

# Natural Gas Working Group



California Energy Commission

March 4, 2010

Electricity Analysis Office

Generation Fuels Unit

Natural Gas Market Assessment

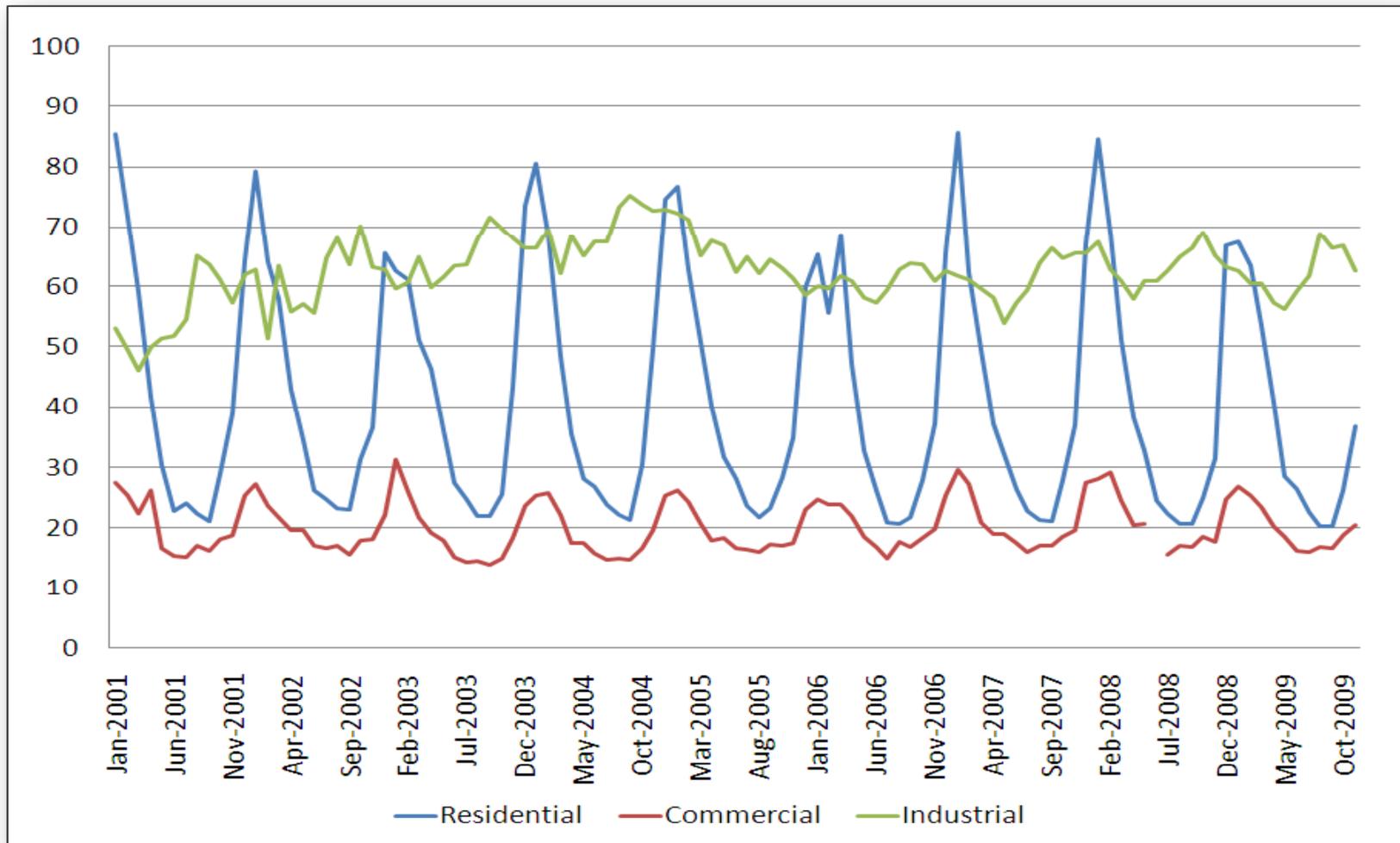
# Natural Gas Working Group



## Industrial, Commercial, Residential and Electric Power Sector Demand

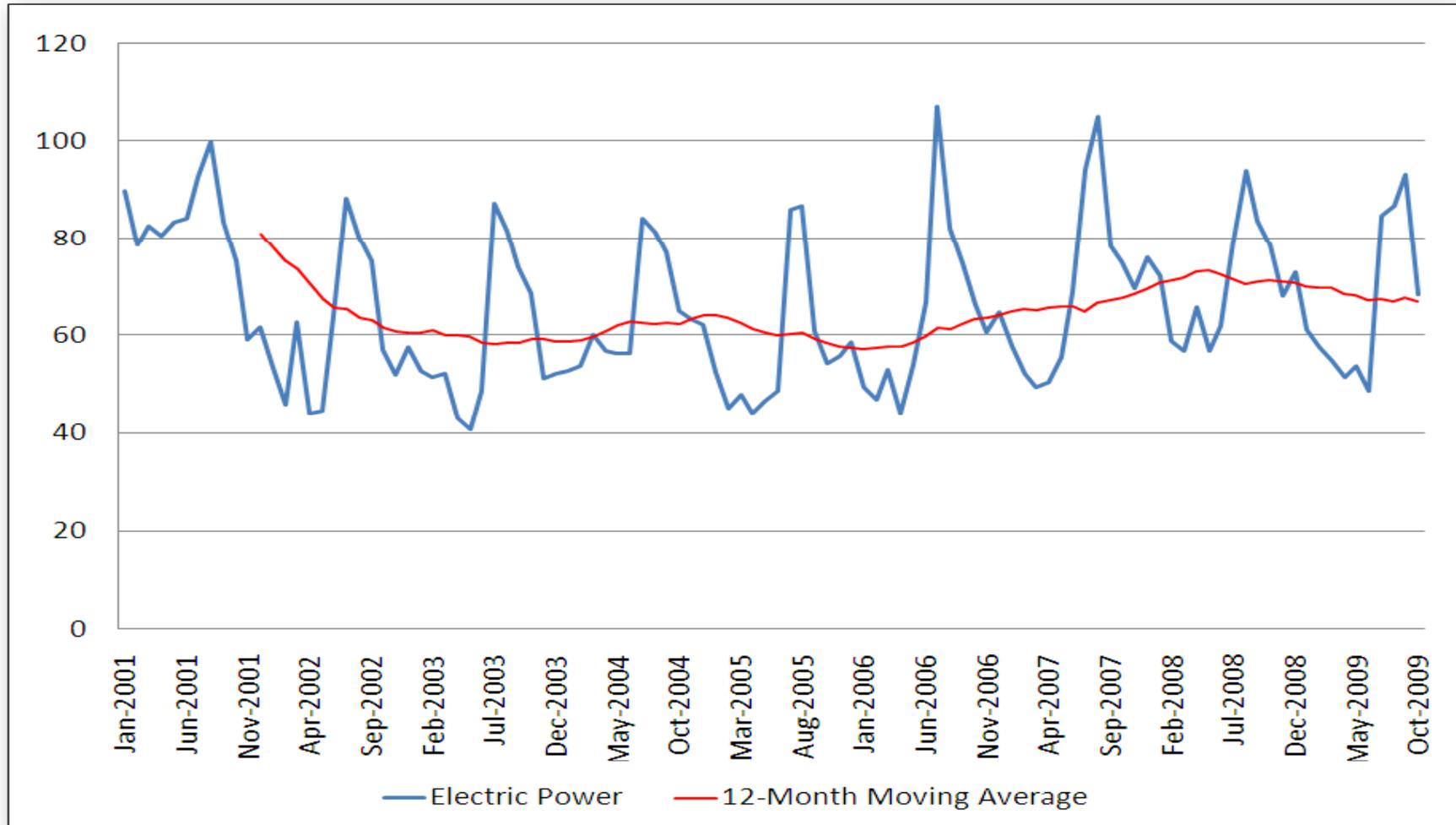
# Natural Gas Deliveries to California Residential, Commercial and Industrial Consumers, January 2001 – November 2009 (Bcf/month)

(Source: U.S. EIA January 2010 Natural Gas Monthly, Tables 12, 13 and 14)



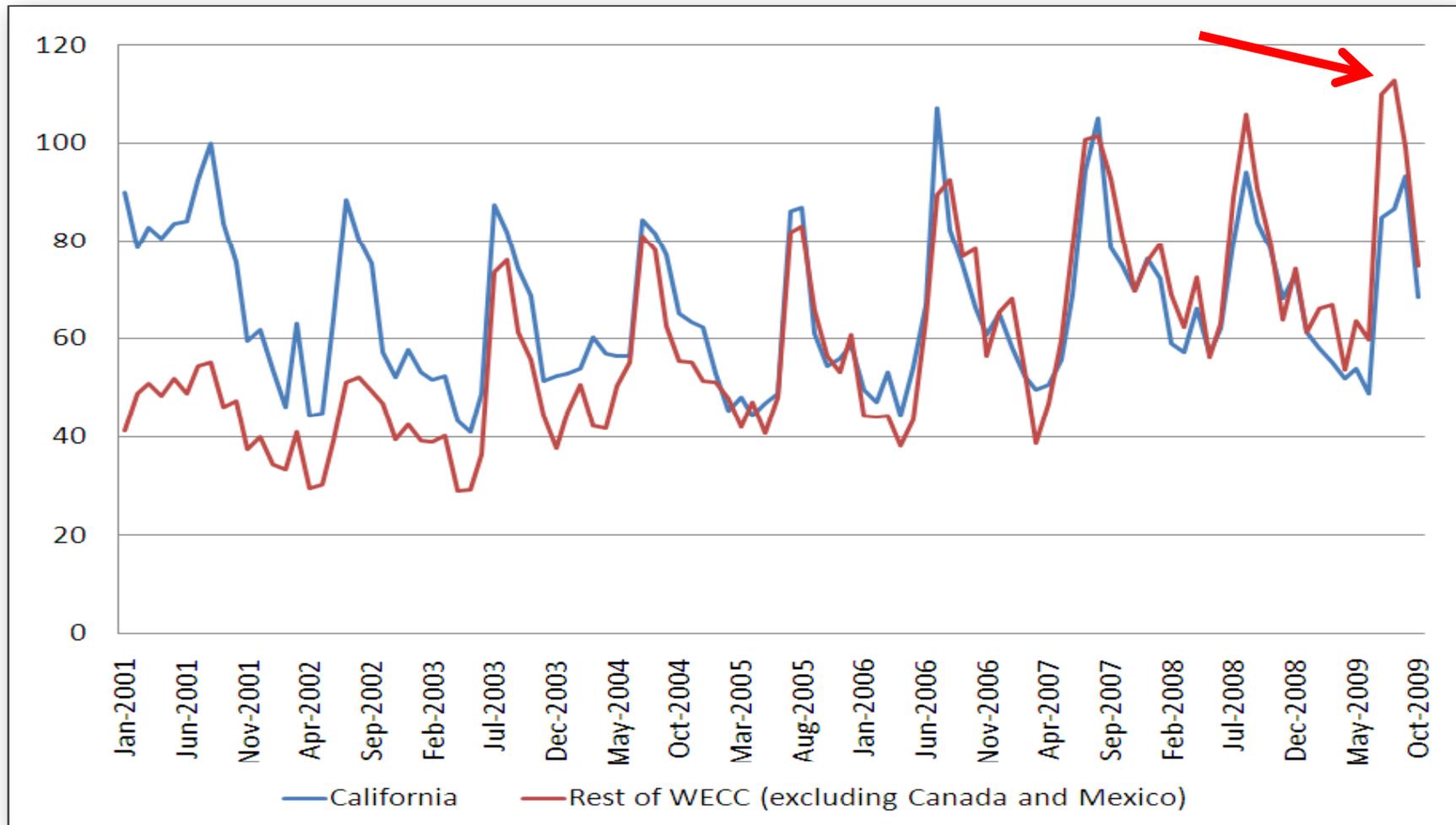
# Natural Gas Deliveries to the California Electric Power Generation Sector, January 2001 – October 2009 (Bcf/month)

(Source: U.S. EIA January 2010 Natural Gas Monthly, Table 15)



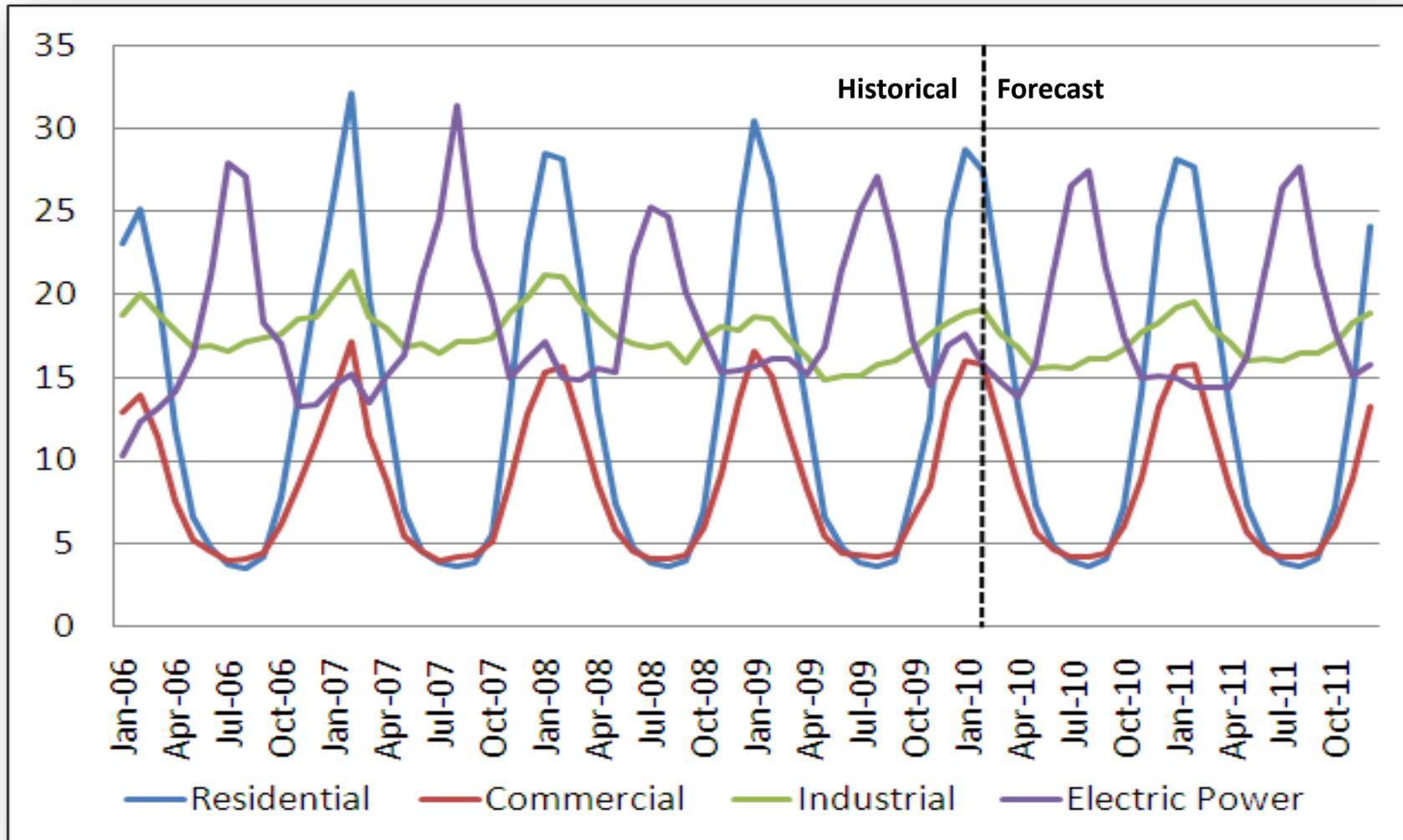
# Natural Gas Deliveries to the U.S. Western Interconnect Electric Power Generation Sector January 2001 – October 2009 (Bcf/month)

(Source: U.S. EIA January 2010 Natural Gas Monthly, Table 15)



