



Rice Global E&C Forum  
Engineering &  
Construction

RICE GLOBAL ENGINEERING  
& CONSTRUCTION FORUM



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*“The Role of NGLs After  
the Crude Oil  
Market Downturn”*



# EnLink Midstream: Strategically Located and Complementary Assets



## Gathering and Transportation

- ~8,800 miles of gathering and transmission lines
- 11 Bcf of natural gas storage capacity

## Gas Processing

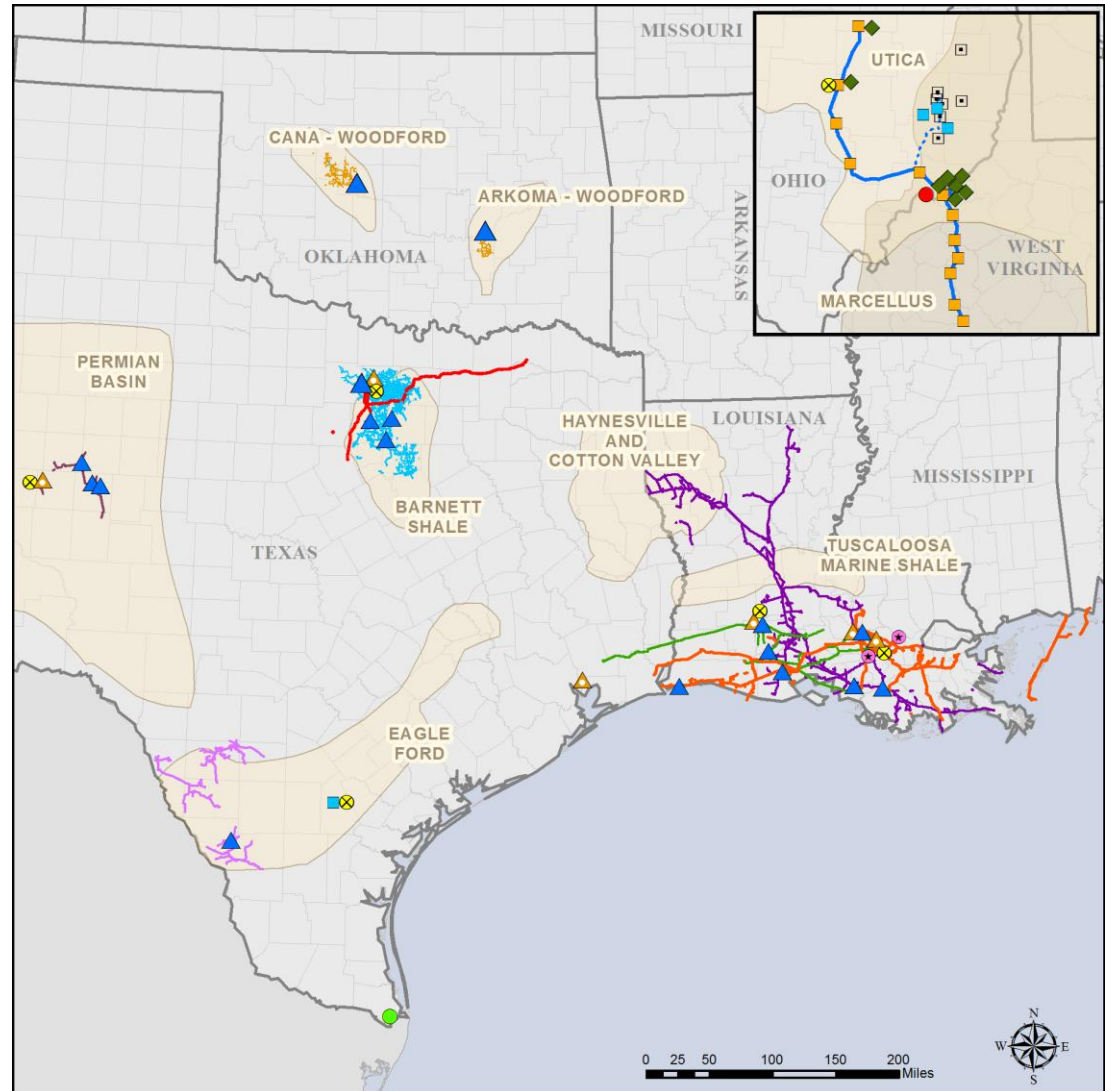
- 13 plants with 3.4 Bcf/d of total net inlet capacity
- 1 plant with 120 MMcf/d of net inlet capacity under construction

## NGL Transportation, Fractionation and Storage

- ~570 miles of liquids transport line
- 7 fractionation facilities with 252,000 Bbl/d of total net capacity
- 3.1 MMBbl of underground NGL storage

