

# *US Natural Gas Market Outlook: Opportunities For New Production*

Presented To:

**Energy Summit 2009**

**Energy Market Challenges and Opportunities**

**October 28, 2009**

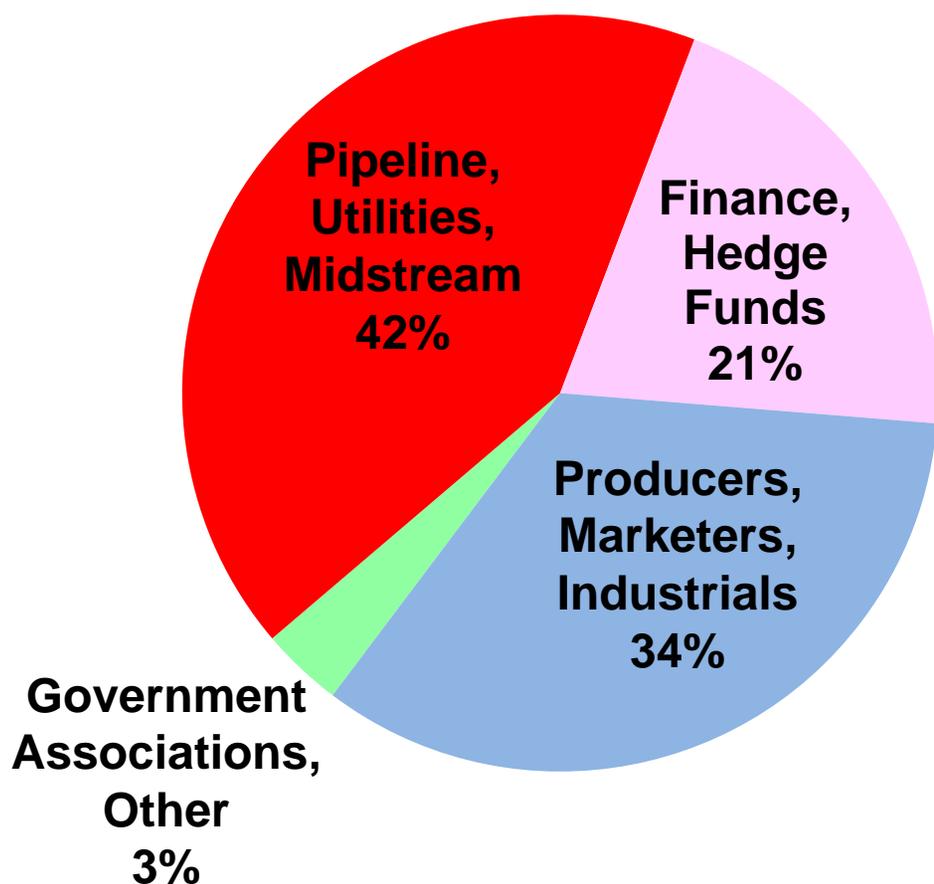
## Key Points

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- ❖ Technology is unlocking unconventional gas resources, and they, in turn, are transforming the US energy market.
- ❖ As a consequence, natural gas should no longer be viewed as unavailable, unreliable or too expensive. If anything, the nation has too much gas for the current market to absorb.
- ❖ Exploration and production is shifting to the lowest cost supply areas with implications for states that are dependent on natural gas related revenues.
- ❖ Pipeline infrastructure issues will bedevil producer prices and efforts to grow demand.
- ❖ Today's low prices are likely to persist for many years. Demand must rise significantly relative to supply for prices to move beyond the \$3.00 to \$5.00 range.

# Who Is BENTEK?

## Distribution of Customers

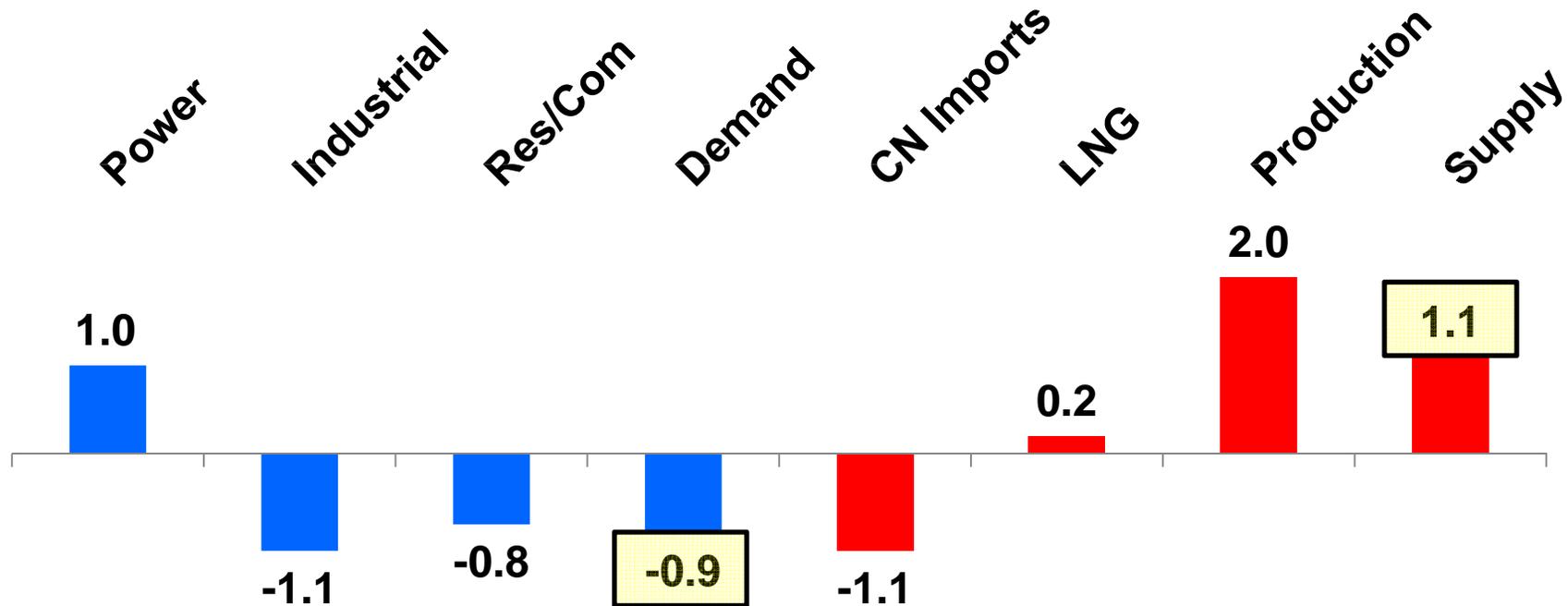


- ✦ BENTEK is the leading US natural gas market analytics firm
- ✦ We provide:
  - Daily assessments of the US natural gas market fundamentals
  - Analysis of major market developments
  - Near real-time Market Fundamentals Data
  - Consulting and Advisory Services
- ✦ Over 230 clients include producers, marketers, pipelines, banks, LDCs and end users as well as govt agencies.
  - FERC
  - EIA
  - State utility commissions



