OE ENERGY MARKET SNAPSHOT

Western States Version – November 2008 Data

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

Office of Enforcement
Federal Energy Regulatory Commission
December 2008

Special Report:

Summary of OE 2008 Annual Report



2008 REPORT ON ENFORCEMENT

Docket No. AD07-13-001

Released October 31, 2008

http://www.ferc.gov/legal/staff-reports/2008-enforc.pdf

Enforcement Activities FY2008

- A. May 15, 2008 Issuances.
 - Revised Policy Statement on Enforcement
 - Interpretive Order Modifying the No-Action Letter Process and Reviewing Other Mechanisms for Obtaining Guidance
 - Ex Parte Contacts and Separation of Functions
 - Instant Final Rule on Submissions to the Commission upon Staff
 Intention To Seek an Order To Show Cause
- B. Updated Enforcement Webpage http://www.ferc.gov/enforcement/enforcement.asp
- C. Compliance Workshop
- **D. Policy Statement on Compliance**
- E. Rulemakings on Reporting Requirements
 - Reporting Requirements for Natural Gas Pipelines
 - Reporting Requirements for Electric Utilities and Licensees
 - Rule on Reporting of Transactions to Price Index Publishers and their Blanket Sales Certificate Status

Office of Enforcement

10/29/08

Reliability Committee

Roger Morie - Chair

Office of the Director

Susan Court, Director

Anna Cochrane, Deputy Director

Roger Morie, Reliability Enforcement Counsel

Administration Staff

Denice Smith, Acting Chief

Division of Investigations

Robert Pease, Director Lee Ann Watson, Dep Dir Kathryn Kuhlen, Senior Counsel

Investigations Branch 1

Deme Anas, Chief

Investigations Branch 2
Ted Gerarden, Chief

Investigations Branch 3

John Kroeger, Chief

Investigations Branch 4
Todd Mullins, Chief

Investigations Branch 5

Vacant, Chief

Division of Audits

Bryan Craig, Director Timothy Smith, Dep Dir

Audits Branch 1
Gerald Williams, Chief

Audits Branch 2
Timothy Smith, Acting Chief

Audits Branch 3
Beth Taylor, Chief

Brian Harrington, Chief

Audits Branch 4

Division of Financial Regulation

Jerome Pederson, Director Michelle Veloso, Dep Dir Scott Molony, Chief Accountant

Regulatory Accounting Branch

Scott Molony, Chief

Forms Administration and Data Branch

David Lengenfelder, Chief

Division of Energy Market Oversight

J. Arnie Quinn, Director Steven Reich, Dep Dir Matthew Hunter, Senior Adviser

Market Monitor Relations Branch

John Sillin, Chief

Information Management and Reporting Branch

William Booth, Chief

Electric Market Analysis Branch

Keith Collins, Chief

Fuels Market Analysis Branch

Christopher Peterson, Chief

Transactions Analysis Branch Steven Reich, Acting Chief

Investigation Activities FY2008

- A. Self Reporting Statistics
- **B. Trends in Self Reporting**
- C. Trends in Investigations
- **D. Investigation Statistics**
- E. Settlements
- F. Proceedings After Orders To Show Cause Have Issued

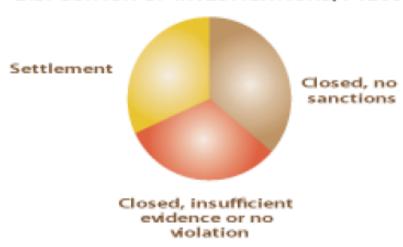
Investigation Highlights

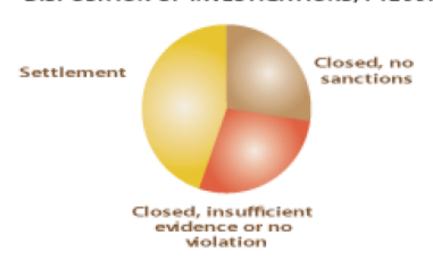
- A. Number of Investigations increased
 - 48 in FY2008
 - 35 in FY 2007
- **B.** Increase in Market Manipulation cases
- C. Increase in 35.41
- D. Increase in referrals from MMUs
 - 15 in 2008 vs 2 in 2007
- E. First Reliability related investigations opened in FY2008
- F. Stress on compliance programs

Investigation Dispositions

DISPOSITION OF INVESTIGATIONS, FY2008

DISPOSITION OF INVESTIGATIONS, FY2007





SETTLEMENTS BY TYPE OF VIOLATION, FY2008

Network Service Violation of the OATT Standards of Conduct 18 C.F.R. § 35.41

FY2008 total civil penalty payment: \$19.95 million

SETTLEMENTS BY TYPE OF VIOLATION, FY2007

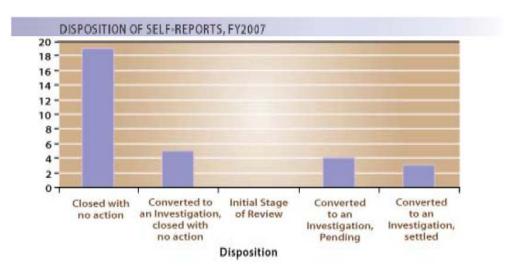


FY2007 total civil penalty payment: \$32.5 million

Self Report Highlights

- A. Self Reporting doubled to 68 reports in FY2008 (31 in FY2007)
- B. Most self reports continue to involve Capacity Release requirements
- C. SOC self-reports have declined
- D. Staff closed 25 FY2008 self reports with no action
- E. None have yet resulted in penalty





Orders To Show Cause FY2008

- A. Amaranth Advisors LLC
- B. Energy Transfer Partners, L.P.; and Oasis Pipeline, L.P.

Audits Activities FY2008

A. Summary of Audit Results

- 60 audits in FY2008; 39 Financial & 21 non-financial
- 156 recommendations for corrective action
- \$1 mill recoveries from acctg/billing adjustments
- \$8.7 million reductions in utility plant
- Implementation of compliance plans
- Examples:
 - PUCHA 2005 1
 - Financial Services Trading Companies 3
 - Blanket Authorizations for Mergers, Acquisitions, and other Transactions 1
 - Fuel Adjustment Clause 1
 - Market-Based Rate Authorizations 2
 - OATT 3
 - OASIS Several
 - Reliability 8 (Observers only)

B. Referrals to Investigations – Ottertail and DQE

C. Audit Improvements

Energy Market Oversight Activities FY2008

A. Presentations at Commission and Other Public Meetings

- State of Markets
- Summer/Winter Assessments
- Upon Request (ex. Increasing Costs in Electric Markets)
- Conferences (ex. Review of Wholesale Electric Markets)

B. Oversight Website

http://www.ferc.gov/market-oversight/market-oversight.asp

- C. Domestic and Foreign Delegation Briefings
 - 3 Congressional delegations
 - 2 groups from state commissions
 - 6 industry delegations
 - 17 foreign delegations

