2016 Argus Americas Crude Summit

Conference In Review

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The purpose of this presentation is to summarize the presentations from the 2016 Argus Americas Crude Summit that was held in Houston, TX on January 21-22, 2016. The views and statements expressed here do not necessarily reflect the position or opinions of KBC Advanced Technologies, Inc.

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The History of KBC

**1979**
KBC founded as independent consulting company, specialising in energy improvement in refineries

**1983**
Development of Petrofine software leads to first refinery-wide flowsheets and Yield & Energy Surveys

**1986**
Y&E Survey develops into comprehensive Profit Improvement Program (PIP)

**1993**
On-site Implementation Services take KBC’s profit improvement deliverable to a new dimension

**1995**
KBC goes public – listed as plc on London Stock Exchange

**1996**
Developed Reliability, Availability & Maintenance services

**1997**
Purchase of Profinatics SIM models software

**1998**
KBC extends into Oil and Gas market analysis with PEL acquisition and enhances Energy services with Linhoff March acquisition

**1999**
release of DISTOP & CATOP; First yield and energy study applied to petrochemicals (ethylene plant)

**2002**
Y&E Survey develops into comprehensive Profit Improvement Program (PIP)

**2004**
KBC extends into Oil and Gas market analysis with PEL acquisition and enhances Energy services with Linhoff March acquisition

**2006**
KBC goes public – listed as plc on London Stock Exchange

**2009**
KBC acquires Infochem, adding strength in physical properties, PVT and flow assurance

**2012**
KBC acquires FEESA, to further develop upstream capabilities with Maximus

**2014**
KBC adds Strategic and Environmental consulting capabilities to the portfolio

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KBC ADVANCED TECHNOLOGIES
Proprietary Information

29 February 2016
AACS Four Key Focus Areas

- Market
- US Exports
- Geo-Political Factors
- Policy Factors
Market

- Prices - “Lower For Longer”
- Price Increase Expected To Begin Q4 ’16
- $50-60 To Begin US Production Growth

- Crude Over Supplied In The Near Term
- US Production Won’t Fall Dramatically From Current Levels

- WTI Houston Trade Volume Doubled From Dec. ‘15 to Jan. ’16
- WTI Houston May Soon Have Paper Contracts Settling On It
Crude Price Forecast

- Stock Builds Decreasing Through 2016
- Nearly Balanced For 2017
- US led non-OPEC contraction 2015/2016 leads to rebalance.
- $75 Oil Is Consistent With Supply/Demand, Production Cost and “Oil Burden”

Source Data: Average Supply/Demand Forecast From AACS Presenters, January 2016
Consensus 1.0 – 1.2 MMBPD Demand Growth

Low (Middle East) and Medium (US) Cost Production Enough To Balance In Near Term ($50-60)

Higher Cost Production (Deepwater & Canadian Oil Sands) Required To Balance In Medium Term ($70-80)

Global Crude Supply/Demand Forecast

Source Data: Average Supply/Demand Forecast From AACS Presenters, January 2016
US Exports

- Tight Oil Production Decreasing, GOM Increasing Slightly
- Tight Oil Breakeven Cost Down 25% and Focused On Best Geology “Sweet Spots”
- Credit and Capital Investment Key Near Term Issues

- Short-Term Takeaway Overcapacity In Select Basins but Fairly Balanced In The Long Term
- Additional Marine Infrastructure Required For Exports
- Sufficient On-shore Storage Capacity

- Increased Demand From TX Splitters and Refinery Upgrades (300 - 500 KBD)
- No Significant Export Volumes Until 2018
- Will Depend On Quality, Refinery Configuration, Arbitrage and Location
Tight Oil Drilling Productivity

- Selective Drilling Reductions
- Major Contributors are Bakken and Eagle Ford
- Increased Pressure for E&Ps From Liquidity and Hedging Protection

Source Data: U.S. Energy Information Administration

EIA Drilling Productivity Report
http://www.eia.gov/petroleum/drilling/

[kbpds graph showing productivity for different regions: Bakken, Eagle Ford, Haynesville, Marcellus, Niobrara, Permian, Utica]
Global Crude Quality Forecast

- US will add ~300-500kbd of crude capacity in 2016.
- Overall capacity utilization remains 90-95%
- Crude selection more critical than ever
- Increased Product Must Go Offshore
Geopolitical Factors

- Saudi Arabia Facing Spending Demands Internally and Externally
- Great Risk With OPEC’s “Fragile Five” (Iraq, Venezuela, Nigeria, Algeria & Libya)
- Iran Will Add 375-500 kbpd To The Market in 2016

- Iraq – ISIS Potential Target Iraq-Turkey Pipeline Appears Vulnerable. (2015 - ~30K Deaths and Injuries)
- Libya – ISIS Has Exploited The Security Vacuum

- Economic Volatility and Budget Shortfalls Due To Depressed Oil Price
- Risk Of Humanitarian Crisis In Some Countries Is A Possibility
- Recent rise in incidents in Nigeria.
- Iraq sees record high production amid economic and security issues.
- Libya may be out for longer due to damaged infrastructure.
Policy Factors

- Will Climate Change Initiatives Lower The Demand Growth Profile?
- What Effect Will The Results of the Presidential Election Have On “Green” Direction?

- The Outlook For Investment In Mexican Offshore Production Is Unclear
- Energy Reform = Investment (?)
- Will Remain Importer Of Gasoline & Diesel

- Project Permitting and Tax/Royalty Changes Will Be A Challenge For Canadian Production
- Organized Opposition To Stop Production
- New Regulatory Hurdles On The Horizon?
Summary

- Price Pressure In 2016 With Re-Balancing Through 2017 Is Expected.
- Credit and Capital Are Near Term Issues For E&P And Could Impact The Long Term Supply Picture
- No Significant US Crude Exports Until 2018 Expected
- Geopolitical Issues Key Risk Factor Moving Forward
- Environmental Policy and Regulatory Requirements Could Influence The Demand Growth Profile
- Mexico Energy Reform Outcomes Are Still Unclear