

# Southwest Gas Corporation 2010/11 Winter Preparedness

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- Questions related to San Bruno Incident
- Southwest Gas Operations Overview

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- Gas Supply Update



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# Introduction

- ▶ Safety of public paramount
- ▶ Protection of life and property integral to Southwest Gas' practices and procedures
- ▶ Southwest Gas meets or exceeds federal and state pipeline safety requirements
- ▶ Actions Southwest Gas is taking for transmission pipelines
  - Safety information
  - Leak survey



# Questions from Commissioner Kennedy

1. Reaction to possible causes of San Bruno incident?
2. Age of the oldest lines in Southwest Gas' system in Arizona?
3. How do you prioritize which lines are in need of replacement due to age and/or condition?
4. Possibility of the same type incident occurring on Southwest Gas' system?
5. What is Southwest Gas doing to prevent this type of incident from occurring on its system?



# REACTION TO POSSIBLE CAUSES OF SAN BRUNO INCIDENT (QUESTION 1)

- ▶ Preliminary report from NTSB
  - Did not explain why pipeline ruptured
  - NTSB continues their investigation
- ▶ Southwest is eager to learn root cause
  - Ready to examine NTSB findings
  - Prepared to take any actions necessary to preserve safety and reliability
- ▶ Safety Information and Resources
  - Southwest Gas website: [www.swgas.com](http://www.swgas.com)



## AGE OF OLDEST LINES IN SOUTHWEST GAS' SYSTEM (QUESTION 2)

- ▶ Age of steel pipe is only one factor to consider
  - Corrosion protection most important factor
  - All transmission lines in Arizona are protected
- ▶ Oldest transmission lines date to 1933
  - Pipe samples
- ▶ Regardless of age, older pipe is held to same standards as newer pipe



HOW DO YOU PRIORITIZE WHICH LINES  
ARE IN NEED OF REPLACEMENT  
DUE TO AGE AND/OR CONDITION?  
(QUESTION 3)

- Steel transmission pipelines can last for many years
  - Factors we consider in prioritizing pipe for replacement:
    - Corrosion Protection
    - Construction Activity Level
    - Earth Movement
    - Soil Type
    - Leak History
    - Pipe Age
    - Building/Structure Density
- Transmission Integrity Management Program
  - High Consequence Areas (HCAs)



## POSSIBILITY OF THE SAME TYPE INCIDENT OCCURRING ON SOUTHWEST GAS' SYSTEM (QUESTION 4)

- ▶ Possibility of Incident Like San Bruno Is Low On Southwest Gas' System
  - Smaller size pipe
  - Effective oversight by ACC's Pipeline Safety Section
  - Robust excavation damage prevention program
  - Quarterly Meetings with ACC's Pipeline Safety Section
    - Key safety initiatives addressed
- ▶ Emergency Response
  - EMRF, liaison training



# WHAT IS SOUTHWEST GAS DOING TO PREVENT THIS TYPE OF INCIDENT FROM OCCURRING ON ITS SYSTEM? (QUESTION 5)

- ▶ Southwest is anxious to learn root cause
  - Use NTSB report to evaluate our policies, procedures and pipelines
  - Prepared to take any actions necessary to preserve safety of public and ensure reliability of system
- ▶ Public education
  - Safety information sent to public along pipelines
  - Safety brochure sent to all schools in our service area
  - Special brochures to emergency responders and public officials
  - Safety information provided to excavators and contractors
  - Website links point to safety information
- ▶ Leak surveys of transmission lines in populated areas have been, or will be, done by end of year



# SUMMARY

- ▶ Safety is paramount
  - 24/7 constant and never ending
- ▶ Protection of life and property woven into practices and procedures
- ▶ Continually evaluate practices to make sure they meet or exceed federal and state requirements
- ▶ Will continue to work with all stakeholders to learn from this incident and improve safety