D. Research in Market Oversight Program

- EPA emissions
- Missouri PSC market volatility, distortions, manipulation
- Ireland's Commission on Energy Regulation
- E. Monthly Conference Calls With State Energy Officials
- F. RTO/ISO Market Monitors
- G. Market Monitoring Center (MMC)

Financial Regulation Activities FY2008

A. Forms Administration and Data Collection

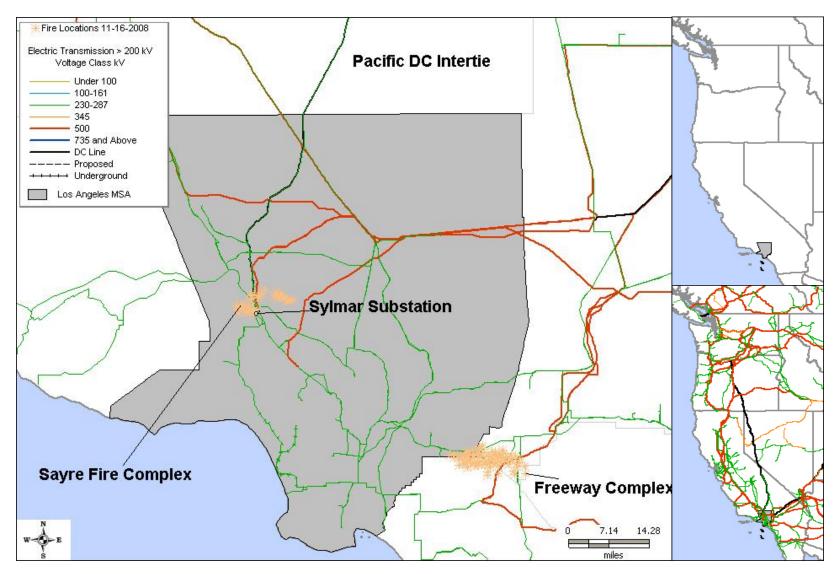
- Electric Quarterly Reports
- Annual and Quarterly Financial Reports

B. Regulatory Accounting

- Help Desk and Outreach
- Requests for Approval of the Chief Accountant
- Certificate Proceedings
- Merger and Acquisition Proceedings
- Rate Proceedings

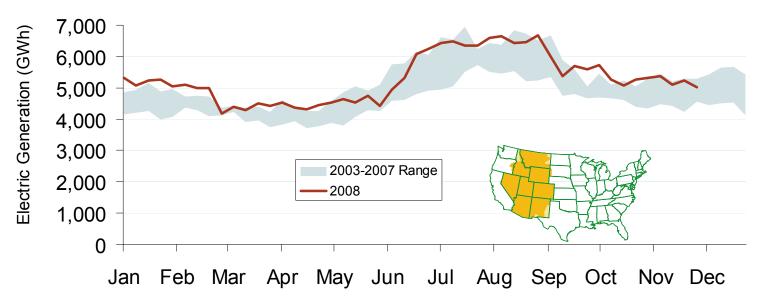


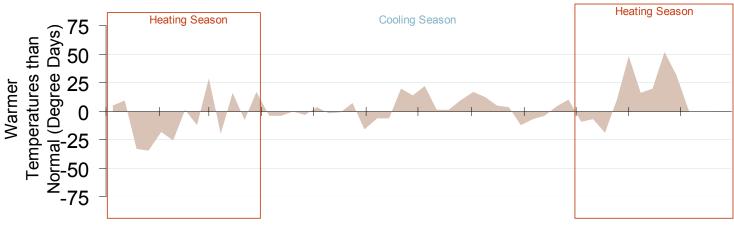
Los Angeles Fires Cause Outages on Pacific DC Intertie



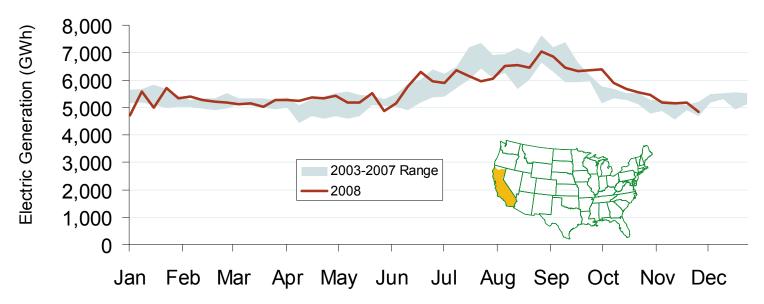
Source: Energy Velocity

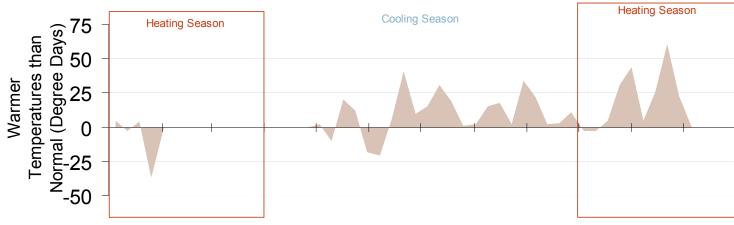
Weekly Electric Generation Output and Temperatures Rocky Mountains Region



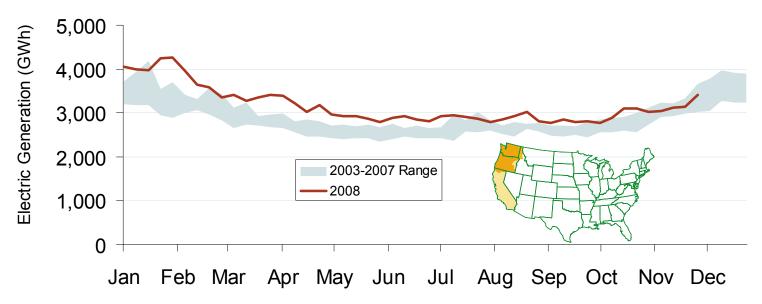


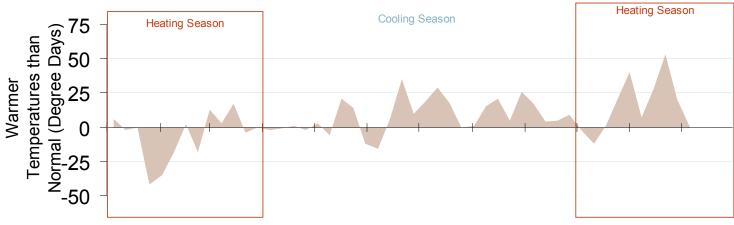
Weekly Electric Generation Output and Temperatures California



