

# Price Determinants: Basis Changes & Where is it Going?



*Leading companies to*  
***Cost-Effective***  
*& Sustainable Energy*



**\$20 Billion**  
*managed spend*

**350+**  
*dedicated employees*

**Independent**  
*& unbiased*

**32,000+**  
*client sites*

**13 Global**  
*offices*

**25 Million**  
*metric tons carbon*



# 13 International Offices

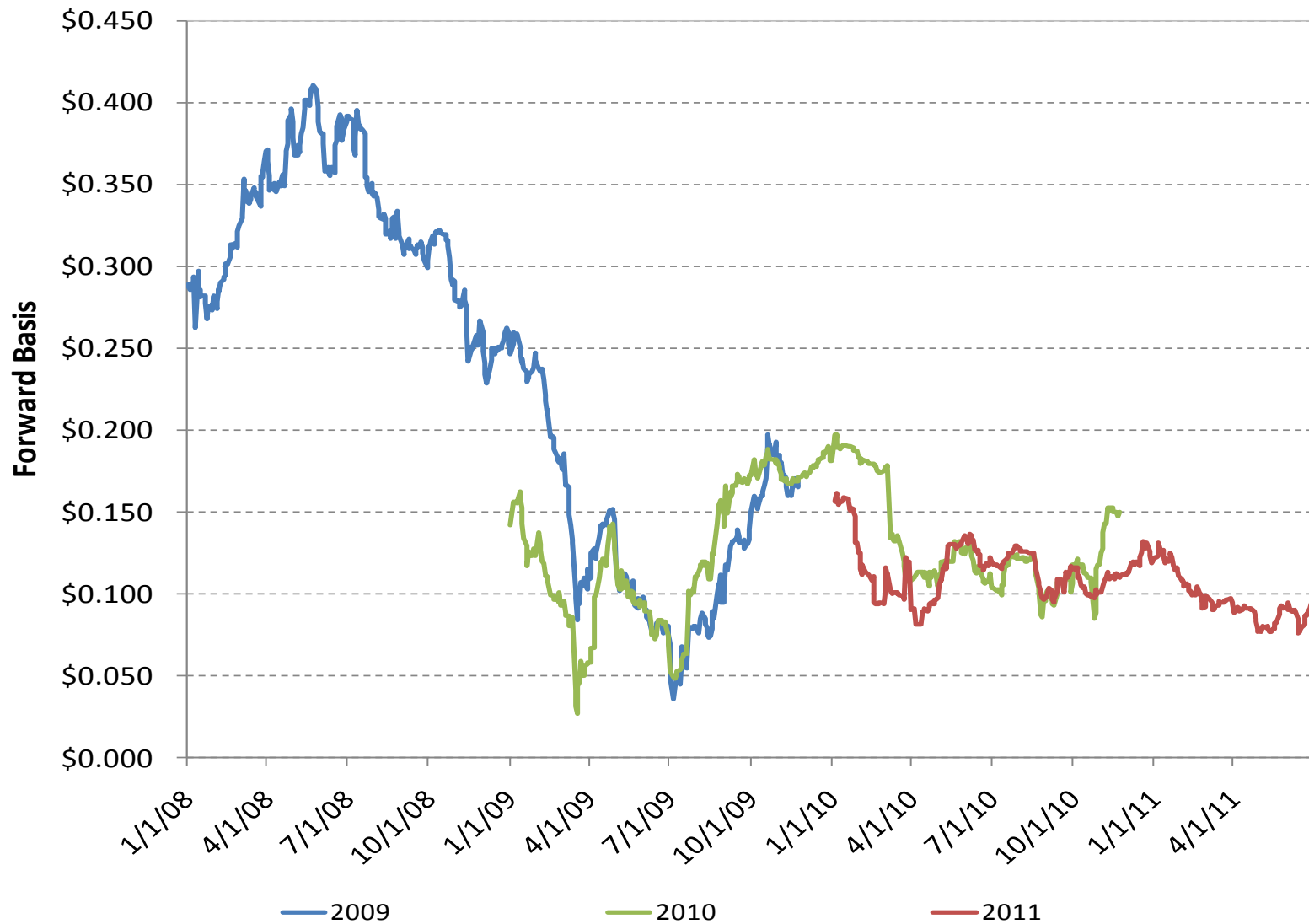
## ❖ End-use Customers

- Industrial
- Commercial
- Institutional

## ❖ Wholesale Customers

- Renewable IPPs
- Producers
- Municipals / Cooperatives

# Historical Calendar TCO Wholesale Basis



## ❖ Pricing Variables

- NYMEX
- Production
- Imports
- Supply & Demand
- Planned Electricity Generation Capacity through 2013
- Storage

## ❖ Impact of Shale Gas

- Conventional vs. Unconventional Production
- High Initial Production Rates
- Steep Decline Curves
- Marcellus-Future Infrastructure

## ❖ Rockies Express

- Ohio Capacity

## ❖ Ohio Basis

- Paradigm Shift
- Where is it Now?
- Where is it Going?

