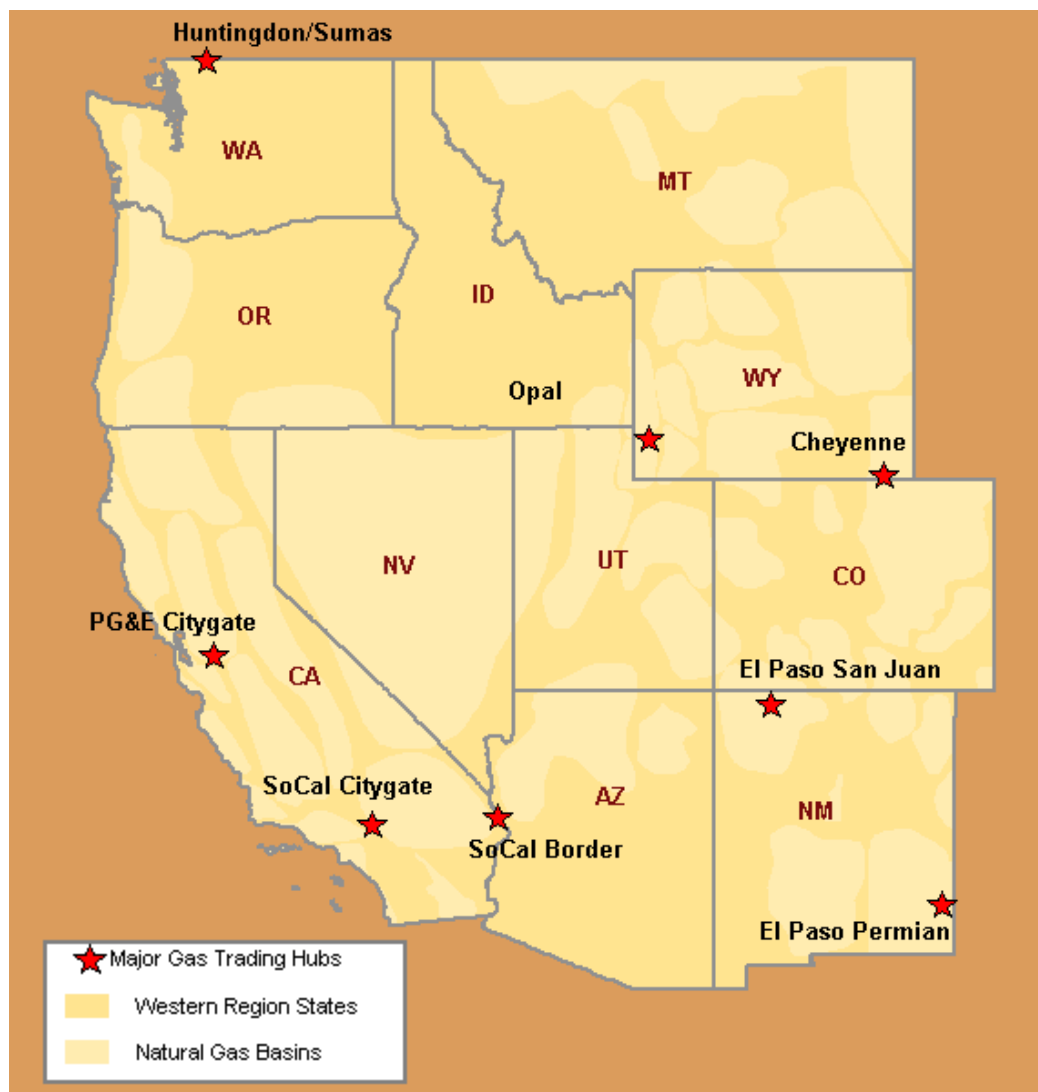


Western Natural Gas Market: Overview and Focal Points

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Western Natural Gas Region



Source: Velocity Suite Intelligent Map

Updated September 30, 2009 2070

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OVERVIEW

Market Description

The Western market experienced a dramatic increase in gas production over the past five years and now constitutes 36% of total US Dry Gas production compared to 29% in January 2005. Despite the significant decline in active rigs in the Rockies since August 2008, production has been sustained at 9.3 Bcf/d. Natural gas is the marginal fuel for dispatching power plants throughout most of the West. However, gas use is dependent on a complex set of factors: weather, storage inventory levels, pipeline capacity availability, hydroelectric resource availability, power-related imports, transmission line congestion, and other fossil-plant availabilities.

This region has added new pipeline capacity to export the growing supply. Most importantly, the three phase Rockies Express Pipeline (REX) was added over the past three years. It is the largest transcontinental pipeline in service linking Colorado to Lebanon, Ohio with a capacity of 1.6 Bcf/d. The third phase of REX is expected to be completed by November 2009 reaching its terminus in Clarington, Ohio. REX has had a significant impact in altering continental US gas prices. Rockies gas is the lowest priced gas in the US; thus, REX has placed significant downward price pressure on MidContinent gas prices the past two years by displacing a significant quantity of higher cost MidContinent and Gulf Supplies. Another important infrastructure addition is the new Transwestern Pipeline Phoenix Lateral which is able to move 0.5 Bcf/d of San Juan gas from Transwestern's mainline in north-central Arizona into Phoenix. This affords customers a competitive choice between Transwestern and El Paso gas supplies to meet the increase in gas demand in the Phoenix region's largely gas-fired generation. The new lateral can help mitigate storage capacity limitations in the Southwest especially during peak periods.

