Key Challenges for the Development of LNG in Emerging Markets: Medium and Long Term Outlook

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Longer-Term Oil Market: A Range to Consider

Brent in US$/bbl

Ceiling
US$150/bbl

Floor
US$80/bbl

2010-2012 are actuals. Forecasts in 2013.
Global LNG Trade: Asia is Still King

Global LNG Trade: 2000-2012

Note: 2000-2012 data are actual.
Asia Overview: Imports and Uncontracted Demand

LNG Uncontracted Demand

- New Markets Uncontracted Demand
- India Uncontracted Demand
- China Uncontracted Demand
- Taiwan Uncontracted Demand
- Korea Uncontracted Demand
- Japan Uncontracted Demand

Likely uncontracted demand including contract renewals.

Besides Japan and Korea, who will be under pressure to secure additional supplies, new demand is emerging from Southeast Asian importers.
New Markets Add Substantially to the Demand Pie

- New Southeast Asian markets of Thailand, Malaysia, Indonesia, and Singapore coupled with potential other new markets could add around 32 mmtpa by the end of this decade.

- Add Middle East to the picture and there could be a further 15 mmtpa of demand by 2020.

*Vietnam, Pakistan, Bangladesh, and Philippines.*
Despite the region’s massive petroleum reserves, gas production in almost all Middle East countries is struggling to keep abreast with demand, especially in the industrial and power sectors.

Middle Eastern energy market dynamics shifted seismically in 2009 with the commencement of Kuwaiti LNG imports. Kuwait and subsequently Dubai’s status as LNG importers illustrates the Middle East’s growing dependence on natural gas and the rapidly increasing gap between supply and demand.

Other countries like the UAE and possibly Bahrain will also use LNG to augment domestic gas supply in the coming years. The gap between gas supply and demand is therefore not confined to one or two Middle Eastern countries; it is truly regional.
Domestic Gas Prices Vary

* Range based on retail prices to date of city gas (residential, commercial, industrial) and power sectors.
** 2012 JLC and JCC levels.
^Estimated from average prices paid by various sectors across China.
Pacific Region to Stay *Mostly* Oil-Linked

Incremental supplies* (mmtpa)

Incremental volumes sold mainly on oil-indexation are driven by new Australian projects.

While, Most USGC volumes = Hub-Indexation

Canada/East African projects
=> Small % Hub-Indexation; Majority % Oil-Linked
=> Due to high development costs.

*Supplies targeting East of Suez, up to Speculative Projects
Massive Australasian Budget Blowouts—Oil-Linked Pricing Cannot be Broken!

* Origin Energy changed currency at Train 2 FID in July 2012—at the time, the Australian company said that capital costs in US$ had increased but this was solely due to foreign exchange movements. However, in Feb 2013, they upped the A$ cost to $24.7 bn, a 7% increase in A$ terms. This new total is equivalent to US$25.5 billion, or a 26.5% increase on the original US$20 bn estimate.
### Will There be an Asian Hub?

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* Neligible small volumes of production

- Most new LNG importers have alternative gas supply sources which may help soften the impact of an LNG supply disruption.
- Buyers that have adopted a ‘portfolio player’ role can cope more readily with supply and pricing issues.
Direct Purchases From the US

...not always cheaper but does provide some savings at high oil prices

Hypothetical US LNG Price (FOB HH @ US$4-8/mmBtu) *
14.5% + Shipping LNG Price (assumed to Japan)
13% + Shipping

* FGE forecast HH prices for period 2015-2030

Note: Liquefaction + Shipping assumed around
Hub Pricing vs Oil Indexation

• There is no such thing as cheap LNG, whatever the source.
• The price of LNG has a cost-based floor. Ultimately, the price of LNG indexed to Henry Hub is not very different to the price of oil-indexed LNG in a lower oil-price environment (in the US$80/bbl range).
• US$10-11/mmBtu or around US$70/bbl oil price is the minimum breakeven price for most new LNG projects, whether they are from the US, East Africa, or Australia, whether they are conventional or non-conventional.
• Hub pricing in one way or the other will enter new LNG contracts. We expect many suppliers of US LNG will end up selling at Hub-related prices plus a margin.
• There are benefits to Hub-related pricing for both sellers and buyers. It is not possible to insist that buyers should ignore Hub pricing and only use conventional oil indexation. Buyers simply will not accept this argument.

There is a reasonable middle ground for both sides and deals can be construed to benefit both sides by sharing the risk.
Thank You

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