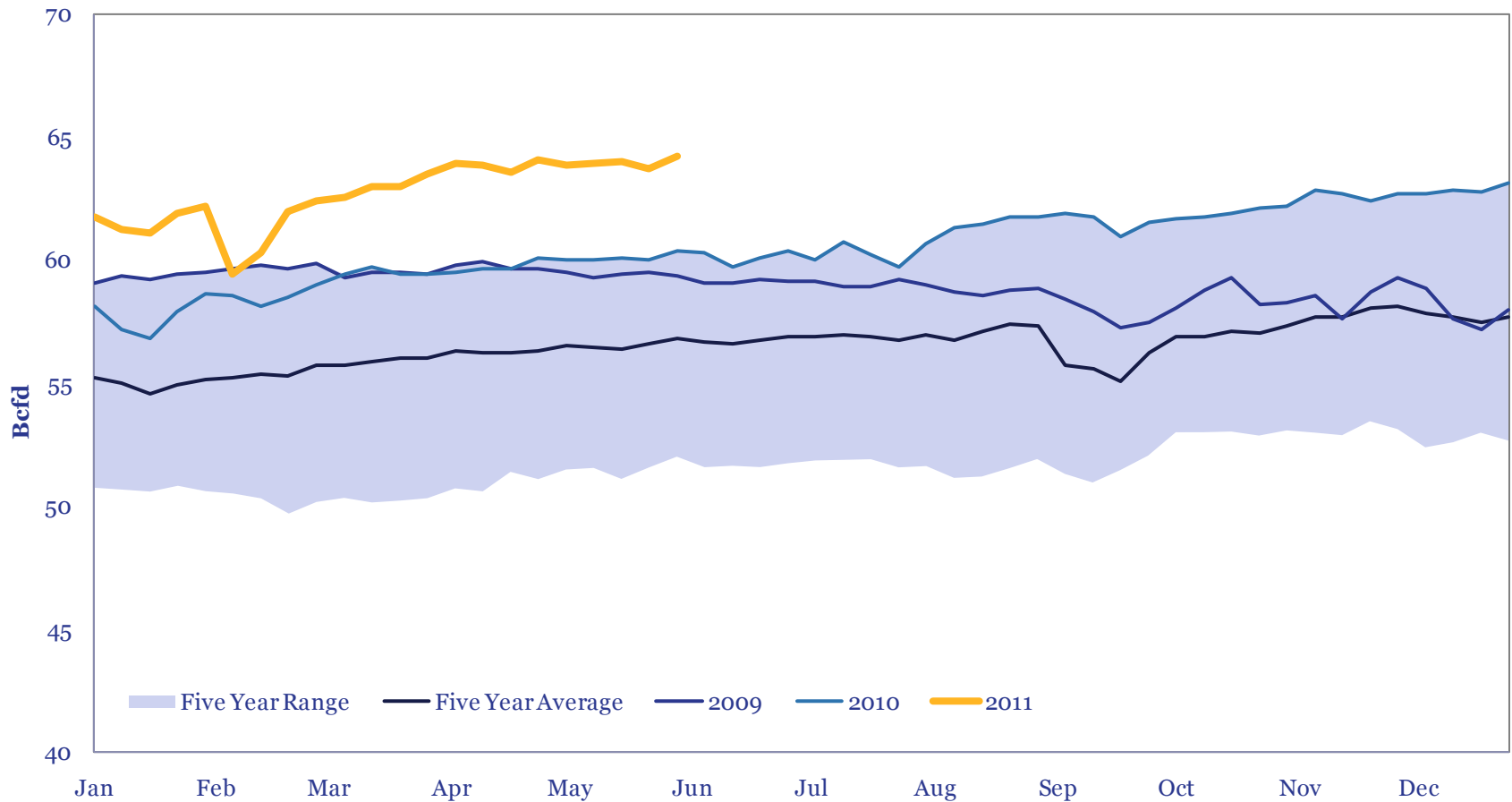
## ❖ Customer Trends

# NYMEX Gas Prices Range-Bound



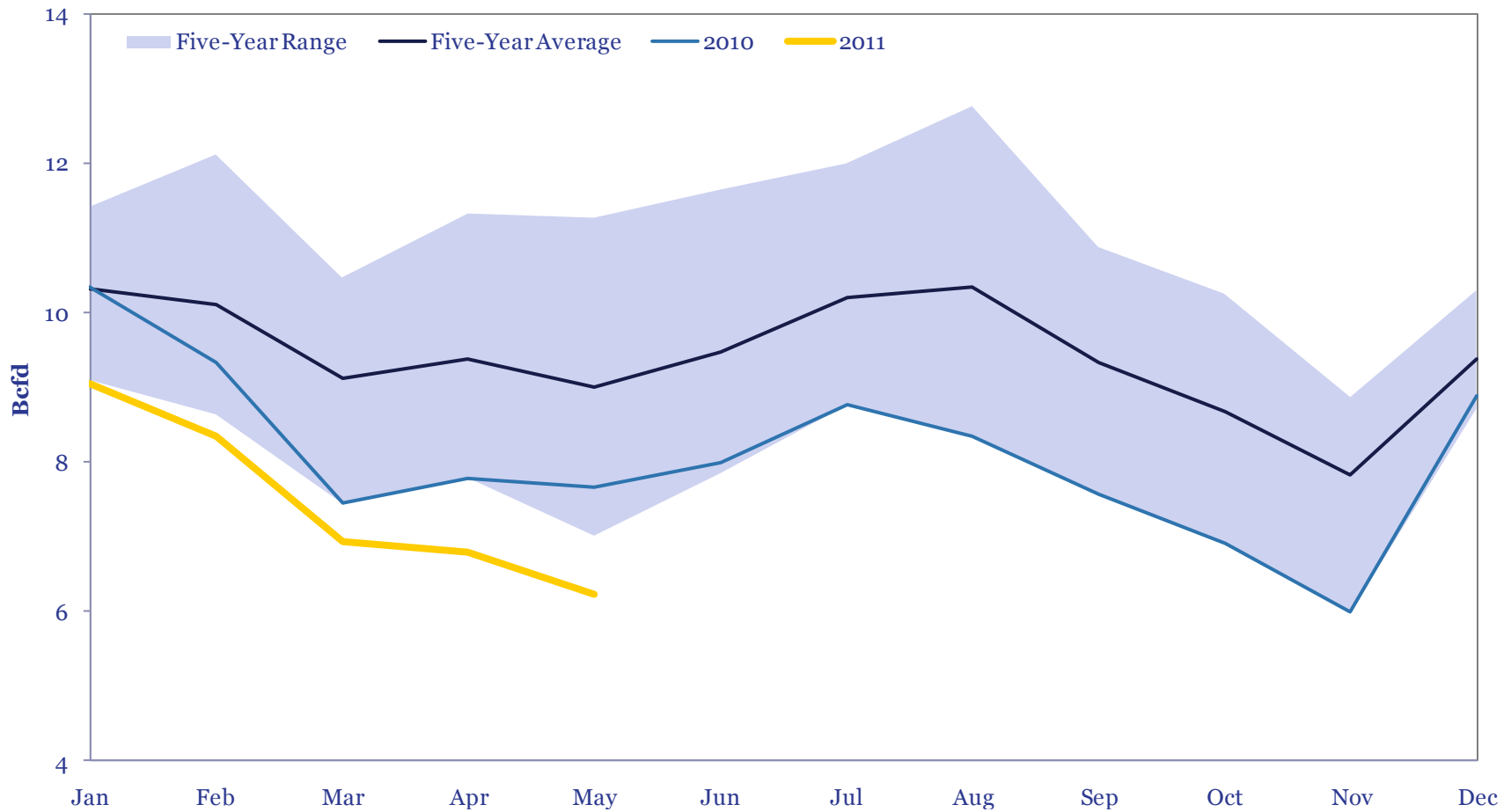
Source: NYMEX / ICE

# Domestic Production Historically High



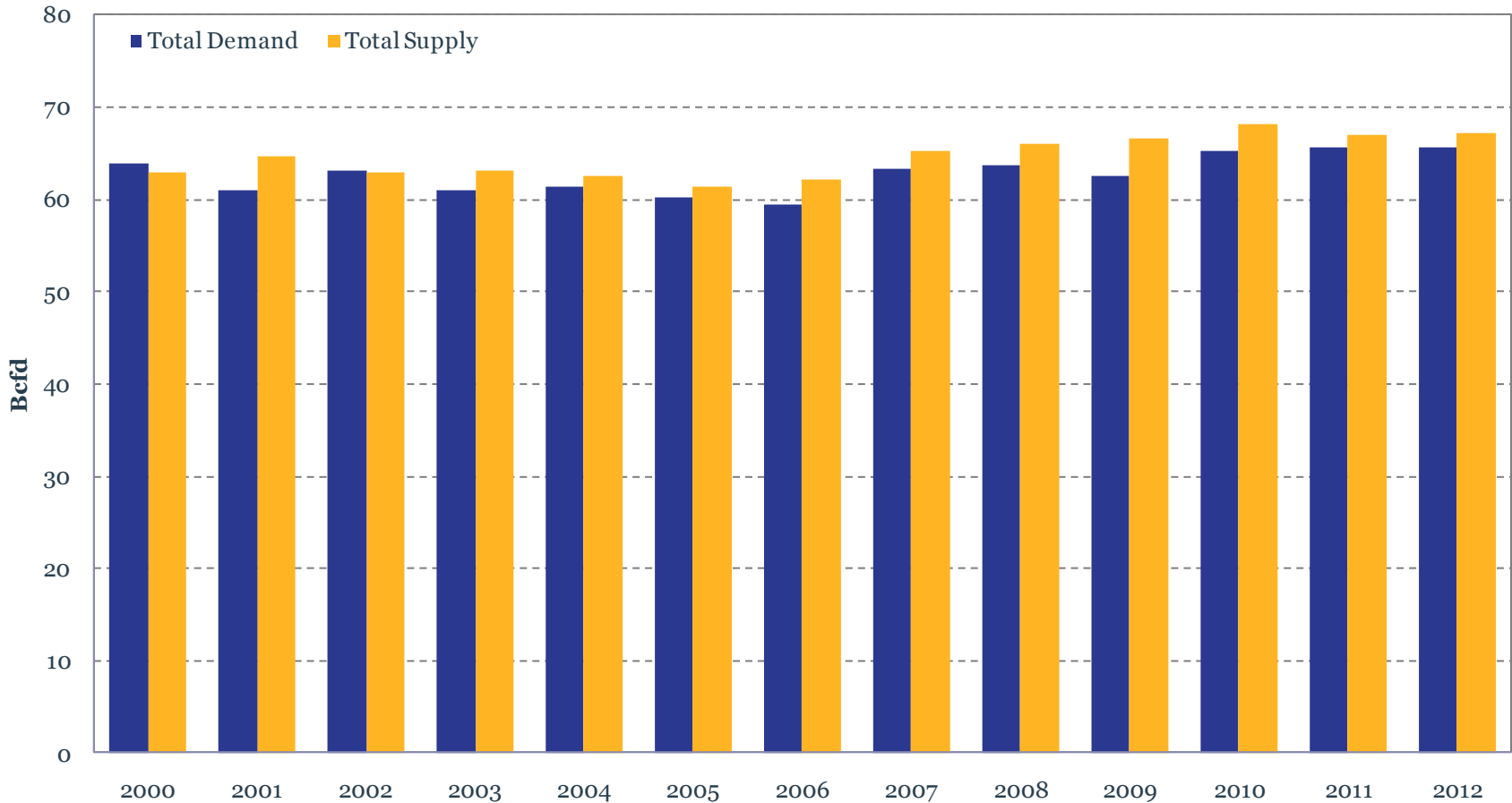
Source: Bentek

# Total NG Imports Falling



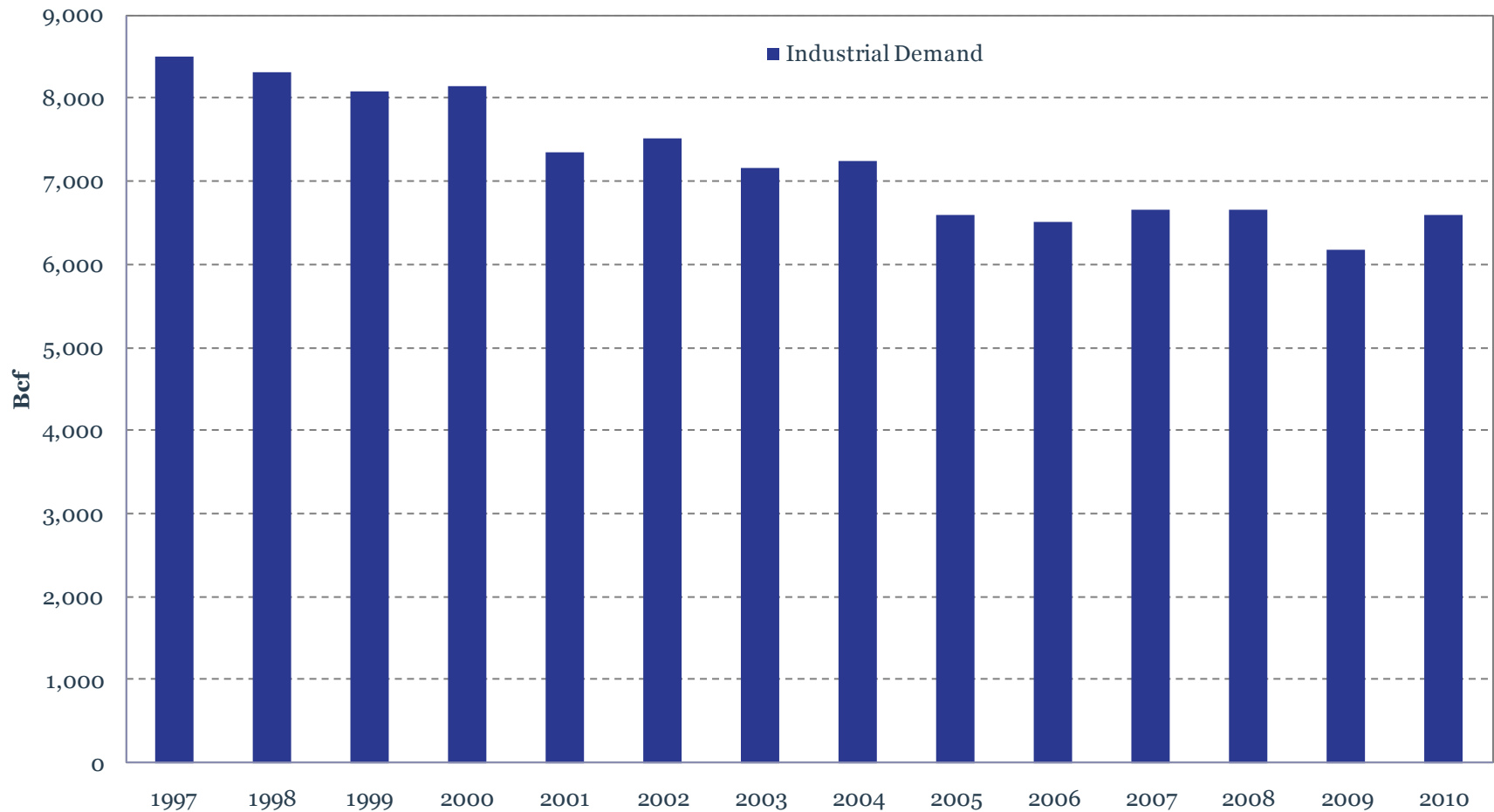
