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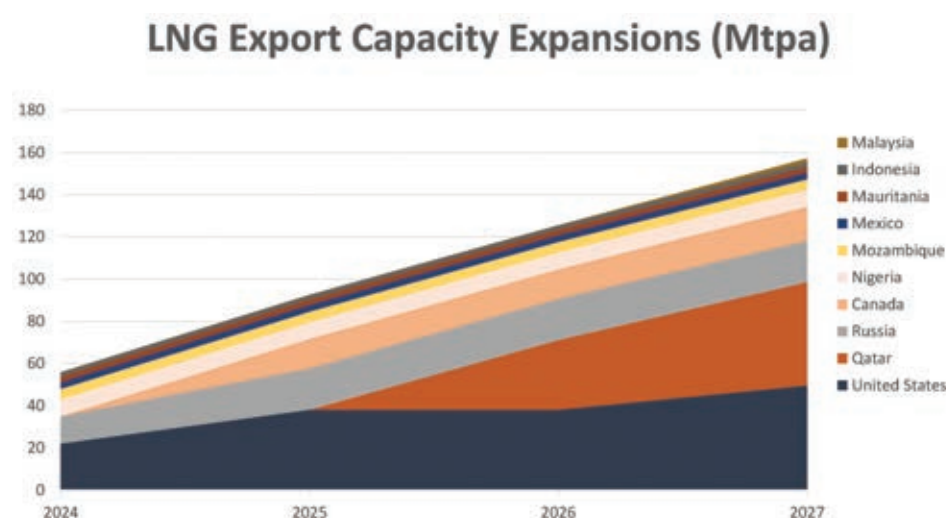
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LNG in 2023: A Retrospective & Outlook

LNG prospered in 2023, according to LNG Journal data, with a shift in Europe's gas strategy facilitating a steady undercurrent to strong demand growth in Southeast Asia. Prospects for 2024 are also positive, some uncertainty on Far Eastern demand notwithstanding, our Markets Editor Alexander Wilk writes.

In an era of significant energy transition, the LNG market is becoming increasingly pivotal in the global energy landscape. Global demand amounted to 408.31mmt in 2023, our data shows, up 15.15mmt (4 percent) year-on-year from 393.16mmt and 36.45mmt (10 percent) from 371.86mmt in 2021. Demand growth in 2023 was primarily driven by higher imports in Southeast Asia and on the India subcontinent whilst ongoing high demand in Europe provided a strong undercurrent. In the Far East, strong annual Chinese demand expansion was overshadowed by negative growth in Japan and South Korea.

Meanwhile, the global LNG market is poised for a substantial increase in supply, with major contributions from new projects across various regions, including Russia, the United States, Qatar and Africa. According to our project database, global LNG export capacity



Source: LNG Journal

could grow by more than 157 million tonnes per annum (mtpa) by 2027, barring any delays. The bulk of that growth is set to come from capacity expansions in the United States.

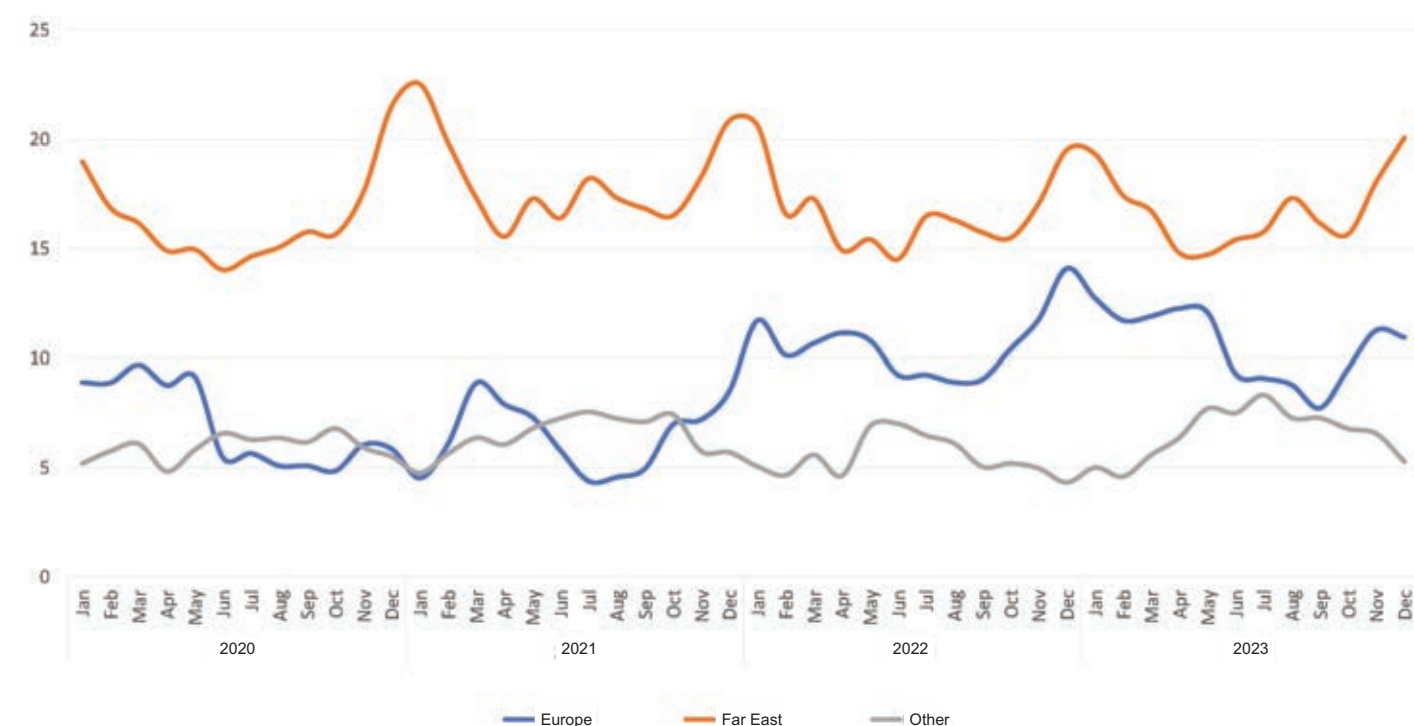
This evolving pattern underscores the diverse energy priorities and economic developments in Europe and Asia,

highlighting the regions' strategic approach to energy consumption and security.