There have been some storage capacity additions the past five years: Imports from Western Canada, while down 38% since January 2005, still supply 1.8 Bcf/d of natural gas to the West. California accounts for more than one-half of total regional gas use. Arizona added a significant amount of gas-fired generating boosting its share of total West demand from 14% in July 2005 to 19% in July 2009. Overall regional gas use is split somewhat comparably amongst the residential, industrial, and power sectors. Physical and financial gas-related products are traded actively at numerous market locations in the West. Southern California restructured its gas market in October 2008 allowing customers firm access rights similar to customers in wholesale gas markets. A new Southern California Citygate trading hub was created to promote competition and the hub is now actively traded and an important place for price formation in that market.

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Geography

States covered: Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Washington and Wyoming.

Major Trading Hubs

Cheyenne Hub, Opal, PG&E Citygate, SoCal Border, SoCal Citygate, El Paso San Juan, El Paso Permian, and Sumas.

Pipeline Flows

Major Pipelines: Trailblazer, Cheyenne Plains, Rockies Express (REX)*, El Paso, Colorado Interstate, Kern, Northwest Pipeline Gas carry a significant amount of gas from the Rockies to the Midwest.

Average Daily Rockies Deliveries to the East on Cheyenne Plains and REX:

2005: 0.42 Bcf/d

2006: 0.56 Bcf/d

2007: 0.7 Bcf/d

2008: 1.8 Bcf/d

2009: 2.2 Bcf/d (Jan-June)

* The REX pipeline extended flows of Rockies gas east in two phases: the first entered service in January 2008 to central Missouri with a capacity of 1.5 Bcf/d. The second phase extended further east to the western Ohio border at Lebanon in June 2009. The pipeline capacity is 1.5 Bcf/d which will expand to 1.8 Bcf/d and terminate in eastern Ohio at Clarington in November 2009.

Average Daily Rockies Deliveries West on Kern, Northwest Pipeline and Southern Trails:

2005: 2.38 Bcf/d

2006: 2.62 Bcf/d

2007: 2.71 Bcf/d

2008: 2.74 Bcf/d

2009: 1.74 Bcf/d (Jan-June)

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Pipeline Flows (continued)

Average Daily Western Deliveries to the Permian & San Juan on El Paso and Transwestern:

2005: 2.67 Bcf/d

2006: 2.87 Bcf/d

2007: 3.15 Bcf/d

2008: 3.28 Bcf/d

2009: 3.24 Bcf/d (Jan-Jun)

Imports and Exports

Average Daily Imports from Canada into the West:

2005: 2.52 Bcf/d

2006: 2.47 Bcf/d

2007: 2.61 Bcf/d

2008: 2.52 Bcf/d

2009: 2.21 Bcf/d (Jan-Jun)

Major Importers: Northwest and GTN are the only two pipelines importing all of the gas from Canada into the Western U.S.

Contact Information

For specific issues regarding the Northeast Natural Gas Region please contact the following Analysts:

Gary Mahrenholtz – gary.mahrenholtz@ferc.gov

Western Natural Gas Market: Yearly Hub Prices

Federal Energy Regulatory Commission • Market Oversight • www.ferc.gov/oversight**Annual Average Spot Hub Prices**

