

LATEST LNG DEVELOPMENTS AND POTENTIAL FOR LNG TRADING

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SPEECH DELIVERED BY FOR NEIL MCGREGOR CEO SINGAPORE LNG CORPORATION PTE. LTD



Good morning Distinguished Guests, Ladies and Gentlemen,

My message to you this morning is that most of the action in LNG today and the foreseeable future is right here in Asia. Over the next 15 years we see volumes set to double¹. The growth isn't about simply scaling up and doing things in the same way as the past. It will be much more about evolving a regional business with many more players and finding new solutions to the individual needs of the buyers and the sellers.

The drive behind this growth is that Governments throughout the region are pledging their support for gas. Gas in Asia is currently only 10%² of the energy mix whilst globally, it makes up around 23%. With lower emissions and generally lower costs per calorie than oil, gas is an attractive fuel to provide clean, cost- effective energy to consumers.

Last year, Asian LNG sales were about 130 Million Metric tonnes with revenues of some 100³ Billion US Dollars. Asia accounts for about 60% of the global market and this is set to grow to 70% by 2020. Asia is growing faster than any other region.

If we compare this with sales of bunker fuels in Asia, these are approximately 80 Million Metric Tonnes per annum with annual revenues of 44⁴ Billion US Dollars. Demand for bunkers is forecasted at best, to be stable short term and then face decline. The comparison between the two businesses shows the distinct attraction of the LNG value chain to investors.

It's not plain sailing all the way for LNG though. It has to compete with pipeline gas for market share in all countries in Asia, apart from Japan, Korea and Taiwan. In these countries there are virtually no indigenous gas nor international pipelines. These 3 established markets today account for 85% of regional demand. China, India and (recently) Thailand

¹ 2010 Asian volumes 130MT, by 2025 estimate 270MT , see viewgraph 1 in attached power point pack

² Presentation from International Gas Union, LNG Asia Summit Singapore, September 2011

³ Assumed \$15/MMbtu = approx US \$750/Mt

⁴ Assumed US\$ 560/MT

make up the balance (15%) of the markets today. By 2020, it's likely that the number of markets in Asia will double⁵ from current number of 6 to 12.

The bulk of the growth will be centred around the new markets. By 2025, it is expected that collectively, these "new" markets will be roughly the same size as the established markets. These markets are unlikely to be homogenous and so it's quite likely that the growing number of buyers will have different needs and different approaches towards buying LNG. All the indications are that the surge in demand in China and India will be strongly correlated to price and the need to be competitive with other fuels. Putting the prospect of a global economic downturn aside, it's expected they will strive to achieve more flexibility in their contracts than is generally offered today. **So the business model of long term take or pay contracts with limited flexibility will be challenged.** They may well opt for some business of this type, but increasingly they will need the flexibility of short-term volumes that fit with sudden changes in demand and prices. Sellers who want to exploit the full potential of the region will need to be creative and listen to, and address these important needs of the buyers. There are already some responses from sellers, particularly new sellers, who are considering new ideas for transacting LNG.

But the ways that buyers and sellers meet the challenge and choose to work together will set both the path and the speed with which the Asian region will embrace the next phase of its development. **I will summarise the key trends and show how they may lead to some LNG trading developing in the region.**

Key Trends

The first trend is "**The regions' growth will lead to a more complex business**"

LNG demand growth will spread over a variety of new countries all looking to buy LNG cost effectively. This will in itself be a catalyst for change. It's quite possible LNG could start to be priced off new indexes. Rather than using the traditional oil-related index (the Japanese Customs Cleared or JCC), the Japan / Korea marker for spot LNG (JKM) or perhaps another regional spot marker may develop. Thinking more broadly, the US Henry Hub, or the UK NBP could also start to be used routinely for some sales. At the margin, this has been happening for the last few years with spot and short-term sales and some buyers are pushing to see this continue.

As we are all aware, Japan has increased its short term LNG demand by some 15⁶% per annum in the aftermath of the Fukushima nuclear disaster. It has very successfully attracted the additional volumes but the clear message from Japan's utilities is "Unless LNG is competitively priced, crude oil and oil products will be the alternatives" – particularly as they are readily available at spot prices without the onerous operational terms we see in LNG.

Several projects are now under development to export LNG from the US and Western Canada to Asia, with heavyweights Shell and BG recently joining the foray. On current prices, it is

⁵ Today its Japan, Korea, Taiwan, India, China, Thailand (6) . In future will add Singapore, Malaysia , Indonesia (3) and possibly :- Pakistan, Bangladesh, Vietnam, Philippines.

⁶ 2010 imports ~70Mt , increase due to Fukushima estimated in 2011 to be around 10Mt.

estimated that US LNG could be landed in Asia around \$10⁷/MMbtu compared with long term Asia oil linked prices of \$15⁸+/MMbtu- a saving of some \$15M per 60,000 Metric Tonne cargo. This is a compelling price saving for price sensitive buyers. If some of these projects succeed then, US Henry Hub pricing could find its way to Asia to buyers prepared to take the Henry Hub pricing basis. I would also expect to see the advent of “portfolio buying” arise, as buyers look to spread their physical and financial risks in order to more closely match their demand curves. The increasing number of regas LNG Terminals being built in Asia will help initiate this trend.

Of course there are other pricing solutions – such as the UK’s NBP pricing or more fixed elements in pricing using S Curves. All of these developments are to be encouraged as they are showing the efforts being made by buyers and sellers alike to find solutions which fit individual countries’ requirements.

As the indexes change, so we expect to see the trend for paper trading growing so that floating prices can be routinely swapped for fixed prices and cross commodity spreads can be locked in.