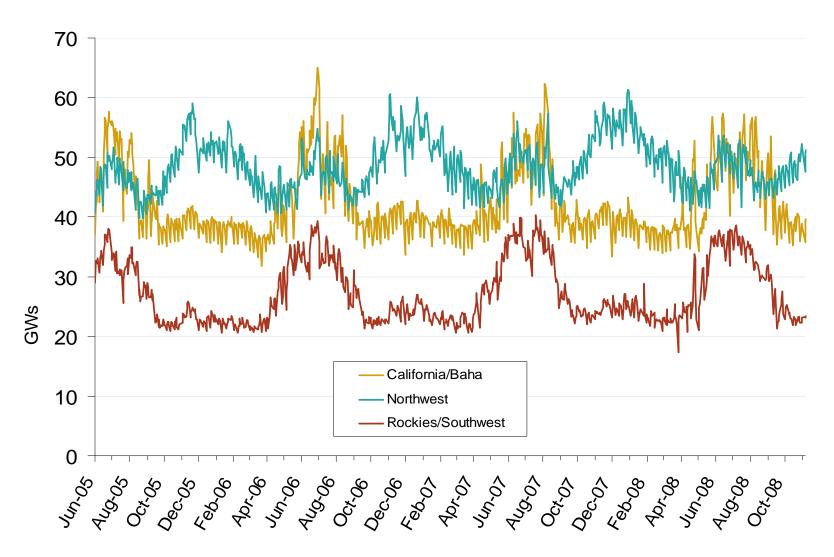


Weekly Electric Generation Output and Temperatures Pacific Northwest Region





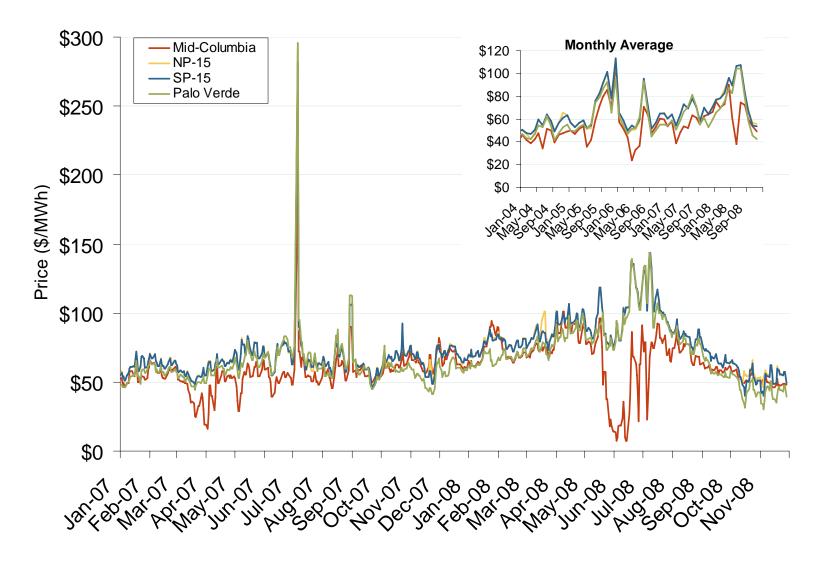
Western Daily Actual Peak Demand



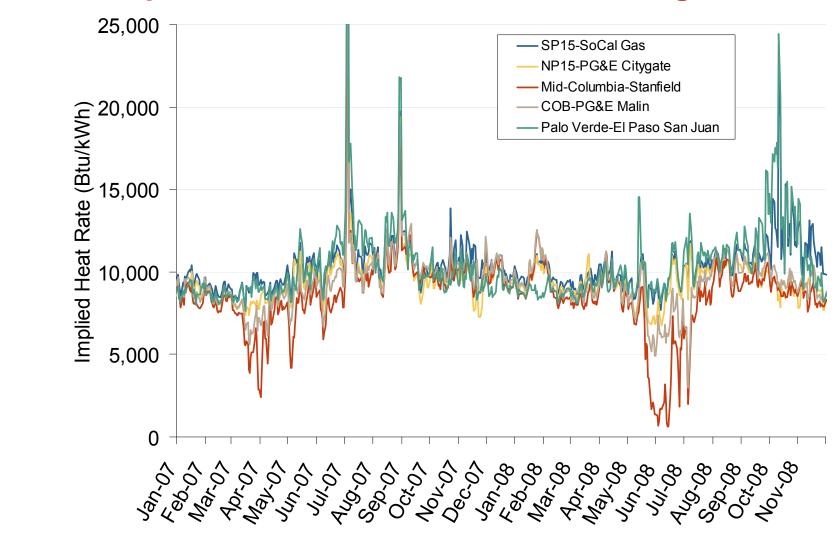
Source: Derived from WECC Daily Report data available at http://wecc.biz. Data shown is generally Sunday through Thursday due to limitations of daily reports.

December 2008

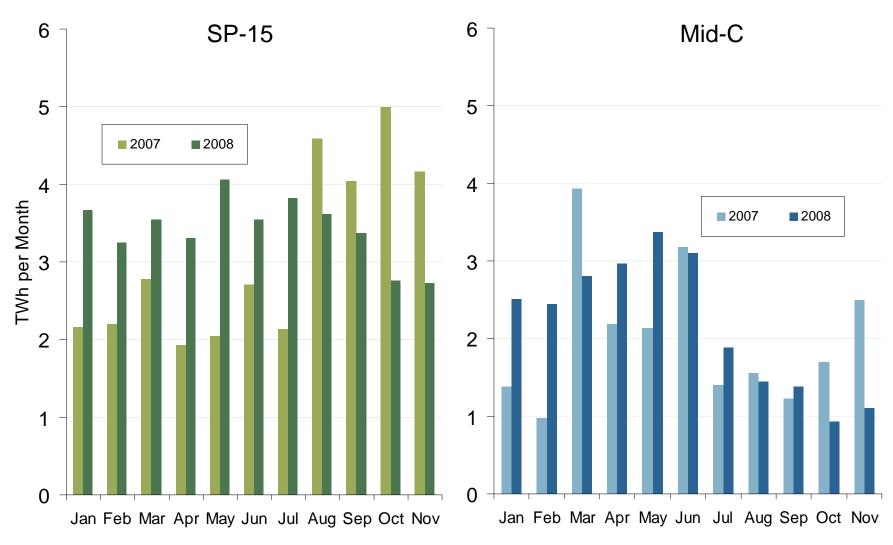
Western Daily Bilateral Day-Ahead On-Peak Prices



Implied Heat Rates at Western Trading Points



Western Next Day Physical Power Volumes Sold on ICE 2007 and 2008



Source: Derived from ICE data.

December 2008

MT: 15% by 2015

ND: 10% by 2015

KS: 20% wind by 2020

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Renewable Energy Portfolio Standards (RPS)

28 states and D.C. have an RPS

WA: 15% by 2020 OR: 25% by 2025: small utilities 5-10% ID: Priority to DR. EE. and in-state RE **CA**: 20% by 2010;

Exec Order: 33% by '20

NV: 20% by 2015; solar 5% per year

UT: 20% by 2025

CO: 20% by 2020; co-ops & munis 10%: includes 4% solar

AZ: 15% by 2025; includes 30% DG

NM: 20% by 2020; co-ops 10%

TX: 5,880 MW by 2015; goal of 10,000 MW by 2025

> HI: 20% by 2020; proposed increase to 40% by 2030 agreed to for 2009 session

WI: 10% by 2015; proposed increase for 2009 session

IL: 25% by 2025

MI: 10% by 2015, and new RE capacity: 1,100 MW by 2015

MO:15% by 2021; at least 2% solar **OH**: 12.5% by 2025; 0.5% solar **OK**: studying RPS, RE transmission, cost-recovery AR: utilities to include KY: proposed REPS: 1,000 RE in IRPs MW of clean energy by 2025

MN: 25% by 2025

Xcel 30% by 2020

IA: 1,105 MW by 2011*

Updates at: http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-rps.pdf

Notes: Alaska has no RPS; * lowa has a goal of 1,000 MW of wind by 2010; TVA's "Renewable Energy and Clean Energy Assessment" is from the Public Power Authority; it is not a state policy.

