DEVELOPMENT OF ASIAN LNG TRADING HUBS – SPOKES IN THE WHEEL?

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Although only modest volumes of LNG are currently traded on Asian indices such as the Singapore Sling, Japan Korea Marker (JKM) and the Dubai/Kuwait/India (DKI) Sling, they are a clear sign of the maturation of the LNG market and the first step in the development of a liquid LNG trading hub in Asia.

Whilst it is clear that liquidity in Asian LNG trading is increasing and confidence in reported prices is improving, a truly liquid LNG traded hub in Asia, which is suitable for reliably indexing long-term LNG contracts, remains years away (notwithstanding the recent Tellurian-Vitol deal, which may come to be seen as a watershed contracting moment for hub development).

To understand why the development of such trading hubs is important to both buyers and sellers alike, it is useful to first understand recent market trends. Traditional buyers of LNG are evolving and are increasingly reluctant to sign long-term contracts which permit little in the way of flexibility. For LNG sellers, especially liquefaction project developers, this presents new and complicated challenges:

- Do they target an increasingly small and competitive segment of the LNG market with appetite for long-term, oil-indexed LNG contracts?
- Should they re-position themselves to manage the risks of flexibility associated with downstream market liberalisation and hub-traded prices?
- Or, more fundamentally, is the LNG business now evolving so quickly that there is no longer a place for long-term LNG suppliers?

These are significant market developments and are among the contributing factors leading to a natural push towards LNG hub pricing. Gas Strategies will address these issues and explore the implications for industry participants.
A shift in buyer behaviour

There has been a fundamental shift in contracting preferences of LNG buyers that is having a marked impact on the industry. Over the last ten years, for longer term contracts (those five years and over), the average contract size has reduced from 1.6 mtpa to 0.9 mtpa, the average term has reduced from 16 years to 12 years, and the average elapsed time from Sales and Purchase Agreement (SPA) signing to commencement of supply has reduced from five to two years. On top of this, spot\(^1\) and short term\(^2\) sales now account for 27% of global volumes versus 10% a decade ago, in-line with an increased drive for flexibility and less standardised contracts. Contributing factors to these changes include:

1. Downstream market liberalisation trends
2. Consortiums of influential Asian buyers forming and demanding more flexibility in contracts, for example the concerted efforts from Jera, CNOOC and KOGAS
3. Increased seller competition in the market, brought on by significant additional supply in the 2010’s (US, Australia and Russia) and buyer’s long positions over the same period
4. Fragmentation of the LNG value chain, including decoupling of gas supply from liquefaction in the US and competition in components of the chain (e.g. US liquefaction, shipping)
5. Decreasing cost of import terminals enabling access to smaller and shorter-term volumes of LNG for a more diverse range of customers
6. Emergence of new business models and new entrants, including infrastructure developers, intermediaries and traders

The challenge for Sellers

This new buyer landscape poses a challenge to project development, with the requirement for long-term contracts to underpin investment and financing contrasting with a more commoditised market and shifting buyer behaviour. This will come further into the spotlight in 2019 with multiple LNG projects targeting FID (ca. 210 mtpa publicly targeting 2019 FID) and a market consensus of a widening supply-demand gap from 2022, given existing capacity and committed construction.

Beyond the traditional success factors for projects taking FID (Marketing, Financing, Cost, Location, Sponsors and Construction and Technology), there are other emerging factors that LNG sellers will need to consider as they seek to make projects happen:

1. Active portfolio management from LNG sellers
2. The role of LNG hub pricing

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\(^1\) Cargoes delivered within 90 days from the transaction date
\(^2\) Spot and short-term trades denote trades under contracts of a duration of 4 years or less
**Sellers as LNG Portfolio Players / Portfolio Managers**

As projects and sellers adapt to the changing buyer environment, we are seeing evidence of LNG sellers taking on a greater level of risk by taking volumes into an ‘LNG portfolio’. Exxon has publicly announced, along with partners, that volumes from Rovuma LNG (Area 4) will be taken into equity portfolios to aid FID, which follows the same approach from already established LNG portfolio players in the LNG Canada FID of 2018.

The ability for sellers to become more active participants in managing a portfolio of LNG volumes – that is, retaining volumes in their own portfolio to sell-out over time in smaller and more shorter-term contracts or on the spot market may become essential. An alternative and complementary approach to this equity portfolio approach, but without concluding multiple long-term contracts, is where project developers are recognising the ability of larger portfolio players to manage the risk of buyer-seller mismatch for them. This was evidenced in the Coral and Tortue FIDs, with BP stepping in to take 100% of the volumes into its portfolio. However, this is at a potentially significant loss of value to the partners in the project, versus if the partners chose to optimise the volumes themselves.

### Table 1: Project examples with 100% volumes sold to Portfolio Players

<table>
<thead>
<tr>
<th>Project name</th>
<th>Partners</th>
<th>Nameplate Capacity (mtpa)</th>
<th>Portfolio Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coral FLNG</td>
<td>ENI, ExxonMobil, CNPC, ENH, Kogas, Galp (Area 4 Partners)</td>
<td>3.4</td>
<td>100% volumes to BP</td>
</tr>
<tr>
<td>Torture FLNG</td>
<td>BP, Kosmos</td>
<td>2.5</td>
<td></td>
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Some of the key questions arising from a more active approach to portfolio management for sellers include:

- How will project partners, as sellers manage the additional risk (volume risk, price risk, cross-commodity risk, logistics and shipping risks) that arise from a more active portfolio management strategy, in order to preserve and maximise value?