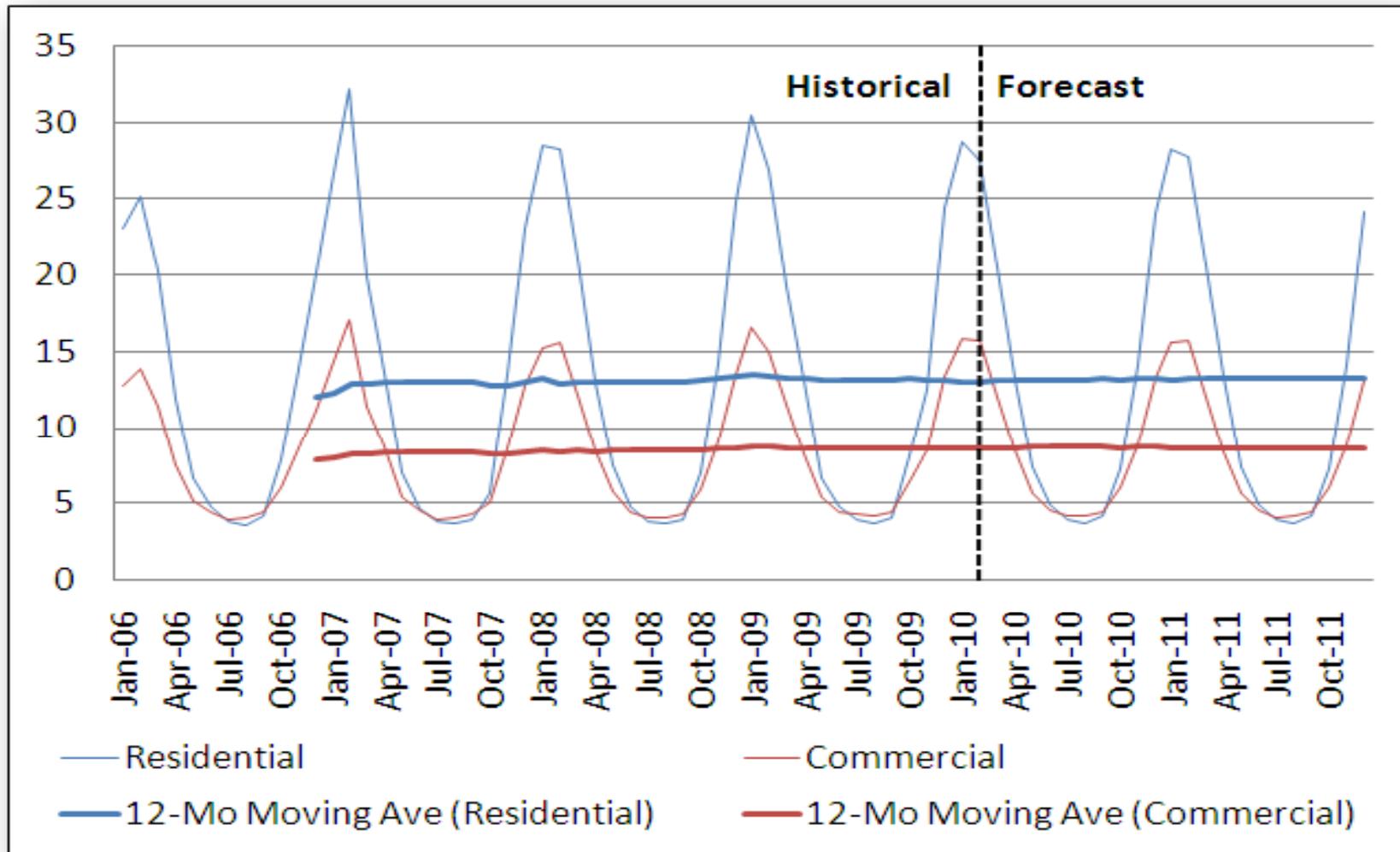
# U.S. Natural Gas Consumption, Largest Sectors, January 2006 – October 2011 (Bcf/day)

(Source: U.S. EIA February 2010 Short-Term Energy Outlook, Table 5a)



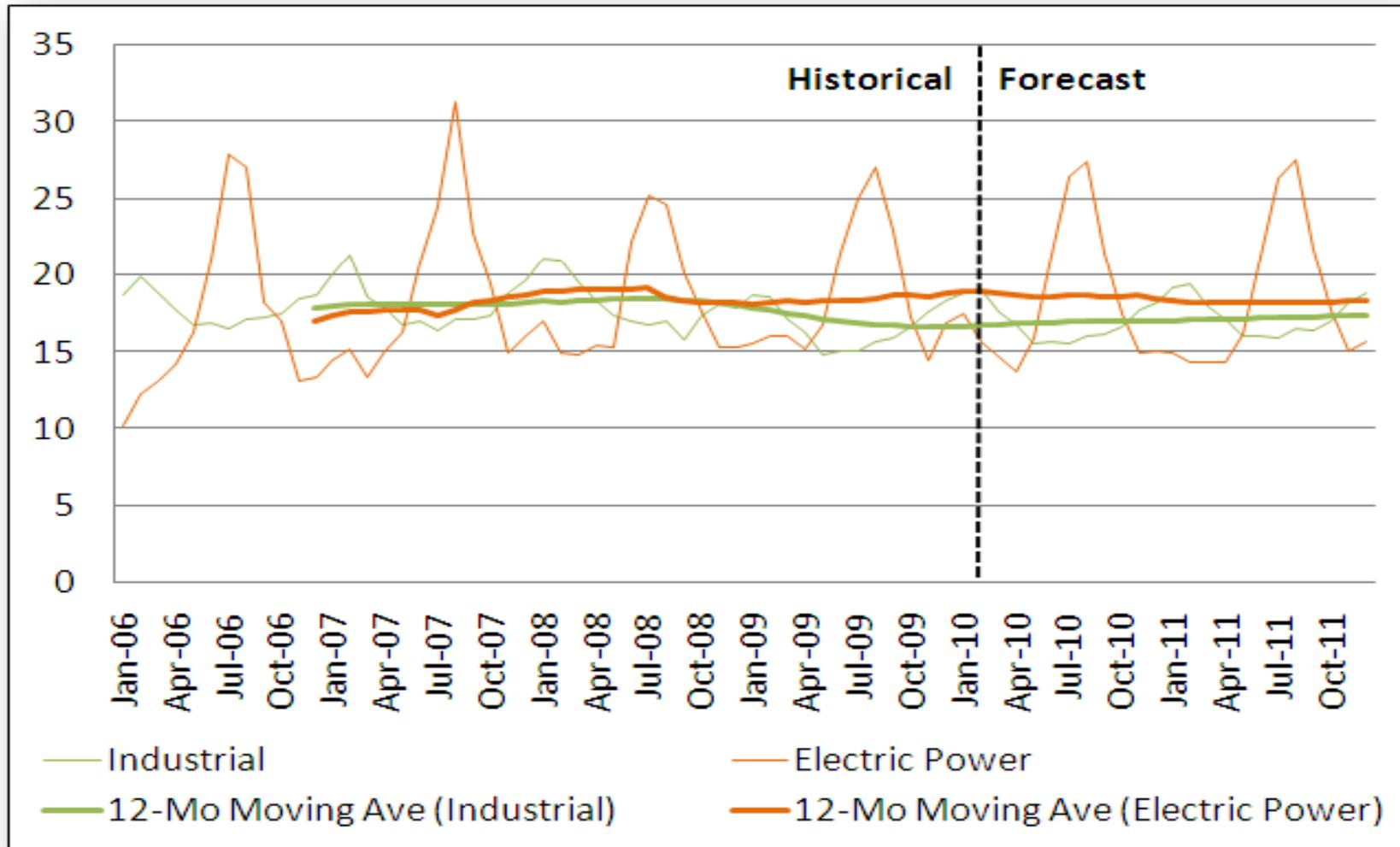
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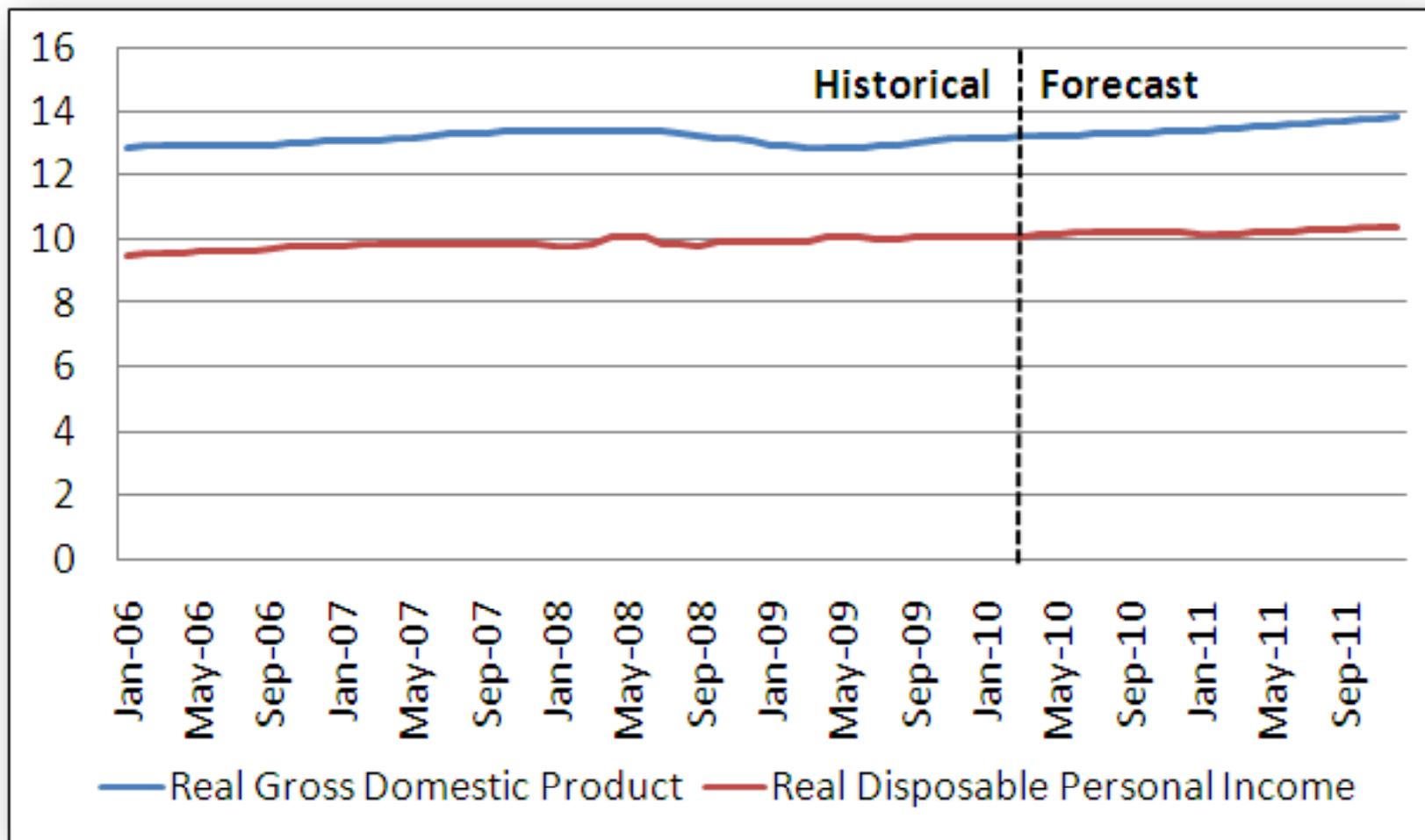
# U.S. Natural Gas Consumption, Largest Sectors, January 2006 – October 2011 (Bcf/day)

(Source: U.S. EIA February 2010 Short-Term Energy Outlook, Table 5a)



# U.S. Macroeconomic Indicators

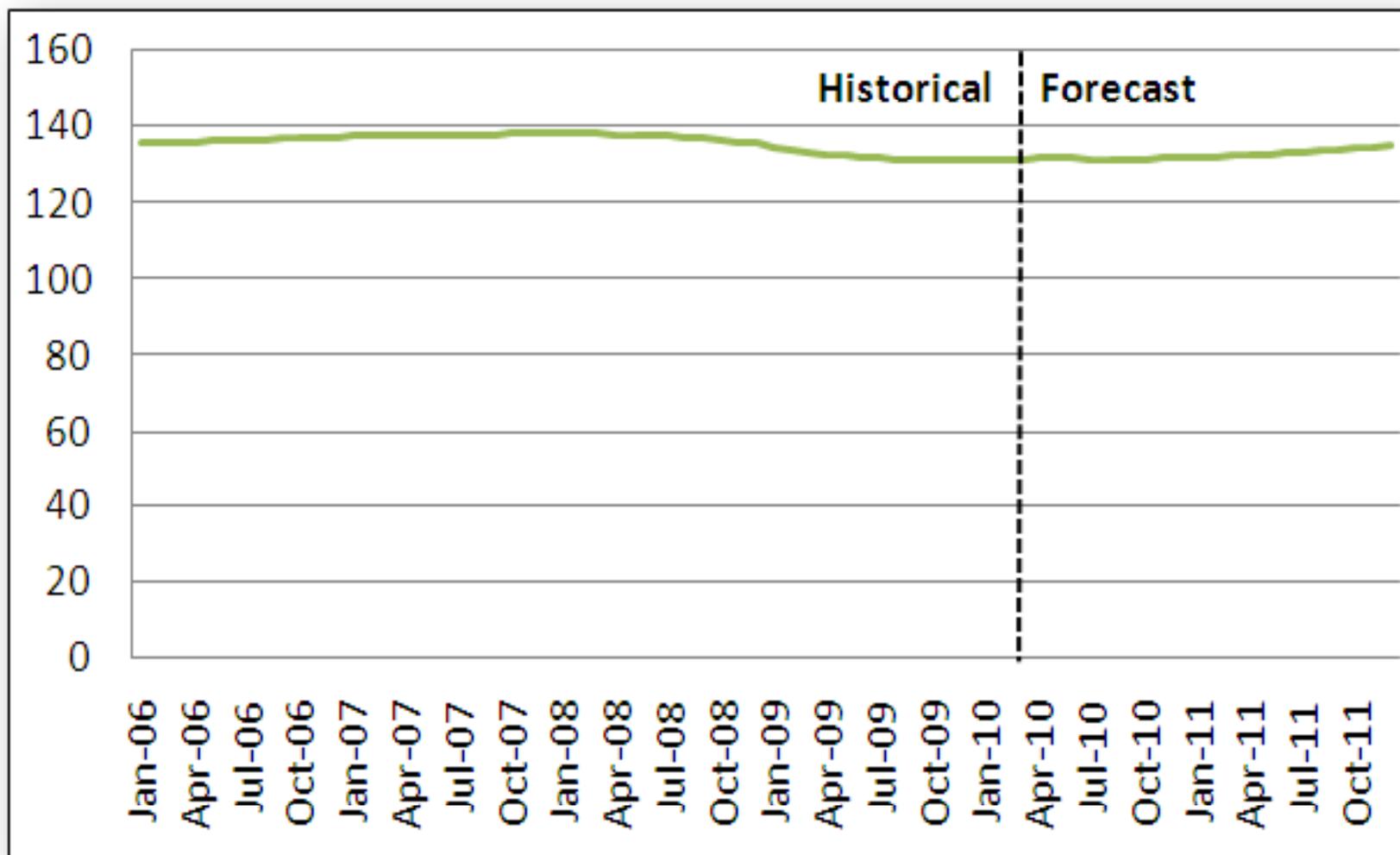
January 2006 – October 2011 (Billions chained 2005 \$, SAAR)  
(Source: U.S. EIA February 2010 Short-Term Energy Outlook, Table 9a)



# U.S. Macroeconomic Indicators: Non-Farm Employment

January 2006 – October 2011 (Millions)

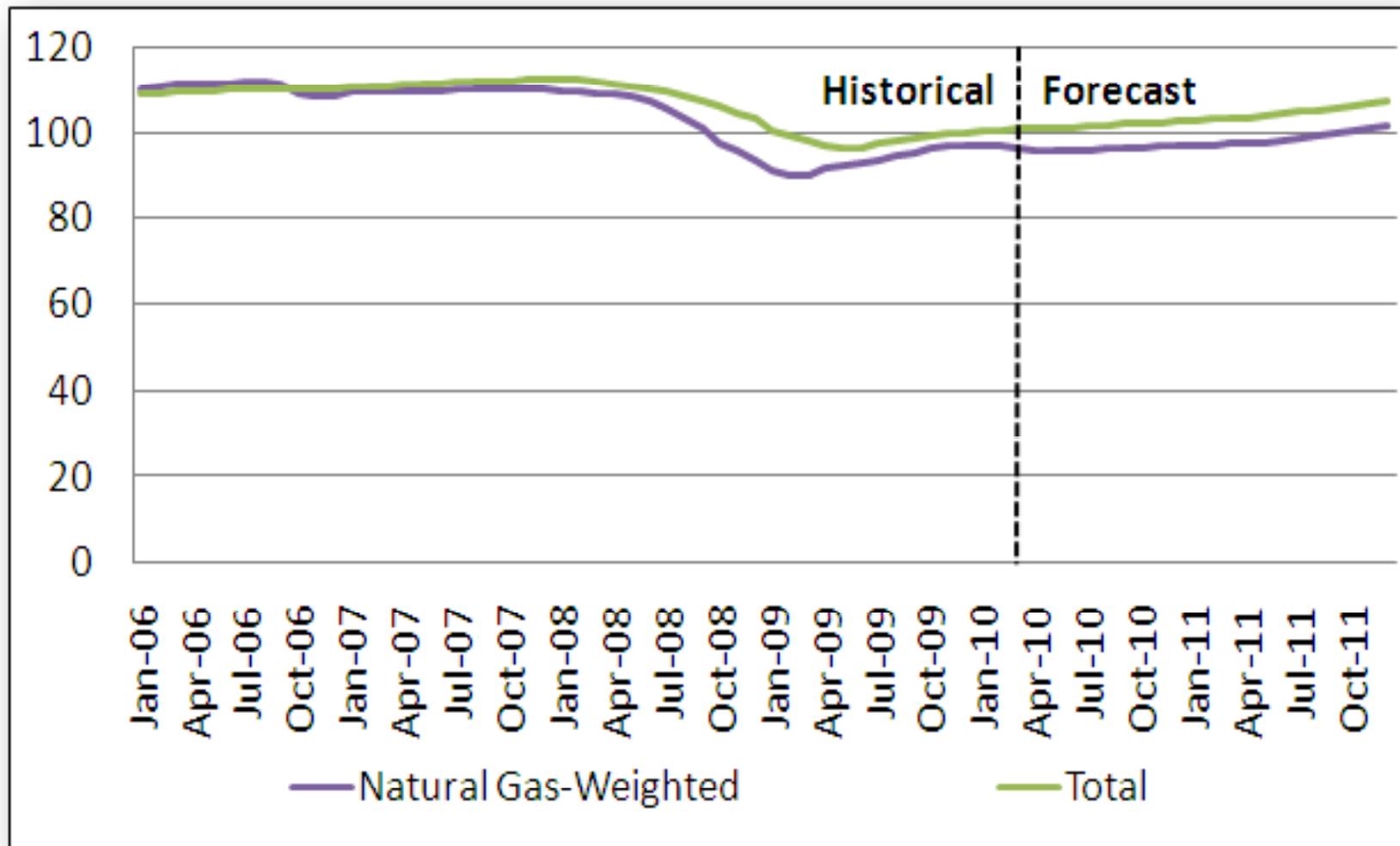
(Source: U.S. EIA February 2010 Short-Term Energy Outlook, Table 9a)



