Recent Trends and Emerging Disruptors Driving Creativity in M&A&D and Energy Finance

PRESENTATION PREPARED FOR

Ryder Scott Reserves Conference – September 13, 2018

PREPARED BY

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Presentation Overview

- Introduction to Millennium Energy Advisors
- Current Market Trends and Market Sentiment
- U.S. Upstream Energy Transaction Market Update (factors driving creativity)
- Examples of Recent Creative Transactions (taking time to understand some of the new terms)
- Market Challenges Driving Energy Finance Creativity (particularly private equity)
- Energy Finance Emerging Disruptors (to capital flow patterns, direct investment and digital technologies enhancing crowd-funding)
- Closing Thoughts for Reserve Evaluators
Introduction to Millennium Energy Advisors
Millennium Energy Advisors is a boutique advisory firm offering acquisition & divestiture consulting services to the oil & gas industry. Millennium was founded by Thomas (Tom) Gardner, a 30-year veteran of the energy industry who desired to provide client-centric energy advisory services in a boutique setting to ensure projects receive the expertise and attention necessary to ensure the client’s success.

Our firm’s mission is to provide our clients with game-changing insights and best-in-class analytical and M&A&D services to successfully navigate the competitive landscape and achieve corporate objectives. Our leadership takes an active role in all of our advisory assignments.
Introduction to Millennium Energy Advisors

Tom Gardner
- Tom is an investment banker, securities principal, experienced oil & gas operator and registered professional engineer
- Track record of creating value
- Significant Deal Experience - $13B+ in energy-related transactions

Representative Deal Experience

- **May 2017**
  - $4,000,000,000
  - **UP Petroleum**
  - Restructuring Advisor to Equity Committee

- **July 2016**
  - $150,000,000
  - **SM Energy**
  - Has sold SCOOP assets to Rimrock
  - Served as strategic advisor to Merit Energy

- **April 2015**
  - **SM Energy**
  - Has sold Marcellus assets to PP&E
  - Served as advisor to SM Energy

- **January 2016**
  - $5,375,000,000
  - **SWN**
  - Has acquired Marcellus and Utica assets from Chesapeake
  - Served as advisor to Southwestern Energy

- **October 2014**
  - $360,000,000
  - **Continental**
  - Has formed a joint venture with SK E&S
  - In Oklahoma Cana Woodford
  - Served as advisor to Continental Resources

- **October 2014**
  - $2,500,000,000
  - **TESORO Logistics**
  - Has purchased pipeline and processing interests of QEP Resources
  - Served as strategic advisor to Tesoro Logistics

- **June 2014**
  - $550,000,000
  - **Ranger Energy**
  - Has sold Permian assets to EQT
  - Served as advisor to Range Resources
Introduction to Millennium Energy Advisors Services

- DEAL STRUCTURING
- DEAL ANALYSIS and TECHNICAL EXPERTISE
- DEAL MANAGEMENT- BUYSIDE & SELLSIDE
- PLAY INSIGHTS
- TARGET IDENTIFICATION – OFF MARKET DEALS
- ASSIST/EXECUTE CAPITAL RAISE
Millennium Energy Advisors Teams Up with Ryder Scott Company
Alliance Brings Unmatched RSC Experience
Access – North America

- Ryder Scott has Evaluated Most Basins in N.A.
  - Direct or suitable analog experience
  - Deep technical assessments and associated quality
  - Evaluation breadth, corporate, A&D, reservoir studies
  - Years of experience to understand technical, operational and development trends
Millennium Energy Advisors – Key Takeaways

• **Advisory Approach** – We serve clients, not deals
• **Proven Success** – Track record of achieving project objectives
• **Attention & Dedication** – Tenacious Focus
• **Transaction Experience and Technical Depth**
• **Ryder Scott Alliance**
  • Technical Experts
  • Unparalleled Experience
  • Rebates
  • Ryder Scott remains independent (no stake in outcome)
Current Market Trends and Sentiment
Comparison of Oil Price Forecasts

Crude Oil Prices, Historical and Forecast as of August 2018

Source: http://www.dpurvispe.com/comparison-of-price-decks/

Backwardated Strip Continues to Challenge Market

Bid-Ask Spread

WTI Oil Price ($/bbl)
Comparison of Gas Price Forecasts

Natural Gas Prices, Historical and Forecast as of August 2018

Bid-Ask Spread

Backwardated Strip Continues to Challenge Market
Market Sentiment

Where are we in the business cycle from the Buyer’s Perspective?