European Market Dynamics

Europe's natural gas market is at a critical juncture, heavily reliant on LNG

Global LNG Demand (MMt)



Source: LNG Journal, Spire Global

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Maritime Content Ltd

2 Prospect Road
St Albans AL1 2AX
United Kingdom
www.LNGjournal.com
+44 (0)20 7253 2700

Publisher

Stuart Fryer

Markets & Commissioning Editor

Anja Karl
anja@lngjournal.com

Markets Editor

Alexander Wilk
alexander@lngjournal.com

Technical Editor

Ian Cochran
lancochran74@gmail.com

Fuelling Editor

Malcolm Ramsay
malcolmraysay@gmail.com

Advertising

David Jeffries, Only Media Ltd
Tel: +44 (0)20 8150 5293
djeffries@lngjournal.com

Subscriptions Sales Manager

Stephan Venter
venter@lngjournal.com

Subscriptions Renewals Manager & Customer Care

Gabi Weck
gabi@lngjournal.com

Production

Vivian Chee
chee@thedigitalship.com

Subscription

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See website for more details
www.lngjournal.com
hotline +44 (0)20 7253 2700

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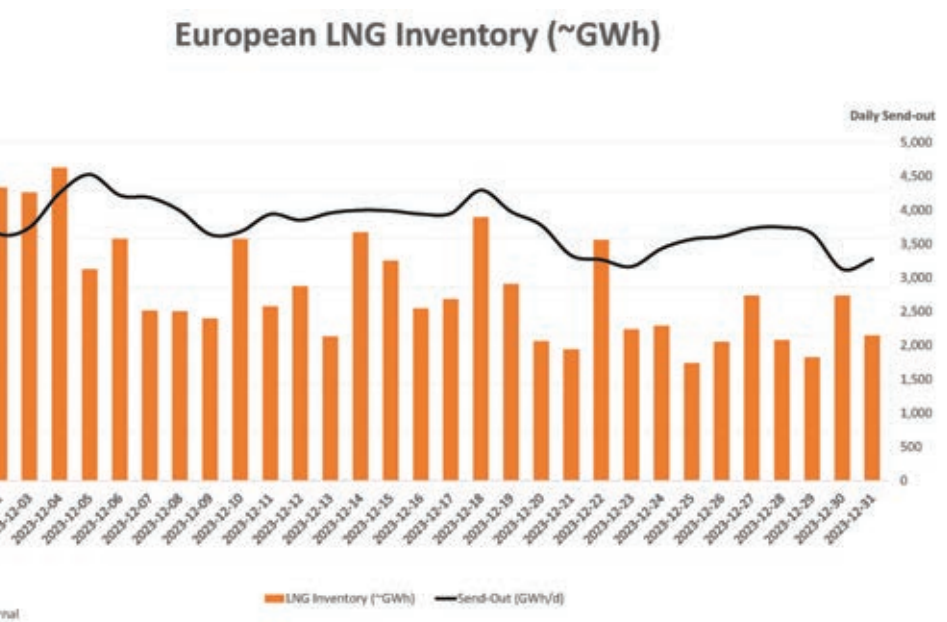
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amidst geopolitical shifts and energy diversification efforts. Europe's strategy focuses on balancing LNG imports with strategic reserves, emphasizing the need for diversification in energy sourcing and sustainability. At the time of writing at the beginning of January, average European gas storage levels were almost 87 percent full, with some leading gas consumers such as Germany showing robust fill levels beyond 90 percent. Similarly, Europe's LNG inventory, even with more

substantial draw-downs towards the end of December, has remained robust compared to October, according to data from Gas Infrastructure Europe (GIE).

Ample volumes in European gas storage this winter – inter alia supported by the recovery in Norwegian gas production and exports – have helped facilitate gas supply security within the European Union and led to a slight net demand reduction in December.

Notably, Russia's full-scale invasion of 2022 notwithstanding, Ukraine has emerged as a key gas storage destination for gas originally delivered to the EU as the bloc's own storage facilities approached maximum capacity as early as mid-October last year. The ability of EU transmission system operators (TSOs) to turn to Ukraine, home to Europe's largest gas storage capacity concentration, to store gas they acquired earlier in the year has helped energy groups and traders to make only relatively small drawdowns from repositories in the European Union, data by Gas Infrastructure Europe indicates. According to the Financial Times, Ukraine also offered incentives such as affordable storage tariffs and three-year custom duty exemptions, making it easier



to reimport gas to the EU as Kyiv aims to deepen its integration into the EU's energy market.

Ukraine possesses more gas storage capacity than any EU country, a legacy of its role as a vital transit nation for Russian pipeline gas, which used to account for nearly 40 percent of gas supply to the EU before the invasion. In 2022, the EU faced an energy crisis, with natural gas prices reaching record highs during the summer due to Moscow's supply cut.

Following steady inflows into Ukraine since last year's summer, drawdowns began quickly in early November and intensified as the month progressed. These net withdrawals continued on a high level in December, ENTSOG data on flows between Poland and Ukraine illustrates, and were instrumental in maintaining EU storage at a high level. At the time of writing, the Ukrainian gas storage level stood at only around 29 percent at the time of writing.

Importantly, the new EU-Ukraine gas market dynamic has served as the backdrop for new gas storage filling targets set by the European Commission in its new EU Gas Storage Regulation (EU/2022/1032), whereby EU Member

States are required to reach 90 percent of gas storage filled by 1 November 2024. The European Commission has set target milestones for February, May, July and September, 'based on the average filling rate during the preceding five years.'

Concurrently, however, market observers such as the Bruegel think tank have observed an ongoing European gas demand reduction in key sectors due to high energy prices, which have made a dent in domestic gas demand. This scenario underscores the need for Europe to maintain a balanced and flexible approach to LNG imports and storage management, adapting to changing market conditions and energy needs.

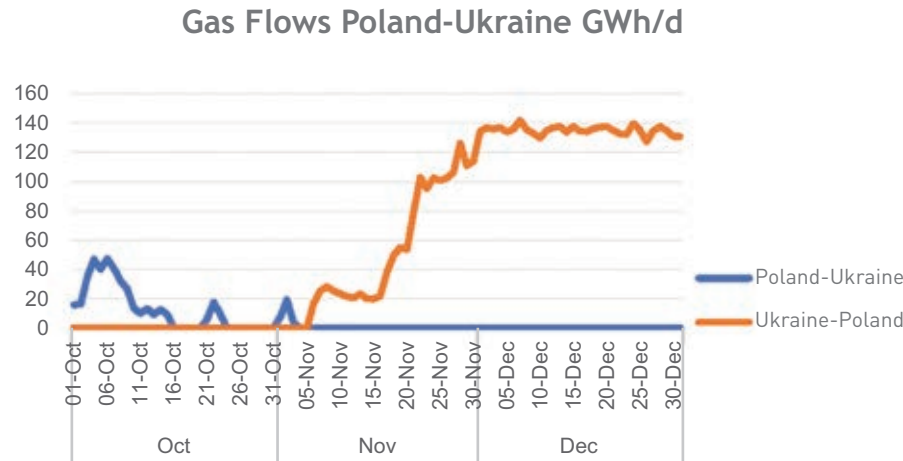
US LNG Export Capacity: A European Game Changer

Meanwhile, the United States has cemented its position as perhaps the key player in the global LNG market due to the significant growth in US LNG export capacity and shipments. The return of Freeport LNG in February 2023 and new liquefaction projects such as Calcasieu Pass LNG are set to bolster this expansion.