# U.S. Macroeconomic Indicators: Industrial Production

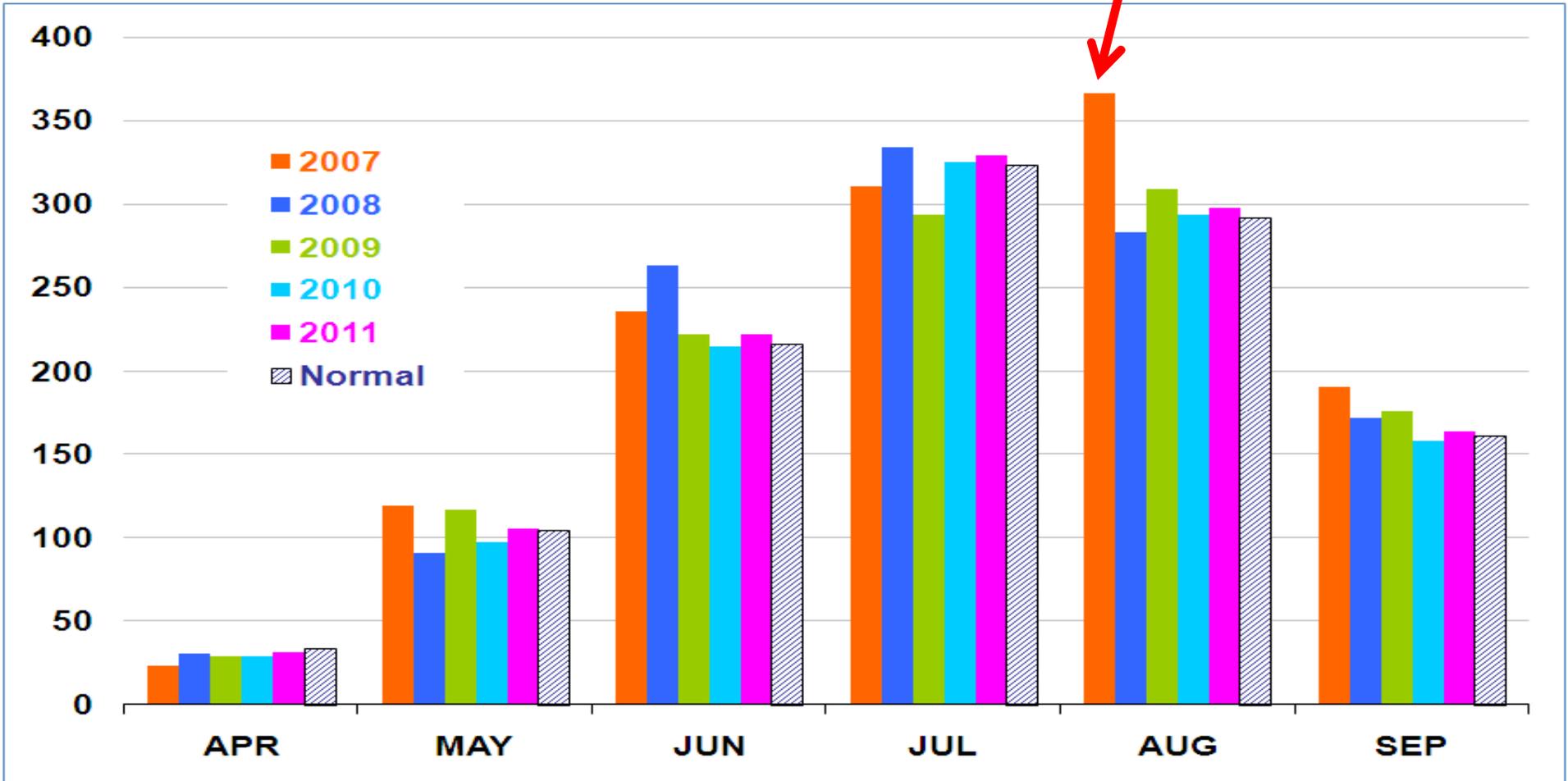
January 2006 – October 2011 (Index, 2002 = 100)

(Source: U.S. EIA February 2010 Short-Term Energy Outlook, Table 9a)



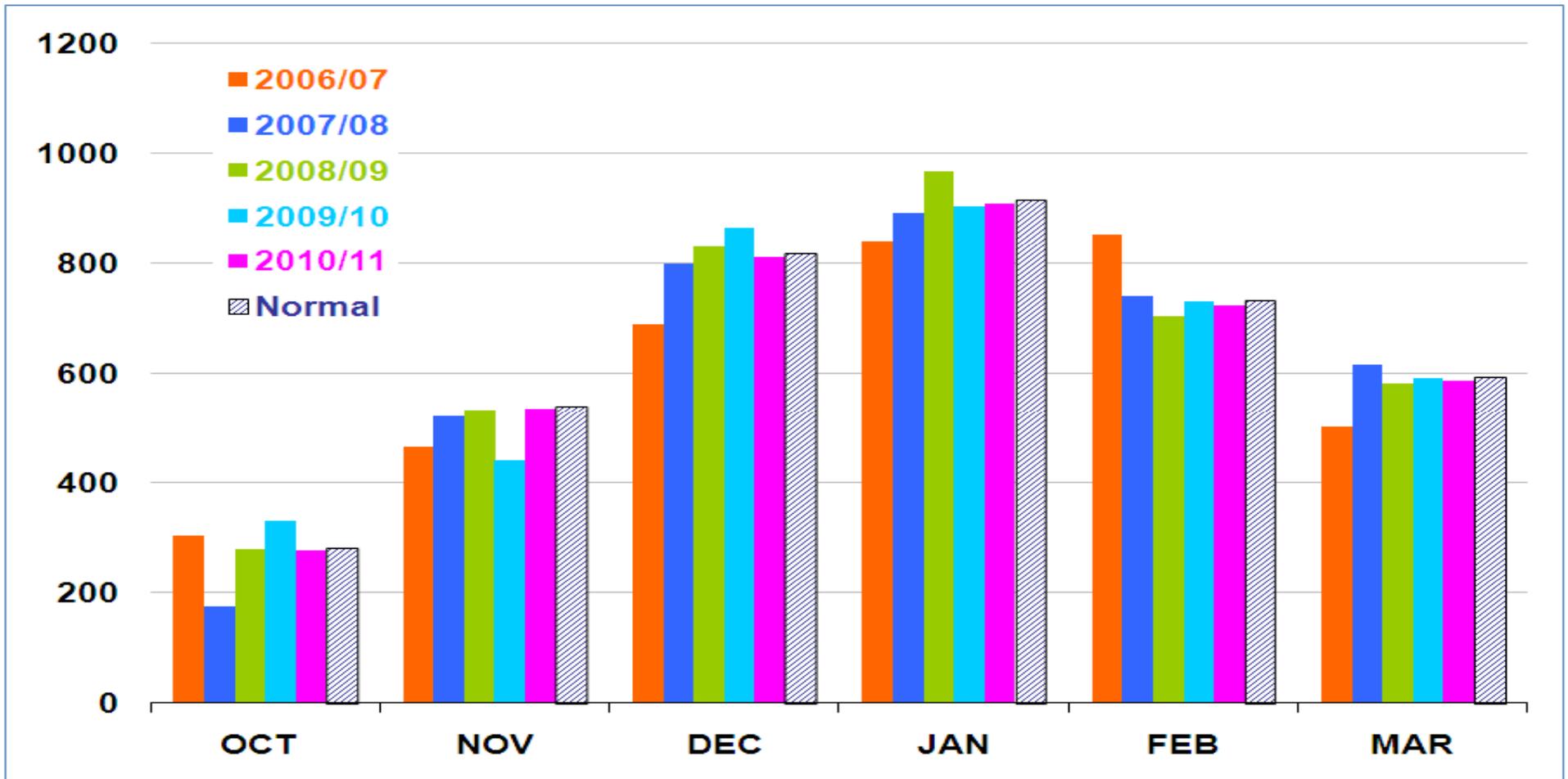
# U.S. Summer Cooling Degree-Days, Population-Weighted

(Source: U.S. EIA February 2010 Short-Term Energy Outlook, Fig. 25)



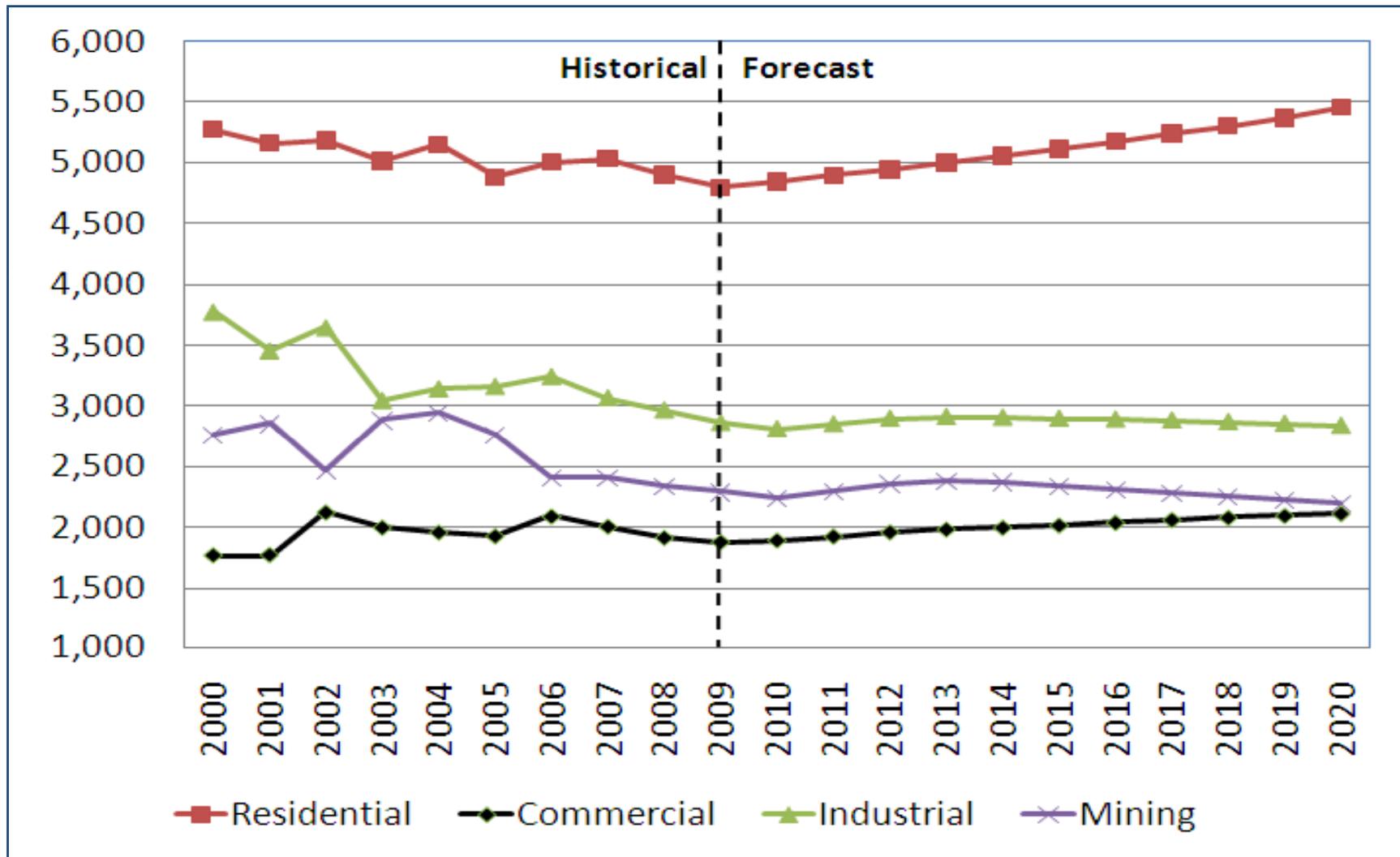
# U.S. Winter Heating Degree-Days, Population-Weighted

(Source: U.S. EIA February 2010 Short-Term Energy Outlook, Fig. 26)



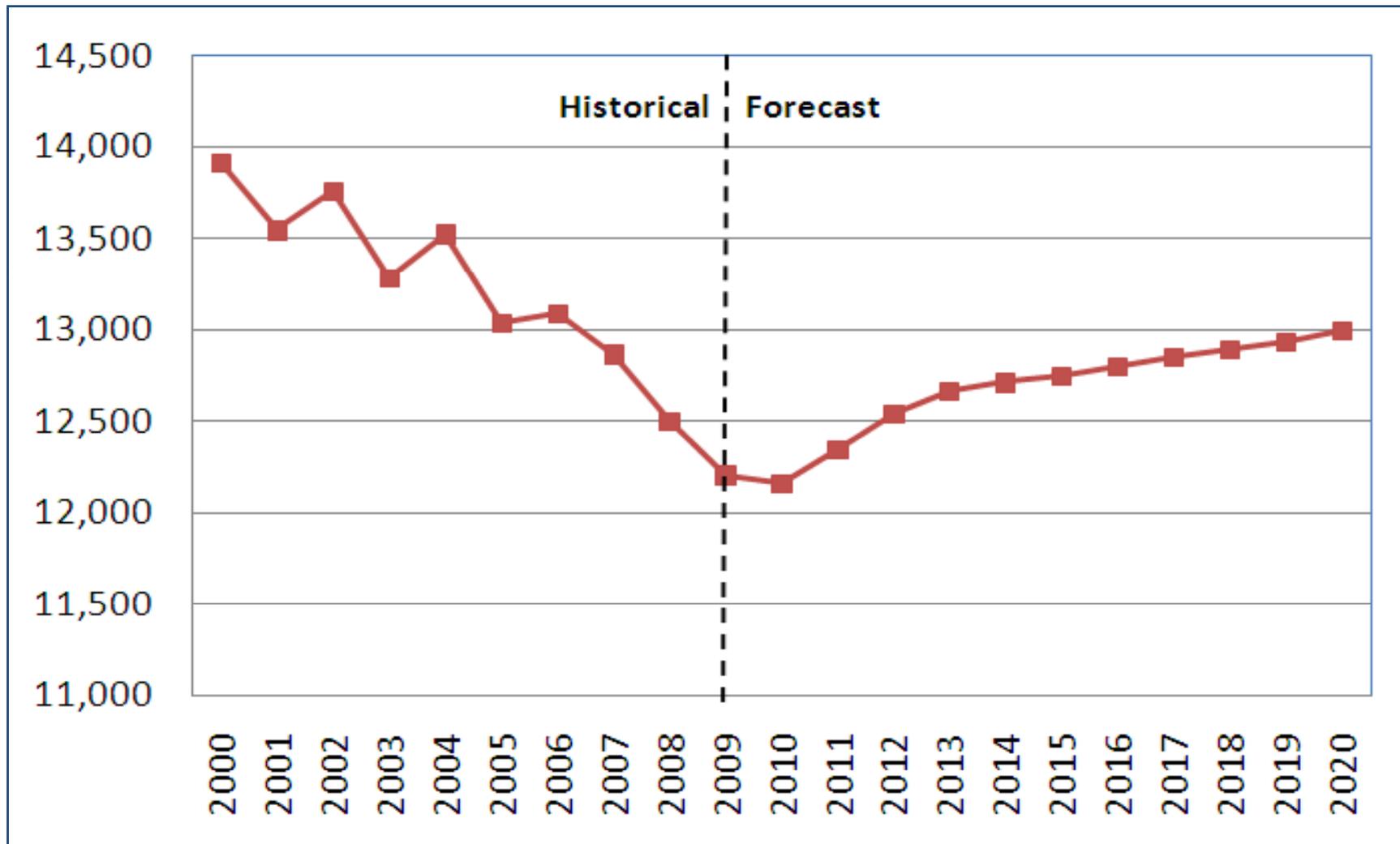
# California Statewide End-User Natural Gas Consumption 2000-2020 (MMTherms/year)

(Source: California Energy Demand 2010-2020, Adopted Forecast, December 2009, Form 1.1)