# WINTER PREPAREDNESS OPERATIONS OVERVIEW

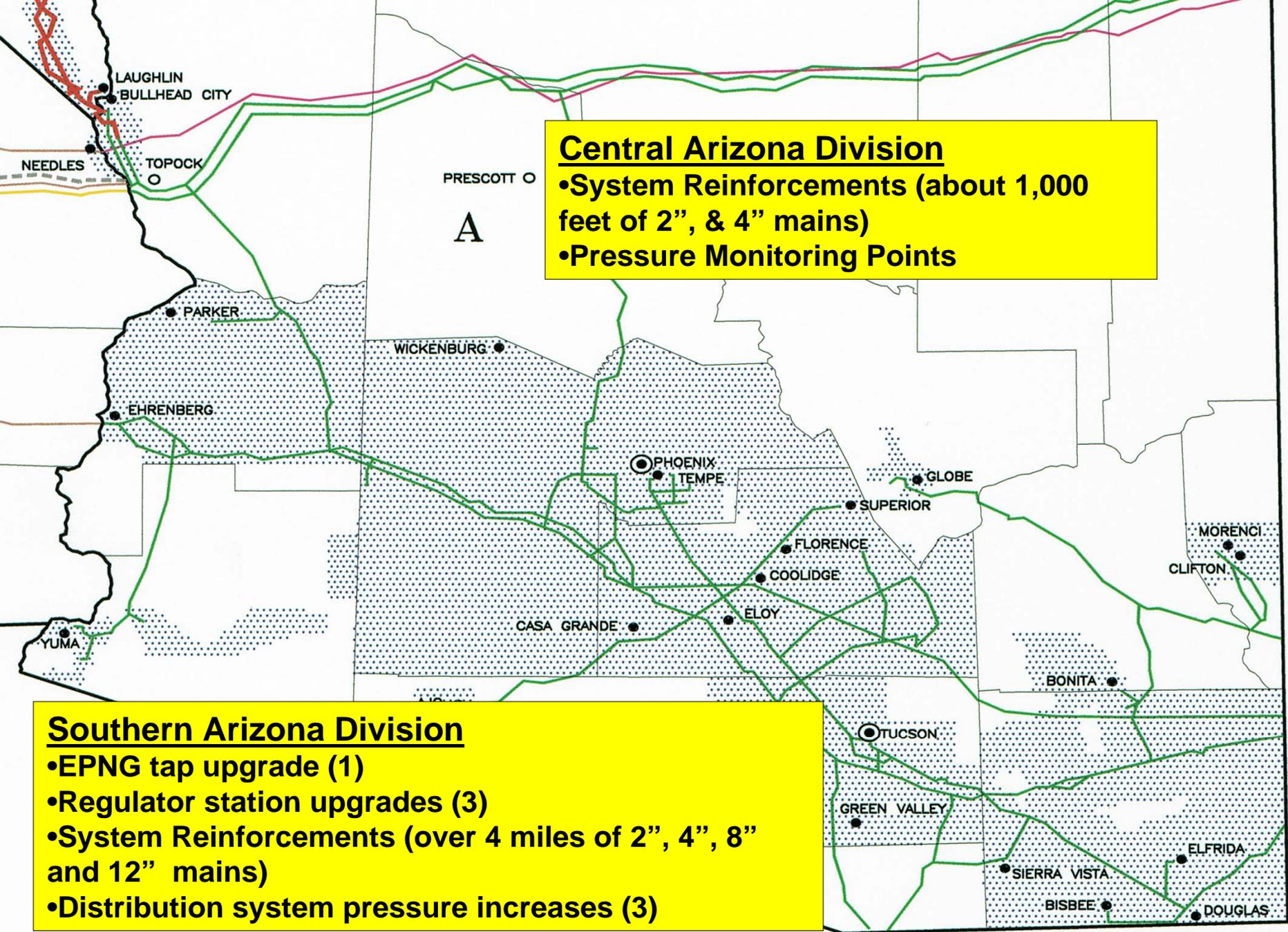
- ▶ System Analysis & Reinforcement
- ▶ Real Time Adjustments
- ▶ Coordination with Partners



# SYSTEMS ANALYSIS

- ▶ Upstream Supply
  - Transwestern & El Paso Natural Gas
- ▶ System Modeling
  - High Pressure Systems
  - Distribution Systems
- ▶ Regulation and Metering Stations
- ▶ Pipeline reinforcements





**Central Arizona Division**

- System Reinforcements (about 1,000 feet of 2", & 4" mains)
- Pressure Monitoring Points

**Southern Arizona Division**

- EPNG tap upgrade (1)
- Regulator station upgrades (3)
- System Reinforcements (over 4 miles of 2", 4", 8" and 12" mains)
- Distribution system pressure increases (3)

