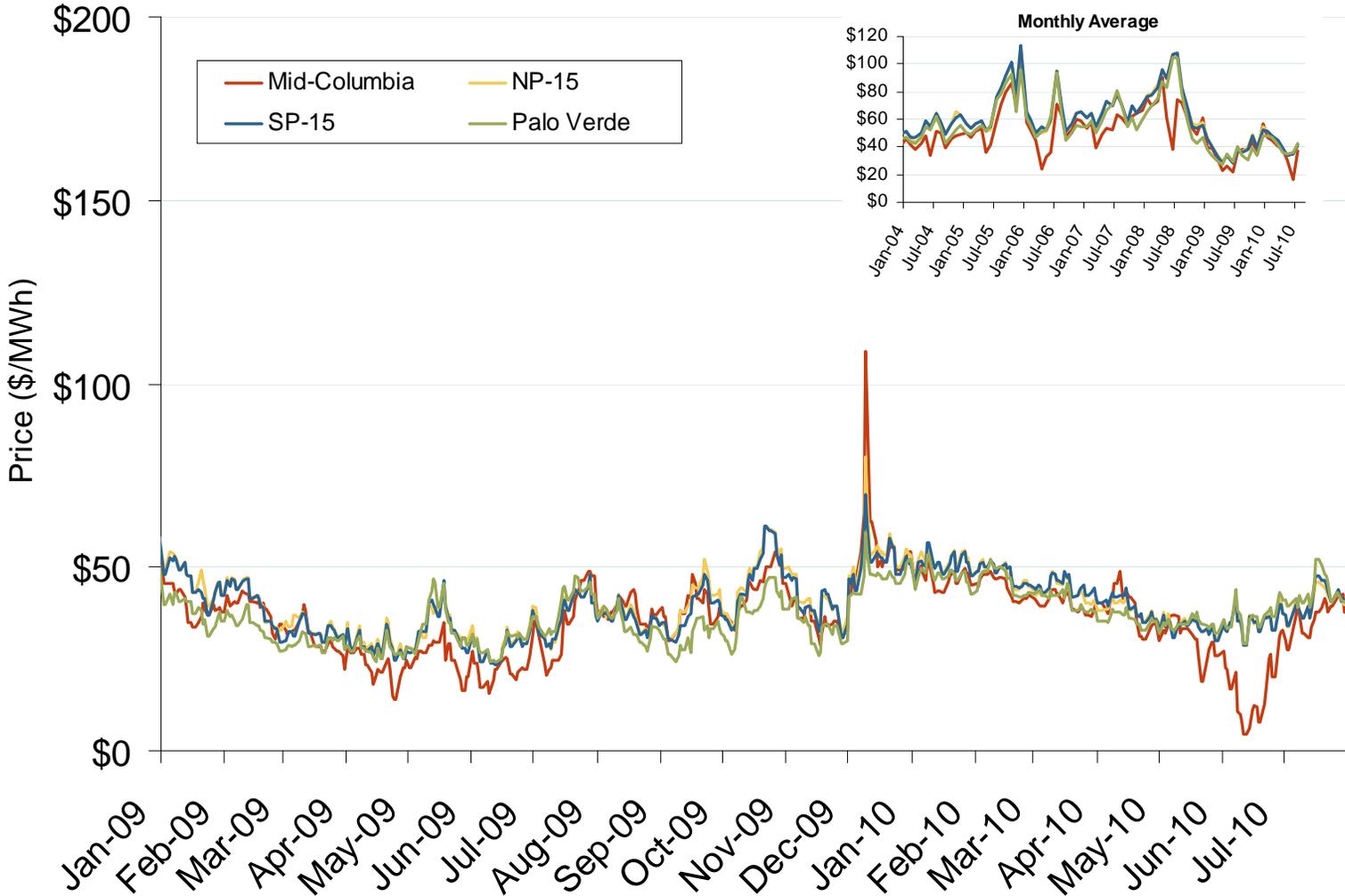
Western Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.
August 2010 Western Snapshot Report

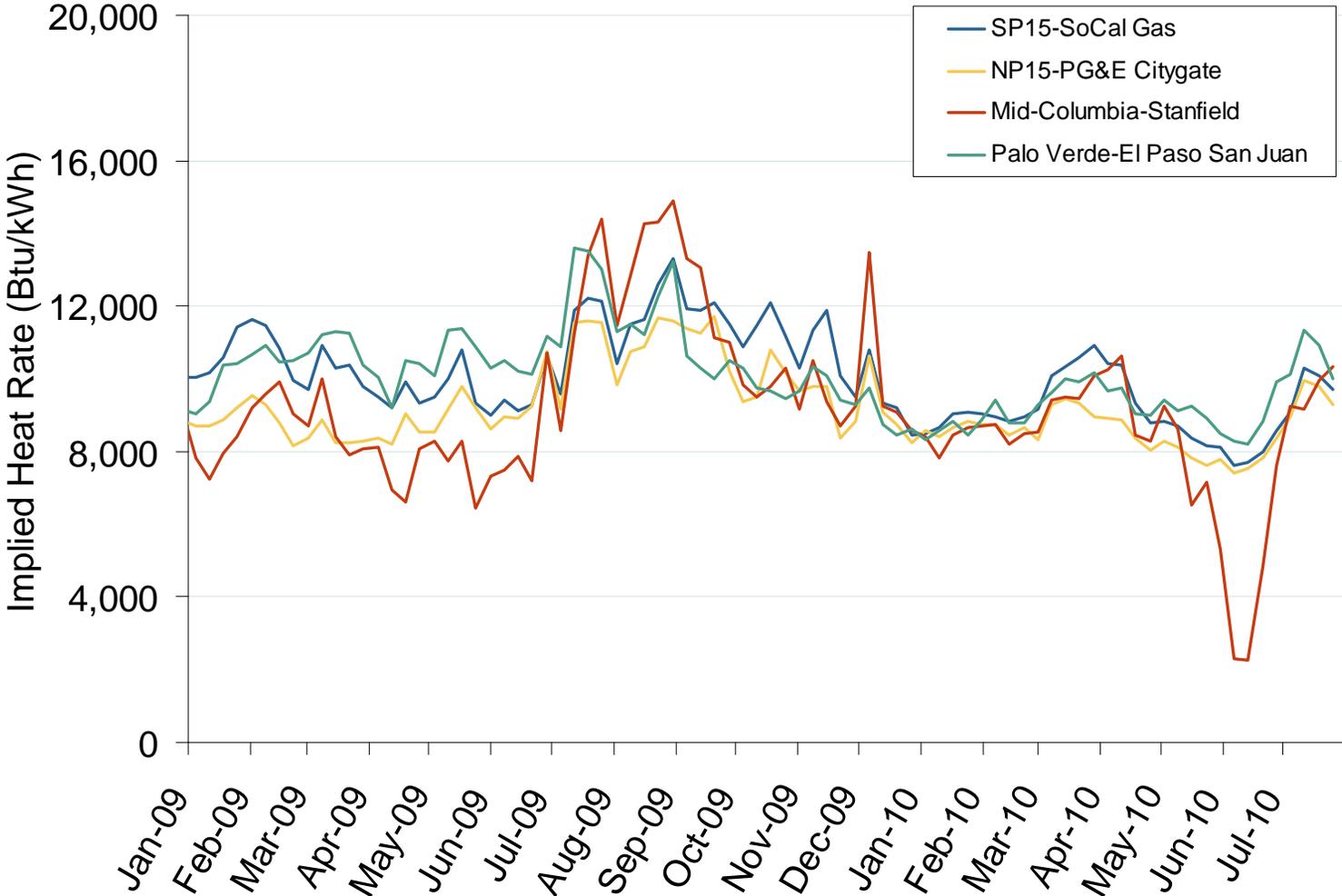
Updated August 6, 2010

Western Daily Bilateral Day-Ahead On-Peak Prices



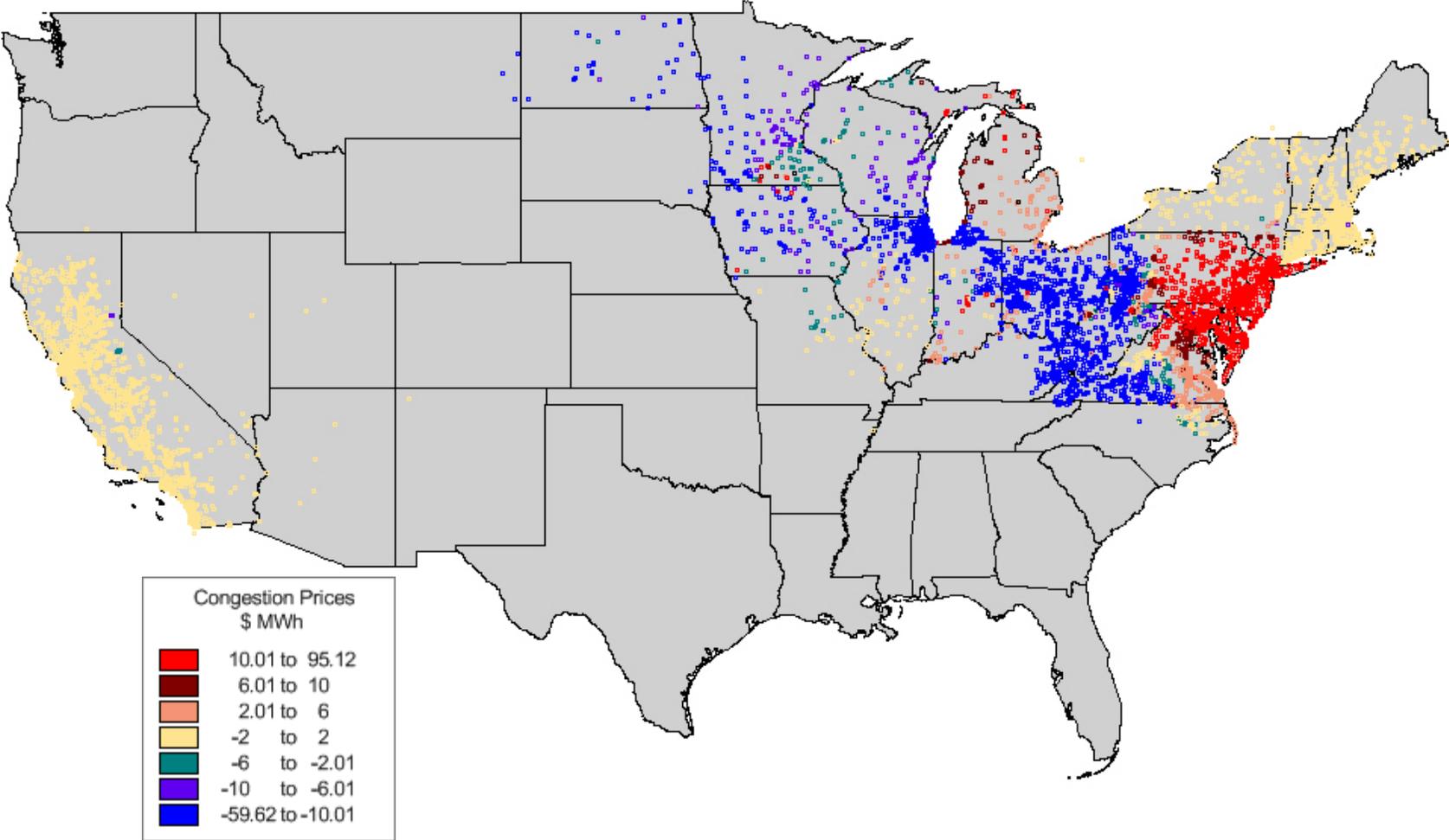
Source: Derived from *Platts* data.
August 2010 Western Snapshot Report