## National Trends

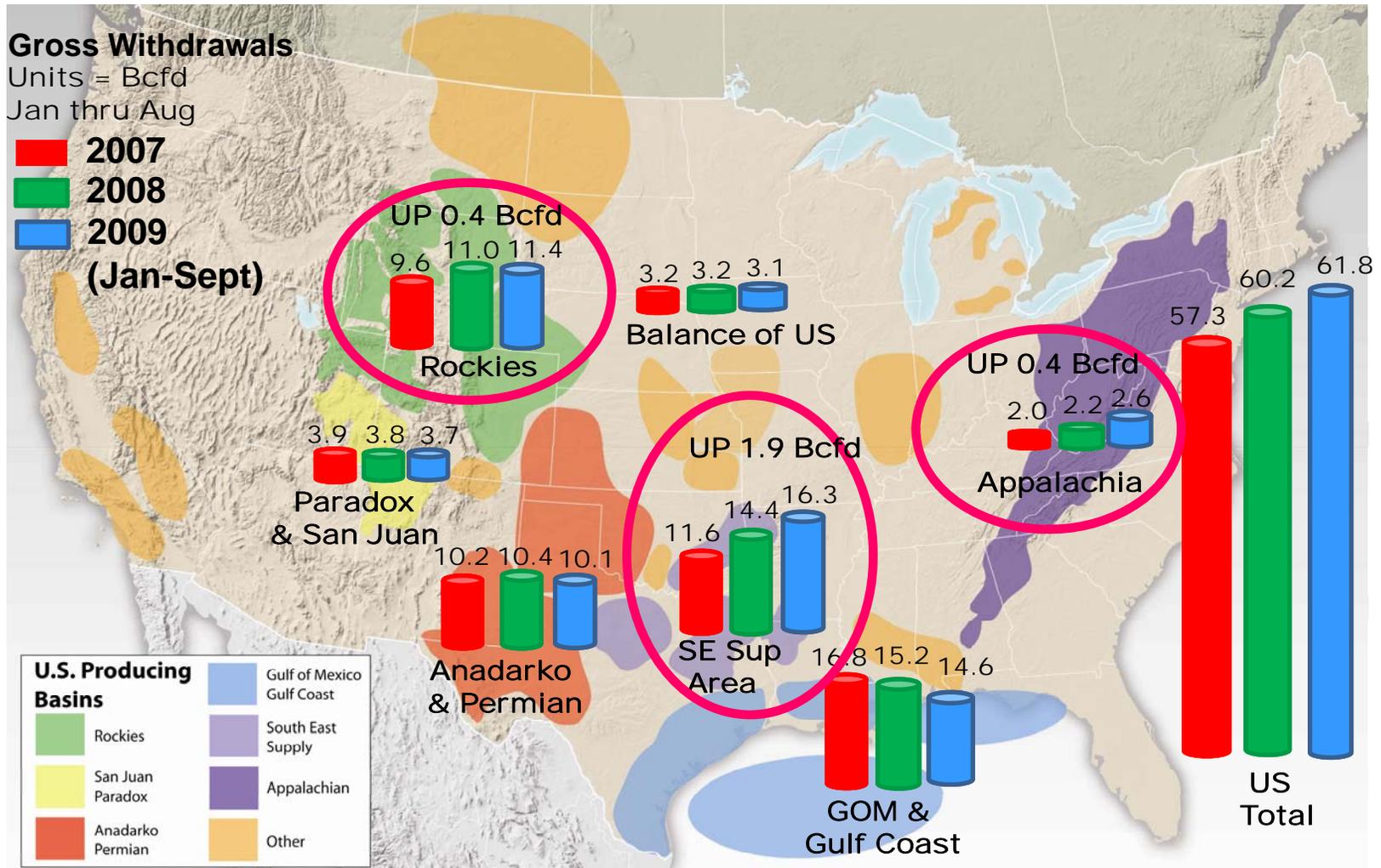
# Inventories Are Building at 2.0 Bcfd



Units = Bcf/d

Data through October 9, 2009

# Between Jan & Sept, Production Grew 1.6 Bcfd Over 2008

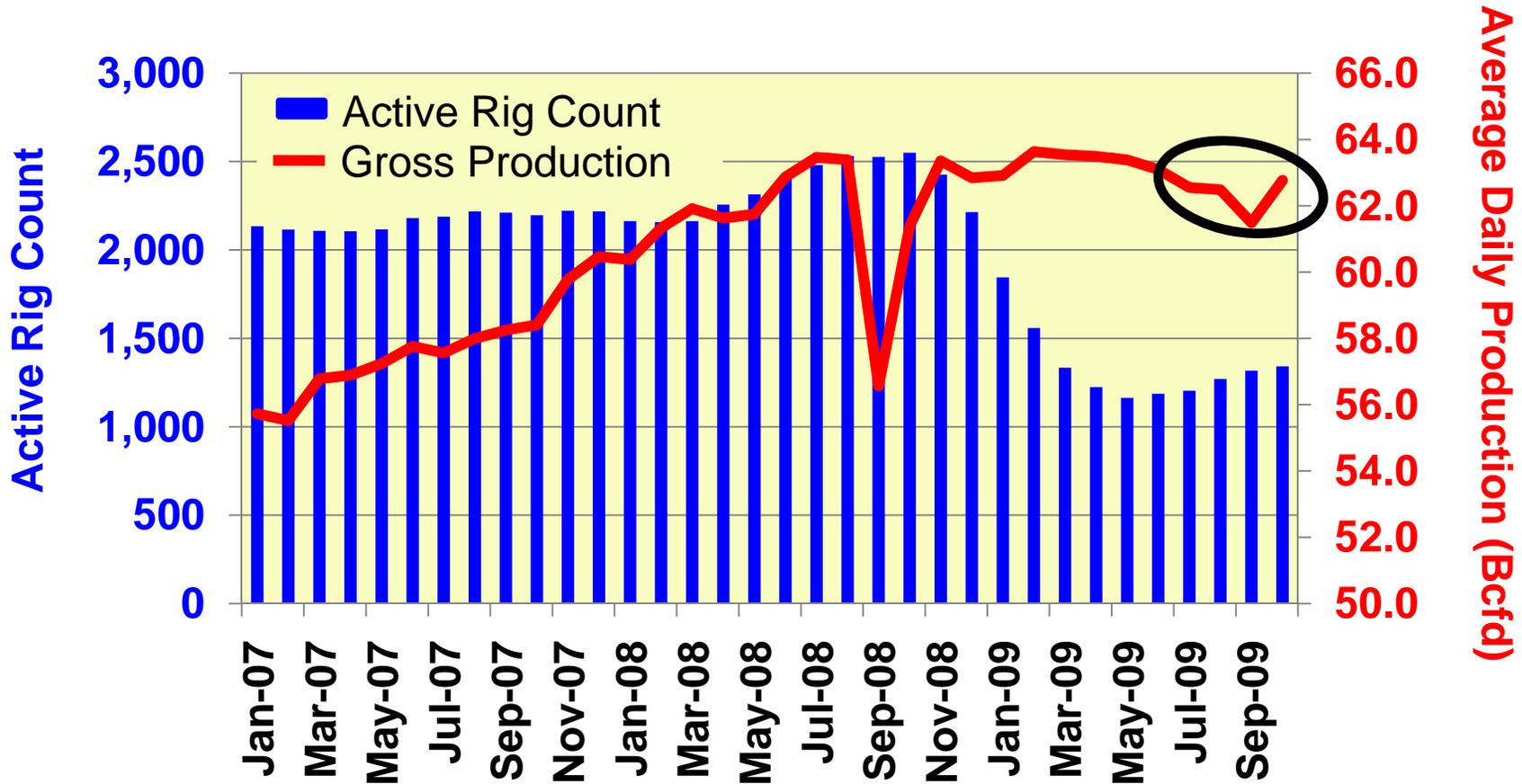


Data through September 30, 2009

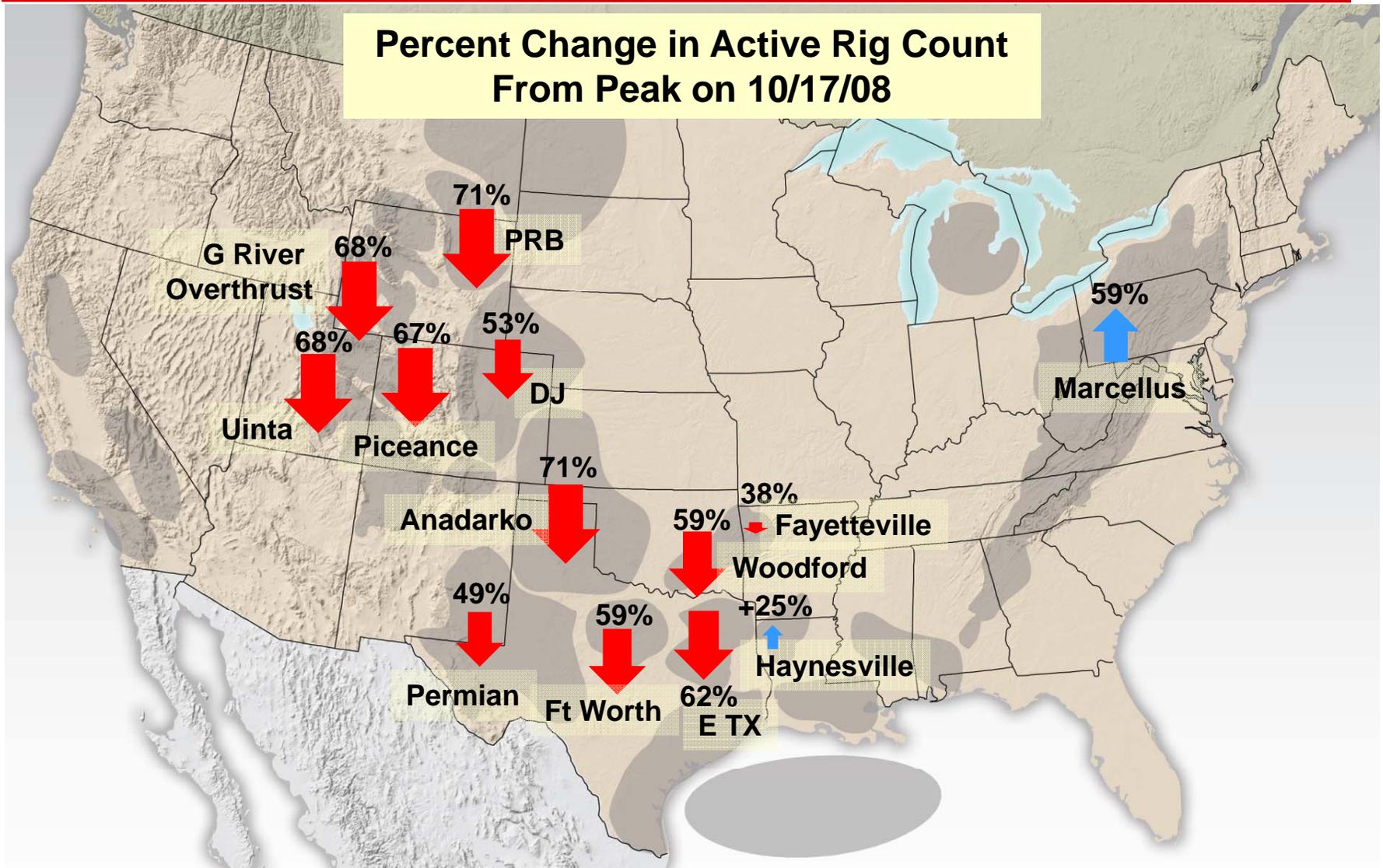
# The Rig Count Has Fallen By Over 47% Since Oct 08

## But Production Is Actually Increasing

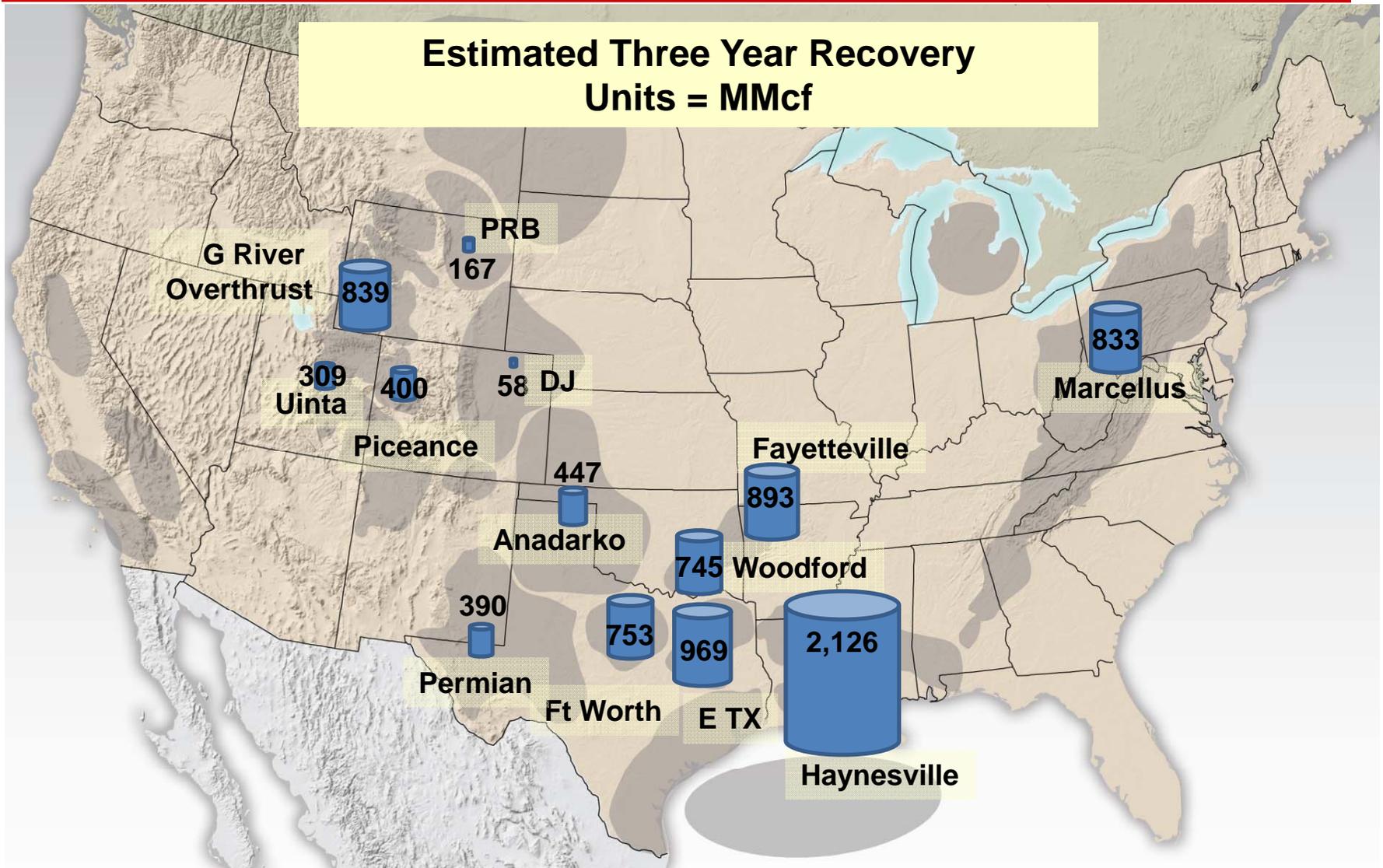
Data Through Oct 9, 2009



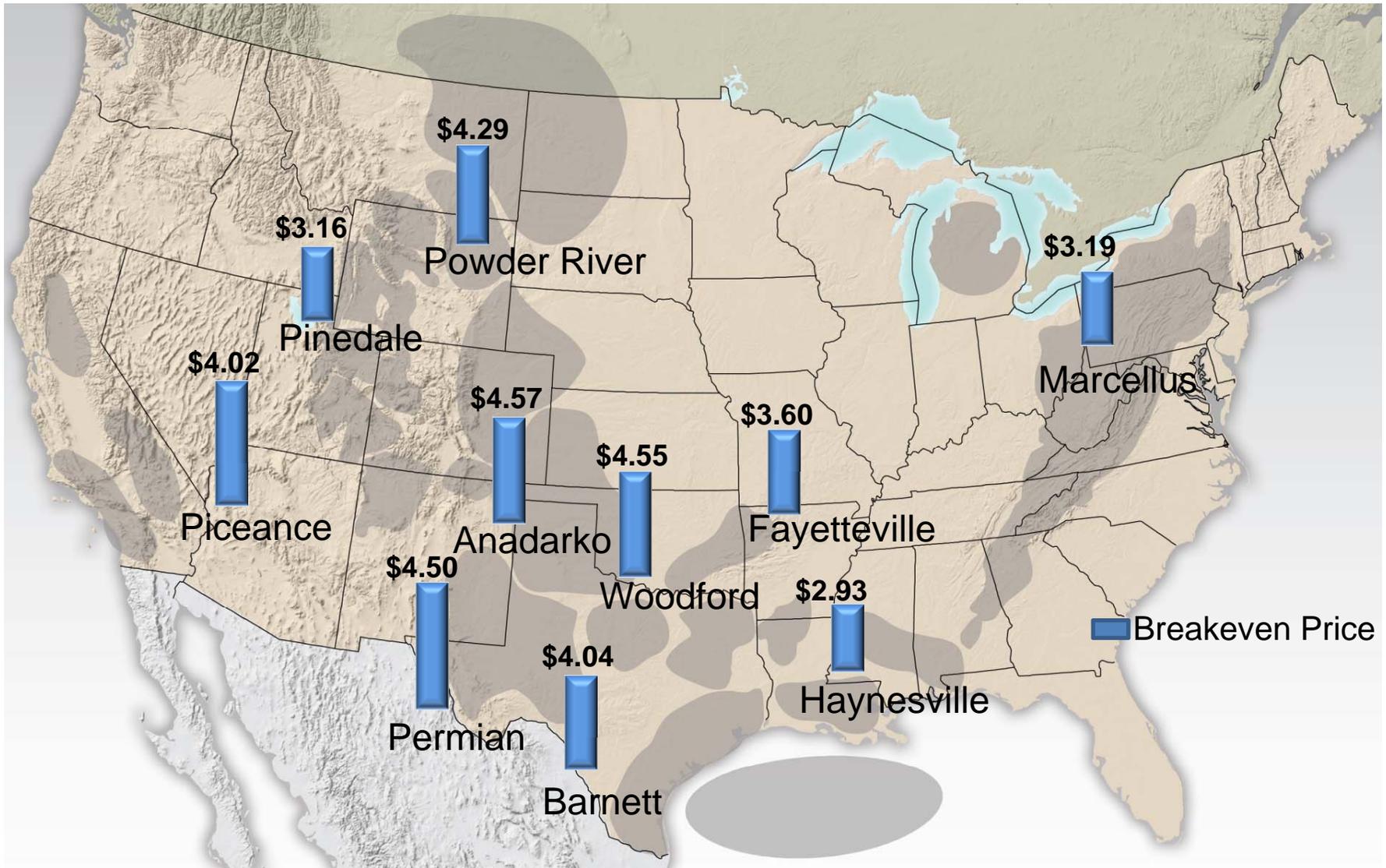
# The Active Rig Count Is Down In Almost All Basins



