The LNG shipping fleet expanded rapidly this year, becoming more technologically advanced and diversified in terms of ownership. What does this mean for 2019 and beyond? By Eric Yep and Abache Abreu

The global fleet is set to undergo its largest expansion ever in 2018. This will be vital for it to support the development of spot pricing, meet growing demand – largely driven by rising US LNG flows to Asia – and serve the new wave of supply expected from post-2020 export projects awaiting final investment decision (FID).

LNG shipping technology is evolving fast, bringing greater efficiencies in trading, helping extend supply chains into new areas of demand and allowing LNG to become more commoditized. The profile of LNG shipping ownership is also becoming more diversified, as reduced earnings visibility forces traditional owners to look for co-investors, and new market players try to expand their fleets to take advantage of an increasingly liquid trading space.

However, the delicate balance of LNG shipping is by no means certain, and will depend on the sector’s ability to respond to shifts in supply and demand, including potential trade disruptions emerging from rising tensions between the US and China and the pace at which pre-FID export projects are delivered after 2020.

Expansion

Despite a decline in ship finance and rising interest rates, LNG shipping continues to attract investment, ensuring that shipping capacity growth meets demand projections and freight rates are kept at sustainable levels.
The global LNG shipping fleet will see its biggest expansion in 2018, with the delivery of more than 70 new LNG carriers and one of the largest order volumes in a given year. This expansion will equate to more than 8 million cu m, versus 4.1 million cu m in 2017.

“The pace of deliveries in 2018 and 2019, which now hold together 94% of the order book in unit terms, will shape the industry for many years to come,” said Ralph Leszczynski, the head of research with Italian shipbrokerage Banchero Costa.

In the first seven months of 2018, 28 large LNG carriers were ordered, more than the 26 ships ordered in 2016 and 2017 combined. The record for new orders was set in 2014, with 62 large gas carriers in a single year.

Most of the existing LNG fleet will be operational for decades: the average age of the fleet is only 10.8 years, versus a shelf life of more than 40 years.

**Shipping technology**

LNG shipping technology is evolving fast, making LNG ships bigger and more efficient.

New propulsion technologies like the MEGI (M-type, Electronically Controlled, Gas Injection) are bringing greater efficiencies in trading. Better insulation is helping reduce the amount of gas that evaporates during the voyage, known as “boil-off,” while the growth of floaters, small-scale LNG and LNG bunkering are helping to extend LNG supply chains into new areas of demand.

Floating storage and regasification units, in particular, have helped facilitate growth of the LNG market by reducing the cost and time of entry for new LNG importers, and the need to commit to permanent onshore facilities, which previously had to be idled for months or years when market conditions changed.
The evolution of propulsion technologies is redefining LNG shipping optionality. The LNG fleet has already shifted from traditional steam turbine propulsion to dual and tri-fuel diesel electric (DFDE/TFDE), which are 35% more fuel efficient and command higher freight rates. The next generation of MEGI LNG vessels are even more fuel efficient than TFDEs by 25% and allow excess boil-off to be reconverted to LNG.

Oil majors are leading several groundbreaking initiatives. Shell and Total, the world’s largest LNG sellers by volume, are using advanced analytics around wind speed, ballast usage and sailing speeds to ensure optimized shipping and maximum profitability, according to analysts at Bernstein Research. Standard LNG voyages result in delays costing around $80,000 per trip. At the median level, that can touch $350,000 per trip – with potential industry-wide losses of $800 million.

**Diversified ownership**

The profile of LNG shipping ownership is also changing, with more participants such as traders and power utilities becoming ship owners, as the LNG trading space becomes more liquid and diversified, and the breakdown of long-term LNG contracts forces traditional ship owners to look for co-investors.

The LNG shipping fleet has been typically concentrated among large shipping owners, such as Malaysia’s MISC, South Korea’s K-Line, Qatar’s Nakilat and Japan’s Mitsui OSK Lines and Nippon Yusen Kabushiki Kaisha Lines. The 12 largest owners still control about half of the trading fleet and account for around 30% of the order book, according to Banchero Costa.

This is the legacy of two separate factors: a traditional LNG business model based on point-to-point bilateral long-term contracts between a small number of suppliers and buyers, and shipping banks’ preference for concentrating capital among a few established low-risk ship owners at relatively low interest rates.

As legacy long-term LNG contracts are being displaced with shorter, more flexible deals, earnings visibility is also reduced, and this is forcing traditional ship owners to share their investments with new market players seeking to take advantage of greater returns from an increasingly liquid trading space with enhanced shipping optimization capabilities.