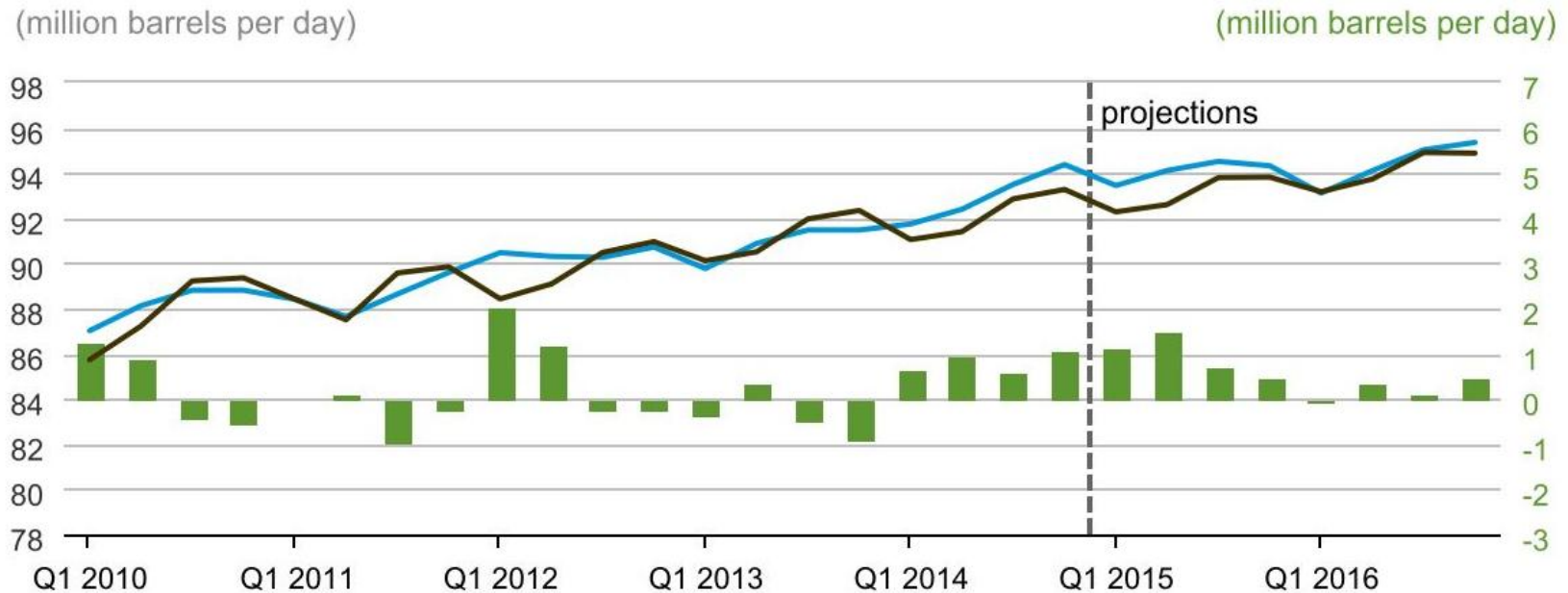
## Crude, Condensate and Brine Handling

- 200 miles of crude oil pipeline
- Barge and rail terminals
- 500,000 Bbl of above ground storage
- 100 vehicle trucking fleet
- 8 brine disposal wells