Abbreviations: DG: distributed generation; DR: demand response; EE: energy efficiency; IRP: integrated resource plan.

Sources: Derived from data in: EEI, EIA, LBNL, PUCs, State legislative tracking services, Database of State Incentives for Renewables and Efficiency, and the Union of Concerned Scientists.

ME: 40% by 2017 **NH**: 23.8% BY 2025

VT: 25% by 2025

MA:15% by 2020; 250 MW solar goal by 2017

RI: 16% by 2019

CT: 23% Class I/II by 2020 4% Class III by 2010

NY: 25% by 2013

PA: 8% Tier I, 10% Tier II by 2020; 0.5% solar set-aside

NJ: 22.5% by 2020; 2% solar; MEP proposes increases

DE: 20% by 2019, with 2% solar

DC: 20% by 2020, with 0.4% solar

MD: 20% by 2022, with 2% solar

VA: 12% by 2022

TVA: 50% of generation from zero- or low-carbon sources by 2020*

NC: 12.5% by 2021

co-ops & munis: 10% by 2018

FL: PSC postponed vote on draft RPS to Jan 2009 for more study

RPS

Strengthened/ amended RPS

Voluntary standards or goals

Proposed RPS or studying RPS

Other renewable energy goal

Energy Efficiency Resource Standards (EERS)

ID: Energy Plan puts conservation -DR and EE – as priority resource

> MT: state agency reduction initiative: save 20% by 2010

WA: must pursue all costeffective conservation

OR: IOUs required to have EE in IRP & assess cost-effectiveness

CA: IOUs reduce MW 10%, peak demand (MWh) 12% by 2013; munis 10% by 2017

NV: use EE for up to 25% of RPS by 2015

UT: EE incentives in RPS goal

CO: save 40 MW and 100 GWh annually to 2013

NM: use EE and DR to save 10% of 2005 retail electric sales by 2020

KS: Order advocates voluntary utility programs, not mandate

OK: PSC approved guick-start DSM programs, including EE

TX: 10% of load growth, beyond 2004, based on prior 5 years

> HI: 20% of MWh sales by 2020; up to 50% of RPS

by 2015 through EE, RE

IA: utilities must establish EE goals by end of 2008

MI: annual savings: 1% of prior year's sales by 2012

WI: RPS requires utility EE

MN: reduce fossil fuel use 15% **IL**: reduce energy 2% by 2015 (EE) and 0.1% from prior year (DR)

> OH: reduce peak-demand 8% by '18; 22% energy savings by '25

KY: proposed REPS - EE and conservation to offset 18% of projected 2025 demand

ME: 10% new EE by 2017; in RPS goal as 2nd priority

VT: EE & RE to meet 2007-12 growth

MA: meet 25% of capacity and energy with DSR by 2020

NY: 15% electric use reduction by 2015; doubles EE funding

CT: 4% savings by 2010; a Tier III RPS resource

NJ: reduce consumption 20%, and peak demand 5,700 MW by 2020

DE: EE. RE. DG. and DR are priority resources before new gen

PA: reduce energy consumption 3% and peak demand 4.5% by 2013

DC: reduce peak demand and energy consumption

MD: reduce peak demand and per cap electricity use 15% by 2015

VA: reduce 10% of 2006 sales by 2022 with EE. DR

NC: EE to meet up to 25% of RPS to 2011; later to 40%

TVA: reduce peak demand 1,400 MW by 2012 with EE, DR *

FL: PSC to adopt goals to reduce electric consumption, peak demand



^{*} TVA's "EE and DR Plan" is from the Public Power Authority, and is not a state policy. **Abbreviations:** CHP – Combined heat & power; DG – distributed generation; DR - demand response; DSM - demand side management; DSR - demand-side resources; EE - energy efficiency; E&G: electric and gas utilities; IRP - integrated resource plan; RPS: Renewable Portfolio Standard Sources: ACEEE, EPA, Regulatory Assistance Project, Union of Concerned Scientists, State regulatory and legislative sites, trade press

EE only as part of an RPS law, rule, or goal EERS by regulation or law (stand-alone) Voluntary standards (in or out of RPS) Energy efficiency goal proposed / being studied Other energy efficiency or demand-side rule or goal

Collaborative Greenhouse Gas (GHG) Programs

Collaborative Regional GHG Programs:

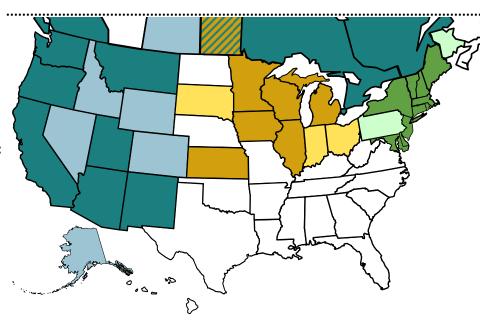
- Three North American groups with goals to lower regional GHG emissions were initiated by state Governors.
- 32 U.S. states, D.C., eight Canadian provinces, and six Mexican states are Participants or Observers.
- Observer jurisdictions do not commit to group GHG reduction goals, but participate in proceedings should they opt to join later. RGGI Observers are not on its Board.

Western Climate Initiative (WCI):

- · Created February 2007
- Partners: 7 states, 4 provinces;
 Observers: 5 states, 1 province*
- WCI announced its design for a market-based, multi-sector capand-trade program, Sept 2008:
 - 15% CO₂ reduction below 2005 levels by 2020
 - Phase I to take effect Jan 2012

Midwest Greenhouse Gas Reduction Accord:

- Established November 2007
- Participants: 6 states, 1 province;
 3 Observer states, 1 province
- Preliminary GHG policy recommendation:
 15 25% reductions by 2020, 60 80% by 2050



Updates at: http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-ghg.pdf

Notes: Kansas is a MGGRA participant and WCI observer. Ontario and Quebec are Partners to WCI and Observers to RGGI; Ontario is also an observer to RGGI. Sources: Regional initiatives: www.rggi.org, www.rggi.org, www.rggi.org, www.rggi.org, www.rggi.org, www.rggi.org, www.westernclimateinitiative.org, true true per Center.