Implied Heat Rates at Western Trading Points Weekly Averages

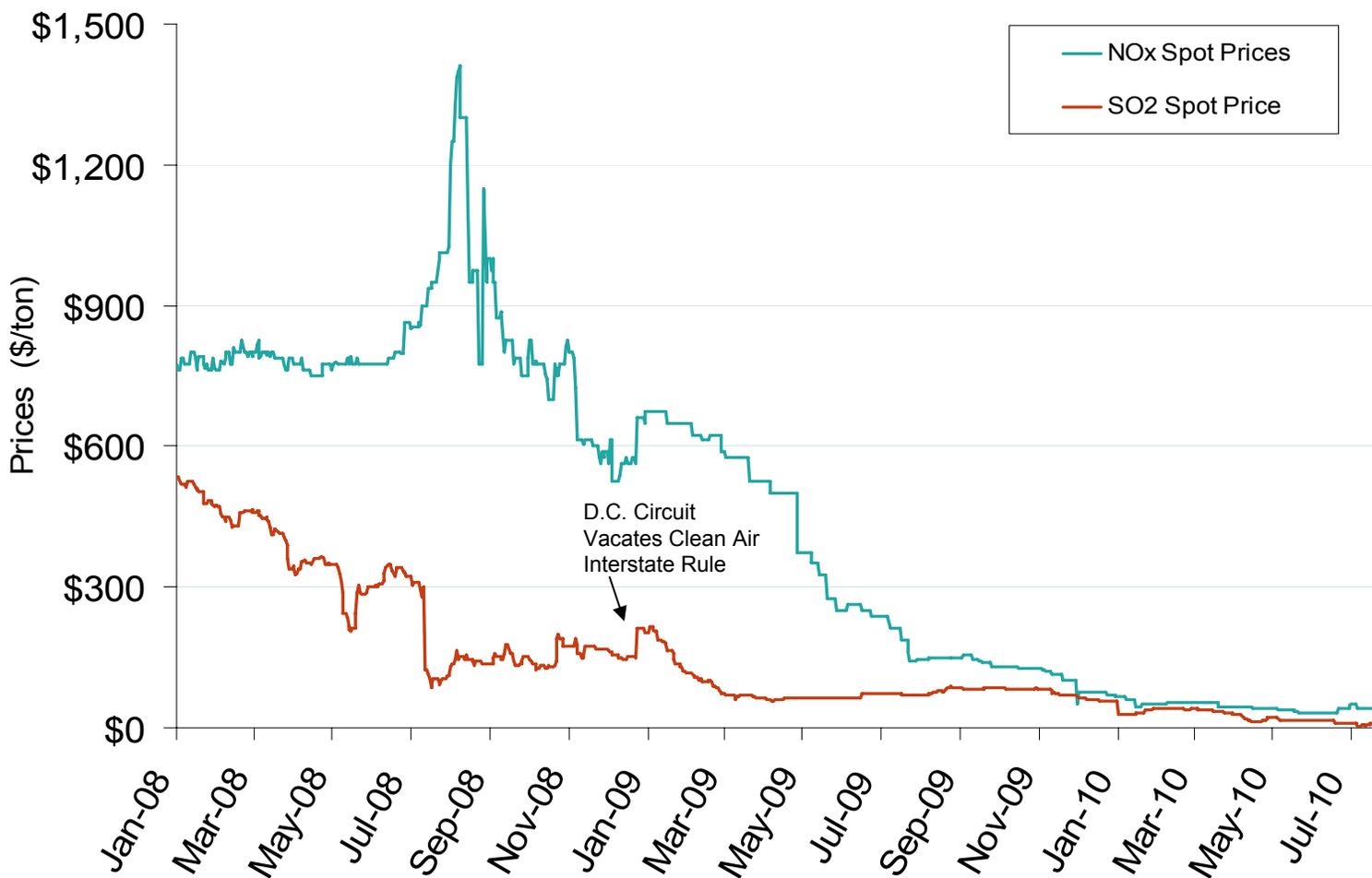


Source: Derived from *Platts* on-peak electric and natural gas price data.
August 2010 Western Snapshot Report

Day Ahead On-Peak Congestion Average Monthly Prices July 2010



SO₂ Allowance Spot Prices and NOx Seasonal Allowance Spot Prices

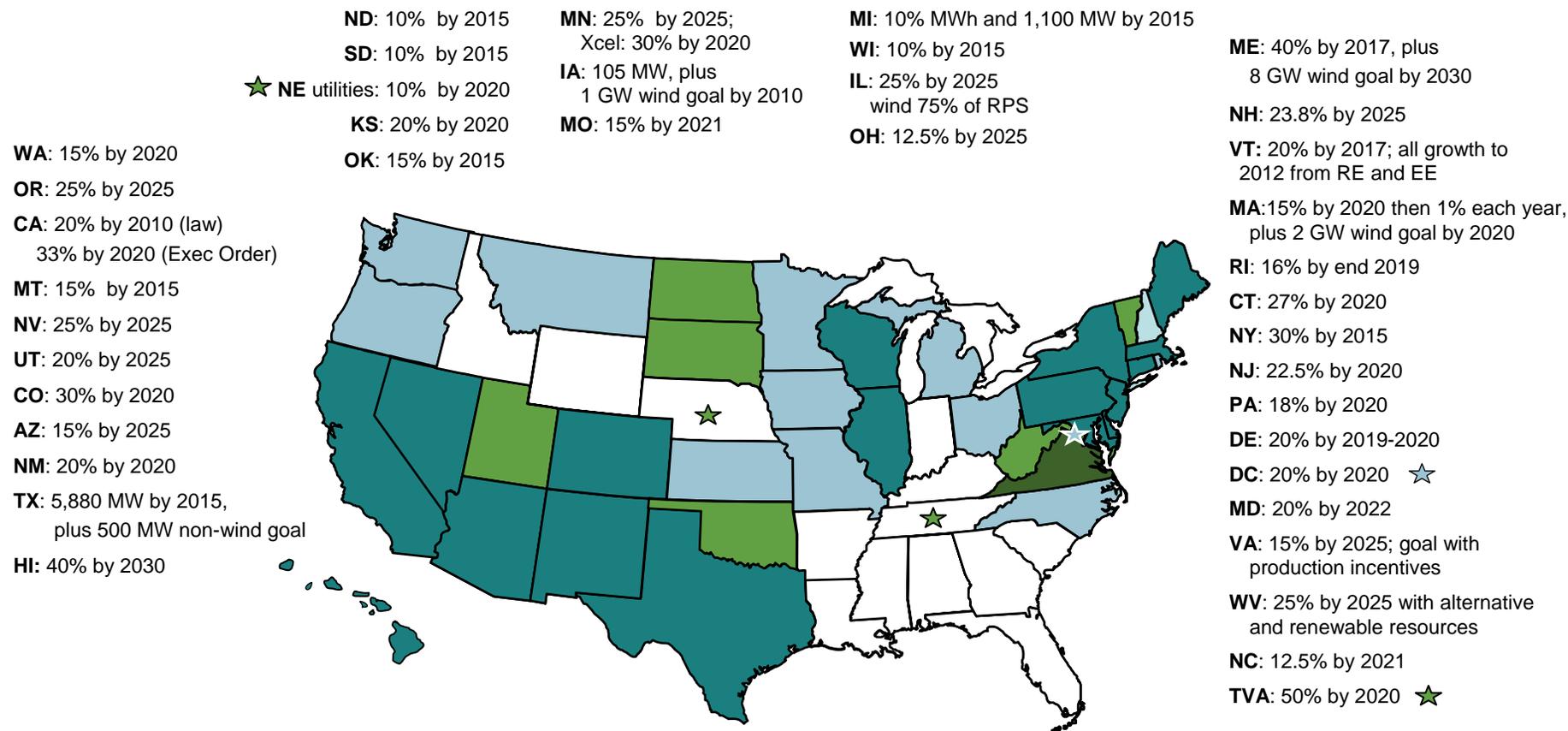


Chicago Climate Exchange CO2 Index



Source: Derived from *Bloomberg*.
August 2010 Western Snapshot Report

Renewable Power & Energy Efficiency Market: Renewable Portfolio Standards

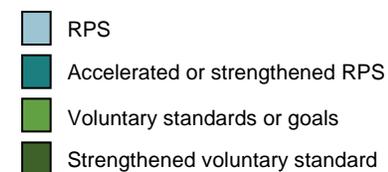
Federal Energy Regulatory Commission • Market Oversight • www.ferc.gov/oversight**30 States including D.C. have Renewable Energy Portfolio Standards (RPS)**Updates at: <http://www.ferc.gov/market-oversight/otr-mkts/renew.asp>

Notes: An RPS 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. Alaska has no RPS.

* Nebraska does not have a state-wide goal, but its two largest public power districts do.

TVA's goal is not state policy; it calls for 50% zero- or low-carbon generation by 2020.

Sources: Derived from data in: LBNL, PUCs, 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 June 29, 2010

Renewable Portfolio Provisions for Solar and Distributed Generation

16 States and D.C. use Set-asides, 3 use Multipliers to Encourage these Technologies

WA: double-credit for DG

OR: 20 MW PV by 2020;
* 2 utility PV credit

CA: 3 GW, including 1,940 MW distributed solar by 2016

NV: 1.5% solar by 2025
* 2.4 central PV;
* 2.45 distributed PV

UT: * 2.4 solar-electric multiplier

CO: 3% DG by 2020
1.5% customer-sited

AZ: 4.5% DG by 2025;
half residential

NM: 4% solar-electric,
0.6% DG by 2020

TX: double-credit for non-wind;
non-wind goal – 500 MW

MO: 0.3% solar-electric by 2021

IL: 1.5% solar PV by 2025

MI: triple credit for solar-electric

OH: 0.5% solar-electric by 2025

NH: 0.3% solar-electric by 2014

NY: customer-sited is 7% of RPS increments, 0.5% of 2015 sales

MA: 400 MW PV by 2020

RI: 3 MW solar by 2013

NJ: 5,316 GWh solar-electric by 2026

PA: 0.5% PV by 2020

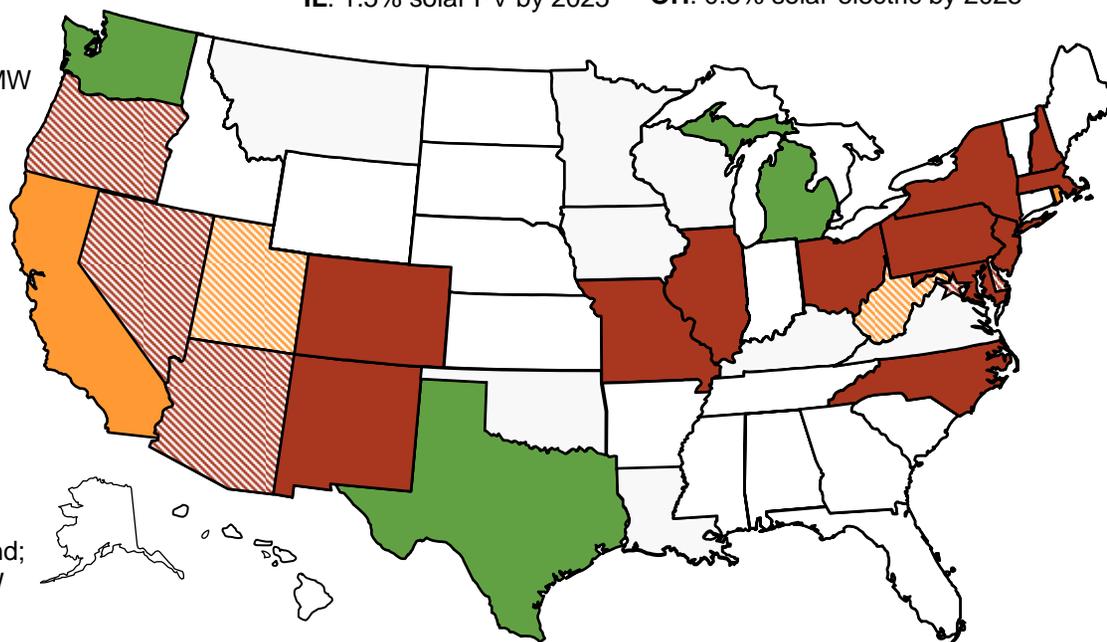
WV: various multipliers

DE: 2.005% PV by 2019;
* 3 PV credit

DC: 0.4% solar by 2021 ★

MD: 2% solar-electric in 2022

NC: 0.2% solar by 2018



- MI, TX, and WA use RPS multipliers only
- AZ, DC, DE, NV, and OR have RPS set-asides and multipliers
- CA, RI, UT, and WV have solar targets outside an RPS

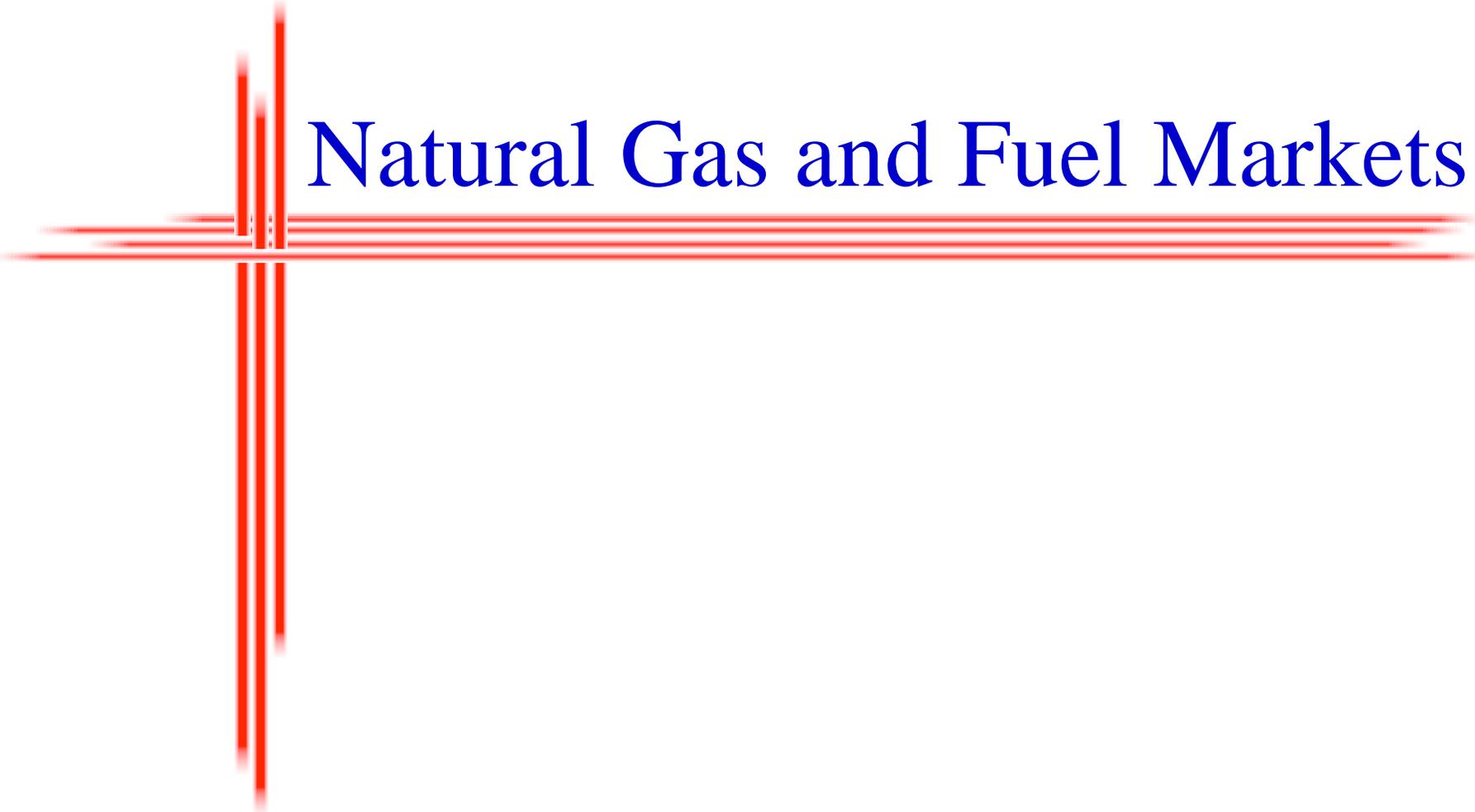
- Solar / DG set-aside in RPS
- Solar / DG in other renewable program
- RPS credit multiplier for Solar / DG
- ▨ Multiplier & set-aside in an RPS
- ▩ Multiplier & set-aside in Renewable Goal

