The Future of the Oil and Gas Industry: Peak Oil or Peak Demand – What’s on the Horizon?

Thriving in the New Commodity Price Dynamic

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Topics

❖ Today’s Realities

❖ American Petroleum Positioning

❖ Global Perspective on New Production Sources

❖ Implications for American Energy Strategy

❖ U.S. LNG Exports

❖ Concluding Observations
Today’s Realities

World Events and Oil Volatility – Nominal per Barrel Pricing (1972 – 2017)

Major oil price inflection points typically coincide with Middle East geopolitical events

Source: EIA.
Today’s Realities

The 2011 “Arab Spring” Skipped “Summer” and Morphed Into “Winter”

- Algeria
- Libya
- Egypt
- Sudan
- Chad
- Tunisia
- Morocco
- Western Sahara
- Mauritania
- Mali
- Niger
- Sudan
- Chad
- Somalia
- Yemen
- Kuwait
- Qatar
- UAE
- Oman
- Saudi Arabia
- Iraq
- Iran

Three failed states:
- Iran-Iraq virtual merger possible post Sistani?
- Saudi-Iran still in a Cold War state

An especially flawed misread by Western press and policymakers
Elimination of the ban on U.S. oil exports remains potentially a price-capping development
## Global Perspective on New Production Sources

<table>
<thead>
<tr>
<th>Country</th>
<th>Potential for Production Increases</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>Possibly Significant</td>
<td>Will involve lead times and sound Trump policy decisions</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Quite Possibly Limited</td>
<td>Growing domestic demand challenges export capability (i.e. oil consumption to generate electricity)</td>
</tr>
<tr>
<td>Iraq</td>
<td>Very Significant</td>
<td>Very subject to improved domestic security of reduced ethnic tensions</td>
</tr>
<tr>
<td>Iran</td>
<td>Potentially Meaningful</td>
<td>However, very dependent on ability to attract foreign investment and subject to development lead times</td>
</tr>
<tr>
<td>Russia</td>
<td>Potentially Significant</td>
<td>Rosneft has identified projects with potential to add 600 MBblpd of new production in 2 – 3 years</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Likely Very Limited</td>
<td>Issues involve domestic social instability, resource maturity</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Notionally Significant But Challenged</td>
<td>Subject to domestic instability, corruption and lead time challenges for new investment</td>
</tr>
<tr>
<td>Argentina</td>
<td>Meaningful to Domestic Supply Needs</td>
<td>Unlikely to be a global game changer</td>
</tr>
<tr>
<td>Colombia</td>
<td>Meaningful to Domestic Supply Needs</td>
<td>Upside is with the margin of error in global supply</td>
</tr>
</tbody>
</table>
Implications for American Energy Strategy

U.S. Oil Production by Type in New Policies Scenario

Note: The World Energy Model supply model starts producing yet-to-find oil after it has put all yet-to-develop fields into production. In reality, some yet-to-find fields would start production earlier than shown in the figure.

U.S. LNG Exports

U.S. A Possible Top 3 LNG Supplier

- LNG demand expected to grow significantly from 2015 to 2030
- Supply-demand gap projected to open shortly after 2020 as trade grows and existing production declines in certain regions
- ~42 new LNG trains needed to take FID by 2025 to meet forecasted demand through 2030

Source: Cheniere Energy investor presentations and Wood Mackenzie estimates.
Concluding Observations

“Following Oil” – Lessons That are Time and Cycle Tested

- There remains an ongoing motivation for OPEC (Saudi Arabia in particular) to periodically remind us of oil price downside risks, but now actions are speaking louder than words.

- Only a decade ago it appeared that the U.S. was on a path to be the largest LNG import market; barring flawed policy direction post the 2016 election it is now poised to become a top three LNG exporter.

- Growing LNG volumes represent many opportunities to reduce carbon emissions and improve energy security in the U.S., Asia, and Europe.

- Markets continuously endeavor to work, but do so in their own time and at their own pace.
## Appendix A

### Opportunities vs Challenges

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>❖ Sustainable Saudi/Iranian cooperation on oil pricing</td>
<td>❖ Global oil demand could drop (possibly below 1.0 million b/d).</td>
</tr>
<tr>
<td>❖ Ongoing Russian Support of OPEC cuts</td>
<td>❖ A looming peak in China’s and India’s inventory build?</td>
</tr>
<tr>
<td>❖ Determined Saudi Aramco IPO progress</td>
<td>❖ Will a stronger dollar derail oil supply/demand rebalancing?</td>
</tr>
</tbody>
</table>
Saudi Aramco IPO

The Basis for a Tailwind

- “Aramco IPO is on Track as Saudi Arabia Weighs Best Road Ahead Minister Says”

- “Saudi Aramco IPO to Offer Shares in Whole Company”

- “Saudi Sovereign Bond Success Seen Strengthening Banks Seeking IPO Role”

- “Nabors Signs Joint-Venture Pact with Saudi Aramco”

IPO goal to raise $100 billion by selling 5% – Implied Total Valuation: $2 Trillion