Regional Greenhouse Gas Initiative (RGGI):

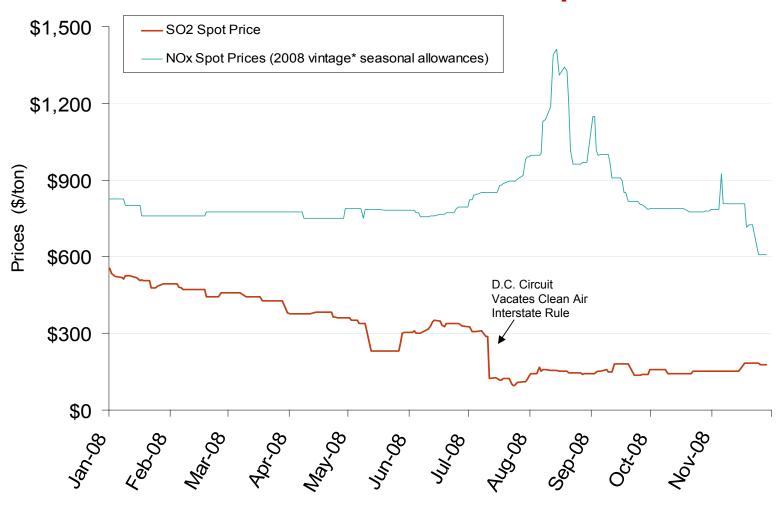
- Takes effect Jan 2009
- 10 Participant states; Observers: 1 state, D.C., 3 provinces.
- Market-based cap-and-trade effort to reduce power-sector CO₂ emissions.
- 10% CO₂ reduction by 2018 covers over 200 plants
- 188 million allowances to be sold in 6 auctions

Auctions:

- **1. 9/25:** 12.5 million allowances sold by 6 states, clearing at \$3.07/allowance.
- 2. 12/17/08: first 6 states plus NY, NJ, NH, DE to participate in sale of 31.5 million allowances
- **3 to 6:** All ten states on same percent basis as prior auctions.
- 2009 dates: 3/18, 6/17, 9/16, 12/16

Participant in WCI
Observer to WCI
Participant in MGGRA
Observer to MGGRA
Participant in RGGI
Observer to RGGI
Participant in MGGRA & WCI

SO₂ Allowance Spot Prices and NOx Seasonal Allowance Spot Prices



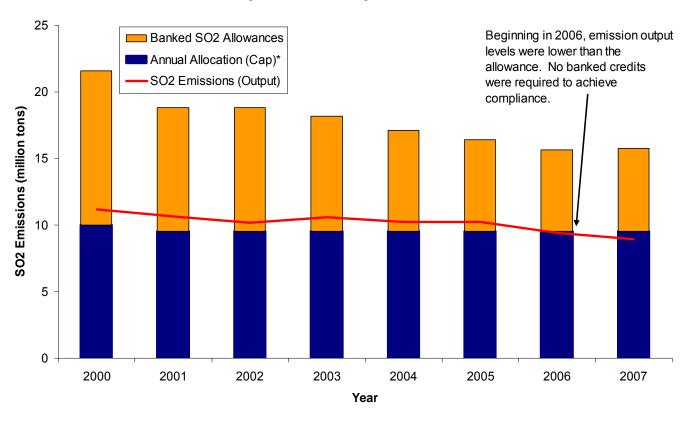
Source: Derived from Cantor Fitzgerald data.

^{*} Earliest year an allowance may be applied against emissions.

December 2008

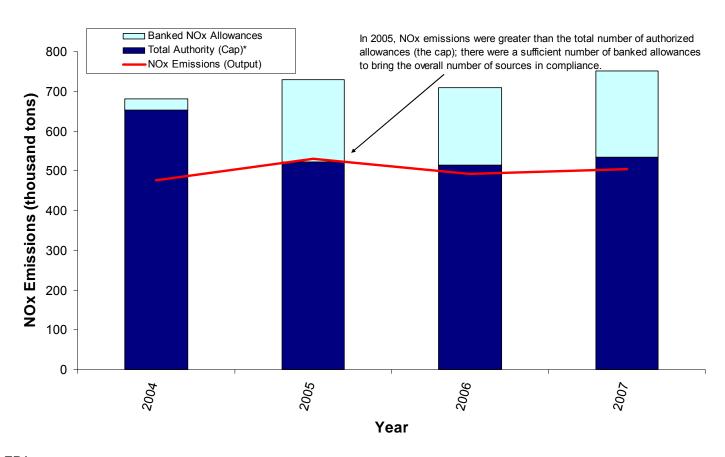
SO2 Allowances Available for Compliance and **SO2 Emission Output under Cap-and-Trade**

SO₂ Allowances Available for Compliance and SO₂ Emission Output under Cap-and-Trade



Source: EPA

NOx Allowances Available for Compliance and NOx Emission Output under Cap-and-Trade

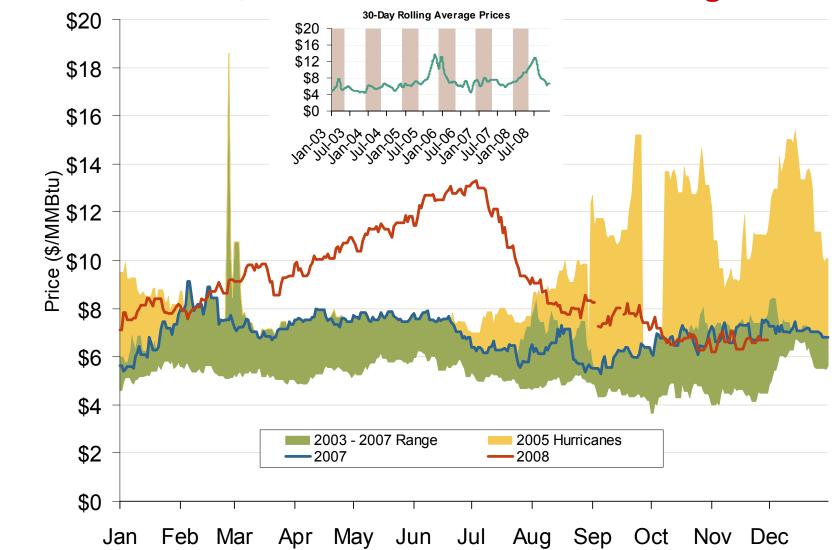


Source: EPA

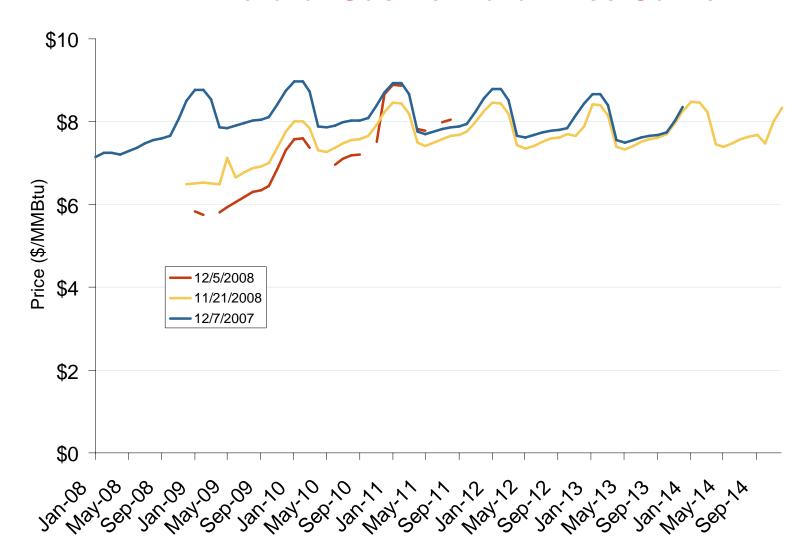
See notes on following slide.