Updates at: <http://www.ferc.gov/market-oversight/othr-mkts/renew/othr-rnw-rps-solar-DG.pdf>

Notes: (*) **Multipliers** receive extra credit towards RPS compliance. **Set-asides** are specific technology targets in an RPS, specified by percent, MW, or MWh. An RPS requires a percent of an electric provider's energy sales (MWh) or installed capacity (MW) to come from renewable resources.

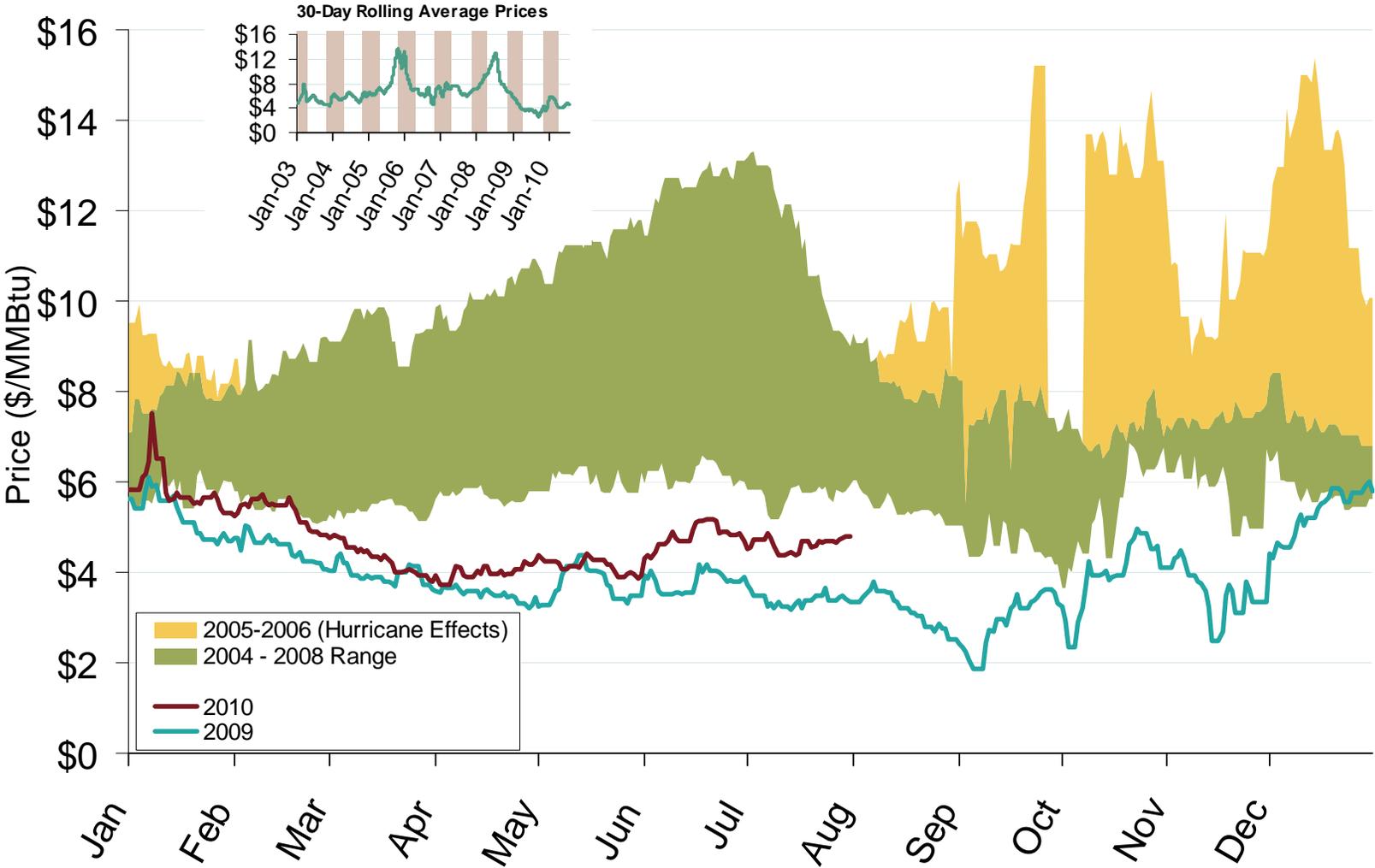
Abbreviations: DG – distributed generation; PV – solar photo-voltaic; RPS – Renewable Portfolio Standard

Sources: Derived from data in: LBNL, State Legislative and Public Utility web sites, California Solar Initiative, and the Database of State Incentives for Renewables and Energy Efficiency: <http://www.dsireusa.org>



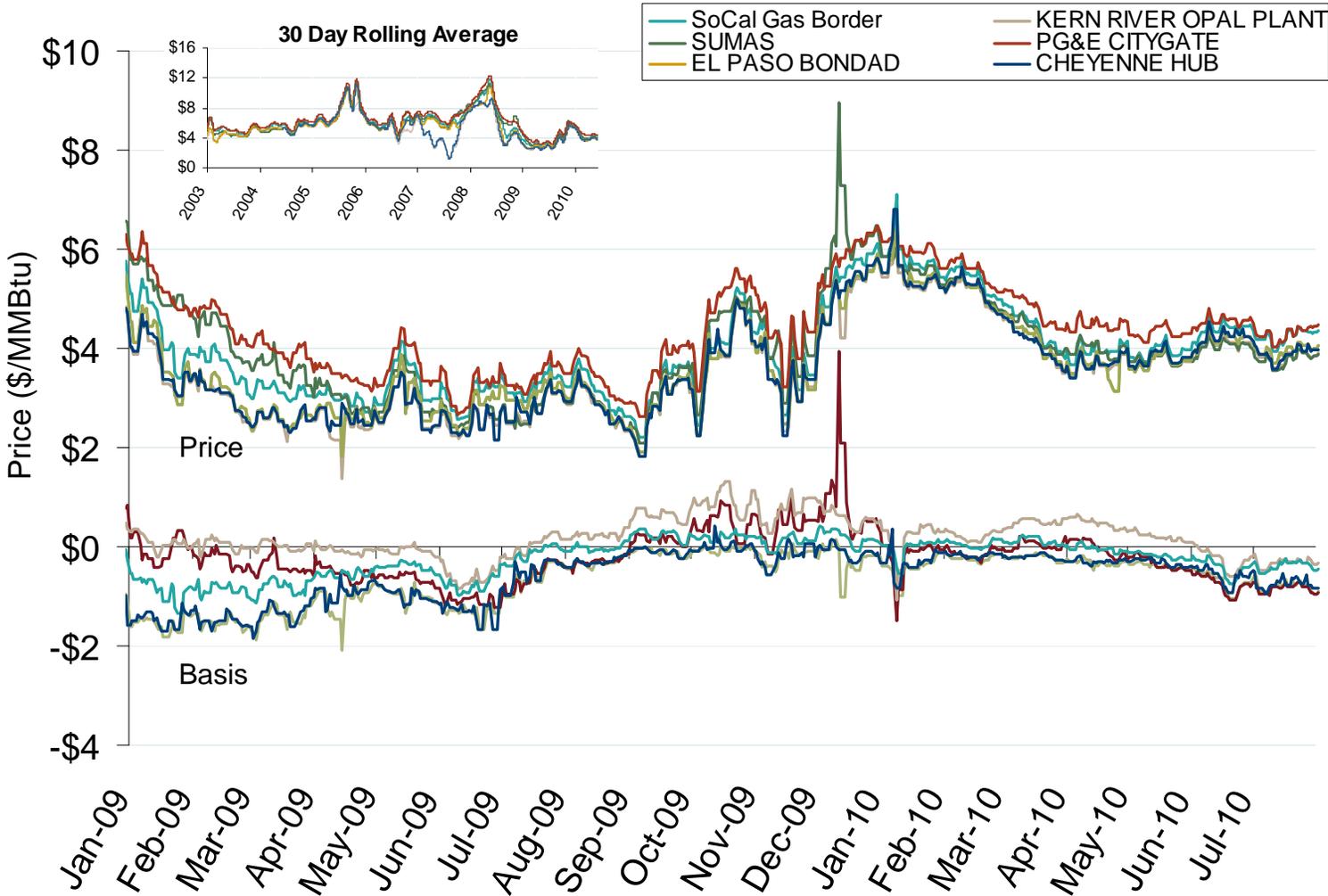
Natural Gas and Fuel Markets

Henry Hub Natural Gas Daily Spot Prices



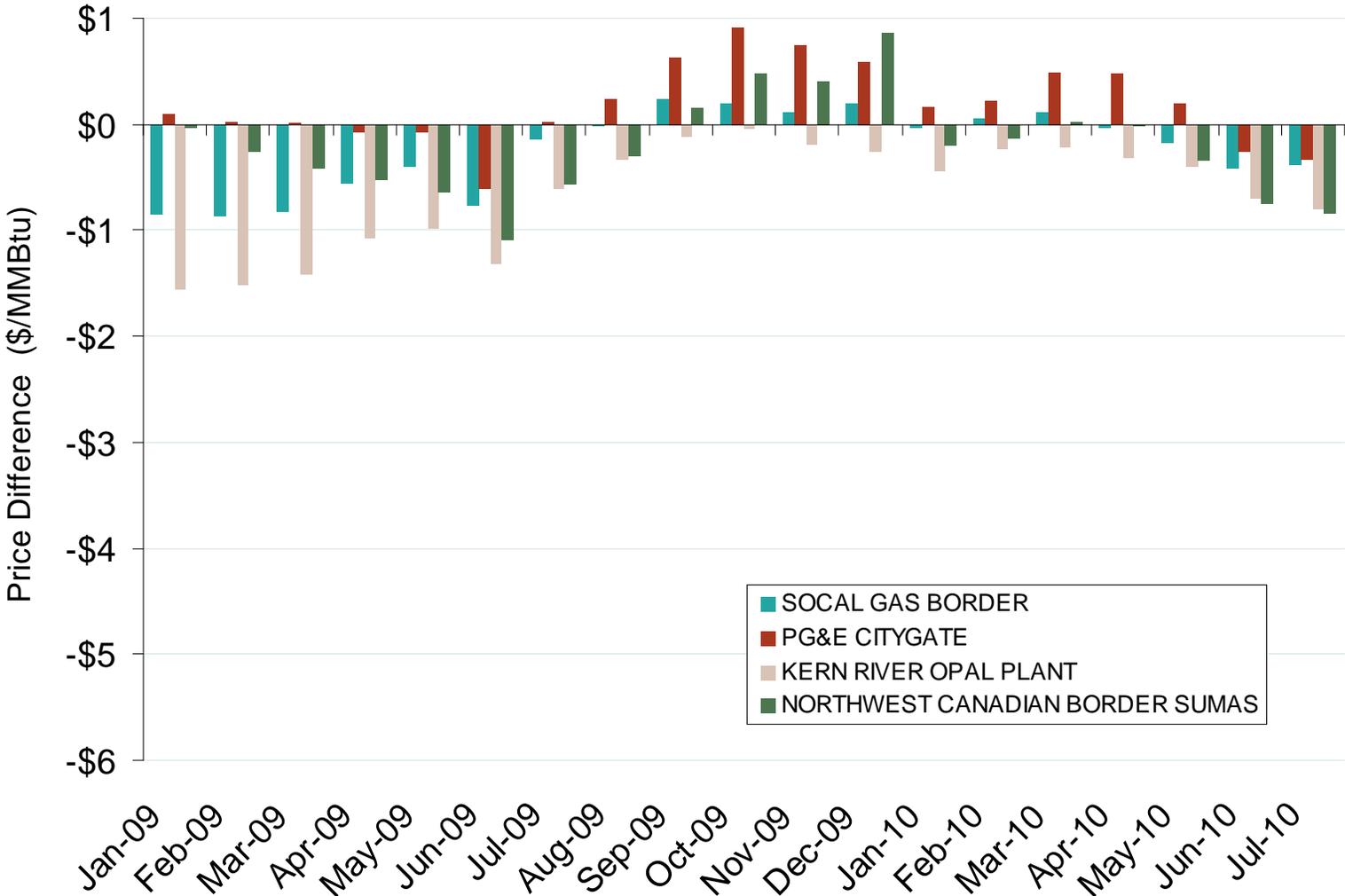
Source: Derived from *Platts* data.
August 2010 Western Snapshot Report