# REAL TIME ADJUSTMENTS

- ▶ Pressure Monitoring
- ▶ Weather Forecasts
- ▶ Optimization



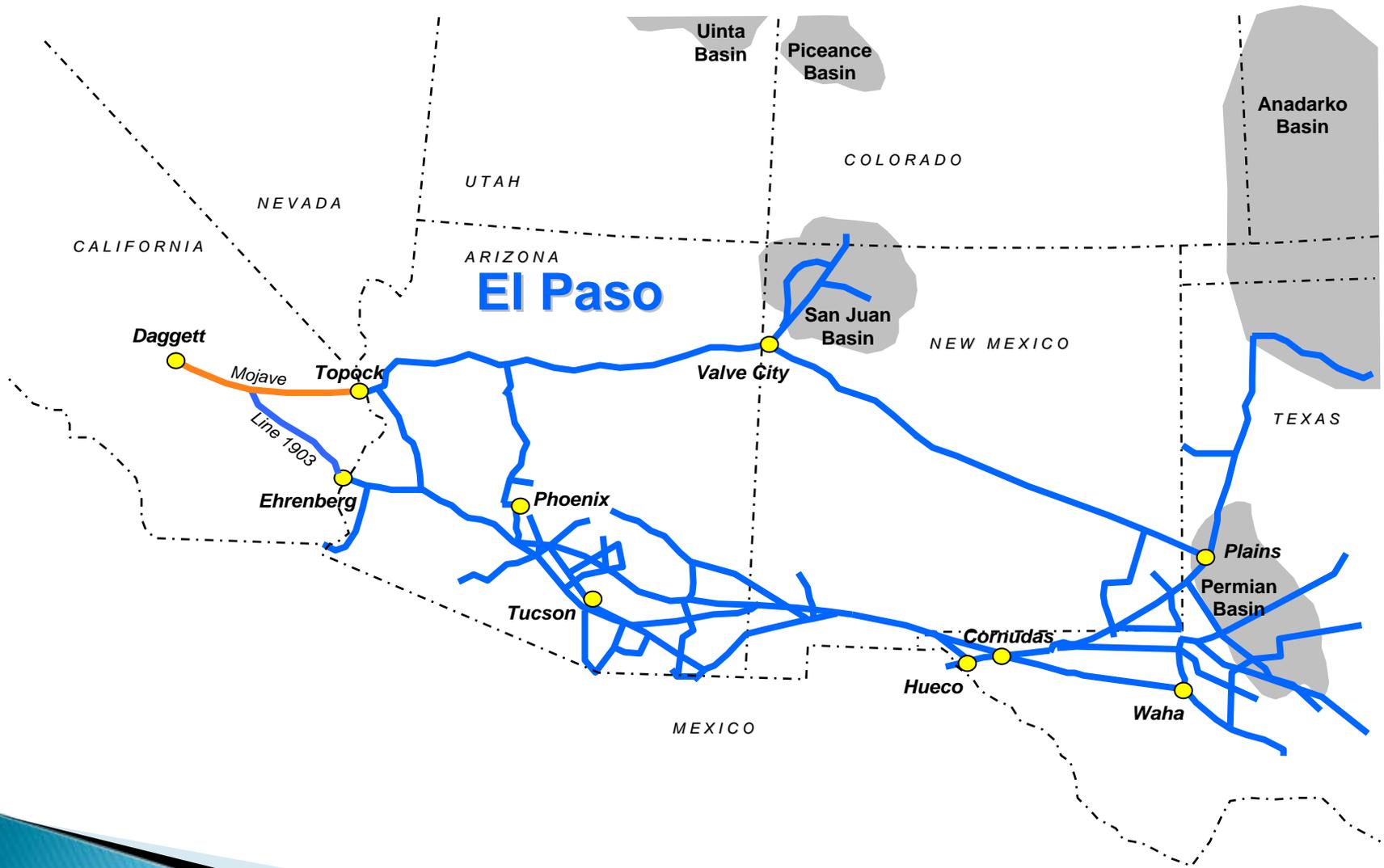
# COORDINATION WITH PARTNERS

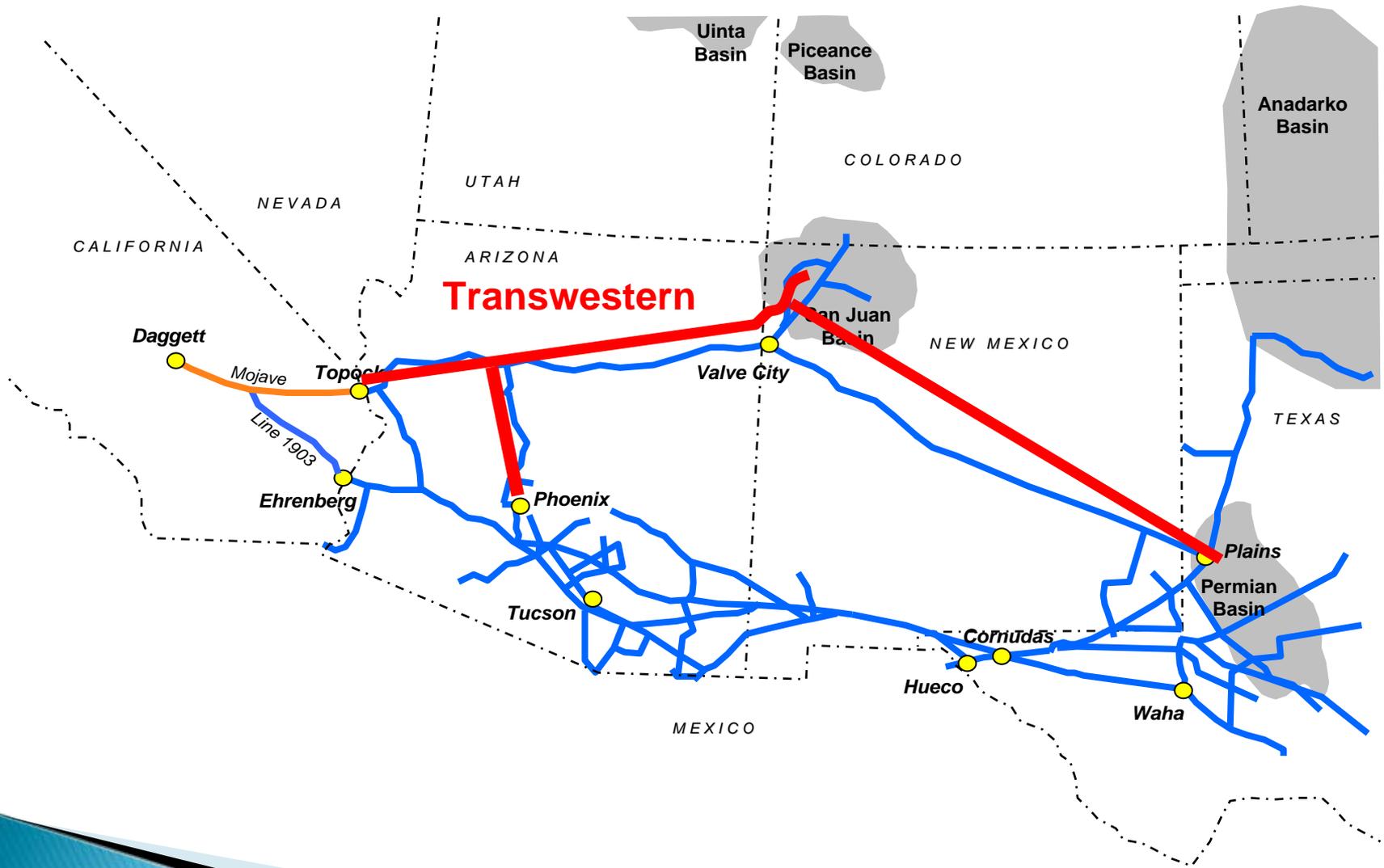
- ▶ Upstream Pipeline Operators
  - Coordination with EPNG and review of EPNG delivery points
  
- ▶ Emergency Responders
  
- ▶ ACC
  - Pipeline Safety
  - Consumer Section



# 2010-2011 Portfolio Summary

- ▶ Interstate Capacity
  - ▶ Supply Portfolio Structure
  - ▶ Market Pricing Trends
  - ▶ Customer Rates
- 