This development reflects the United States' growing role in shaping global LNG supply dynamics and its strategic position in the energy sector. At the time of writing, Europe has been the prime destination of US LNG exports, according to our data, with shipments to the continent amounting to more than 60mmt in 2023. In contrast, US LNG exports to the rest of the world amounted to only 31.88mmt.

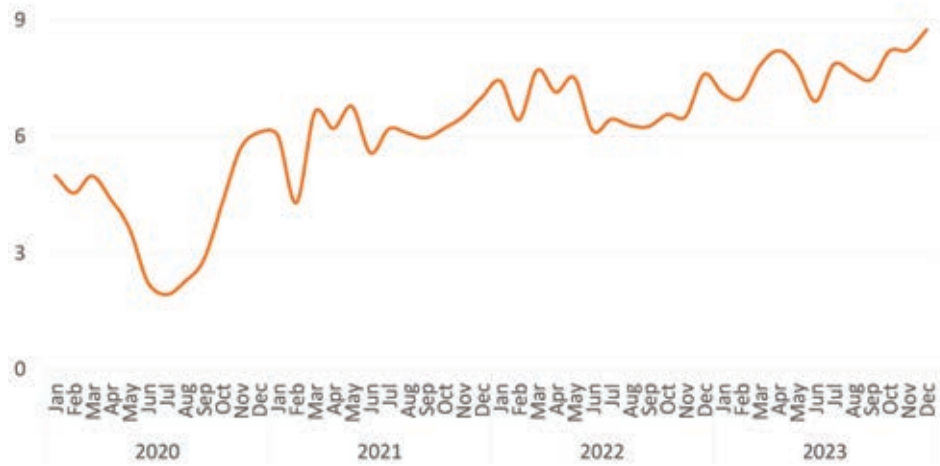
Smaller Demand Centres

Asia's LNG market is equally witnessing a notable transition. The diminished competition for LNG between Europe and North Asia due to Europe's gas



Source: ENTSOG

US LNG Exports (MMt)



Source: LNG Journal, Spire Global

storage plays and reduced demand in Japan and South Korea, marks a shift in the region's energy dynamics.

Southeast Asia saw a surge in LNG imports in 2023, a notable decrease in November/December offtakes notwithstanding, which was underpinned by domestic production declines as well as new infrastructure and contracts, for example in India. This highlights the region's evolving energy needs and the importance of LNG in meeting these demands. Our data at the end of December showed regional offtakes amounted to 51.79mmt for the year, up 9.92mmt (24 percent) from 41.87mmt in 2022. Nevertheless, regional demand has dipped during the winter months so far.

A similar development could also be observed in South America and the Middle East, where ongoing energy transitions in the Caribbean, Chile, Argentina and Kuwait bolstered demand growth. South American and Caribbean demand amounted to 11.34mmt in 2023, up by 1.49mmt (14 percent) year-on-year. Middle Eastern demand growth, meanwhile, stood at 1.23mmt (9 percent) year-on-year as it increased from

13.33mmt in 2022 to 14.56mmt in 2023.

Long-term LNG Market Outlook

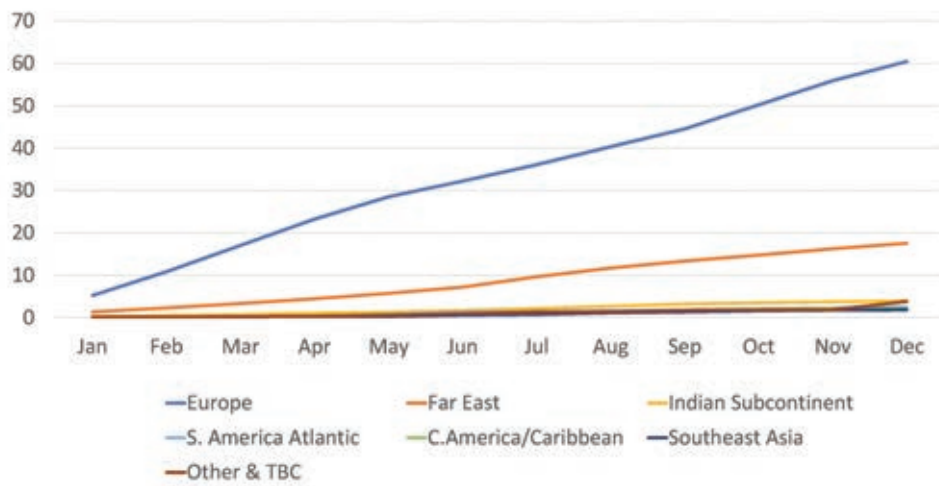
Looking at 2024 and beyond, the LNG market remains a crucial component of the global energy mix. The integration of new players and the adaptation of existing market participants are expected to reshape the LNG landscape, influencing global energy geopolitics and trade patterns.

A prominent factor is going to be the extent to which China will continue to turn to LNG as its immediate alternative to coal in particular. As we have predicted and reported previously, China has reaffirmed its role as the world's foremost LNG consumer in 2023. The country's demand grew by 8.28mmt (13 percent) to 71.80mmt whereas demand in Japan and South Korea, the two other major regional demand centres, had decreased by 4.95mmt (-7 percent) and 1.04mmt (-2 percent) to 66.06mmt and 44.73mmt, respectively.

Chinese economic expansion

To what extent China's charging ahead

Cummulative US Exports, 2023 (MMt)



Source: LNG Journal, Spire Global

with LNG demand continues remains to be seen, however, as its economic growth has been slowing significantly in 2023. At the time of writing, Chinese LNG demand was still underpinned by the power and industrial sectors, with urban adoption still relatively small despite ambitious targets. According to the IMF, China's economic expansion – and, by extension, energy demand – has previously been largely derived from investment-heavy growth, namely industry and construction. This growth, however, has since evolved to increasingly encompass household consumption and services, but with an uneven trajectory, the IMF submits. It points to a lack of productivity growth and mounting debt in particular as major stumbling blocks for brisk ongoing economic expansion in China but also warns that 'prognostications about China's growth prospects are a fraught exercise'.

In our view, the ongoing expansion of China's LNG import capacity serves as an important indicator of China's demand trajectory. As we highlighted in November, Chinese LNG import capacity is planned to grow to at least 166.88 million tonnes per annum (mtpa) by 2035,

with the bulk of 162.22mtpa potentially achieved by 2025. Even accounting for possible delays, the planned commercial market entry of almost 30mtpa in the first few months of 2024 will constitute a rapid expansion of nominal capacity hitherto not seen in the market.

