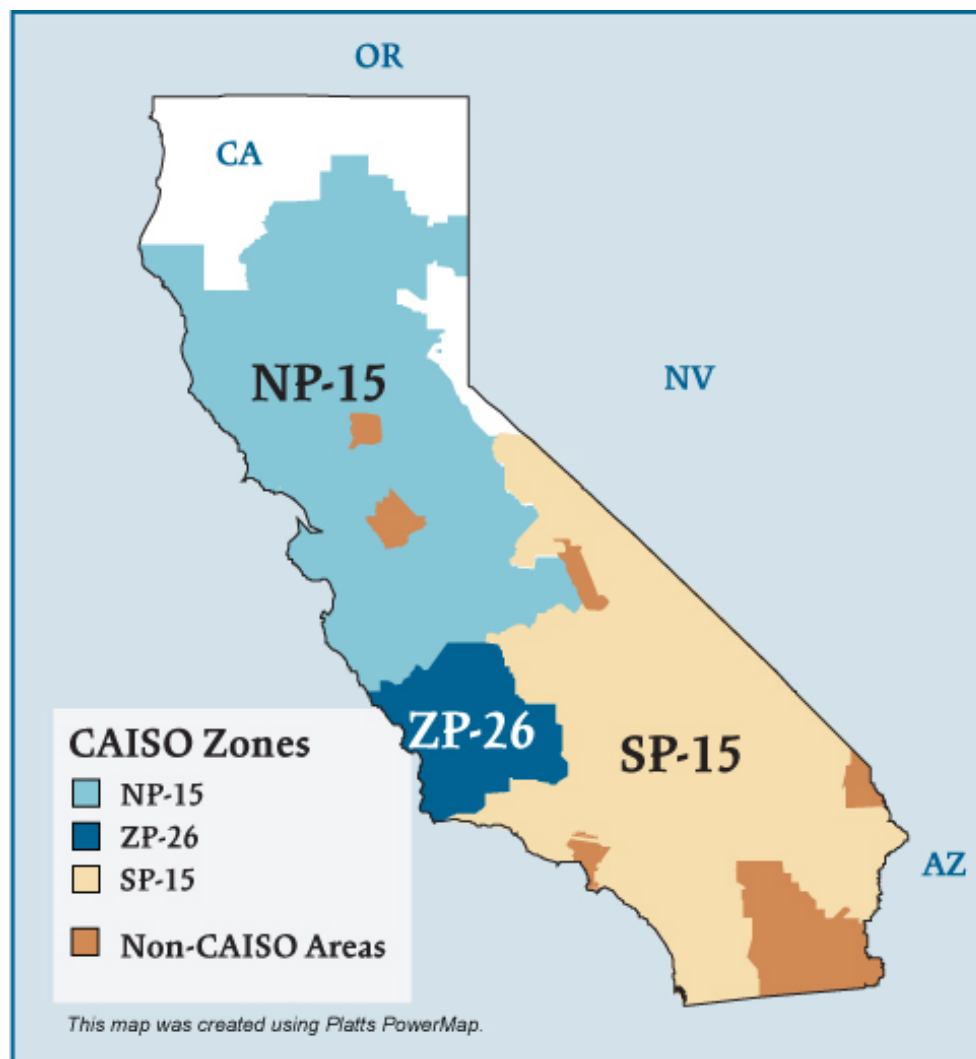


California Electric Regions



California Electric Market: Overview and Focal Points

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Overview

Geography

States covered: California (most of) and northern Baja California (Mexico)

Reliability region: California-Mexico Power Area (CAMX) sub-region of the Western Electric Coordinating Council (WECC)

Balancing authorities: California ISO (CAISO), Sacramento Municipal Utility District (SMUD), Turlock Irrigation District (TID), Los Angeles Department of Water and Power (LADWP), and Comision Federal de Electricidad (CFE).

Approximately 80% of demand in the CAMX subregion is within the area of the CAISO balancing authority. The portion of the CAMX area within Mexico is comparatively small. The remaining 20% of California's load is managed primarily by municipal utilities and irrigation districts such as the Los Angeles Department of Water and Power, the Sacramento Municipal Utility District, and the Imperial Irrigation District.

CAISO zones: NP-15, ZP-26, SP-15

RTO/ISO

California ISO (CAISO) (established 1998) operates the region's power grid and wholesale electric markets:

- Real-time imbalance energy,
- Ancillary services, and
- Transmission usage.

[CAISO 2007 State of the Markets Report](#)

Market Monitor: Keith Casey – Director, Department of Market Monitoring

Updated May 13, 2008

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California Electric Market: Overview and Focal Points

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Generation/Supply

Marginal fuel type: natural gas

Generating capacity (summer 2006): 56,347 MW

Capacity reserve (summer 2006): 6,077 MW

Reserve margin (summer 2006): 12%

Demand

All time peak demand: 50,270 MW (set July 24, 2006)

In July 2006, CAISO experienced an extreme heat wave that resulted in new records for peak loads and for temperatures across the state.

Peak demand growth: 10.7% (2006-2005)

	2004	2005	2006
Summer Peak Demand (MW)	45,597	45,431	50,270

Source: Derived from CAISO data.

Load pockets: Humbolt, North Bay, Greater San Francisco Bay, Sierra, Stockton, Los Angeles Basin, and San Diego areas.

California Electric Market: Overview and Focal Points

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Prices (CAISO only)

Annual Average Price (ISO Real-time)

NP-15:

2004: \$38.35/MWh

2005: \$54.39/MWh

2006: \$43.17/MWh

2007: \$54.44/MWh

SP-15:

2004: \$39.47/MWh

2005: \$55.57/MWh

2006: \$46.50/MWh

2007: \$54.45/MWh

Interconnections/Seams

Load serving entities within CAISO rely on imports for approximately one-fourth of their annual energy needs.

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Supply and Demand Statistics for CAISO

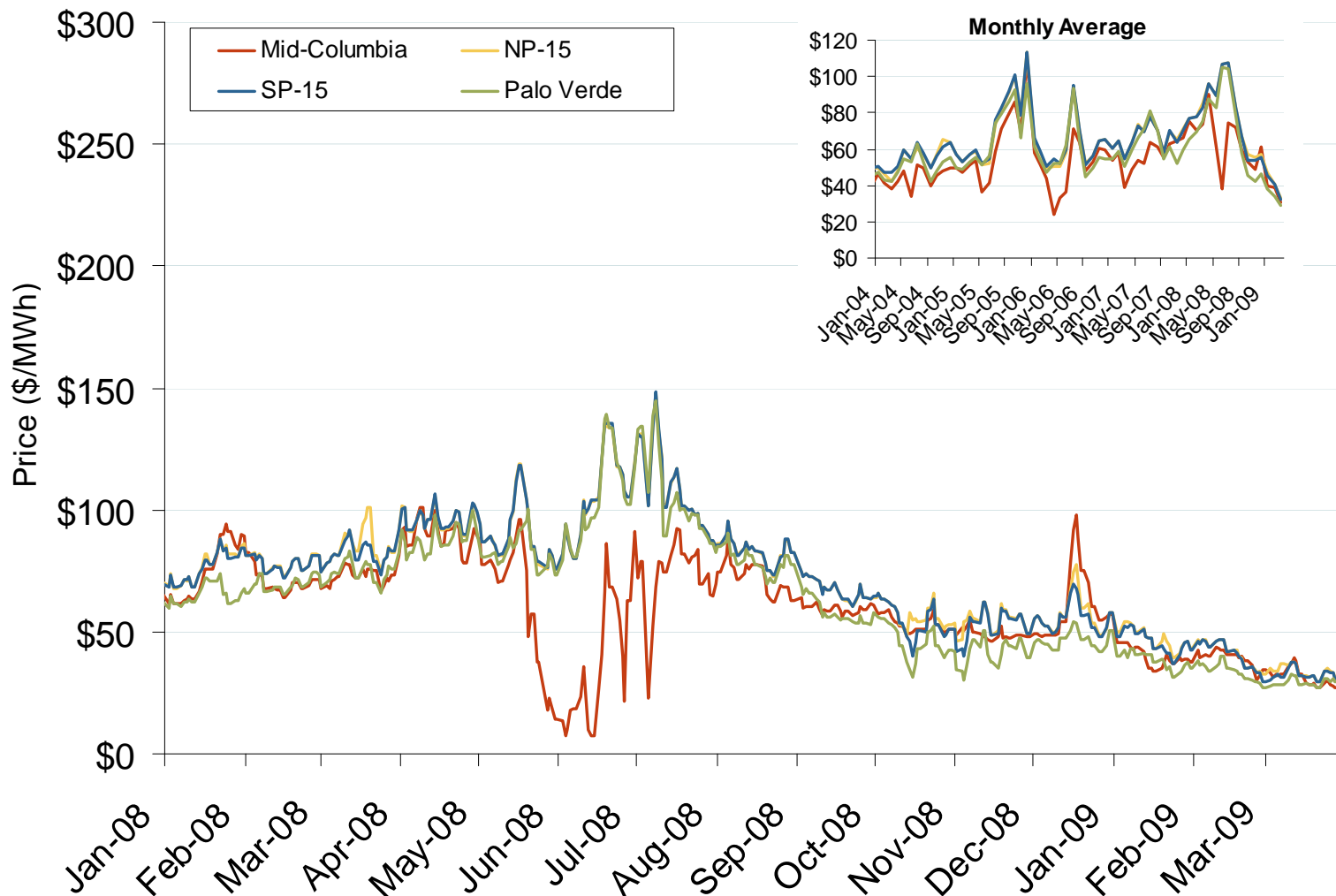
Supply Demand Statistics			
	2004	2005	2006
Summer Generating Capacity MW (1)	54,038	55,694	56,347
Summer Peak Demand MW	45,597	45,431	50,270
Summer Reserves MW	8,441	10,263	6,077
Summer Reserve Margin:	19%	23%	12%
Annual Load (GWh):	239,788	236,449	240,259
Annual Net Generation GWh	178,304	179,188	177,757

