US LNG: A GAME CHANGER

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OVERVIEW OF GAS MARKETS

Gas-to-gas competition
Gas-to-coal competition
Oil-linked LT contracts

Gazprom & Qatar insist on oil-linked LT contracts

Source: SG Cross Asset Research
TEPID EUROPEAN GAS DEMAND

Demand set to reach 2008 level only in 2018e

11 bcm of pre-paid gas to be taken back by European companies before market can tighten

Source: IEA for historical data, SG Cross Asset Research estimates
US LNG IN 2016E, THANKS TO SHALE GAS

20-year contracts to buy LNG:

- Oct. 2011: BG – 3.5 mtpa from train 1 – from 2016e
- Nov. 2011: Gas Natural Fenosa – 3.5 mtpa from train 2 – from 2016e
- Dec. 2011: GAIL – 3.5 mtpa from train 4 – from 2018e
- Jan. 2012: BG – 2 mtpa from trains 2, 3 & 4 – from 2017e

Cheniere to take FID on phase 1 (trains 1 & 2 - 9mtpa)

- Total cost before financing costs: $5bn
- Secured ToP revenues: $975m/y (7.7 mtpa contracted - 86%)

US LNG from 2016e… competing with Australian LNG
WHERE WILL THIS LNG BE SOLD?

- **FOB: 115% HH + fixed fee**
  - BG: $2.25/Mbtu (3.5 mtpa) and $3/Mbtu (for additional 2mtpa)
  - Gas Natural Fenosa: $2.49/Mbtu
  - GAIL & KOGAS: $3/Mbtu

- **Likely to target Asia**
  - China for BG and Gas Natural Fenosa
  - India for GAIL
  - South Korea for KOGAS

- **This ‘new’ US LNG is likely to be in China, competing with:**
  - Not-yet-contracted LNG, particularly from Australia
  - Not-yet-contracted pipe gas, particularly from Russia
  - Unconventional Chinese gas
GAS PRICES IN CHINA IN 2016E - SG FORECASTS

Source: SG Cross Asset Research

Negotiating room: $13.5-22/Mbtu

US LNG could delay Gazprom’s China pipe gas deal

Source: SG Cross Asset Research
### US LNG exports projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Capacity mtpa</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheniere Sabine Pass</td>
<td>16</td>
<td>(FTA &amp; non-FTA approved)</td>
</tr>
<tr>
<td>Freeport</td>
<td>18</td>
<td>(FTA approved &amp; under review for non-FTA)</td>
</tr>
<tr>
<td>Lake Charles (BG)</td>
<td>15</td>
<td>(FTA approved &amp; under review for non-FTA)</td>
</tr>
<tr>
<td>Dominion Cove Point</td>
<td>8</td>
<td>(FTA approved &amp; under review for non-FTA)</td>
</tr>
<tr>
<td>Jordan Cove</td>
<td>9</td>
<td>(FTA approved)</td>
</tr>
<tr>
<td>Sempra LNG Cameron</td>
<td>12</td>
<td>(under review for FTA)</td>
</tr>
<tr>
<td>Gulf Coast LNG</td>
<td>24</td>
<td>(under review for FTA and non-FTA)</td>
</tr>
<tr>
<td><strong>Total US</strong></td>
<td><strong>102</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Canada</strong></td>
<td><strong>12</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: SG Cross Asset Research, US DoE
US TO REMAIN NO.1 GAS PRODUCER...

... to supply growing markets

US: THE 2020E LNG HUB?

2010 Demand
- Canada: 94 bcm
- US: 683 bcm
- 25% of world

Storage capacity:
- Canada: 14 bcm
- US: 122 bcm

LNG exports/imports

How much US LNG exports are needed to break oil-indexation in Asia?
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