# Transwestern

Daggett

Mojave

Topock

Ehrenberg

Phoenix

Tucson

Valve City

San Juan Basin

Comudás

Hueco

Waha

Plains

Permian Basin

Anadarko Basin

Uinta Basin

Piceance Basin

CALIFORNIA

NEVADA

UTAH

ARIZONA

COLORADO

NEW MEXICO

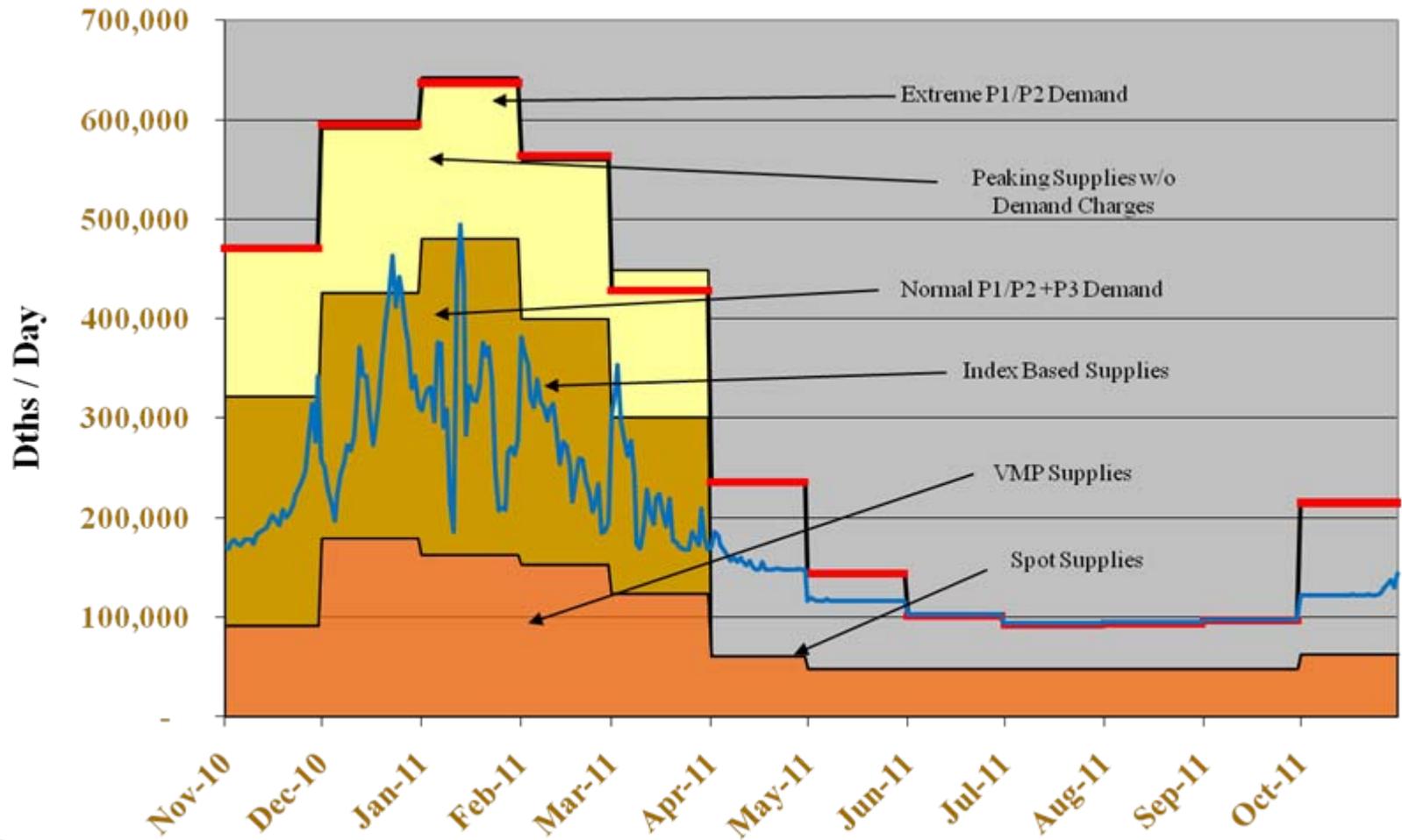
TEXAS

MEXICO

# 2010-2011 Portfolio Summary

- ▶ Portfolio Supply Structure
  - Firm contracts for both capacity and gas supply to meet design peak day
  - 50% of normal load purchased at fixed price
    - ❖ Purchased 6 to 18 months in advance
    - ❖ Go to market every 4 to 6 weeks
  - Remainder is firm market index contracts
  - 2010/2011 portfolio complete

# Portfolio Profile



# Arizona Price Stability Program

	2007/2008	2008/2009	2009/2010	2010/2011
<b>Winter (\$/Dth)</b>	<b>8.24</b>	<b>8.78</b>	<b>6.53</b>	<b>6.02</b>
<b>2010/2011 Winter Strip (approximate)</b>				<b>4.12</b>