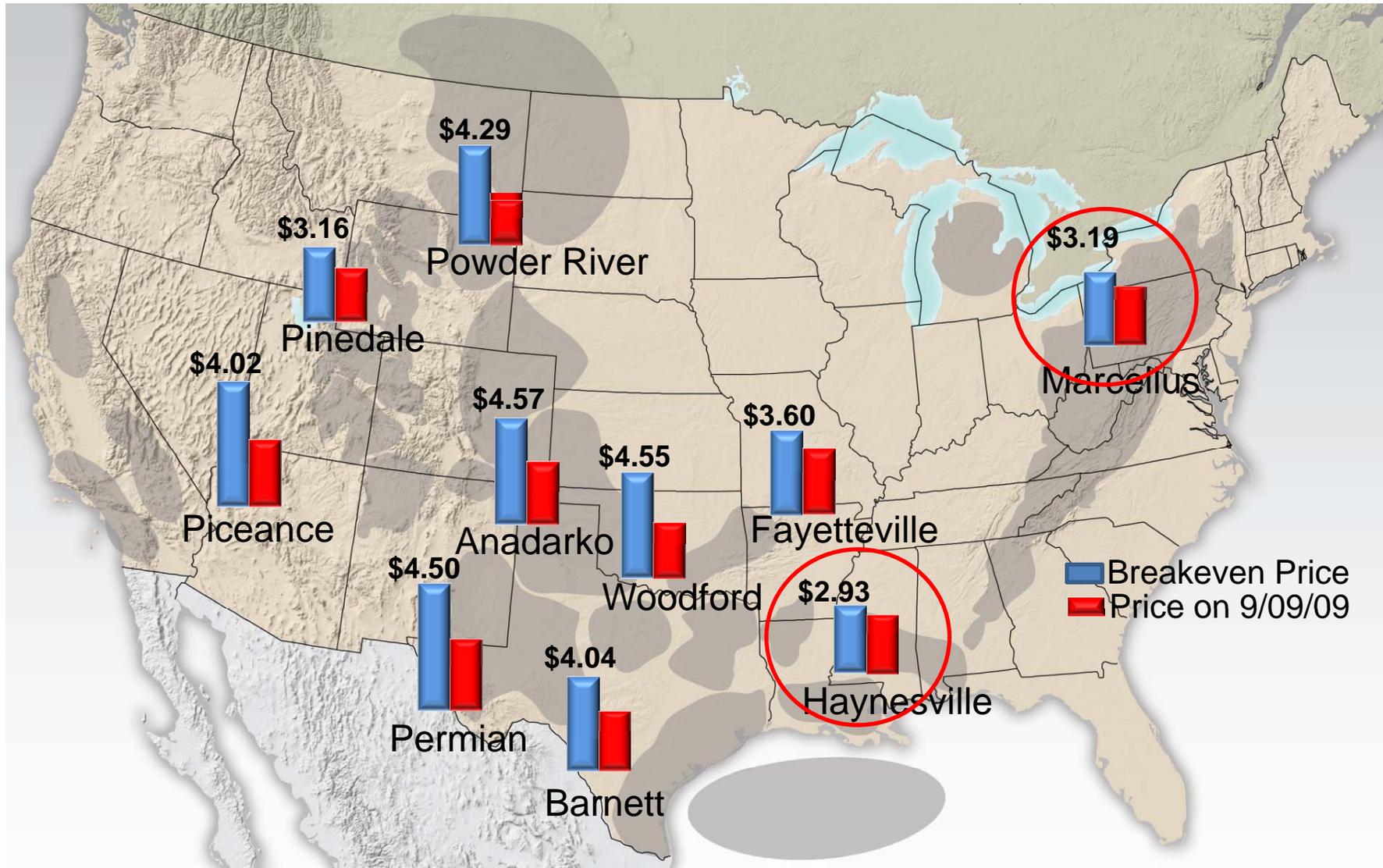
# Activity Is Shifting To The Most Productive Basins



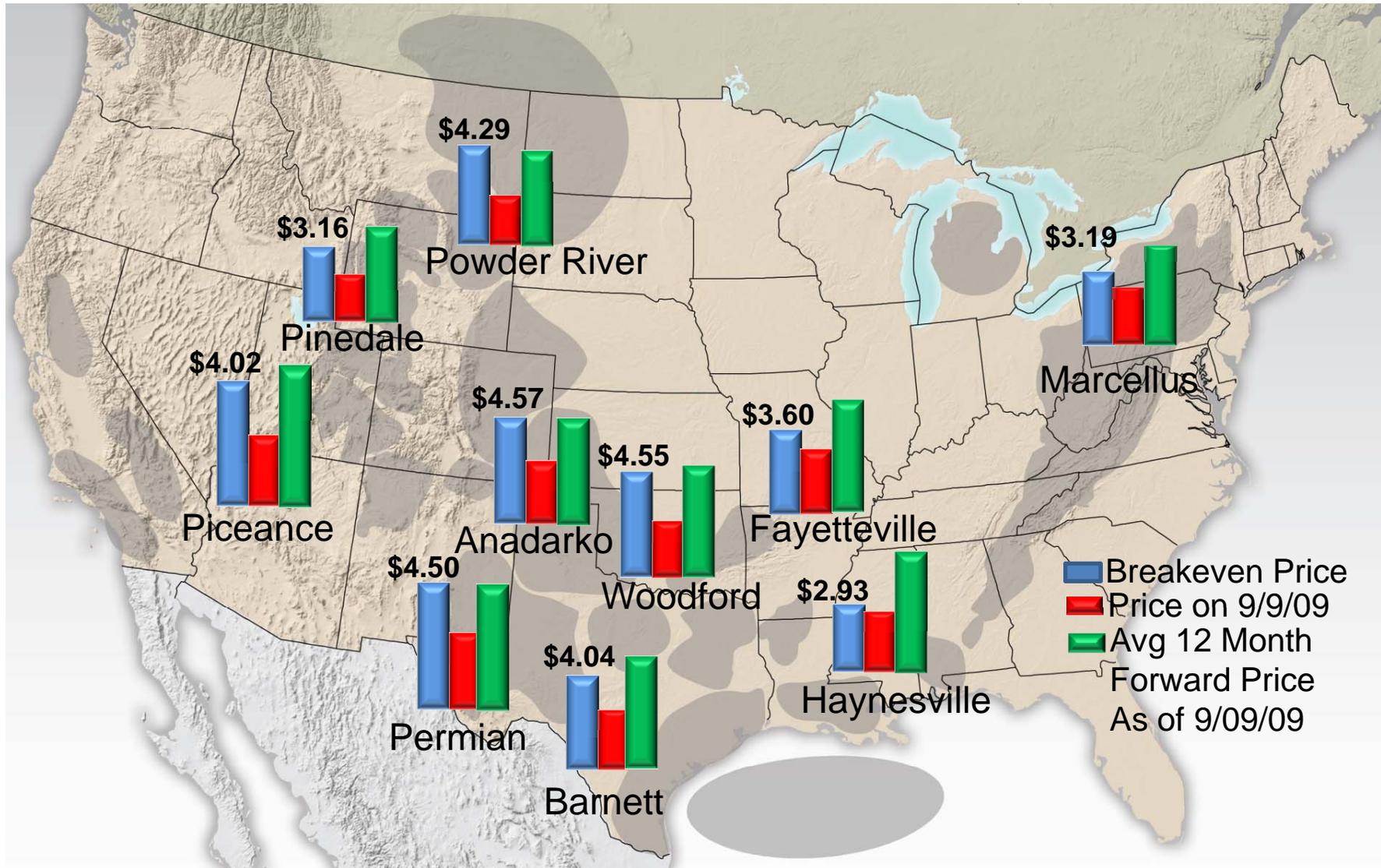
# Lowest Breakeven Prices Associate With The Most Productive Basins



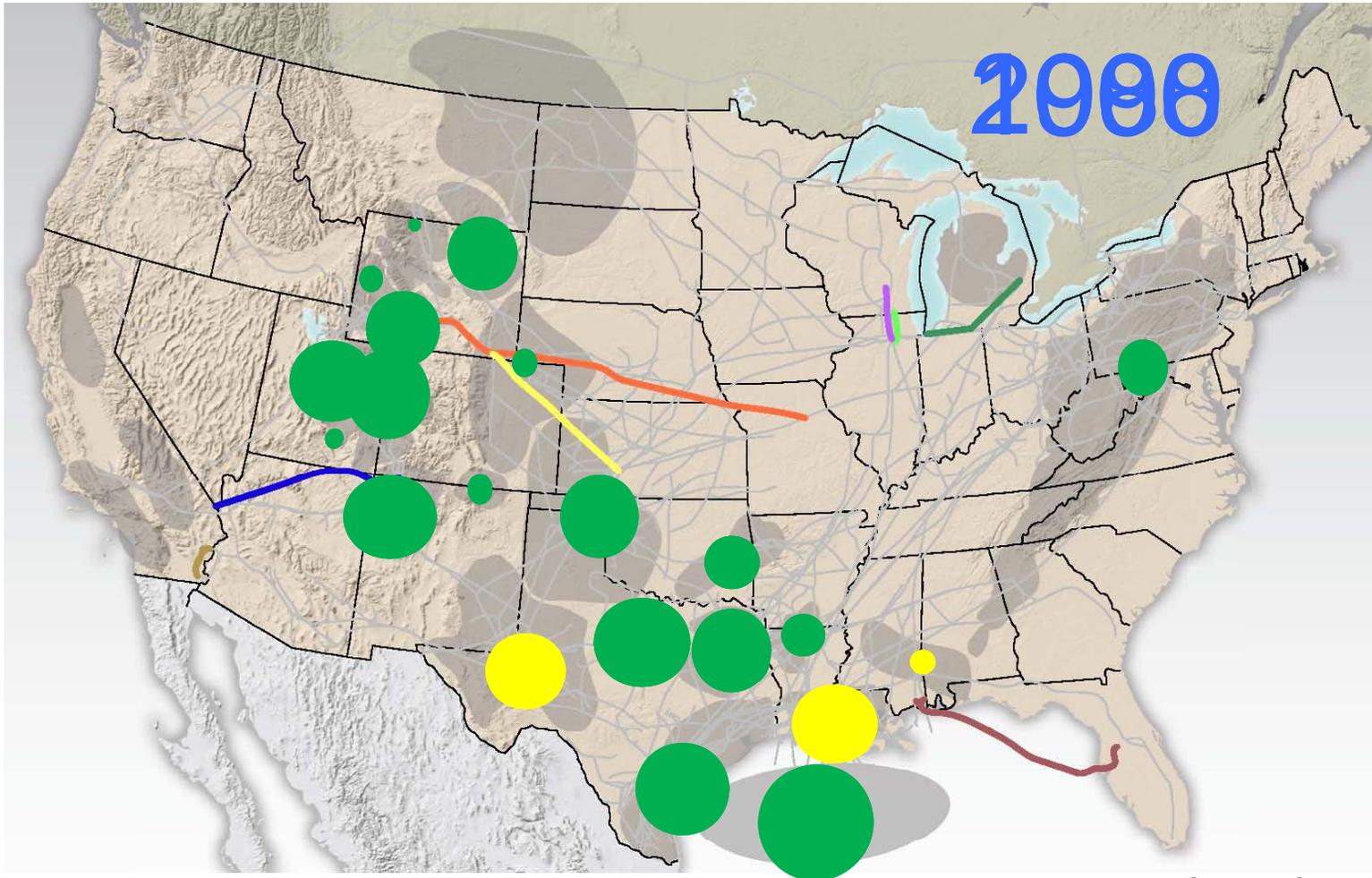
## Several Basins Are Under Water at Current Prices