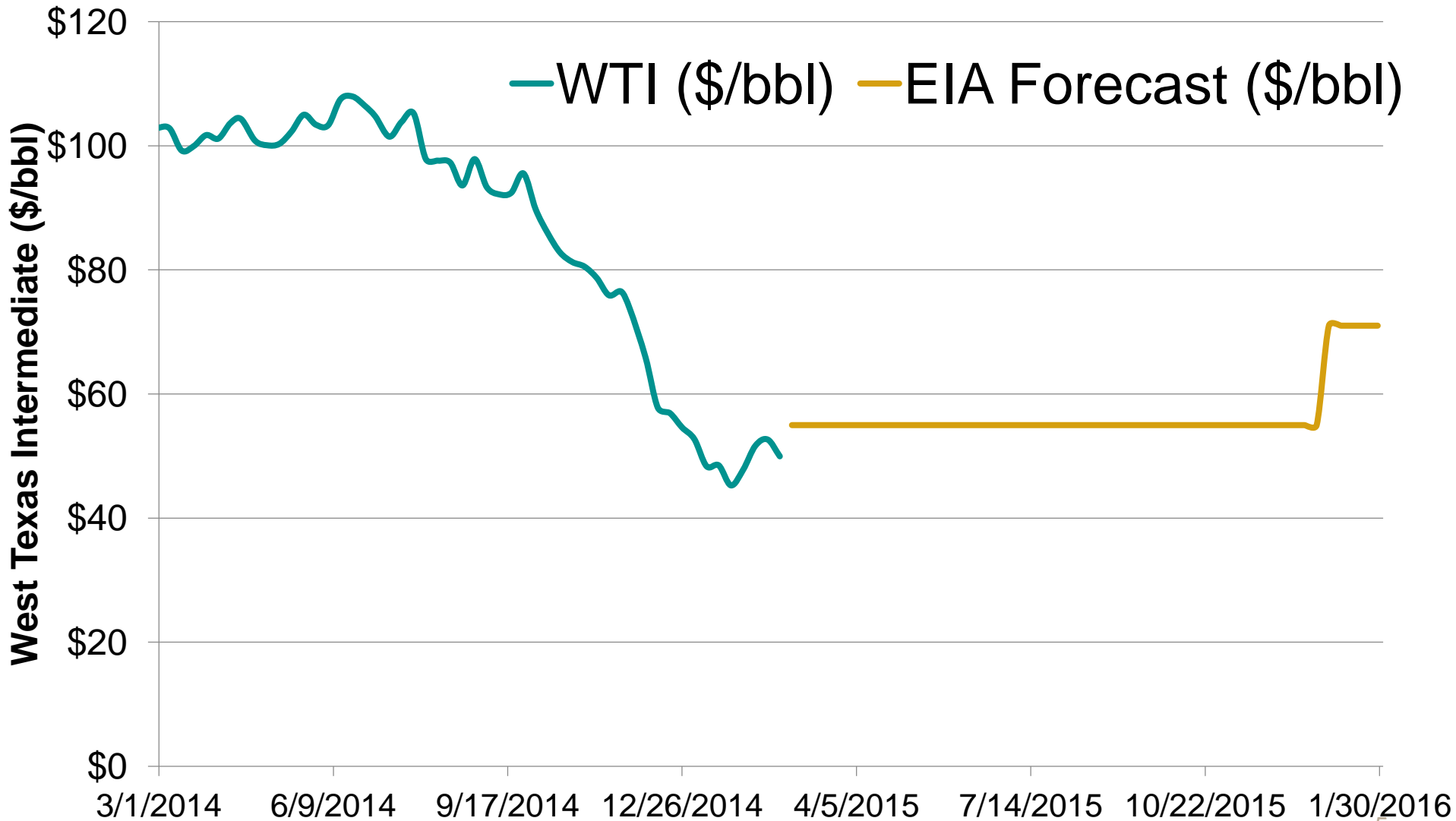
# Supply & Demand Imbalance

## World Liquid Fuels Production and Consumption Balance

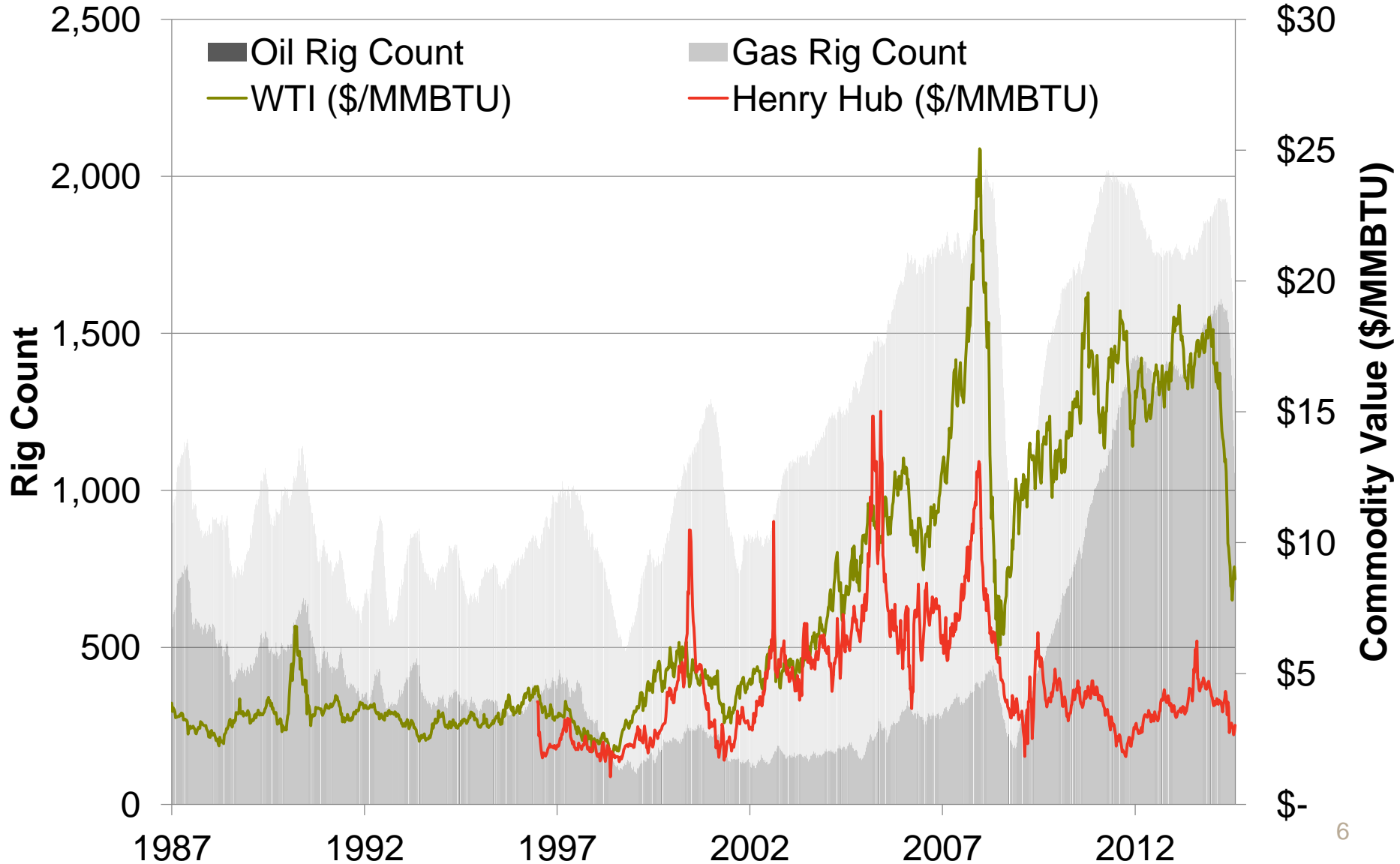


- Implied stock change and balance (right axis)
- World production (left axis)
- World consumption (left axis)