- Market Sentiment – Impacts buyer’s motivation
  
  - **Contango** – Rising futures pricing...compels to secure inventory
  
  - **Backwardation** – falling futures pricing...disincentivizes securing inventory

Contrarian views toward backwardation is not uncommon, some willing to step into the market for the right opportunity

Deal market may be further impacted when equity markets are rewarding fiscal discipline, a.k.a. living within cashflow, more than growth.
Market Sentiment

Where are we in the business cycle from the Seller’s Perspective?

• Seller will want to move quickly when market timing is optimal

• Seller is much more likely to execute in current market if allowed to participate in upside

• Although sellers are in control of process, a significant contingent of current transactions are composed of reluctant sellers under compulsion

• Presents two-fold challenge to reserves evaluators, be ready and know value sensitivities
Market Sentiment
Oil and Gas Inventories

Oil Inventories

Gas Inventories

Source: U.S. Energy Information Administration
An examination of EIA long-term forecasts from 1994 through 2012 shows that on average, for forecasts over five years in the future, the actual crude oil price was at least 50% higher than the EIA Forecast (Jim Williams, WTRG Economics and ESP).
NYMEX Historically Under Predicts Oil Prices

"We learn from history that we do not learn from history."

G. Wilhelm F. Hegel

WTRG and Energy Security Partners Study found NYMEX under-predicted oil price and the size of the error increased with time. In the most extreme case, the actual price was over 180% higher than the average contract for the same month.
U.S. Upstream Energy Transaction Market Update
Upstream Deal Value by Type and Announce Date

Source: 1Derrick
Upstream Deal Count by Type and Announce Date

- **Royalty**: 70% Plunge
- **Property/Asset**: Acreage
Deal Activity by Commodity, Region and Buyer Type

Activity relative to 2 years ago
- Gas deals up 11%, oil down 11%
- Permian activity up 10%
- Other plays down 12% (focus)
- Mid-Con up 3%, Appalachia down 5%

Activity relative to 2 years ago
- Public company activity down 14%
- PE/PE Backed up 14%
- Privates up 14%
- MLP Activity essentially non-existent
Recent Forbes Article Headline Says it all...

What Happened To The IPO Market For Oil And Gas Independents?

Article concludes IPO market for E&P companies is weak because:

- Market value of public E&Ps is below replacement costs of assets
- Investors “underweight” the energy – undervalues sector
<table>
<thead>
<tr>
<th>($MM)</th>
<th>Heading</th>
<th>US Play</th>
<th>Period</th>
<th>Transaction Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 6,000</td>
<td>Whiting Petroleum acquires Kodiak Oil &amp; Gas</td>
<td>Bakken</td>
<td>3Q '14</td>
<td>Stock</td>
</tr>
<tr>
<td>$ 6,000</td>
<td>Devon acquires Eagle Ford assets from GeoSouthern</td>
<td>Eagle Ford</td>
<td>4Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 3,100</td>
<td>Encana acquires Eagle Ford assets from Freeport</td>
<td>Eagle Ford</td>
<td>2Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 3,000</td>
<td>Breitburn acquires QR Energy</td>
<td>Multi</td>
<td>3Q '14</td>
<td>Stock &amp; Cash</td>
</tr>
<tr>
<td>$ 2,588</td>
<td>Baytex Energy acquires Aurora</td>
<td>Eagle Ford</td>
<td>1Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 2,500</td>
<td>AEP acquires Permian assets from Enduring Resources</td>
<td>Permian</td>
<td>2Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 2,300</td>
<td>Devon Energy divests non-core US assets to Linn Energy</td>
<td>Multi</td>
<td>2Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 2,288</td>
<td>Energy XXI acquires EPL Oil &amp; Gas</td>
<td>GoM Shelf</td>
<td>1Q '14</td>
<td>Cash or Stock</td>
</tr>
<tr>
<td>$ 1,800</td>
<td>Encana sells Wyoming gas assets to Jonah Energy</td>
<td>Rockies-GGR</td>
<td>1Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 1,500</td>
<td>Hilcorp acquires Alaska assets from BP</td>
<td>Alaska</td>
<td>2Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 1,450</td>
<td>Oasis Petroleum acquires Bakken Shale assets</td>
<td>Bakken</td>
<td>3Q '13</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 1,400</td>
<td>Freeport acquires interests in deepwater GoM assets from Apache</td>
<td>GoM DW</td>
<td>2Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 1,400</td>
<td>Oxy sells assets in Hugoton gas field, Kansas</td>
<td>Midcon</td>
<td>1Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 1,275</td>
<td>AEP acquires Marcellus assets in West Virginia</td>
<td>Marcellus</td>
<td>2Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 1,175</td>
<td>Chesapeake divests interest in CHKCT</td>
<td>Other</td>
<td>2Q '14</td>
<td>Cancel Obligations</td>
</tr>
<tr>
<td>$ 1,131</td>
<td>Sabine Oil &amp; Gas acquires Forest Oil</td>
<td>Ark-La-Tex</td>
<td>2Q '14</td>
<td>Stock</td>
</tr>
<tr>
<td>$ 1,075</td>
<td>Hess sells Utica dry gas acreage to American Energy Partners</td>
<td>Utica</td>
<td>1Q '14</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 1,000</td>
<td>Templar Energy acquires Texas Panhandle assets from Forest Oil</td>
<td>Other</td>
<td>4Q '13</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 950</td>
<td>QEP acquires Permian assets from EnerVest</td>
<td>Permian</td>
<td>4Q '13</td>
<td>Cash</td>
</tr>
<tr>
<td>$ 935</td>
<td>Memorial Production acquires oil assets in Wyoming</td>
<td>Rockies-GGR</td>
<td>2Q '14</td>
<td>Cash</td>
</tr>
</tbody>
</table>

FOR ALL TOP DEALS: ASSET DEALS = CASH CORPORATE DEALS CASH AND/OR STOCK
# Top U.S. Deals by Size in last 12 months – Creativity Reigns!