# California Statewide End-User Total Natural Gas Consumption 2000-2020 (MMTherms/year)

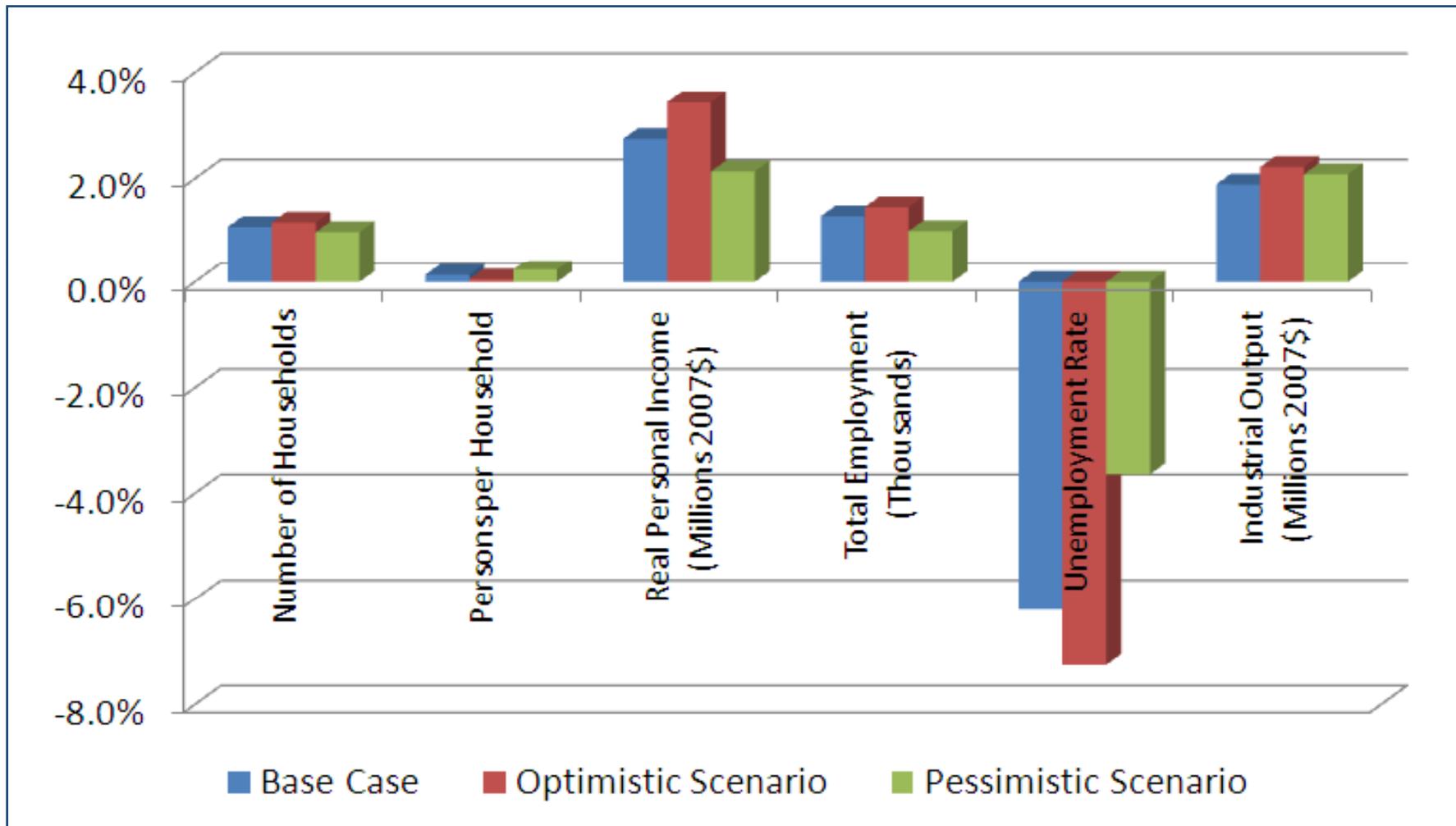
(Source: California Energy Demand 2010-2020, Adopted Forecast,  
December 2009 , Form 1.1)



# California Energy Demand 2010-2020

## Forecast Assumptions (Annual Growth Rates)

(Source: California Energy Demand 2010-2020, Adopted Forecast, December 2009 , Form 2.2b)



# Need More Detail?



U.S. EIA Short-Term Energy Outlook:

<http://www.eia.doe.gov/emeu/steo/pub/contents.html>

California Energy Demand 2010-2020, Adopted Forecast:

<http://www.energy.ca.gov/2009publications/CEC-200-2009-012/index.html>

# Natural Gas Working Group

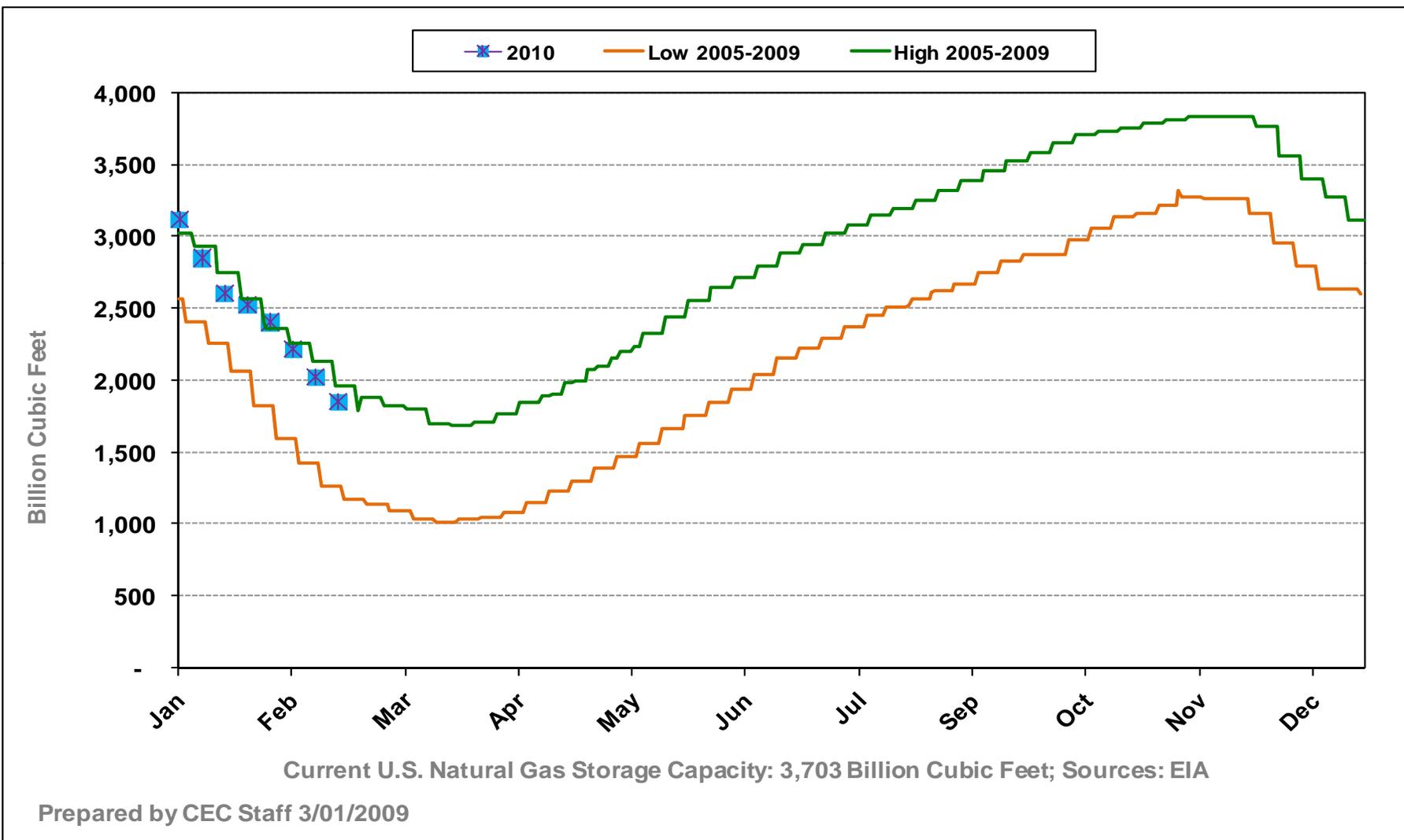


## Storage: United States and California



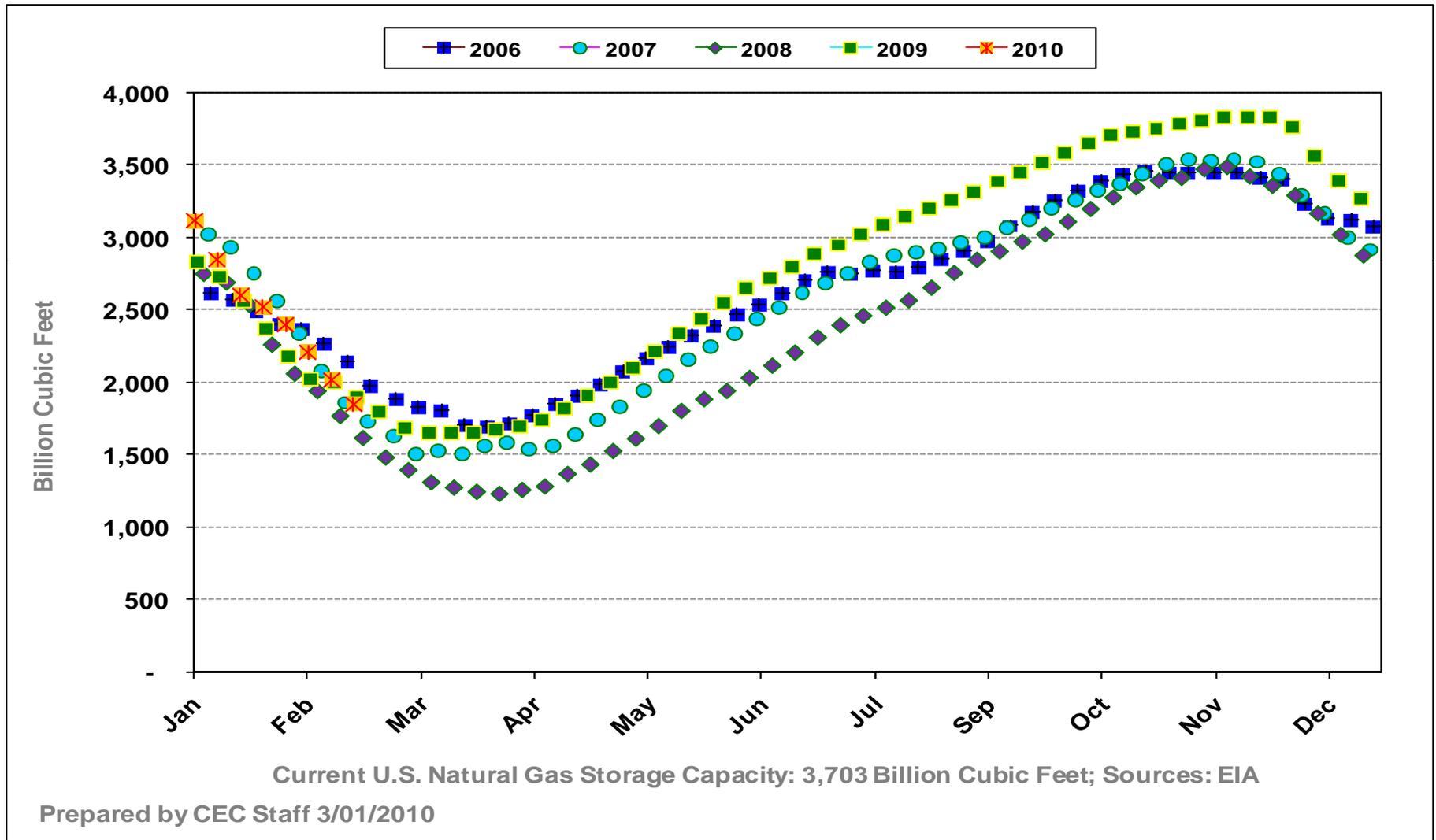
# U.S. Storage Monthly Inventory

(Current Year vs. 5-Year Band)

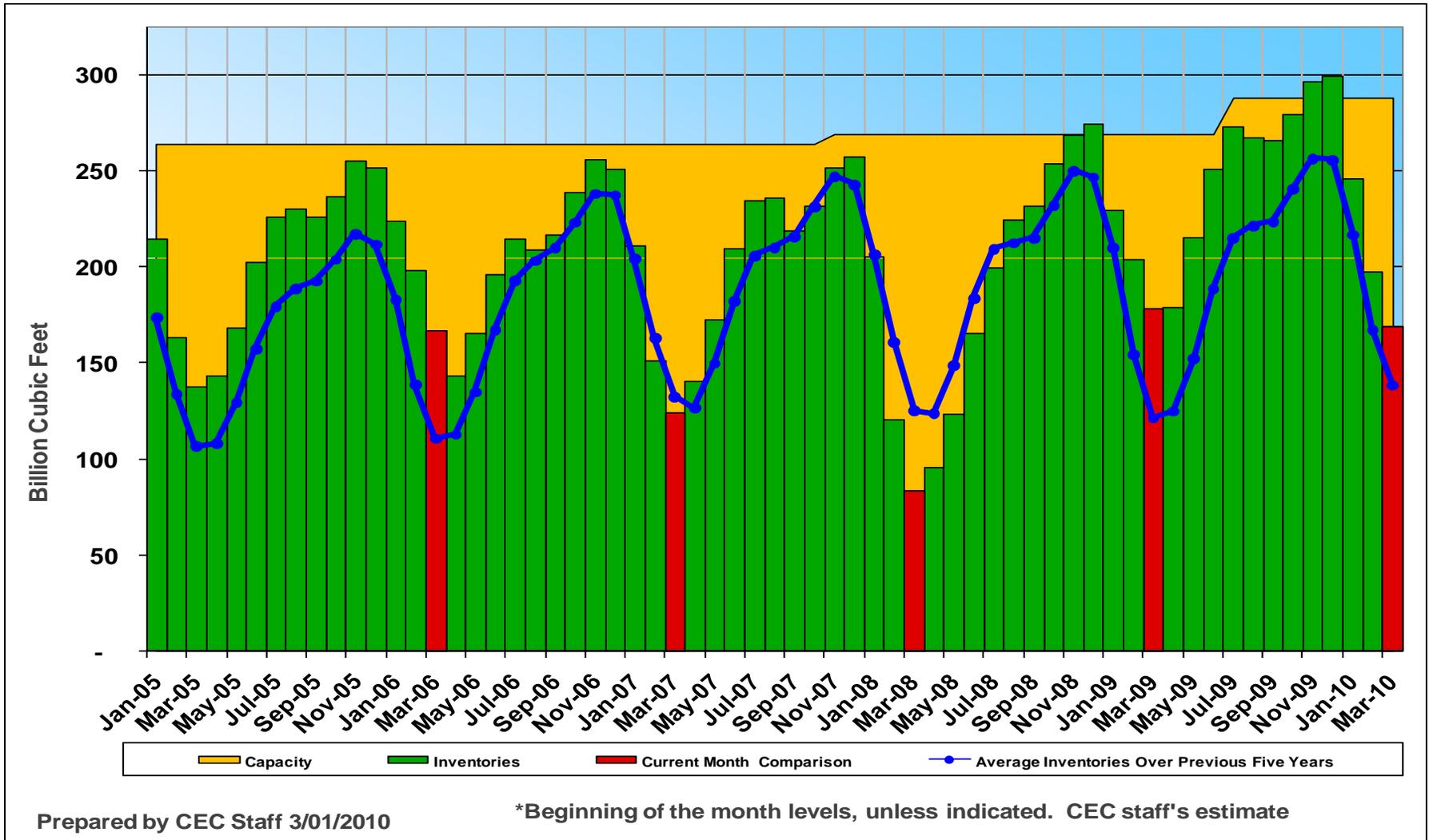


# U.S. Storage Monthly Inventory

(Current Year vs. Previous Year)