Footnote (1): Generation capacity includes dynamically scheduled generation, and excludes any derates of the resources or imports.

Annual Average Bilateral Prices

Annual Average Day Ahead On Peak Prices (\$/MWh)						
	2004	2005	2006	2007	2008	5-Year Avg
NP15	\$54.44	\$72.49	\$61.08	\$66.59	\$80.14	\$66.95
SP15	\$55.18	\$73.04	\$61.95	\$66.48	\$79.36	\$67.20

Western Daily Bilateral Day-Ahead On-Peak Prices

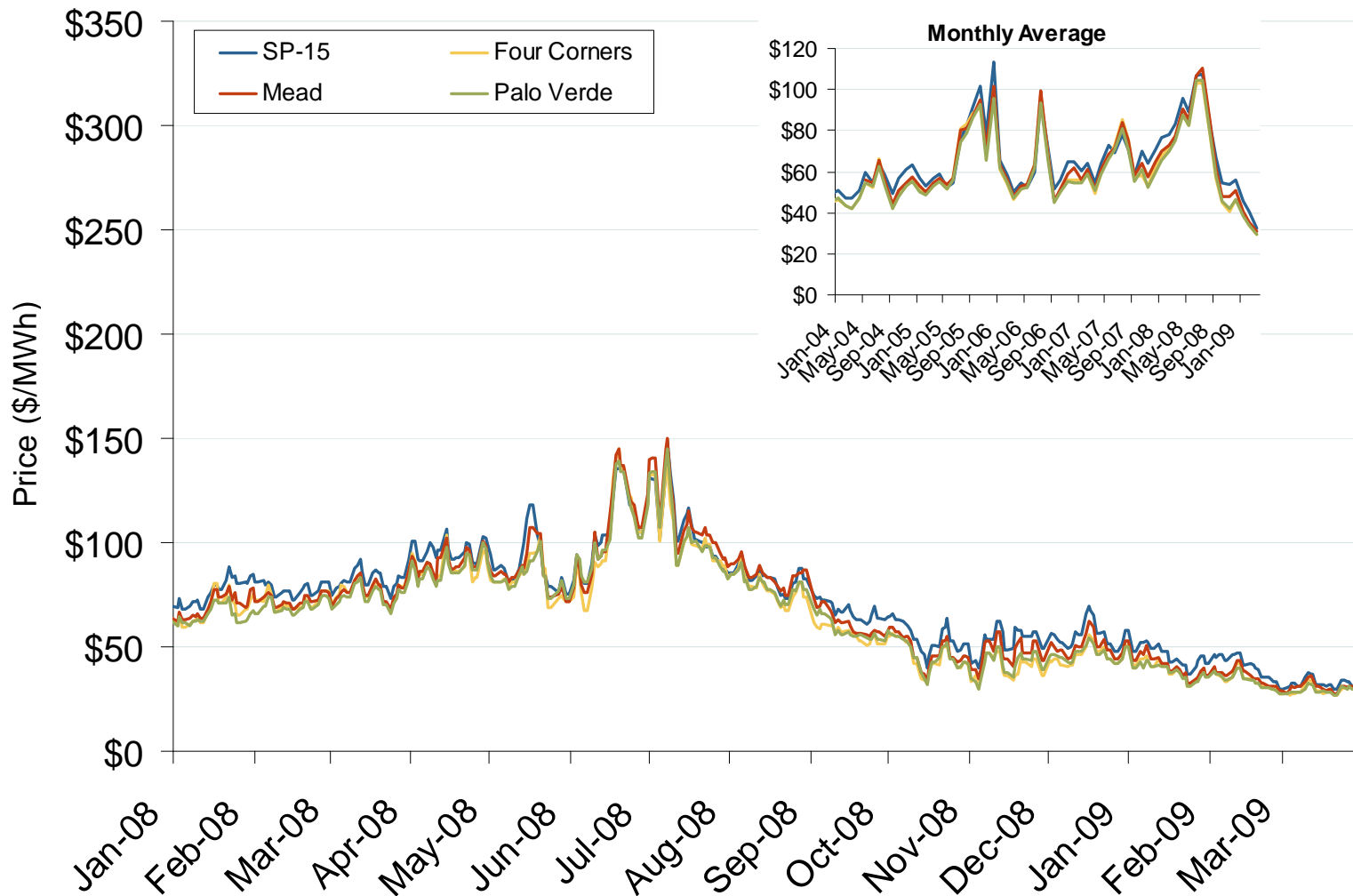


Source: Derived from *Platts* data.

Updated April 7, 2009

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Southwestern Daily Bilateral Day-Ahead On-Peak Prices