<table>
<thead>
<tr>
<th>($)MM</th>
<th>Deal Heading</th>
<th>US Play</th>
<th>Period</th>
<th>Transaction Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,500</td>
<td>BP acquires Permian, Eagle Ford and Haynesville assets from BHP</td>
<td>Multiple</td>
<td>3Q’18</td>
<td>Cash &amp; Deferred Cash</td>
</tr>
<tr>
<td>$9,500</td>
<td>Concho acquires RSP Permian</td>
<td>Permian</td>
<td>1Q’18</td>
<td>Stock Merger</td>
</tr>
<tr>
<td>$9,200</td>
<td>Diamondback acquires Energen</td>
<td>Permian</td>
<td>3Q’18</td>
<td>Stock merger</td>
</tr>
<tr>
<td>$2,662</td>
<td>TPG Pace Energy acquires Eagle Ford assets from EnerVest</td>
<td>Eagle Ford</td>
<td>1Q’18</td>
<td>Stock-SPAC-CPay</td>
</tr>
<tr>
<td>$1,900</td>
<td>Chesapeake divests Utica assets to Encino</td>
<td>Utica</td>
<td>3Q’18</td>
<td>Cash &amp; Cpay</td>
</tr>
<tr>
<td>$1,597</td>
<td>Reverse merger of Stone Energy and Talos</td>
<td>Offshore GoM</td>
<td>4Q’17</td>
<td>Stock Reverse Merger</td>
</tr>
<tr>
<td>$1,500</td>
<td>Ascent Resources acquires Utica assets</td>
<td>Utica</td>
<td>2Q’18</td>
<td>Cash</td>
</tr>
<tr>
<td>$1,419</td>
<td>Silver Run II acquires Alta Mesa Holdings</td>
<td>SCOOP/STACK</td>
<td>3Q’17</td>
<td>Cash &amp; Stock - SPAC</td>
</tr>
<tr>
<td>$1,245</td>
<td>Diamondback acquires Midland basin assets from Ajax Resources</td>
<td>Permian</td>
<td>3Q’18</td>
<td>Cash &amp; Stock</td>
</tr>
<tr>
<td>$1,225</td>
<td>Kosmos Energy acquires Deep Gulf Energy</td>
<td>GoM</td>
<td>3Q’18</td>
<td>Cash &amp; Stock</td>
</tr>
<tr>
<td>$1,013</td>
<td>Oasis acquires Delaware basin acreage from Forge Energy</td>
<td>Permian</td>
<td>4Q’17</td>
<td>Cash &amp; Stock</td>
</tr>
<tr>
<td>$800</td>
<td>Osprey Energy and Royal Resources combine to form Falcon Minerals</td>
<td>Eagle Ford</td>
<td>2Q’18</td>
<td>Cash &amp; Stock-SPAC-CPay</td>
</tr>
<tr>
<td>$775</td>
<td>Birch Permian acquires Midland acreage and 7.5% of Maverick from Breitburn</td>
<td>Permian</td>
<td>1Q’18</td>
<td>Stock</td>
</tr>
<tr>
<td>$765</td>
<td>Cabot divests Eagle Ford assets to Venado</td>
<td>Eagle Ford</td>
<td>4Q’17</td>
<td>Cash</td>
</tr>
<tr>
<td>$700</td>
<td>WPX divests San Juan Gallup assets to Enduring Resources IV</td>
<td>San Juan</td>
<td>1Q’18</td>
<td>Cash</td>
</tr>
<tr>
<td>$649</td>
<td>Bill Barrett acquires Fifth Creek</td>
<td>Niobrara</td>
<td>4Q’17</td>
<td>Stock Merger</td>
</tr>
<tr>
<td>$620</td>
<td>Reverse merger of Comstock with Arkoma Drilling and Williston Drilling</td>
<td>Bakken</td>
<td>2Q’18</td>
<td>Stock Reverse Merger</td>
</tr>
<tr>
<td>$608</td>
<td>SRC Energy acquires DJ basin acreage from Noble Energy</td>
<td>Niobrara</td>
<td>4Q’17</td>
<td>Cash</td>
</tr>
<tr>
<td>$575</td>
<td>Diversified Gas acquires certain Appalachian basin assets from EQT</td>
<td>Appalachian</td>
<td>2Q’18</td>
<td>Cash-Reverse Takeover</td>
</tr>
<tr>
<td>$570</td>
<td>Callon acquires Delaware basin assets from Cimarex</td>
<td>Permian</td>
<td>2Q’18</td>
<td>Cash</td>
</tr>
</tbody>
</table>
Summarizing Top U.S. Deals in last 12 months

• Four years ago, 3 types of deals, cash, stock or stock and/or cash
• Now twelve varieties of deals including stock mergers, stock reverse mergers, deferred payments, cash and stock by a SPAC, stock and contingent payments by a SPAC, cash, stock and contingent payments by a SPAC.
  • What is a deferred payment?
  • What is a stock deal?
  • What is a contingency payment?
  • What is a SPAC?
  • What is a reverse merger?

Why all the Creativity? → Product of the Current Challenges to M&A&D

• Significant Bid-Ask Spread due to Futures Curve
• Weak Energy Asset/IPO Market
• Equity Investor Demands for Returns over Growth
Examples of Recent Creative Transactions
Notable Cash and Deferred Payment Deal
BP to Acquire Permian, Eagle Ford, and Haynesville from BHP/Merit to Acquire BHP’s Fayetteville

On July 26, ’18, BHP agreed to sell all U.S. onshore assets for a combined $10.5B

BP will pay:
-- $5.25 billion in cash upon closing;
-- The remaining $5.25 billion as deferred payments, payable in cash in six equal installments over six months.