# Market Pricing Trends

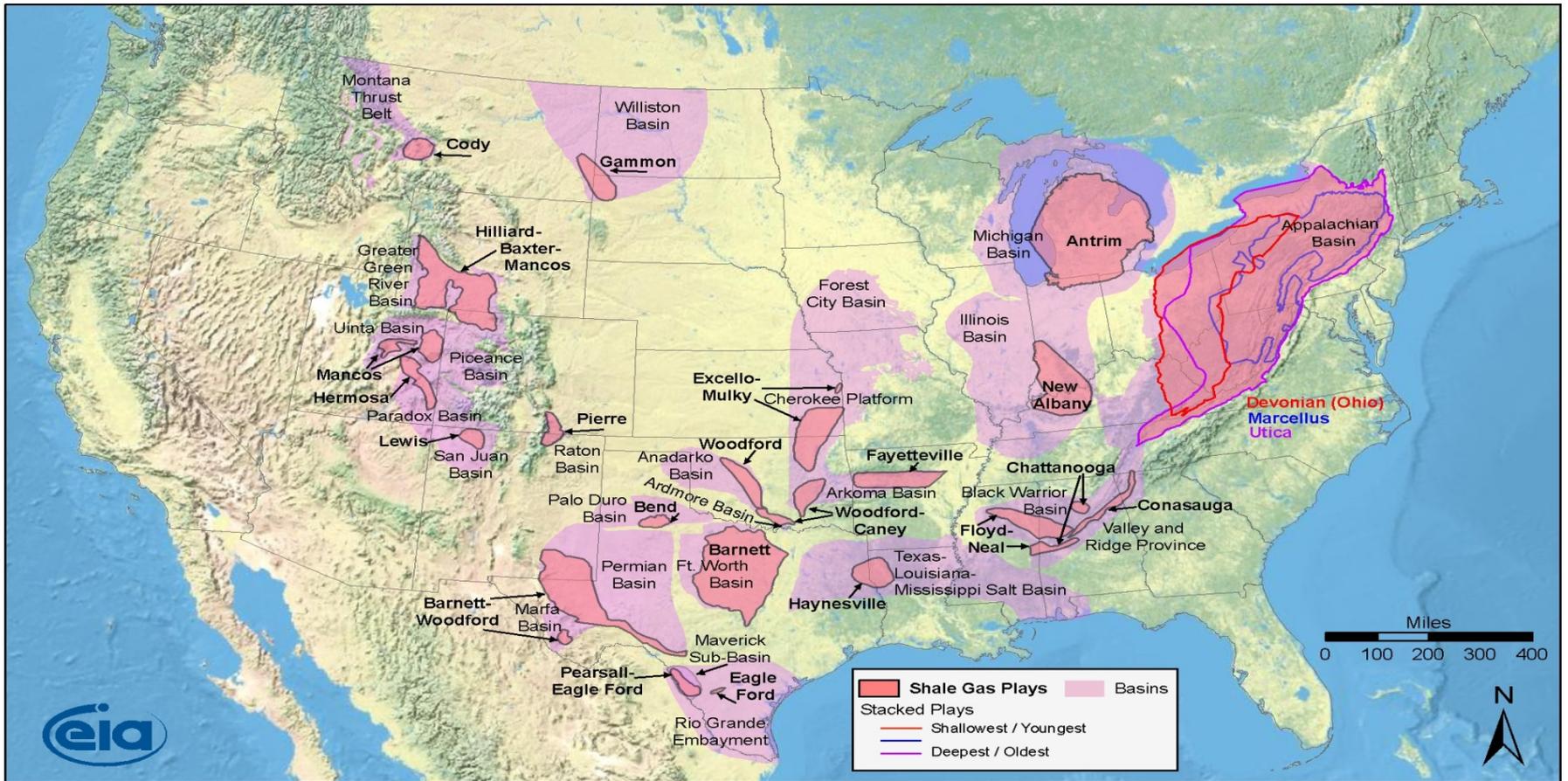
- ▶ Unprecedented high prices in July 2008
  - ▶ Dramatic reduction in prices
  - ▶ Market relatively flat
    - Reduced volatility
    - Shrinking basis
  - ▶ Shale becoming a major player
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# NYMEX Natural Gas Futures