Natural Gas and Fuel Markets

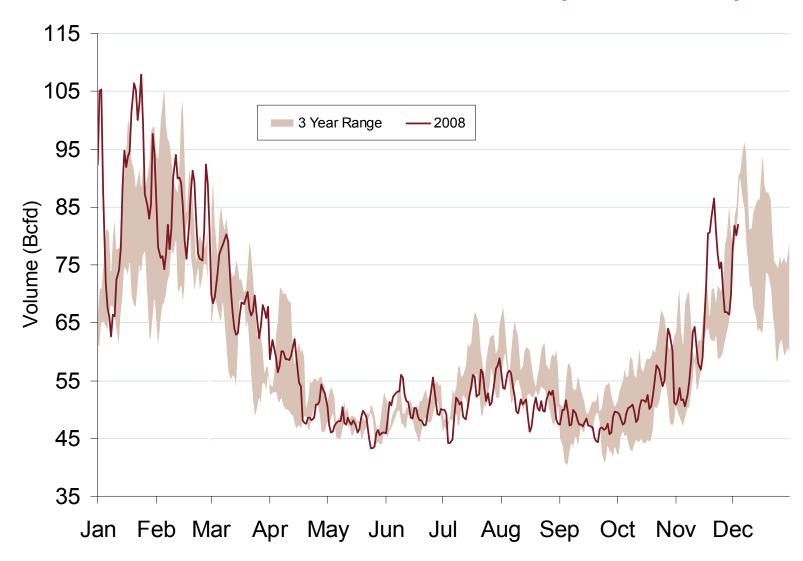
Henry Hub Natural Gas Daily Spot Prices 2007, 2008 and 2003-2007 Year Range



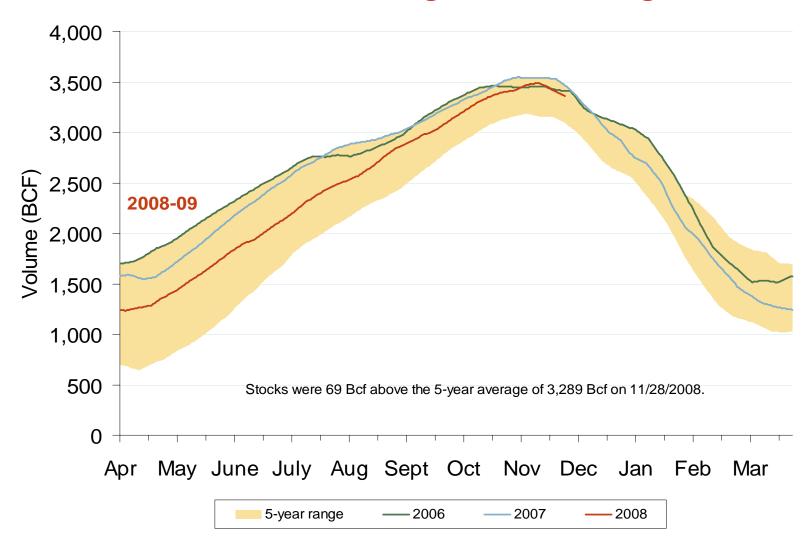
NYMEX Natural Gas Forward Price Curve



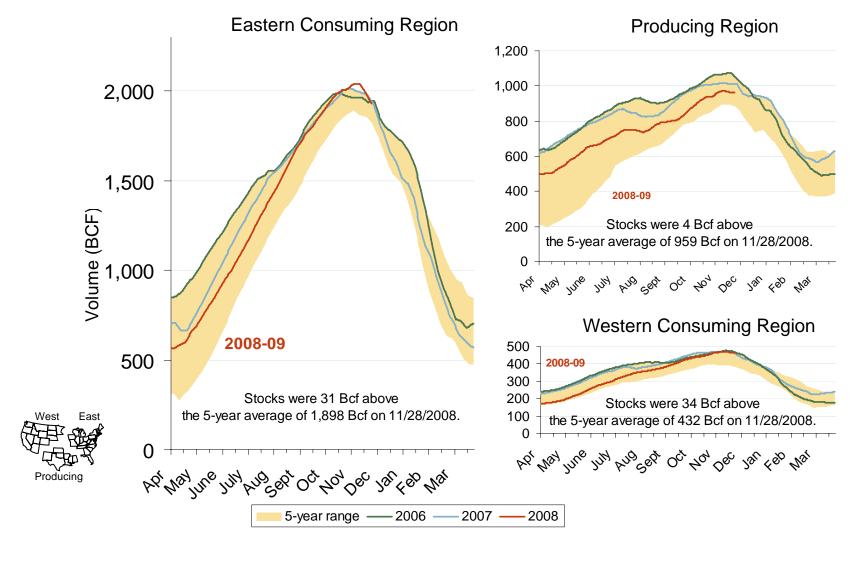
Total U.S. Natural Gas Demand (All Sectors)