Reserve Evaluators – spotlight on post deal operating and development cost forecasts

Asset Summary
Permian
• 83,000 acres in Delaware Basin
Eagle Ford
• 194,000 ac. in the EGFD and 1,400 gross drilling locations
• 90 mboe/d
Haynesville
• 194,000 ac., 720 gross drilling locations, 360 mmcf/d (100% gas)
Noteable Stock Deal
Concho/RSP Permian Acquisition

- Concho Resources 100% acquisition of RSP Permian in an all-stock transaction (29% premium).
- $9.5B total cost
- Land position of 91,887 net acres, with significant stacked potential
- Production of 55,500 boe/d
- Resource of 2,200 Mmboe
- 5,000 gross locations

- Production of 55,500 boe/d
- Resource of 2,200 Mmboe

- Deal Rationalization
  - Concho funding transaction with highly valued equity
  - Deal will result in synergies with $2B NPV.
  - Transaction provides deeper opportunities to trade and block up core acreage in Midland and northern Delaware

- Reserves Evaluators – Important to reflect full value allowed under regulations, report 2P and beyond?
Contingency Payments and Why the Increase in Use?

**Oilpatch Drillers Are Betting Billions on Later Payouts to Make Deals Today**  
*Source: Bloomberg*

- Contingency Payments—Sellers get more if deal goes well for Buyer
  - Various Dependencies
    - Future Prices
    - Future Profits
    - Production Volumes

- Used to bridge the bid-ask
- Address Price Volatility
- Reduce exposure to price swings
- Help sellers get “fair value”
- Buyers feel they didn’t overpay, win-win
On July 26, ’18, Chesapeake agreed to sell its Utica assets to Encino Acquisition Partners (EAP) for $1.9B and also receive an additional payment of $100MM contingent on future gas prices

- EAP was formed in 2017 with a commitment from Canada Pension Plan Investment Board (CPPIB) and Encino Energy
  - CPPIB will invest another $1 billion to finance the acquisition

Asset Summary
- 938,000 acres in condensate, liquids-rich, and dry gas window of Delaware Basin 320,000 net core Utica ac.
- 3,400 gross drilling locations
- 107 mboe/d net production, 67% gas, 24% NGL, 9% oil
What is a SPAC?

• Special Purpose Acquisition Company – SPAC
  • Publicly-traded buyout company that raises funds through an IPO to acquire an existing private company.
  • Can be looked at as an IPO of a “company to be named later.”

• How a SPAC Works
  • Individuals who form SPAC are typically upstream rockstars
  • Money invested in a SPAC is deposited in a trust account
  • SPAC management team has usually 24 months in which to complete the acquisition.
  • If acquisition not completed within specified time, SPAC is automatically dissolved and the money is returned.

Example SPACS:
  • Silver Run Acquisition Corp $500MM – Riverstone Centennial (CDEV)
  • Silver Run Acquisition Corp II $900MM - Riverstone
  • Kayne Anderson Acq. Corp $350MM – Kayne Anderson
  • Vantage Energy Acq. Corp. $480MM – NGP
  • Osprey Energy Acq. Corp buying Royal Resources renaming as Falcon Minerals $800MM - Blackstone
  • TPG Pace Energy Holdings now renamed Magnolia O&G
Notable SPAC-Stock-Contingent Payment Deal
TPG Pace Energy Acquires EnerVest’s South Texas Assets to Form Magnolia O&G

- SPAC TPG Pace Energy Holdings acquires 360k net acres in EGFD and Austin Chk.
- Combined entity renamed Magnolia Oil & Gas Corp. headed by Steve Chazen
- EnerVest 51% of shares, TPGE public investors 42%, and TPG Pace Energy 7%.
- EnerVest will continue to operate under a long-term services agreement and may earn up to an additional 17MM shares if certain operating and/or stock price targets achieved.