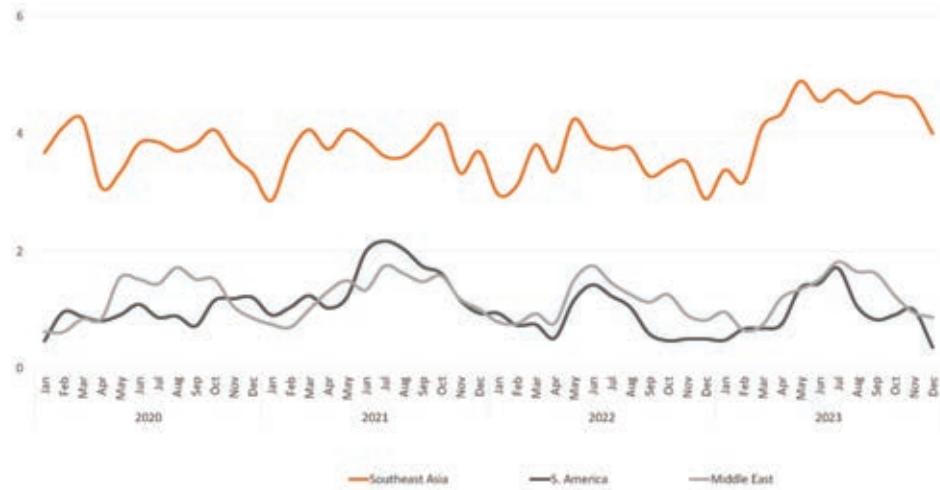
Concluding thoughts

The LNG market is navigating a period of significant transformation, influenced by global supply and demand shifts as well as regional dynamics.

Europe's focus on energy security and reducing single-source dependencies contrasts with Asia's diverse energy requirements and economic growth drivers. The US, leveraging its vast natural gas reserves, has emerged as a key exporter, affecting global LNG prices and supply dynamics.

Strategic planning and investment are essential to harness these opportunities and navigate the evolving energy landscape. As the world moves towards a more sustainable and secure energy future, LNG's role will be instrumental in shaping global energy policies, economic growth, and environmental sustainability.

LNG Demand In SE Asia, S. America & M. East (MMt)



Source: LNG Journal, Spire Global

Leading Far Eastern Demand Drivers (MMt)



Source: LNG Journal, Spire Global

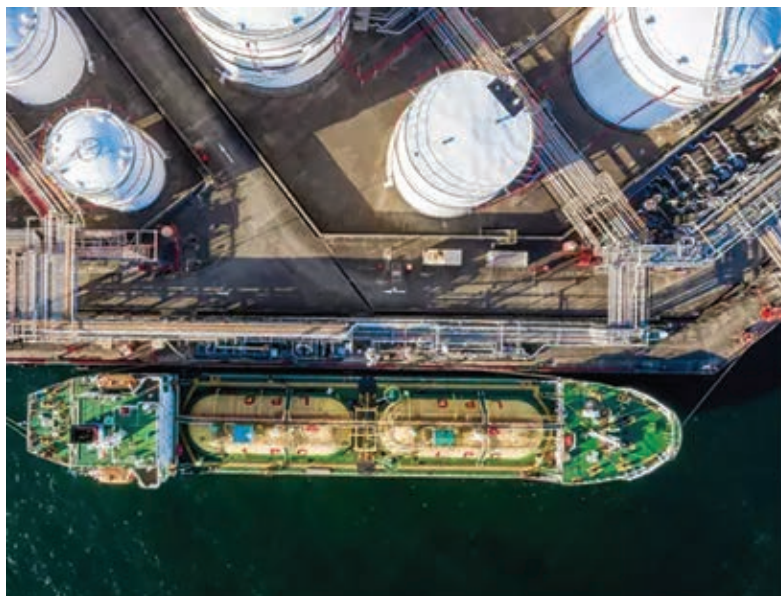
Northeast Asia stops short of issuing large buy tenders this winter

Muted gas demand prevails across northeast Asia as comfortable stocks and a mild winter make buyers abstain from issuing large tenders for balance-of-winter and avoid calls for US spot cargoes, for now. But with JKM prices forecast to average \$11.98/MMBtu in the first quarter of 2024 – just below oil-linked term gas supply – some private firms may seek to buy spot LNG rather than relying on their domestic suppliers. Our Markets Editor Anja Karl has more.

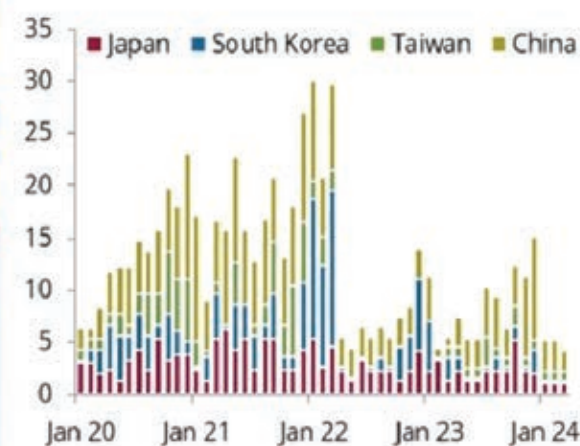
Flexibility in their contracts is a prerequisite for private buyers to opt for spot deliveries rather than term supply, but this move will have “no impact on pricing,” Energy Aspects reckons, as the producers will have much more volume to sell short-term. Major buyers are, however, thought to have already secured spot cargoes via bilateral deals.

Modelling finds no spot demand from Pakistan, but Bangladesh just issued a tender for a January delivery with the lowest offer received just below \$16/MMBtu. Bangladesh may well buy another four or five spot cargoes in the first quarter of 2024 “when JKM prices are more affordable,” Singapore-based Min Na noted. Energy Aspects’ head of Asia LNG also anticipates India’s LNG demand to rise by 1.1 million tons in the first quarter – though the country already secured most of the supply and may just need one or two spot cargoes, potentially through swap tenders.

With Chinese demand revised down and India well-covered, utility buyers will unlikely have to call on US spot LNG over the winter, not least because higher availability of nuclear generation in Japan reduces gas-burn. Energy Aspect’s model indicates a loosening of the Asian balance by 2.2 million tons, as Chinese



JKTC buy tenders, #cargoes



Source: LSEG, Bloomberg, Argus Media Group, Energy Aspects

LNG demand forecasts were revised down by 0.3 mt over the first quarter.