# Forward Prices Encourage Drilling Everywhere



# The Geography of Production Is Changing

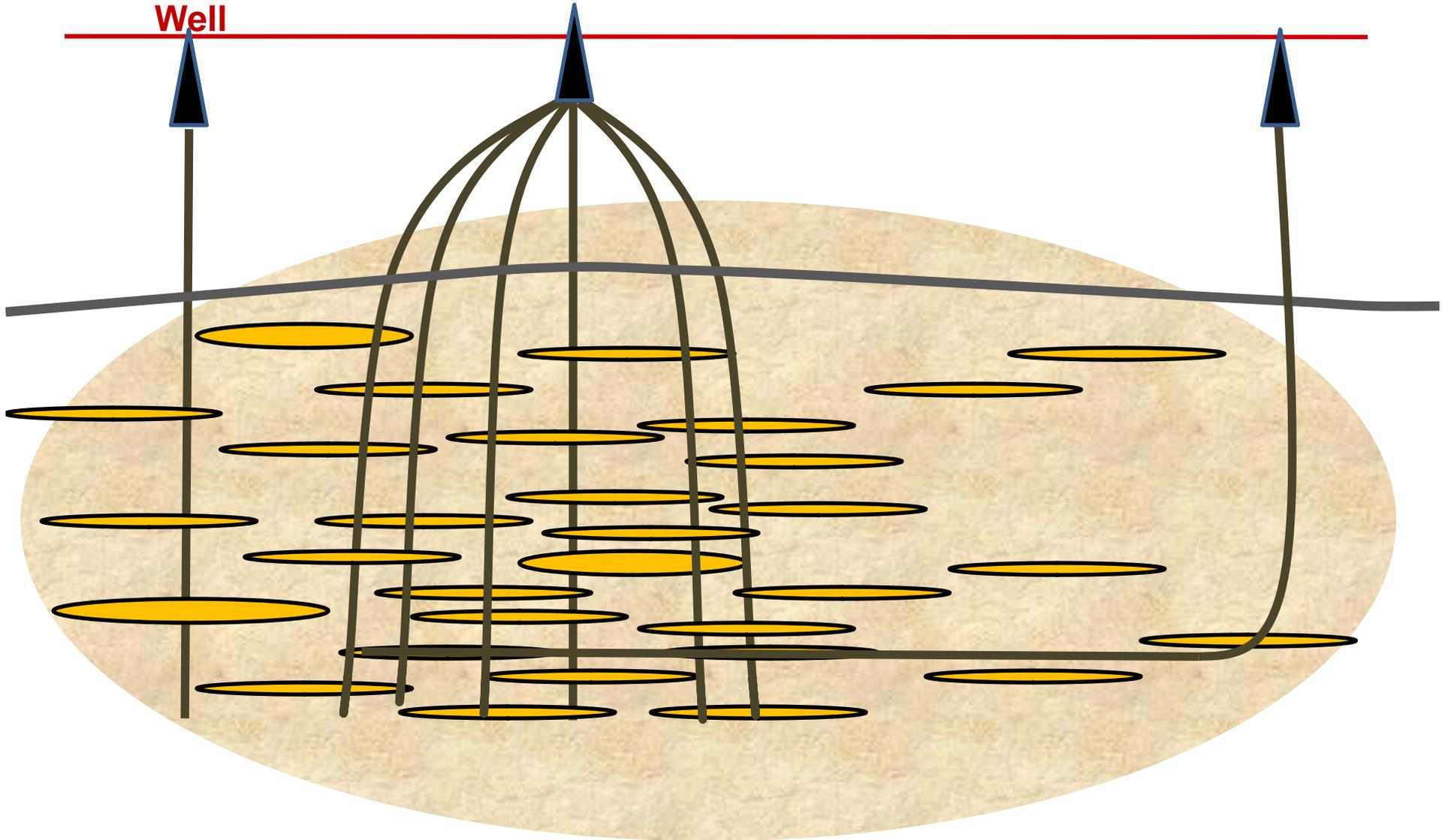


Source: State Oil & Gas  
Commission Reports

**Vertical Well**

**Directional Well**

**Horizontal Well**



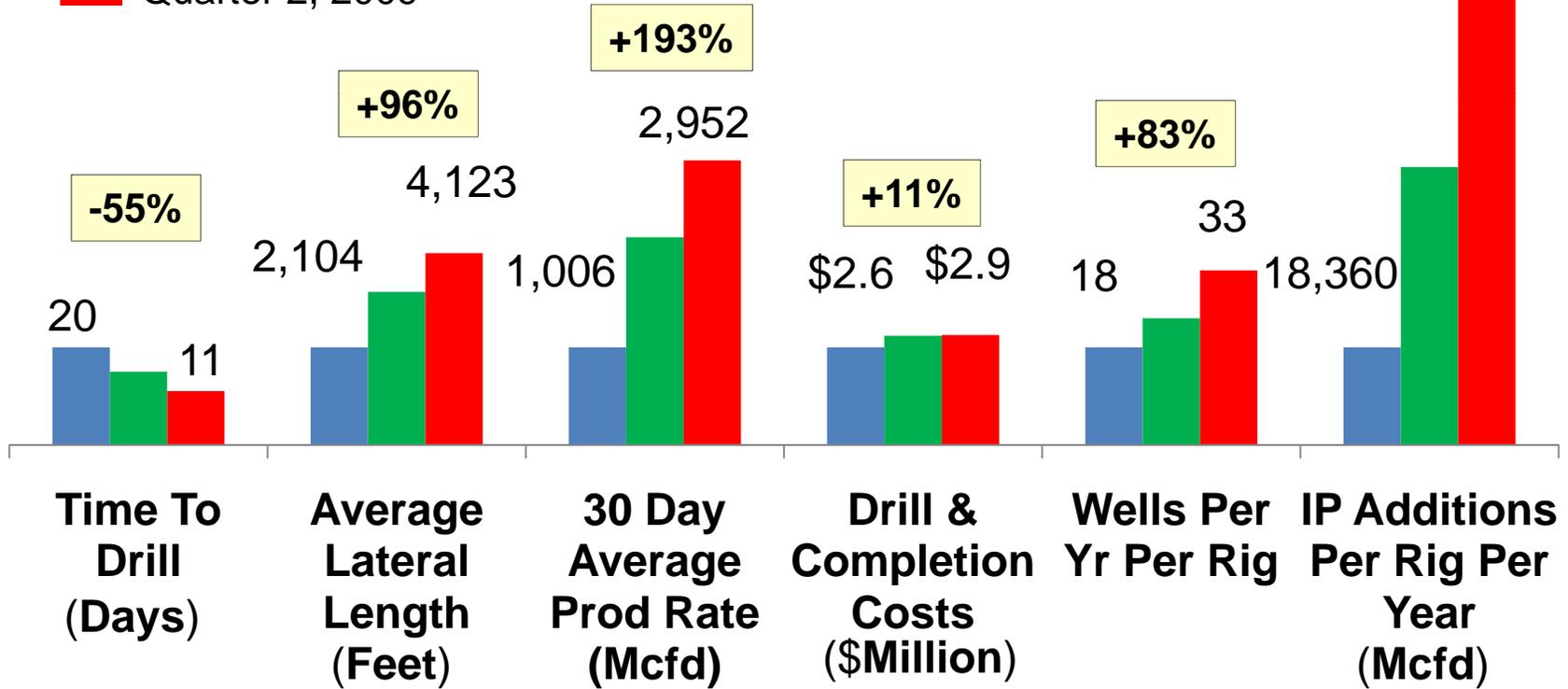
# Efficiency Gains Will Drive Down Costs

## Southwestern Energy - Fayetteville

+433%

97,953

- Quarter 1, 2007
- Quarter 1, 2008
- Quarter 2, 2009



# The Form Of Drilling Risk Is Shifting

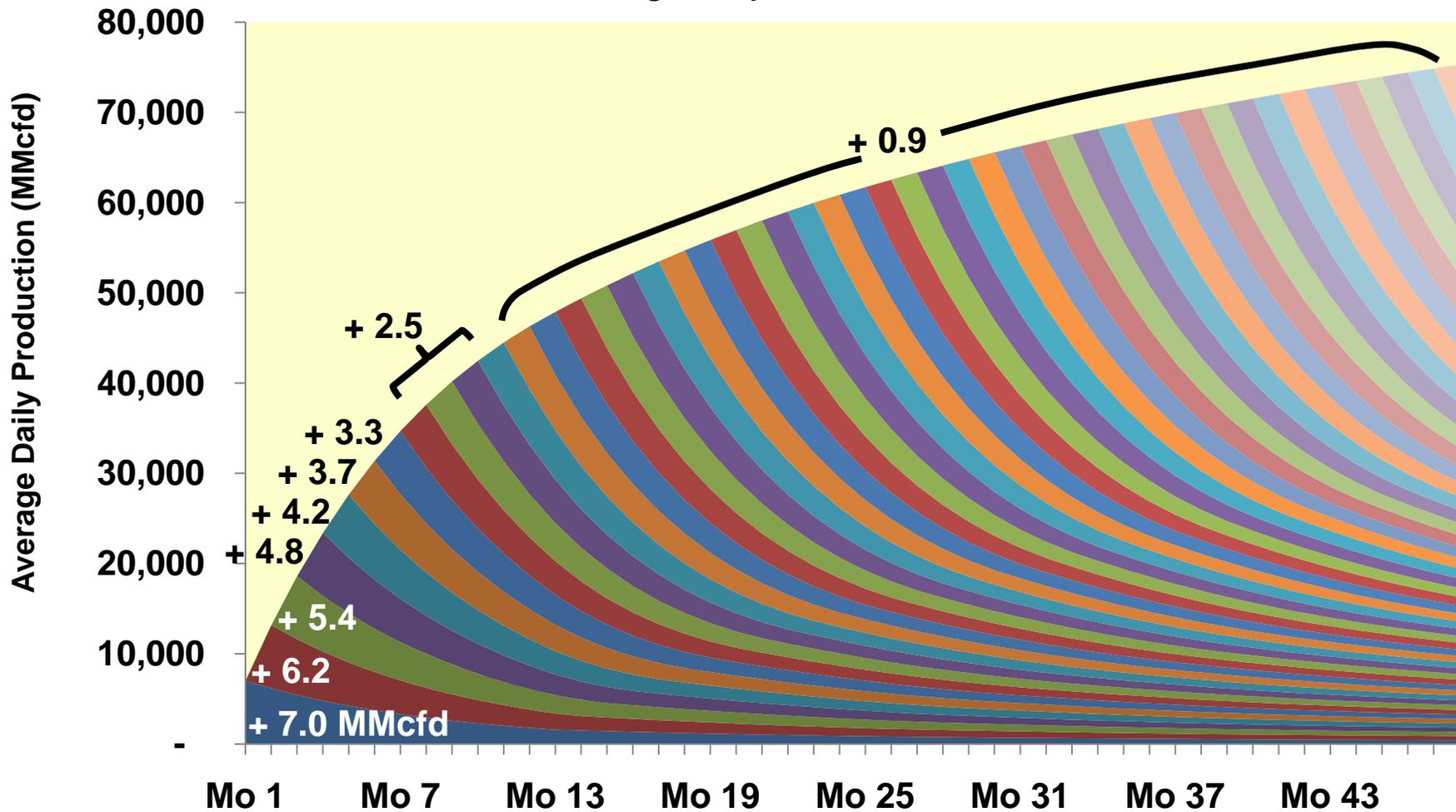
Pct Successful Wells Drilled In 2008

	Overall	Mid-Cont	Fayetteville	Haynesville	E Texas	Marcellus	Arkoma	Permian	Barnett	Gulf Coast	Rockies
Range Resources	98%										
Petrohawk	98%	98%	99%	100%	100%						
Chesapeake	99%										
Southwestern	98%				100%	100%	92%				
Pioneer	99%	50%						99%	100%	100%	
Cimarex		100%								54%	
Carrizo	96%								100%	85%	
Anadarko	99%				100%					53%	100%
Noble	99%	96%			100%						100%
Devon	98%										
	98%	86%	99%	100%	100%	100%	92%	99%	100%	73%	100%

