Gas Strategies

PATHFINDER FORUM 2015
Report

WHAT NOW
FOR LNG?

REVOLUTION OVER EVOLUTION?

The developing role of LNG in the global gas market creates new opportunities and risks for Buyers, Sellers and Financiers.

In the period January – March 2015, Gas Strategies held three roundtable Pathfinder forums with key figures at the forefront of the LNG industry. The forums were hosted by Societe Generale (London), Latham & Watkins (Houston) and Ashurst (Singapore).

In the context of radical oil price change and on the brink of the LNG supply/demand balance shifting profoundly, we discussed what the next 20 years of LNG will look like.

Different market vantage points were confirmed by the different perspectives on how the industry may grow, with a common expectation that the future for LNG remains extremely positive. This document captures the key points.

Models, technologies and markets

The driver for LNG project development continues to be the connection of abundant and cost-effective gas reserves in one location to growing gas markets in another; however the means by which this takes place is changing fundamentally.

While upstream-led integrated LNG supply projects will continue to play a significant part in the global development of the industry, the maturing and disaggregation of value chains has created the opportunity for players seeking opportunities in particular segments of the chain to become integral to the next 20 years of industry development.

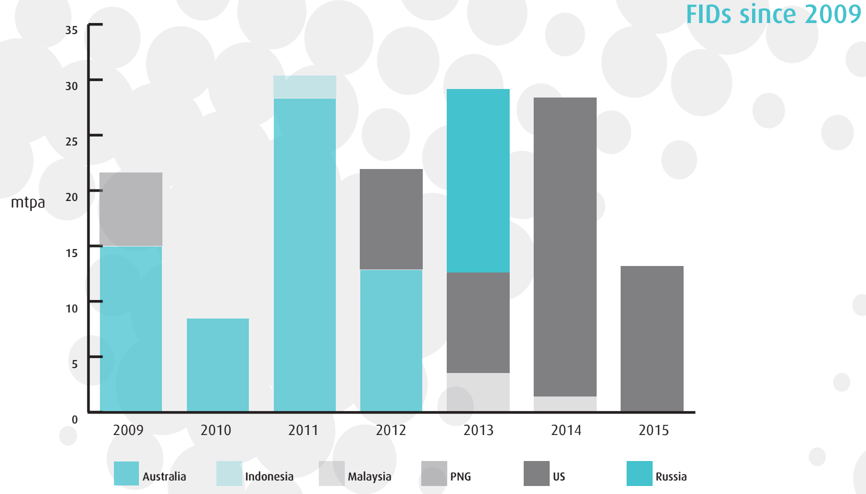
On the liquefaction side, the development of US LNG exports has realized an alternative business model for project development and supply. This model is here to stay and is likely to be replicated, and further variations developed elsewhere. Floating LNG is already well established on the regas side and now appears to be near the point of critical maturity for liquefaction, which will provide another impetus for industry diversification.

Market structures and volumes will continue in the direction of travel established in the aggregator model, including the growth of multi-term deals ranging from spot to long term and the development of new and hybrid pricing models.

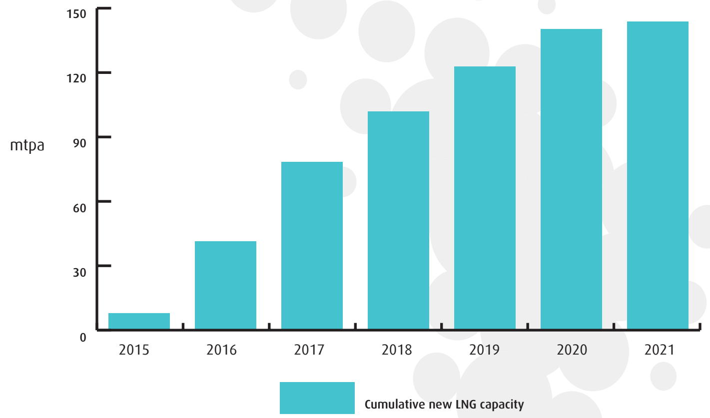
Hiatus in upstream-led development?

The impending wave of new LNG supply is already set to slow down new FIDs, as markets digest these significant additional LNG volumes and new liquefaction models.

FIDs since 2009



Estimated start-up of new capacity



A lower oil price environment additionally challenges the budgets and project development ambitions of the developers of new projects, particularly of 'traditional' LNG projects. It reduces both the investment capacity of the project sponsors and the outlook for realizable prices in the marketing of new volumes, particularly those targeting Asia.

Which new projects take FID in the next five years, and the business models on which they are based, may play a significant role in determining the future shape of LNG.

New models create new opportunities

These new approaches will be seen differently by different players:

- Traditional developers and their advisors may see a role for, but not a threat from, the emerging new business models and their developers.
- US project developers may see their position in the world as the ascendant new order, without peer.
- Markets and aspiring entrepreneurs see new opportunity to bring forward further supply diversity and to evolve business models further.

These represent different outlooks for the future development of the LNG industry, additional to the risks that are already an accepted part of being in the LNG supply chain such as oil price, Henry Hub price, market-side events and energy policy.

Business model innovation has already brought new competition for markets, new opportunities for participation in the value chain, new entrants to LNG and, so far, a new 'time to market' paradigm for LNG project realization.

Towards a two-tier industry?