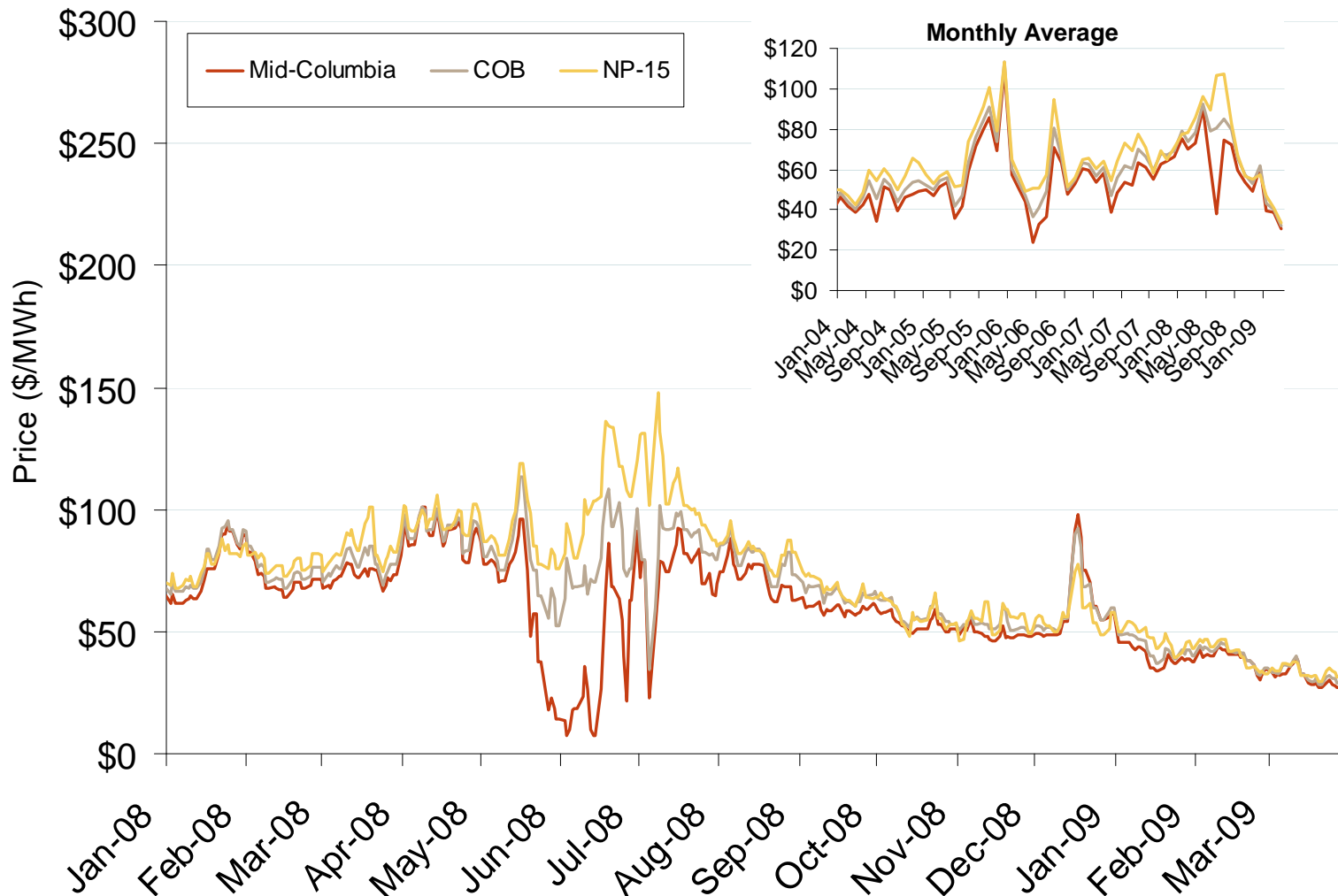


Source: Derived from *Platts* data.

Updated April 7, 2009

1005

Northwestern Daily Bilateral Day-Ahead On-Peak Prices

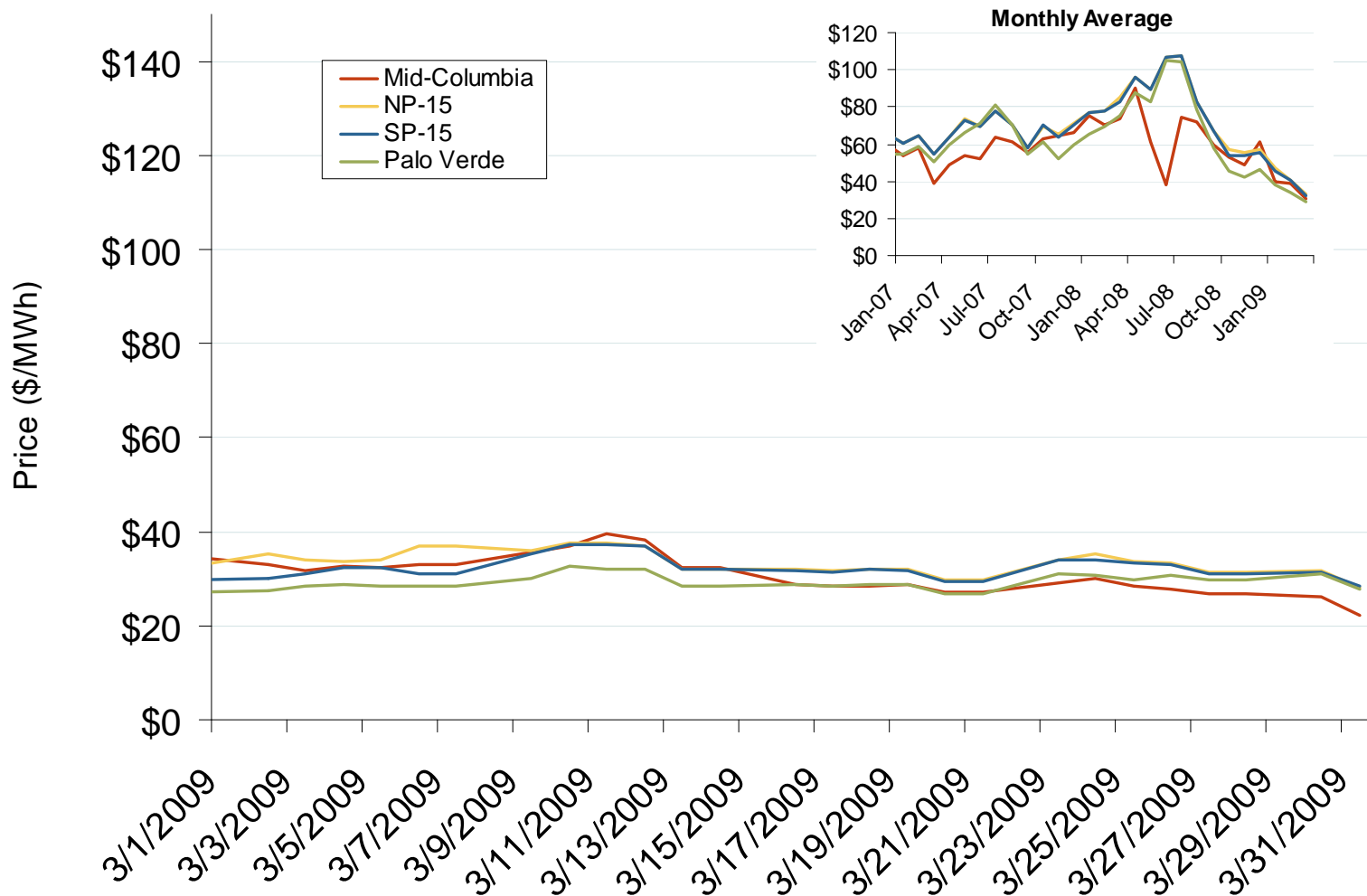


Source: Derived from Platts data.