# CA Storage Capacity\* and Utilization

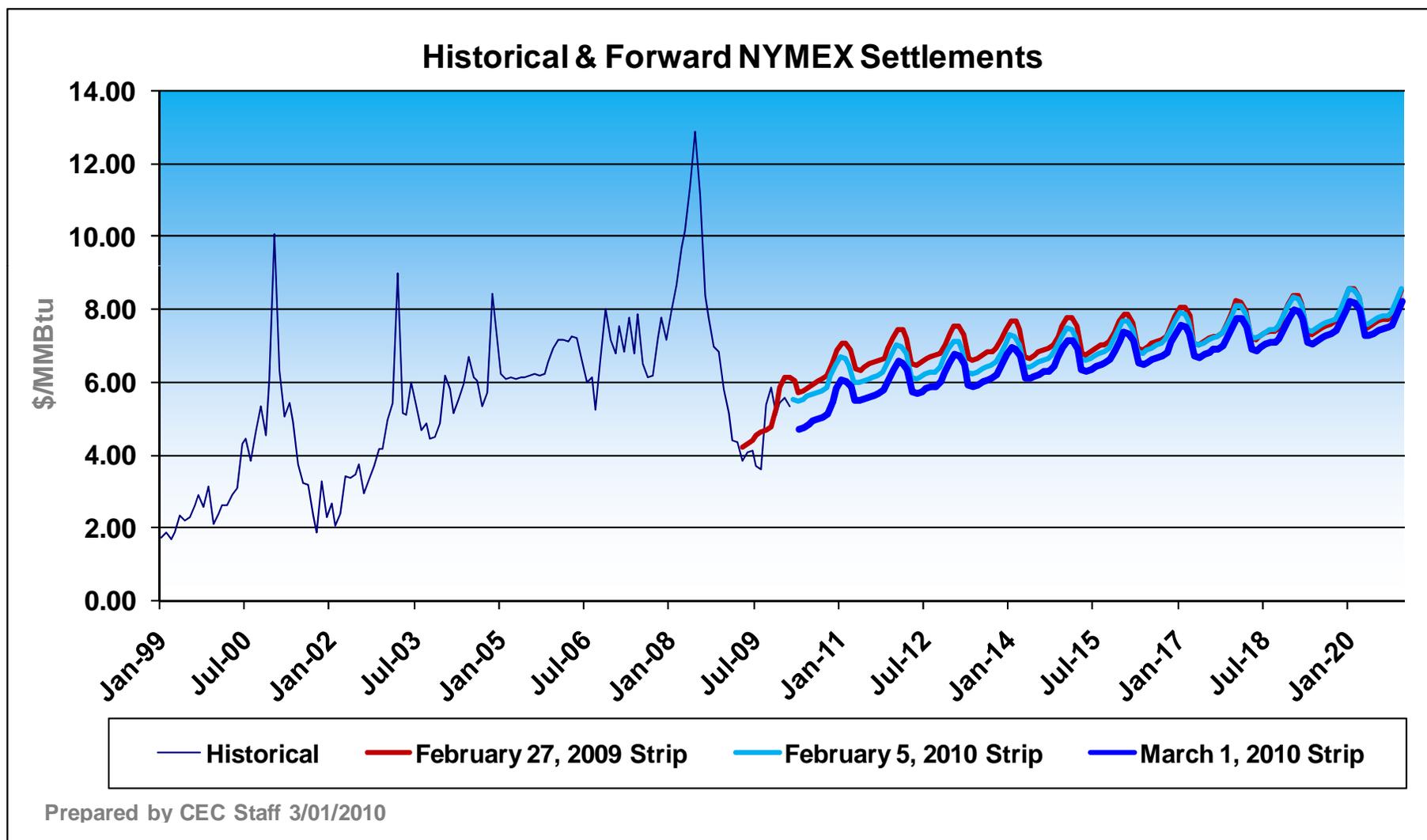


# Natural Gas Working Group

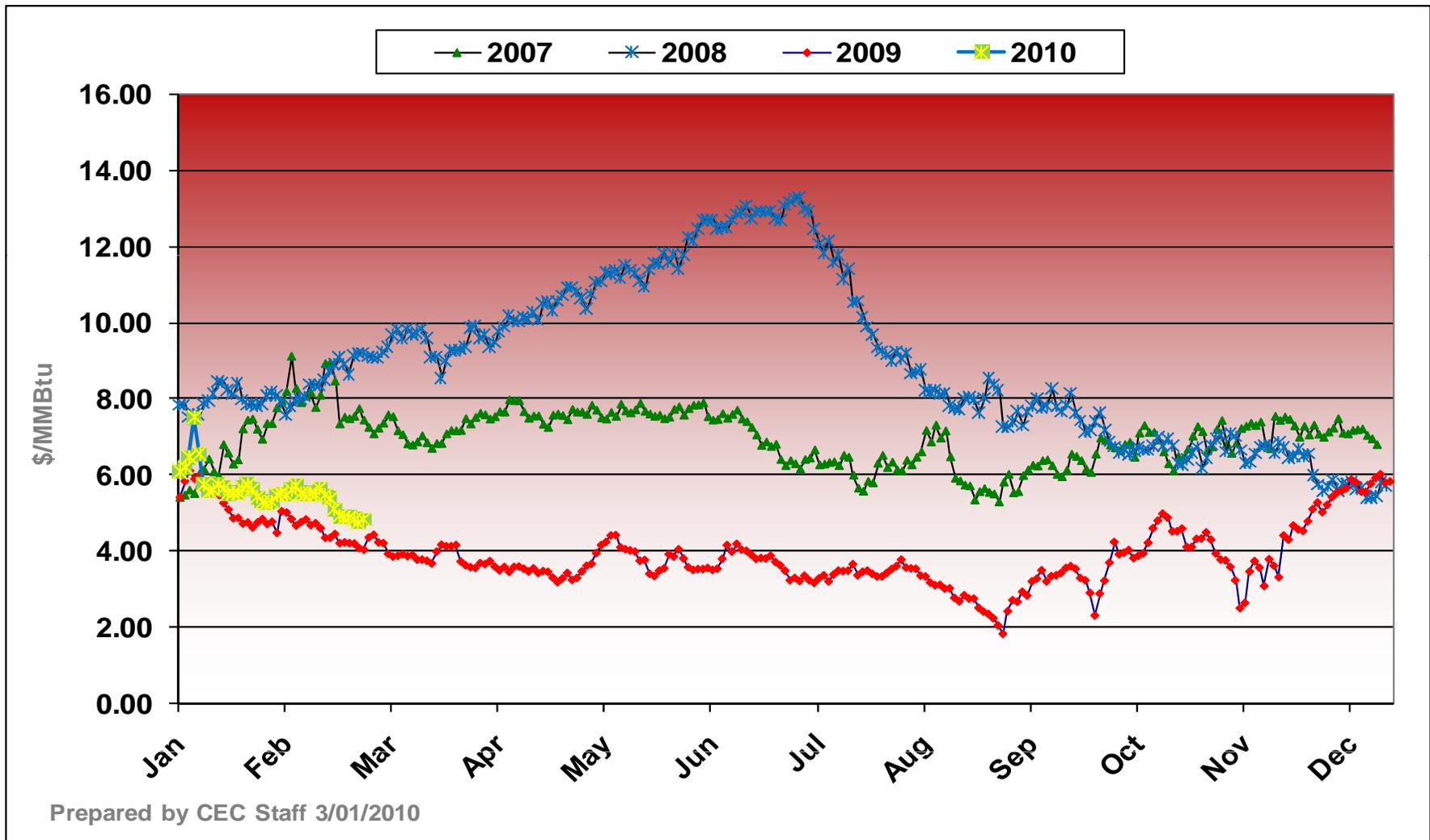


## Prices: United States and California

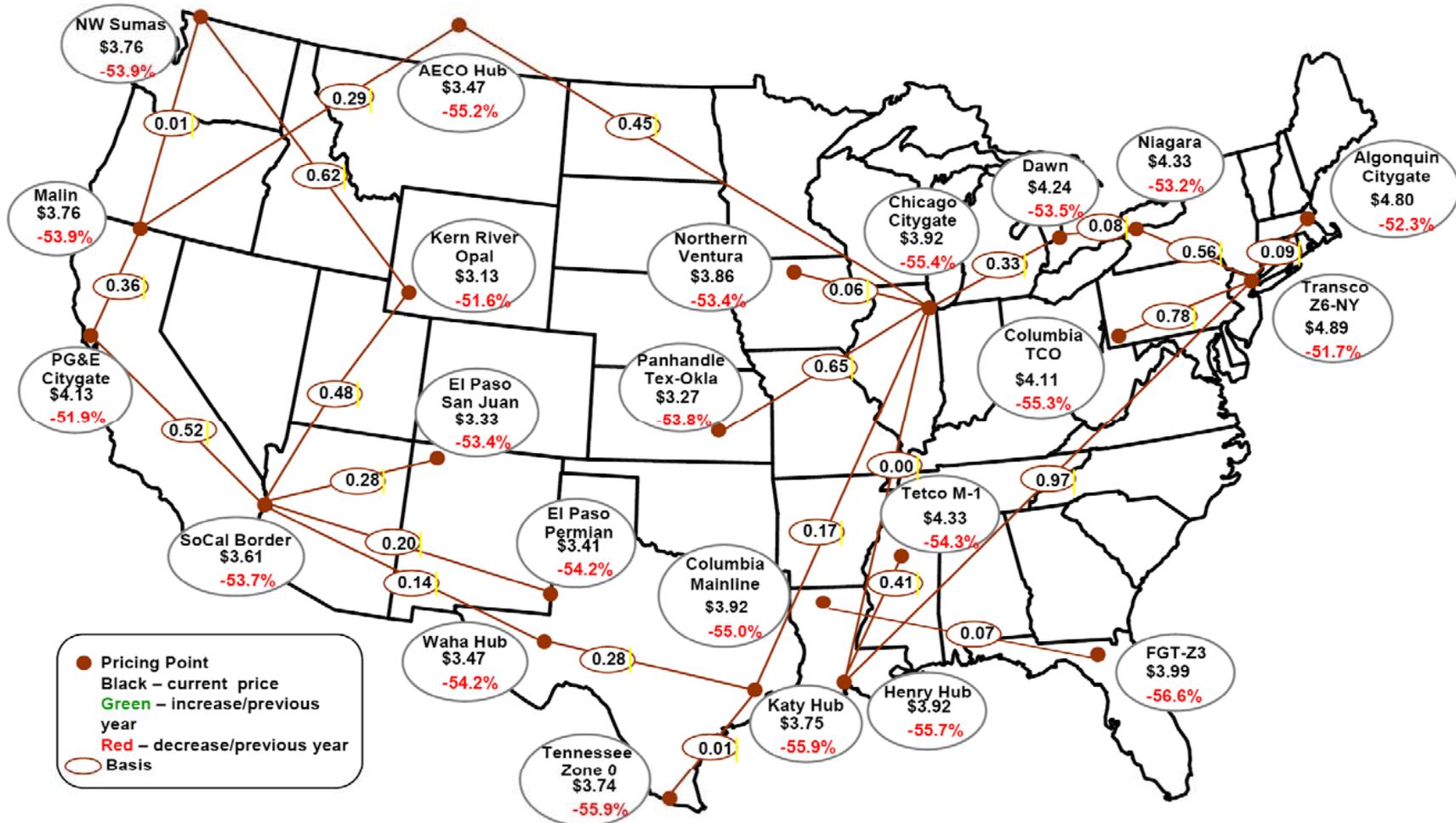
# U.S. Natural Gas Futures Prices



# Henry Hub Daily Spot Prices



# Average Spot Prices 2009

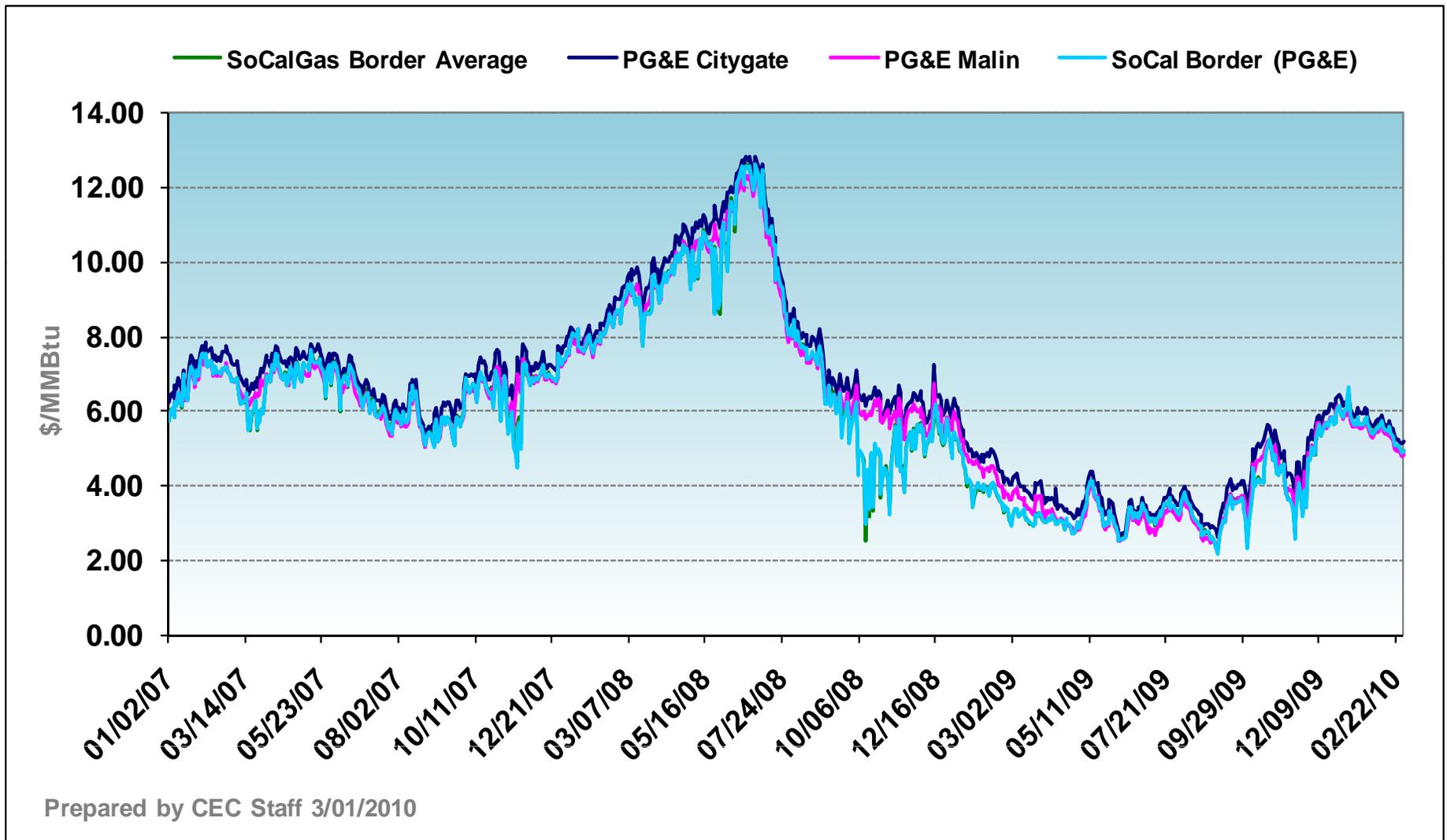


Source: Derived from FERC, *Platts* Data

# Henry Hub Daily Spot Prices

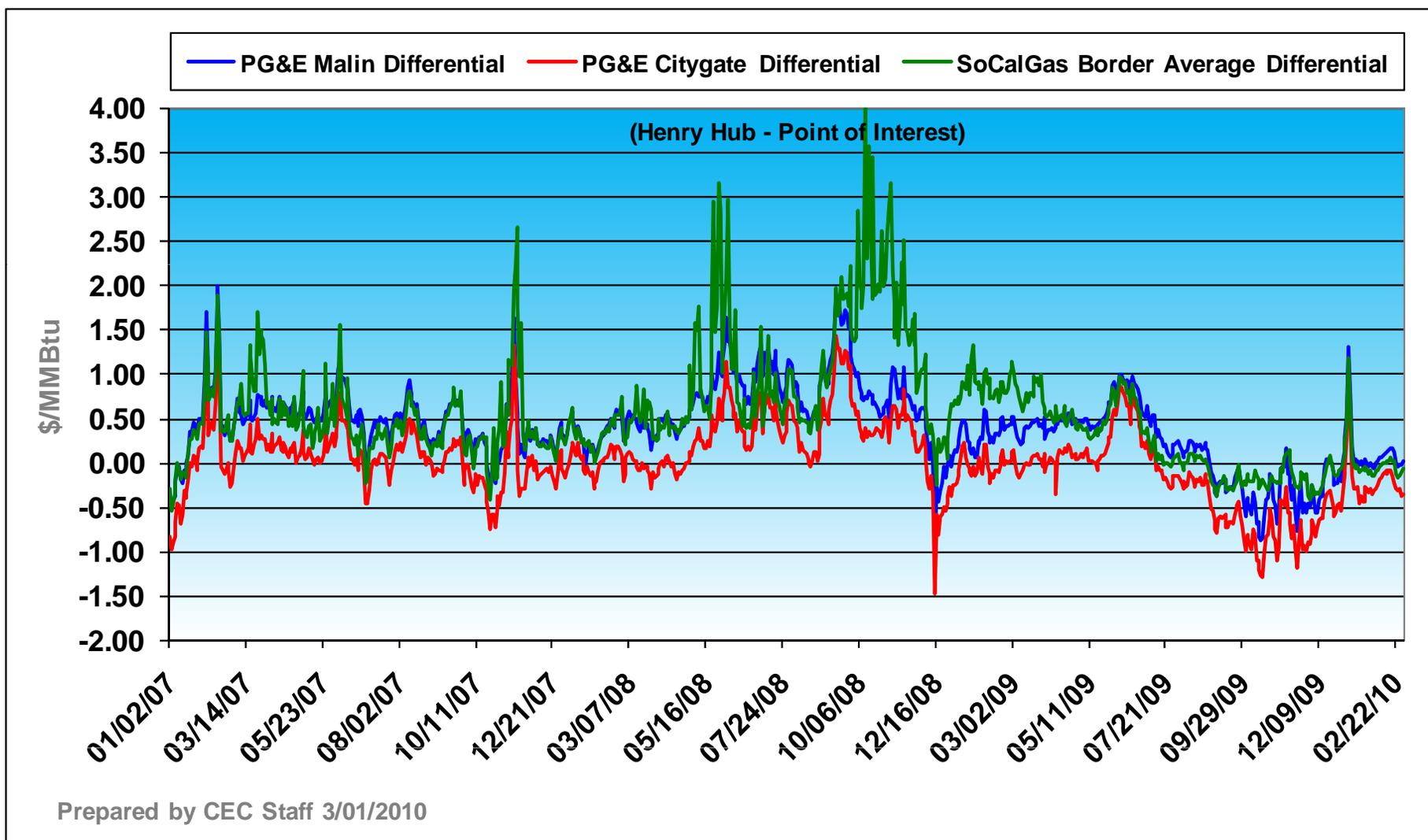