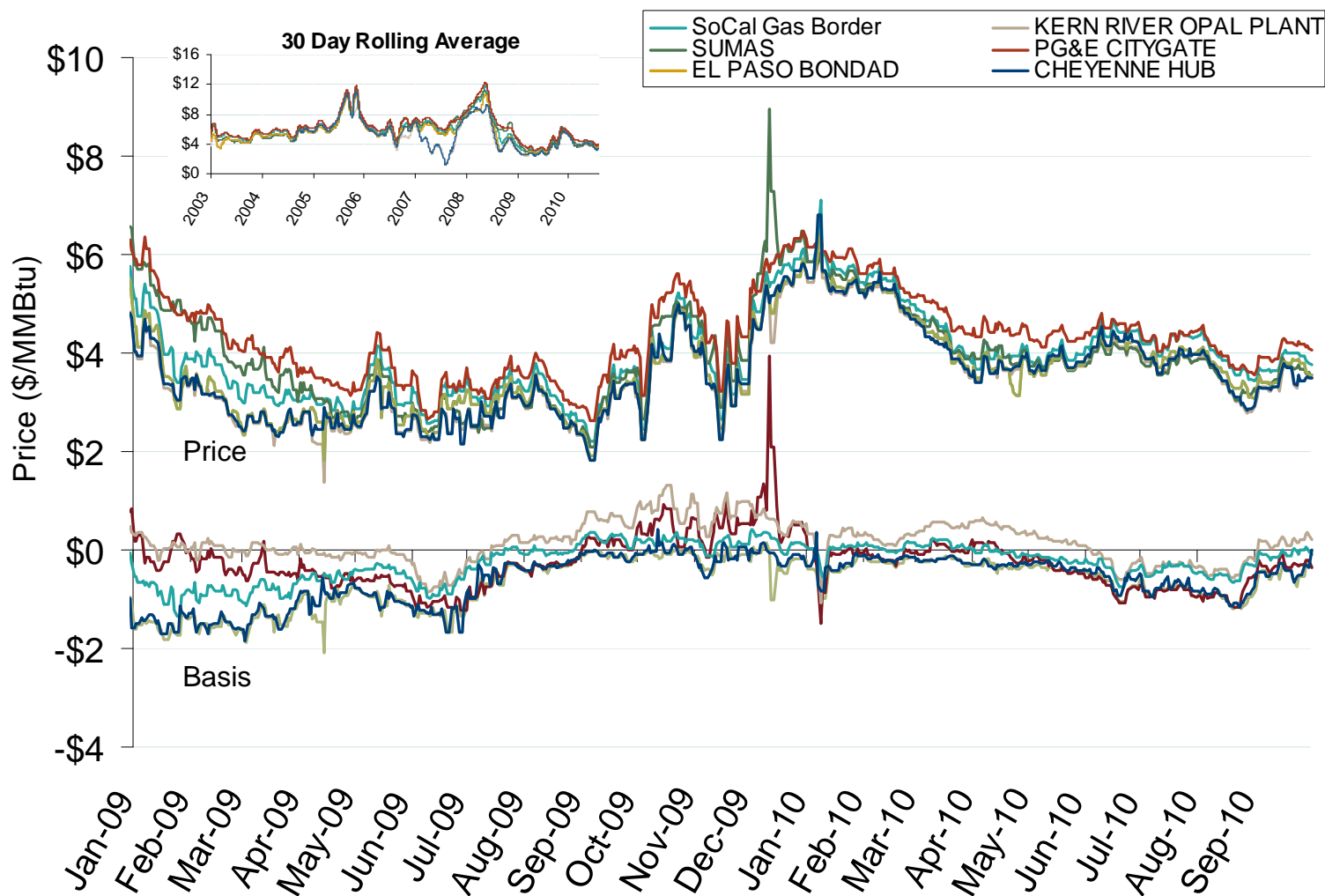
Annual Average Day Ahead Prices (\$/MMBtu)						
	2005	2006	2007	2008	2009	5-Year Avg
Socal Border	\$7.56	\$6.09	\$6.41	\$7.80	\$3.61	\$6.30
PG&E Citygate	\$7.94	\$6.47	\$6.89	\$8.59	\$4.13	\$6.80
Opal	\$7.17	\$5.38	\$4.07	\$6.48	\$3.13	\$5.24
Sumas (Huntington)	\$7.40	\$6.01	\$6.49	\$8.14	\$3.76	\$6.36
El Paso Bondad	\$7.17	\$5.73	\$6.02	\$6.99	\$3.28	\$5.83
El Paso San Juan	\$7.18	\$5.76	\$6.06	\$7.16	\$3.33	\$5.90
Malin	\$7.57	\$6.11	\$6.48	\$8.17	\$3.76	\$6.42

Source: Derived from *Platts* data.

