LNG as a Key Market Option

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REPSOL S.A. 2016
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Agenda

- LNG – Structural Shift
- Historical Supply View of LNG
  - 2015/2016 Liquefaction Year in Review
- 2017/18 Outlook – Long Supply
- New Players – New Day
- Repsol’s Role
## Structural Shift

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<tr>
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<th>Until 2000’s</th>
<th>From the latter half of the 2010’s</th>
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<tbody>
<tr>
<td><strong>LNG Supply Sources</strong></td>
<td>Developed mainly in Southeast Asia, Oceania, Middle East and Africa</td>
<td>Major expansion in Australia and the US.</td>
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<td><strong>Status of LNG</strong></td>
<td>Premium energy and natural gas supply source</td>
<td>A major driving force to expand new natural gas demand</td>
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<td><strong>Value-chain Structure</strong></td>
<td>Vertically-integrated simple line value chain to promote projects.</td>
<td>Diversified and more complicated value-changes through portfolio supply, tenders and commodity traders</td>
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<tr>
<td><strong>Project Development</strong></td>
<td>Vertically-integrated from gas field to liquefaction facilities, support capital intensive project development</td>
<td>Diversified to include brownfield, backfill and medium scale development</td>
</tr>
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<td><strong>Sale Practice</strong></td>
<td>Relatively rigid and inflexible</td>
<td>More flexible, including relaxation of destination restrictions</td>
</tr>
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<td><strong>Pricing</strong></td>
<td>Mostly linked to crude oil prices</td>
<td>More diversified ways to determine prices</td>
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The Great Reconfiguration

Global LNG Market in 1990

- Exporters
- Importers
- Import and Export

LNG Production – approx 50m tonnes
Exporting countries – 8
Importing countries – 8
LNG Fleet – 60+ vessels

Figure 4.2: Global Liqufaction Capacity Build-Out, 1990-2022

- Exporters
- Importers
- Import and Export

LNG Production – 250m tonnes
Exporting countries – 17 (plus 10 countries re-exported LNG)
Importing countries – 33
LNG Fleet – 410

Sources: IHS, Company Announcements
### 2015 – 2016 Liquefaction in Review

<table>
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<tr>
<th>Capacity Additions</th>
<th>US Build-out Begins</th>
<th>Floating Liquefaction</th>
</tr>
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<tbody>
<tr>
<td>+ 31.7 MTPA</td>
<td>9 MTPA</td>
<td>8.7 MTPA</td>
</tr>
<tr>
<td>Y/O/Y Growth in 2016</td>
<td>US capacity online</td>
<td>FLNG capacity under construction</td>
</tr>
</tbody>
</table>

- Global liquefaction increased from 304.3 MTPA in 2015 to 336.1 MTPA in 2016
- 114.6 MTPA was under construction as of January 2017
- 879 MTPA of new liquefaction projects have been proposed as of January 2017, primarily in North America
- Previously expected to be one of the largest LNG importers, 57.6 MTPA of export capacity was under construction in the US as of January 2017
- 156.9 MTPA of floating liquefaction capacity has been proposed. Four projects have been sanctioned, totaling 8.7 MTPA
- Many proposals announced in the past few years aim to commercialize gas from smaller, stranded offshore fields relatively quickly

Source: ICIS Heren
A scheduled ramp-up of Australia’s LNG export capacity combined with the six US export projects under construction in the US Gulf and East Coast supports a bearish supply and demand outlook.

2017

- 22.15 MTPA is scheduled to come online in Australia
- Two additional trains at Sabine Pass, another under construction
- Dominion constructing the one-train, 5.6 MTPA plant at its Cove Point import terminal in Maryland

2018

- Corpus Christi 13.5 MTPA
- Elba Plant 2.5 MTPA
- Cameron 14.95 MTPA
- Freeport LNG 13.2 MTPA
New Players – New Day
Characteristics of New Supply

Growth, change, challenge, opportunity

New projects in the US and Australia will contribute to supply source and pricing diversifications
• Source country stability
• More flexibility in the LNG market.

Portfolio players who have multiple options in both upstream and downstream segments are increasing their roles.

Increase in shorter-term LNG trade

ICE soon to begin trading a first-ever U.S. LNG futures contract
• Price transparency and the means to hedge
LNG - Market Solution for New England
Repsol’s Role

- Continue to optimally procure LNG in changing market. Match to market needs.
- Educate
- Proactively use its asset base of 10 BCF of storage (50 BCF of working storage) and 733,000 MMBtu of transport assets to serve the NE LDC’s, Industrials and Power Markets

- Promote deeper penetration of LNG for peaking markets
- Adjust – PI program starting Jan 2018
THANK YOU