Source: Bentek

# Natural Gas Supply vs Demand



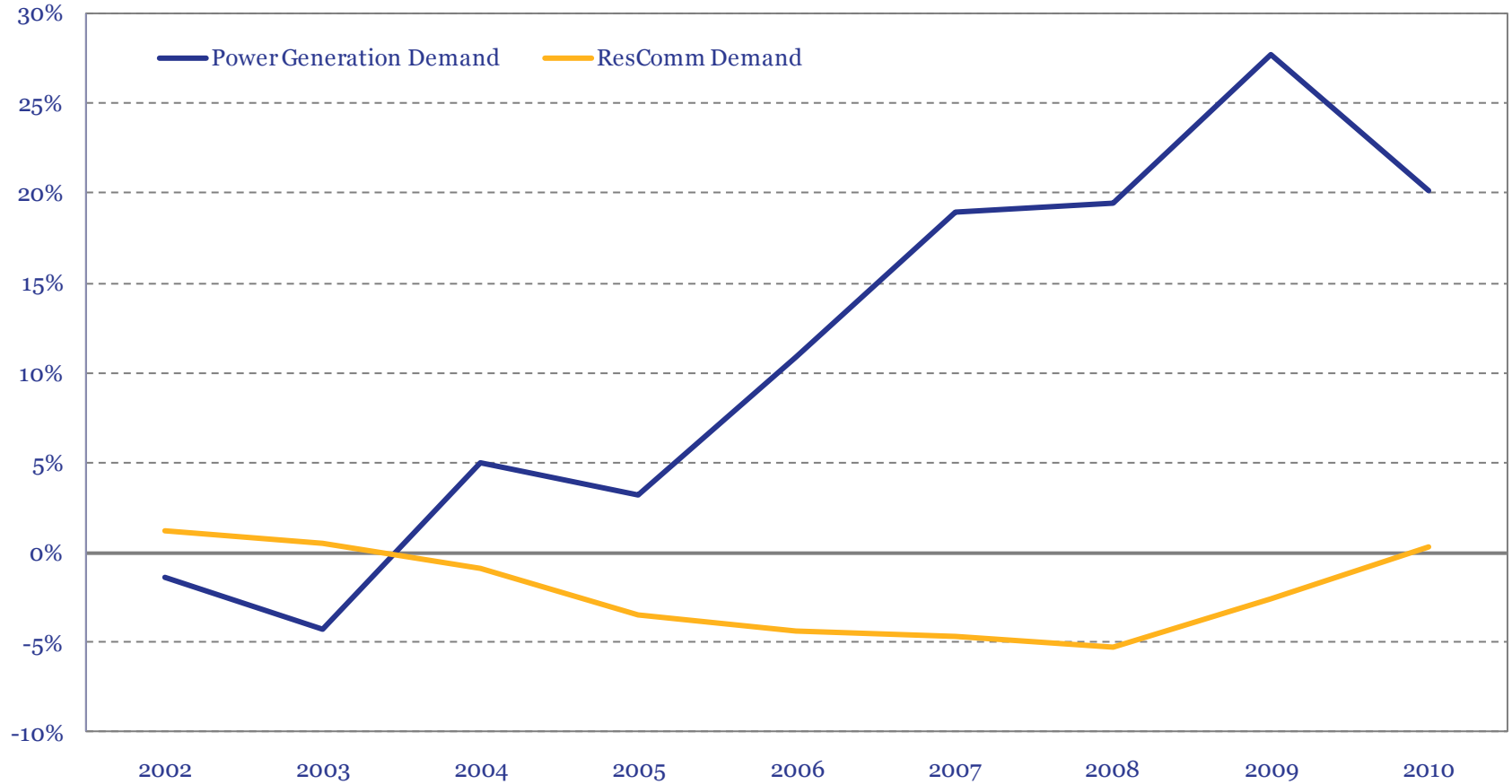
Source: Summit Research

# Industrial Demand In Structural Decline



Source: EIA

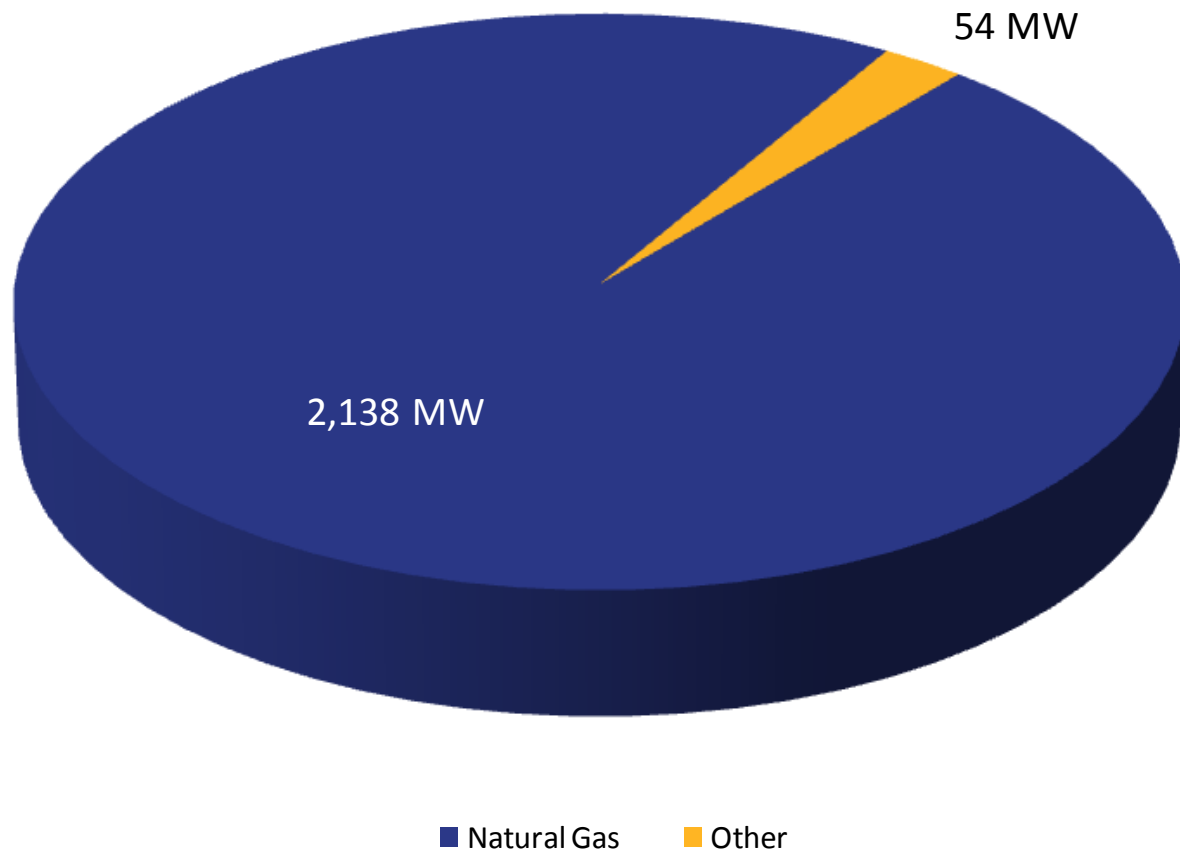
# Structural Growth In Gas-Fired Generation