Western Day-Ahead Hub Spot Prices and Basis



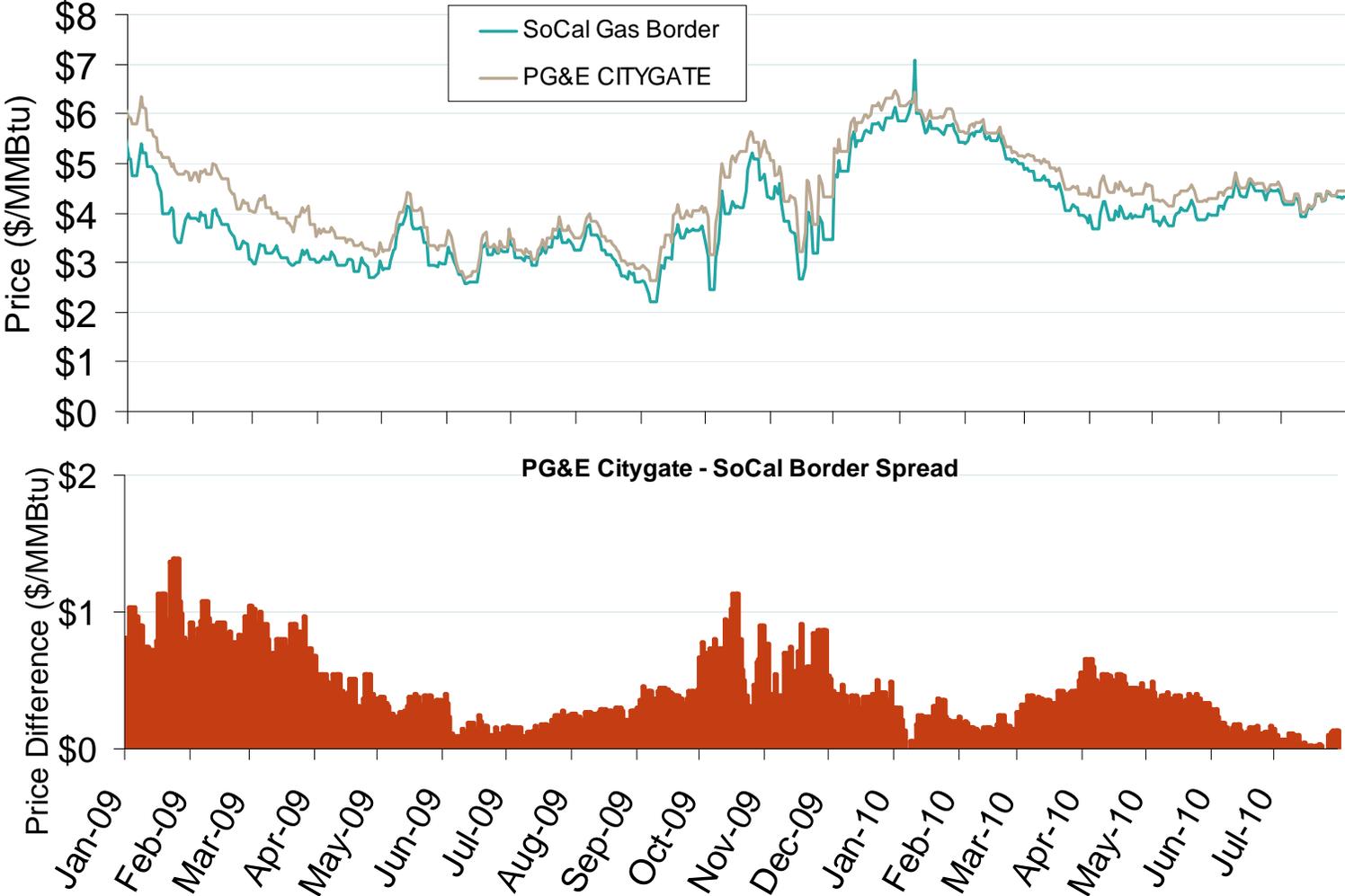
Source: Derived from *Platts* data.
August 2010 Western Snapshot Report

Western Monthly Average Basis Value to Henry Hub



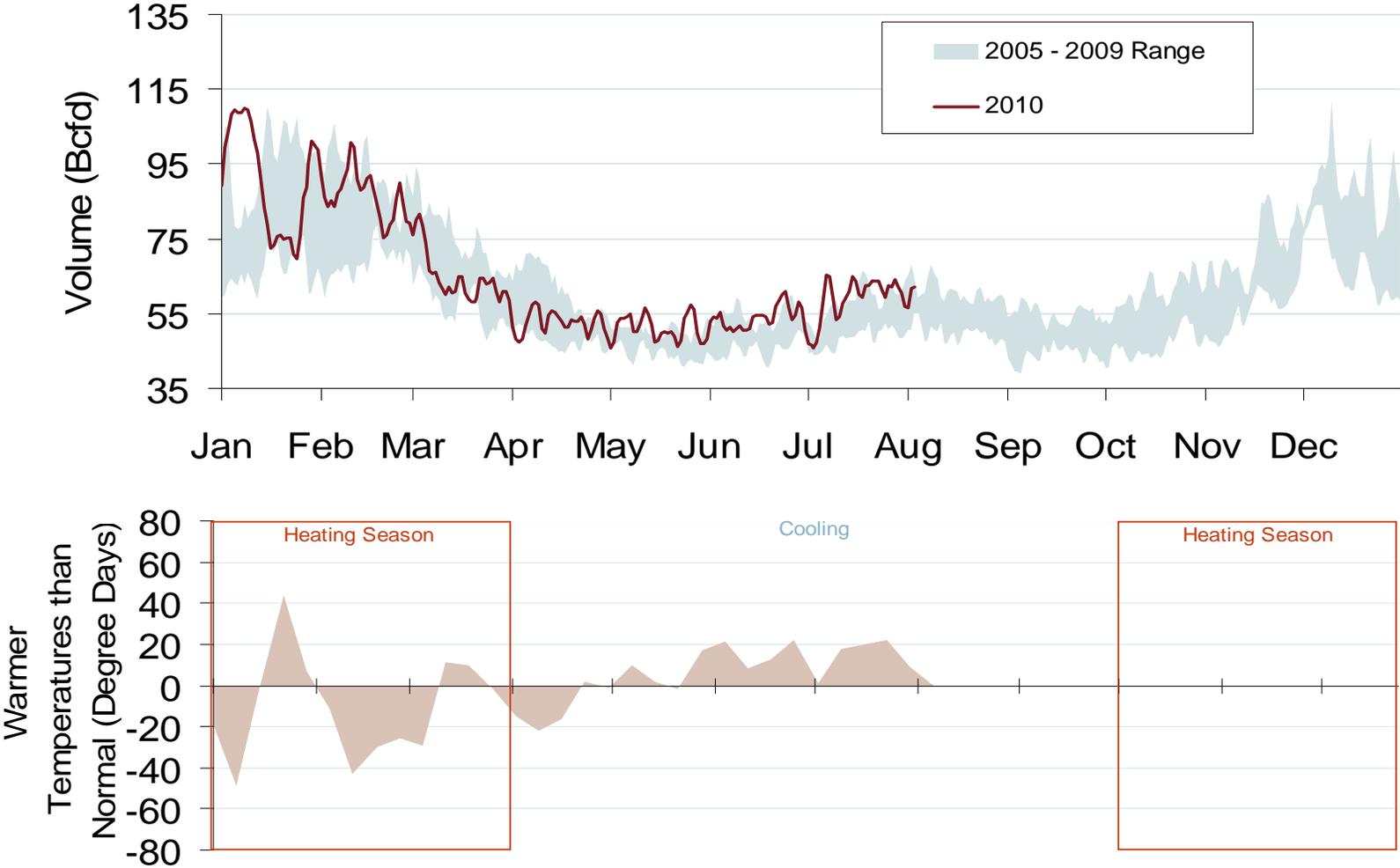
Source: Derived from *Platts* data.
August 2010 Western Snapshot Report

Difference in Northern and Southern California Daily Spot Prices



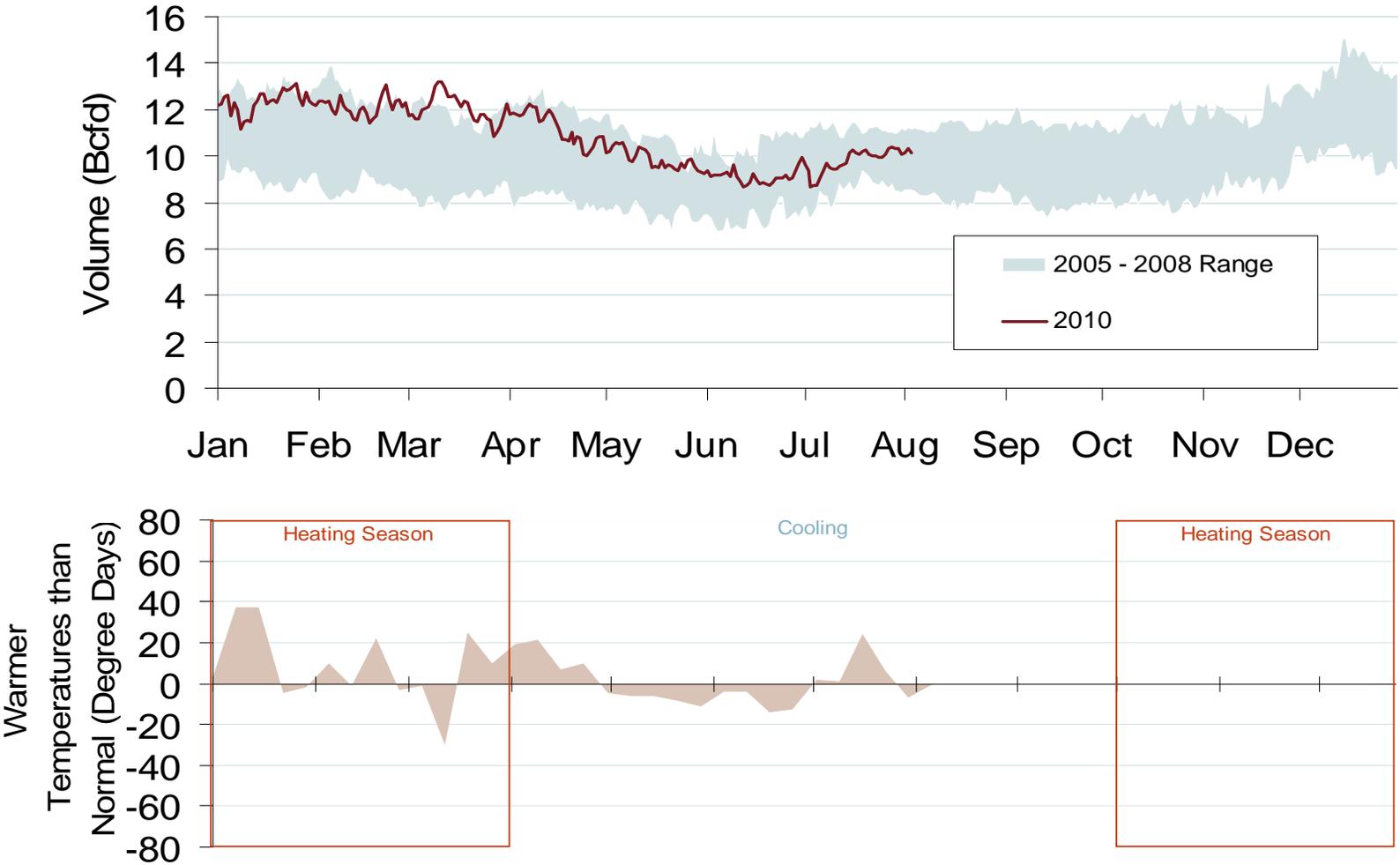
Source: Derived from *Platts* data.
August 2010 Western Snapshot Report