Updated January 8, 2010

2068

Western Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

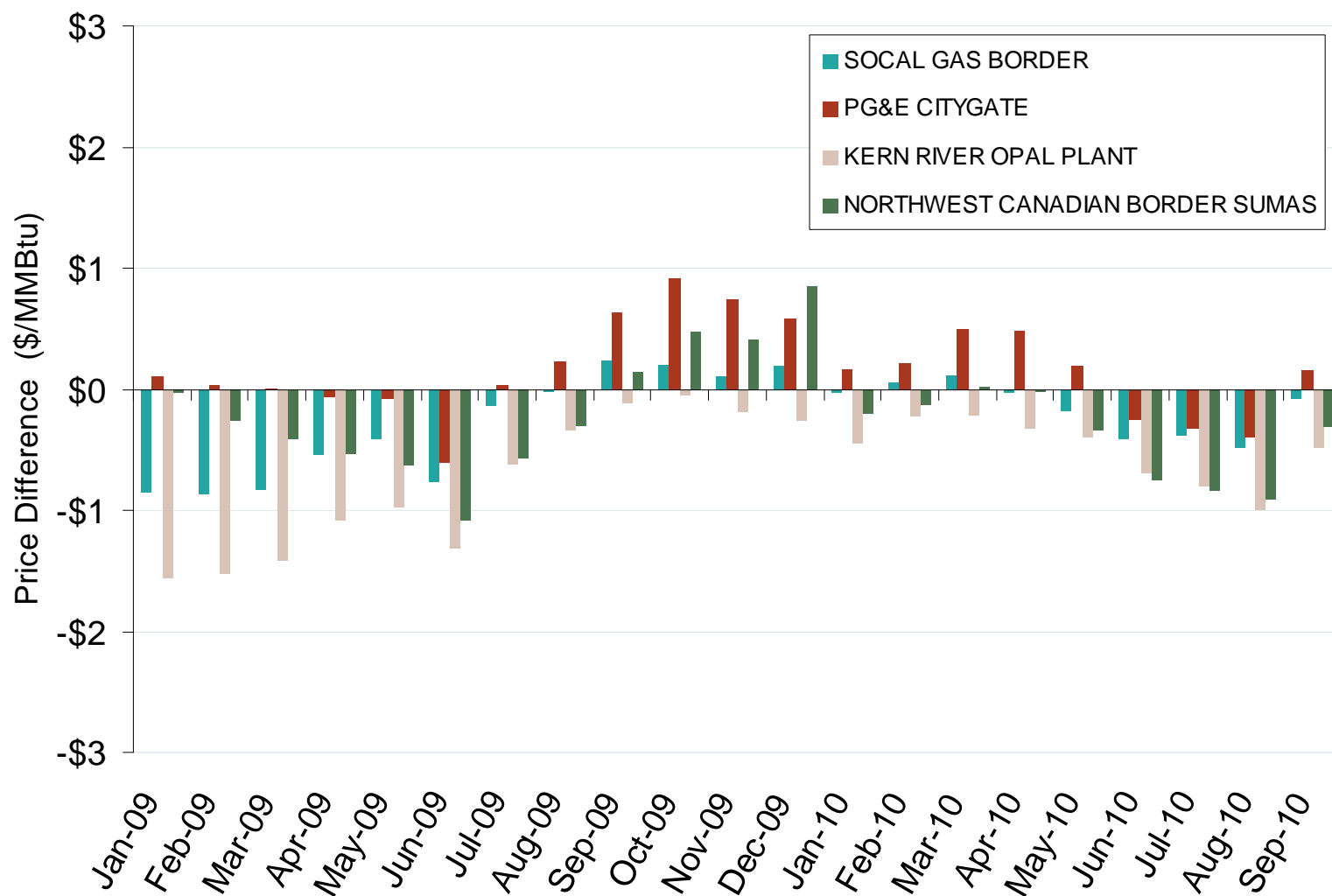
Updated October 7, 2010

2072

Western Natural Gas Market: Average Basis to Henry Hub

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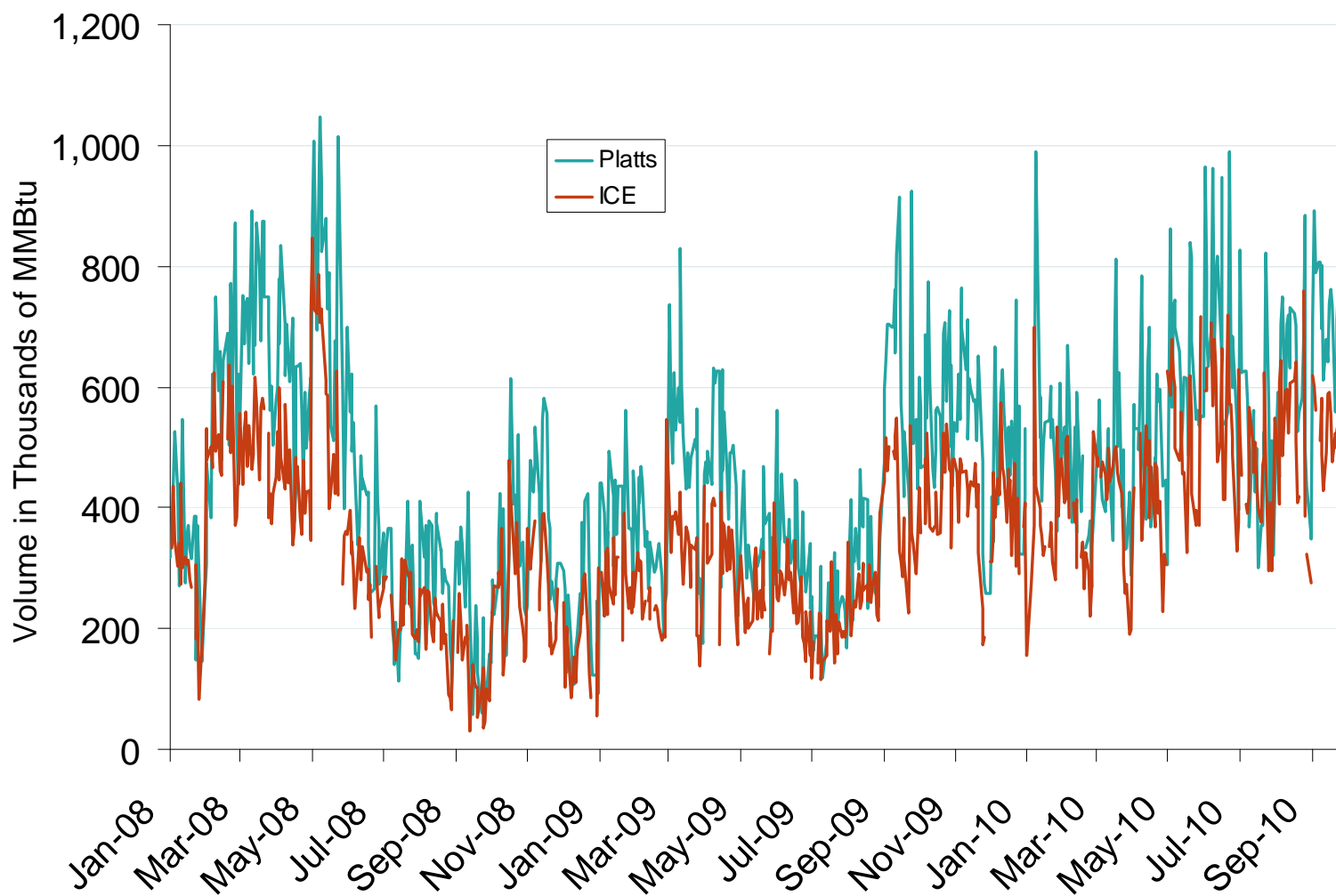
Western Monthly Average Basis Value to Henry Hub

Source: Derived from *Platts* data.