\*Benchmarked to 2001

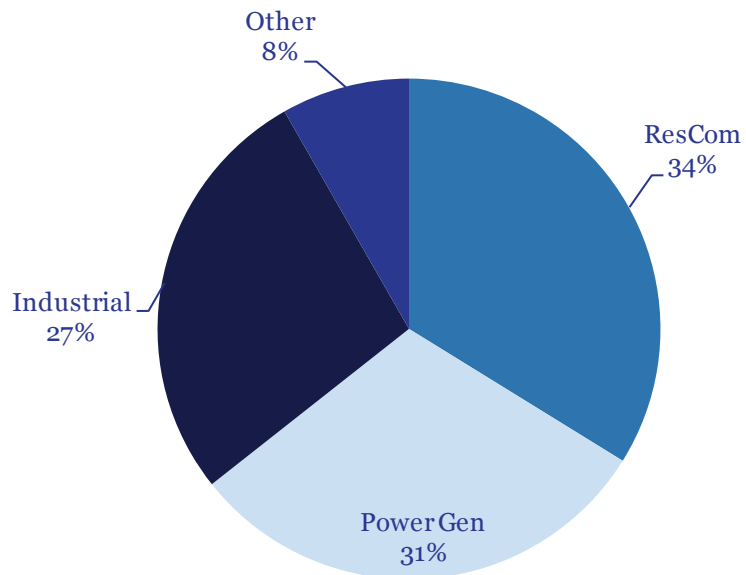
Source: EIA, NOAA

## Planned Electric Generation for OH through 2013

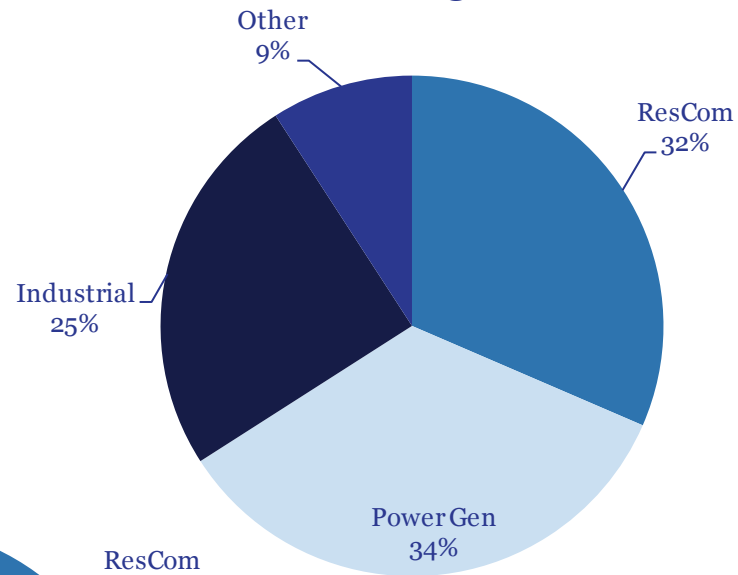


# Shifting NG Consumption

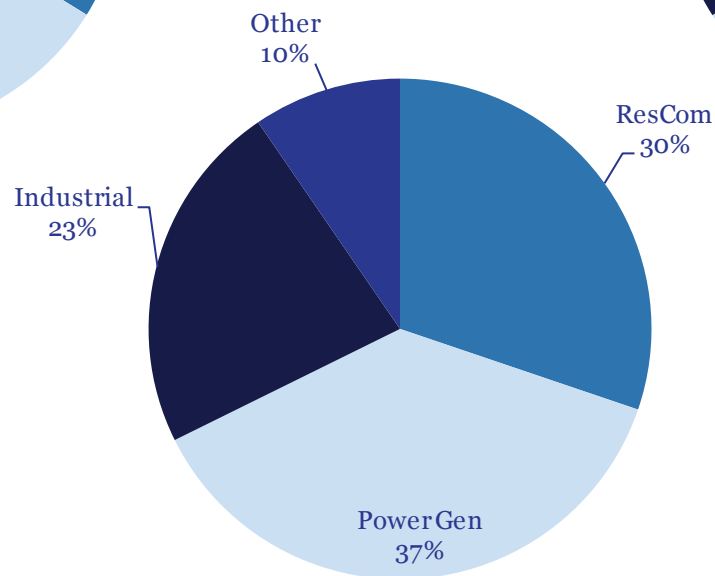
**2010**



**2015**

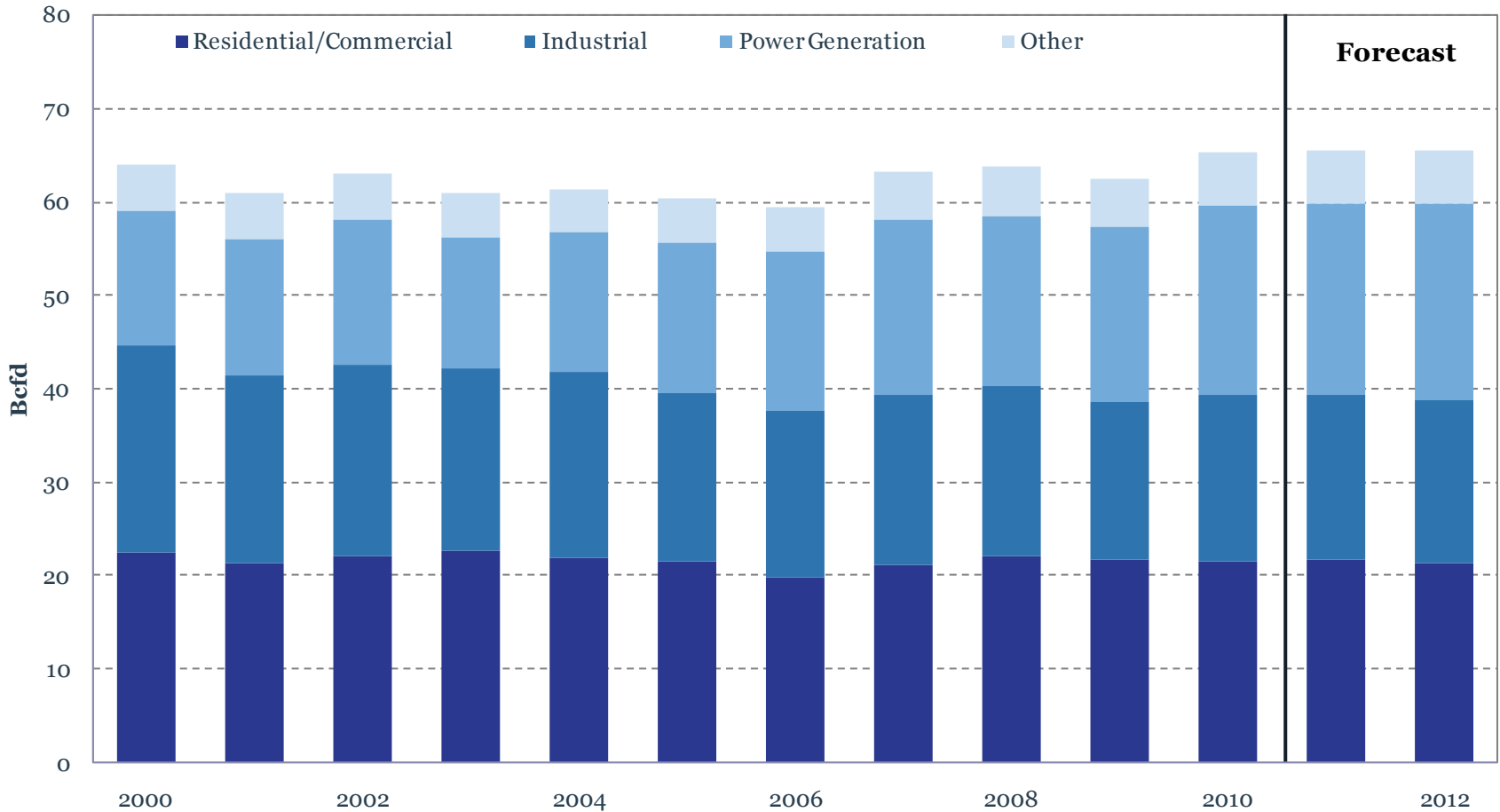


**2020**



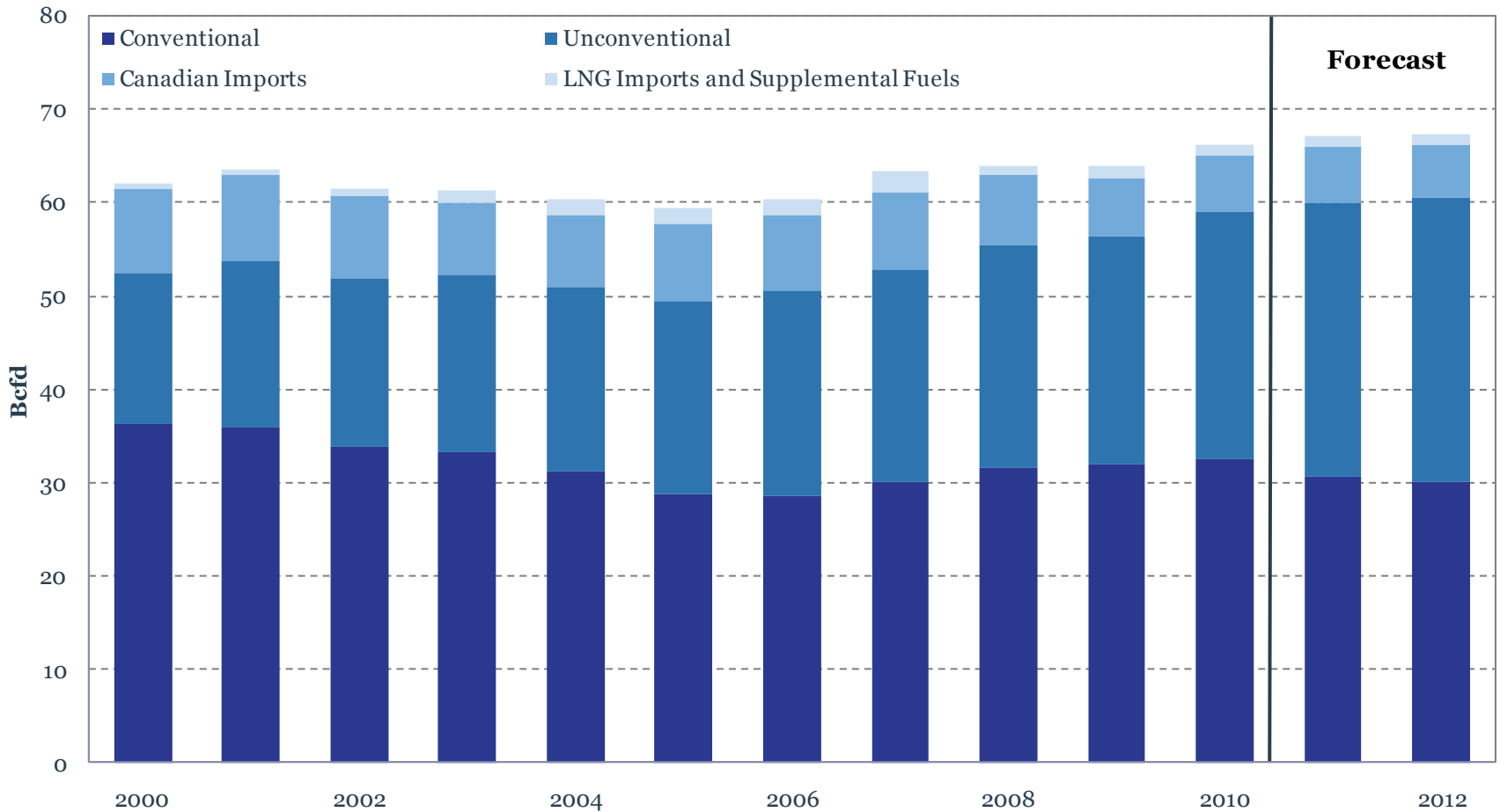
Source: Summit Research

# NG Demand To Stay Relatively Strong



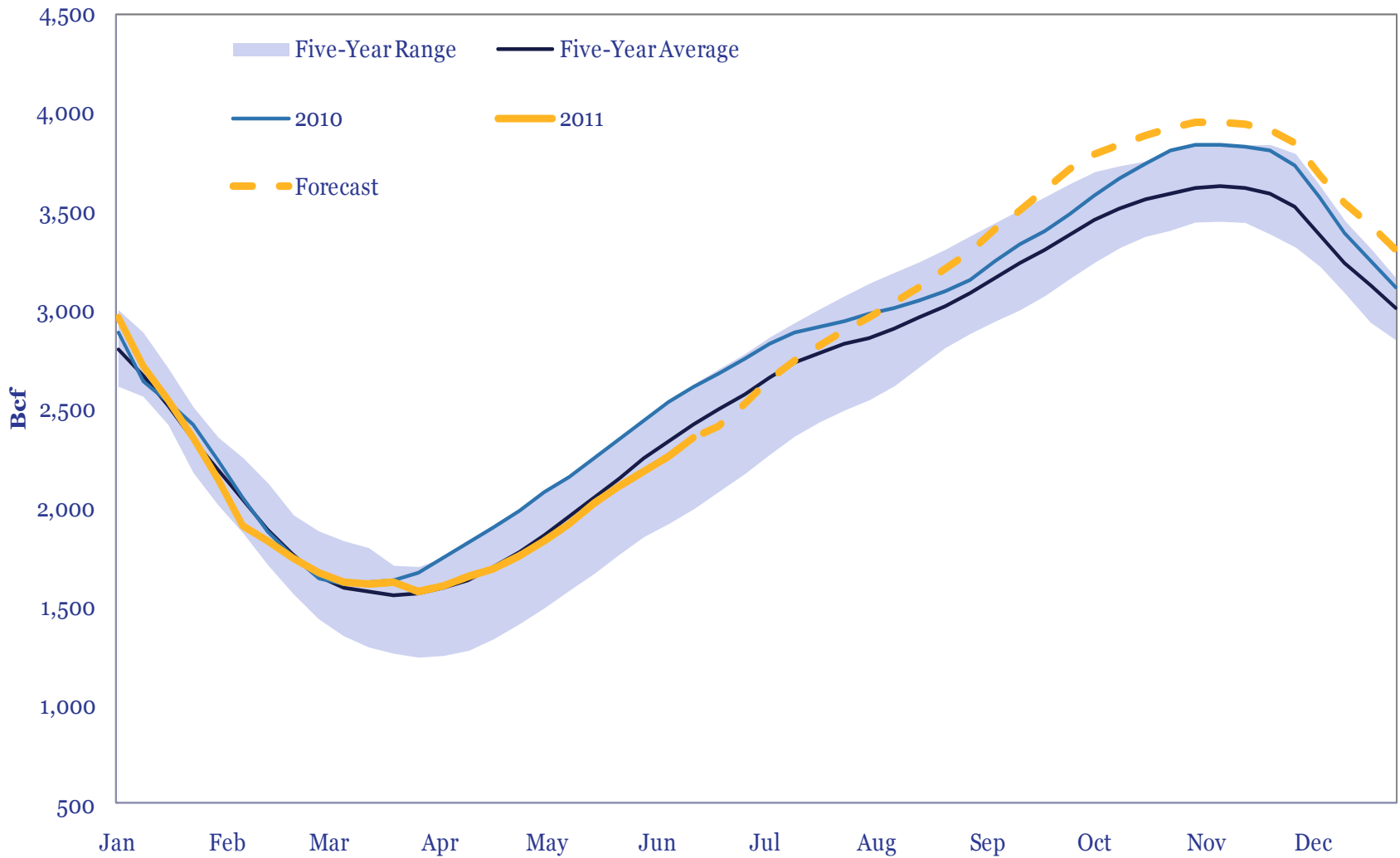
Source: EIA, Summit Research

# NG Supply To Remain Robust



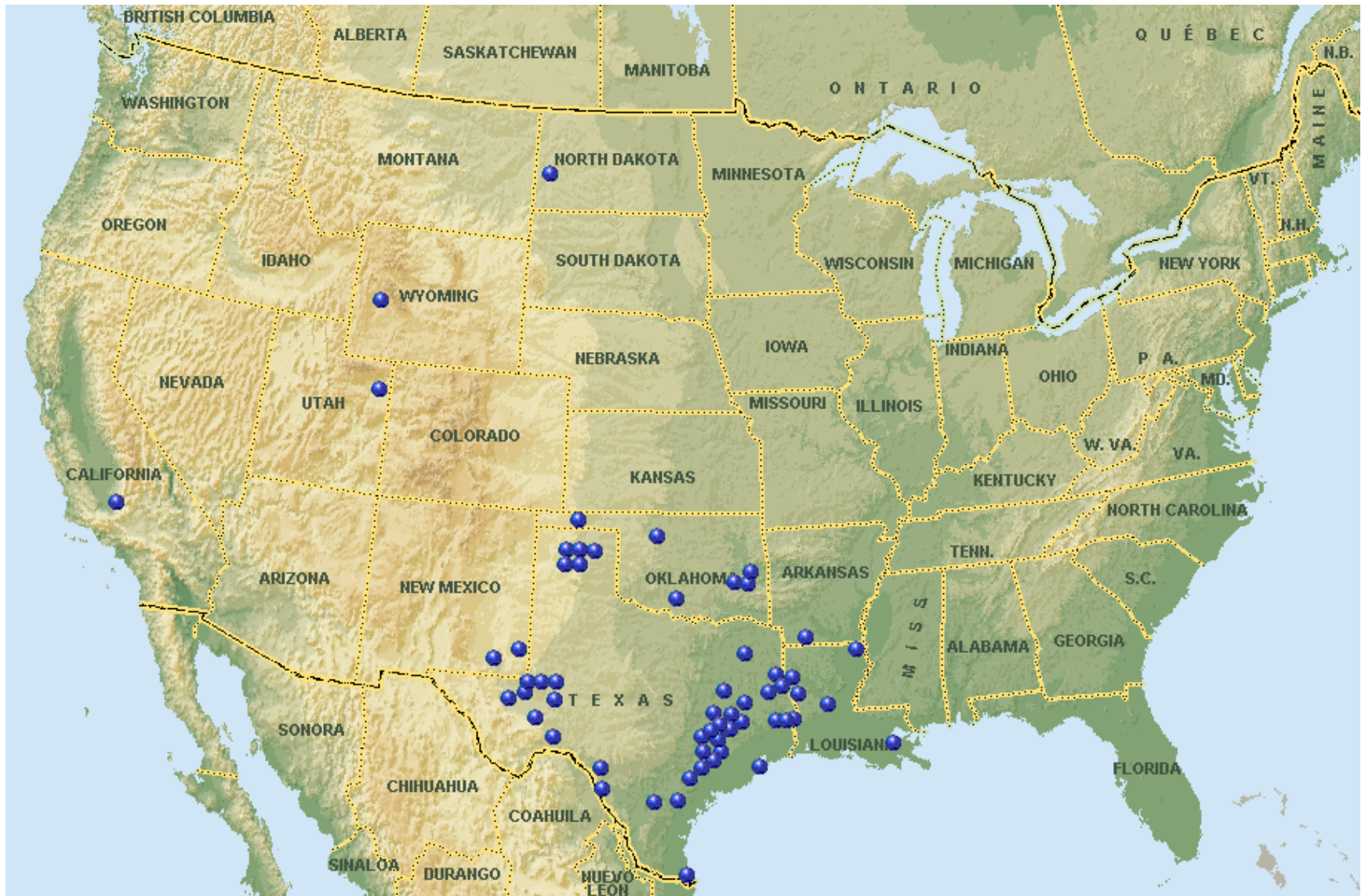
Source: EIA, Summit Research

# 2011 NG Storage Projection

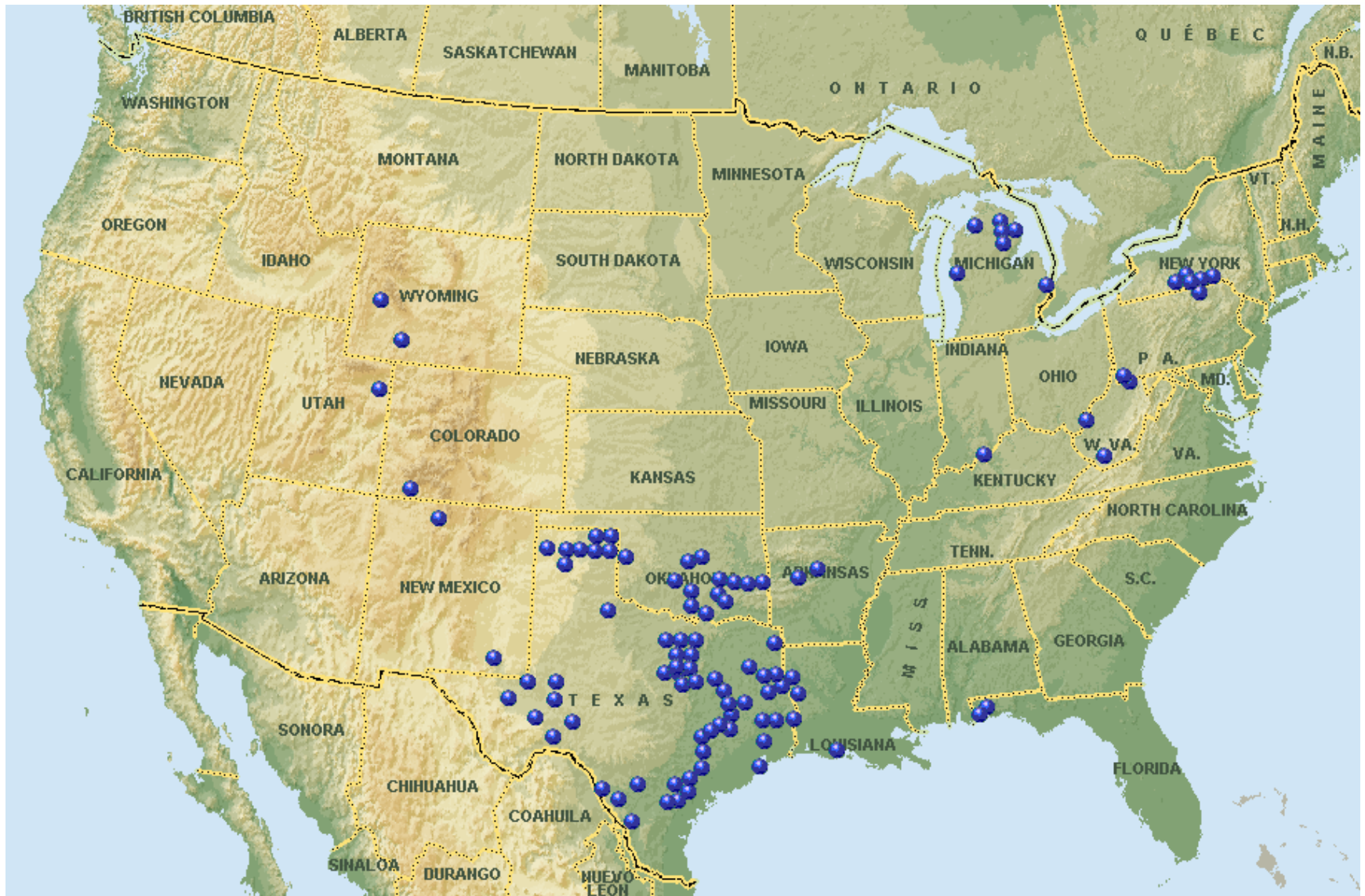


Source: EIA, Summit Research

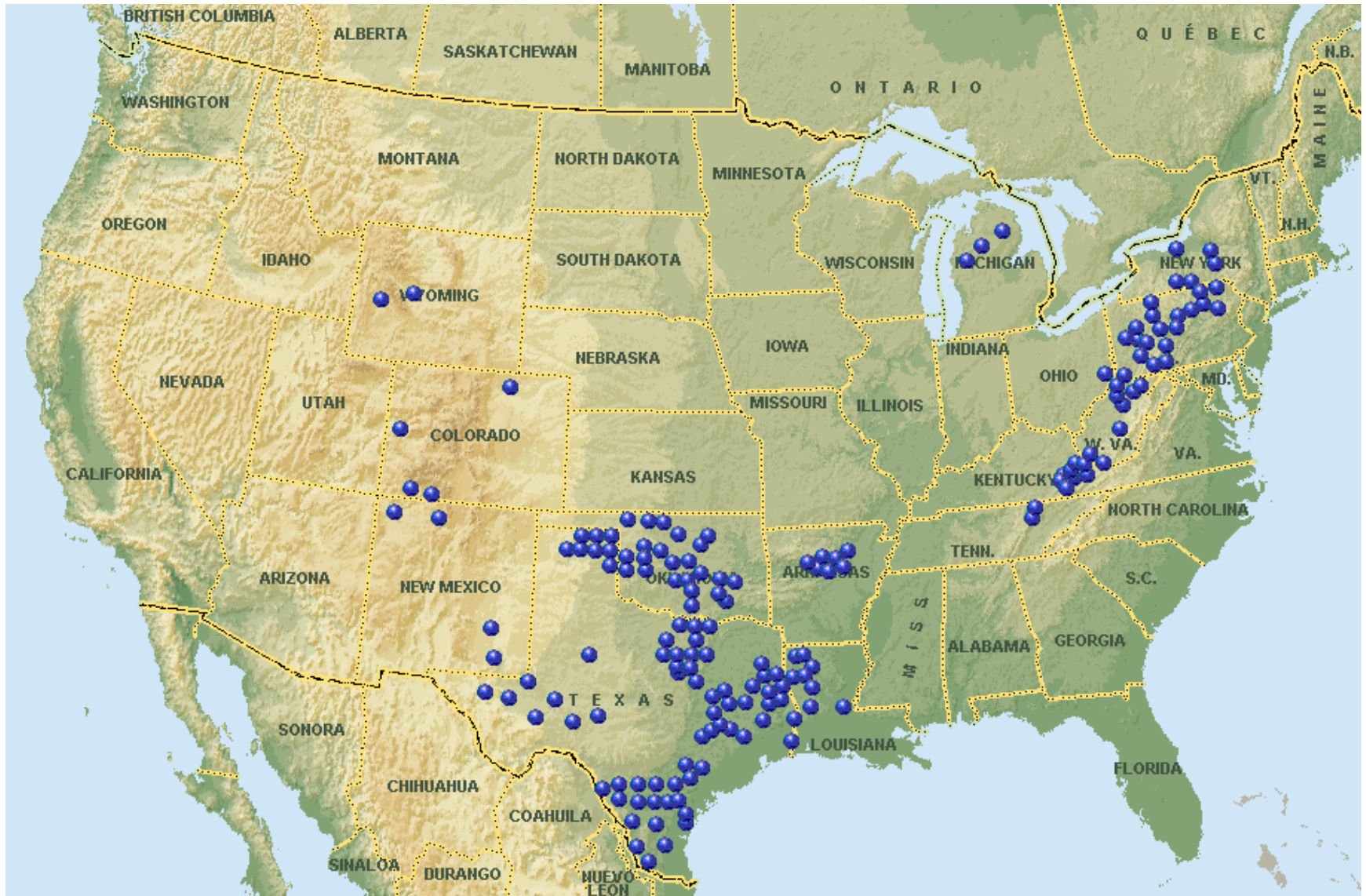
# Drilling Horizontal Gas Rigs in 2000



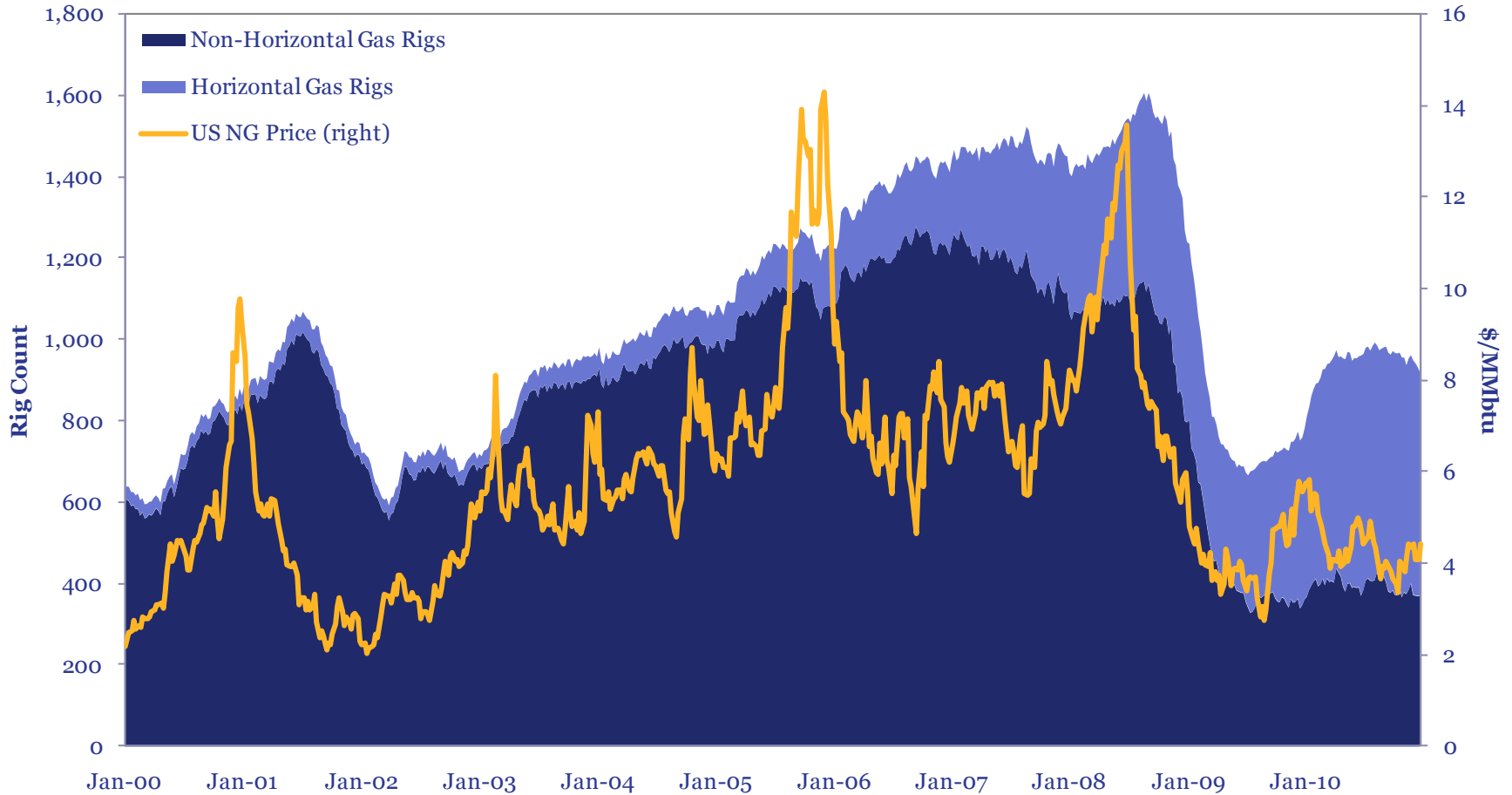
# Drilling Horizontal Gas Rigs in 2005



# Horizontal Gas Drilling Rigs in 2010

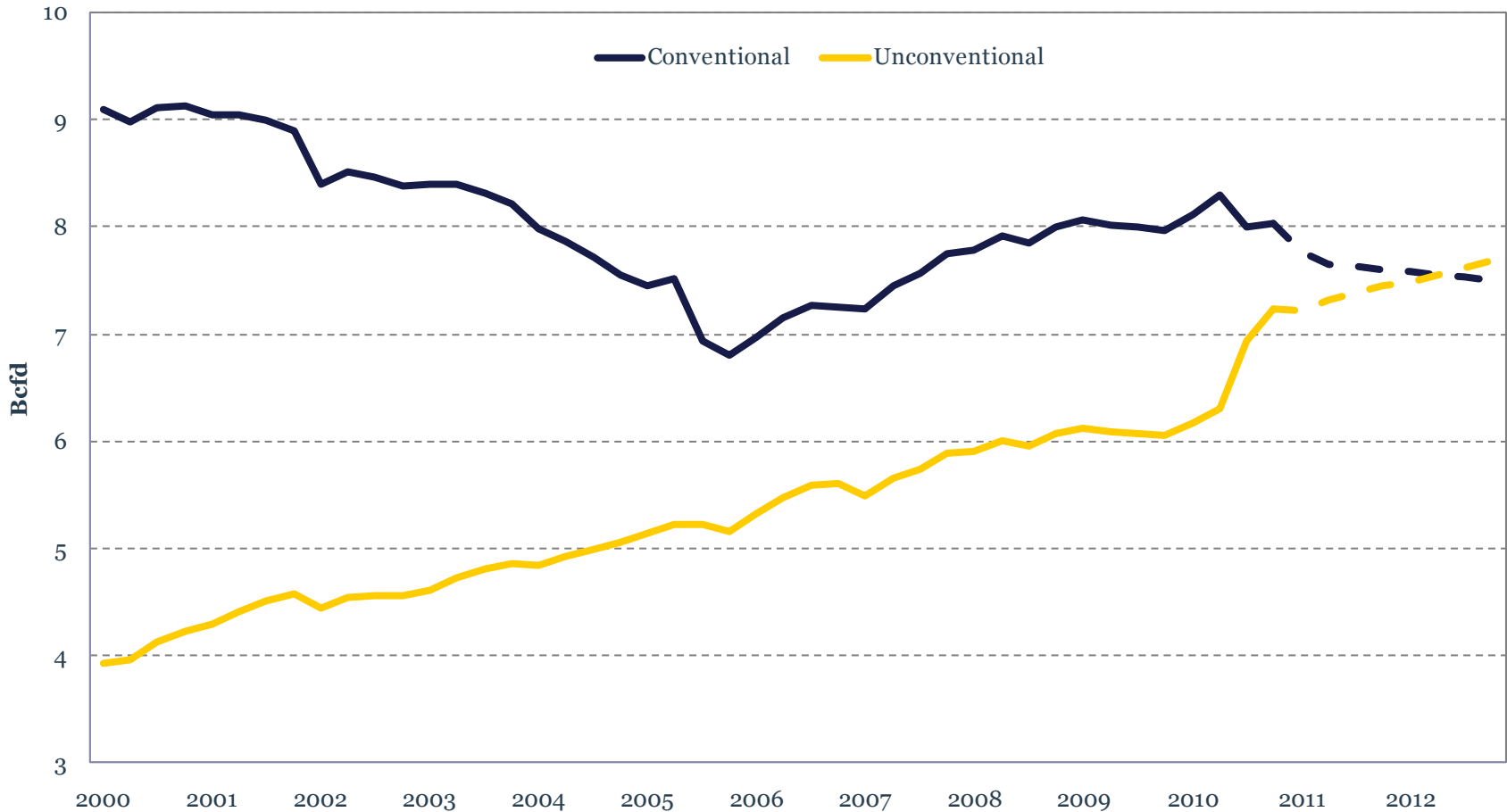