## for January 2011

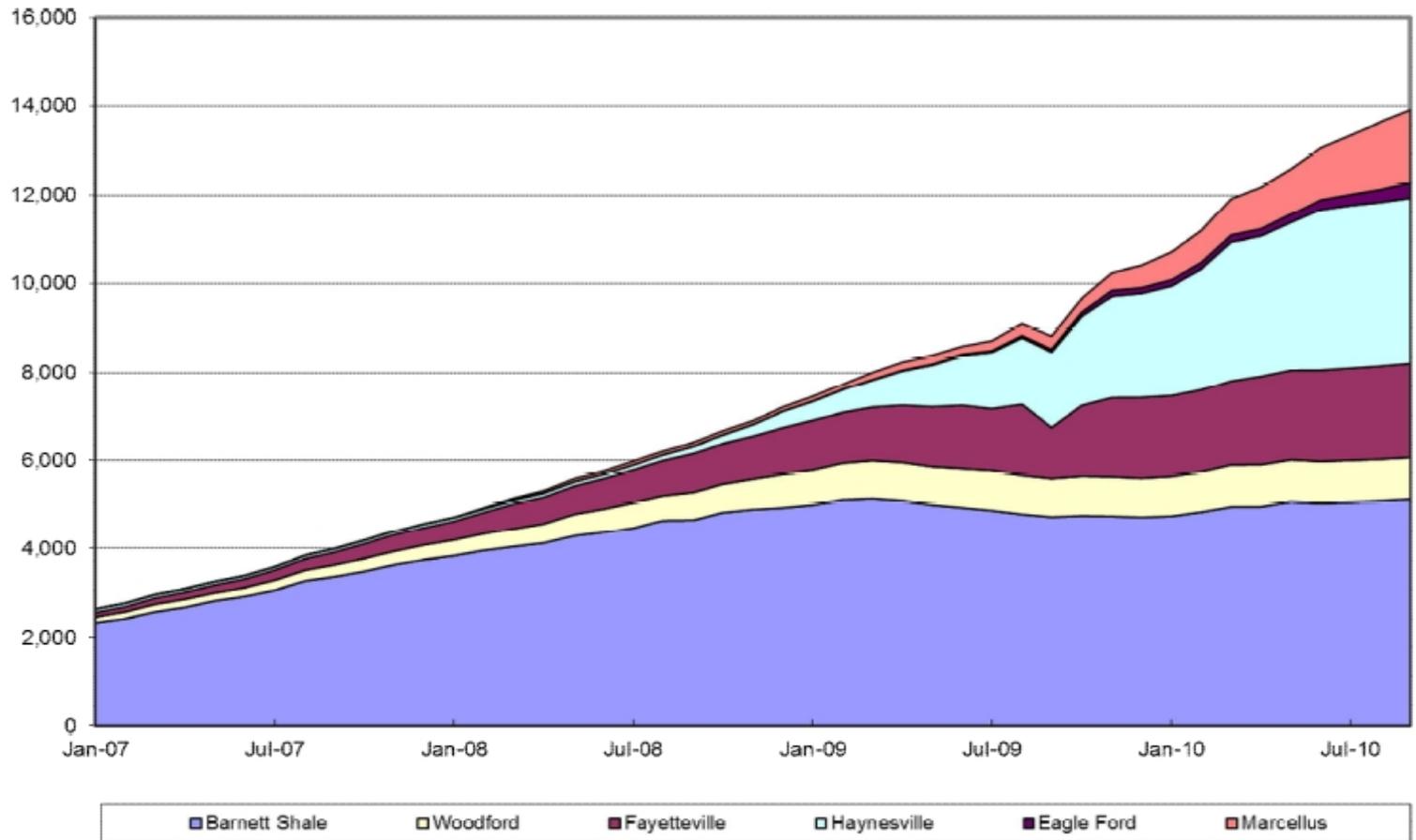


# Shale Gas Plays, Lower 48 States

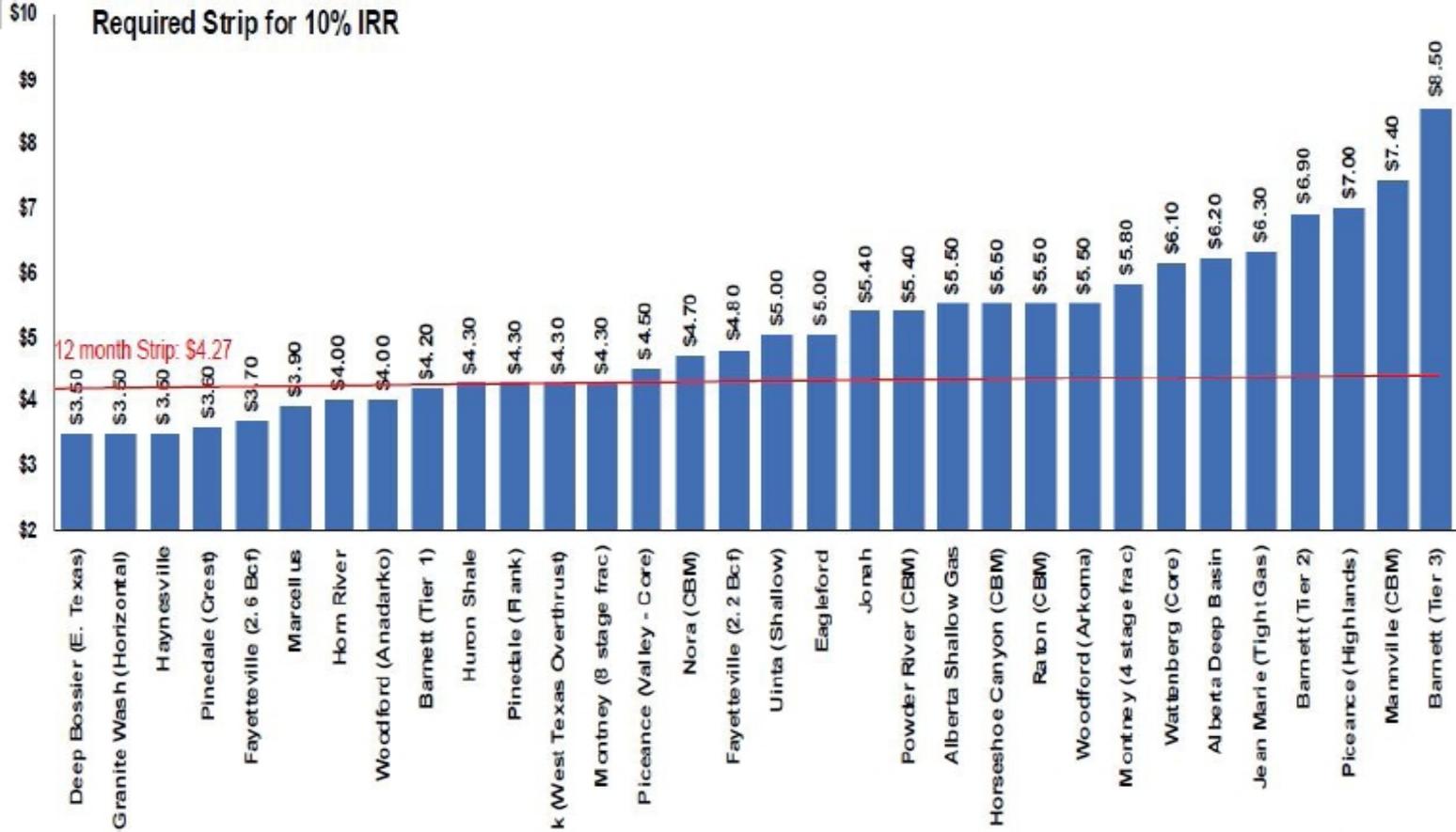


Source: Energy Information Administration based on data from various published studies  
 Updated: May 28, 2009