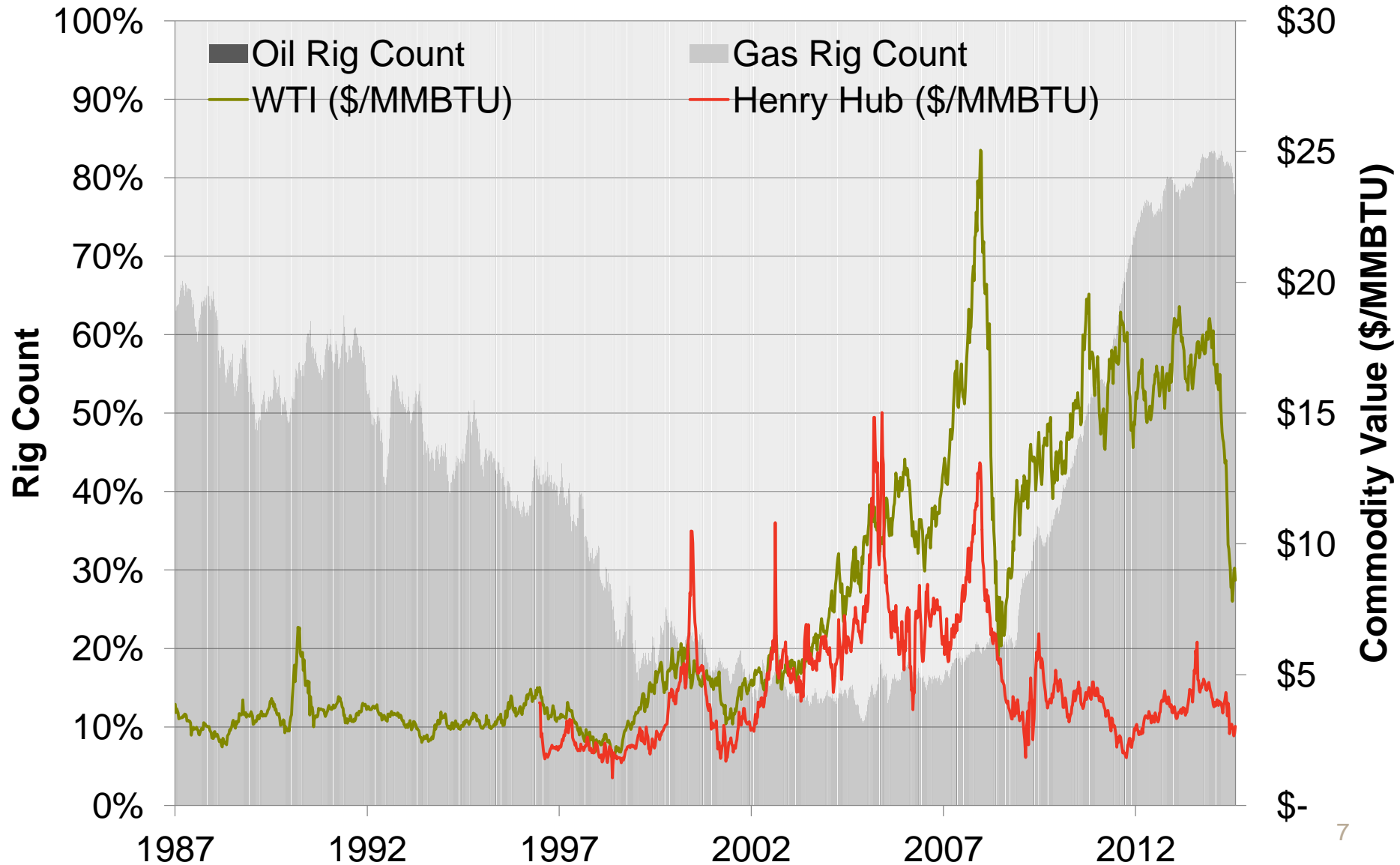
# Oversupply causes Crude Price to Fall



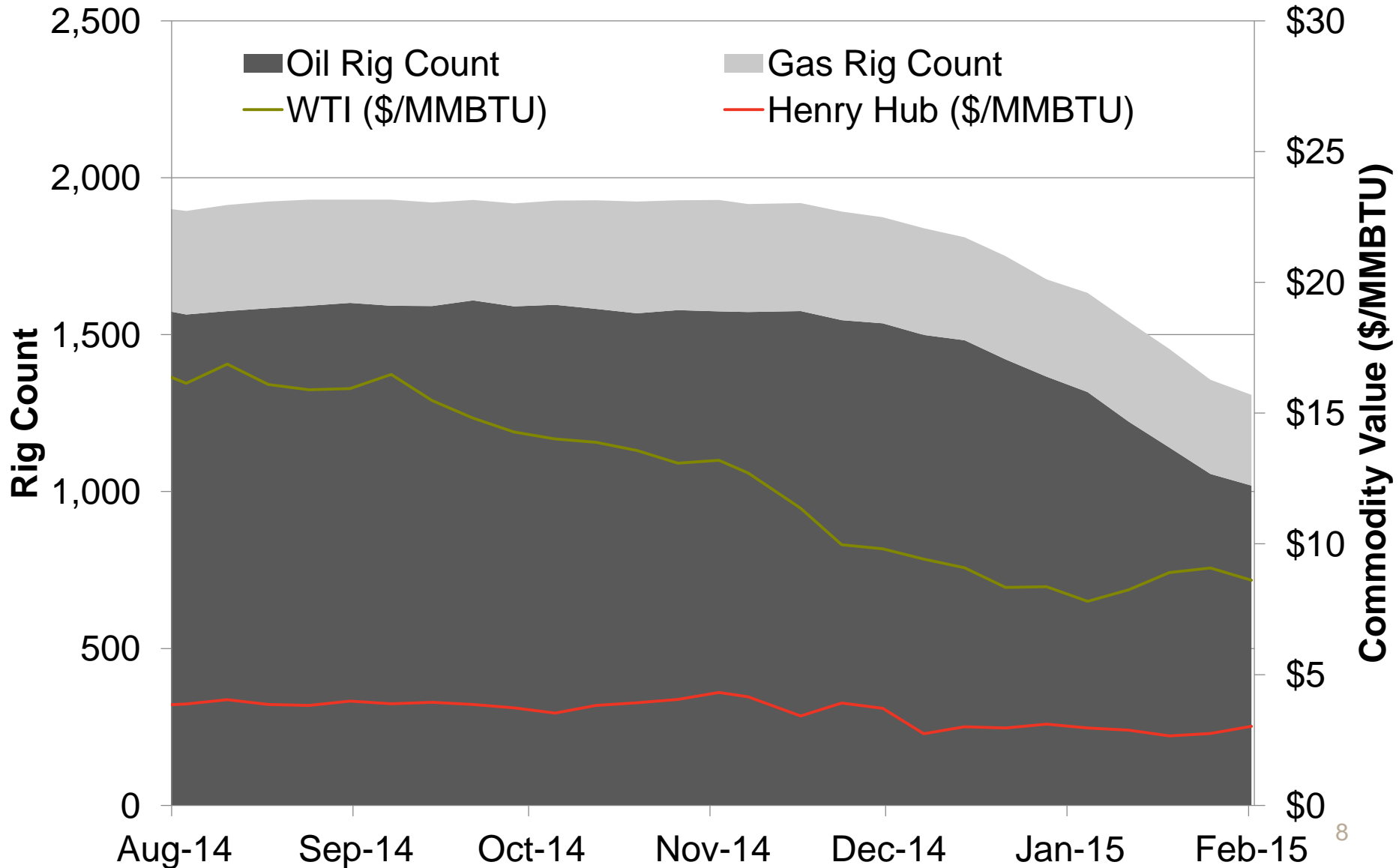
# Operating Rigs – 28 years



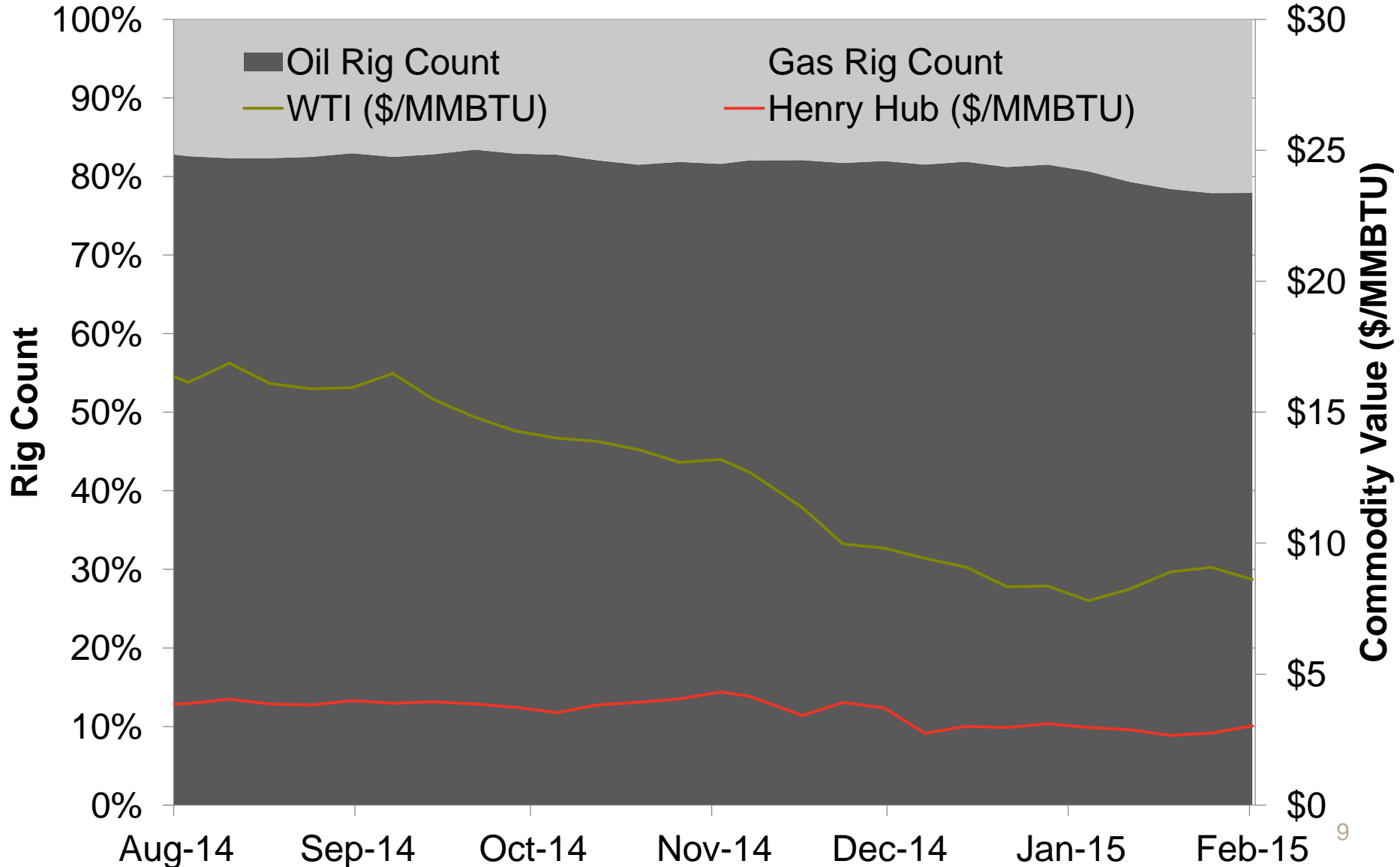
# Operating Rigs – 28 years



# Operating Rigs – Last 180 days



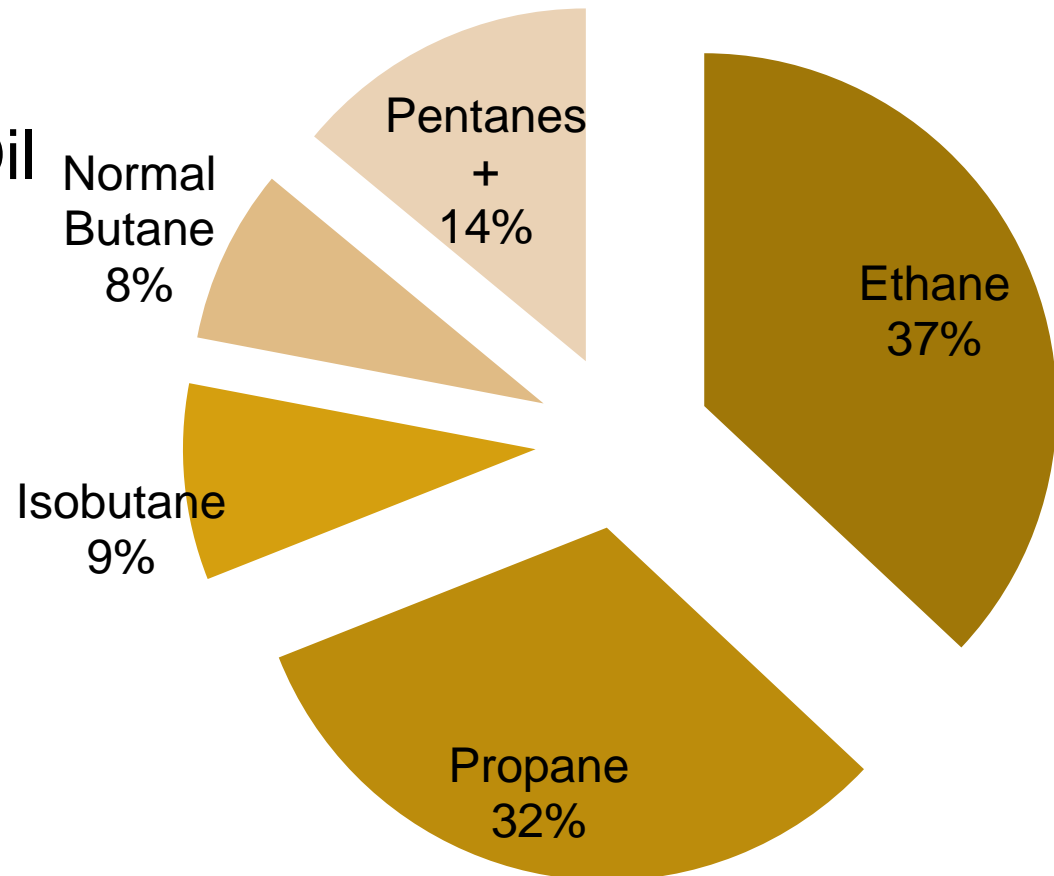
# Operating Rigs – Last 180 days





# Natural Gas Liquids (NGLs)

- Liquids extractable from Natural Gas after separated from Crude Oil
- Most are gases at atmospheric pressure
- Components:
  - Ethane
  - Propane
  - Isobutane