Updated October 7, 2010

2073

Published and Traded Daily Spot Volumes at Kern River

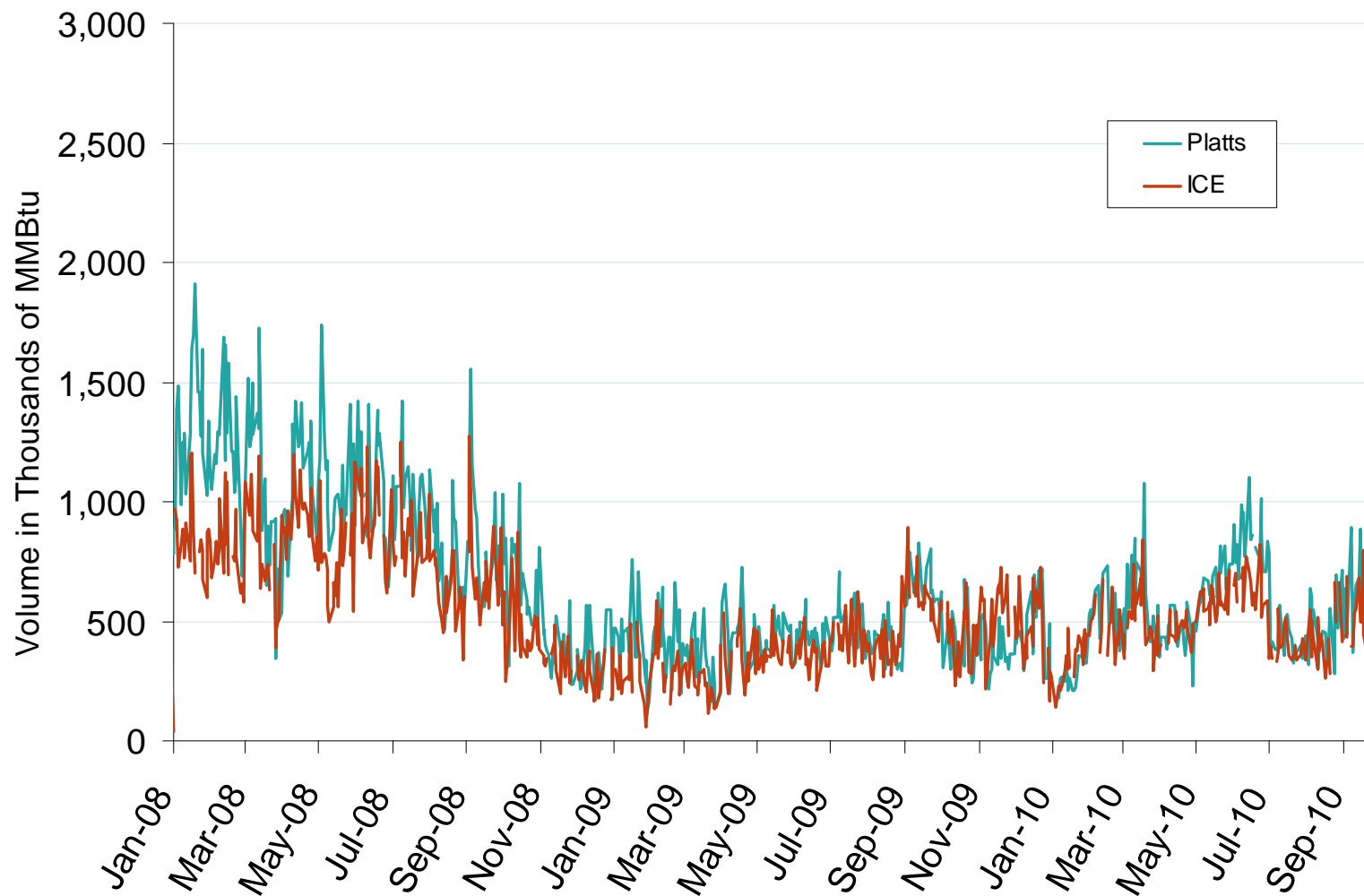


Source: Derived from *Platts* and *ICE* data.