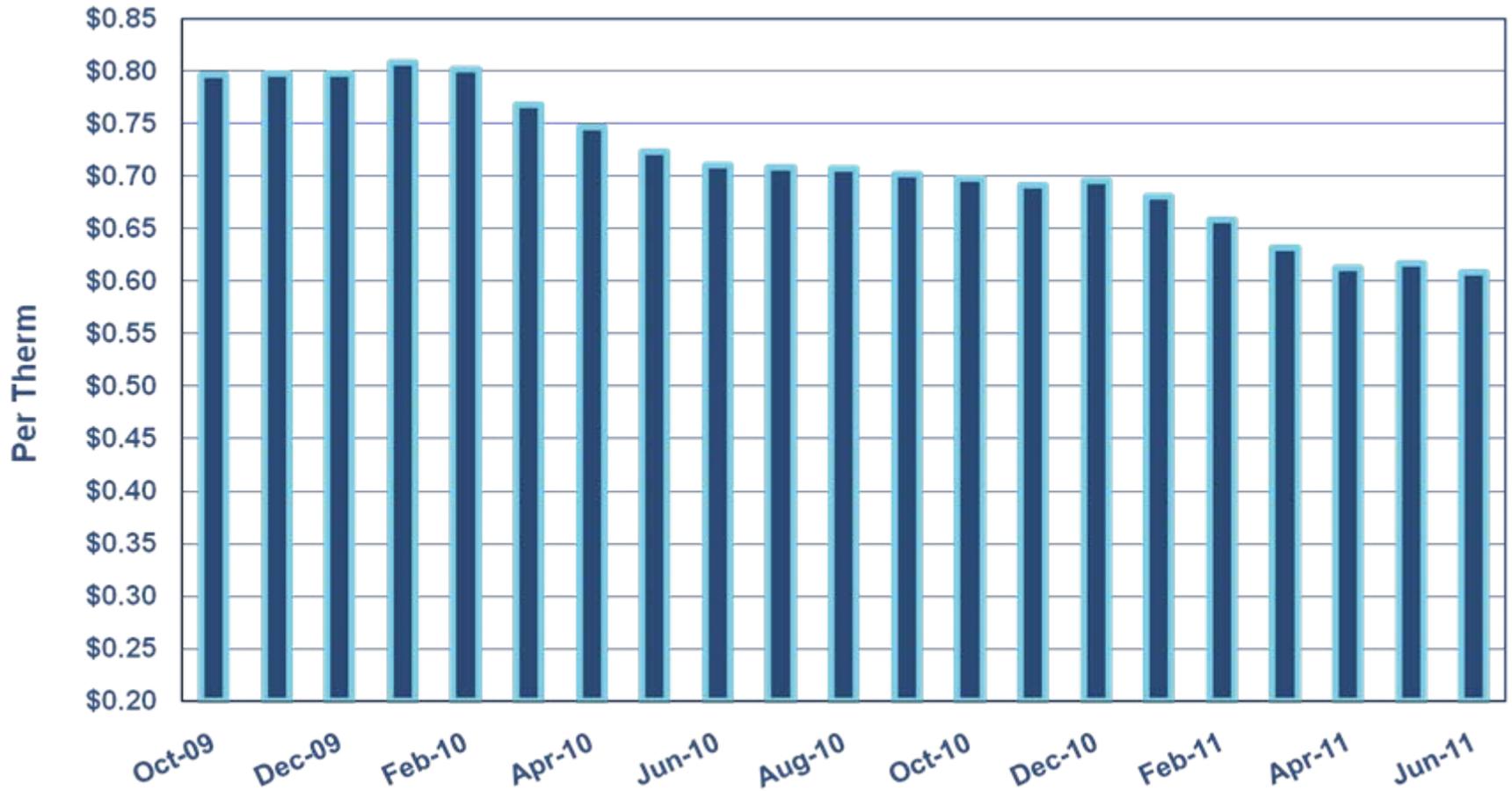
## Major Shale Production



# Breakeven Pricing Analysis



# Monthly Gas Cost Rate



# Average Winter Bill