  - Normal Butane
  - Pentanes+ (Natural Gasoline)



# NGL Supply and Demand

## NGL Supply Sources

## NGLs Supplied <sup>1</sup>

## NGL End Uses

## NGLs Consumed <sup>2</sup>

**Gas Processing**  
80% (2,150 MBPD)

**Crude Oil Refining**  
15% (390 MBPD)

**Overland & Waterborne Imports**  
5% (135 MBPD)

Ethane -- 42%  
**Propane – 28%**  
Normal Butane – 7%  
Iso-Butane – 9%  
Natural Gasoline – 14%

Ethane – 12%  
**Propane – 71%**  
Mixed Butanes – 17%

**Propane – 77%**  
Mixed Butanes - 15%  
Pentane Plus – 8%

**Primary Petrochemicals**  
55% (1,455 MBPD)

**Space Heating & Other Fuel Uses**  
19% (500 MBPD)

**Motor Gasoline & Blendstocks**  
19% (510 MBPD)

**Ethanol Denaturing**  
<1% (20 MBPD)

**Fuel Exports**  
6% (190 MBPD)

Ethane -- 98%  
**Propane -- 36%**  
N-Butane – 26%  
Natural Gasoline - 11%

**Propane – 54%**  
Ethane – 2%

N-Butane – 66%  
Iso-Butane – 100%  
Natural Gasoline – 72%

Natural Gasoline – 7%

**Propane – 10%**  
N-Butane – 7%  
Natural Gasoline - 10% (diluent)

<sup>1</sup> %'s represent the composition of NGL mix from primary sources.