Updated October 7, 2010

2154

Published and Traded Daily Spot Volumes at Socal Border

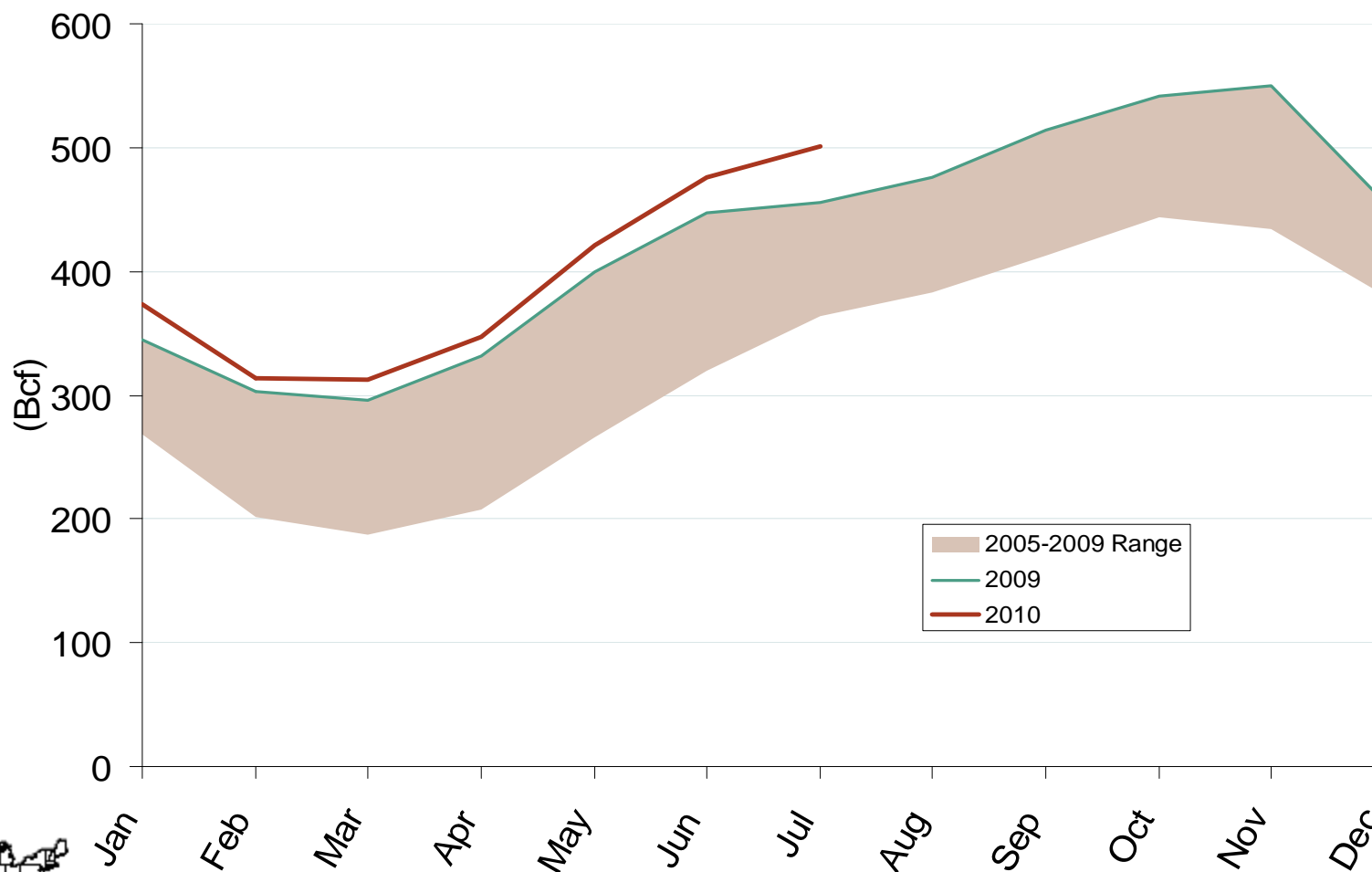


Source: Derived from *Platts* and *ICE* data.