Updated April 7, 2009

1007

Western Daily Bilateral Day-Ahead On-Peak Prices

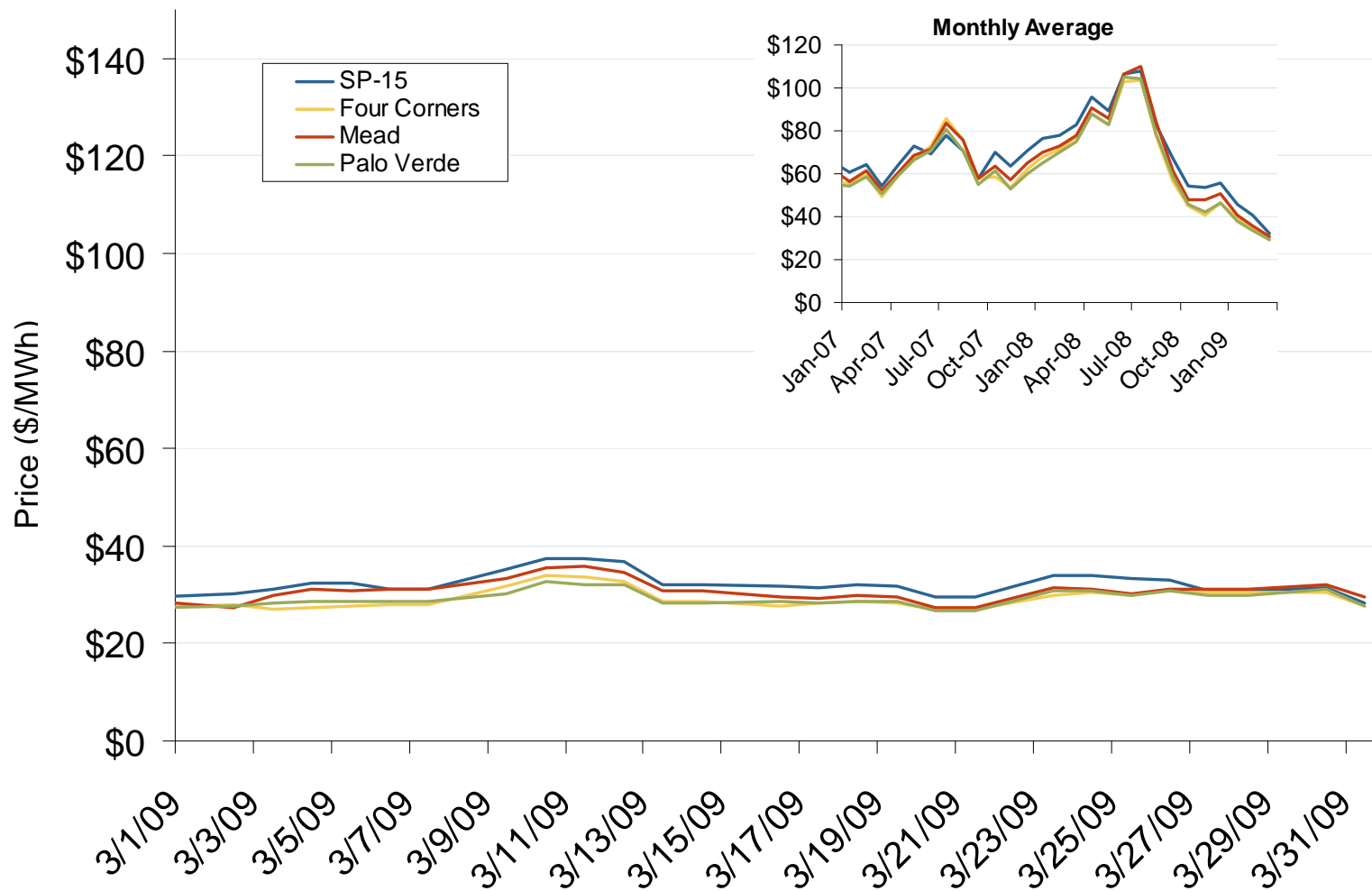


Source: Derived from *Platts* data.

Updated April 7, 2009

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Southwestern Daily Bilateral Day-Ahead On-Peak Prices

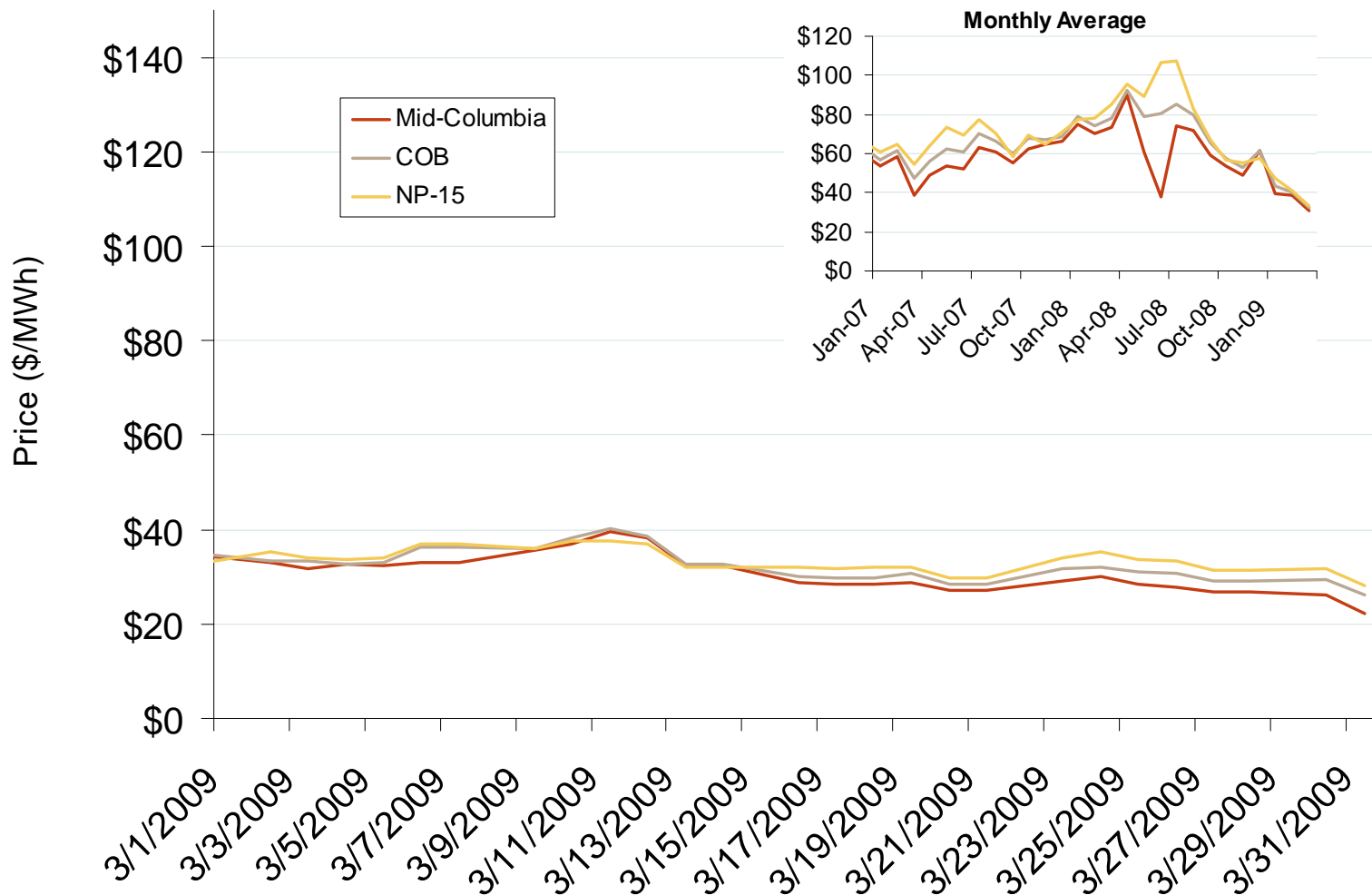


Source: Derived from *Platts* data.

Updated April 7, 2009

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Northwestern Daily Bilateral Day-Ahead On-Peak Prices