# Horizontal Gas Drilling Activity Increases



Source: Smith Resources, Summit Research

# Paradigm Shift In NG Production



Source: EIA, Summit Research

# Marcellus – Future Infrastructure

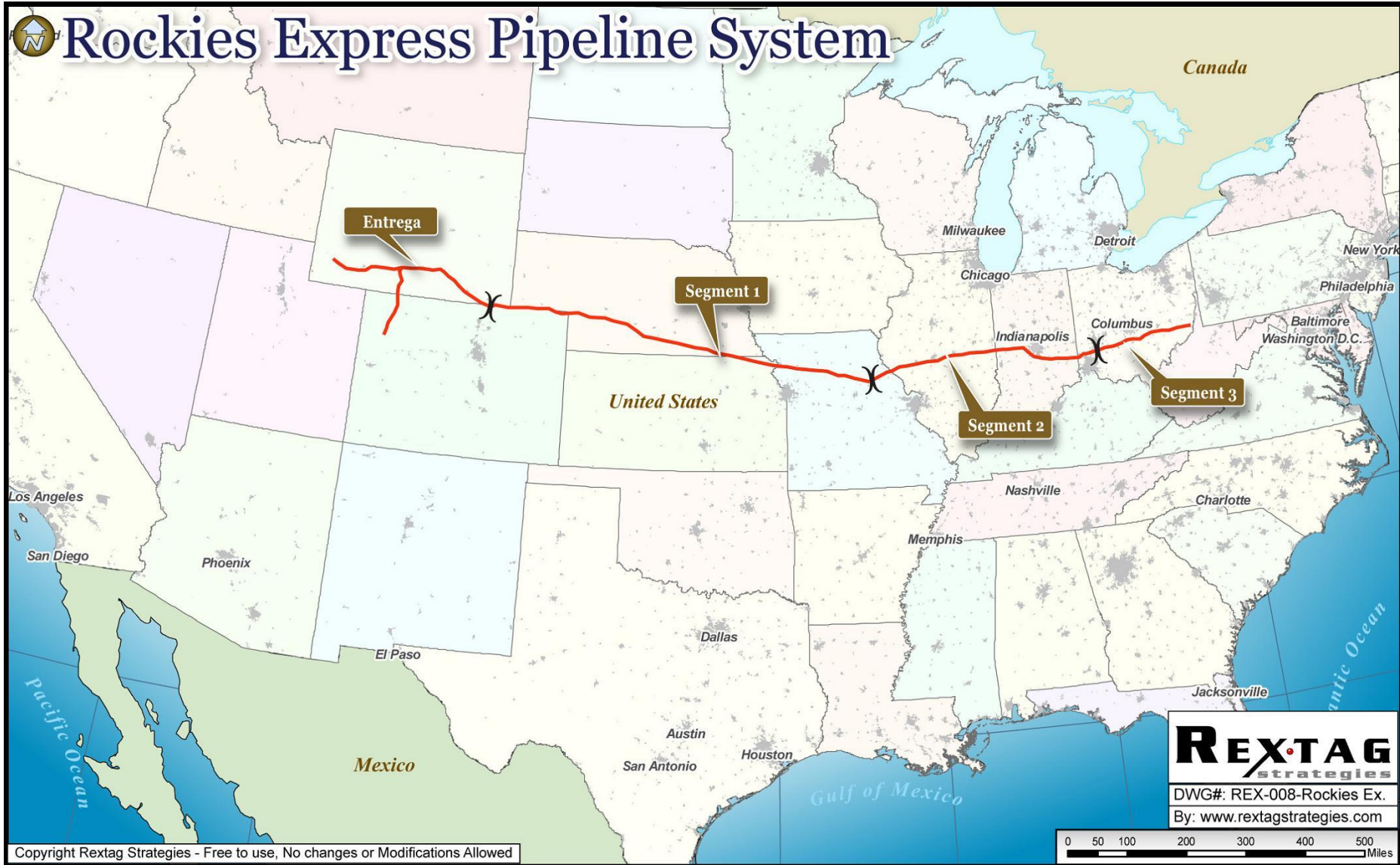


Project	Expected In-Service Date	Capacity	From	To
DOM Keystone	Nov-12	1 Bcf/day	Crane Co., PA	Eastern PA
TEMAX/TIME III	2 <sup>nd</sup> half of 2011	455k Mcf/day	Holbrook, PA	Eastern PA & NJ
Texas Eastern Appalachia to Market Expansion (TEAM 2012)	2012	300k Mcf/day	Holbrook, PA	Eastern PA & NJ
TEAM 2013	Q3 2013	500k Mcf/day	TGT M2 & M3 Zones	Eastern PA & NJ
PENNSTAR	Q3 2013	500k Mcf/day	Columbia Gas	Transco, TGP, DTI & Millennium

# Rockies Express Pipeline (REX)



## Rockies Express Pipeline System



# Rockies Express – OH Capacity

- ❖ Rockies Express Pipeline(REX) – 1,679 mile pipeline stretching from Colorado to Eastern Ohio
- ❖ Provides 1.8 Bcf/day of Rocky Mountain supply to Midwest and Northeast markets
- ❖ Major interconnects at Lebanon and Clarington, OH

Capacity at Lebanon, OH	
TETCO	980,000 Dth/day
TGT	140,000 Dth/day
DTI	585,000 Dth/day
TCO	280,000 Dth/day

Capacity at Clarington, OH	
TETCO	980,000 Dth/day
EOG	140,000 Dth/day
DTI	500,000 Dth/day

Source: Genscape

- ❖ Additional interconnects:
  - Guernsey-Tenn Gas 560k
  - Noble-DTI 250k

Special update  
July 2009

## Special

Rockies Express Pipeline Phase III Update

**Rockies Express Pipeline (REX) Phase II** which included deliveries to Austin, MO commenced service in mid-2008. Summit provided clients with a market update that outlined the fundamentals affecting the Midcontinent. Our expectations for an overall decline in basis in the Midcontinent did develop as depicted in Figure 1. Summit then issued a market narrative for clients to actively hedge physical basis. Clients were able to achieve risk mitigation, price certainty, and in many cases, year-over-year savings due to this market narrative.