JKM-TTF spreads look overvalued

Bearishness abounds in Energy Aspects’ view on the JKM-TTF Q1-24 spreads – though a 0.2 million ton per month tightening in its Asian balance would create an interest for US cargoes. Spreads “look overvalued,” Ms Na commented, given that latest CME settlements point to reload from Europe to Asia in January and February 2024, and Asian call on US spot supply via the Cape of Good Hope – due to Panama Canal restrictions – in

March 2024.

Pricing of the Japan-Korea Marker (JKM), Platt’s benchmark LNG price assessment for spot physical cargoes to Asia, hinges on a “small and inconsistent call on US spot cargoes at the margin,” she explained.

Asia’s muted call on cross-basin cargoes could bring down freight rates to an average \$53,000/d, Energy Aspects suggests which would be significantly less than the CME curve averaging \$67,000/d over the first quarter. But Ms Na and her team still consider current Panama restrictions as an upside risk to freight rates.

The number of LNG carries, allowed to transit the Panama Canal, has been curtailed to 24 – down from the typically 36 per day – as draught reduced the water levels at Gatún Lake which is needed to operate the locks of the canal. Ships are waiting one or even two weeks in line at the canal, dependent on which way they are headed. In January the number of transit slots will be cut short by half which is bound to lengthen wait.

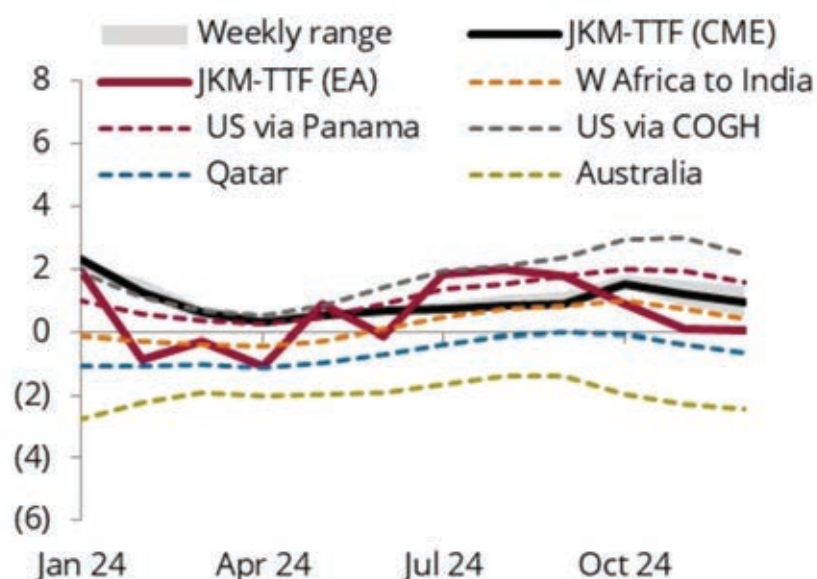
Margins shrink on higher shipping costs

Shipping companies that are hard-pressed for time are willing to pay exorbitant amounts to jump to the front of the queue. Some were heard paying as much as \$4 million to avoid wait times, on top of the rising cost for transit slots – initial bids for Panama Canal Authority’s latest special transit auction started at \$55,000. All of this is eating into profit margins.

Congestion costs for an LNG cargo from Sabine Pass in the US to Futtsu in Japan soared by \$1.5 million, making total spot freight \$6.2 million more expensive, Spark Commodities data shows. Netbacks from cargoes scheduled to load mid-December from US LNG facilities to Western Europe via the Panama Canal were at mid-\$14 per million British thermal units, about \$0.5/MMBtu lower than to East Asian destinations.

“The margin for US LNG to the Pacific will keep shrinking, given the longer voyage days and higher shipping cost,” Xi

JKM-TTF spreads, LNG freight diffs, \$/mmbtu

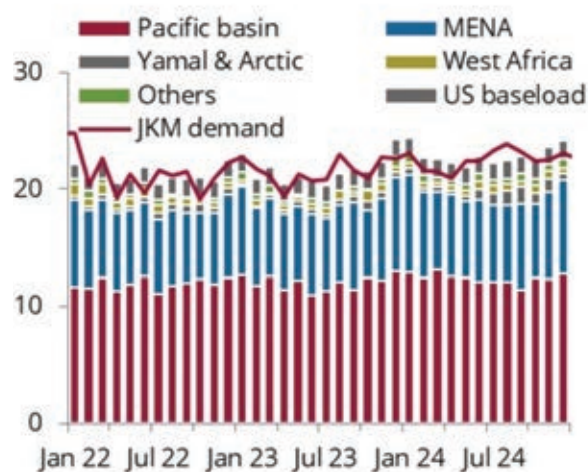


Note: Freight diffs are the increases in freight costs to send cargoes to Northeast Asia instead of Europe

Source: CME, Fernleys, Argus Media Group, Energy Aspects



Asia supply-demand stack ex-US flexible, Mt



Note: US baseload reflects assumed firm cross-basin flows regardless of spreads

Source: GTT, LSEG, Bloomberg, Energy Aspects



LNG tanker transiting the Panama Canal

Nan, head of LNG research at Oslo-based Rystad Energy said, suggesting: "The East Asia spot price will have to provide a premium to attract US supplies." With shippers bypassing the drought-stricken waterway, any cargoes that are still headed to Asia now transit via the Suez Canal or around the Cape of Good Hope, ship-tracking data shows. Strikingly, the Asian gas price premium on US LNG compared to Europe for the summer-2024 contract has more than doubled.

Beware weather risks

Though Asian utility buyers are well covered, weather-risk remains with analysts cautioning that "the difference between a mild and a cold winter is about 10 billion cubic metres (bcm) in China." A cold wave has prompted many Chinese municipalities, including Beijing and some in Hebei and Shaanxi, to start district heating ahead of schedule with utilities dispatching coal- and gas-fuelled cogeneration plants. A short-lived cold spell should have little impact on LNG demand, analyst reckon, considering China can draw on robust domestic gas production, the ramp-up of Russian pipeline gas deliveries and higher stock-builds estimated at 20.7 bcm.

Over in Japan, LNG is forecast to fall by 0.1 million tons year-on-year for the balance of winter amid higher nuclear availability and stronger stock-draws. Japan had 5.7 million tons of LNG in stocks in November, 0.5 million tons less than the five-year average.

"Japan's power market is less tight than last year, with the lowest power reserve margin at 5.2 percent in areas including Tokyo and Tohoku in January 2024 under a cold-winter scenario, up from 4.1 percent last year," analysts commented. Electricity demand across

Japan could rise by 1 percent year-on-year this winter but a rise in nuclear availability up 1.1 GW (due to the restart of Takahama Unit 1&2) and renewables will reduce aggregate calls on thermal for balance-of-winter.