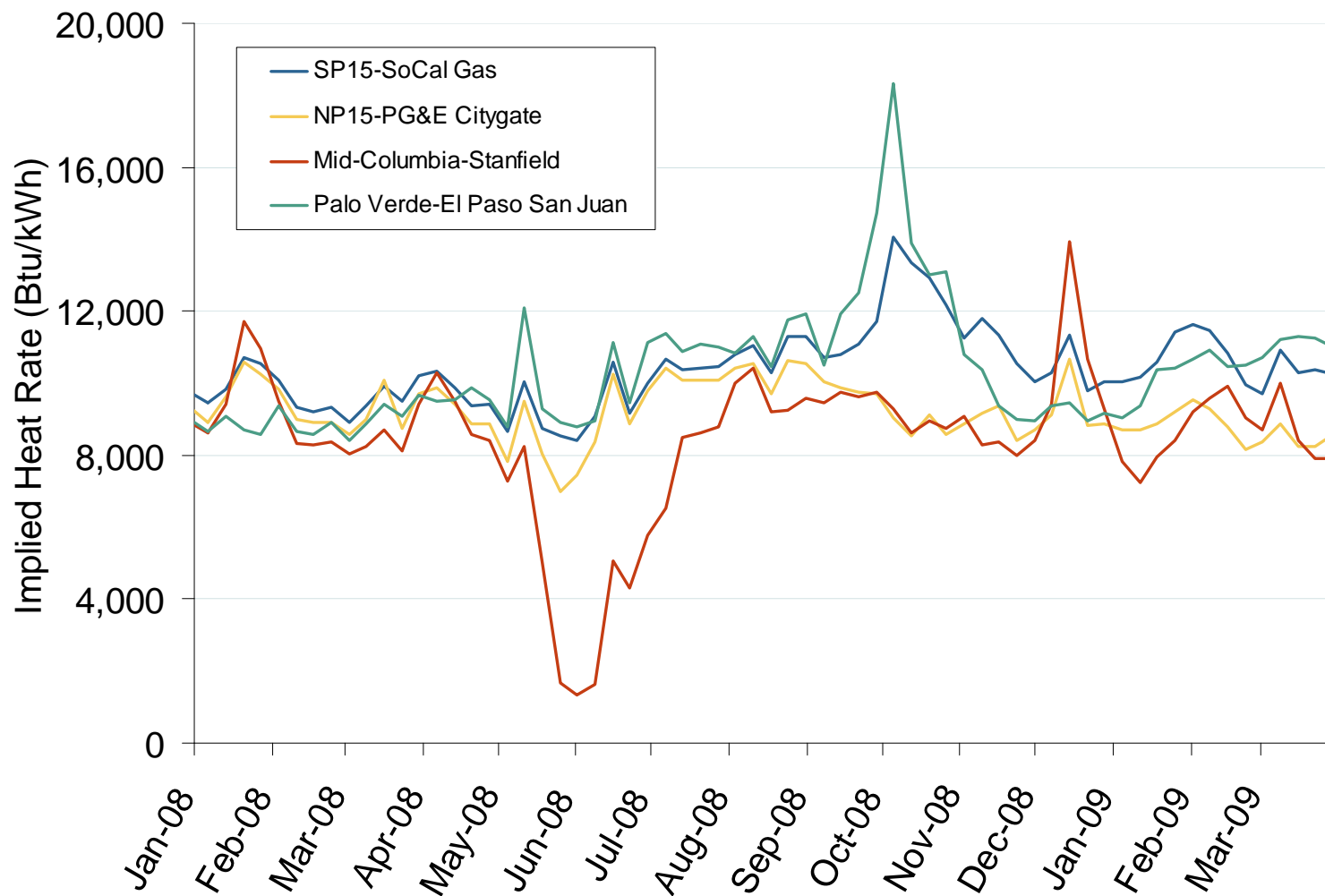


Source: Derived from *Platts* data.

Updated April 7, 2009

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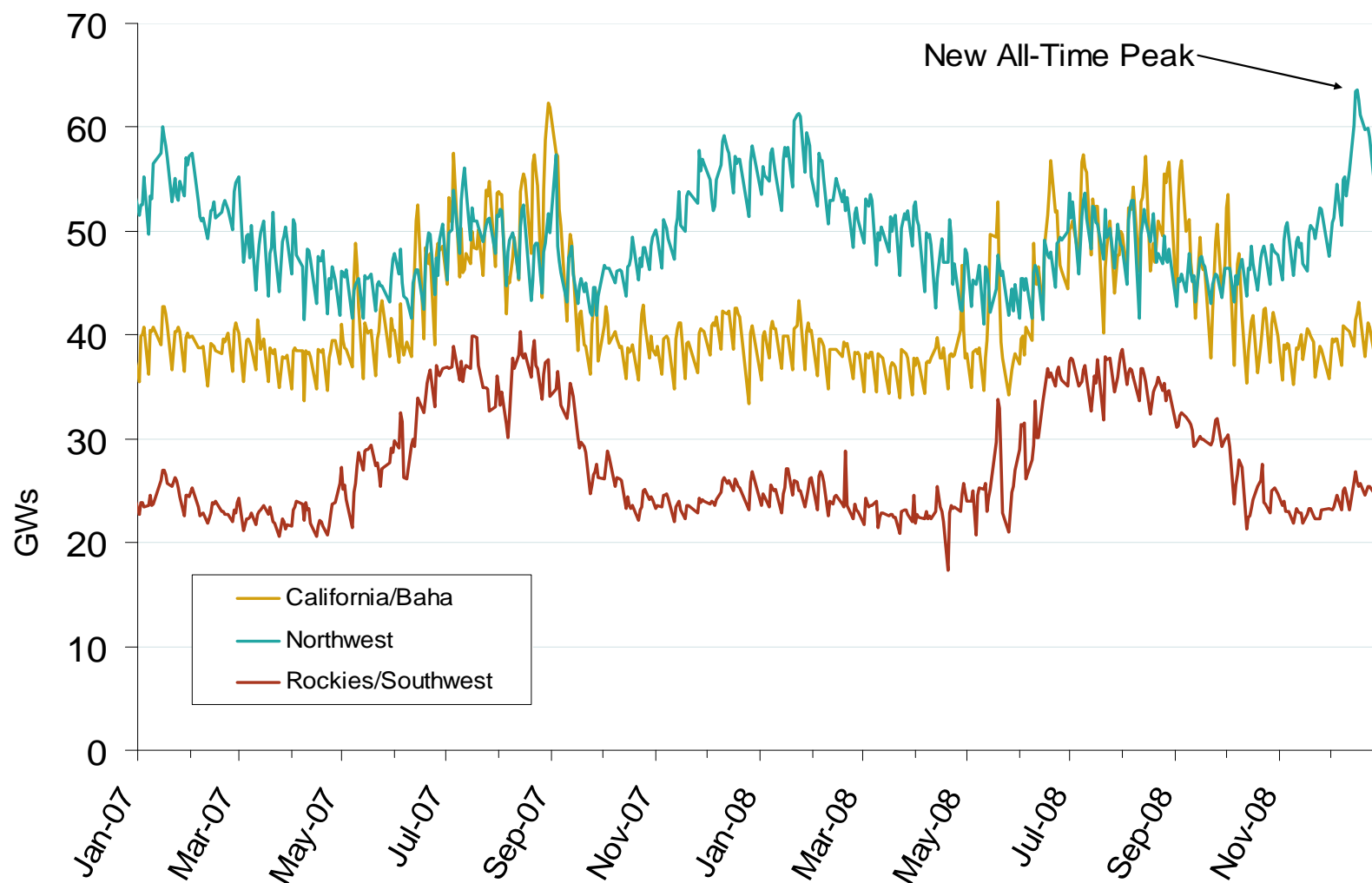
Implied Heat Rates at Western Trading Points Weekly Averages

Source: Derived from *Platts* data

Updated April 7, 2009

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Western Daily Actual Peak Demand