Summit has been actively monitoring the development of Phase III which has gradually come online since mid-2009. This phase will extend from Austin, MO to Clinton, OH with an expected completion date of November 2009. Due to REX crossing every major region of the U.S., our analysis has been broken down regionally. The following outlines what we believe will be the regional effects as they relate to REX when it is in full service.

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Central Plains Region

It is our expectation that basis in the Northern Central Plains will undergo further tightening before we see overall improvement. This expectation is based on data that indicates that Midcontinent rig counts have dropped 60% since last year resulting in less production in the region. New pipeline infrastructure (Midcontinent Express and Gulf Crossing pipelines) is moving supply that traditionally stayed in the Midcontinent to the higher priced Southeast Gulf region. Two other Texas pipelines are also moving Fayetteville Shale gas out of the region to premium markets in Ohio and the Northeast via TETCO. As Phase III progresses and gas moves East to higher priced markets, this will reduce supply available in the Midcontinent and should lead to a tighter basis market.

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Regarding the Southern Central Plains (Gulf Coast states), we believe that there will be an eventual build up of supply in the Midwest and Southeast that will pressure Gulf Coast gas back to the Texas and Louisiana restrictive markets. This is expected to limit upside price movement in the near-term and provide for a potential downside price opportunity. The introduction of shale gas and new pipelines to move the gas East will also contribute to supply compression in the region. Additionally, Figure 2 shows steady Texas production increases over the previous 5 years. From 2004 to 2008 Texas production has increased 57.5%.

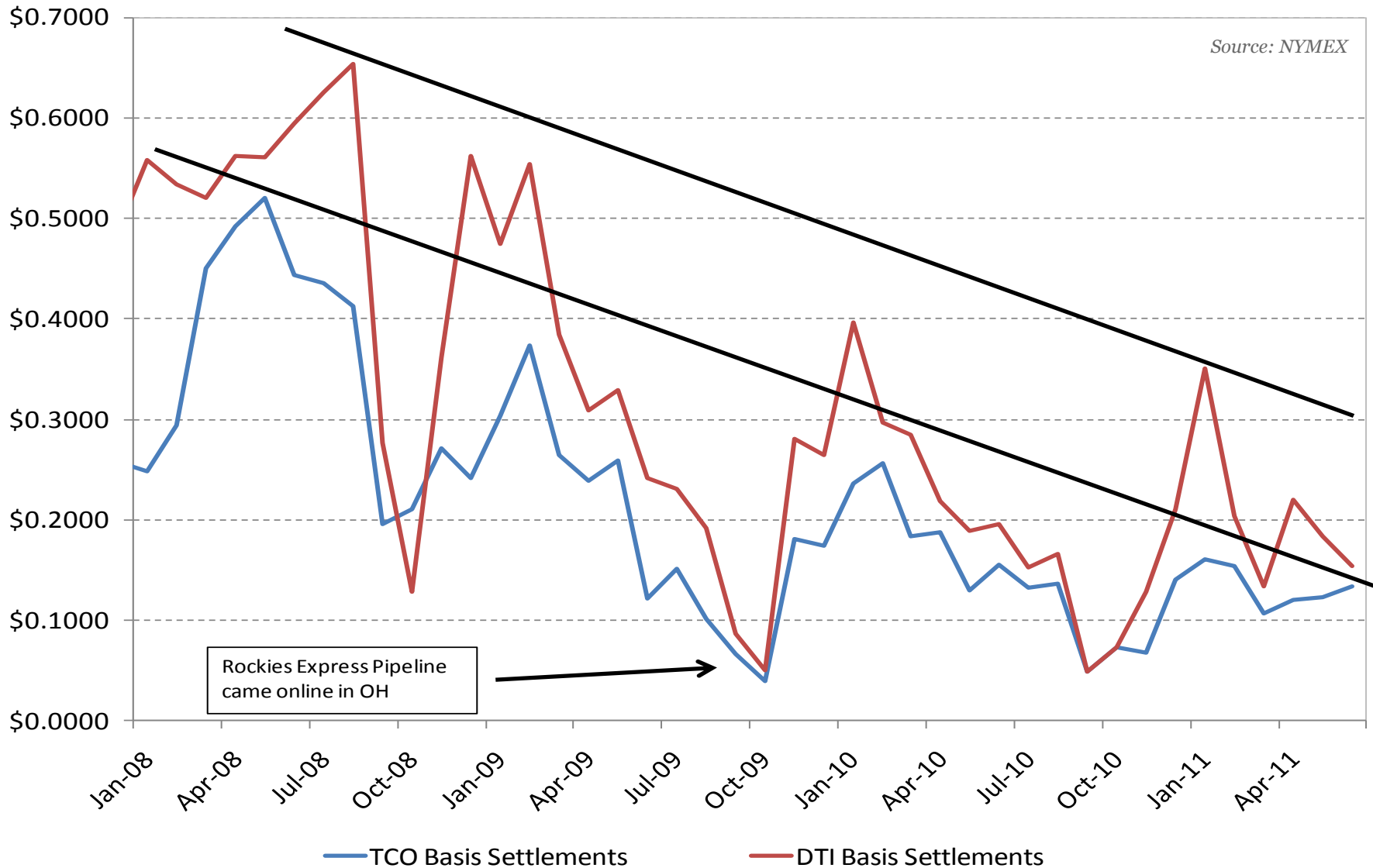
SummitEnergy.com

❖ In depth analysis of REX Phases I, II, and III

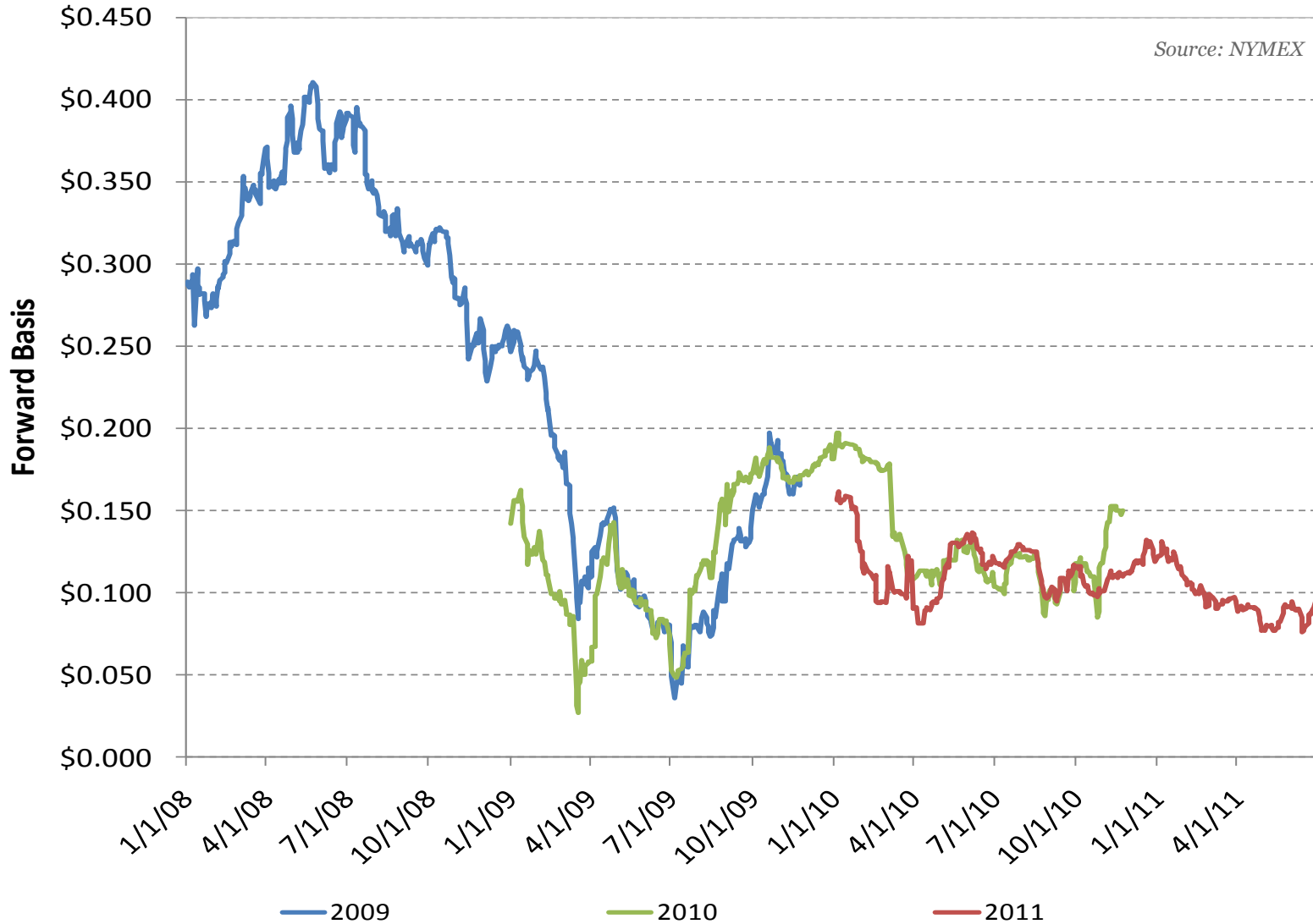
❖ Regional and market-specific impact studies