"Unfavourable economics" also limit the dispatch of oil- and gas-fired power plants, analysts said, explaining JKM and oil-linked term LNG import contracts are both priced higher than the top of the fuel-switching range, hence utilities will favour coal over gas for power generation.

Southeast Asia's demand poised to double

Global LNG trade reached a record high in 2022 and will grow by another 25 percent to 500 million tons annually in five years as demand in southeast Asia takes off, the International Energy Forum (IEF) finds. Supply growth largely originating from the United States where liquefaction capacity is planned to rise by 17 percent by 2025 and another 43 percent by 2028. According to IEF and data analytics firm Synmac, "southeast

Asia will become the new LNG import hotspot," with demand poised to double by the end of the decade, driven by Singapore, Vietnam, and the Philippines.

Volatile prices and supply disruptions in the wake of the Russia/Ukraine war have far-reaching effects on emerging economies: South Asia – notably India, Pakistan, and Bangladesh – slashed LNG purchases by 16 percent last year. Many buyers in the region withdrew from spot markets altogether, and suppliers under long-term contracts in some cases defaulted on deliveries to obtain higher profits in other markets.

"A lack of access to affordable natural gas led to fuel shortages and increased use of carbon-intensive fuels. This impacted countries' energy strategies and LNG's perceived reliability and affordability," IEF secretary general Joseph McMonigle commented.

Europe's offtake falls post-2030

Geopolitics has remapped trade flows and investments. European buyers have turned to LNG to fill the void left by

Gazprom's halt in contractual Russian pipeline gas deliveries which contributed to Russia's gas production plunging 21 percent over the past two years to hit a 14-year low in 2023. LNG's share of gas demand rose from 12 percent a decade ago to more than 50 percent which prompted a flurry of regas and import terminal projects.

"LNG is now an integral part of Europe's energy mix, acting as a baseload and replacing the role of Russian pipeline gas," McMonigle noted, though things are about to change: By 2030, Europe's regas capacity could grow by another 48 percent which makes some policymakers wary of overcommitting to gas infrastructure as demand is poised to fall as EU countries progress towards Net Zero goals.

Europe accounted for 31 percent of LNG contracts signed this year, dwarfed by Asia Pacific's 46 percent share with analysts anticipating European buyers will cover more than 70 percent of their LNG demand on the spot market by 2030 as the role of gas in the energy mix changes as decarbonisation progresses. ■

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December trade buoyant on higher US, Australian and Qatari exports

Our December data showed significant LNG trade growth globally although exports were broadly flat year-on-year. Meanwhile, demand also saw a net increase on account of a few select demand centres, our Market Editor Alexander Wilk reports.

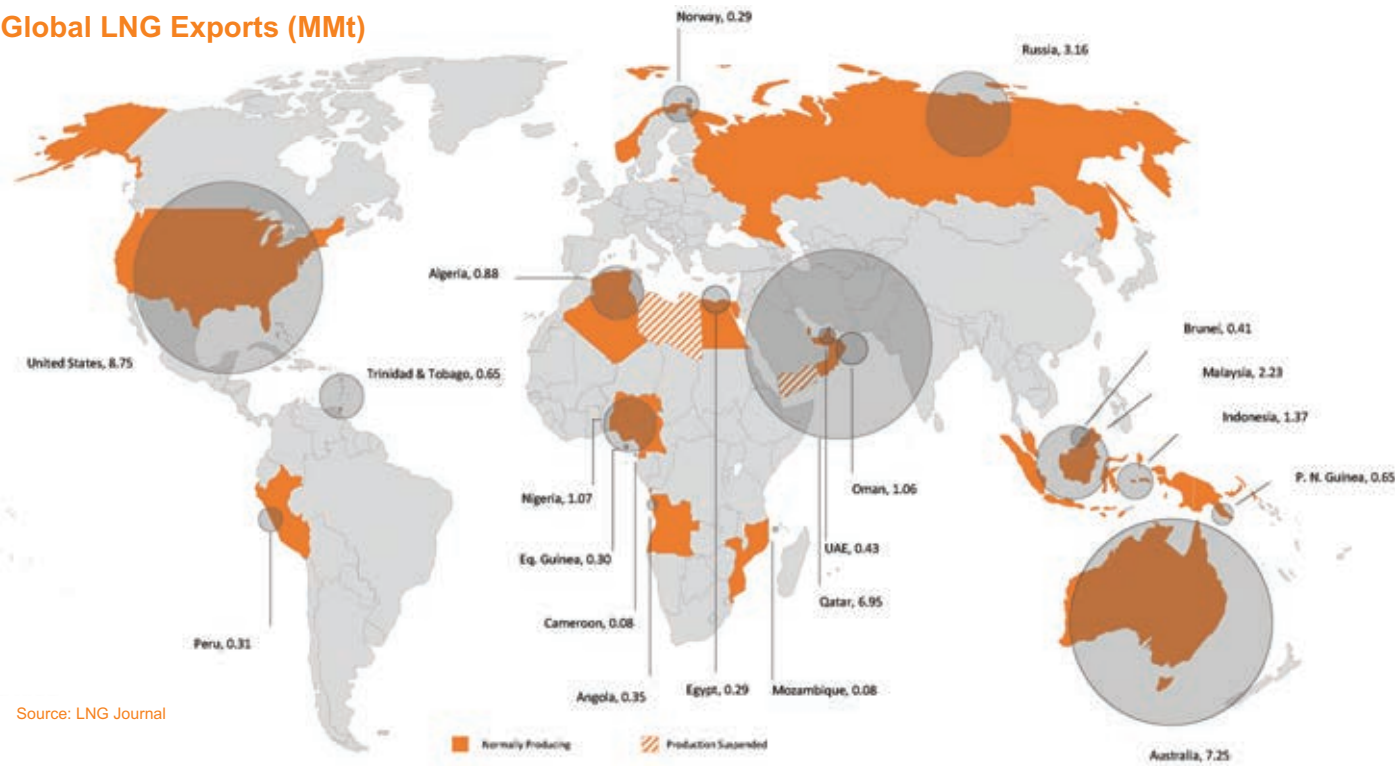
Global LNG exports in December amounted to 36.82mmt and thus ended the month with a trade boost of 2.30mmt (7 percent) from 34.52mmt in November. Among the three most significant exporters in December, the United States saw an export increase of 0.60mmt (7 percent) with 8.75mmt in shipments compared to 8.15mmt in November. Concurrently, Australia grew its cargo loadings by 0.64mmt (10 percent) to 7.25mmt whilst Qatar increased its LNG flows by 0.46mmt (7 percent) to 6.95mmt from 6.49mmt in November. However, global exports remained broadly flat year-on-year, showing a marginal net decrease of 0.09mmt from the 36.91mmt we recorded in December 2022 due to lower Middle Eastern exports.