<sup>2</sup> % of a NGL supplied that is consumed by a market.

# Dry Gas vs. Wet Gas

## 1 MMCF (Million ft<sup>3</sup>) of Gas February 2015 Pricing



“Dry” 2 GPM Gas		“Wet” 4 GPM Gas	
Natural Gas	\$2,616	Natural Gas	\$2,459
Ethane	\$24	Ethane	\$47
Propane	\$254	Propane	\$508
Isobutane	\$110	Isobutane	\$220
Normal Butane	\$95	Normal Butane	\$190
Pentanes+	\$384	Pentanes+	\$768
Total	\$3,483	Total	\$4,193

- Wet Gas Plays still net an 20.4% sales premium on an MMCF
- Wet Gas also likely yield much higher margin on accompanying Condensate or Crude Oil

# Typical NGL Concentrations (in GPM)

Lower 48 states shale plays

## Rich Shale Play Corridors

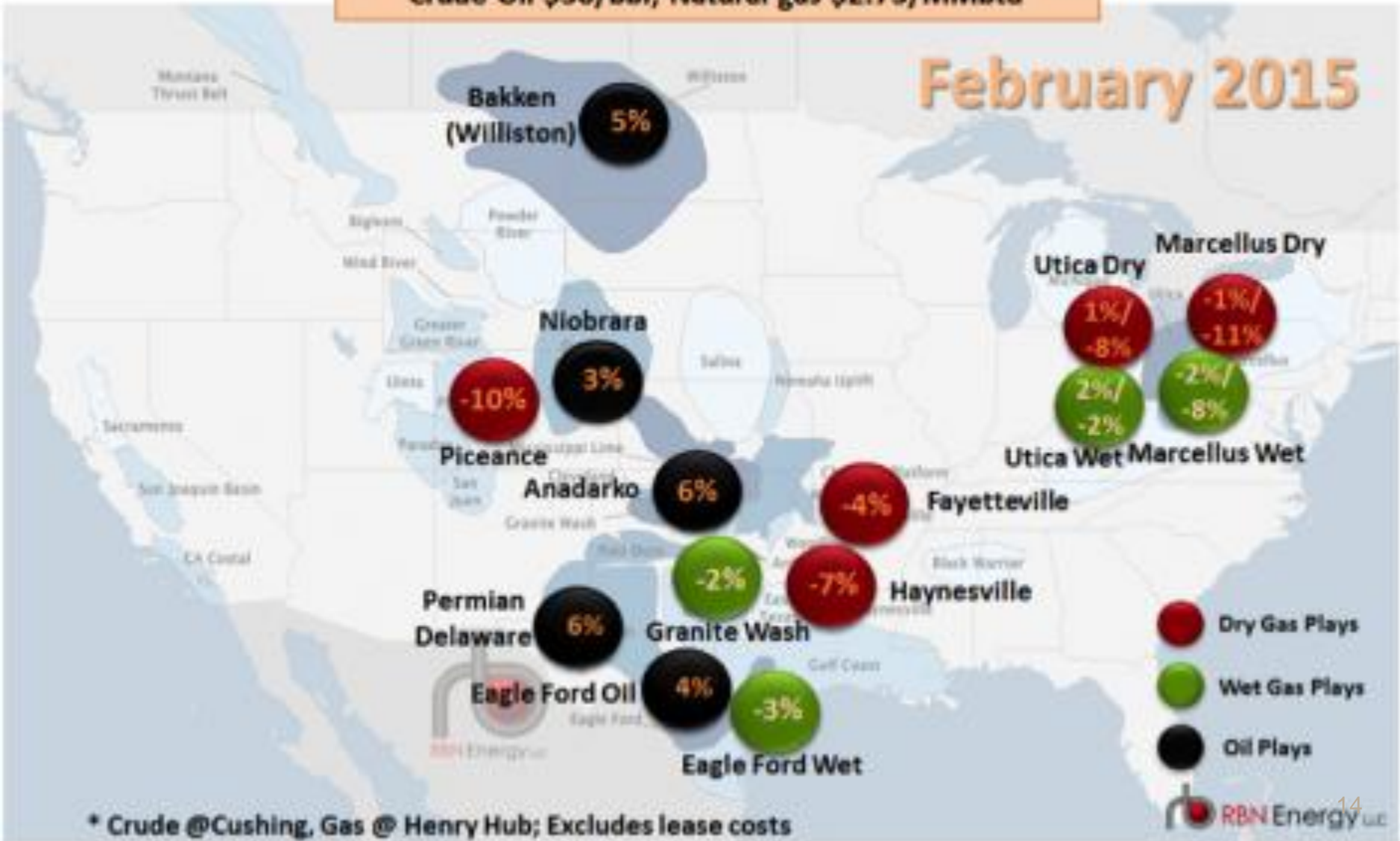


Rich Plays	NGL (GPM) Content*
Avalon/Bone Springs**	4.0 to 5.0
<b>Bakken**</b>	4.0 to 9.0
Barnett	2.5 to 3.5
Cananda-Woodford	4.0 to 6.0
<b>Eagle Ford***</b>	4.0 to 9.0
Granite Wash	4.0 to 6.0
Green River**	3.0 to 5.0
Niobrara**	4.0 to 9.0
<b>Marcellus (Rich)</b>	4.0 to 8.0
<b>Utica</b>	4.0 to ??
* gpm – gallons of NGLs per 1000 cu. ft.	
** Oil Shale Plays	
*** Both an Oil and Gas Shale Play	

