

# Natural Gas and the Industrial Revolution

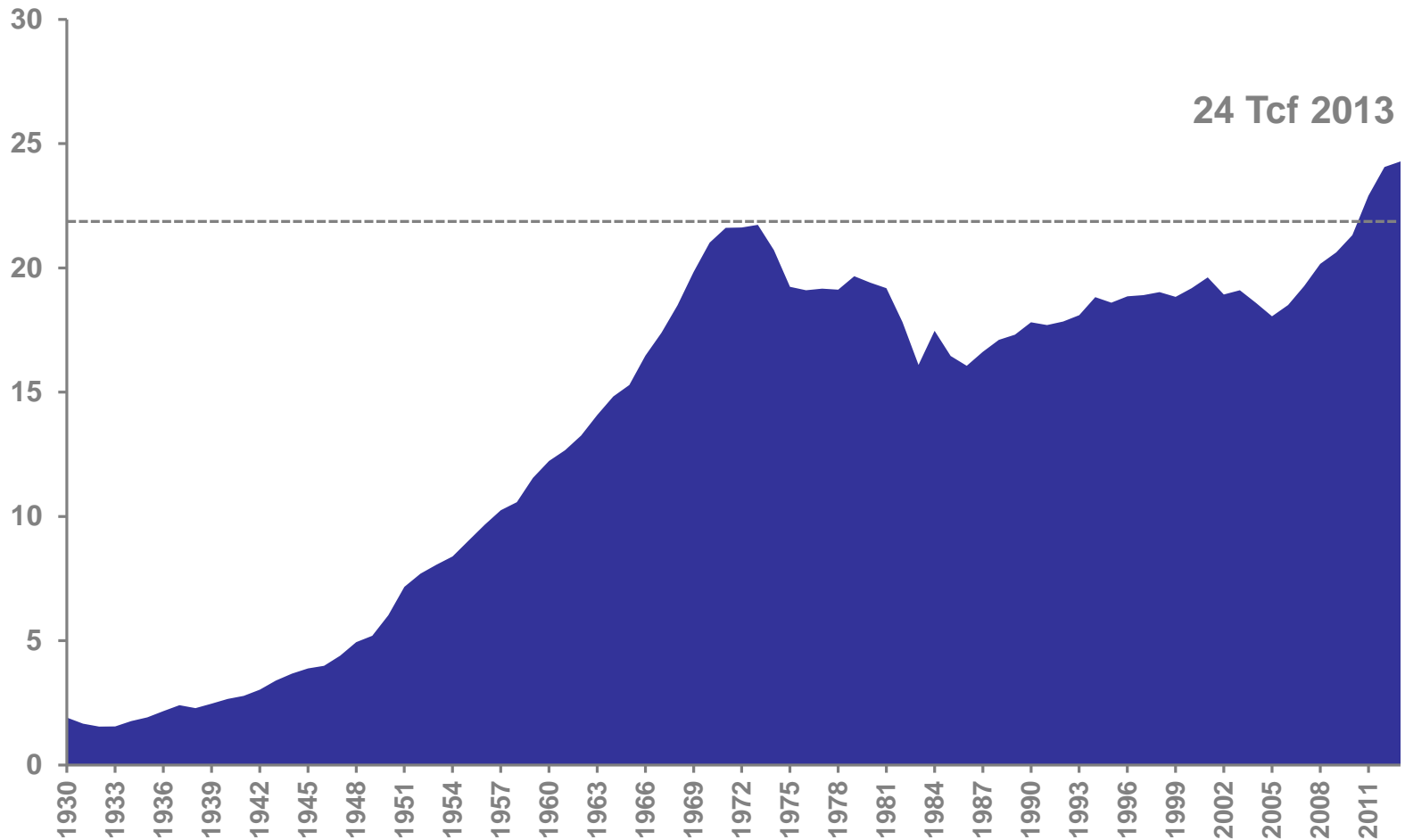
Jennifer Fordham

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Monarch Beach, CA

November 7, 2014

# US natural gas production surpassed all time record in 2011 and is still growing

Tcf/year



Source: EIA

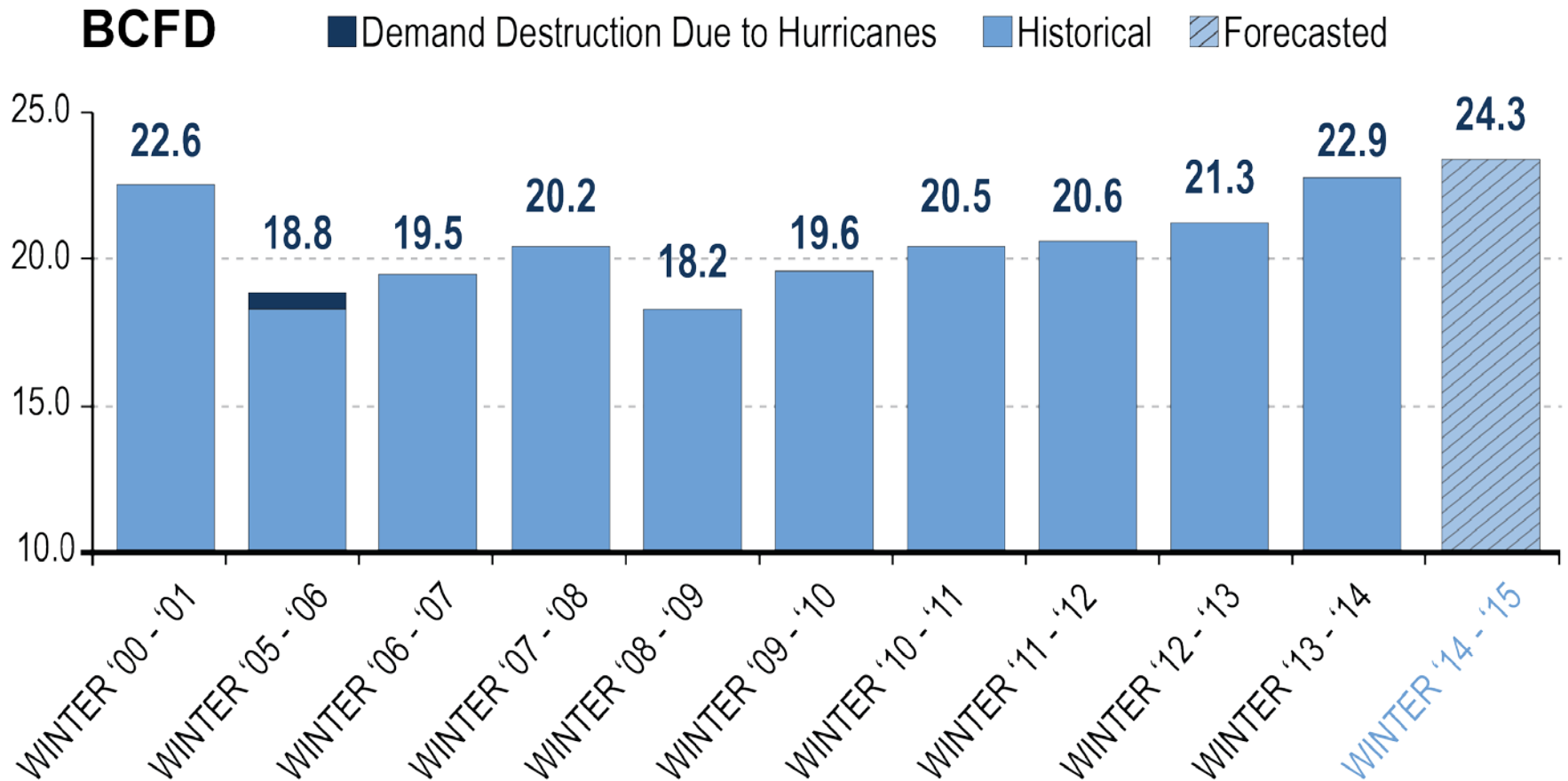
# Supply: Winter Production

Winter season Period-to-period change Data source: Energy Ventures Analysis	Last Winter 2013-2014 ACTUAL	This Winter 2014-2015 FORECAST
Annual natural gas well completions (Lower 48)	7,971	7,397
Winter average production (Lower 48)	67.2 Bcf/d	70.8 Bcf/d
Canadian imports (net)	5.7	5.3
LNG imports	0.1	0.1
Mexican exports (net)	1.7	2.2

Winter-to-winter pressure  
on natural gas prices



# Focus on Industrial Demand: Return to Highest Levels Since 1990s



Sources: EIA and EVA, Inc.

# Demand: Customer Demand

Winter Season Period-to-period change Data source: EVA	Last winter 2013-2014 ACTUAL	This winter 2014-2015 FORECAST
<b>Customer gas demand</b>	<b>91.1 Bcf/d</b>	<b>87.7 Bcf/d</b>
▪ Electric	20.1	20.2
▪ Industrial	22.9	24.3
▪ Residential/Commercial	41.5	36.9
Growth sector	Residential/ Commercial	Industrial +6.1%