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



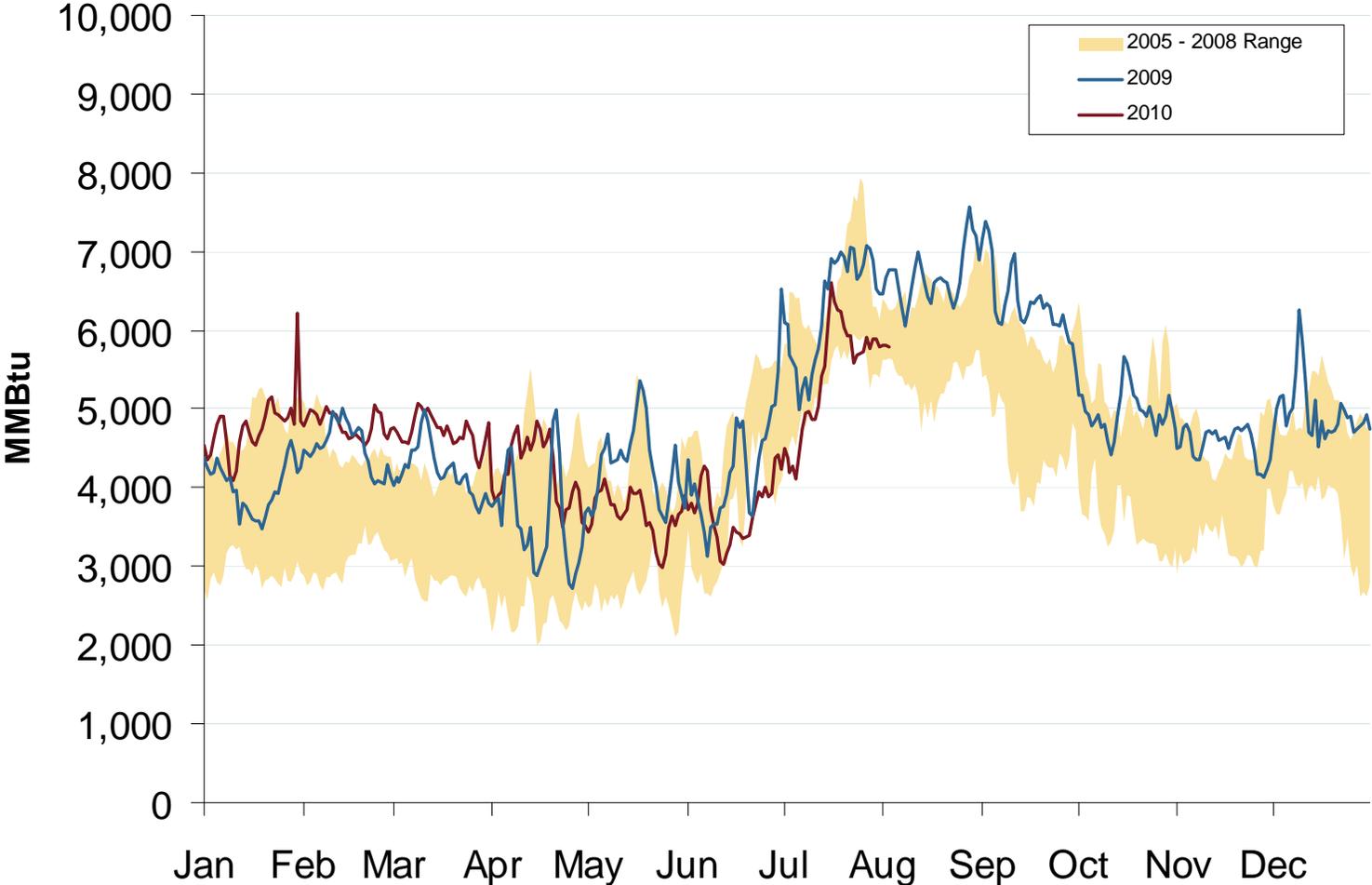
Source: Derived from Bentek Energy and Weekly NOAA data.
August 2010 Western Snapshot Report

Daily Western Natural Gas Demand All Sectors



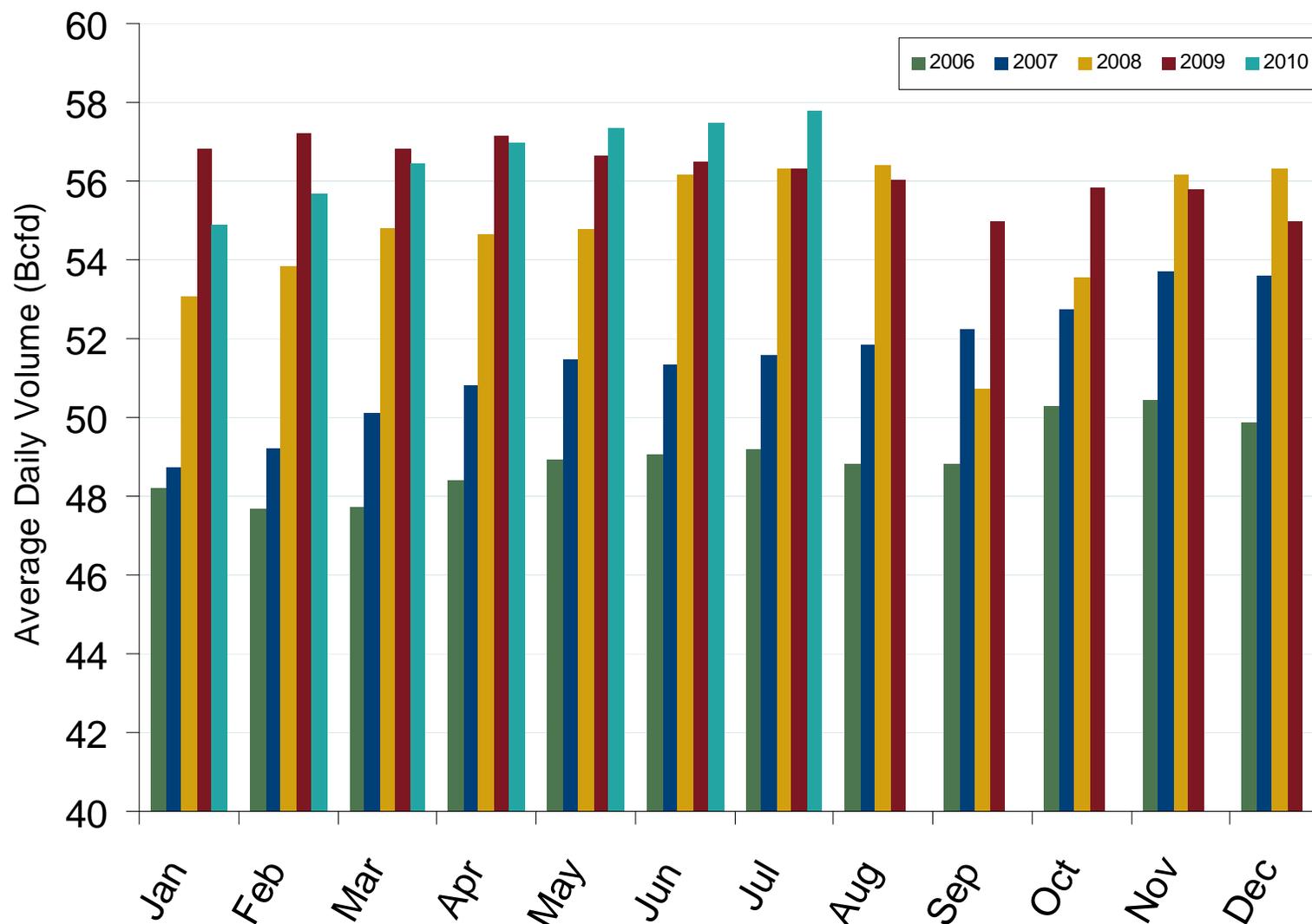
Source: Derived from Bentek Energy and Weekly NOAA data.
August 2010 Western Snapshot Report

Western Natural Gas Consumption for Power Generation



Source: Derived from Bentek Data
August 2010 Western Snapshot Report

Monthly U.S. Dry Gas Production – Lower 48 States



Source: Derived from *Bentek data*.

Note: Prior to July 2010, chart was derived from a combination of EIA and Bentek data
August 2010 Western Snapshot Report