**“As the US represents a greater and greater percentage of global supply, the weighted average shipping distance should also start to trend upwards”**

**Market balance**

The balance of the LNG shipping market through 2020 will largely depend on the equilibrium between the fleet’s expansion and the rate of demand growth as measured in ton-miles – or the laden distance travelled multiplied by the volume of cargo carried.

The growth in ton-mile demand is likely to be driven primarily by more US LNG making its way to Asia. US LNG requires far more shipping resources than its Indo-Pacific competitors to reach the key Asian markets. More than 40% of total US supply went to Asia in the first half of 2018, compared with about 19% in 2017, according to S&P Global Platts Analytics. This trend is set to continue, as US liquefaction capacity is currently only about one third of a projected 2020 capacity of more than 55 million mt/year.
“As the US represents a greater and greater percentage of global supply, the weighted average shipping distance should also start to trend upwards,” said Jeff Moore, head of Asia LNG analytics with S&P Global Platts.

An overall increase in average shipping distance and voyage time could have major implications for spot shipping prices, as the limited number of LNG vessels would serve longer and longer voyages, he added.

So far, the ramp up in average shipping distance out of North America has been largely offset by declines in average shipping distance from the Middle East and Pacific regions, which have become more self-sufficient as export projects in Australia ramp up and Middle Eastern demand increases.

**Enter the dragon**

One of the biggest markets tapped by US LNG has been China, where economic growth, industrial recovery and coal-to-gas switching policies have helped offset stagnant demand growth in Japan and South Korea.

China imported more than 30 million mt between January and August 2018, up by nearly 50% year on year. The country’s dependence on inter-basin LNG inflows is also on the rise, partly supported by declining supplies from Southeast Asian legacy producers and limited spot availability from eastern Australia, where rising domestic gas prices have led to political opposition to LNG exports.
If China continues its drive to reduce pollution, ton-mile demand could surprise to the upside, rewarding those who ordered ships in the past five years or acquired modern units through sale and purchase activity,” Court Smith, shipping analyst at VesselsValue, said.

China imported more than 2 million mt from the US from January–August 2018, versus 1.6 million mt during the whole of 2017. The commissioning of new LNG terminals in the country’s northeast coast is set to increase consumption and the seasonal nature of purchases.

However, it remains to be seen how the delicate balance of the sector will be affected by potential disruptions, including the uncertain timeline of new FIDs and the threat posed to US–China LNG trade by tariffs.

The US–China trade war has raised some concerns about a contraction in shipping demand as Chinese buyers realign their purchases of spot US LNG cargoes, and replace them with LNG from sources closer to Chinese ports.

On September 24, China began to levy a 10% tariff on LNG as part of retaliatory tariffs covering an additional $60 billion of US imports. This was in response to announcements by the White House affecting $200 billion of Chinese goods, including various aluminum and steel items that had been left out of earlier tariffs imposed in March.

The risks to US–China LNG trade were exacerbated by US commitments to make it easier for European countries to buy American LNG by reducing trade barriers, in recent announcements from Washington, DC. Shipping distances between the US and Europe are shorter and the NATO alliance has a vested interest in reducing Russia’s grip on Europe’s gas supply.

However, the potential readjustment of trade flows resulting from China’s tariffs on US LNG could also increase the role played by intermediaries such as LNG traders, and the need for shipping optionality, which could have an upward impact on ton-mile demand and LNG shipping rates in 2019.

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**S&P Global Platts LNG shipping methodology**

The increased sophistication of LNG trading requires greater precision and transparency in the shipping markets. For instance, ship owners have now begun to seek payments from charterers to position and re-position their ships, plus ballast bonuses equal to 100% of the fuel and hire rate.

This unprecedented development is the basis for the latest methodology change for S&P Global Platts LNG shipping assessments.

S&P Global Platts has added port costs for each loading and discharging point to its freight cost calculations, and introduced two new ballast rate assessments – one each for the Atlantic and Pacific basin – to assess the cost of the return leg of voyages.

**What is a ballast rate assessment?**

These assessments reflect the value typically charged by ship owners to charterers for the time and fuel used to position vessels for a spot voyage. Ballast rates, sometimes known as a “ballast bonus,” are assessed using all available data from the spot markets, including lump sum amounts. The rates replace the old practice of assuming round-trip economics at 100% of day rates for all voyages.

**Why is S&P Global Platts assessing ballast rates?**

Increased LNG shipping market seasonality and a growing number of spot fixtures have increased the market’s need for greater ballast rate transparency and accuracy on a $/MMBtu basis. This increases the precision of freight costs and netback calculations.