# How Do Different Plays Compare?

Crude Oil \$50/bbl; Natural gas \$2.75/MMBtu

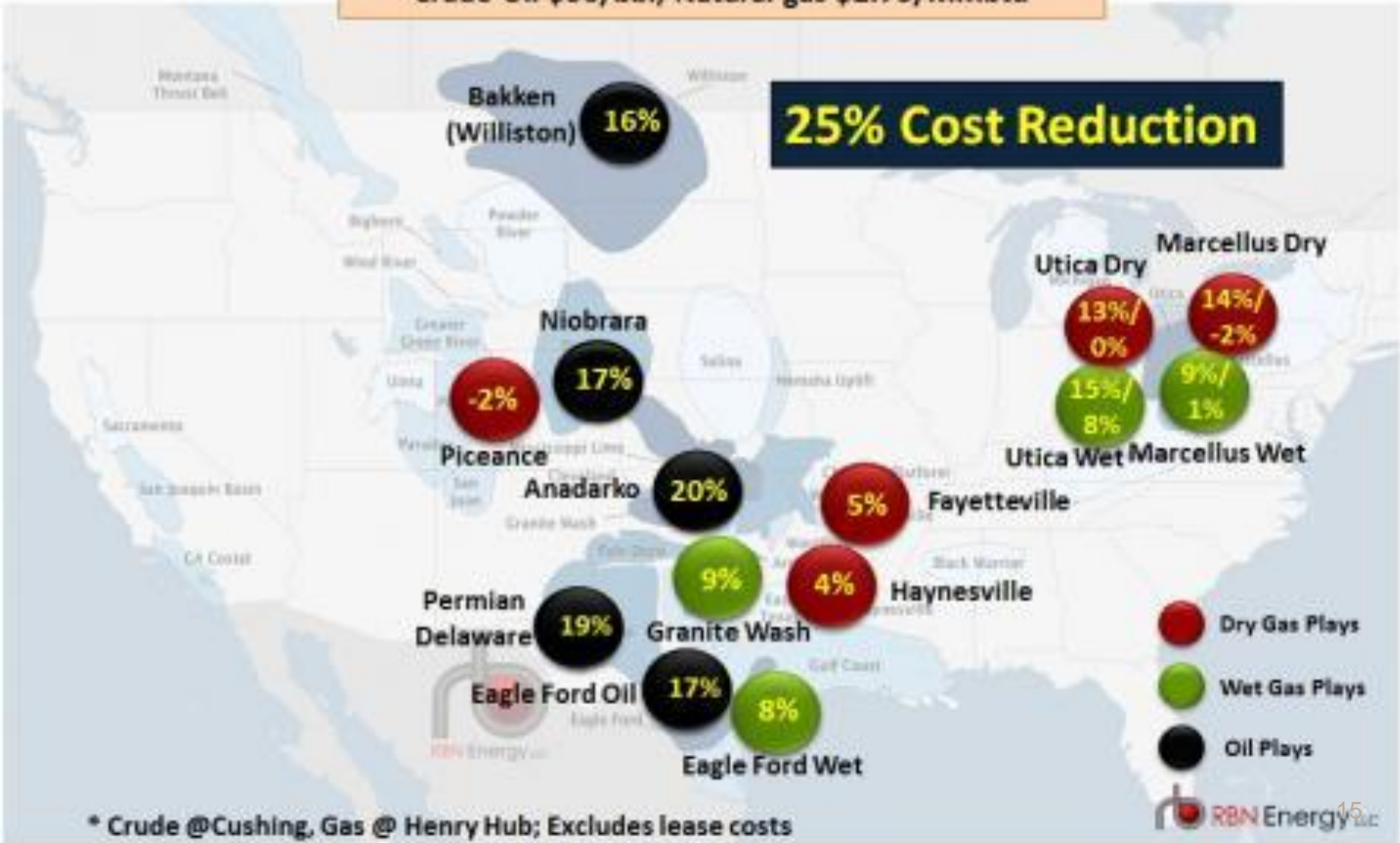
February 2015



# Plays with 25% Reduction in Well Costs

Crude Oil \$50/bbl; Natural gas \$2.75/MMbtu

**25% Cost Reduction**



# Producers' Focus in 2015/2016

- Adjust Drilling Portfolios to maximize cash flow
  - Oil = \$9.50/MMBTU
  - NGL = \$6.00/MMBTU
  - Gas = \$3.50/MMBTU
- Focus on reducing costs per well drilled
  - Huge pressure on well services companies to reduce cost
  - Single pad / multiple well technologies
- Target drill sites that minimize infrastructure builds
  - Drilled wells that have high connection costs are being left unconnected

- “Hold By Production” leases
  - Expire if Producers don’t drill and produce
  - Creates artificial pressure on Producers to drill even when short-term economics are negative
- Location and Infrastructure impact NGL returns
  - Local markets can be too small or seasonal
  - Primary markets can be too far
  - No pipeline connectivity





# Questions?

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