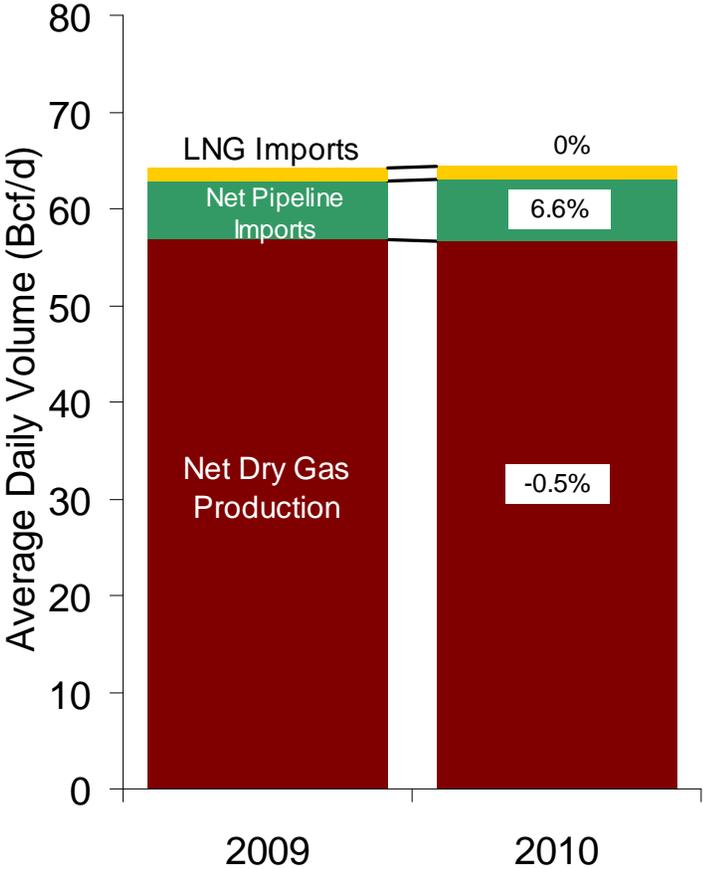
Updated August 6, 2010

20021

U.S. Natural Gas Supply and Demand 2009 vs. 2010: January - July

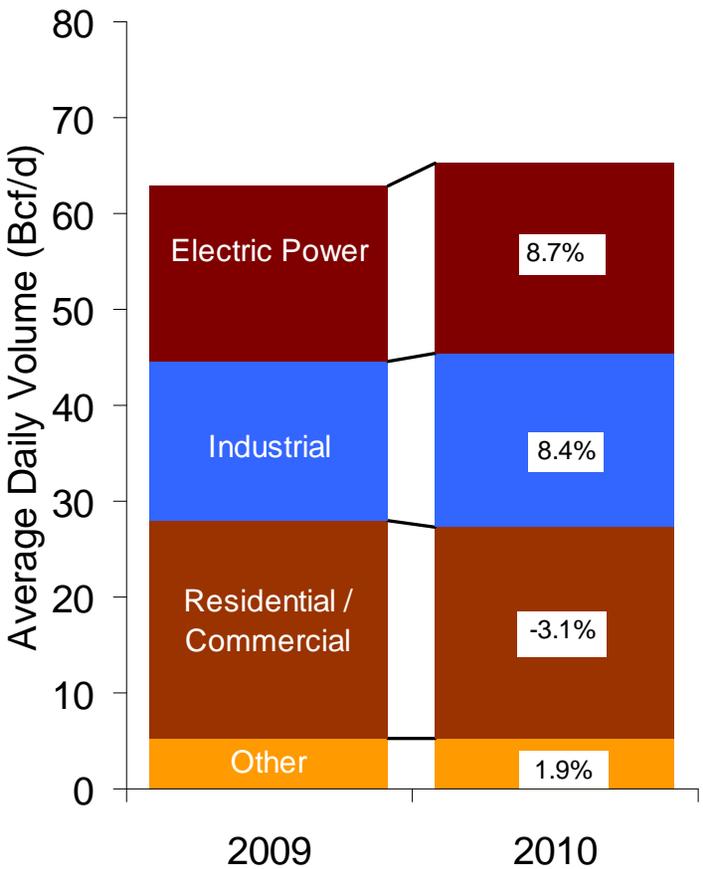
US Natural Gas Supply

Total Change in Supply 0.3%



US Natural Gas Demand

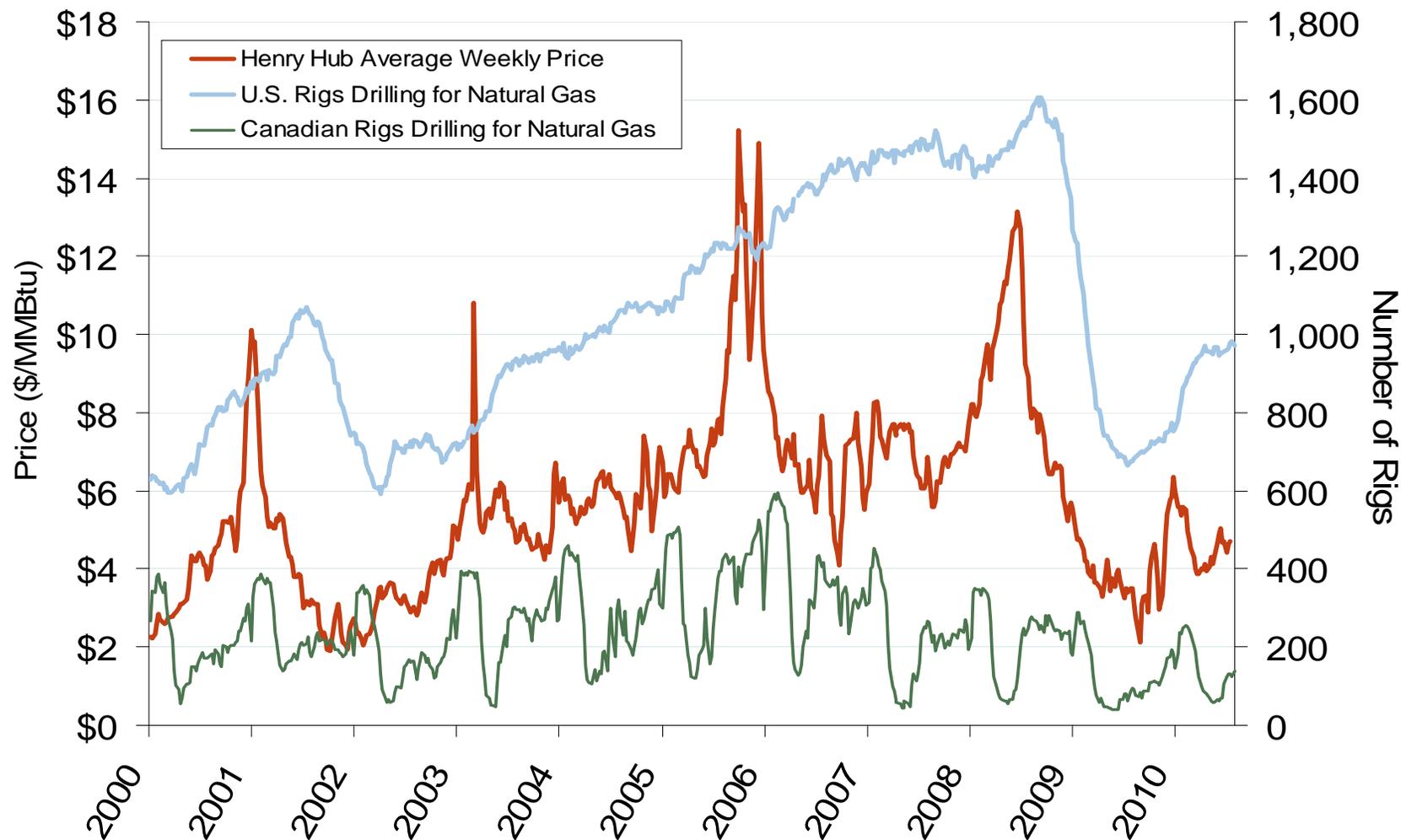
Total Change in Demand 3.7%



Source: Derived from Bentek data.
August 2010 Western Snapshot Report

Updated August 6, 2010

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

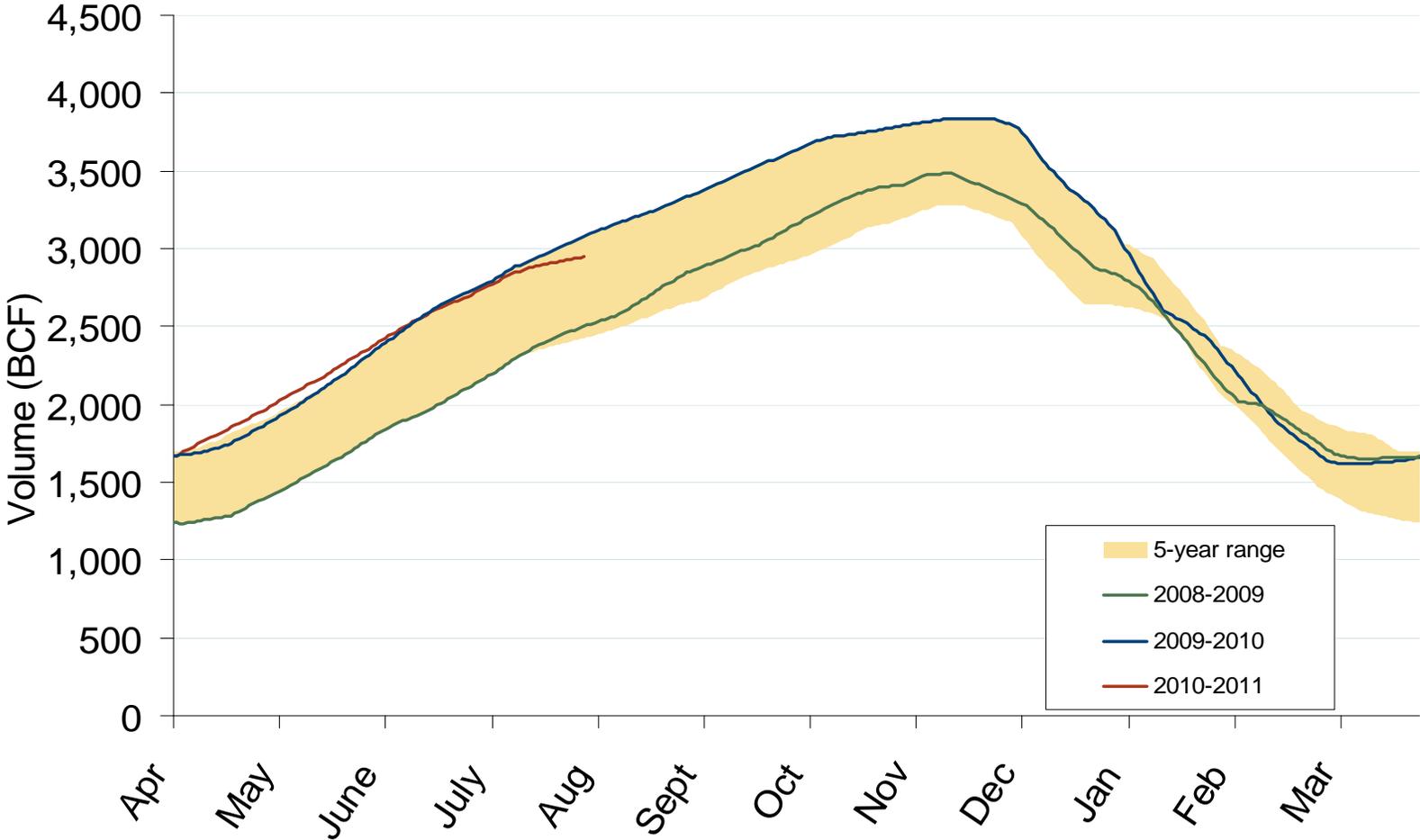


Source: Derived from *Platts* and *Baker Hughes* data.
August 2010 Western Snapshot Report

Updated August 6, 2010

2007

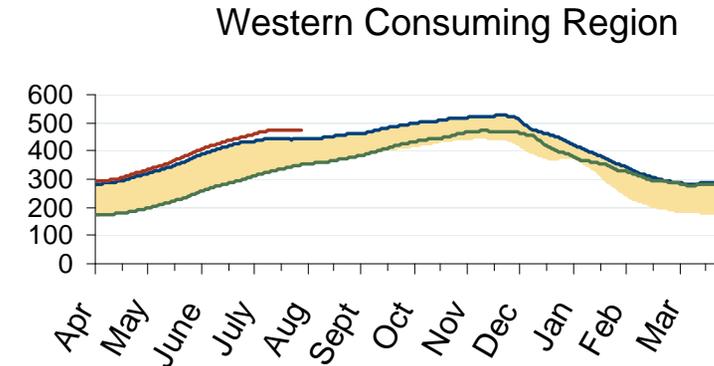
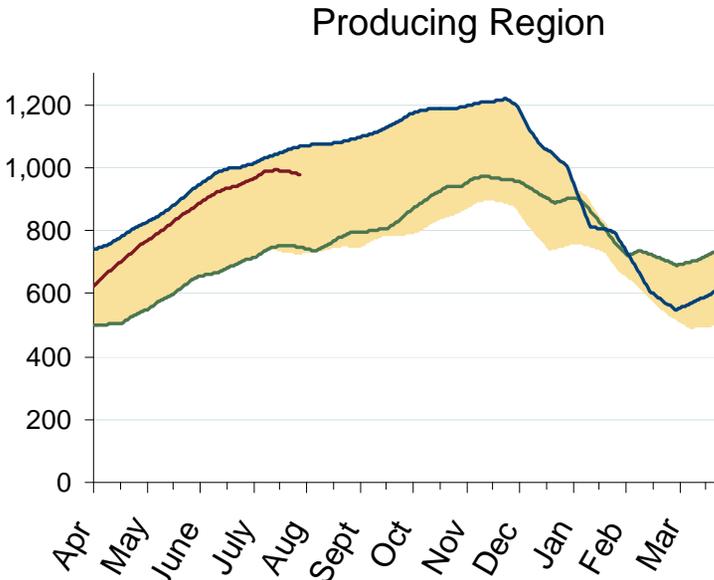
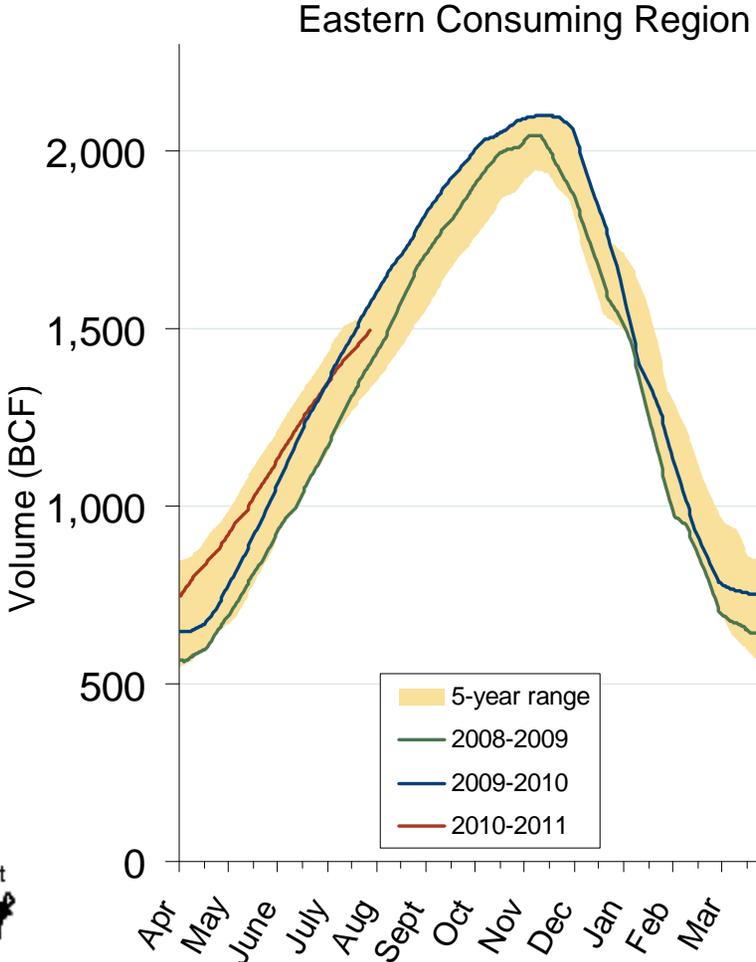
Total U.S. Working Gas in Storage