The second trend is “increasing LNG market liquidity”

In the last 5 years, the number of long- term LNG sources East of Suez has increased from 7⁹ to 11¹⁰. By 2015, it will increase to close to 20¹¹. Additionally, Atlantic Basin LNG is also frequently diverted to Asia on short-term contracts. If Asia retains a pricing premium to the Atlantic markets, then sellers may look to rebase some of their sales long term to Asia. This will add to choice and market liquidity, and is likely to be supported by buyers.

A wider choice of sources also leads to a wider choice of individual sellers. Asia is seeing sellers emerging in their own right rather than as part of a joint venture. To name a few, Chevron, Exxon-Mobil, Shell, Gazprom, and GDF Suez are contracting directly with wholesalers and end users, and setting up satellite sales offices in Asia – in several cases these are in Singapore, where a Government initiative of a lower tax regime for LNG sales is in force.

The third trend is “ increasing amounts of divertible LNG”

This is probably the most important trend to date. Breaking with the traditional point-to-point business models, several sellers now operate a portfolio of divertible LNG which can respond more effectively to market demand and price signals. Asia’s short-term demand has increased over the last 5 years due to seasonal shortfalls and nuclear outages. It’s now running at about 20% of the overall business. Divertible LNG from the Atlantic Basin has

⁷ Formula is 115%HH + 2.25 FOB + 3.00 Freight + 0.50 margin. At \$3.8/MMbtu HH this gives US\$10.12/MMbtu

⁸ Formula is 14.85%JCC (100) + 0.5 gives US\$ 15.35/MMbtu

⁹ Brunei LNG, Malaysia LNG , Indonesia (Pertamina) , NWS, Qatar (Rasgas / Qatargas) , Abu Dhabi, Oman (7)

¹⁰ Footnote 9 + Sakhalin, Tangguh, Yemen, Darwin (11 overall)

¹¹ Footnote 10+ Pluto + Gorgon, PNG+Curtis Island+APLNG+ Gladstone + Angola+Donggi+possibly Fisherman’s Landing + Arrow

become a regular means of balancing demand. Indeed, it has been a large part of the additional volume sold to Japan this year. The next logical extension would be to see it established as a regular short term trading activity.

Elsewhere we have seen some upstream project developers offering equity gas to buyers, allowing them to lift their own LNG with destination flexibility. Chevron in the Gorgon project in North Western Australia is one such example. If this trend continues, cargo destination flexibility will start to move to buyers giving them more commercial choices and allowing them to trade and optimise around their own supply portfolios.

*The fourth trend is “**increasing amounts of spare regas and shipping capacity**”*

To make market liquidity and flexibility long-term realities, the LNG supply chain needs spare regasification and shipping capacities so that there are always options to trade LNG at short notice. Until now, Asian buyers have focussed primarily on meeting their seasonal demand profiles. They have not looked particularly to optimise their portfolio by short term opportunistic trading. But the new regasification terminals in Thailand and here in Singapore have been deliberately designed with spare capacity. In the case of Singapore, the intention is that after domestic demand is met, spare regas capacity can be used to offer new services to the region such as storage, reloads and redistribution of LNG to other markets. This may start to open up opportunities for inter-month arbitrage trading and also for some break-bulk sales within Asia. These activities would all impact on LNG trading and start to stimulate its growth.

With regard to shipping capacity, it is estimated that today, there are some 21¹² LNG vessels on order which are not currently allocated to any specific long term trades. These investments have been taken based on market fundamentals and the expected arbitrage trading opportunities rather than as new infrastructure to support specific new LNG projects.

Overall, the message is: the more infrastructure made accessible, the more risks can be controlled, and so the more likely the market will lean towards optimisation. Of course, risks taken in the supply chain will need to be kept in balance with the potential rewards. When the signals are there that supply and scheduling risks can be managed and will be proportionate to the rewards, then it is more likely that optimisation and trading will grow.

***So in summary**, when we look at the latest trends, we see already evidence of changes and in my opinion, these are irreversible. They “can’t be put back into the bottle” and the markets are going to build on these trends and evolve further.*

Are we there yet for LNG trading? – No, not by a long way, particularly if we compare it to oil and oil products. But we should recognise that we are moving towards having the necessary components which will result in more market fragmentation, more scope for optimisation and more market participants.

Over the next 5 years, I would expect more short-term sales to develop. The region has a lot of experienced demand side and supply side managers with large-scale businesses.

¹² Braemar Seascope presentation at the LNG Asian summit Singapore, September 2011

Improving their ability to optimise their businesses is the next logical step. Flexibility is the key aspiration of business models for buyers and sellers alike. There are very significant prizes to capture from market arbitrage and short term trading. Now that has been recognised, everyone is going to try to capitalise on them.

Singapore has established itself as a trading nation and a gateway to Asia. As such we intend to leverage off our location, our willingness to offer LNG services and an attractive fiscal environment for transacting. Trade flows for LNG are increasing and new patterns are emerging – we will see not only LNG moving bi-directionally from North and South to Asia, but there will be a new pattern emerging that will also be bi-directionally East /West as well, as the America's and Africa develop their supply infrastructure in addition to the Middle East to satiate the growing Asian Demand for LNG. Singapore is ideally located to support this trend as the centre of Gravity between LNG supply and demand becomes more equatorial. From Q2 2013, the Singapore regasification terminal on Jurong Island will be open for business. This comes at a good time when all the regional markets are growing and new opportunities will develop. Initially Singapore will be importing about 3 Mtpa of LNG. That level will grow organically. On top of that, we will look to provide as many additional services to international buyers as possible.

The times they are a changin' and Singapore is getting ready to step up to the plate, by servicing its own needs and in doing so leveraging off the capability of its import/export terminal to facilitate the growing regional LNG trade.

It is on this note ladies and gentlemen, I will end today's keynote speech and I wish you a thought provoking day ahead.

Thank you.