*Options for them will include significant investment in capability development and potential changes to business models (including partnering and joint ventures)*

- How will sellers approach the build-out of capability (risk management, credit management, back office, front office, market analysis, trading and commodity hedging, increased investment in systems, regional presence) required for an LNG portfolio approach?
Sellers will need to consider the time it takes to build significant capability and how that aligns with their development and marketing timelines, and also the implications for those project developers with a focus on only single projects.

- Do sellers want or need to incur the additional risk and capability investment in order to capture an additional part of the value margin? And do they have a choice, or is this a prerequisite for participating (i.e. sell volumes) in a more short-term and commoditised market?

Whilst there is not an immediate market imperative that is forcing all sellers to move towards a ‘portfolio approach’, where market participants choose not to do so they will be finding themselves targeting and competing for an increasingly small market of large LNG buyers that are all of 3 things:

- Bankable for project financing purposes
- Having the capacity to sign large long-term SPAs
- Ready to commit to such deals

At LNG2019 we will explore the challenges, risks, rewards and timescales for sellers transitioning to a more active portfolio management approach.

The role for traded hubs?

This picture of changing market dynamics has the potential to add significantly to the extent of traded market activity already being supported by changed buy-side behaviour and the entry of new intermediaries and traders. This change is already in play, with only the time interval between FID and commencement of commercial operations causing some delay in market impact.

As the market continues to evolve and sellers grapple with a world of shorter term and more flexible deals, what will the role be for traded hubs? What will the consequence be on their pace of development?

The formation of a liquid LNG hub must be market driven due to the global nature of the business. The evolving market landscape, with increased trading and short-term activity, should incentivise both buyers and sellers to participate in this traded hub pricing. This evolving market may well drive increased market willingness and could therefore be a catalyst for spurring a faster than expected development of a liquid LNG hub price.

For buyers, this would allow access to a reliable and representative pricing index for LNG, and in a more commoditised and short-term market would allow buyers the ability to hedge locational exposures and sell LNG on a forward basis. For liquefaction developers, a truly liquid hub would minimise the requirement to sell a percentage of volumes on long-term contracts therefore reducing the barriers around achieving FID.

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3 Sell forward only to a certain extent – even developed gas hub price indices have limited liquidity beyond 5 years


**Hub pricing development – a work in progress**

Ultimately the emergence of traded LNG price indices will be dictated by market willingness to buy and sell LNG linked to these indices. JKM is the clear current market leader and is being increasingly accepted by buyers. 2017 saw a four-fold increase in traded JKM volumes from 2016, and 2018 saw more than a three-fold increase. In addition, the recent Tellurian -Vitol deal⁴ was a potential watershed deal in the LNG industry, with the Memorandum of Understanding (MOU) the first example of a term deal fully linked to an LNG price index - JKM. The fact that supply isn’t due to start until the mid-2020’s may have given buyer and seller increased levels of confidence, with recent trends indicating liquidity will increase and further develop over the coming 5+ years. This deal does, however, already point to the need for enhanced risk management for LNG sellers – with the requirement to manage locational basis risk between the end market (JKM) and the cost of supply (likely Henry Hub) most likely falling to Tellurian.

There are still obstacles to achieving maturity for these LNG price indices (see Figure 1), and as such traded hub pricing does not at present offer a panacea for sellers hoping to both leverage hub pricing in deals and to take on a more active portfolio approach in the current market. Without sufficient liquidity, adequate hedging is not possible and therefore sellers are faced with ‘uncovered’ LNG positions from a price perspective. Hub pricing will also act as a catalyst for sellers (and buyers) to develop LNG trading and portfolio optimisation capabilities – without these, they will be left behind in a more traded world.

**Figure 1: LNG traded hub: “Path to Maturity”**

Slow progress towards full maturity does not necessarily mean no current impact for LNG sellers. With increasing acceptance and prevalence of JKM, the lending community could be expected to become more willing over time to consider a higher proportion of ‘uncovered’ LNG in assessing project financing. This could lower the threshold for

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⁴ 1.5 mtpa, 15 year term, 100% indexed to JKM, from volumes from the yet-to-be-sanctioned Driftwood project
project financing from traditional levels of ca. 85% of capacity and give sellers additional comfort about the ability to move towards a more active portfolio approach. However, it is likely to need to be backed by more extensive trading and risk management capabilities on the part of the project. We could see more examples of the Tellurian-Vitol type deals.

This ties back to the earlier questions of capability development and risk management, as LNG sellers that take uncovered positions based on traded LNG hub pricing (whether on secured volume deals or completely uncovered from a volume perspective) will still need to manage commodity risk, hedging activities and develop deep market knowledge of emerging indices.

At LNG2019 we will explore further hub pricing development and how it may impact LNG sellers’ approach to marketing and portfolio management.