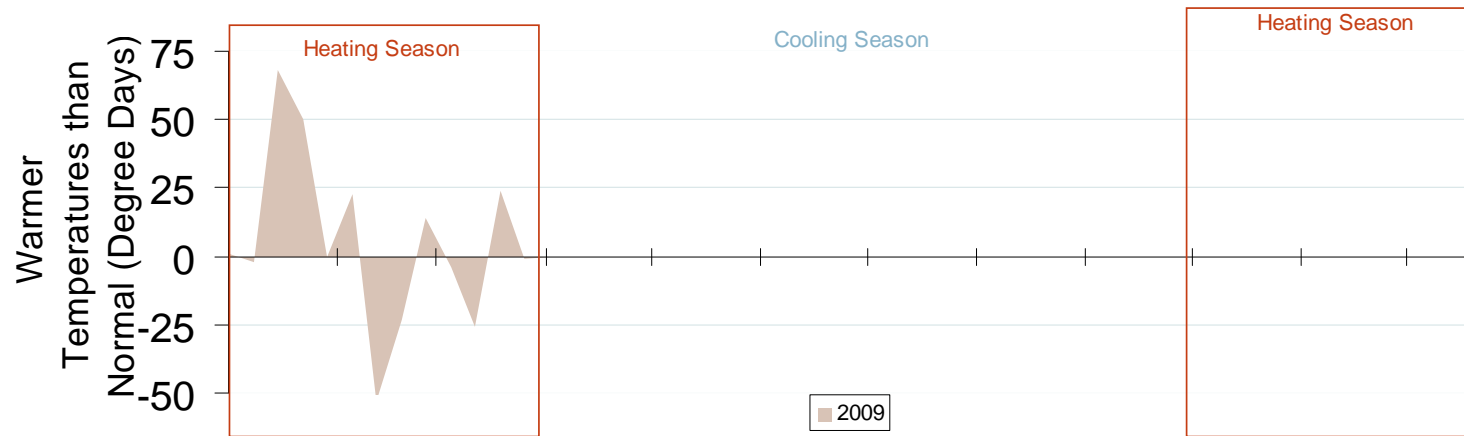
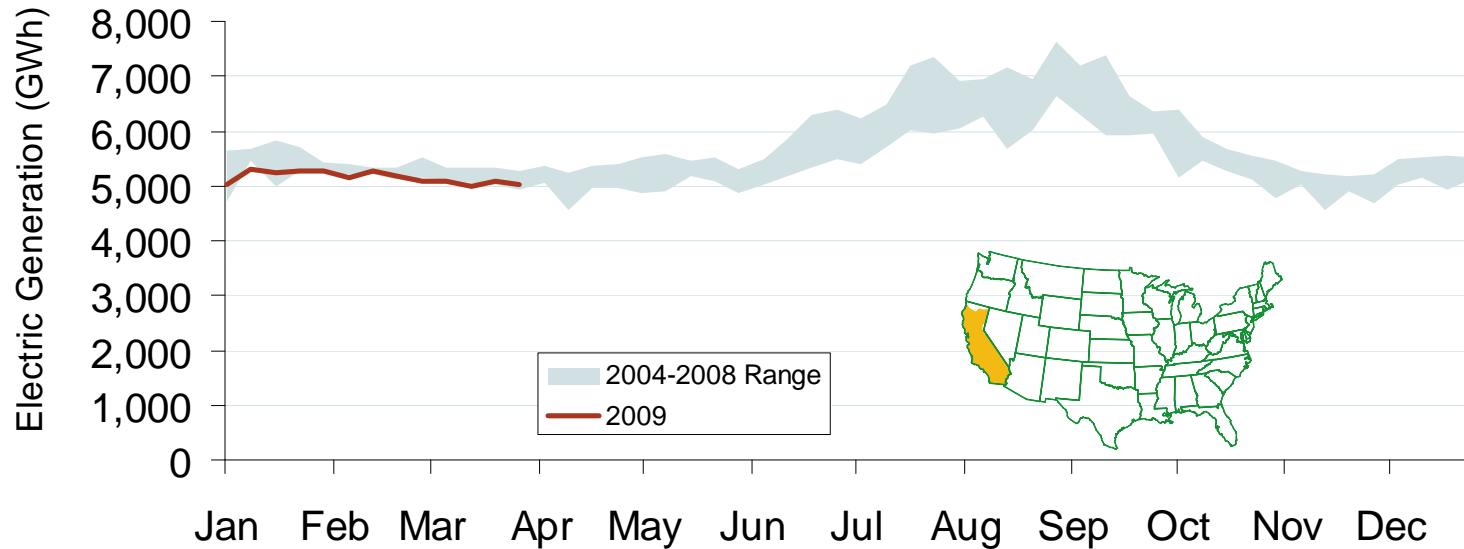


Source: Derived from WECC Daily Report data available at <http://wecc.biz>. Data shown is generally Sunday through Thursday due to limitations of daily reports.

Updated January 9, 2009

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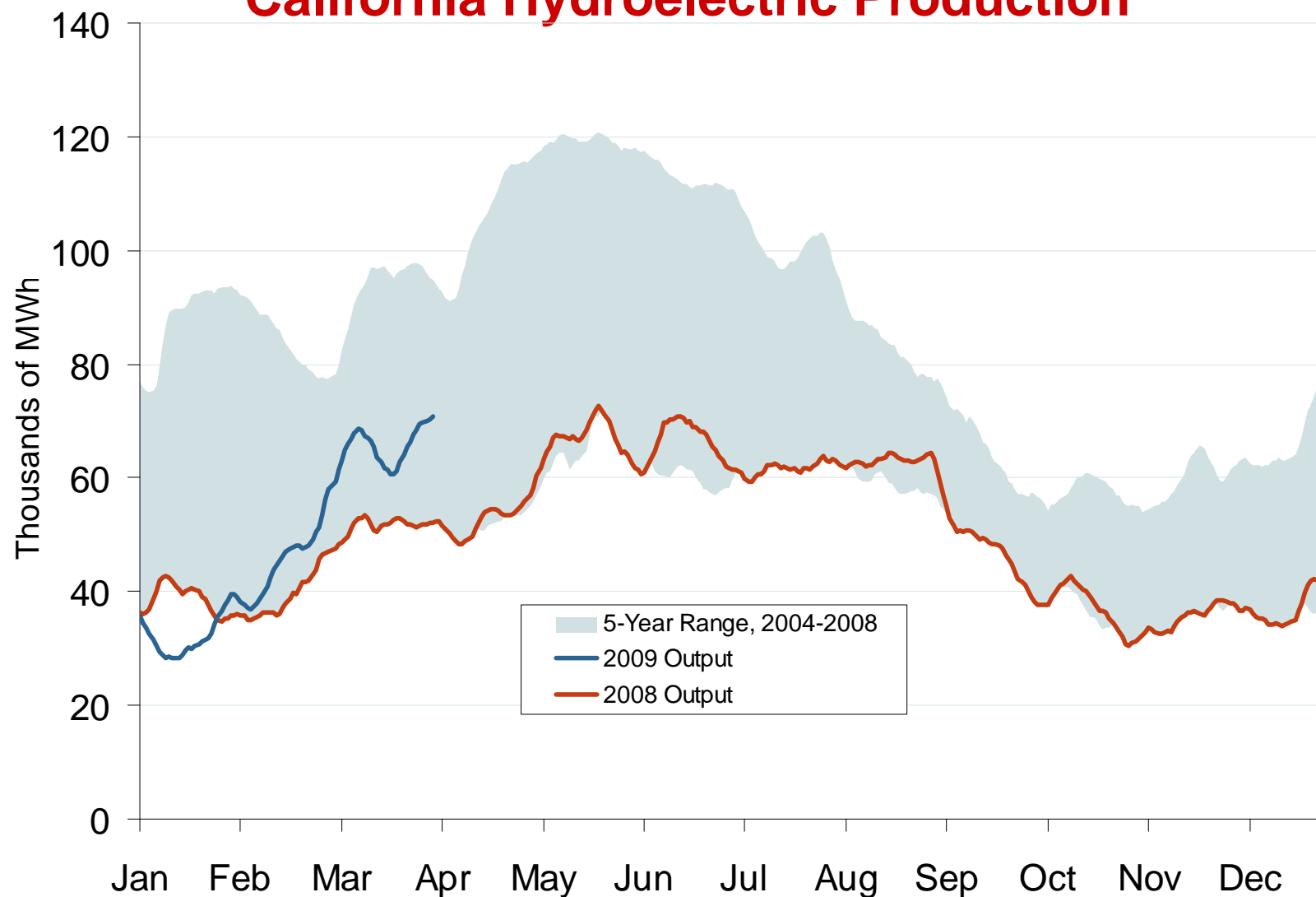
Weekly Electric Generation Output and Temperatures California



Source: Derived from *EEl* and NOAA data.

Updated April 7, 2009

California Hydroelectric Production



Source: Derived from CAISO data.

Trend lines are 7-day moving averages.