A first and fundamental question when projecting forwards for LNG is '*how big will the industry get?*' If the growth of LNG continues on its current trajectory, or even dips to a more reasonable CAGR of ~4-5%, it would increase in size to 2.5 times its present scale by 2035. There is some doubt that the industry can deliver such a significant growth story, especially when considering the prospects for '*traditional*' multi-train, significant-cost LNG projects and the challenges faced by such projects which are on the slate (in East Africa, Canada and Australia).

Indeed, the challenge looks even more daunting for projects that require '*tens of billions*' of finance to be raised, very large volumes of LNG to be successfully marketed and multiple stakeholders (including project partners and governments) to be lined up.

This is not to say such projects will not proceed, but rather that they represent only one part of the way in which LNG will develop in the next decade.

The most relevant question is now considered to be "*how will the LNG industry grow?*" rather than "*by how much?*"

A '*challenger*' set of projects, developers, buyers, financiers and technologies have emerged in the last five years. Market conditions and risk appetites seem set to create a favourable environment for them to flourish.

US LNG as catalyst and trailblazer

The US has driven the innovation boom in LNG since 2012. It will continue to form an integral part of further LNG market growth, and will be the single most significant supplier of new volumes.

The types of projects set to participate in the next wave of FIDs include; Sabine Pass, Freeport, Cove Point and Cameron, which have developed largely familiar technologies in a less familiar business model. However, there will also be a further generation of smaller, more niche projects designed to be positioned at the other end of the scale from the mega project:

- Low project and output unit cost, based on simple reproducible technology that is largely fabricated in controlled conditions offsite.
- Modular in construction to enable bite-size marketing.
- Innovative in business model beyond the pure toll.

Elsewhere in the world, projects look set to achieve something similar by taking these developments into FLNG applications – achieving manageable costs and controlled construction (built in Korean shipyards) – matched with the right gas supply situation and commercial value chain.

The prospect that this next wave of development could take place within new market conditions – with greater volatility, liquidity, price communication and innovation – is a major element of what is driving this innovation and evolution.

New marketers and markets

There will also be notable change in where and how LNG is marketed. Portfolio suppliers and increasing numbers of companies that find themselves in that role (either though design or necessity) will stimulate the development of new markets.

Non-OECD markets – or otherwise those that are less able to stand behind a long term contract that would traditionally be favoured in Project Finance – will increase in significance. Such portfolio players will be driven by pursuit of higher margins. Traders and aspiring portfolio players will be seeking to establish their position lead by new technologies and business models that support the opening of new markets (as with FSRUs).

Europe will return as a significant market for LNG, initially as an outlet for LNG that cannot find a higher-value market and ultimately as a replacement for traditional sources of gas such as indigenous production and, perhaps, a significant part of present pipeline supply from Russia.

Traditional LNG mega-projects will continue to be developed, but will have to differentiate themselves from the more agile and innovative projects being developed in the US and, sooner rather than later, elsewhere.

Whither commoditization of LNG?

Long-term contracts will remain central to the LNG industry, but their size and nature will continue to change and support an increasingly flexible and traded industry.

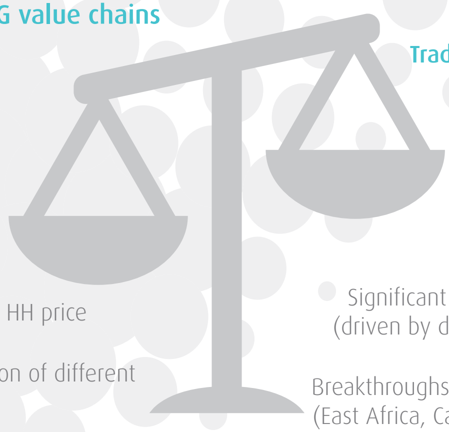
Smaller volumes, relying on the credit of a portfolio offtaker rather than an ultimate market, are already proving to be acceptable for Project Finance purposes, with offtakers seeking to optimize value through trade. Asian buyers are increasingly moving at least partly away from the traditional supply model and – initially prompted by positions of short term over-supply – are themselves evolving into portfolio players.

It remains to be seen how far commoditization of LNG will go, but conditions appear to have never been better to support it – although most likely still underpinned by long-term contracts to support financing.

Enablers and challenges to development

While the scales may at present, appear to be weighted in favor of the '*challenger*' models in the LNG value chain, a variety of developments may swing the balance between challenger and traditional LNG models.

Enablers to the development of different LNG value chains



Traditional value chain

High oil price

IOC consolidation

EPC cost reduction

Significant increase in demand (driven by demand-side event?)

Breakthroughs in specific locations (East Africa, Canada and Australia)

Challenger value chain

Low – and non-volatile – HH price

Successful implementation of different approaches to FLNG

Private Equity gets deeper into, and more comfortable with, LNG (including outside US)

Market demand driven by incremental growth in non-traditional markets

A major determinant of how the LNG industry out-turns – the extent to which a '*new way*' challenges the established – will be how the industry giants respond. Shell's move in early 2015 to acquire BG creates a market-dominant behemoth in LNG and may represent a move towards consolidation by the traditional industry.

How this plays out with other IOCs, and how such established players respond to the challenger model opportunity and threat, may influence the pace at which the LNG industry overall reaches a tipping point.

Outlook

A Pandora's Box has already opened for LNG. The traditional model has been joined by the US tolling liquefaction model and the disaggregated upstream value chain. FLNG is now imminent and is already being developed using different commercial models and approaches (*e.g. Prelude vs. Golar*). It seems inevitable that new technologies will break through and new markets will continue to open.

The next wave of LNG projects is now likely to be characterized by further technical innovation, smaller and more modular development, innovative commercial models and non-traditional approaches to financing.

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