Winter-to-winter pressure on natural gas prices



# Natural Gas Spurring 100 Major Industrial Projects 2012-2019; \$90-\$100 Billion Investment to Build

**63**

## NEW PROJECTS

29 Petrochemical  
13 Fertilizer  
12 Steel  
7 Gas-to-liquids  
2 Paper and pulp

**28**

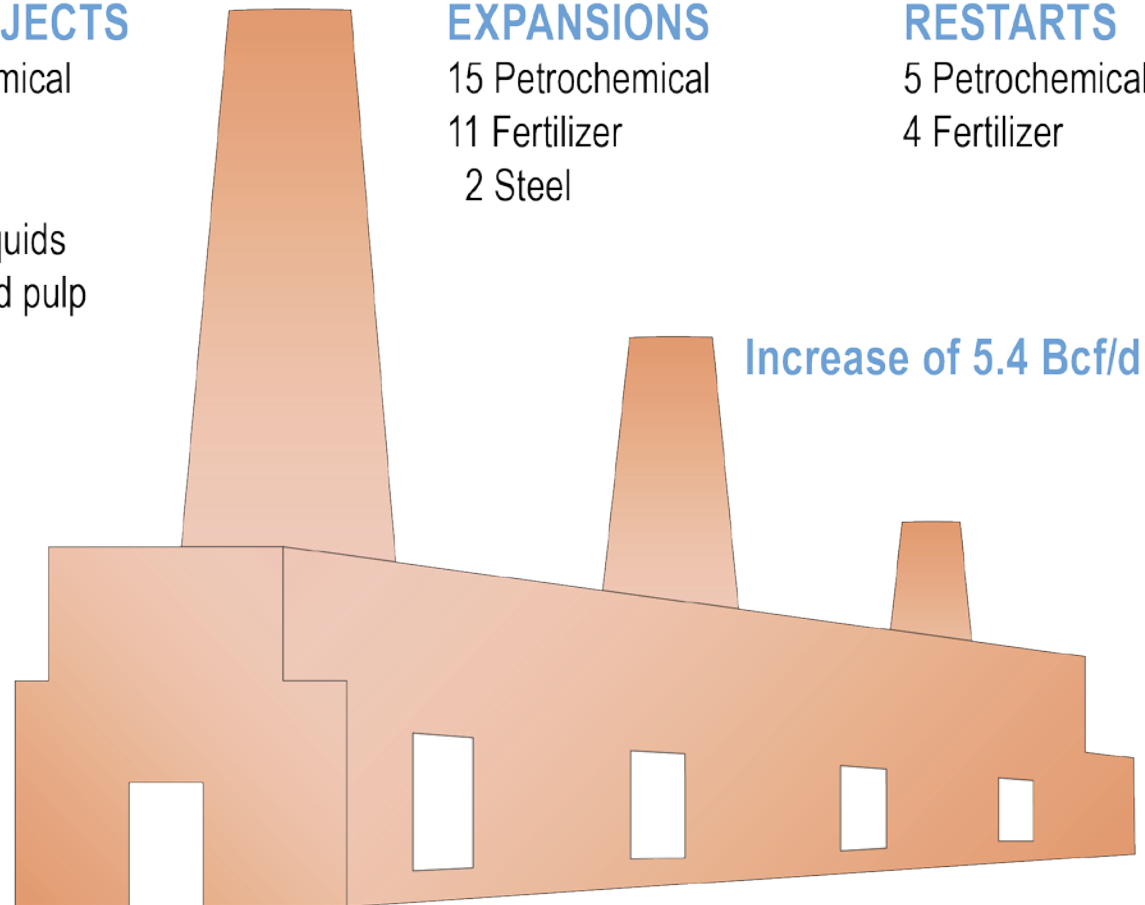
## EXPANSIONS

15 Petrochemical  
11 Fertilizer  
2 Steel

**9**

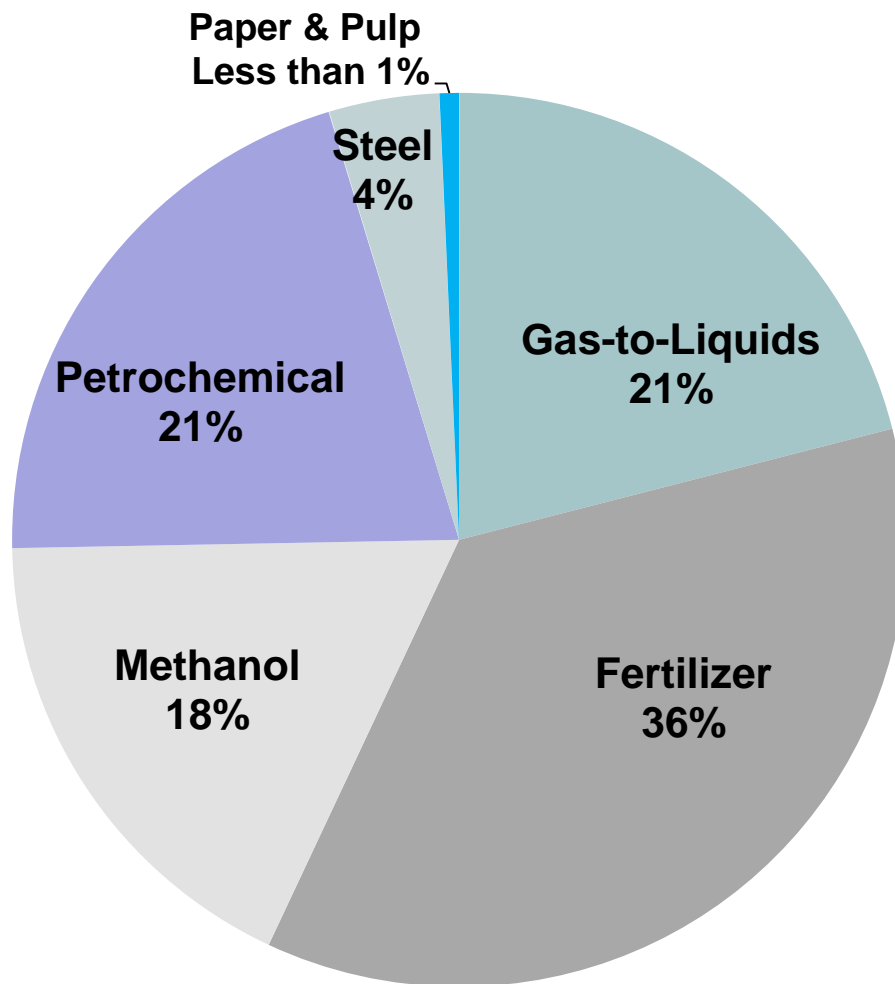
## RESTARTS

5 Petrochemical  