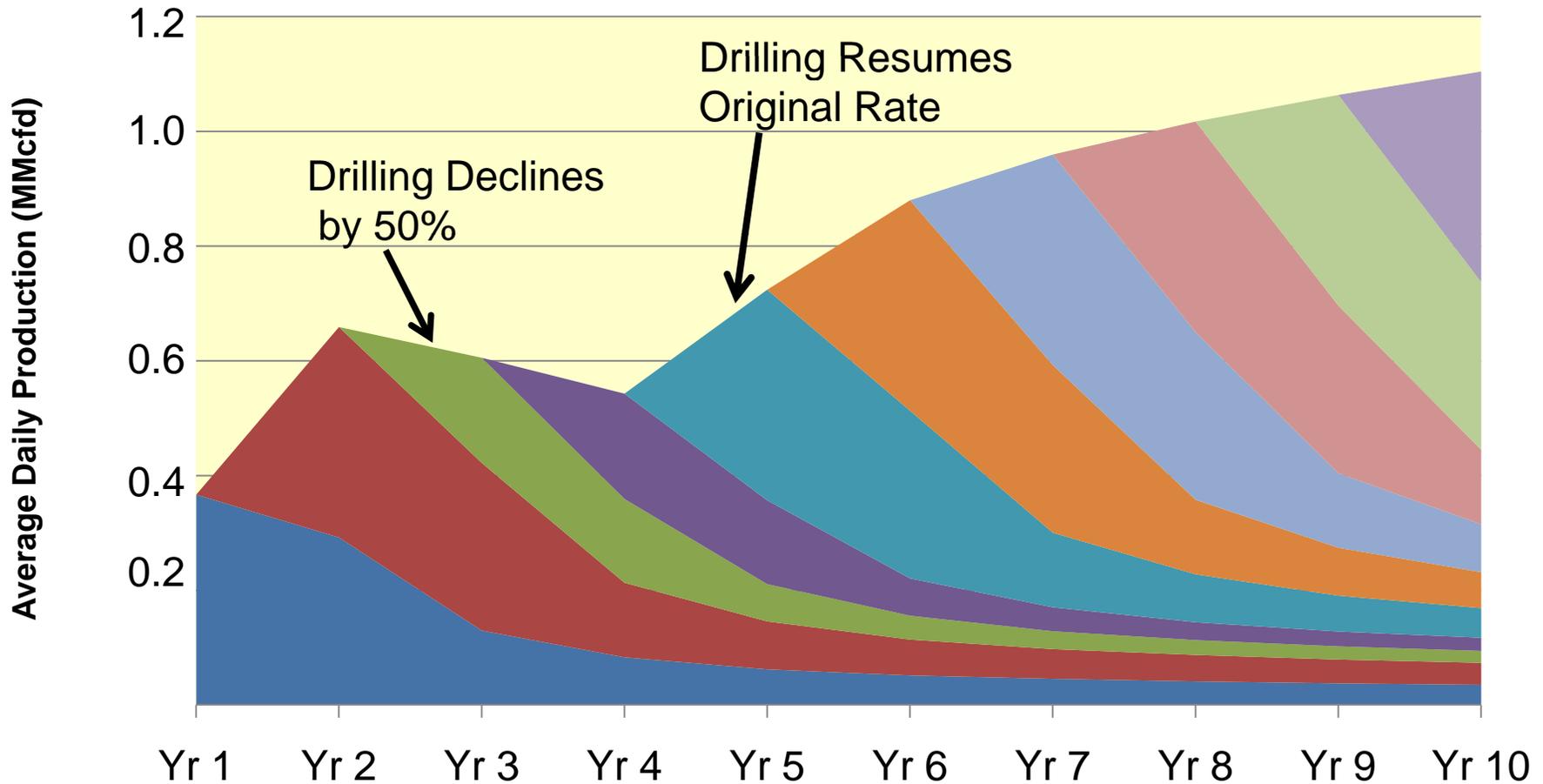
Source: Company Annual Reports and Investor Presentations

# Steep Declines Yield Less Incremental Production From Each New Well

Average Haynesville Well Profile



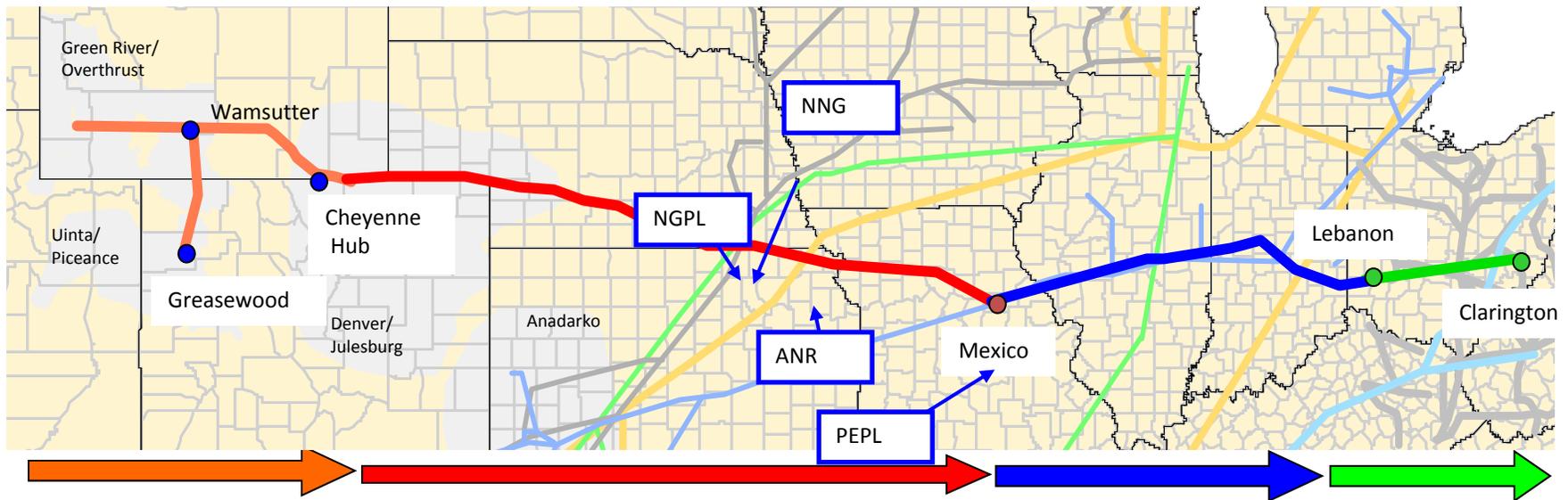
# Production Rates Are More Responsive



## Some Producers Are Insulated From The Current Price

Company		2009		2010	
		Vol/% Tot Vol	Price	Vol/% Tot Vol	Price
Chesapeake	NG Swaps	52%	\$7.34	13%	\$9.78
	NG Collars	38%	\$7.12-\$8.80	8%	\$9.18
Forest Oil	NG Swaps	193.4 Bbtu	\$7.58	160.0 Bbtu	\$7.58
	NG Collars	40.0 Bbtu	\$7.31-\$9.76	---	
Cabot	NG Collars	54.0 Mcfd	\$7.33 -\$9.04		
	NG Collars	18.0 Mcfd	\$10.47-\$14.63		
	NG Fixed	44.0 Mcfd	\$12.18	53.0 Mcfd	\$11.43
	NG Collars	35.0 Mcfd	\$9.51-\$12.10		
	NG Collars	22.0 Mcfd	\$8.29-\$10.02		
Southwestern	NG Swaps	36.0 Bcf	\$8.30	36.0 Bcf	\$9.04
	Collars	14.0 Bcf	\$8.71-\$11.69	14.0 Bcf	\$8.29-\$10.57
Petrohawk	Swap-Collars	33.0 Bbtu	\$7.02-\$12.22	148.0 Bbtu	\$5.54-\$10.06
Encana	Fixed/Puts	2.0 Bcf	\$6.09		
Bill Barrett Corp	Swap-Collar	167.0 MMBtud	\$6.83	634.0 MMBtud	\$6.60

