Unconventional Revolution and New Oil Price Environment

Brussels, Belgium

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US unconventional revolution has been largely driven by technology

EVOLUTION OF THE US SHALE GAS INDUSTRY: BARNET SHALE EXAMPLE
Thousand of Wells, Billion Cubic Feet per Day, 1990-2012

- Horizontal drilling
- Re-fracture stimulation
- Multistage fracturing
- Integrated perforation
- Reservoir characterization
- Fracture network modeling
- Micro Seismic
- Water treatment

Source: Railroad Commission of Texas; SBC Energy Perspectives; Rystad Energy; EIA; SBC Analysis
North America operators have continuously reduced their gas lifting costs

BREAK EVEN PRICES IN MAJOR US SHALE GAS PLAYS
USD per Million Cubic Feet, 2008-2013

Source: SBC Analysis
The unconventional revolution spread to Light Tight Oil (LTO) making it more competitive

LTO BREAKEVEN PRICE\(^1\) AND MAJORS FULL CYCLE COST\(^2\)
USD per Barrel of Oil Equivalent, 2009-2013

1: F&D + Lifting costs. Pure unconventional NAM players
2: S&GA + F&D + Total Production + WACC. Majors
Source: Rystad; IHS; Evaluate Energy; Goldman Sachs
As a result, 2014 has seen the largest supply growth since 2010 with North America LTO accounting more than 50%.

**SUPPLY GROWTH BY SOURCE**
Million Barrels per Day, Percentage of total increase, 2010-2014

- 2010: 87.4 MMBD
- 2011: 88.8 MMBD (+1.4%)
- 2012: 90.0 MMBD (+1.7%)
- 2013: 91.5 MMBD (+1.5%)
- 2014: 93.3 MMBD (+2.1%)

Supply Growth by Source:
- **North America LTO**: 56%
- **OPEC**: 12%
- **Rest of the World**: 14%
- **Other North America**: 14%
- **Canada**: 4%

Source: IEA Oil Market Reports; SBC Analysis
Increase in North America production outstripped supply shortages

WORLDWIDE SUPPLY
Million barrels per day, Oil Price, 2012-2014

1: Includes Iran, Libya, Sudan & South Sudan and Syria
Source: IEA Oil Market Reports; SBC Analysis
US operators have begun to slash Capex

**NORTH AMERICA CAPEX REDUCTIONS**
Percentage, 2015 relative to 2014

Capex Percentage

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%

Average 34% Decline

**US ACTIVE RIG COUNT**
Number of rigs, 1986 and 2015

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How will future rig count evolve?

-62%

Note: US active rig counts includes all Oil & Gas Rigs; Rig count drop in 2015 was reported on January 30, 2015

Source: IHS; Baker Hughes; SBC Analysis
Time to remove excess supply rest on companies ability to recover from Capex cuts

NEW PRODUCTION – 400 KBPD/MONTH\(^1\)
Thousand Barrels per Day, Month Over Month

NATURAL DECLINE – 300 KBPD/MONTH\(^1\)
Thousand Barrels per Day, Month Over Month

ESTIMATED TIME TO REMOVE EXCESS SUPPLY
Million Barrels per Day, Month Over Month

What will be the impact of Capex cuts in the rest of the world?

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1: Includes Niobara, Permian, Bakken and Eagle Ford
Source: IEA; SBC Analysis