4 Fertilizer



Data source: Energy Ventures Analysis, September 2014

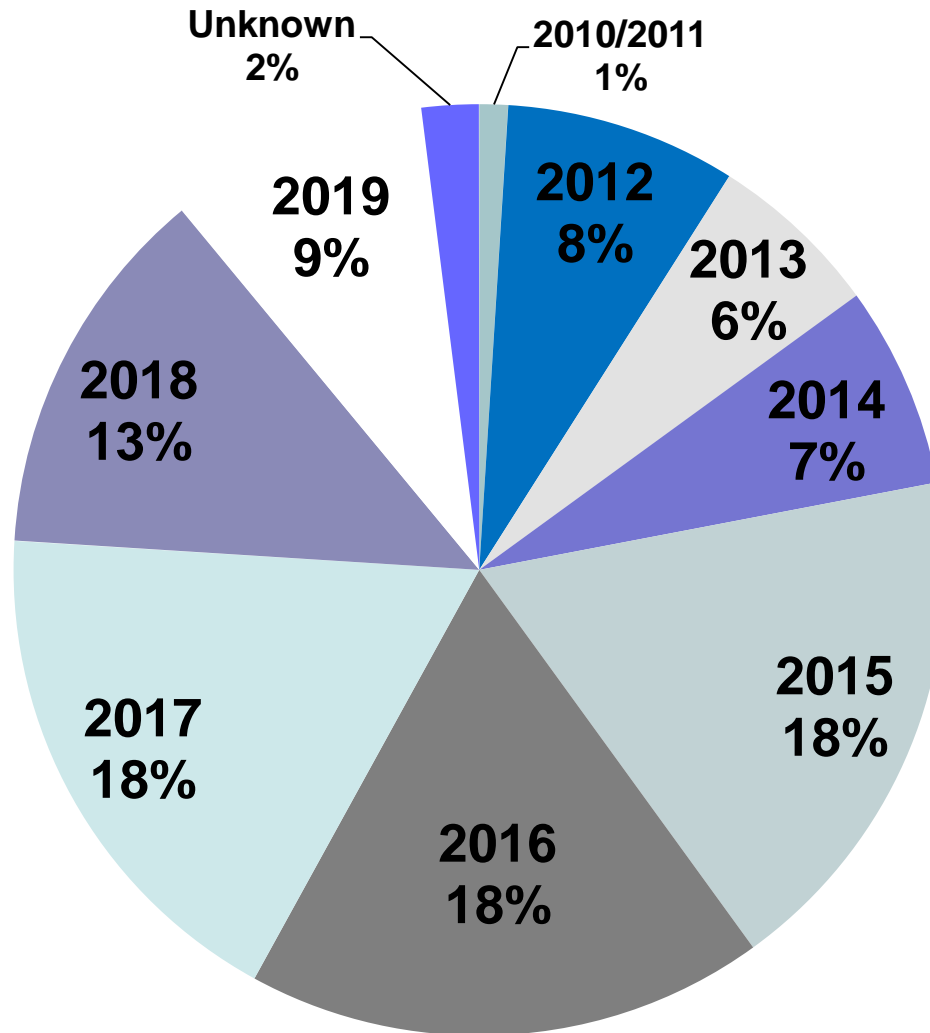
# Economy shows signs of steady growth; most industrial growth in fertilizer, gas-to-liquids sectors



