Energy – So Many Issues, So Little Time

A Presentation to the
CFA Society of Dallas-Fort Worth

February 23, 2011

Dan Pickering

*Disclaimers on page 18 of this document.
History of Tudor, Pickering, Holt & Co.

The mission of Tudor, Pickering, Holt & Co. is to be the premier integrated energy investment and merchant banking boutique, providing advice and professional services to our institutional and corporate partners.

Our History

- The firm was founded in early 2004 by Dan Pickering and David Pursell, who had a vision for a strong technical research firm: Pickering Energy Partners, Inc.
- Combined with Bobby Tudor, former partner at Goldman Sachs who had the vision of a premier energy investment banking firm: Tudor, Pickering & Co.
- Maynard Holt, also a Goldman alumni, joined as a named partner in 2008 completing Tudor, Pickering, Holt & Co.

Our Expertise

- Diversified lines of business designed to deliver extensive energy industry and advisory expertise(*):
  - Asset Management
  - Investment Banking
  - Research
  - Securities
  - Acquisitions & Divestitures
  - Private Equity
- Equity analysts covering 100+ energy companies
- Private Equity fund, TPH Partners, established in 2008
- Broader energy Asset Management efforts launched in late 2010

Recent Recognitions

<table>
<thead>
<tr>
<th>Recognition</th>
<th>Source</th>
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<tbody>
<tr>
<td>Research: #1 Oil and Gas E&amp;P Best Industry Knowledge¹</td>
<td>Greenwich Associates 2010</td>
</tr>
<tr>
<td>Research: #1 Energy Best Stock Recommendation¹</td>
<td>Greenwich Associates 2010</td>
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<td>Research: #1 Energy Most Detailed Financial Analysis¹</td>
<td>Greenwich Associates 2010</td>
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<tr>
<td>Leading US Energy M&amp;A Transactions 2010²</td>
<td>Dealogic 2010</td>
</tr>
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</table>

(1) Source: Greenwich Associates
(2) Source: Dealogic

*Tudor, Pickering, Holt & Co. affiliates include:
(1) Tudor, Pickering, Holt & Co. Securities, Inc., a FINRA registered broker-dealer;
(2) TPH Asset Management, LLC, an SEC registered investment advisor;
(3) TPH Partners, LLC, the firm’s private equity affiliate, and;
### Selected TPH Advisory Engagements

#### Top Energy Advisors

<table>
<thead>
<tr>
<th>Firm</th>
<th>Deals</th>
<th>Year</th>
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<tbody>
<tr>
<td>Barclays Capital</td>
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<td>Goldman Sachs</td>
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<td>2010 to Current</td>
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<td>Tudor Pickering Holt &amp; Co</td>
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<td>RBC Capital Markets</td>
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<td>Benfield Capital</td>
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<td>Barclays Capital</td>
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<td>October 2008</td>
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<td>Bank of America Merrill Lynch</td>
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<td>June 24, 2010</td>
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<td>Lazard</td>
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<tr>
<td>Credit Suisse</td>
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<td>December 27, 2009</td>
</tr>
<tr>
<td>Jefferies &amp; Company</td>
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<td>January 2, 2008</td>
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<td>Bank of America Merrill Lynch</td>
<td>19</td>
<td>June 24, 2010</td>
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<td>JPMorgan</td>
<td>17</td>
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<td>Credit Suisse</td>
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<td>Merrill Lynch</td>
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<td>July 9, 2010</td>
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<td>Deutsche Bank</td>
<td>15</td>
<td>February 26, 2008</td>
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<td>Deutsche Bank</td>
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<td>June 30, 2010</td>
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<td>Jefferies &amp; Company</td>
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<td>July 9, 2010</td>
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<td>April 20, 2008</td>
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</tr>
<tr>
<td>Credit Suisse</td>
<td>1</td>
<td>July 9, 2010</td>
</tr>
</tbody>
</table>