Source: Derived from EIA data.
August 2010 Western Snapshot Report

Updated August 6, 2013

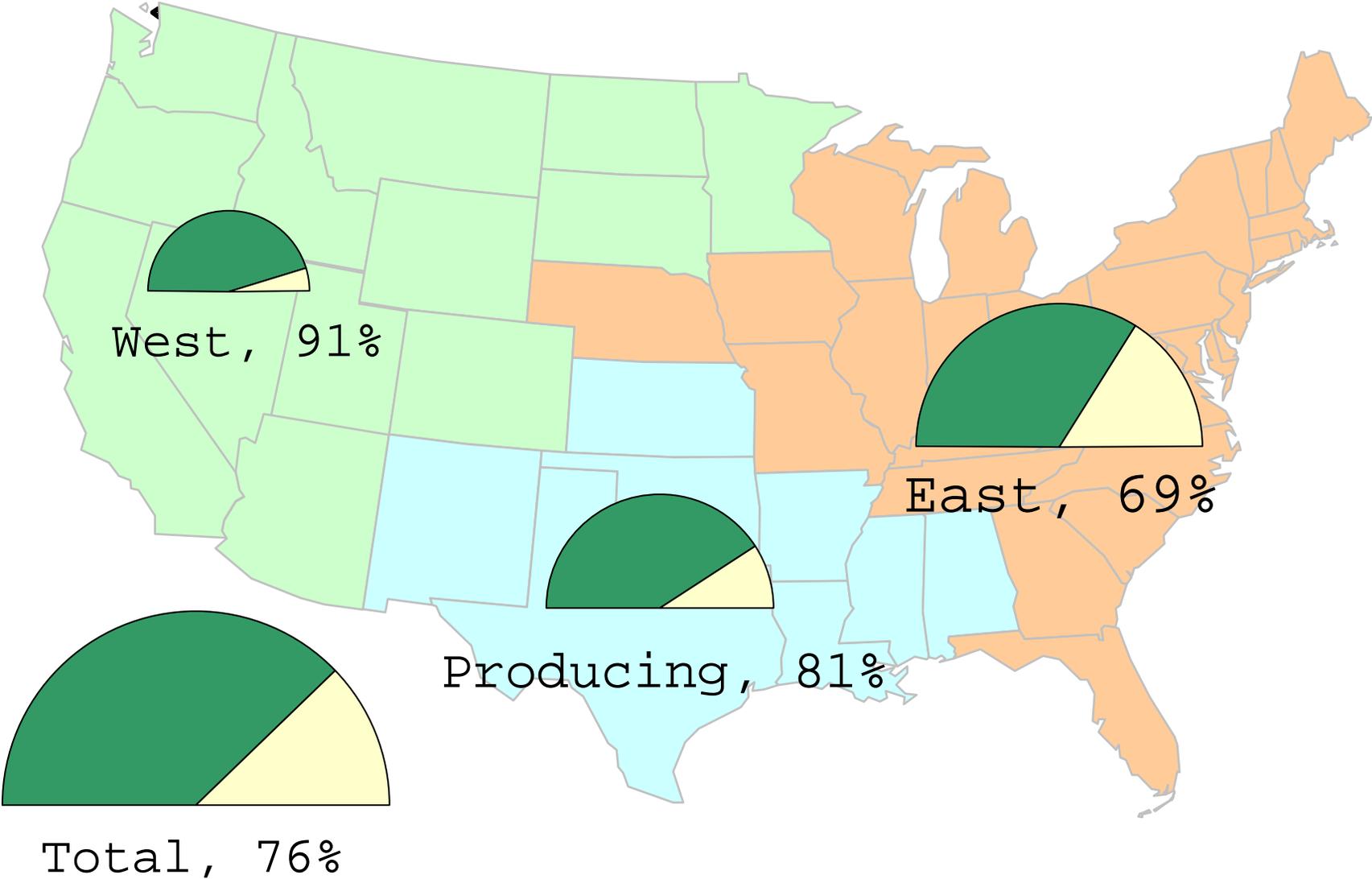
Regional Totals of Working Gas in Storage



Source: Derived from EIA data. August 2010 Western Snapshot Report

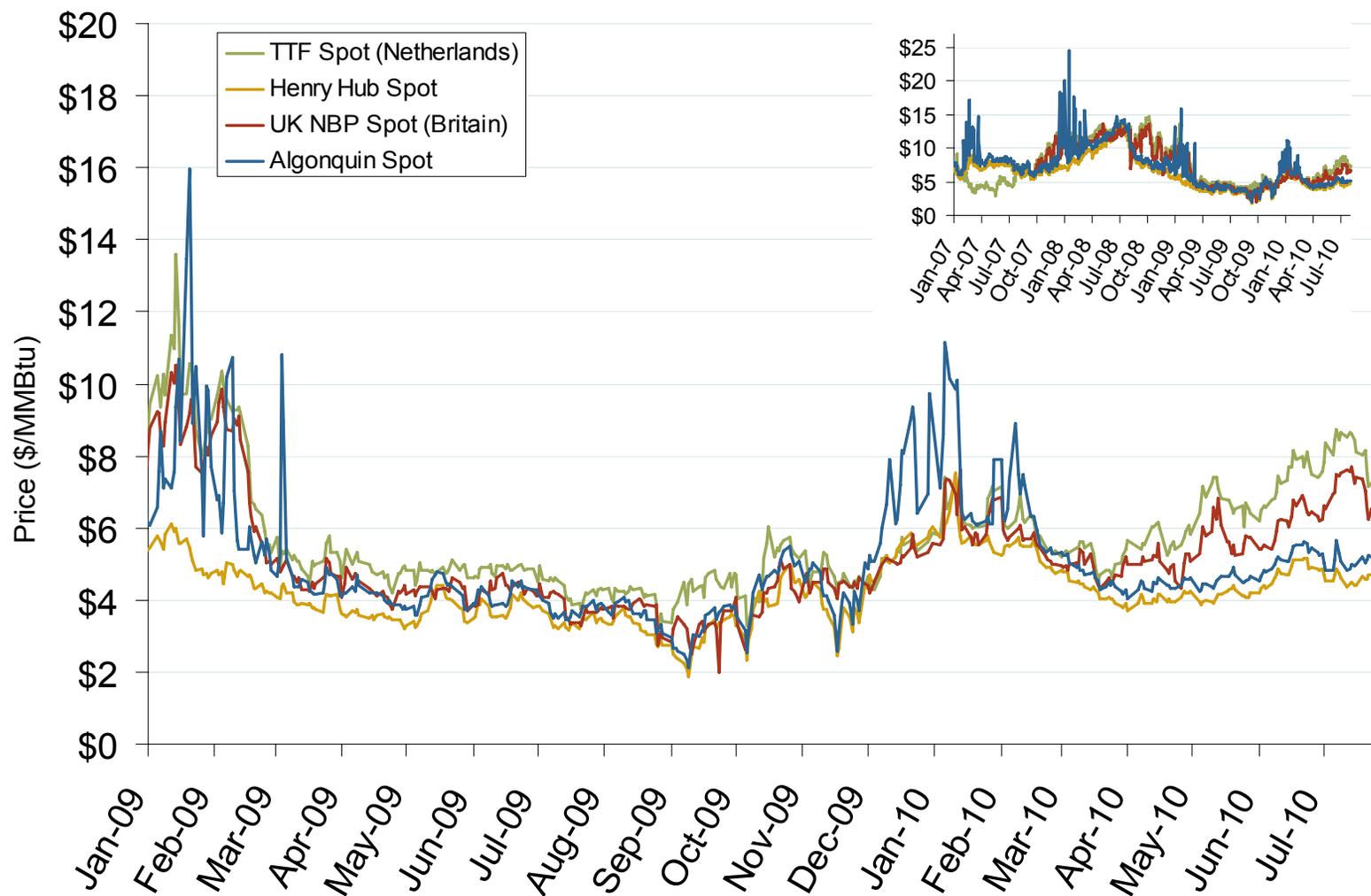
Updated August 6, 2014

Natural Gas Storage Inventories – % full on July 30, 2010

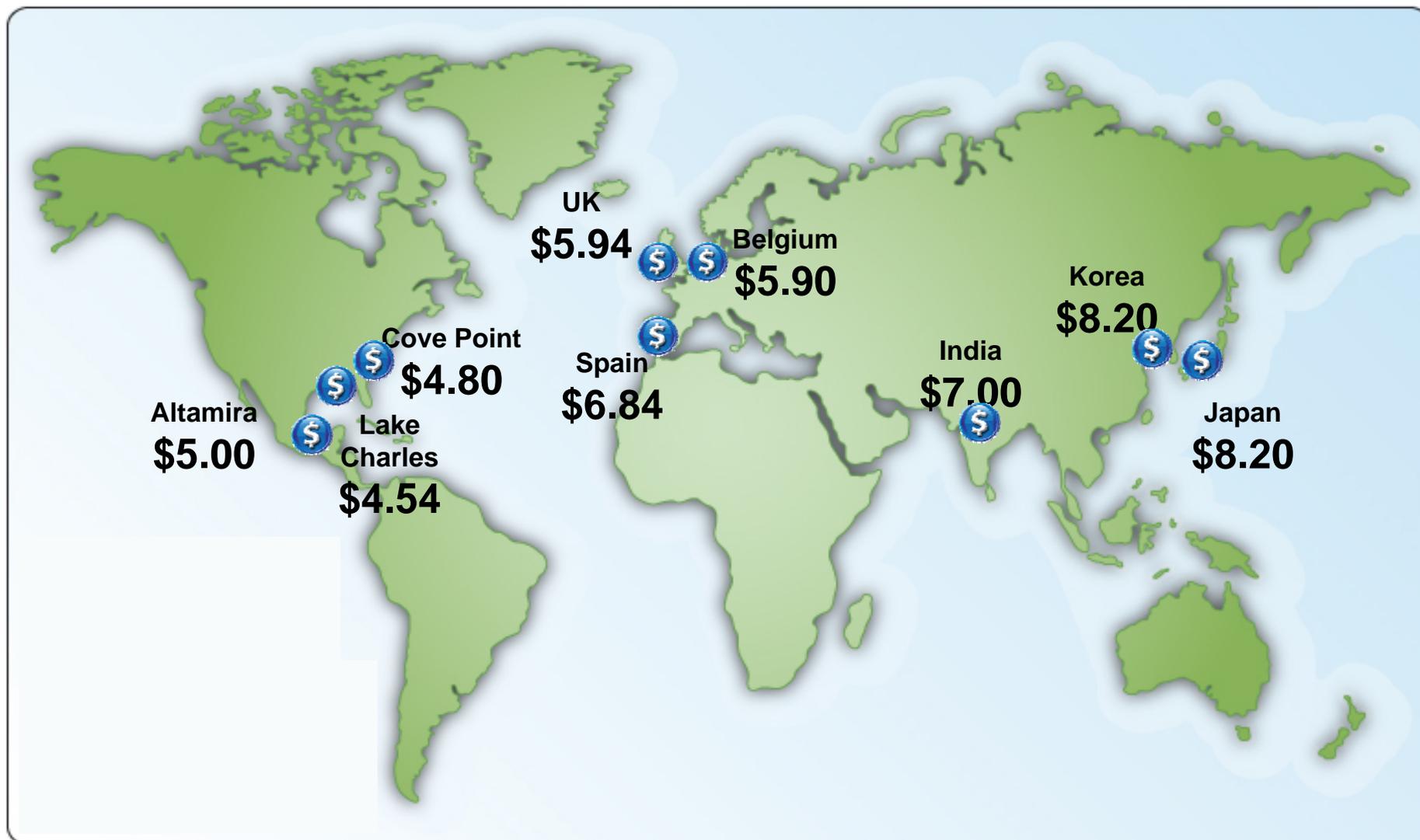


Source: Derived from EIA Weekly Storage Report and the 2009 Estimated Peak Underground Working Gas Storage Capacity. Updated August 6, 2010 20022
August 2010 Western Snapshot Report

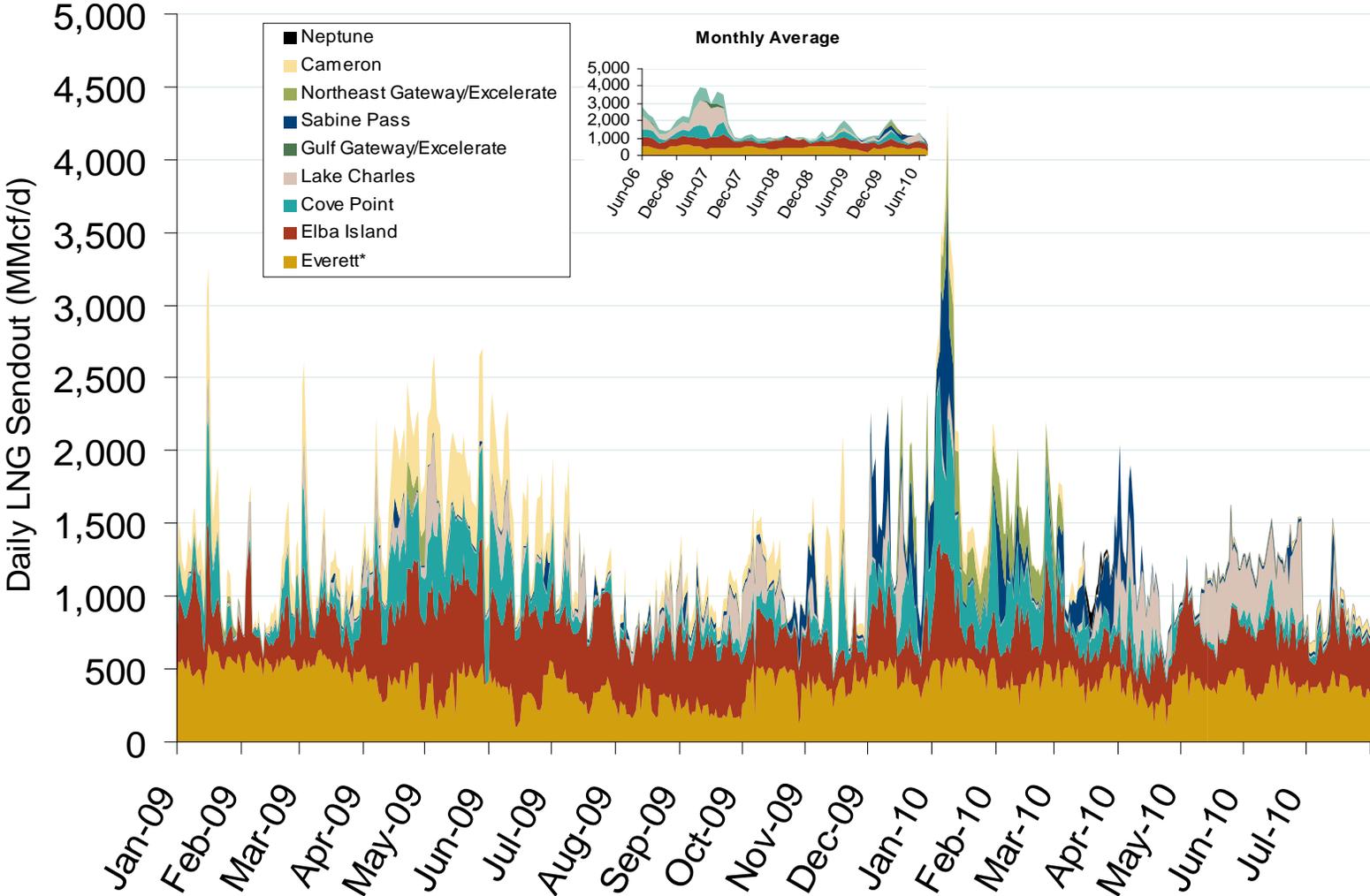
Atlantic Basin European and US Spot Natural Gas Prices