**Total = 5.4 BCFD**

Source: Energy Ventures Analysis, 2014

# Industrial growth is spread out over nine year period

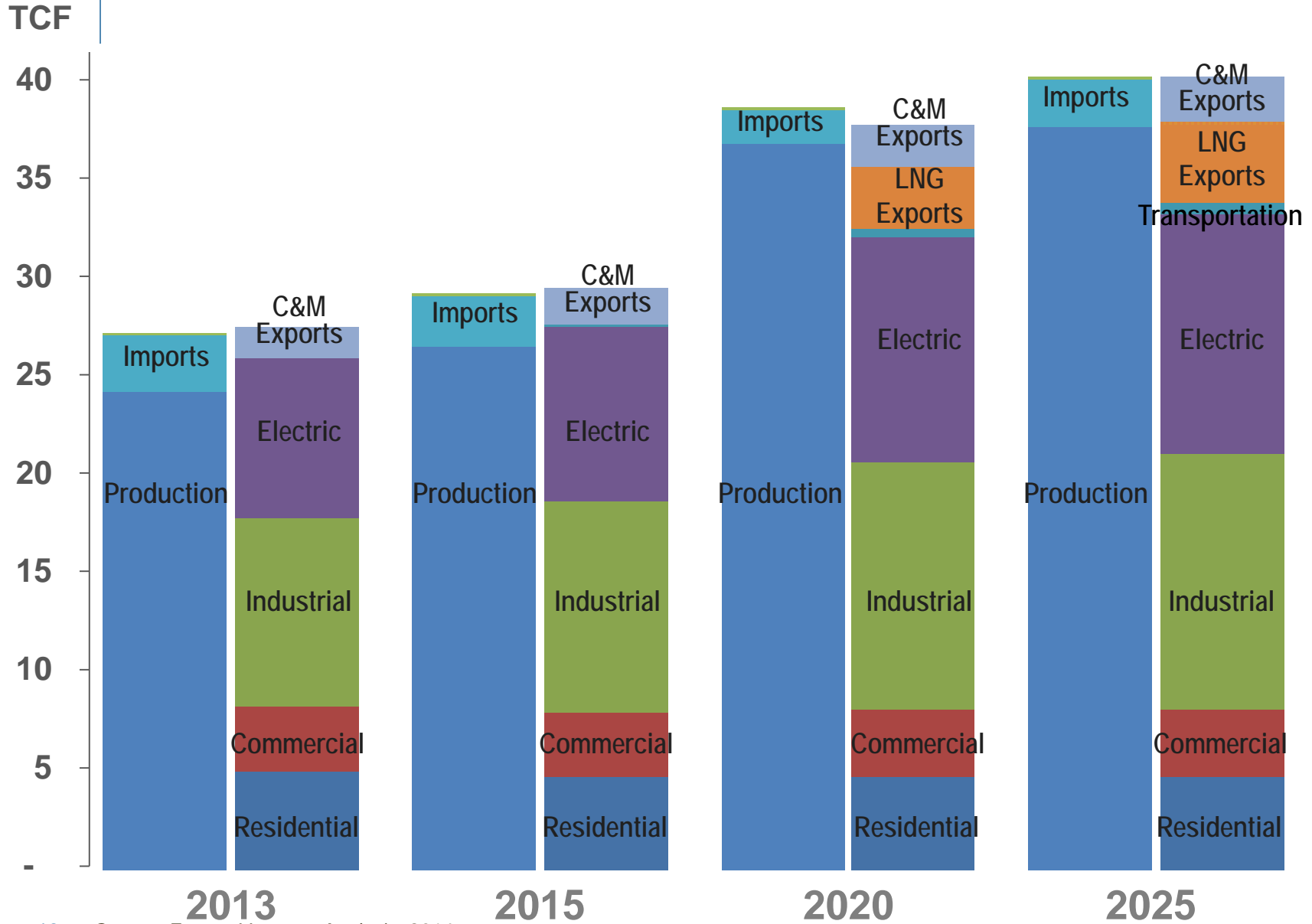


Source: Energy Ventures Analysis, 2014

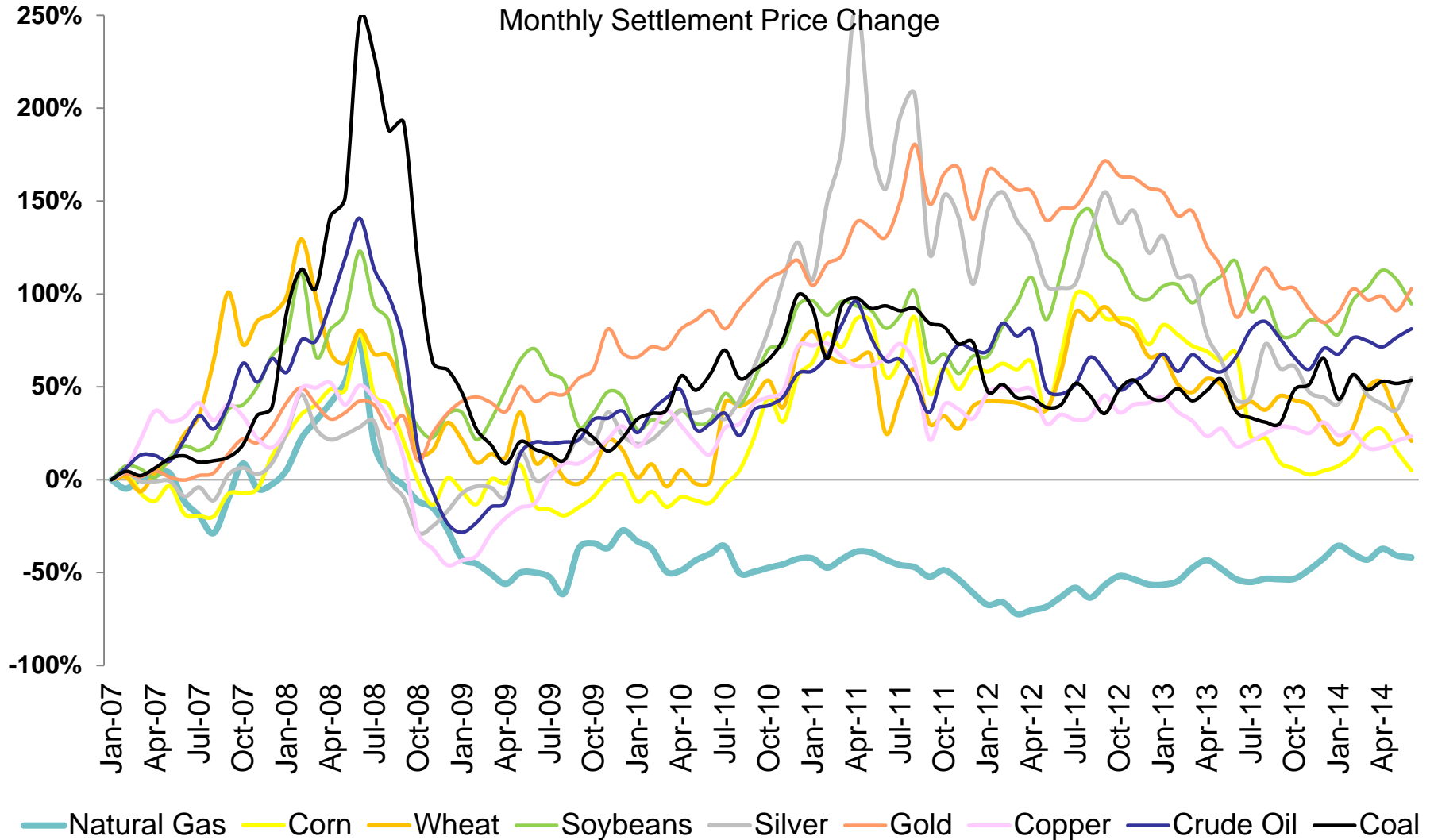
**Total = 5.4 BCFD**



# As demand grows, so does supply



# Supply from Shale Differentiates Natural Gas



Source: CME



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# Questions

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