❖ Actionable recommendations and positioning strategies tailored for customers

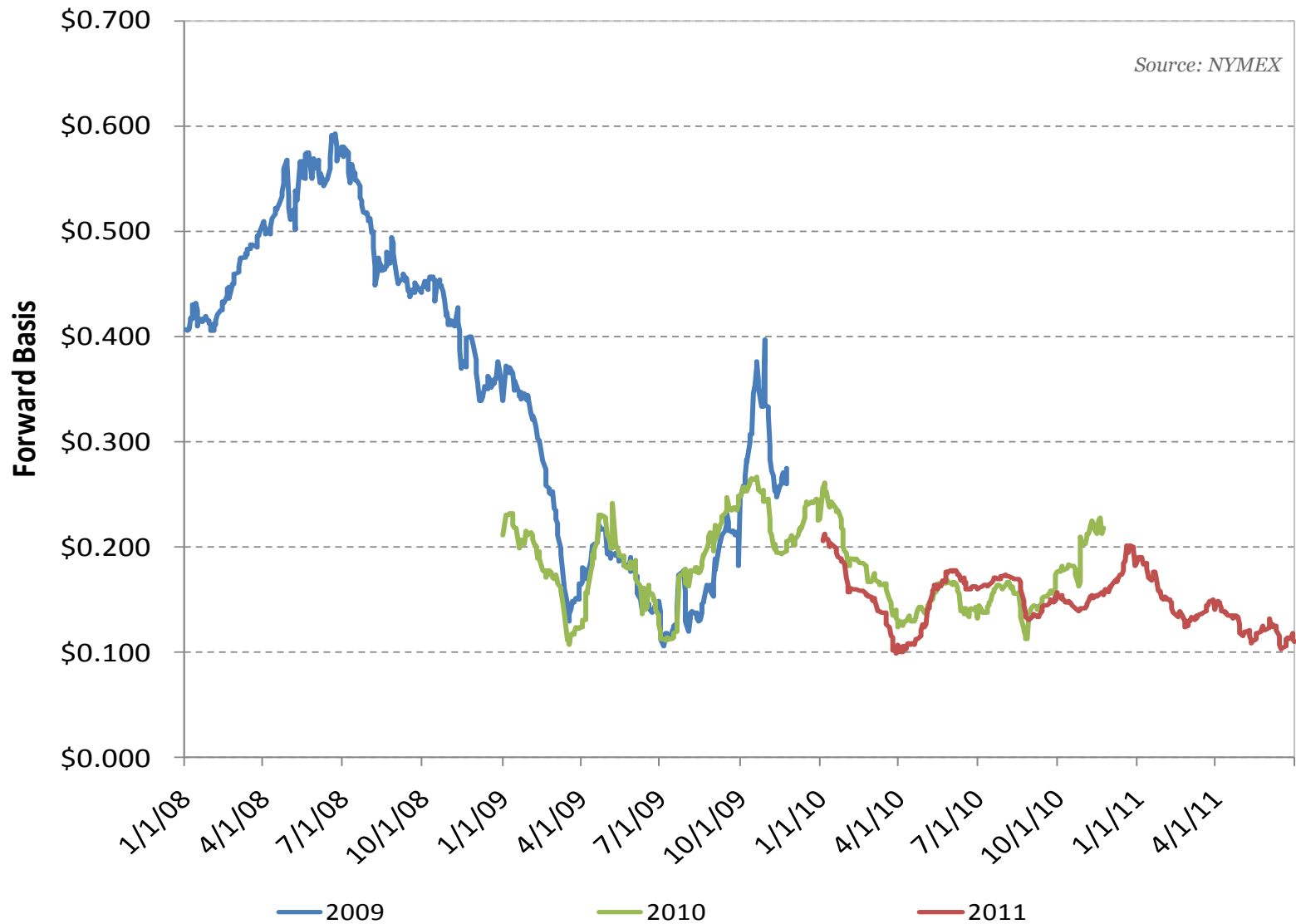
# Paradigm Shift in Ohio Basis



# Historical Calendar TCO Wholesale Basis



# Historical Calendar DTI Wholesale Basis



Special update  
SummitEnergy  
**Regional**  
Midwest & Southeast  
April 2010

**Natural Gas Markets**

**Included Jurisdictions**

Ohio  
Columbian Gas of OH  
Dorchester East OH  
Dorchester West OH  
Duke Energy of OH  
Northern Energy of OH

Virginia  
Columbian Gas of VA  
Virginia Natural Gas  
Piedmont Gas Co.  
Washington Gas Light Company of VA

West Virginia  
Mountain Gas Company  
Dorchester West

**1** **Natural Gas Initiative:** Forward Contract (FCO) and Dominion Trans (DOM) wholesale basis have fallen to near historic levels. Summit recommends these customers with open positions through the end of 2010 lock in a portion of their needs through October 2011 (Virginia) and October 2012 (Ohio/West Virginia).

**Analysis**

There are several factors influencing the current fundamental market situation that have depressed both the TCO and DOM forward wholesale basis differentials (shown in the graph below and on page 2). Rockies Express Pipeline (REX) gas continues to displace higher priced gas from the Gulf, which has led to prices in check in these markets. High producing shale plays have also created additional supplies flooding these markets. Industrial and commercial demand has returned to levels experienced in 2008. This reduced demand has created help to alleviate normally constrained supply on both pipelines, which has helped to alleviate normally constrained supply.

Summit expects more upside risk throughout the remainder of 2010 and during 2011. The potential increase in demand should put upward pressure on wholesale basis. Multiple pipeline expansions designed to take REX supply further into the Northeast markets are slated for completion in late 2010 and during 2011 which should also influence prices to increase. However, increased supply in the Northeast could provide downward pressure on Virginia retail basis pricing as that market tends to take direction from Northeast regional fundamentals.

**2** **Recommendations by Risk Tolerance**

**Ohio West Virginia**  
**Conservative & Moderate:**

**Strategy:** Lock basis through October 2012 for 100% of site natural gas requirements.

**Benefit:** Budget certainty, protection against potential price increases, locking pricing at near historical lows.

**Risks:** Basis settlements could move against historical and fundamental indicators and provide more cost effective pricing than current forwards. Delays in the expansion of REX into the eastern markets and a demand recovery could cause the over supply in the OH market to continue, forcing prices to rise. This recommendation is for basis only, customers will still be exposed to market pricing for the commodity portion of their gas costs. Please consult your Client Energy Manager to discuss Summit Energy's opinion for purchasing commodity.

**Aggressive:**

**Strategy:** Lock basis through October 2012 for 50% of site natural gas requirements.

**Benefit:** Due to the amount of new shale production coming online and the sluggish economy, basis prices could potentially settle lower than corresponding forward pricing.

**Risks:** Basis forwards could increase making future pricing less favorable. Summit is only recommending that customers lock in 50% of their basis, therefore the remaining portion will be exposed to marketing pricing. This recommendation is for basis only, customers will still be exposed to market pricing for the commodity portion of their gas costs. Please consult your Client Energy Manager to discuss Summit Energy's opinion for purchasing commodity.

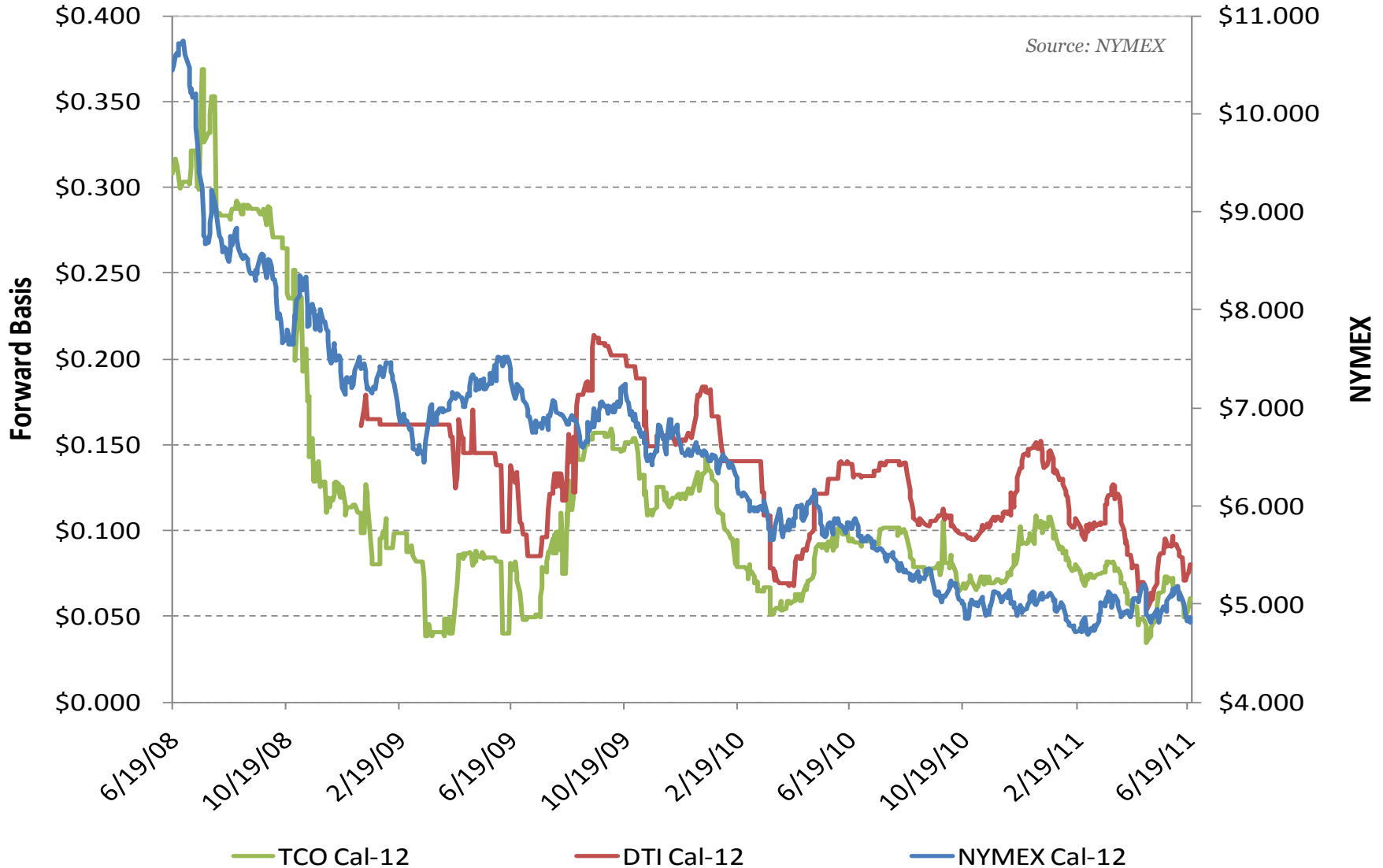
**3**

- 1 Overview of strategic opportunity including strategic synopsis
- 2 Detailed analysis of market trends, pricing information and other relevant data
- 3 Specific recommendation for customer's "risk appetite"

# Ohio Basis – Where is it Now?

- ❖ DTI and TCO basis spread flattening
- ❖ Industrial demand remains depressed
- ❖ Excess supply from Rockies and local production
- ❖ Near-term storage purchasing keeping basis elevated, potential for softening as storage deficit is minimized
- ❖ Potential for price increases during summer from gas fired generation

# Cal-12 Forward Wholesale Basis & NYMEX



- ❖ Increased Marcellus supply + Rockies supply = Supply Glut?
- ❖ Financial wholesale deferred strips trade negative (2013 & beyond)
- ❖ Possible backhauls into OH due to additional Marcellus supply coming to market
- ❖ Lack of full industrial demand recovery keeping basis weak
- ❖ Increased liquidity at Lebanon and Clarrington interconnects

- ❖ 2007 - 2008:
  - Long term basis deals (+2yrs)
  - Risk aversion, budget certainty
  - Portfolio positioning for potential price decreases (REX)
  
- ❖ 2009 - 2011:
  - Mix of long and short term basis deals (1-2yrs)
  - Opportunistic portfolio management
  - Increased layering / contracting during price decreases
  
- ❖ 2012 - Beyond:
  - Seeking to optimize portfolio through flexible structures