Map: Transactions in the vicinity of TPG Pace – EnerVest Eagle Ford transaction

Reserves Evaluators – Become Experts on assets most valuable to your company
Notable Reverse Merger Deal  
Stone/Talos Merger

What is a Reverse Merger? The acquisition of a public firm by a larger private firm and handing control to the private firm

On May 10, 2018 Stone Energy and Talos Energy agreed to merge, Talos (63%) and Stone (37%) in Talos Energy - a reverse merger transaction.

Deal value –$1.6B, $1.21B in shares and $385MM net debt

Rationale: Talos set aside plans to go public in October 2014 as prices plunged. The reverse takeover of Stone takes Talos public without going through the IPO process and provides liquidity for its investors.

Reserves Evaluators – Ensure evenhanded evaluation of both portfolios
Market Challenges Driving Energy Finance Creativity
Historical Backdrop of E&P Financing

- Traditional Model – Friends and Family
  - Drilled a few wells
  - Built things up slowly

- Since Financial Crisis of Last Decade the model has been different
  - Private Equity has been dominant
  - Back strong E&P management teams
  - Prevalence of PE backed teams - Haynes and Boone Survey – 70%

- PE will remain a principal energy capital provider unless they find better...
- However, a host of market challenges and disruptive forces is driving change in energy finance...PE firms pivoting from Lease, Drill and Flip model
Market Challenges Driving Creativity

• What are some of the current market challenges?

  • Challenges Previously Discussed
    • Significant Bid-Ask spread due to backwardated futures curve
    • Weak Energy Asset and Equity/IPO market
    • Equity Investor demands for returns over growth

  • Other Challenges
    • Increasing maturity of major unconventional plays
    • Downturn providing traditional finance role for Private Equity

Reserves Evaluators – Your work is increasingly relied upon by non-energy professionals – don’t assume background knowledge – trusted independent evaluators are more important than ever!
Private Equity’s Creative Response to Market Challenges
Pursuing Alternatives to E&P Team Backing to Deploy Capital

- Investing in non-operated positions and acquiring mineral interests
- Partner with majors and large independents to bid on large asset packages
- PE making direct investments in O&G and manage with an in-house team (avoids double promote)
- Shifting funds to non-control mezzanine finance (high yield debt, Ex. Carlyle Mezz.)
- Co-investing or sponsoring SPACs
- Forming DrillCos (large scale drilling ventures) with Operators
Private Equity’s Creative Response to Market Challenges
Capital providers Directly Investing through DrillCo Deals

Typical Industry JV (DrillCo) Structure

- Based on recent industry JV deals, a typical deal structure is:
  - Partner pays 80-100% Capital
  - Receives 80-100% Working Interest
  - Typical hurdle rate:
    - 10% - 20% IRR
  - Partner’s working interest once hurdle rate is achieved:
    - 5% - 25%

<table>
<thead>
<tr>
<th>Operator</th>
<th>Investor</th>
<th>Date</th>
<th>Play</th>
<th>Investor WI</th>
<th>Trigger</th>
<th>Post-reversionary WI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linn Energy</td>
<td>GSO</td>
<td>Jan ’15</td>
<td>NA</td>
<td>85%</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>Rex Energy</td>
<td>ArcLight</td>
<td>Mar. ’15</td>
<td>Marcellus</td>
<td>35%</td>
<td>NA</td>
<td>17.50%</td>
</tr>
<tr>
<td>LoneStar Resources</td>
<td>IOG</td>
<td>July ’15</td>
<td>Eagle Ford</td>
<td>90%</td>
<td>NA</td>
<td>10%</td>
</tr>
<tr>
<td>Seneca Resources</td>
<td>IOG</td>
<td>Dec. ’15</td>
<td>Marcellus</td>
<td>80%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Alta Mesa Holdings</td>
<td>Bayou City</td>
<td>Jan ’16</td>
<td>Stack</td>
<td>80%</td>
<td>15%/25%</td>
<td>20%/7.5%</td>
</tr>
<tr>
<td>California Resources</td>
<td>BSP</td>
<td>May. ’18</td>
<td>Joaquin/LA</td>
<td>90%</td>
<td>NA</td>
<td>25%</td>
</tr>
</tbody>
</table>

Source: California Resource Corp.
Energy Finance Emerging Disruptors
What are some emerging disruptive forces to Energy Finance?