Updated October 7, 2010

2154

Western Region Underground Working NG In Storage

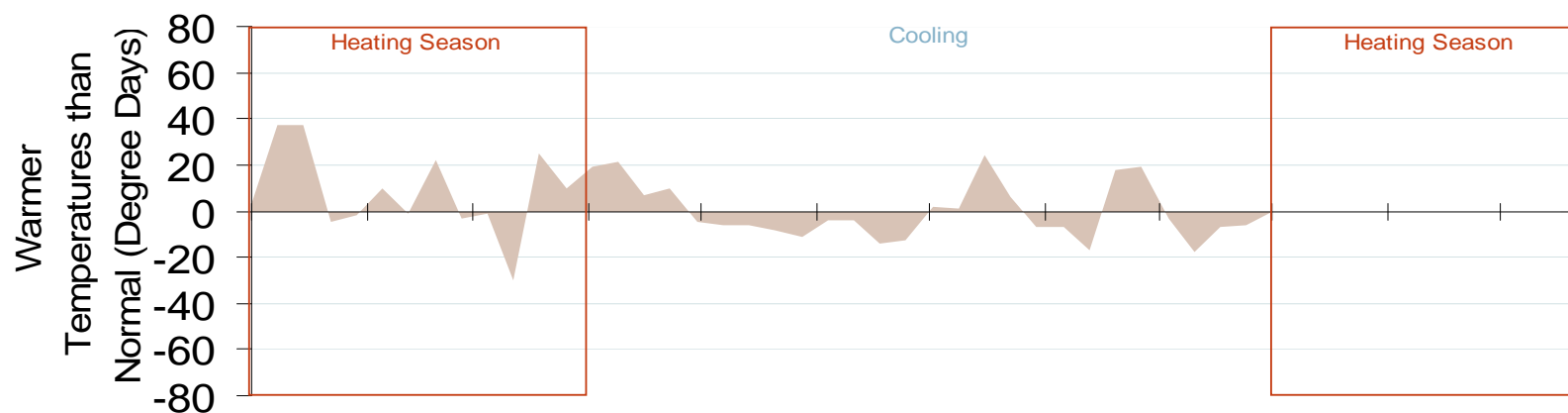
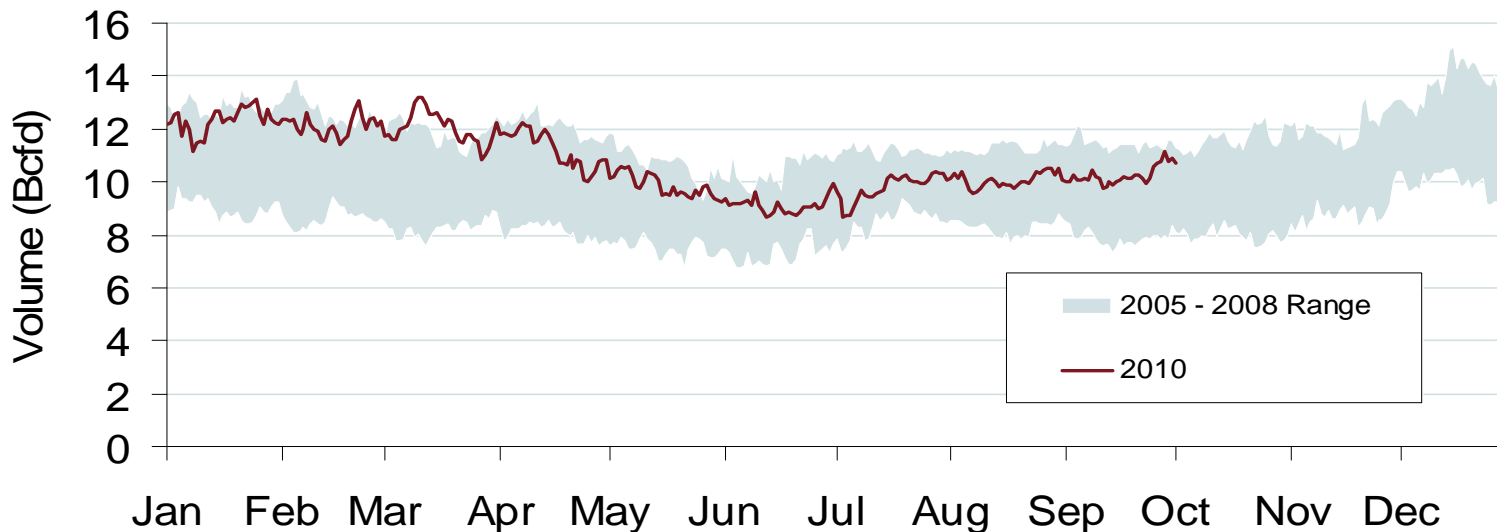