Global LNG demand, meanwhile, was led by China with imports of 7.40mmt in December, up by 0.58mmt (9 percent) to 7.40mmt. Japan, meanwhile, increased imports by 1.41mmt (27 percent) to 6.55mmt whilst South Korea grew imports by 0.49mmt (12 percent) to 4.71mmt.

Exports

As December closed, 36.82mmt of global LNG exports were up compared to their

Global LNG Exports (MMt)



Source: LNG Journal

November counterparts of 34.24mmt. Strong demand growth was almost equally split between the Atlantic and Pacific Basins, and which was surpassed by an export spurt in the Middle East.

Pacific Basin

Our December data shows Pacific exports accrued to 13.64mmt during the month, coming in above November's total of

12.99mmt by 0.65mmt (5 percent). Consequently, annualised capacity utilisation stood at 90 percent. Exports were also up by 0.10mmt (1 percent) year-on-year.

Australia: The Pacific Basin's most significant exporter by installed capacity – Australia – boosted exports by 0.64mmt (10 percent) to 7.25mmt in December from 6.61mmt in November.

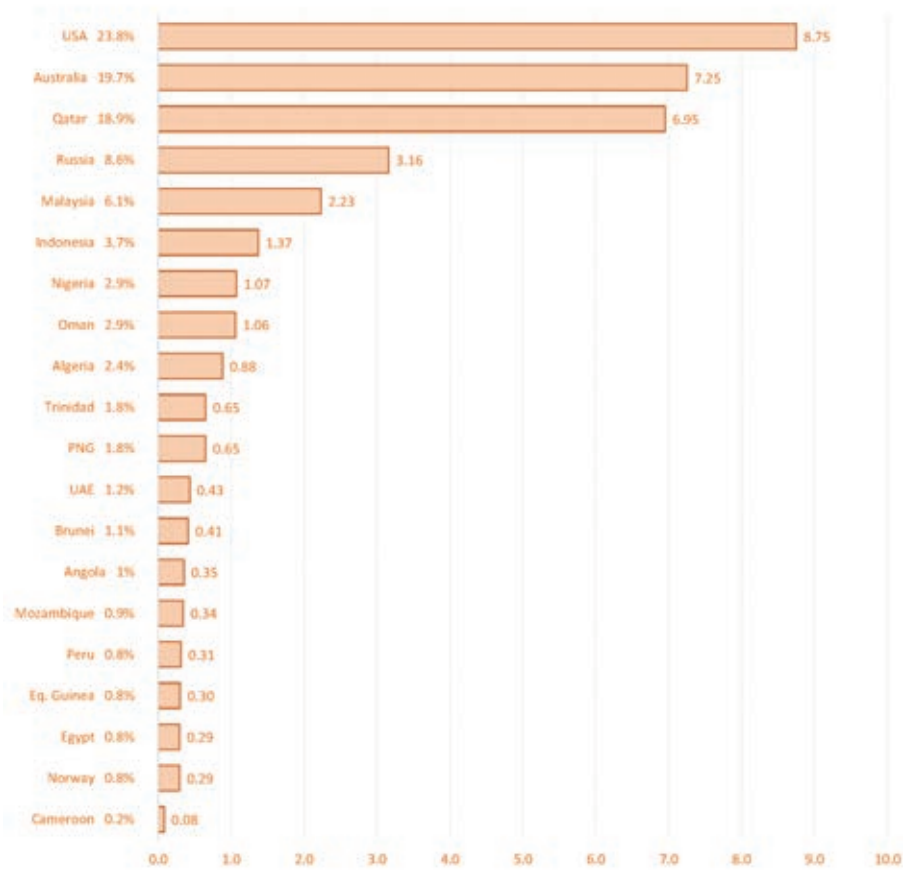
Most plants experienced an increase in shipments, with NWS LNG in the lead through an increase of 0.30mmt (30 percent) to 1.30mmt compared to 1.00mmt in November. Wheatstone LNG equally experienced a significant increase of 0.27mmt (39 percent) to 0.96mmt in December compared to 0.69mmt in November. Moreover, Australia Pacific LNG grew exports by 0.22mmt (33 percent) to 0.89mmt from 0.67mmt in November whilst Gladstone LNG shipped 0.14mmt (27 percent) more in December, reaching 0.65mmt from the 0.51mmt we recorded in November. Elsewhere in Australia, Prelude FLNG returned to the market with a 0.08mmt shipment in December whilst Gorgon LNG saw only a slight export increase of 0.04mmt (3 percent) to 1.63mmt from 1.59mmt in November. These increases were tempered, however, by export decreases totalling 0.41mmt at Ichthys LNG, Darwin LNG, Queensland Curtis LNG and Pluto LNG. Ichthys LNG faced a

decline of 0.03mmt (-4 percent) to 0.71mmt whilst no cargo loadings took place at Darwin LNG following a single export of 0.06mmt in November. Concurrently, Queensland Curtis LNG cut shipments by 0.12mmt (-15 percent) to 0.67mmt alongside an even more significant cut by 0.20mmt (-36 percent) to 0.36mmt at Pluto LNG.

Australian exports were led by shipments to Japan amounting to 2.68mmt in December, up by 0.36mmt (16 percent) month-on-month to 2.68mmt. China also increased its monthly imports from Australia by 0.25mmt (12 percent) to 2.39mmt alongside a modest increase by South Korea of 0.03mmt (3 percent) to 0.99mmt. Singapore, meanwhile, boosted its Australian offtakes by 0.21mmt (150 percent) month-on-month to 0.35mmt. In contrast, however, Taiwan cut imports by 0.22mmt (-33 percent) month-on-month to 0.44mmt whilst Malaysia cut imports by 0.07mmt (-37 percent) to 0.12mmt. Thailand saw its supply from Australia remain broadly steady at 0.06mmt whilst Indonesia did not receive LNG from Australia in December compared to 0.06mmt in the previous month.

