CRUDEAWAKENING
Crude Awakening Series

- 6 Parts
- 300+ Pages
- In Depth Analysis Of Each PADD and Canada By Fundamental
  - Supply
  - Demand
  - Transportation
  - Storage
  - Price
- 10 Year Outlook Conclusion
Gas, Oil and NGL Price Comparison: MMBTU Equivalent

Value Gap

Source: ICE, EIA
U.S. Active Rig Locations: Resource Plays Dominate

US Active Rigs (03/09/2012)

Rig Orientation
- Directional
- Horizontal
- Vertical

- Williston Basin Bakken Shale (Oil Play)
- Pinedale/Jonah Tight Gas
- Uinta – Piceance
- Niobrara Shale Play (Oil Play)
- Granite Wash, Cleveland, Miss.
- Fayetteville Shale Gas Play
- Barnett Shale Gas Play
- Woodford Shale Gas Play
- Haynesville Shale Gas Play
- Marcellus Shale Gas Play
- Fayetteville Shale Gas Play
- Permian Basin-Oil Targets
- Eagle Ford Shale Play

Source RigData and BENTEK: Lower 48 States, Jan. 15, 2012
Oil Plays Provide Superior Returns

Price Assumptions:
- Gas = 12 month forward average curve for each regional pricing point (price range $2.97-$3.19/Mcf)
- Oil = 6 month WTI +/- differential (price range $75-$92/barrel)
- NGLs = weighted average price $46.34/bbl, based on current Mt. Belvieu prices and the average composition of a typical barrel of NGLs.
Plays With High Returns Attract Drilling Rigs

Note: Active rig count: March 2, 2012 / Change in rig count from Jan. 1, 2010

Source: Bentek, March 2012
U.S. Crude Oil Supply Growth

Production ('000 b/d)

Williston

Jan-05    Jan-06    Jan-07    Jan-08    Jan-09    Jan-10    Jan-11    Jan-12    Jan-13    Jan-14    Jan-15    Jan-16    Jan-17

Mb/d
U.S. Crude Oil Supply Growth

**Niobrara Shale (DJ+PRB)**

- Production ('000 b/d)
- Jan-05 to Jan-17
- Mb/d
U.S. Crude Oil Supply Growth

Anadarko

Production (‘000 b/d)

Mb/d
U.S. Crude Oil Supply Growth

Permian

Production (‘000 b/d)

Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17

Mb/d
U.S. Crude Oil Supply Growth

Eagle Ford

Production (‘000 b/d)

Jan-05  Jan-06  Jan-07  Jan-08  Jan-09  Jan-10  Jan-11  Jan-12  Jan-13  Jan-14  Jan-15  Jan-16  Jan-17

Mb/d
Unconventional Oil Plays – Turning The Corner

Growth 2011 – 2016
2,200 Mb/d

Bakken
Niobrara
Anadarko
Permian
Eagle Ford
Forecast Through 2016

Source: BENTEK, EIA, Excludes NGLs and Other Liquids
Adding In Canada

Canadian Production and Imports

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<tr>
<th>Year</th>
<th>Production ('000 b/d)</th>
<th>PADD 2/PADD 3</th>
<th>PADD 4</th>
<th>PADD 5</th>
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Note:
2011 Average to 2017 Average (MB/d)

Source: Petroleum Project Tracker
Not All Projects Shown
Bentek Energy Map

Map of the United States with price data points indicating Brent Premium for years 2011 and 2016.

Prices include:
- $16, $17, $12, $11, $10
- $16, $8
- $15, $17, $11, $12
- $8, $12
- $1, $3

Brent Premium

2011
2016
U.S. Light Crude Oil Growth Potentially Displaces all Foreign Imports Landing in PADD III

Note: 2011 Average Imports
Supply growth will shape the market.

US Growth will Displace Foreign Light Oil Imports

Heavy – Light Spread Set to Tighten with Refinery Upgrades and U.S. Light Oil Growth

LLS - WTI Spread to Tighten as Projects Reconnect Premium Market to WTI
BENTEK is an energy market analytics company, focused on the natural gas market and related energy sectors.

Matt Marshall
Manager, Energy Analysis
Crude Oil
Office: 303-988-1320
mmarshall@bentekenergy.com

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