Abstract

As falling commodity prices have left North American unconventional gas plays increasingly unprofitable, operators and investors have been forced to look at alternative unconventional opportunities - North American tight oil and international shale gas.

In this presentation, we will outline the most important pros and cons for each investment theme from a commercial vantage point. For many operators and investors, the portfolio benefits and price risks in tight oil plays compete head-to-head with the low entry costs and unproven geology of international gas.

In Wood Mackenzie's view, large portfolio players (majors and large independents) will continue to increase their investments in both North America tight oil and international gas plays. Niche investors (exposed to one or two plays) will be forced into US liquids plays. Supply players (NOCs and utilities seeking access to volumes) will invite experienced unconventional operators to participate in their domestic gas opportunities and NOCs will partner with experienced operators to access North American liquids plays.

We expect competition to further intensify in the North American tight oil market with more cash-rich companies seeking to acquire acreage in producing plays. While in international gas plays, larger companies will seek sizeable positions in the most promising shale gas assets, with supply players controlling access where they can.
Wood Mackenzie: Unconventional Play Service

Unconventional Resources Around the World: Company Strategies for Dynamic Global Markets

22 May 2013
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The US “shale gale” overcame its own set of headwinds

Total US shale supply forecast

Play detail

Source: Wood Mackenzie
This type of growth will be replicated with oil production

Total US liquids supply forecast

Play detail

Source: Wood Mackenzie
There are many elements to the globalisation of unconventional plays, one being their impact on worldwide M&A.
The majority of total resource* from producing plays sits in North America, and despite operators’ shift to tight oil, volumes are mainly gas.

Resource (bnboe) in plays producing >20k boe/d

Gas/Liquid Commercial Volume Split

Source: Wood Mackenzie Unconventional Play Service

“Total Resource” includes resource potential and commercial resource volumes
† Rounding means sub-pie total does not equal 291 bnboe
North American tight oil plays offer the highest value volumes

Source: Wood Mackenzie Unconventional Play Service

* Total Resource* includes resource potential and commercial resource volumes.
Not all resource themes, and certainly not all plays, are created equal.

Post-tax NPV/well ranges in North America

- **Shale Gas**: Negative NPV range
- **Tight Gas**: Positive NPV range
- **Tight Oil**: Positive NPV range

Source: Wood Mackenzie's Unconventional Play Service, *Excludes numerous wet gas plays*
Expect wide differentiation within each and every play
Numerous areas are global unconventional exploration “hot spots”

**Latin America:**
Liquids and gas prices are improving and shale formations are being evaluated by experienced unconventional gas operators.

**Russia:**
A mix of majors and Russian companies have committed capital to assess the enormous Bazhenov play.

**China:**
Production targets are being raised, subsidies are being established, and a more diverse group of companies is being allowed to bid on shale acreage.

**Resource (bnboe) in plays producing >20k boe/d**

- **North America**: (291)
- **Latin America**: (7)
- **Asia Pacific**: (17)

*Source: Wood Mackenzie Unconventional Play Service*
Internationally, the countries with most activity combine low relative costs and high volumes.

Source: Wood Mackenzie Unconventional Play Service

‘Active’ country refers to a country with a relatively high level of drilling and corporate activity (e.g. farm ins/outs, M&A)
The best strategy for participating in the unconventional sector, whether it be via North America oil or international gas, varies by company.

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<thead>
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<th>Categories and Corporate Examples</th>
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<td><strong>Portfolio</strong></td>
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<td><strong>Niche</strong></td>
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International gas is, in our view, more of a supply story

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Primary Appeal</th>
<th>Primary drawbacks</th>
<th>Entry Approach</th>
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<tbody>
<tr>
<td></td>
<td>Large accessible resource volume.</td>
<td>Long lead times between licensing and production means concepts might not survive successive portfolio reviews.</td>
<td>Licensing large blocks with lengthy initial 'exploration' phases in a range of countries.</td>
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<tr>
<td>Niche</td>
<td>Low entry costs and 'company making' resource potential.</td>
<td>Potential for markets to turn on limited data points.</td>
<td>Accessing blocks in countries where the company has connections or legacy conventional positions. North American independents will be conservative with international positions.</td>
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<tr>
<td>Supply</td>
<td>Opening up a resource that improves domestic supply.</td>
<td>Lack of technical expertise</td>
<td>Partnerships with more technically proficient partners in domestic plays.</td>
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Contacts

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› For more information, please contact the Unconventional Play Service team of analysts at unconventionalplay.service@woodmac.com
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