#### Notable Engagements

- **Firm # Deals**
- **Year**
- **Event**

**February 2010**

- $2.16 billion Acquisition of Gulfstream Natural Gas System
- **February 27, 2009**
- **$1.5 billion**
- **Merger with Magellan Midstream Partners**

**February 2009**

- **$1.2 billion**
- **Acquisition of West Texas Gathering System, L.P.**

**January 2009**

- **$575 million**
- **Sale of Eagle Ford Shale assets to Hess Corporation**

**April 2008**

- **$2.1 billion**
- **Sale of Eagle Ford Shale assets to Hess Corporation**

**March 2008**

- **$230 million**
- **Sale of Bakken Shale assets to Northern Pacific Group**

**January 2008**

- **$1.27 billion**
- **Sale to ION Geophysical**

**November 2007**

- **$6 million**
- **Sale of Bakken Shale assets to Northern Pacific Group**

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(1) Source: Dealogic: United States Oil & Gas - Exploration & Development/Field Equipment & Services/Diversified/Pipeline and Utility & Energy - Gas pending and completed transactions announced from 1/1/2010 to 2/20/2011.
Hot Buttons - Things Changing Almost Daily

Middle East Unrest
- The Internet is Everywhere
- Rational Middleman in Egypt
- No Middleman in Libya
- ~2.5mmbbls/day Egypt/Libya
- Oil’s Importance Keeps Volumes Safer
- WATCH SAUDI

Brent - WTI Price Gap
- Canada Crude Line
- Bakken Volumes
- Cushing Storage Tight
- Refinery Turnaround Season
- $15+/bbl Differential Too Wide
- Tighter By Summer...But Not Gone
Let’s Start With The Big Kahuna’s

**Oil**
- Economy!!
- Demand Can Grow Faster Than Supply
- Opportunities Are In Hard Spots
- Price Must Ration Demand
- Demand Risks Increasing
- Near-Term Price is Anybody’s Guess
- $90/bbl Long-Term

**Natural Gas**
- Forget Oil/Gas BTU Parity
- Shale = Domestic Oversupply
- $4/mcf Not Sustainable
- No 2011 Recovery Likely
- Thank God For Coal
- $6/mcf Long-Term
# The Global Oil Demand Reality

<table>
<thead>
<tr>
<th></th>
<th>1990 to 2000</th>
<th>2000 to 2010E</th>
<th>2010E to 2020E</th>
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<tbody>
<tr>
<td>OECD Total</td>
<td>1.4%</td>
<td>-0.4%</td>
<td></td>
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<tr>
<td>US</td>
<td>1.2%</td>
<td>-0.4%</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>1.0%</td>
<td>-0.6%</td>
<td></td>
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<tr>
<td>US</td>
<td>1.2%</td>
<td>-0.4%</td>
<td></td>
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<tr>
<td>Non-OECD Total</td>
<td>1.5%</td>
<td>3.6%</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>6.5%</td>
<td>7.4%</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>6.5%</td>
<td>3.7%</td>
<td></td>
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<tr>
<td>Middle East</td>
<td>4.4%</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>World Overall</td>
<td>1.4%</td>
<td>1.3%</td>
<td></td>
</tr>
</tbody>
</table>

IEA says ~2%/year through 2020

110 mmbbls/day = impossible

Source: IEA, TPH
Some Oil Observations

- US Drilling Frenzy...
- ...A Mere Drop In The Bucket
- Demand Matters
- When Was The Last Time You Thought About:
  - OPEC
  - Geopolitical “Stuff”
  - $50/bbl Oil
- Still A Great 5-10 Year Story
Some Nat Gas Observations

- Unconventional Gas Is No Longer Unconventional
- Horizontal + Fracturing = Game Changer
- Shale Is KING For The Next Decade
- Too Much Gas Supply
- 2011 = More Tough Sledding
- $4/mcf Price Doesn’t Work Long-Term

The “Old” Assumptions Don’t Work Anymore
Too Much Gas!