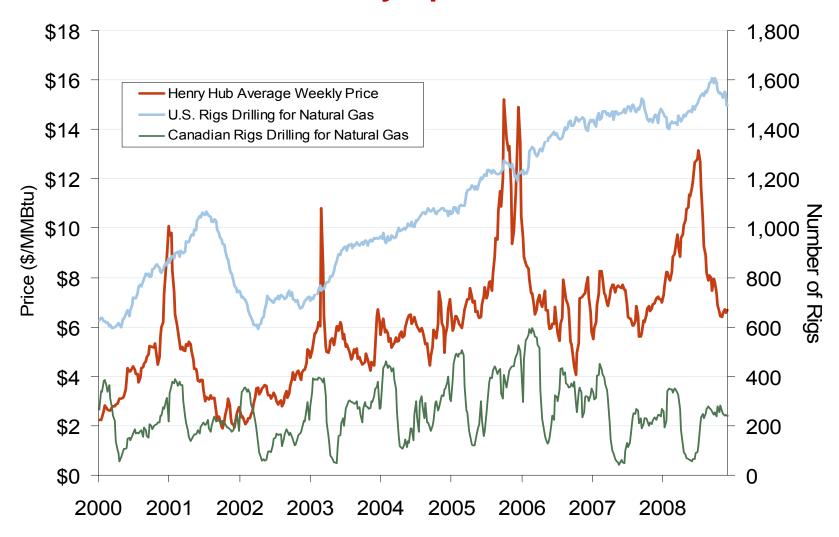
Total U.S. Working Gas in Storage



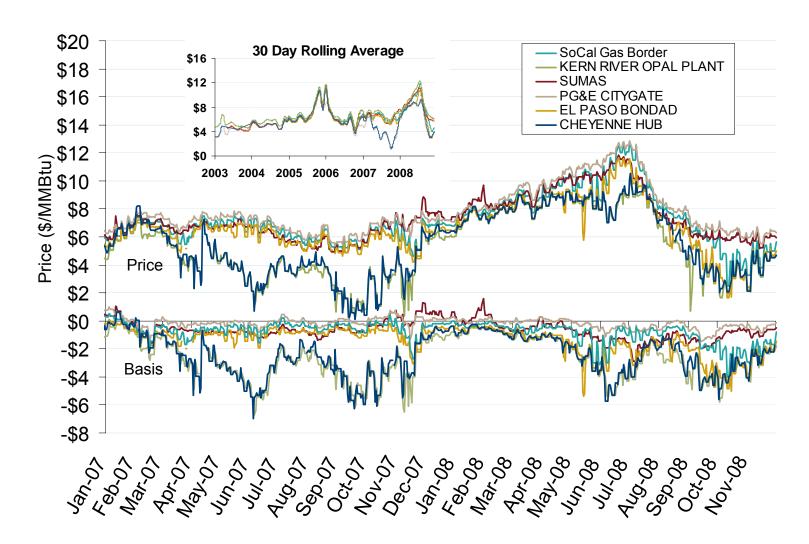
Regional Totals of Working Gas in Storage



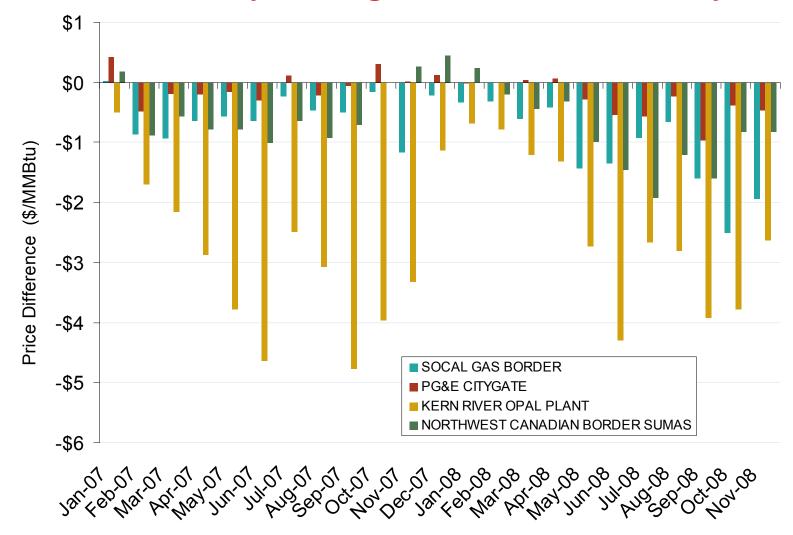
U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



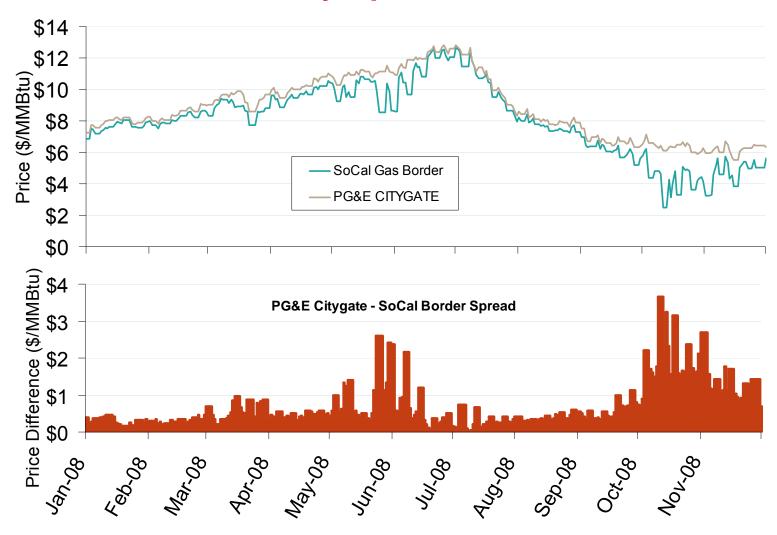
Western Day-Ahead Hub Spot Prices and Basis



Western Monthly Average Basis Value to Henry Hub



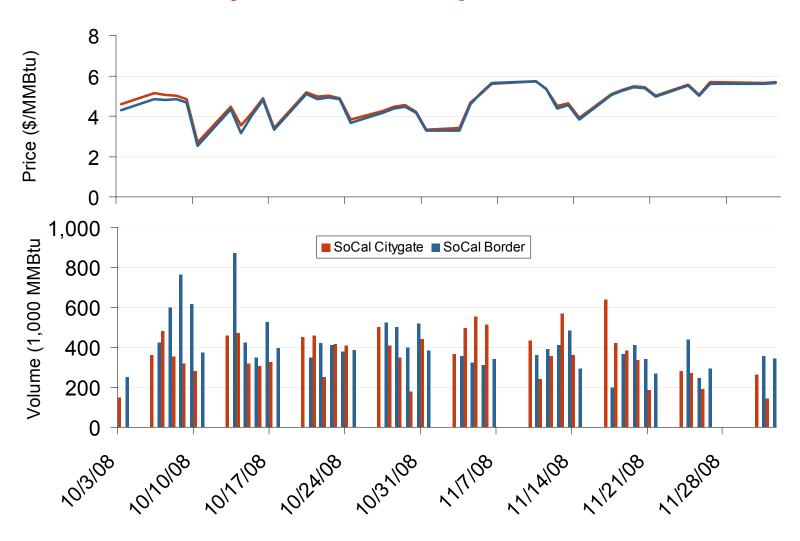
Difference in Northern and Southern California Daily Spot Prices



Source: Derived from Platts data.