• Increased Direct Investment by large Pension Funds and SWFs bypassing PE
  • Factors driving trend:
    • Concerns over Private Equity Costs
    • PE’s limited partners seeking diversification, transparency and yield
    • Limited partners to PE may have differing views on investment control

• The democratization of energy finance driven by digital technologies
  • Online A&D marketing/transaction and crowdfunding marketplaces
  • Blockchain technology
Emerging Disruptors to PE’s Role in E&P Finance
Emerging Threats to PE’s Preeminence in Energy Funding-Direct Investment by Pension Funds

• Various means by which institutions directly invest:
  • Direct sponsorship of an experienced E&P management team
  • Purchase direct ownership in E&P assets
  • Investing directly with deal maker who acquires operated assets and hires contract op.
  • Investing directly with a group that focuses on forming structured drilling deals or Drillcos
Emerging Disruptors in E&P Finance
Democratization of energy finance driven by digital technologies

• Online Marketplaces and Capital Sourcing
  • Online Marketing/Transaction Marketplace Examples:
    • Entoro OfferBoard
    • EnergyNet
    • Oil & Gas Asset Clearinghouse

• Online Energy Crowd Funding/Capital Raising Market Examples
  • Entoro Offerboard
  • Energy Funders
Emerging Disruptors in E&P Finance
Democratization of energy finance driven by digital technologies

• Technology that could significantly alter capital sourcing
  • Blockchain Technology
    • What is it?
    • Blockchain’s Disruptive Power?
  • One of Example Blockchain Enabled Securities
    • Security Token
Emerging Disruptors in E&P Finance
Blockchain Technology Defined

- What is blockchain
  - Allows parties to connect directly removing the need third party.
  - Using cryptography to keep exchanges secure, blockchain provides decentralized database (digital ledger) of transactions that everyone on the network can see.
  - The network is essentially a chain of computers that must all approve an exchange before it can be recorded.

Source: Financial Times
Emerging Disruptors in E&P Finance
Blockchain Technology’s Disruptive Power

- Blockchain’s Technology’s Disruptive Power
  - What makes blockchain so disruptive - shared ledger eliminates the need for intermediaries to establish trust and authenticate identity, i.e. it cuts out middleman
  - Gaining traction as a form of payment for e-commerce transactions
  - May circumvent financial establishment, lower transaction costs and increase liquidity
The Security Token

- Finance world has discovered digital securities
- Companies using the Securitized Token Offering (STO)
- STOs are SEC compliant
- Tokens are digital units representing value
- Lock investment attributes into blockchain code
- Attributes can include: a) rights to a ownership percentage b) rights to cash flows c) voting rights d) rights to use products or services
- Tokens may lower overall transaction costs, be more secure and immutable than traditional agreements and more liquid because they can be listed on exchanges after 12 months
Closing Thoughts for Reserves Evaluators
What Does All This Mean for the Reserves Evaluator...

...and why you should care

Preparation

• Reserve professionals should recognize that current market conditions are driving short-turnaround valuation decisions

• As valuation professionals, you play an important role in quantifying the buyer/seller gap currently challenging the M&A&D market. Be prepared to report values under various price outlooks.

• Preparing non-core gas properties for a sales process may be prudent (inventories and outlooks suggest a market window may soon open for those seeking to opportunistic divest gas)
What Does All This Mean for the Reserves Evaluator...
...and why you should care

Precaution – Help Grandma Keep Her Pension

• Increased asset-concentration risks (single-play focus) places increasing pressure on evaluators to get key technical assumptions right

• Increased deal contingencies place various post-transaction cost assumptions in the spotlight – upon which deal success may hinge

• Increased use of stock for both mergers and acquisitions suggests:
  • Shareholders served by portraying full value
  • Deal fairness depends on consistent evaluation of both portfolios

• Increased non-energy specialists’ use of professional evaluators’ work demands appropriate qualification and control
Questions?

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