# Rockies Express Will Take Rockies Gas To OH

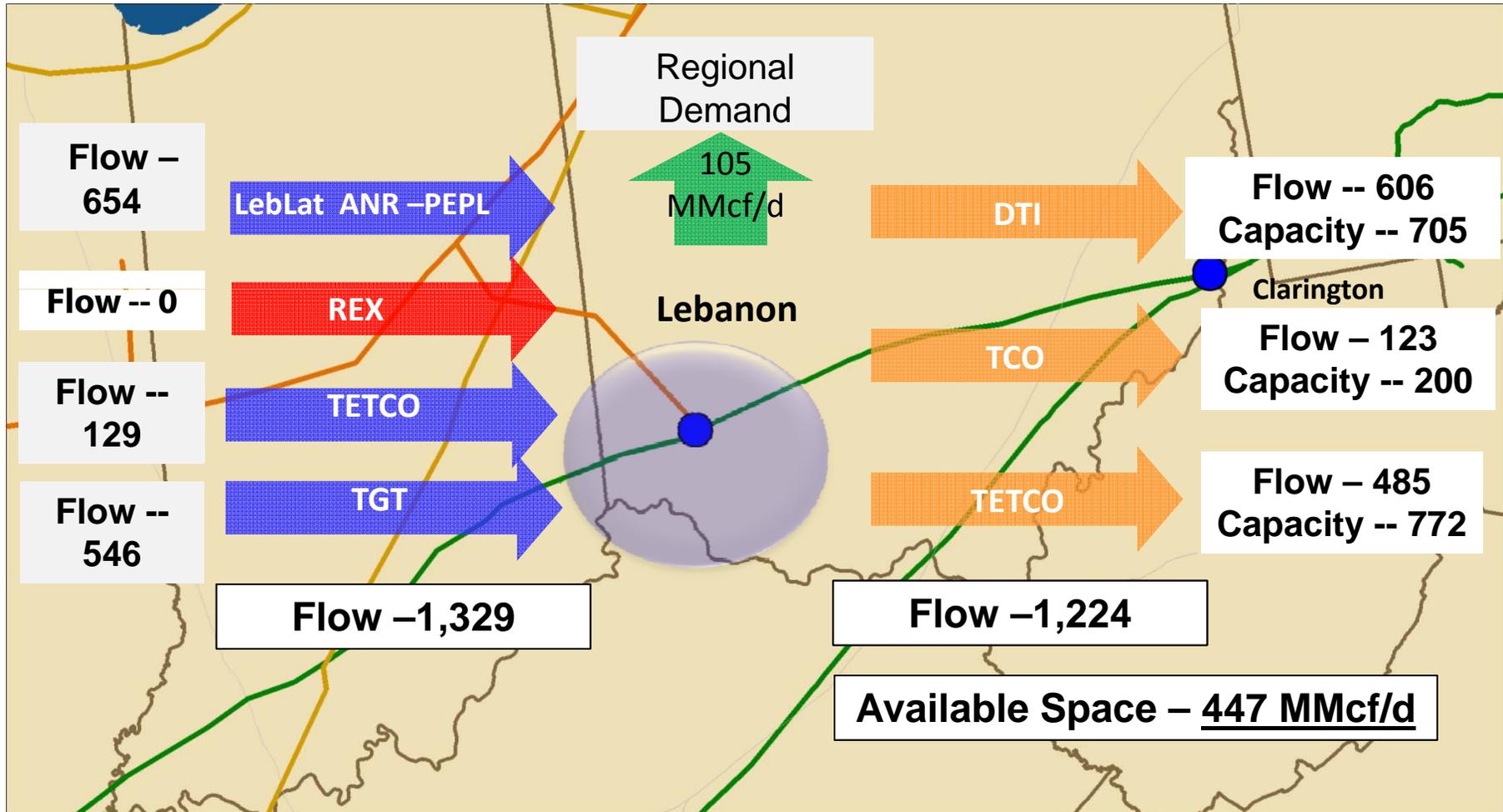


Phase I –  
Greasewood to  
Wamsutter to  
Cheyenne Hub - Feb  
14, 2007

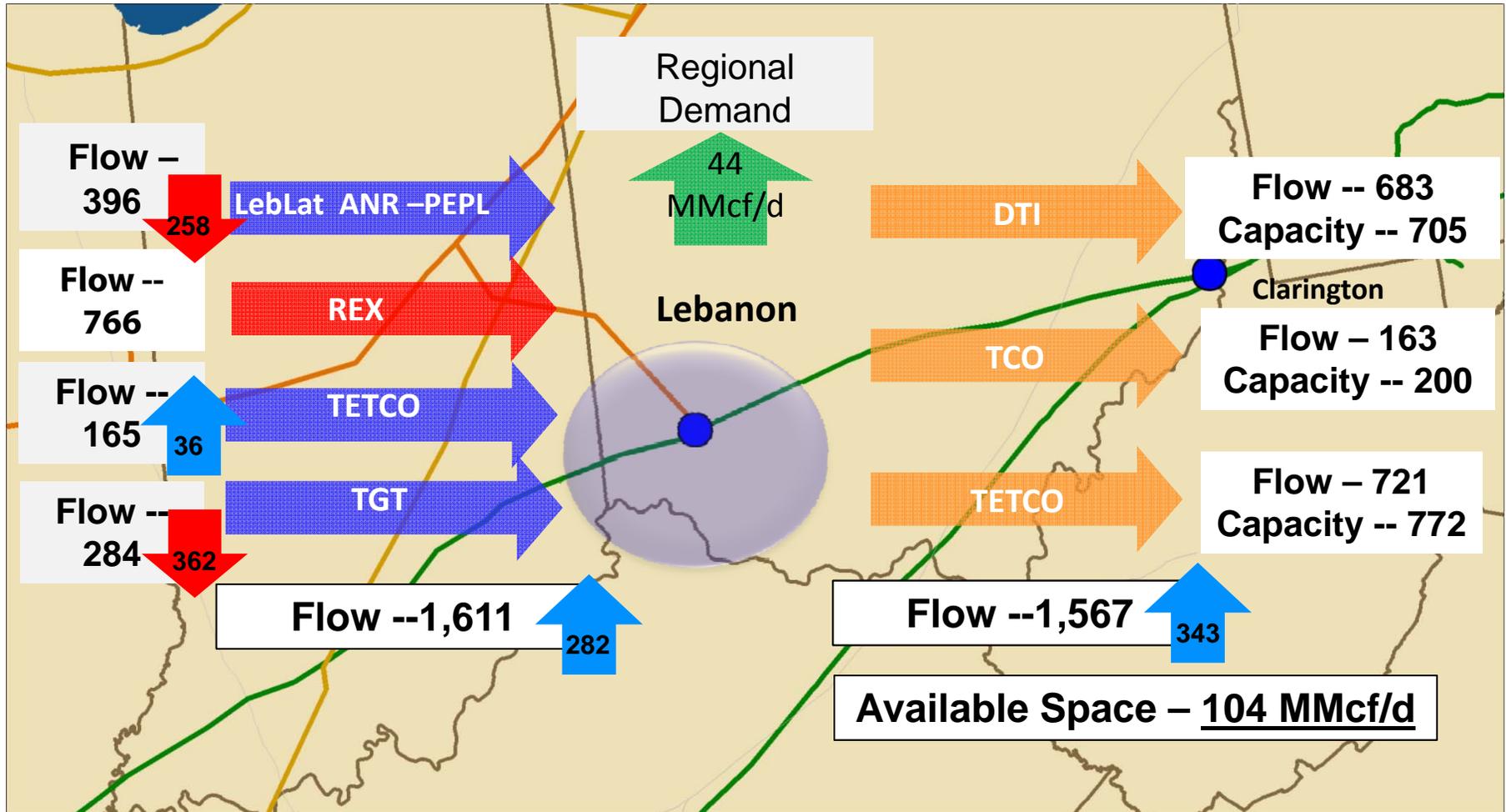
REX West/ Phase II –  
1.4 Bcf - Cheyenne  
Hub to Audrain  
County, MO – May  
2008

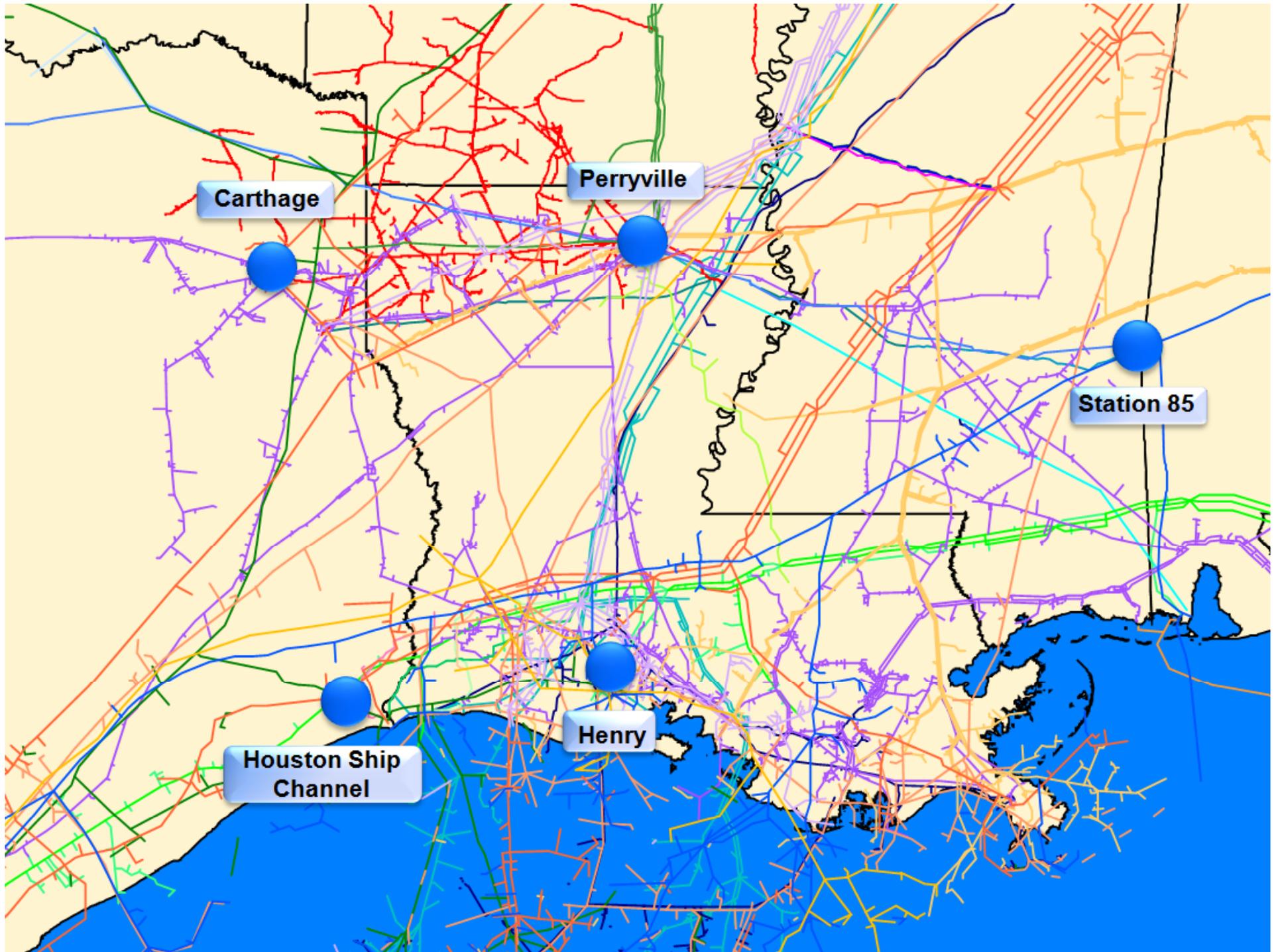
REX East/Phase III – Audrain  
County, MO to Lebanon , OH – June  
2009 – 1.5 Bcf ; Then 1.8 Bcfd to  
Clarington, OH in November 1,  
2009