Source: Derived from EIA data.

Updated October 7, 2010

2079

Daily Western Natural Gas Demand All Sectors

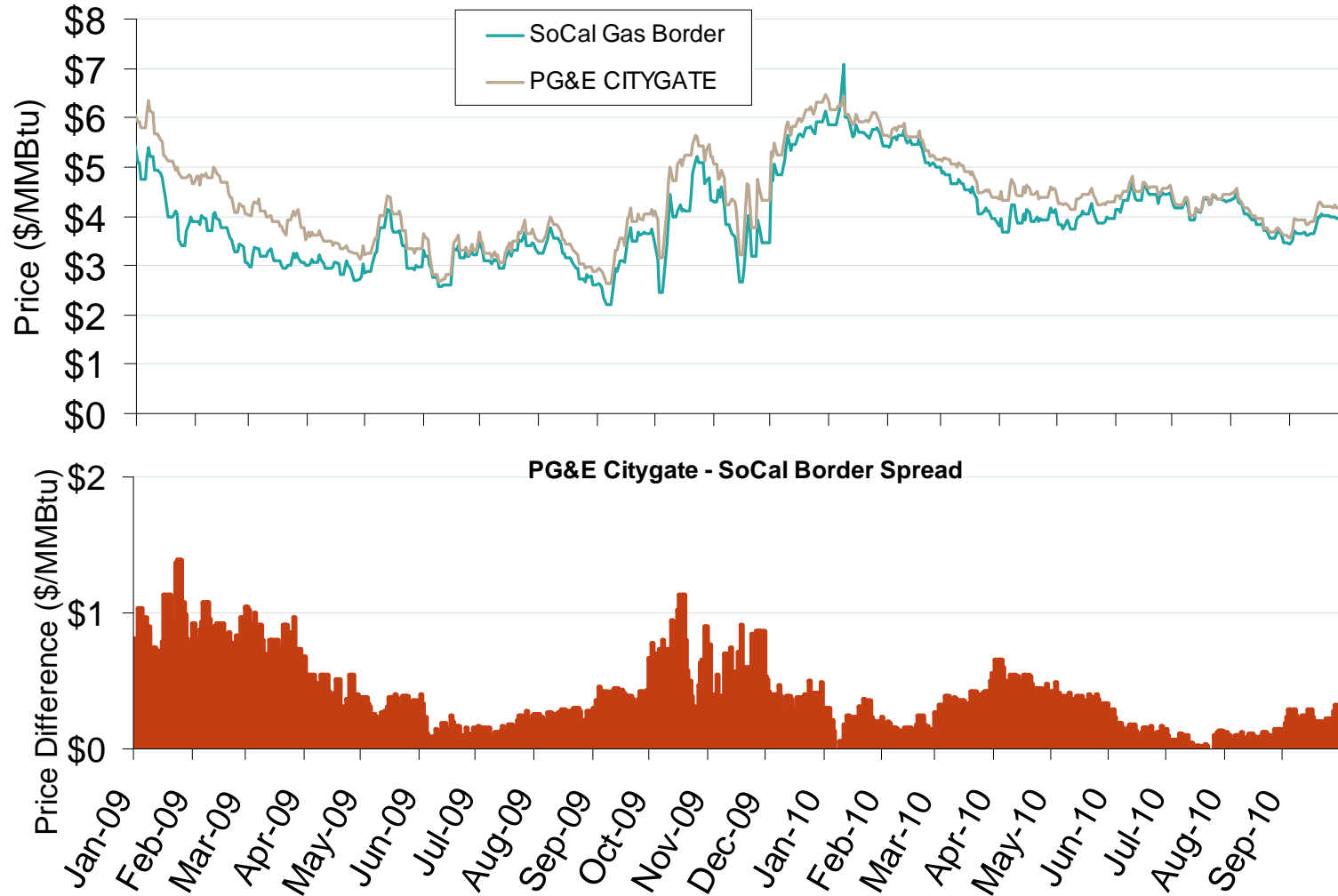


Source: Derived from Bentek Energy and Weekly NOAA data.

Updated October 7, 2010

23503

Difference in Northern and Southern California Daily Spot Prices



Source: Derived from *Platts* data.

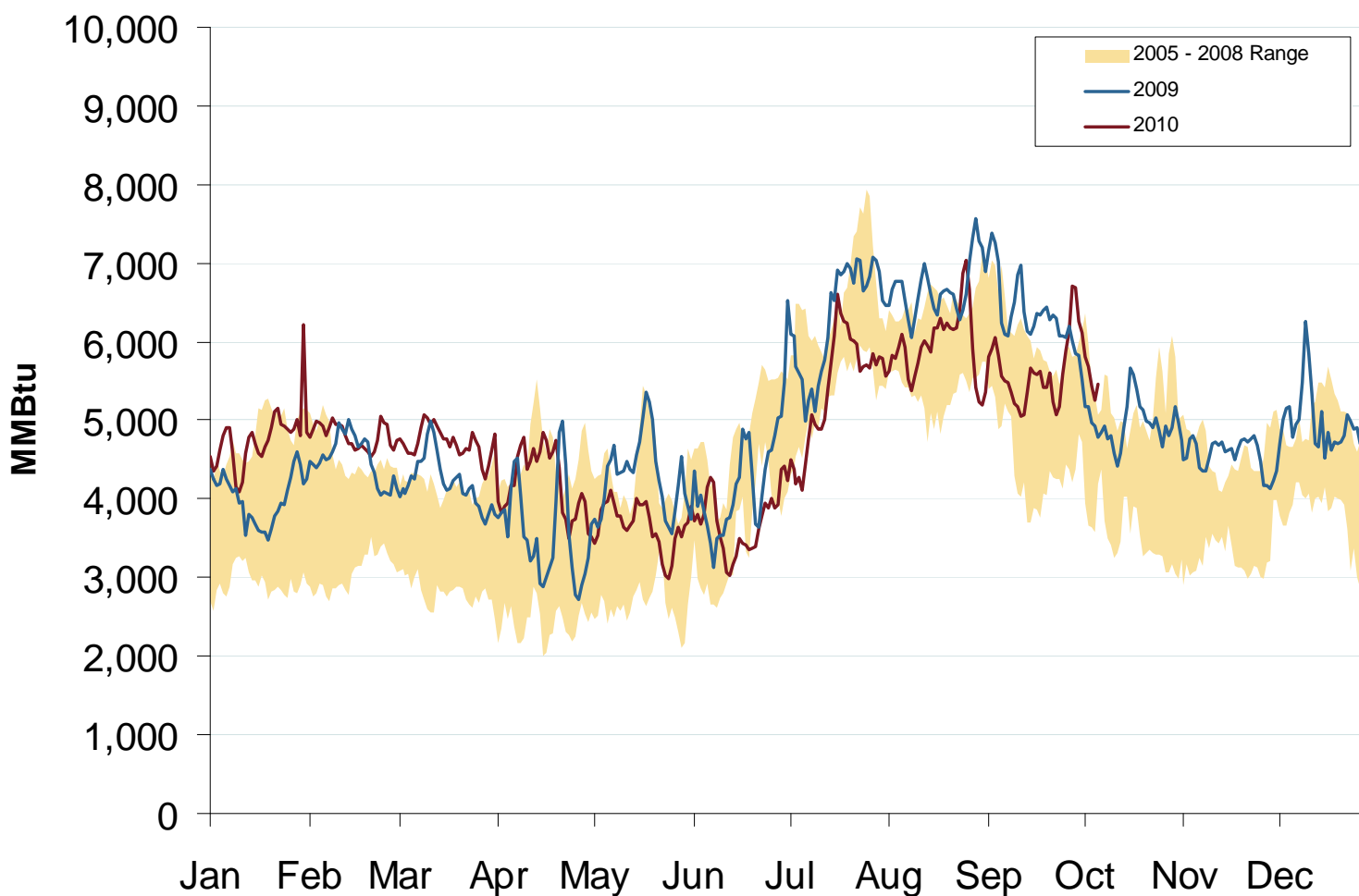
Updated October 7, 2010

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Western Natural Gas Market: NG Consumption for Power Generation

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Western Natural Gas Consumption for Power Generation



Source: Derived from Bentek Data

Updated October 7, 2010

23504