US Wellhead Supply Forecast
[Onshore]

Updated Forecast

Historical Production
Old Production Forecast
Current Forecast

Historical Rigcount
Old Rigcount Forecast
Current Rigcount

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ENERGY INVESTMENT & MERCHANT BANKING
Shale - More Production Than Expected

2011 Exit Rate From Shale

Surprises During 2009/2010
- More Rigs
- Leases
- Hedges
- Joint Ventures
- More Wells/Rigs

Shale Gas Production, bcf/day

- Original Study: 15.9
- More Rigs: 16.9 +1.0
- Efficiency Gains: 18.3 +1.4
- New (Current Study): 18.3
Non-Shale - Just One Little Surprise

2011 Exit Rate From Non-Shale

Onshore Non-Shale Gas Production, bcf/day

Original Study  | Anadarko Basin  | Other  | New (Current Study)
---|---|---|---
38.6 | 40.8 | +2.2 | 41.4

Surprises During 2009/2010

Granite Wash!

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Why $4/mcf Gas Can’t Be Sustained

Breakeven Prices at 10% BFIT IRR and Cumulative Production

- $5/mcf
- $6/mcf
- $6.50/mcf
- $8/mcf

2013 Est Cum Production % of total

Gas Production (Bcf/d)
M&A Drivers / Thoughts

- $100 Billion “Marketplace”
- Energy Steadier Than Non-Energy
- Shale / Horizontal Has Changed The US
- Early In US Asset Realignment
- Longer Cycle = More Enthusiasm
- Deals Bigger Toward Tops / Bottoms
- Asset Scarcity
- International / NOC’s Are Awake
Wall Street’s View On Energy

- Bullish Oil / Bearish Gas...Still
- Pretty Big Rally - Now What?
- Oily Stocks - Discounting High Prices Already
- Trying To Bull Up On Gas
- How Much Good News Is Too Good?
- People Want To Believe
### Energy Subsector Returns - Something’s Always Working

<table>
<thead>
<tr>
<th>Year</th>
<th>Refining</th>
<th>Natural Gas</th>
<th>Resource/Shale E&amp;P</th>
<th>Crude Oil</th>
<th>Midstream</th>
<th>Conventional</th>
<th>Oil Service/Equip</th>
<th>Offshore/Land Drillers</th>
<th>Global Energy</th>
<th>Coal</th>
<th>Natural Gas</th>
<th>E&amp;Cs</th>
<th>S&amp;P 500</th>
<th>MLPs</th>
<th>Crude Oil</th>
<th>Oil Service/Equip</th>
<th>Offshore/Land Drillers</th>
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<td>86%</td>
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<td>84%</td>
<td>30%</td>
<td>9%</td>
<td>9%</td>
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<td>9%</td>
<td>6%</td>
<td>-23%</td>
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<td>2003</td>
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<td>104%</td>
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<td>20%</td>
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<td>9%</td>
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<td>2005</td>
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<td>Natural Gas</td>
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<td>Coal</td>
<td>Refining</td>
<td>Refining</td>
<td>YTD 2011</td>
<td>116%</td>
<td>9%</td>
<td>-61%</td>
<td>6%</td>
<td>9%</td>
<td>6%</td>
<td>-18%</td>
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<td>3%</td>
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<td>-61%</td>
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<td>9%</td>
<td>6%</td>
<td>-18%</td>
<td>9%</td>
<td>3%</td>
</tr>
</tbody>
</table>

(1) Source: Bloomberg (2/17/2011)
Quick Hits

- Energy Policy...At The State Level
- Gas Cars Won’t Matter This Cycle
- LNG *Exports* Getting Real Attention
- Macondo/Moratorium Is Lingering
- Horizontal Is The New Vertical
- Wall Street Hates Gas - But Industry Is Buying Like Wild
- Frac Assets Ample By YE 2011
- What Is The 2011 Oil Surprise?

“To infinity and beyond!”
Time for Q&A
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