World LNG Estimated August 2010 Landed Prices



Daily Gas Sendout from Existing U.S. LNG Facilities

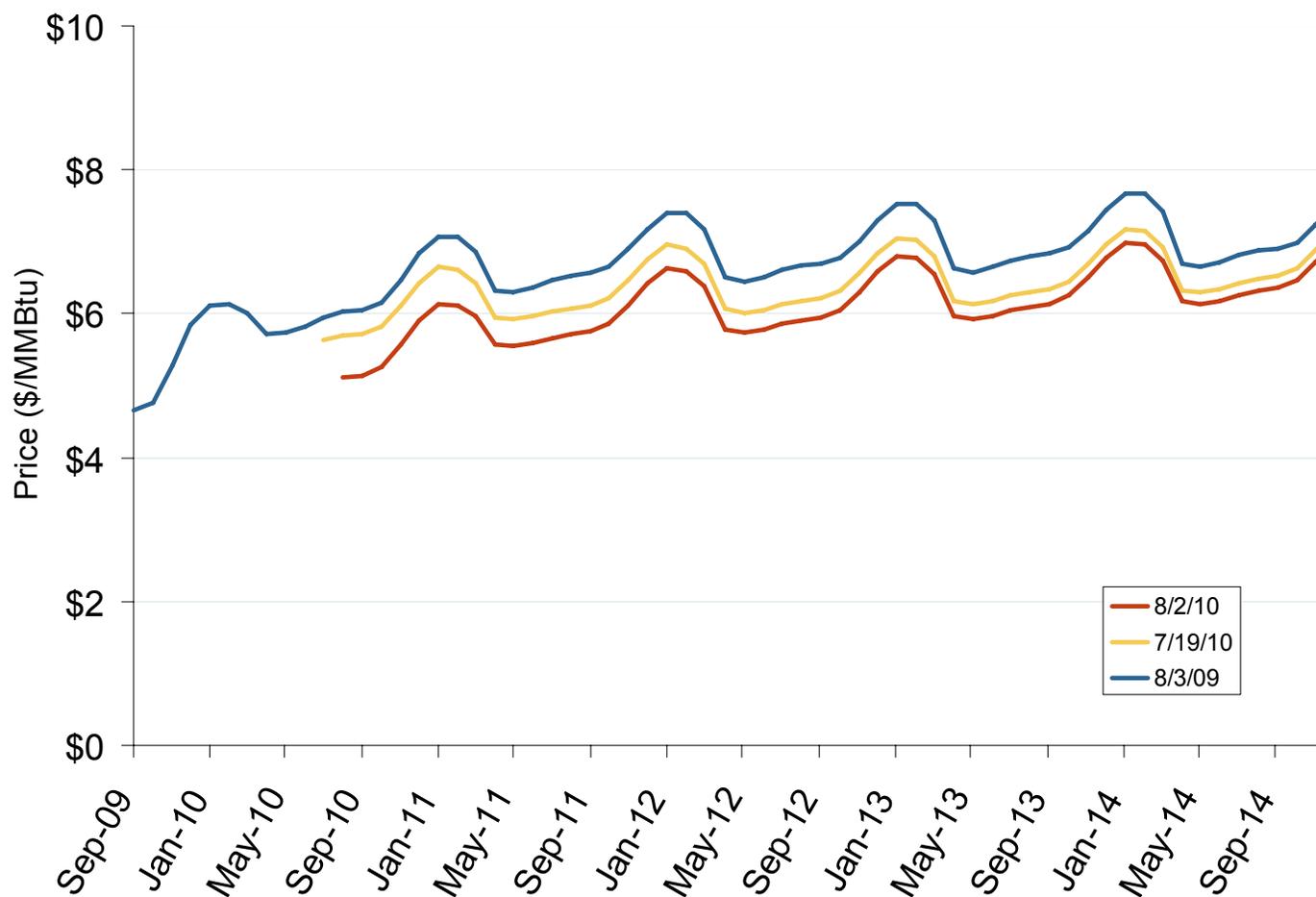


Source: Derived from *Bentek* data.

* 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.

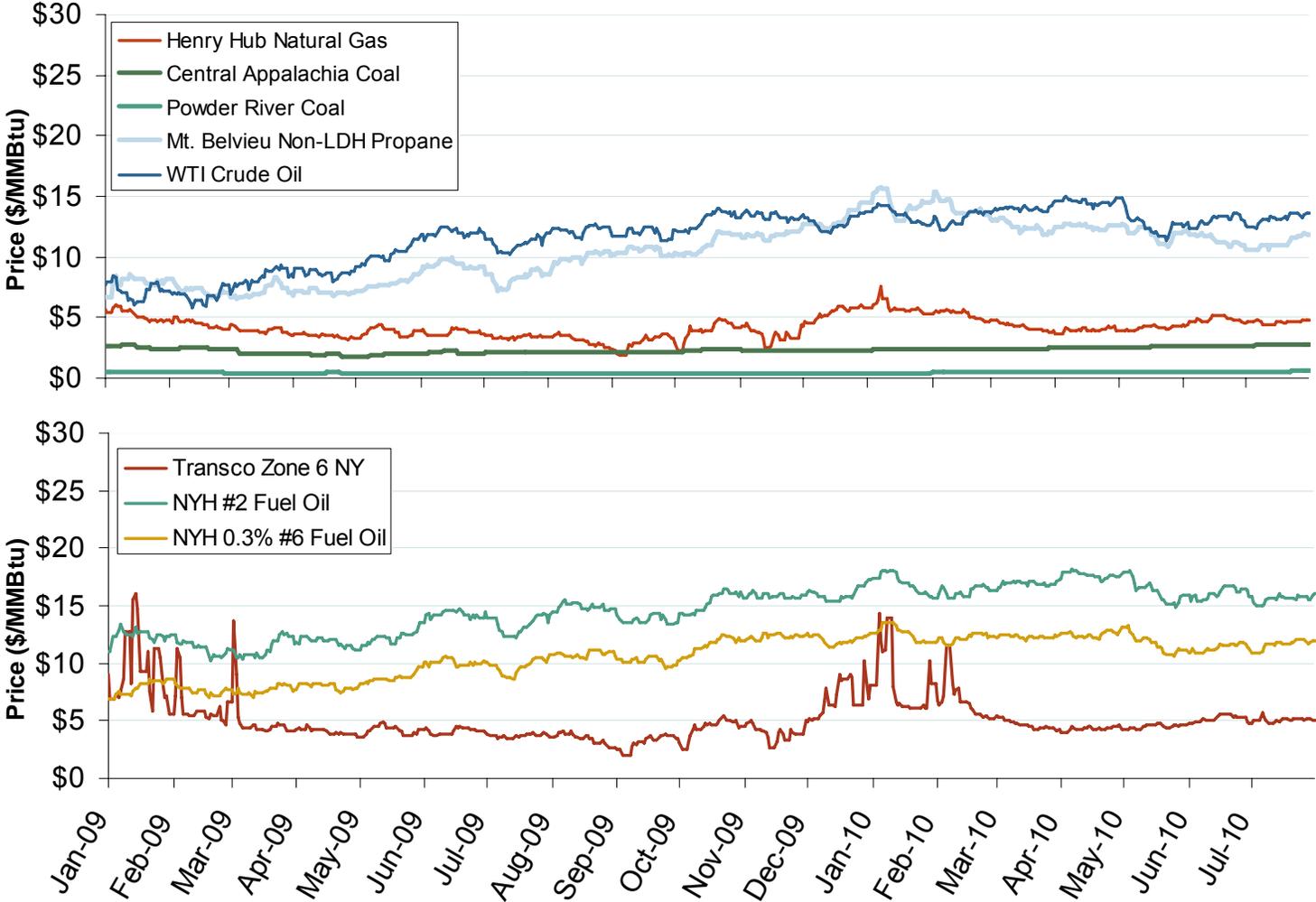
Updated August 6, 2010

NYMEX Natural Gas Forward Price Curve



The NYMEX futures contract trades in 10,000 million Btu units. The blue series shows the forward price curve for these contracts 1-year ago. The red and yellow curves show prices for contracts traded on the current and previous months.

Oil, Coal, Natural Gas and Propane Daily Spot Prices

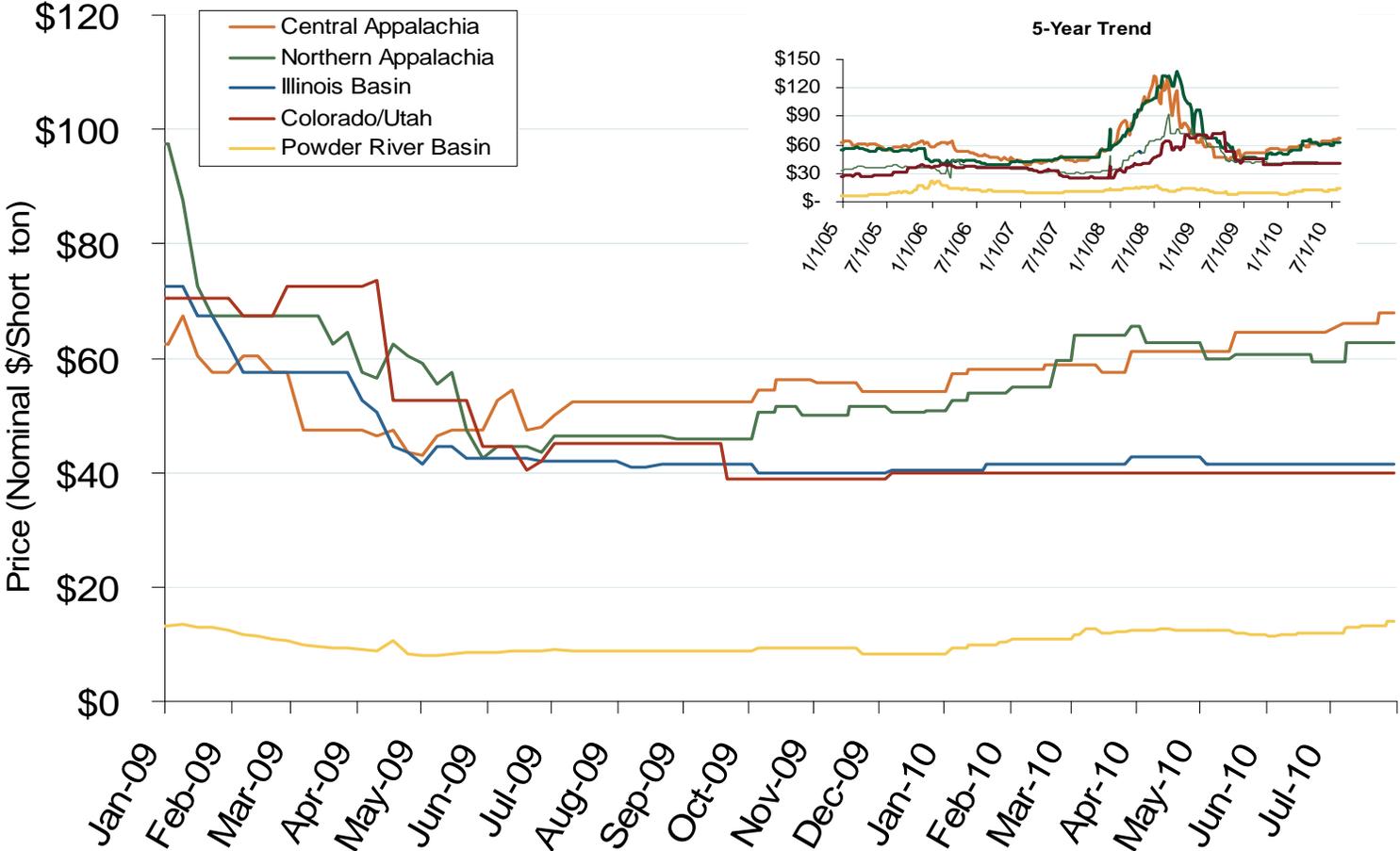


Source: Derived from ICE and Bloomberg data.

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 August 6, 2010

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.
August 2010 Western Snapshot Report

Updated August 6, 2010

Western Coal Stockpiles at Electric Power Generating Facilities