# CA Natural Gas Spot Prices



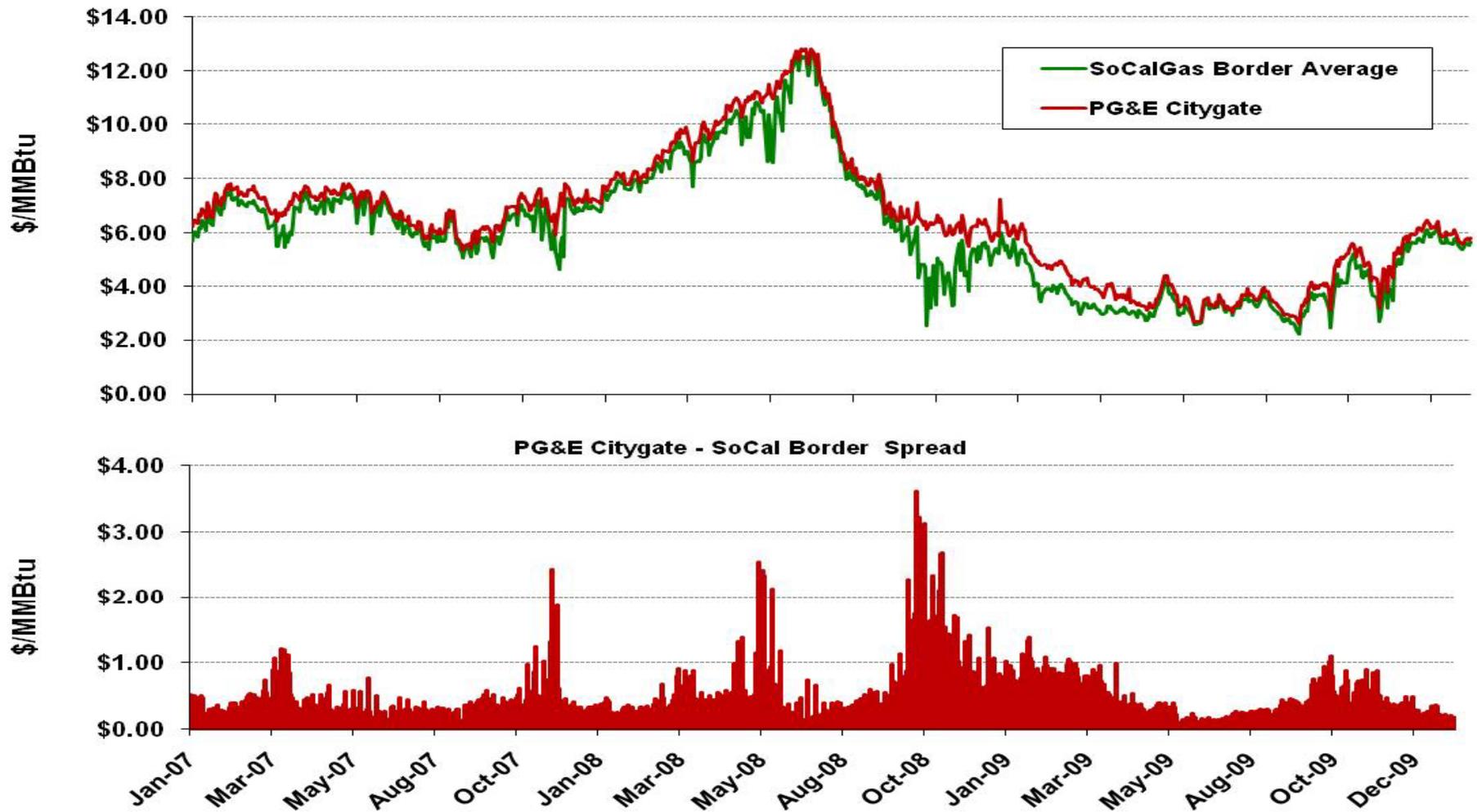
Prepared by CEC Staff 3/01/2010

# Henry Hub Daily Spot Prices Differential



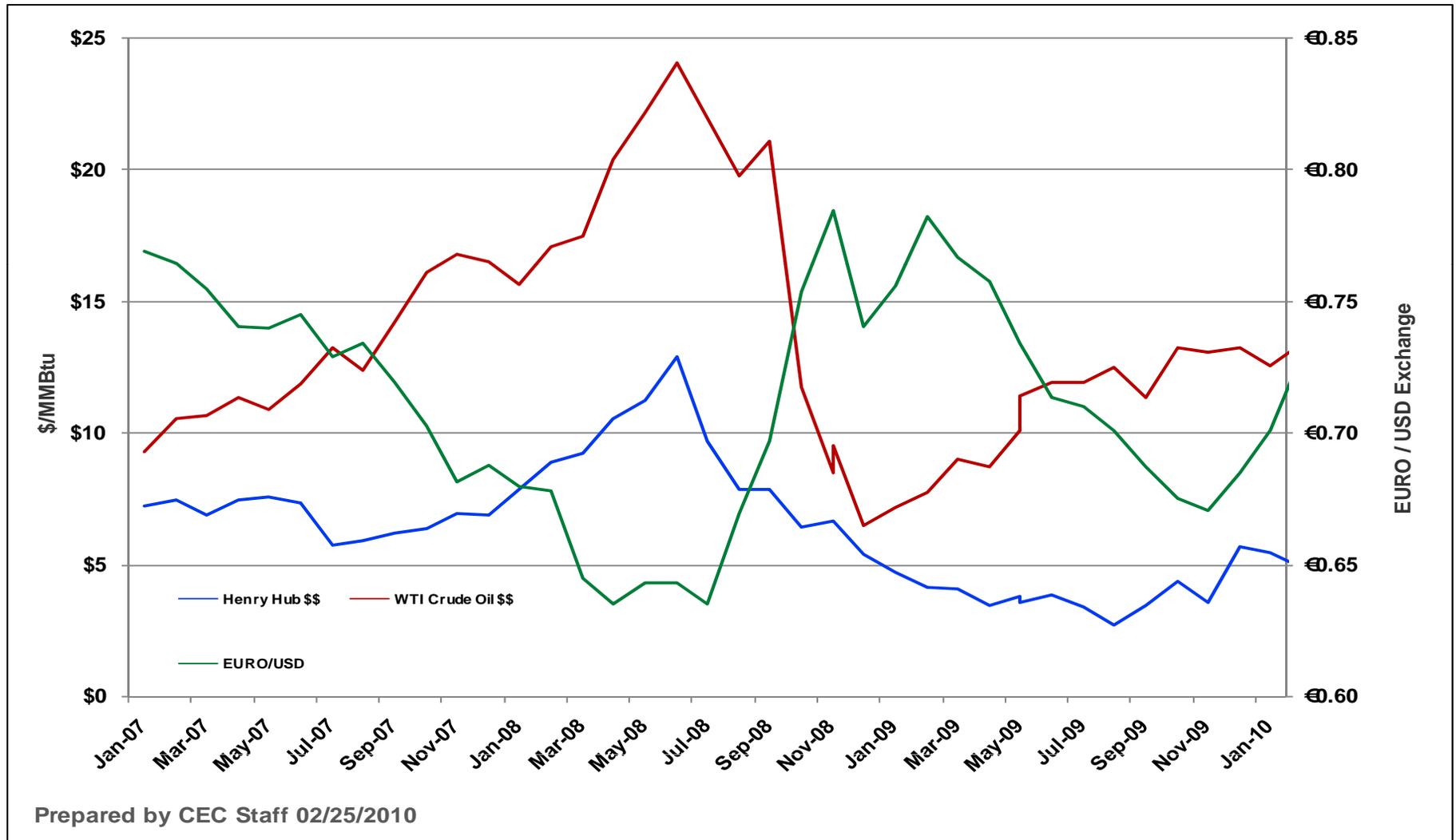
Prepared by CEC Staff 3/01/2010

# North-South CA Spot Price Differential



Prepared by CEC Staff 2/08/2010

# NG-Oil Spot Prices – Euro/USD

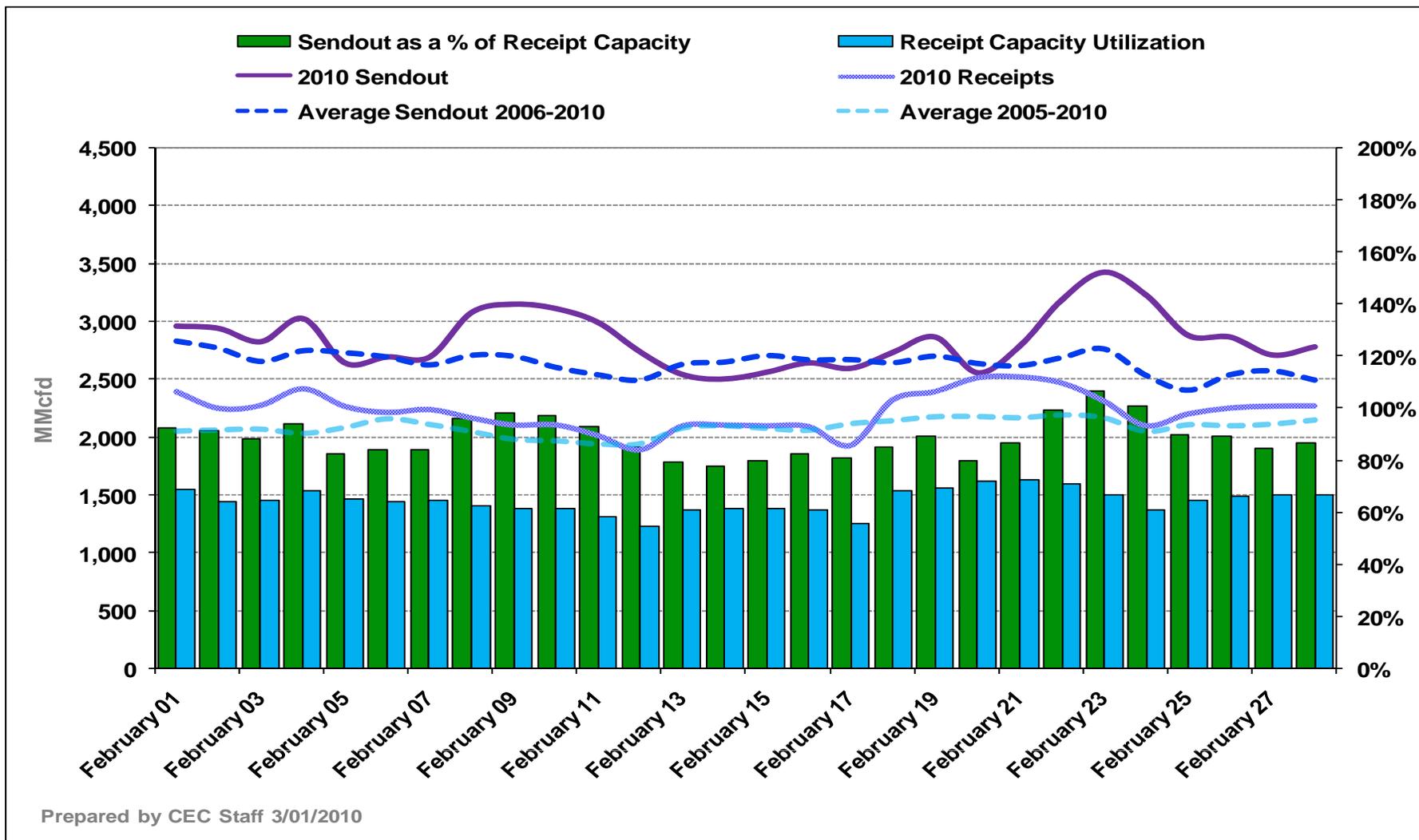


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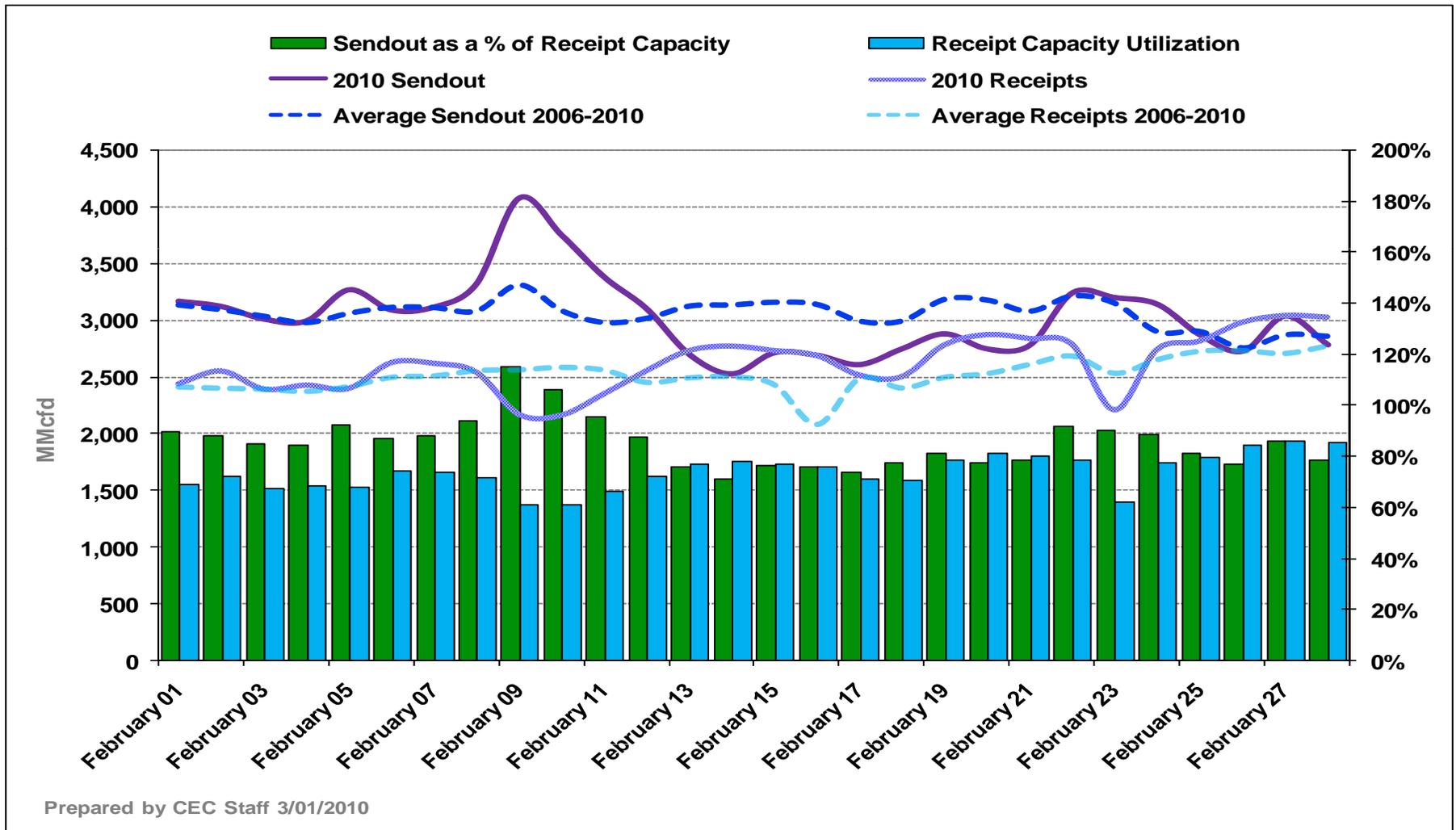