# Average Lebanon Flows – June 2009

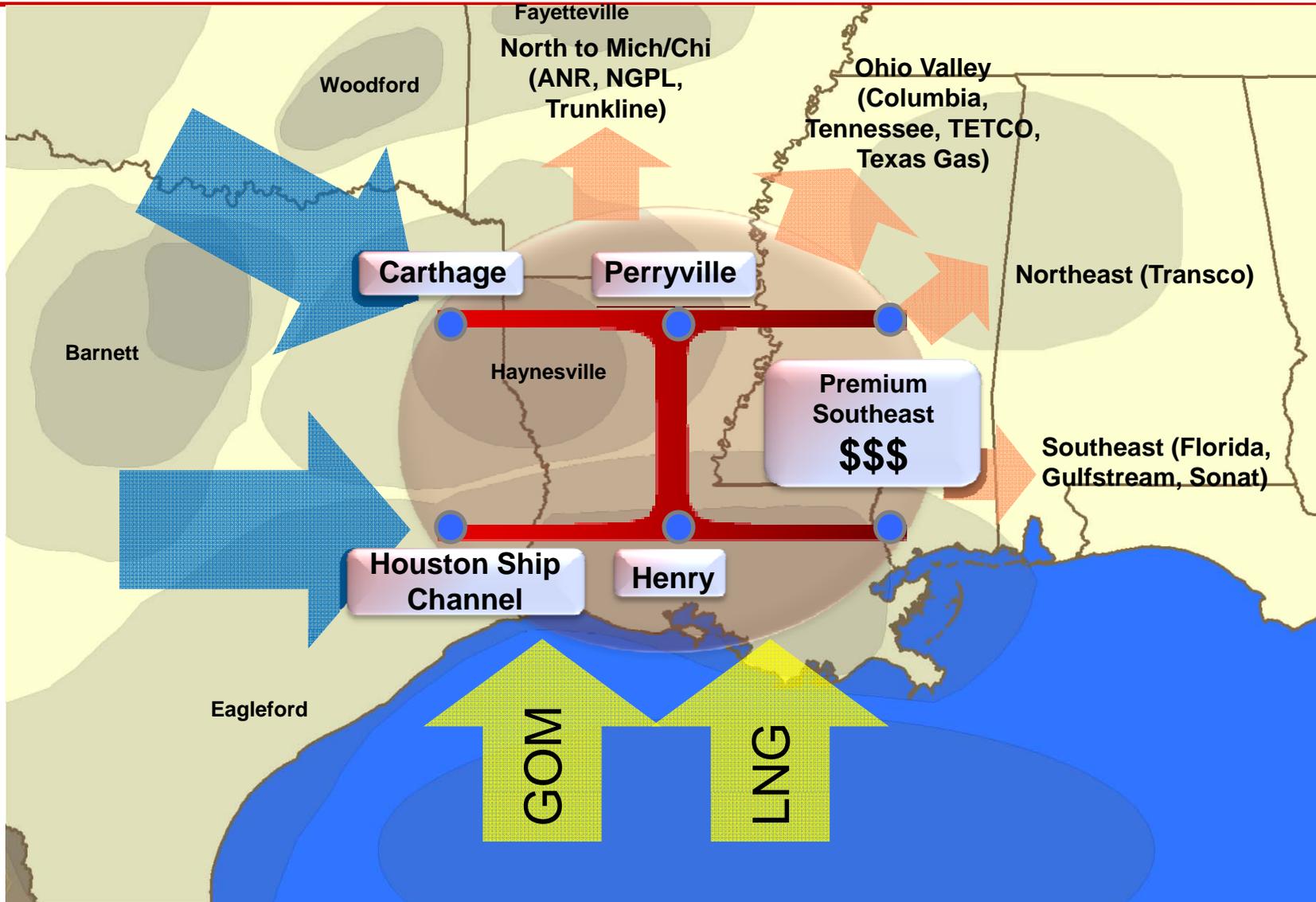


# Average Lebanon Flows – July 2009

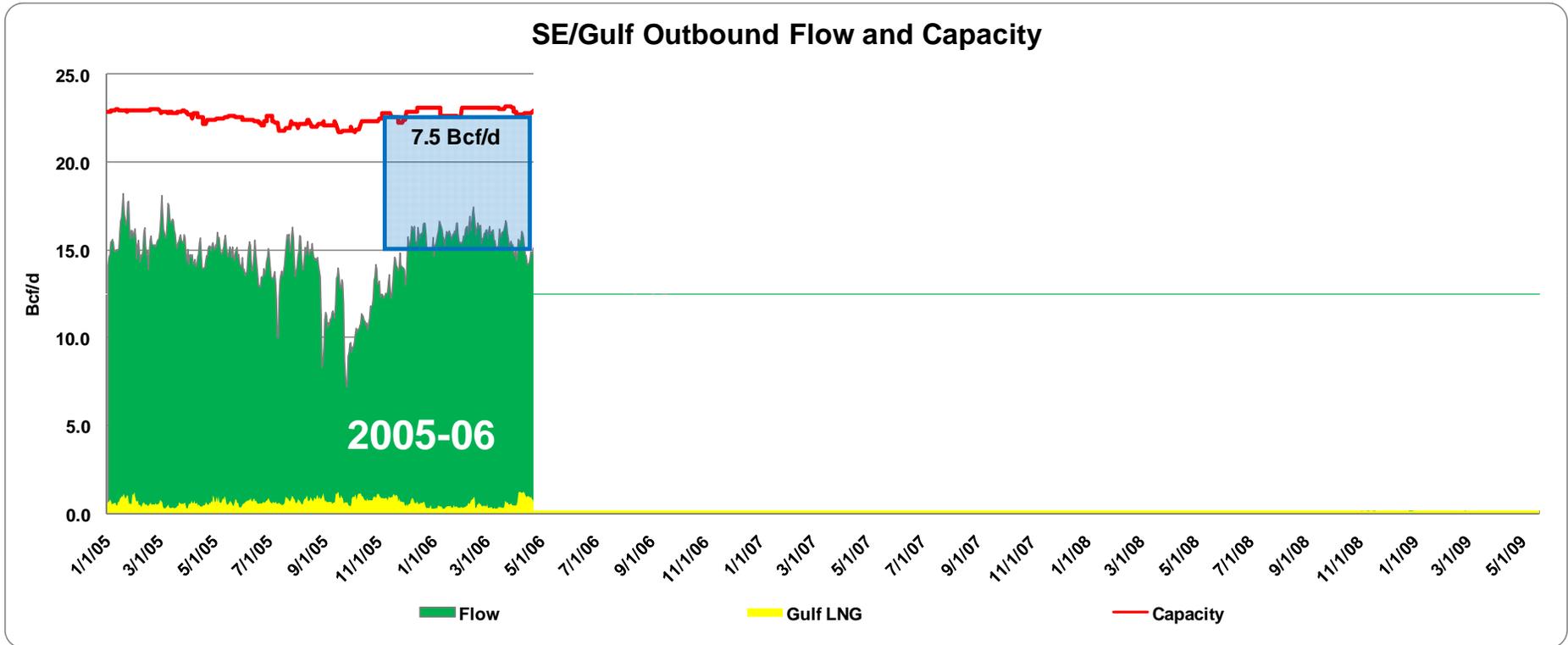




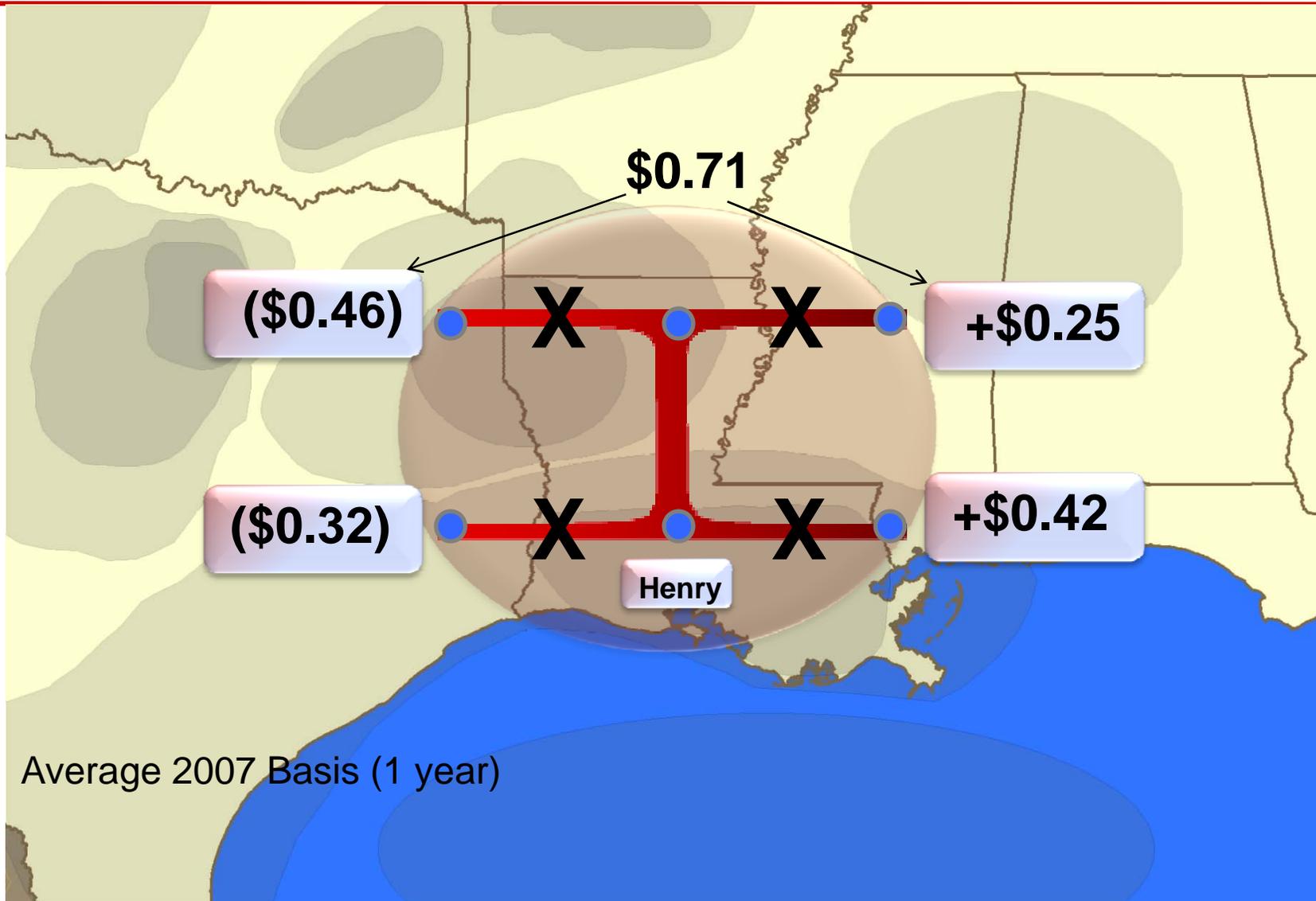
# The Southeast Flow "I"