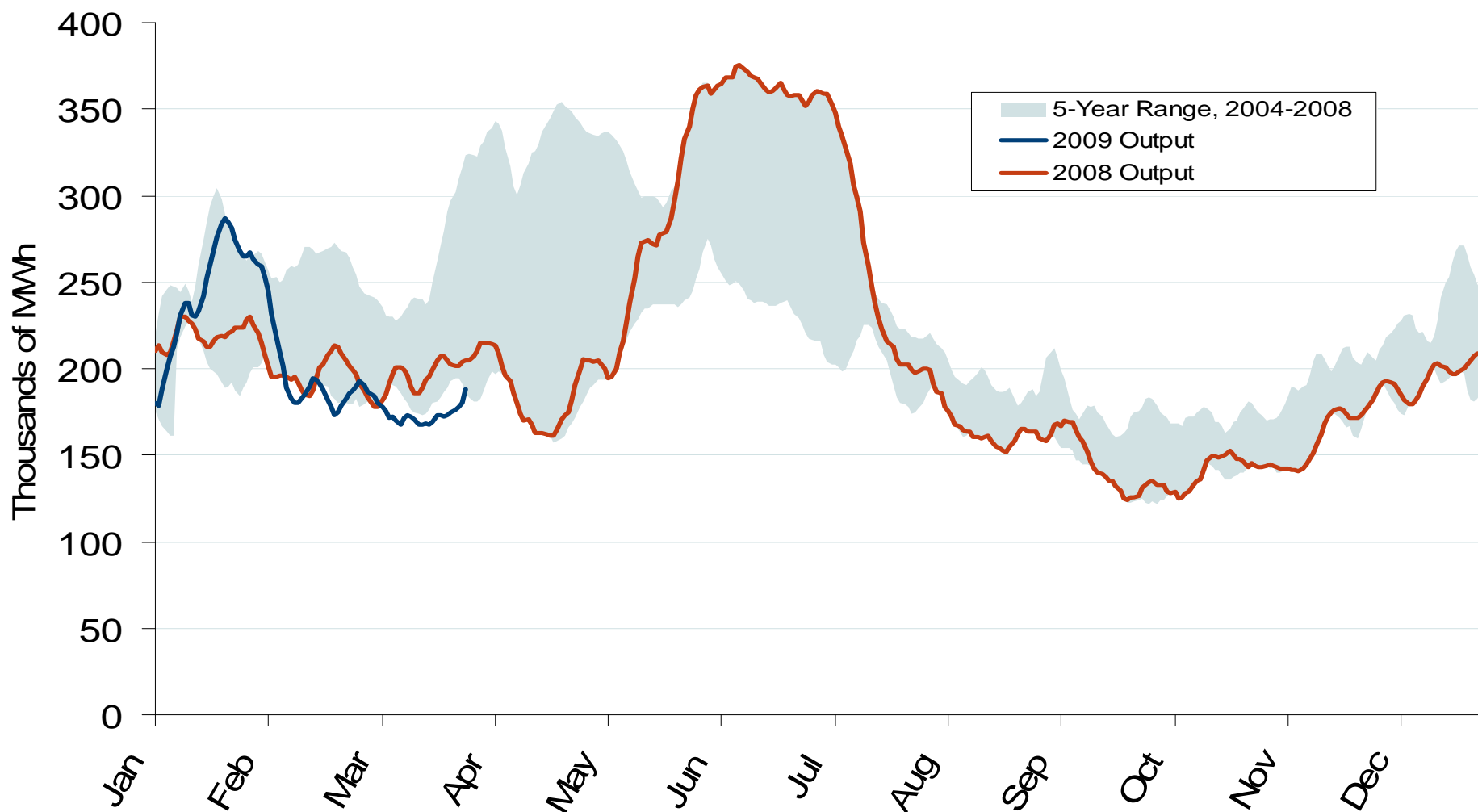
Updated April 7, 2009

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California Electric Market: Pacific Northwest Hydro Production

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Pacific Northwest Hydroelectric Production

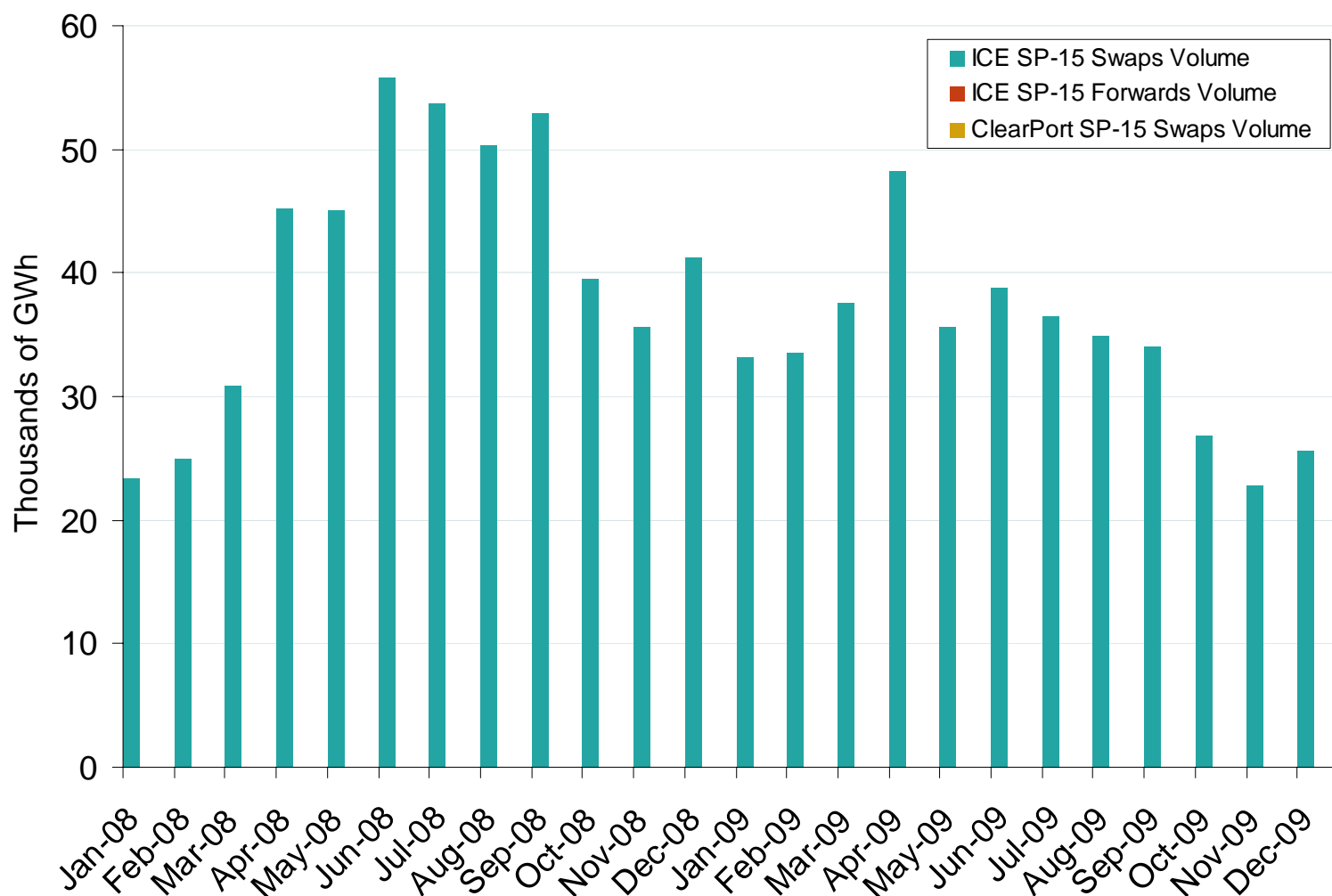


Source: Derived from USACE data reflecting the output of the 24 largest facilities.
Trend lines are 7-day moving averages.