## Infrastructure and Operations

# PG&E System Operations



# SCG System Operations



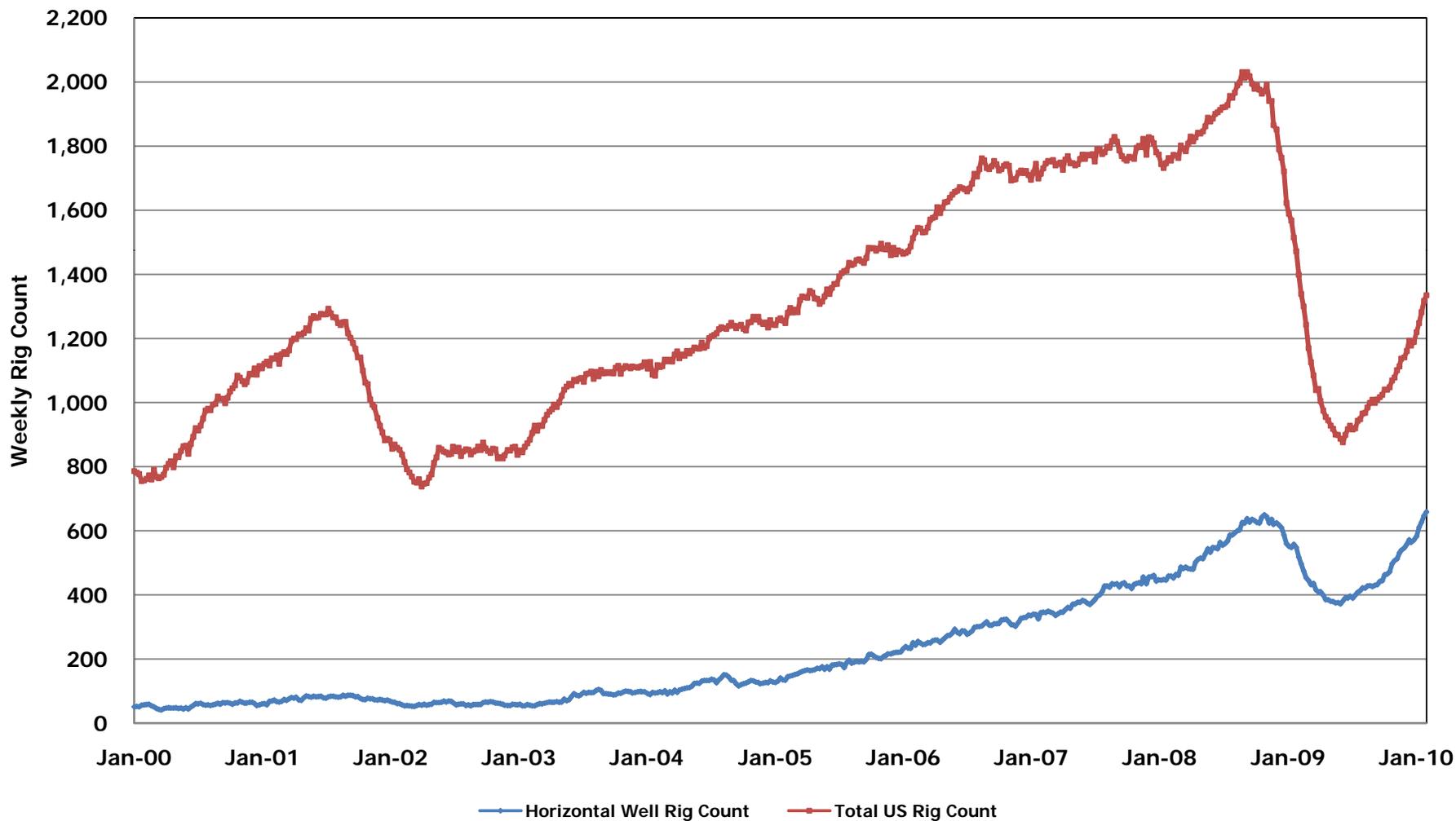
Prepared by CEC Staff 3/01/2010

# Natural Gas Working Group

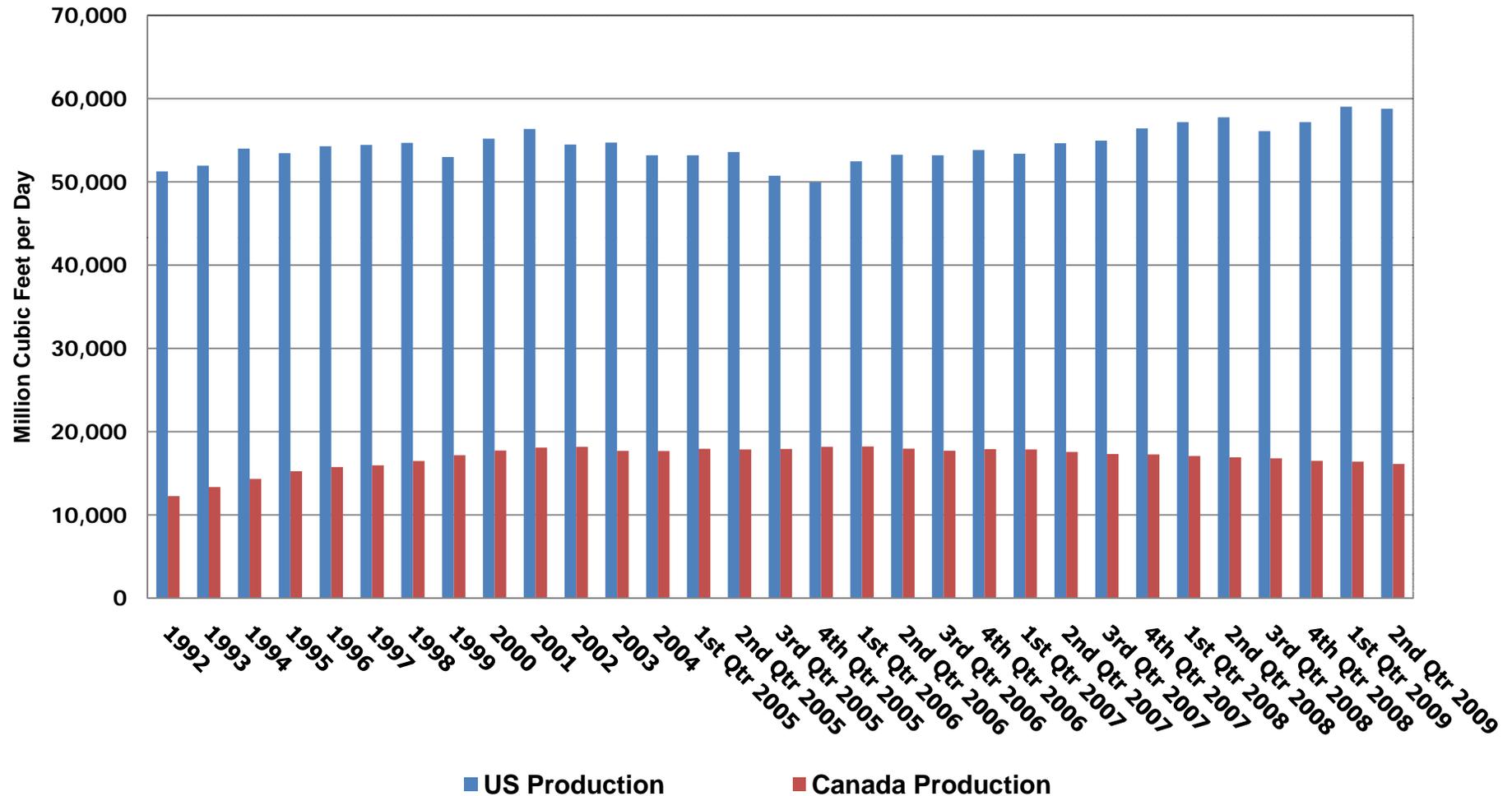


## Drilling and Production Updates

# Rig Count: North America



# Wellhead Production: US & Canada

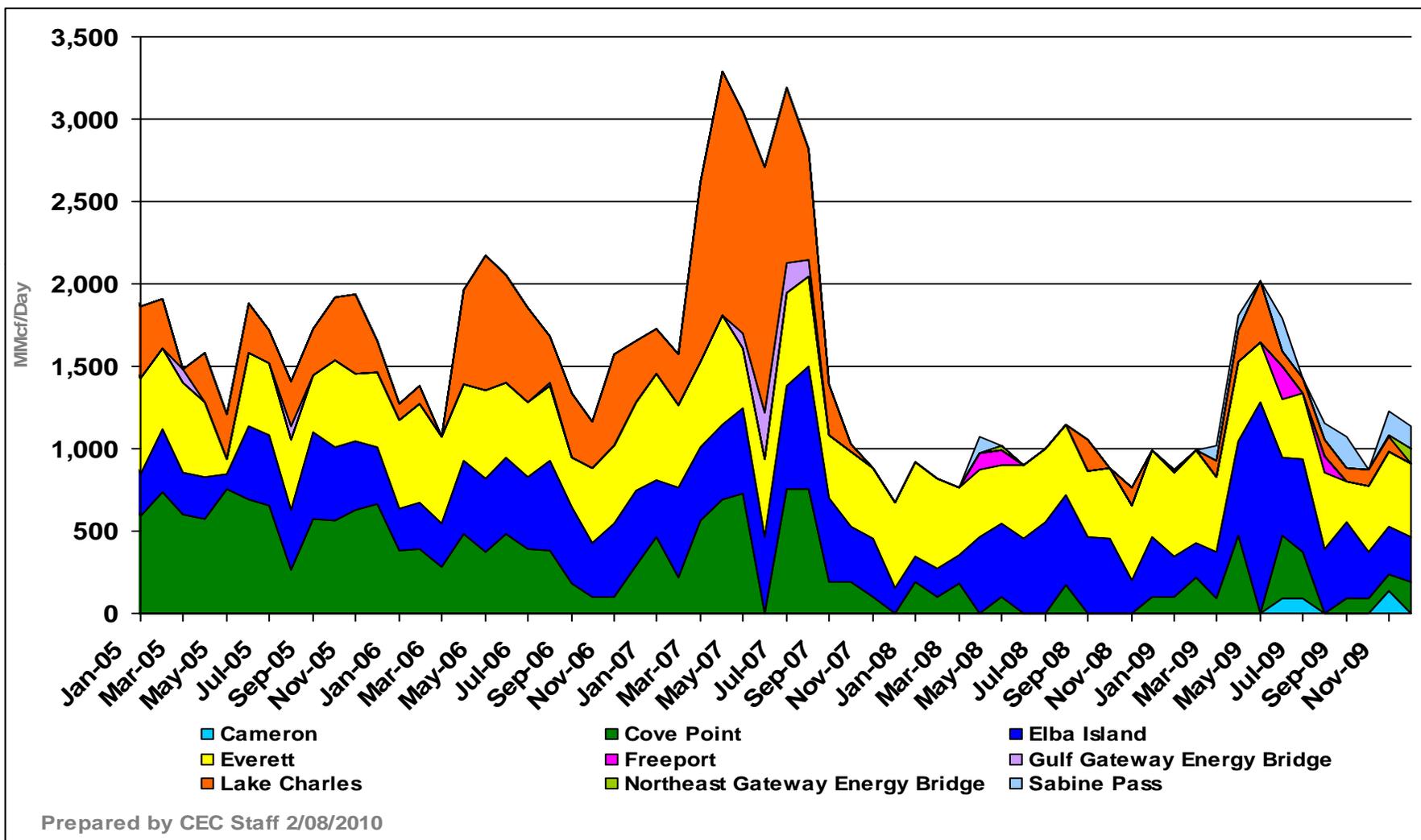


# Natural Gas Working Group



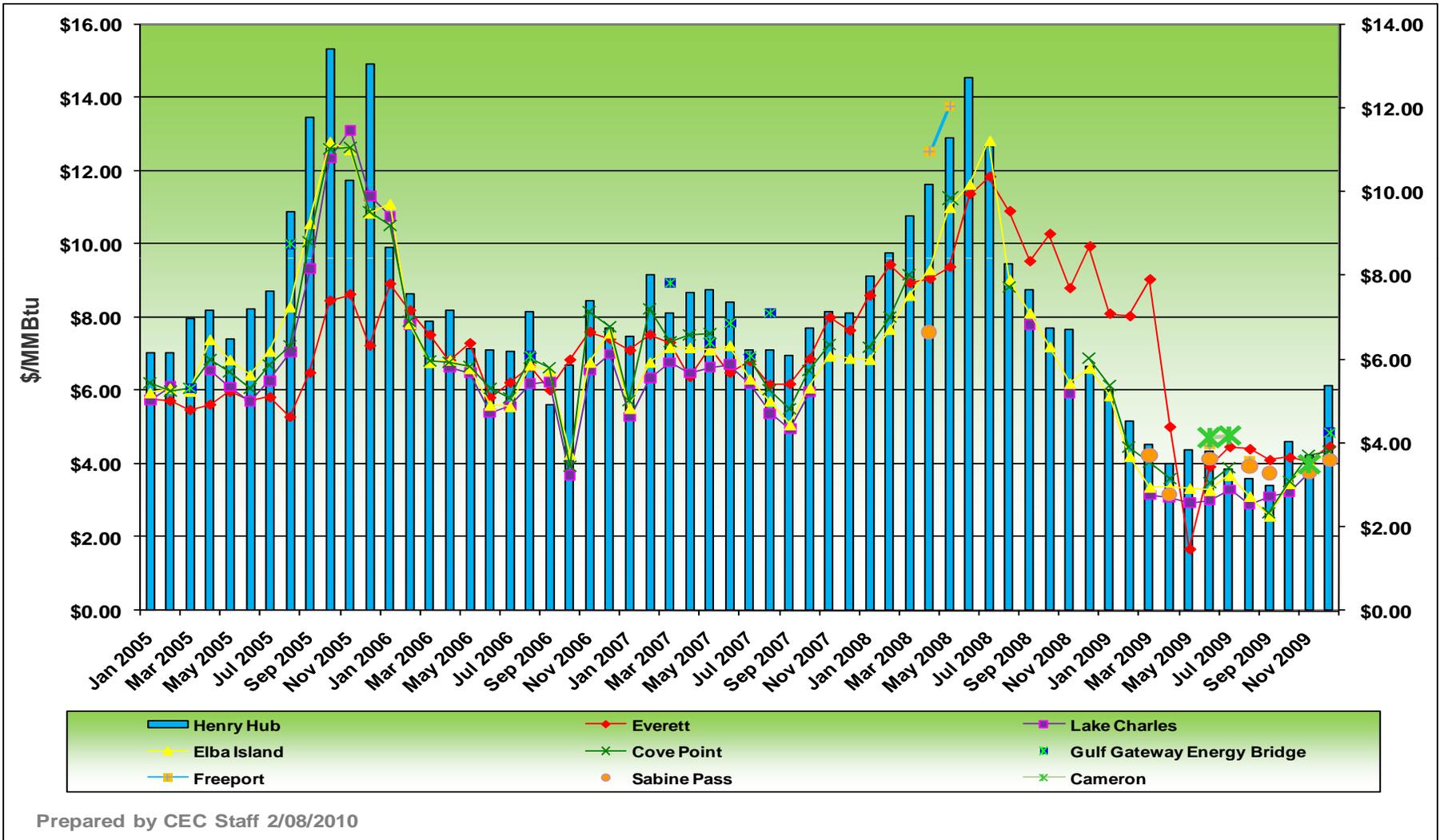
## LNG Update

# LNG Imports



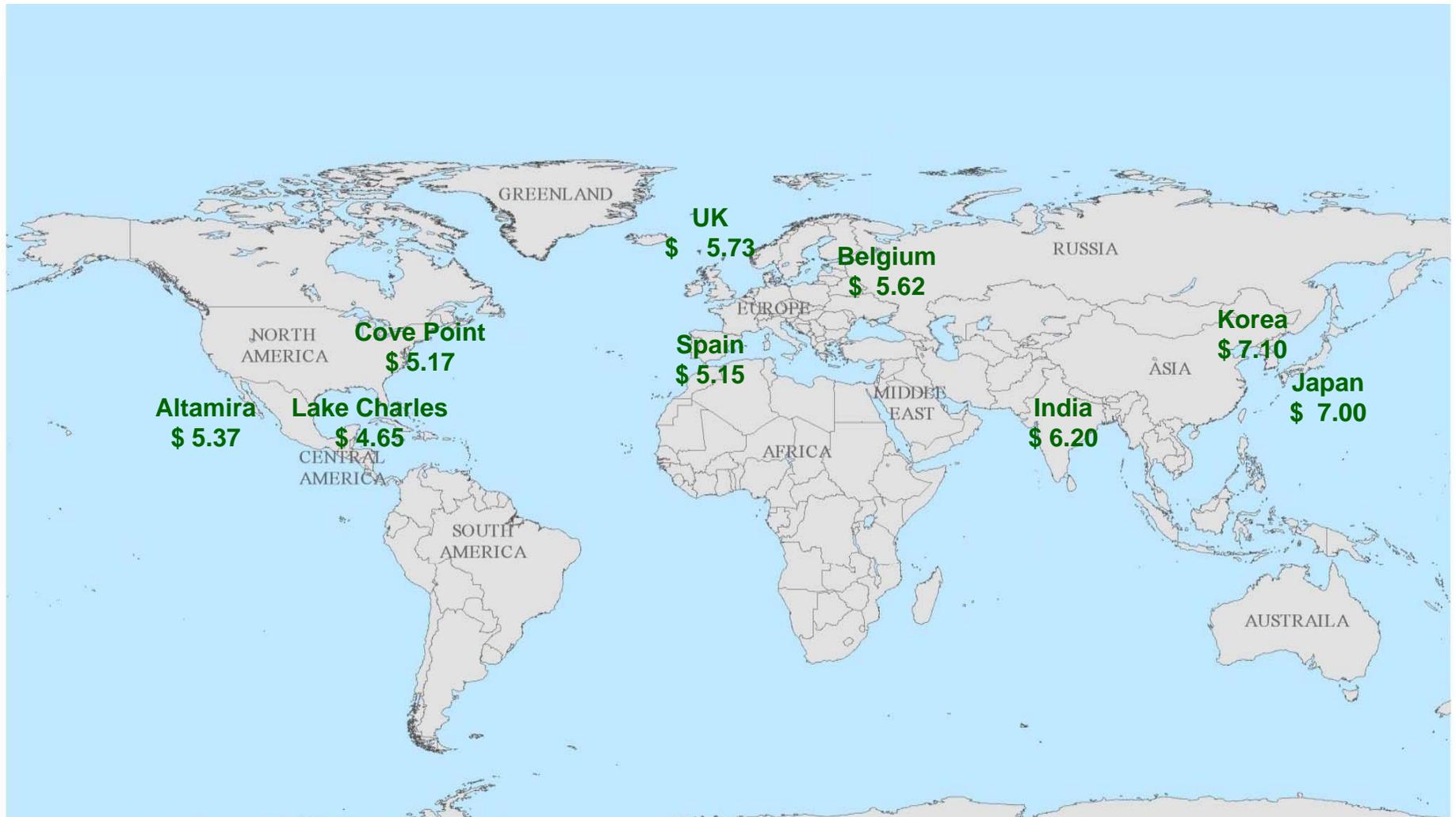
Prepared by CEC Staff 2/08/2010

# Average Terminal LNG Import Price

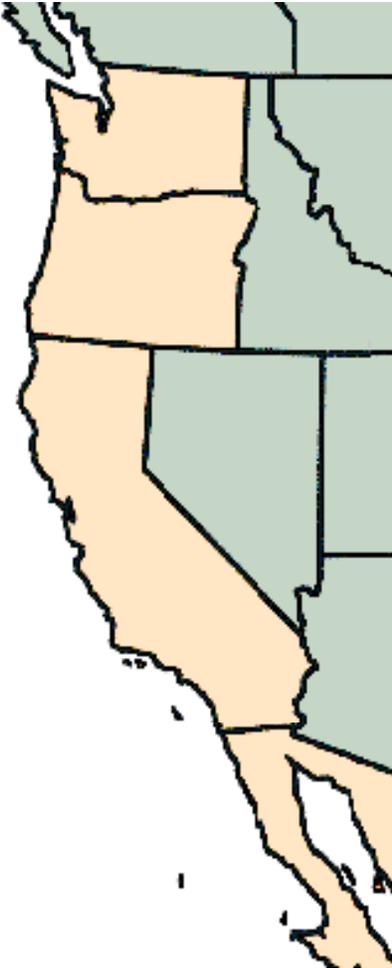


Prepared by CEC Staff 2/08/2010

# World LNG Estimated February 2010 Landed Prices



# LNG UPDATE SUMMARY



# Clearwater Port LNG Project



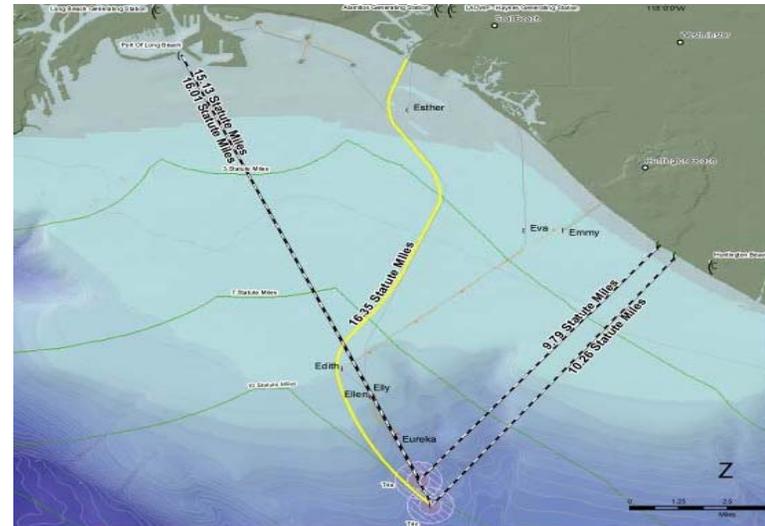
- California Location: 12.6 miles offshore from City of Oxnard
- Owner: NorthernStar Natural Gas Inc
- Capacity: 1.4 Bcfd Peak
- Status: Application Clock Stopped, Could be Voided soon