Updated December 5, 2008

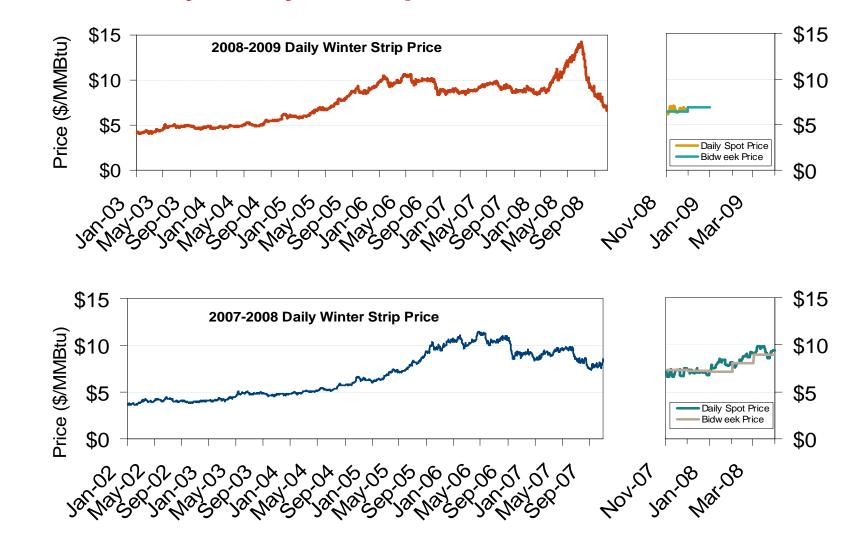
SoCal Citygate and SoCal Border Day-Ahead Hub Spot Prices



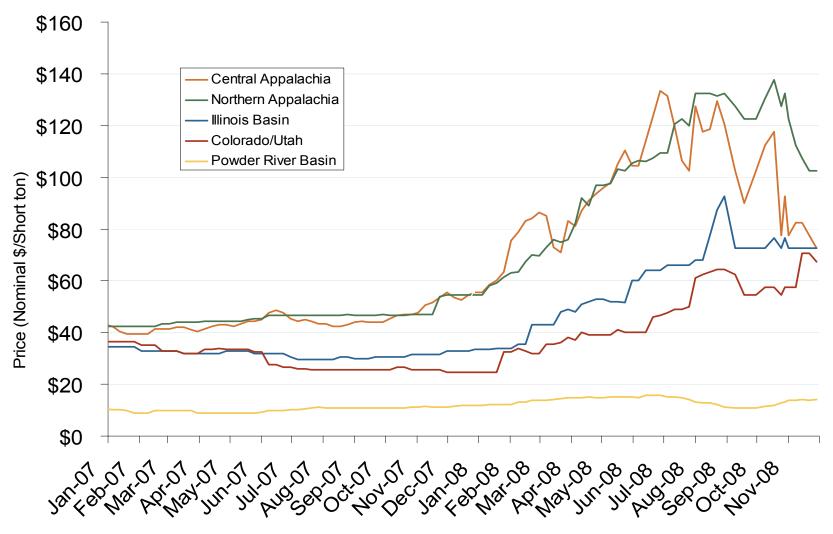
Source: Derived from ICE data.

December 2008

Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices

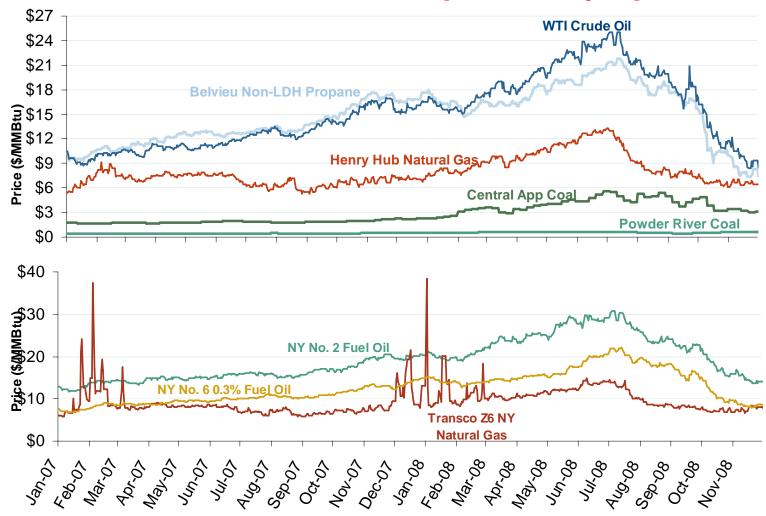


Regional Coal Spot Prices



Note: Does not reflect the delivered price of coal; excludes incremental cost of emissions allowances.

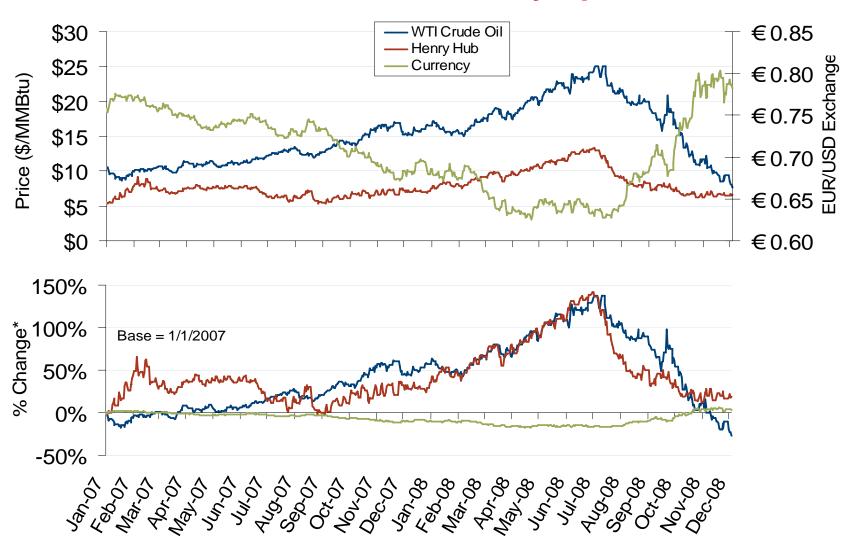
Oil, Coal, Natural Gas and Propane Daily Spot Prices



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.

Oil, Natural Gas and Currency Spot Prices



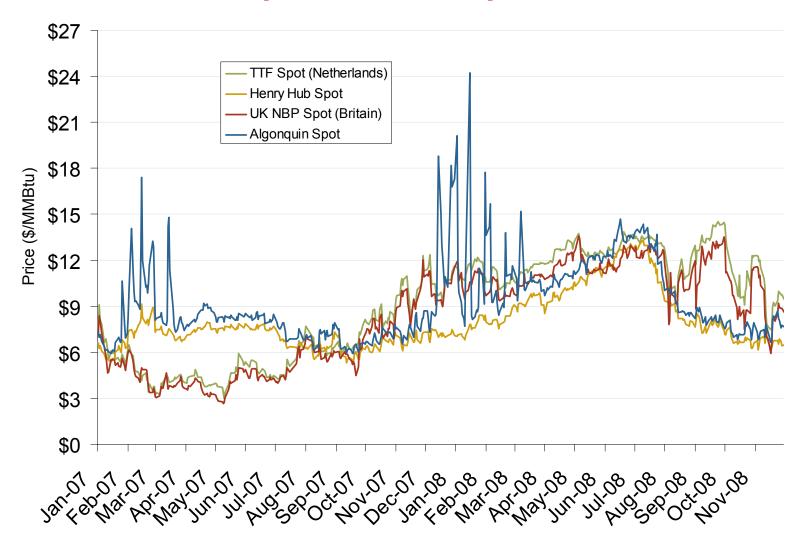
Source: Derived from Bloomberg data.

World LNG Estimated December 2008 Landed Prices



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

Atlantic Basin European and US Spot Natural Gas Prices



Daily Gas Sendout from Existing U.S. LNG Facilities