Updated April 7, 2009

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SP-15 Forward and Swap Volumes

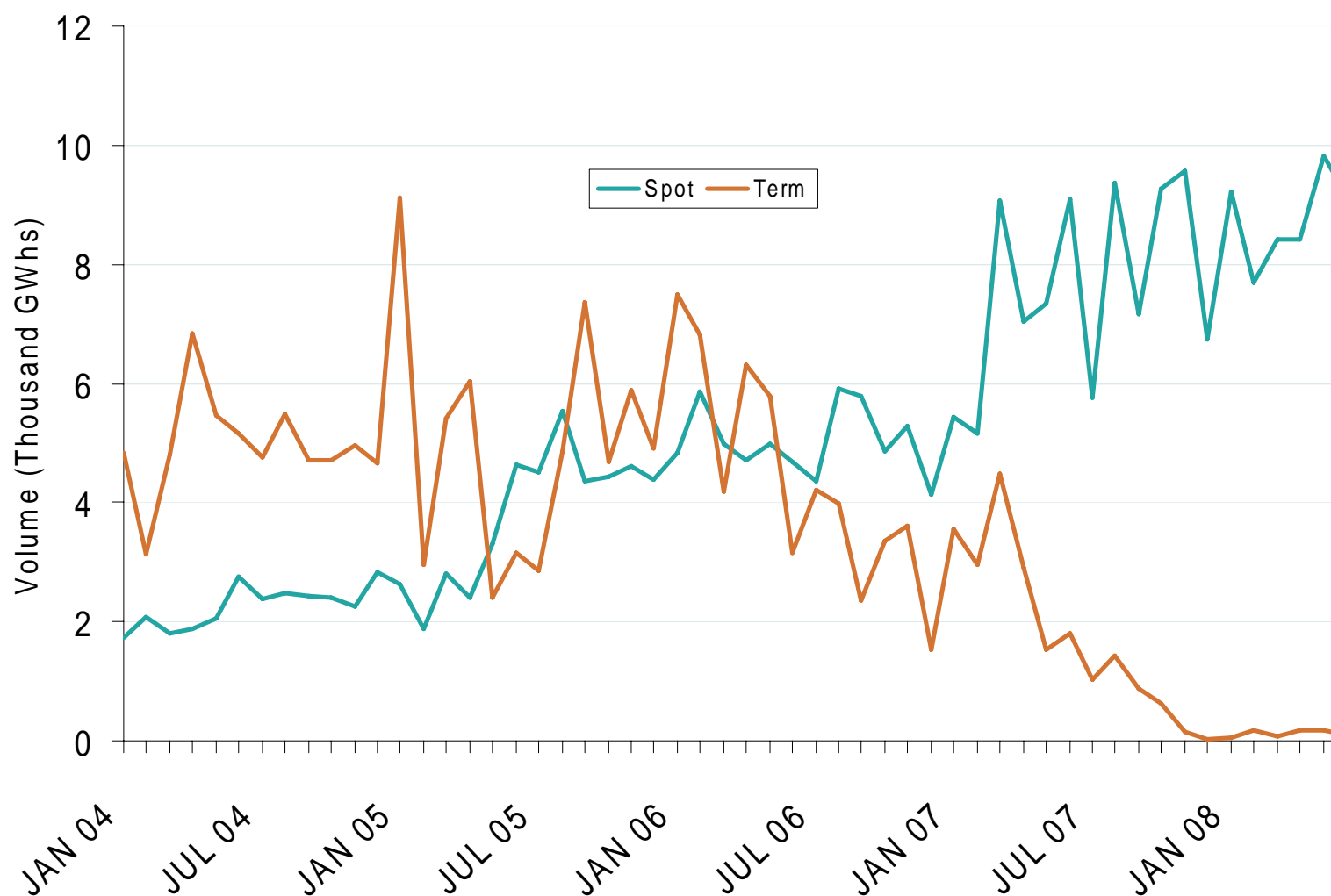


Source: Derived from *ICE* and *Nymex ClearPort*. ICE on-peak forward (physical) and swap (financial) volumes are for SP-15 and include monthly, dual monthly, quarterly, and calendar year contracts traded for each month. Nymex ClearPort on-peak swap (financial) volumes are for the SP-15 Hub traded by month.

Updated April 7, 2009

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Western Physical Power Volumes Traded on ICE by Month

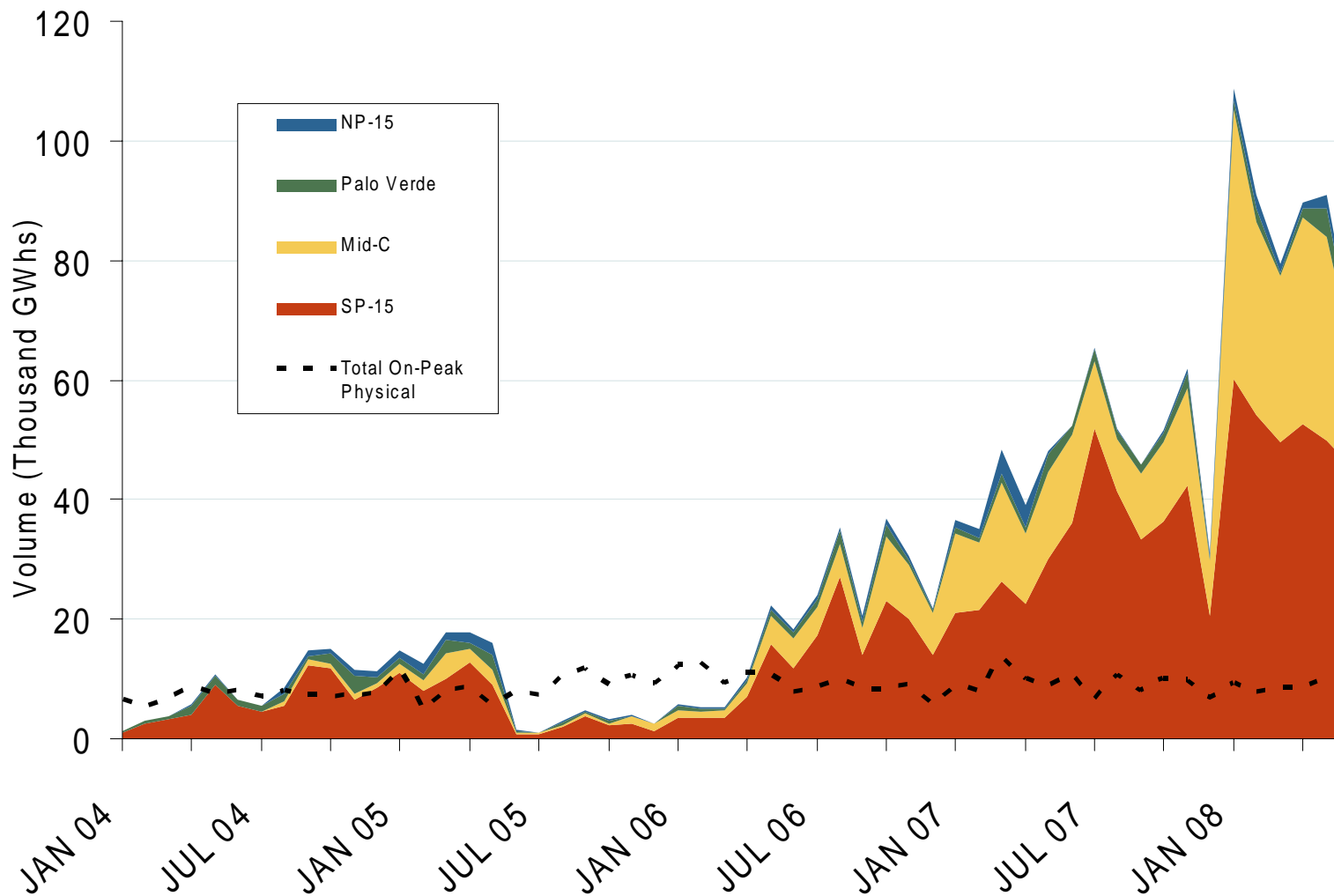


Source: Derived from ICE data.

Updated August 14, 2008

1200

Western Financial On-Peak Products Traded on ICE by Hub



Source: Derived from ICE data.

Updated August 14, 2008

1203