# Port Esperanza



- California Location: 15 miles seaward of the Port of Long Beach
- Owner: Esperanza Energy
- Capacity: 1.2 Bcfd
- Status: Project on hold



# Northern Star LNG Facility



- Oregon Location: Bradwood, Oregon, south shore Columbia River
- Owner: NorthernStar Natural Gas LLC
- Capacity: Peak send out of 1.3 Bcfd
- Status: Caution letter from director of Environmental Quality Department issued (2/24/10)



# Oregon LNG Facility



- Oregon Location: Astoria
- Owner: Funding Partners
- Capacity: 1.5 Bcfd Peak
- Status: A federal magistrate rules to extend Astoria's sublease with Oregon LNG, DEIS expected soon



# Jordan Cove Energy Project



- Oregon Location: bay side of North Spit of Coos Bay
- Owner: Energy Projects Development, LLC
- Capacity: 1.0 Bcfd
- Status: FERC approves Jordon Cove, Oregon State has petitioned FERC



# Kitimat LNG Facility



- Canada Location: Bish Cove near Port of Kitimat
- Owner: Galveston LNG Inc
- Capacity: 1.0 Bcfd Peak
- Status: Apache signs MOU with Kitimat, acquires 51% controlling stake in Kitimat



# Energia Costa Azul LNG Facility



- Mexico Location: 14 miles north of Ensenada
- Owner: Sempra Energy LNG Corporation
- Capacity: 1.3 Bcfd Peak
- Status: 1.45 Bcf from Tangguh 1 (before maintenance issues) arrived at Costa Azul on Saturday (8/29/09).

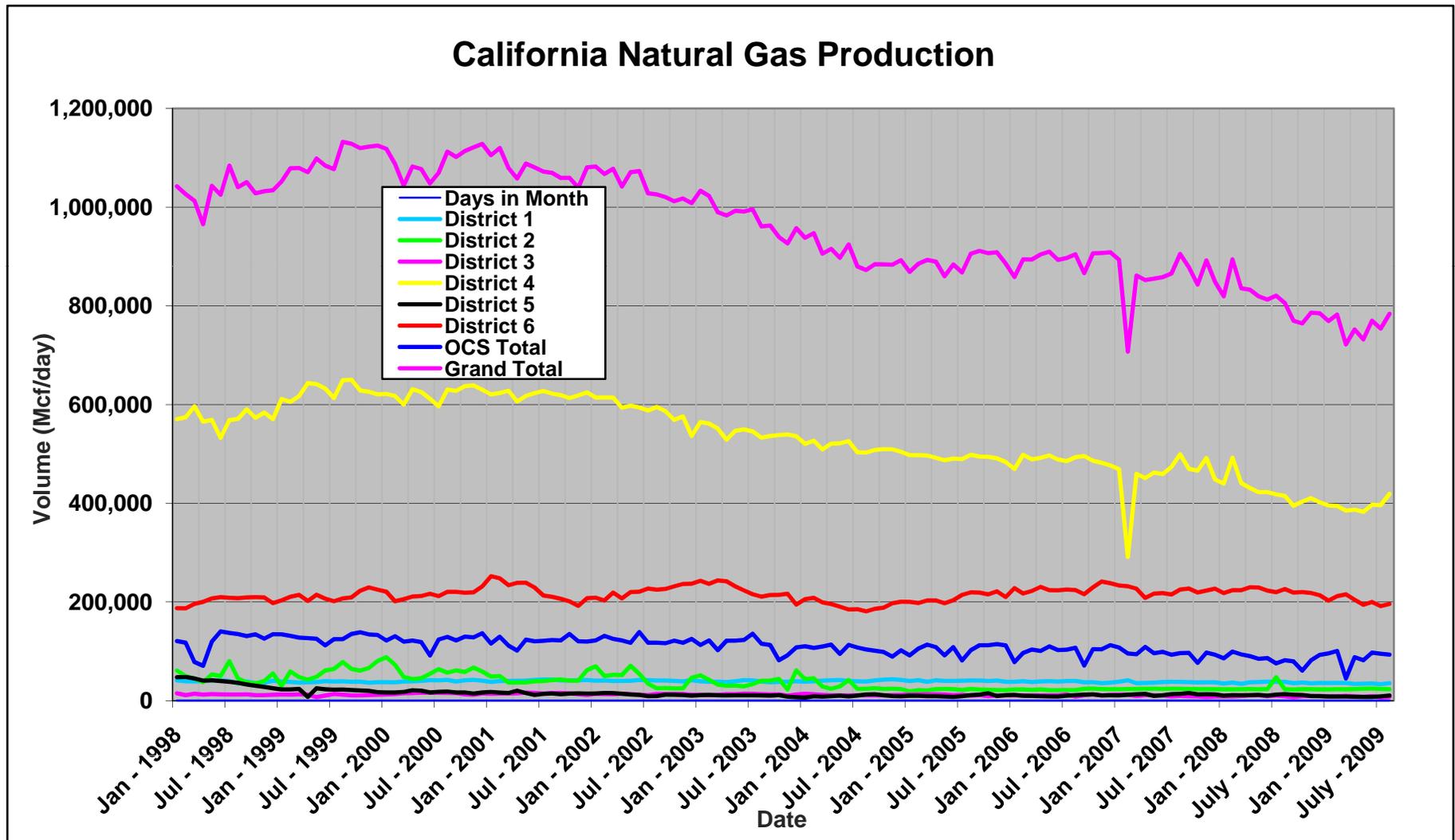
# Natural Gas Working Group



**Jim Champion**

Department of Conservation

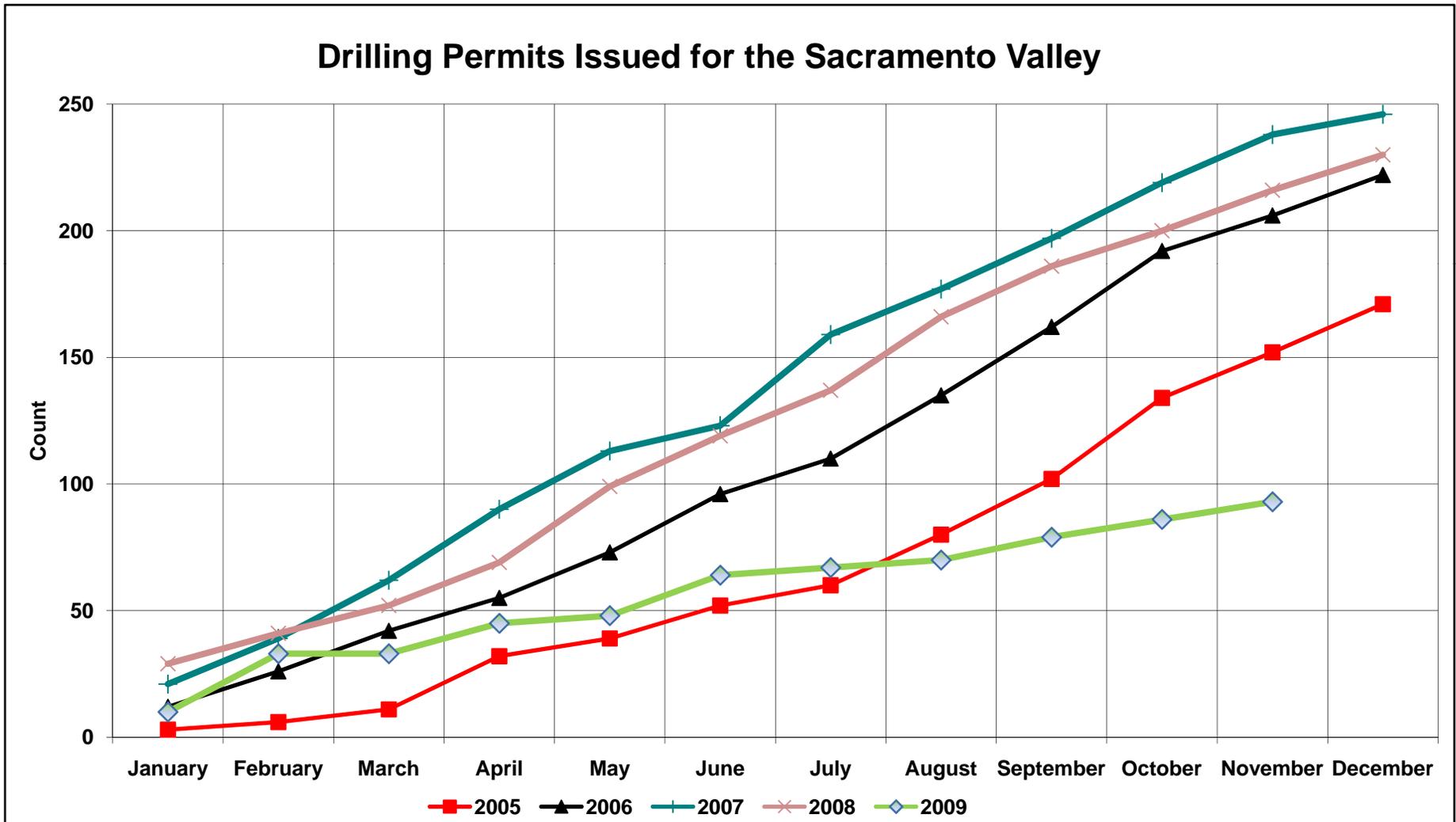
# California Natural Gas Production



# California Drilling Permits



## Drilling Permits Issued for the Sacramento Valley



# Natural Gas Working Group



**Richard Myers**

California Public Utilities Commission

# California Public Utilities Commission Cases



## California Public Utilities Commission and FERC Cases

Proceeding Number & Title	Description	Status
<b>A.04-08-018 SoCalGas, access for natural gas provided by California gas producers</b>	Establish the terms and conditions under which natural gas produced by California gas producers will be granted access to the SoCalGas operating system	On 1/29/09, CPUC issued decision on SoCalGas Petition for Modification (regarding quality testing) of initial decision in proceeding. CPUC found that more information is needed. Additional testimony filed in June, hearing held on 7/7/09. Briefs filed 8/14/09 and reply briefs on 9/4/09. Waiting for Proposed Decision (PD)
<b>A.07-04-013 Sacramento Natural Gas Storage application for CPCN</b>	Sacramento NGS seeks CPCN to construct and operate natural gas storage facility in Sacramento	Draft EIR issued April 2009, concludes that "No Project Alternative" is environmentally superior. Other sites also found to be superior to proposed site. Waiting for final EIR. Amended Scoping Memo issued 1/21/10, additional testimony may be allowed.
<b>A.08-06-006 SoCalGas and SDG&amp;E request authority to make off-system deliveries, out of state</b>	SoCalGas and SDG&E request authority to expand off-system deliveries to out-state points. (Only deliveries to PG&E are currently permitted.)	Phase 1 decision issued 6/4/09 finds that air quality issues were previously dealt with and CEQA is not required in this proceeding. Phase 2 briefs have been filed. Waiting for PD on remaining issues
<b>R.08-06-025 Rulemaking on Gas Cost Incentive Mechanisms</b>	CPUC issues rulemaking to determine if modifications to the gas cost incentive mechanisms should be made, especially with regard to hedging costs. (Utilities are currently not at risk for hedging costs.)	Final decision issued 1/21/10, places utilities at some risk for hedging costs.
<b>A.08-09-023 SoCalGas Application for Advanced Metering Infrastructure</b>	SoCalGas requests approval to construct and operate AMI system and funding of \$1.1 billion over 2009-2015 period	Proposed decision issued 2/9/10 by ALJ denies SoCalGas' request, alternate decision by Assigned Commissioner approves request. Expect final decision as early as 3/11/10.
<b>A.09-04-021 Wild Goose Storage Expansion</b>	Wild Goose requests approval of capacity expansion beyond the currently certificated capacity.	Amended Scoping Memo issued 1/28/10. Final Suppl. EIR due spring 2010, final decision expected summer 2010.
<b>A.09-05-026 PG&amp;E Biennial Cost Allocation Proceeding</b>	PG&E requests approval of cost allocation and rate design for gas distribution rates	Partial settlement reached on most issues. Hearings on remaining issues held in January 2010. Briefs filed February 2010. Waiting for Proposed Decision.
<b>A.09-06-011 Lodi Gas Storage Bond Requirement</b>	Lodi Gas Storage requests elimination of bond requirement	Final decision held to 3/11/10 agenda. (Proposed decision denies Lodi request.)
<b>A.09-07-014 SoCalGas Honor Rancho Storage Expansion</b>	SoCalGas requests approval of revision of its CPCN for Honor Rancho to expand the capacity, per settlement reached in Phase 1 of BCAP	Application filed 7/13/09. Settlement parties (from BCAP) file response 8/13/09 supporting expeditious approval of application. No protests filed. Waiting for Proposed Decision.

# California Public Utilities Commission Cases



## California Public Utilities Commission and FERC Cases

Proceeding Number & Title	Description	Status
<b>R.09-07-029 Rulemaking to Determine Allocation of Core Gas Refunds</b>	Rulemaking at the CPUC to determine the proper allocation of gas refunds to be made to utility gas customers stemming from court cases.	Final decision issued 1/21/10. Refunds should be made in March 2010.
<b>A.09-08-008 Central Valley Storage CPCN</b>	Application by Central Valley Storage for CPCN for 5-8 Bcf storage facility in Colusa County	Application filed 8/19/09. Protests filed 9/21/09. CVS holds open season for capacity interest in October 2009. Prehearing conference held 2/10/10.
<b>R.09-08-009: CPUC rulemaking on alternative-fueled vehicles</b>	CPUC to consider tariffs, policies and infrastructure on alternative-fueled vehicles, including NGVs	Rulemaking issued 8/20/09. PG&E, SDG&E, SoCalGas and Edison are respondents. Comments filed 10/5/09, Reply comments filed 11/6/09. Scoping Memo issued 1/12/10. Proceeding divided into three phases. Phase 1 briefs filed 2/8/10. NGVs to be addressed mainly in Phase 3.
<b>A.09-09-013 PG&amp;E Gas Transmission and Storage Revenue Requirement and Rates</b>	PG&E requests approval of changes in revenue requirement and rates for backbone transmission, local transmission and storage.	Application filed 9/13/09. Prehearing conference held 12/2/09. Amended Scoping Memo issued 1/15/10. PG&E Supplemental Testimony due 3/15/10. DRA & others' testimony due 5/21/10. Rebuttal due in June.
<b>A.09-09-020 SoCalGas Requests approval of work at Aliso Canyon Storage Field</b>	SoCalGas seeks approval to replace 3 gas turbine compressors with electric compressors	Application filed 9/28/09. Only TURN files Protest on 11/3/09
<b>A.09-12-020 PG&amp;E 2011 General Rate Case</b>	PG&E requests increase in electric and gas distribution system revenue requirement	Application filed 12/21/09. Prehearing conference held 2/19/10
<b>C.10-02-001 Gill Ranch/PG&amp;E Complaint vs Property &amp; Mineral Rights Owners</b>	Gill Ranch & PG&E file complaint against property owners and holders of mineral rights	Complaint filed 2/2/10. ALJ Ruling issued 2/11/10, sets expedited schedule.
<b>RP08-026 at FERC: El Paso 2009 General Rate Case</b>	El Paso requests increase in revenue requirements and other authority	Broad settlement in principle has been reached. Discussions have been on-going to iron out differences between parties, but some issues likely will remain for hearings in the spring.
<b>CP09-054 Ruby Pipeline seeks construction permit at FERC</b>	Ruby Pipeline seeks construction permit from FERC	FERC issued final EIS on 1/8/10 says no significant environmental harm with mitigation measures. FERC certificate anticipated by spring 2010.
<b>CP09-432: at FERC: Tricor Ten Section Hub</b>	Tricor seeks FERC certificate for storage field in southern California, not on utility system	Tricor files at FERC in June 2009. In October 2009, Tricor claims capacity oversubscribed in non-binding open season. Environmental Assessment due May 2010, final decision August 2010

# Natural Gas Working Group



## Questions/New Issues