# S/E Gulf "Bubble" Exports

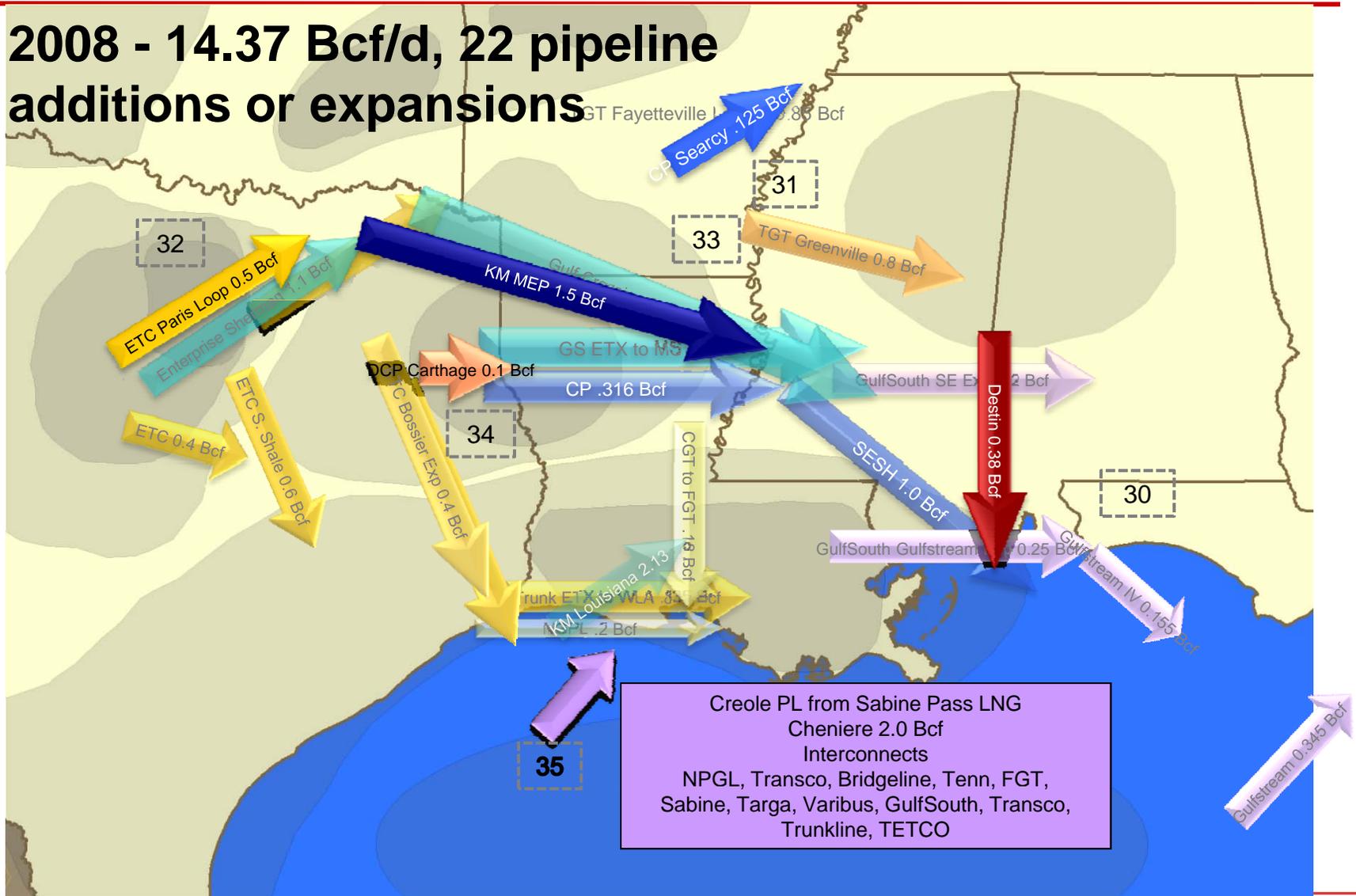


# The Way Things Were in 2007

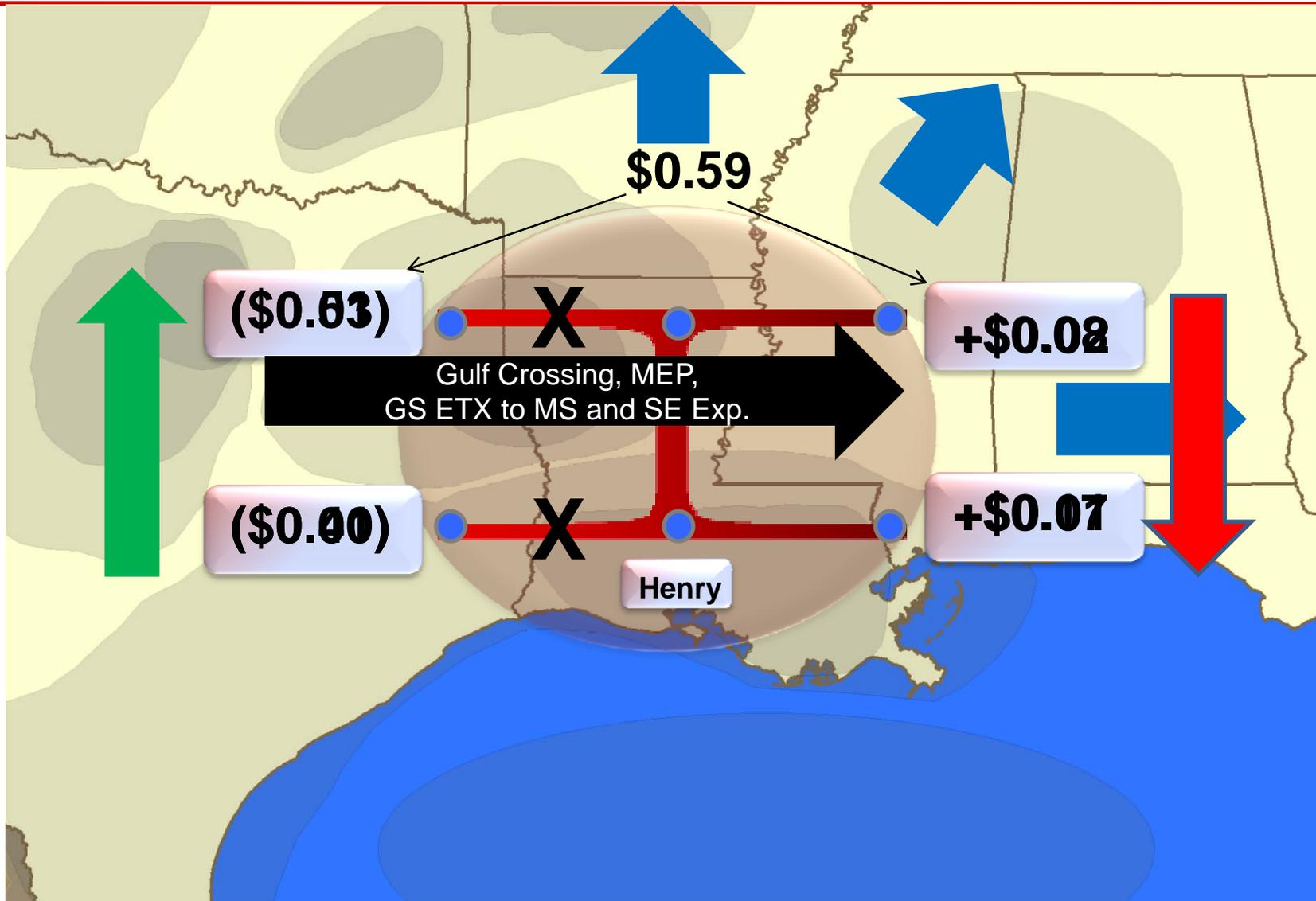


# 2008 'Super Build'

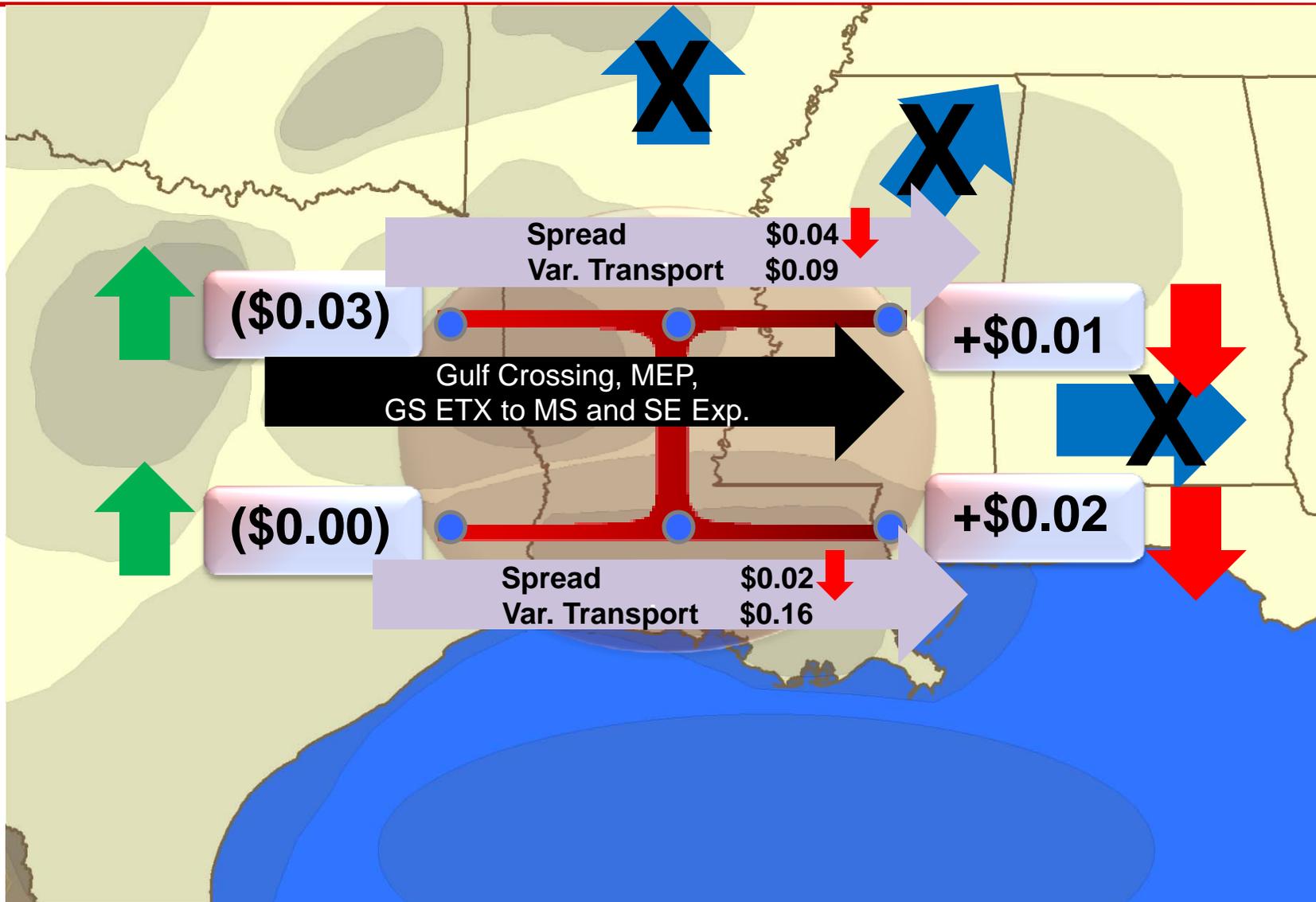
2008 - 14.37 Bcf/d, 22 pipeline additions or expansions



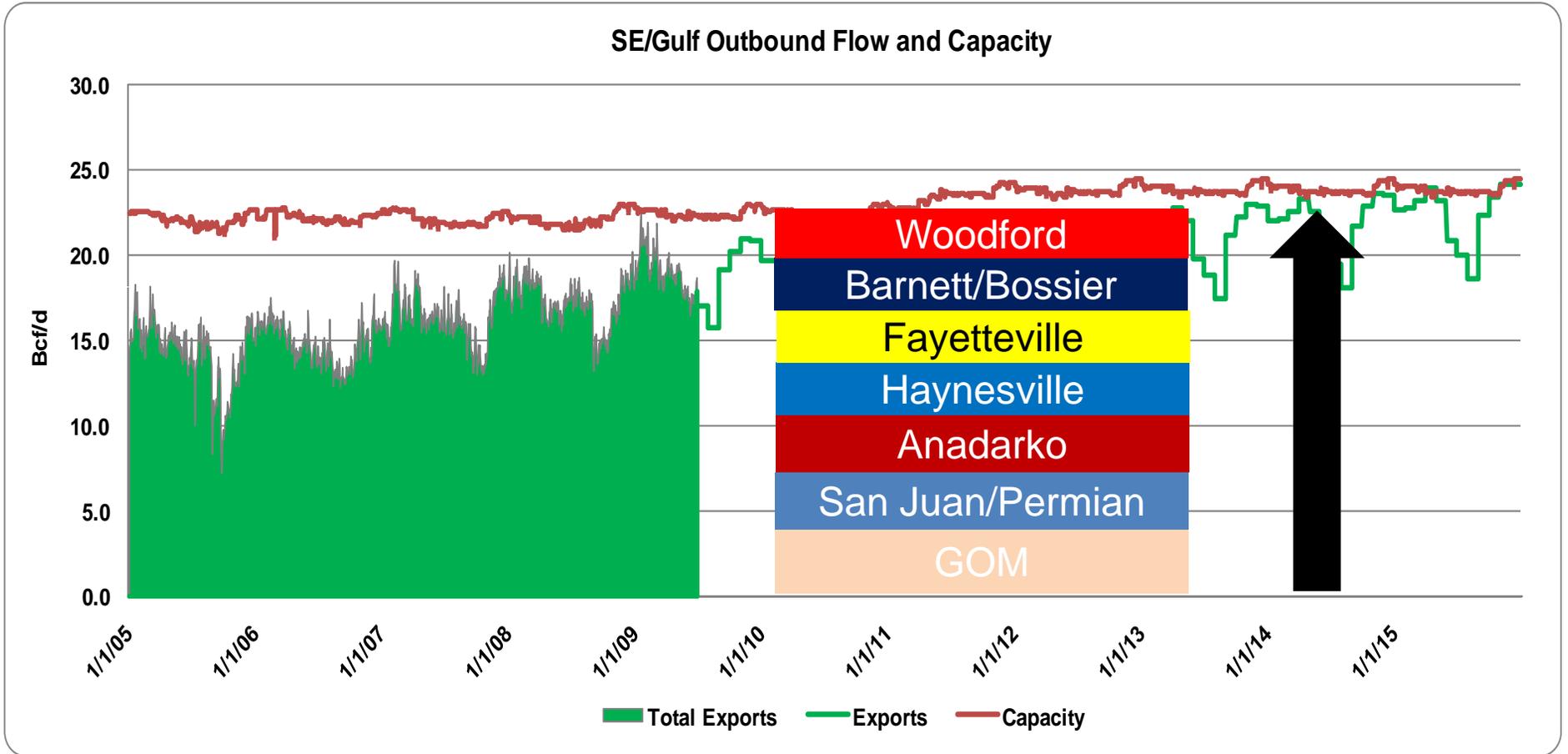
# The Southeast Flow "I" As Of August, 2009



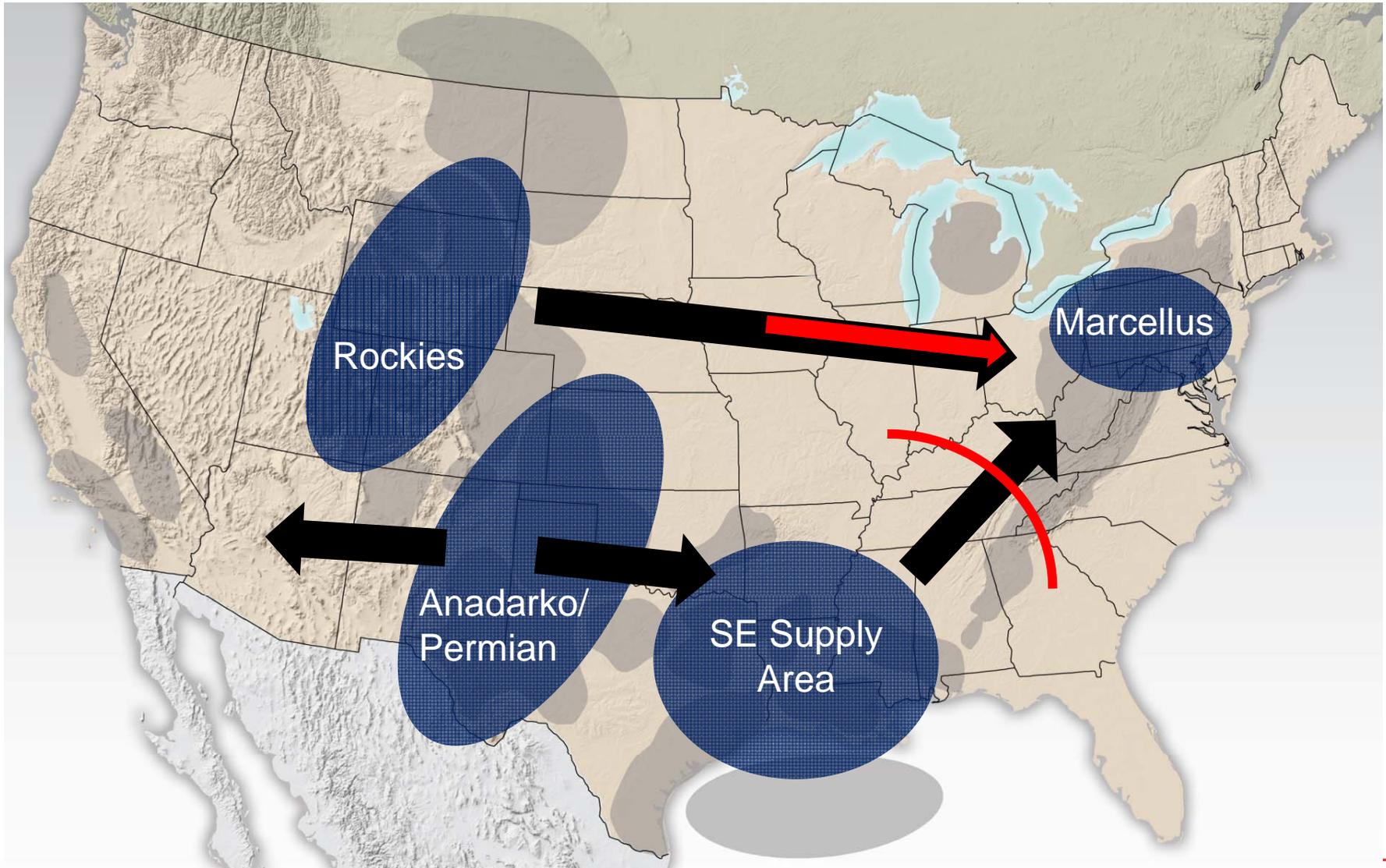
# The Southeast Flow "I" – August, 2009



# Basin Competition



# Market Implications of Flow Dynamics



## *Conclusions*

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- ❖ Technology is unlocking US unconventional resources and fundamentally reshaping the natural gas industry.
- ❖ The US now has abundant natural gas supplies and a robust productive capacity that should dampen historic price volatility.
- ❖ Gulf export pipeline constraints will continue to place additional pressures on regional prices and impact the nation's ability to increase demand.
- ❖ If the US is serious about improving energy security and reducing carbon emissions, policies should build on the positive attributes of natural gas – it is abundant, domestic, relatively inexpensive, and clean.
- ❖ Natural gas should be the central focus of our energy policy; it can achieve results now with minimal public finance requirements.
- ❖ Political interference in the market may obviate realization of this historic opportunity.

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