Southeast Asia: North of Australia, Papua New Guinea's PNG LNG recorded a slight production increase of 0.01mmt (2 percent) to 0.65mmt in December from the 0.64mmt it shipped in November. The plant's annualised capacity utilisation

Market Share & LNG Exports by Country (MMt)

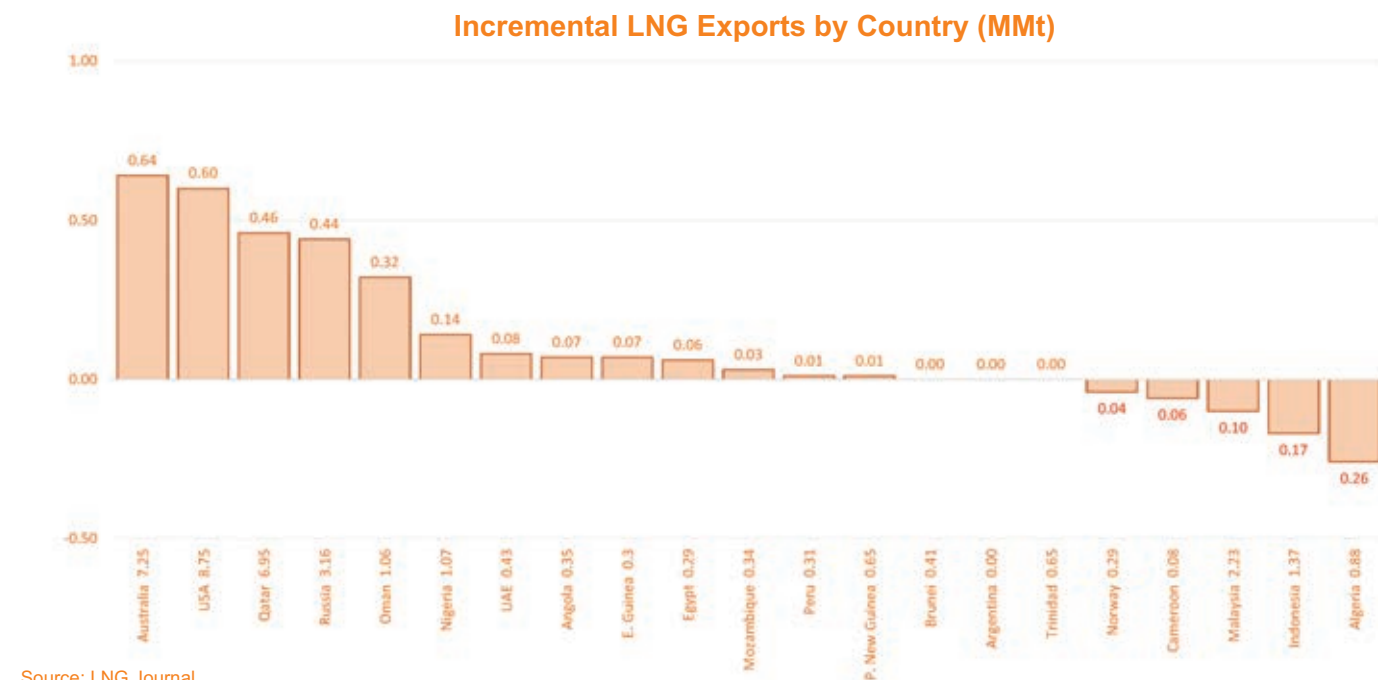


Source: LNG Journal

rate thus stood at 94 percent. Papua New Guinean LNG exports were led by shipments of 0.34mmt to Japan in December, up by 0.15mmt (79 percent) month-on-month. Taiwan also increased its PNG LNG offtakes by 0.07mmt (88 percent) to 0.15mmt in December. Conversely, China slashed its offtakes by 0.14mmt (-47 percent) to just 0.16mmt whilst South Korea did not receive LNG from Papua New Guinea in December compared to 0.07mmt in the previous month.

Indonesia, meanwhile, ended the month of December with a significant decrease in shipments of 0.17mmt (-11 percent) to 1.37mmt from 1.54mmt in November. Bontang showed an export decrease of 0.21mmt (-43 percent) with only 0.28mmt in shipments compared to 0.49mmt in November. Donggi-Senoro LNG also reduced exports by 0.06mmt (-25 percent) to 0.18mmt compared to 0.24mmt in November. These export reductions were only cushioned by a substantial increase of 0.10mmt (12 percent) to 0.91mmt at Tangguh LNG. As result, the Bontang plant produced at only 29 percent of annualised capacity utilisation whilst Donggi-Senoro and Tangguh LNG achieved 108 and 144 percent, respectively.

Malaysia, meanwhile, saw an export decrease of 0.10mmt (-4 percent) to 2.23mmt in December from 2.33mmt in November. This was because Malaysia LNG cuts exports by 0.26mmt (-12 percent) to just 1.95mmt in shipments from 2.21mmt in November. The plant thus reduced its annualised utilisation to 80 percent. This export reduction was cushioned, however, by an export increase totalling 0.16mmt at PFLNG 2 and PFLNG 1. PFLNG 2 boosted shipments by



0.14mmt (200 percent) to 0.21mmt whilst PFLNG 1 experienced a more modest LNG export increase of 0.02mmt (40 percent) to 0.07mmt. The two floating plants thus showed annualised capacity utilisation of 210 percent and 70 percent, respectively.

Brunei LNG saw no change in production levels with 0.41mmt shipped in December, unchanged from November. The plant's utilisation rate thus stood at 68 percent. Whilst China and South Korea slashed their respective offtakes from Brunei LNG, these losses were compensated by renewed exports to Taiwan and stable demand from Japan. Our data also showed at the time of writing that 0.14mmt of Brunei shipments still had to declare their destination within the Pacific.

Russia, Peru & Mozambique: Elsewhere in the Pacific, Sakhalin-2 LNG recorded a production increase of 0.23mmt to 1.08mmt in December, representing growth of 27 percent from the 0.85mmt we recorded in November. The plant's annualised capacity

utilisation rate thus stood at 135 percent. The plant's LNG exports were led by shipments to Japan amounting to 0.72mmt in December, up by 0.11mmt (18 percent) whilst South Korea maintained its Sakhalin imports at 0.18mmt. China also doubled imports to 0.12mmt alongside a further 0.06mmt destined for the Pacific Basin.

Meanwhile, Peru's Pampa Melchorita LNG showed a modest production increase of 0.01mmt (3 percent) to 0.31mmt in December, our data shows. The plant's annualised capacity utilisation rate thus stood at 84 percent. LNG exports from Peru were led by shipments to Chile.

Finally, Mozambique's Coral Sul FLNG recorded a production increase of 0.03mmt (10 percent) to 0.34mmt in December, which pegged the plant's annualised capacity utilisation rate at 120 percent.

Atlantic Basin

Surpassing even the strong growth in the Pacific in volume terms, the Atlantic

Basin's overall shipped LNG had increased by 0.73mmt (55 percent) to 14.45mmt in December from 13.72mmt in November. This translated into annualised export capacity utilisation of 83 percent for the Basin. Exports were also up by 0.41mmt (3 percent) year-on-year.

North Africa & Europe: The amount of LNG shipped from within its north-eastern part - comprising the EEA, Russia and North Africa (and not including re-exports) - amounted to 5.05mmt in December and thus constituted a slight increase of 0.13mmt (3 percent) from 4.92mmt in November.

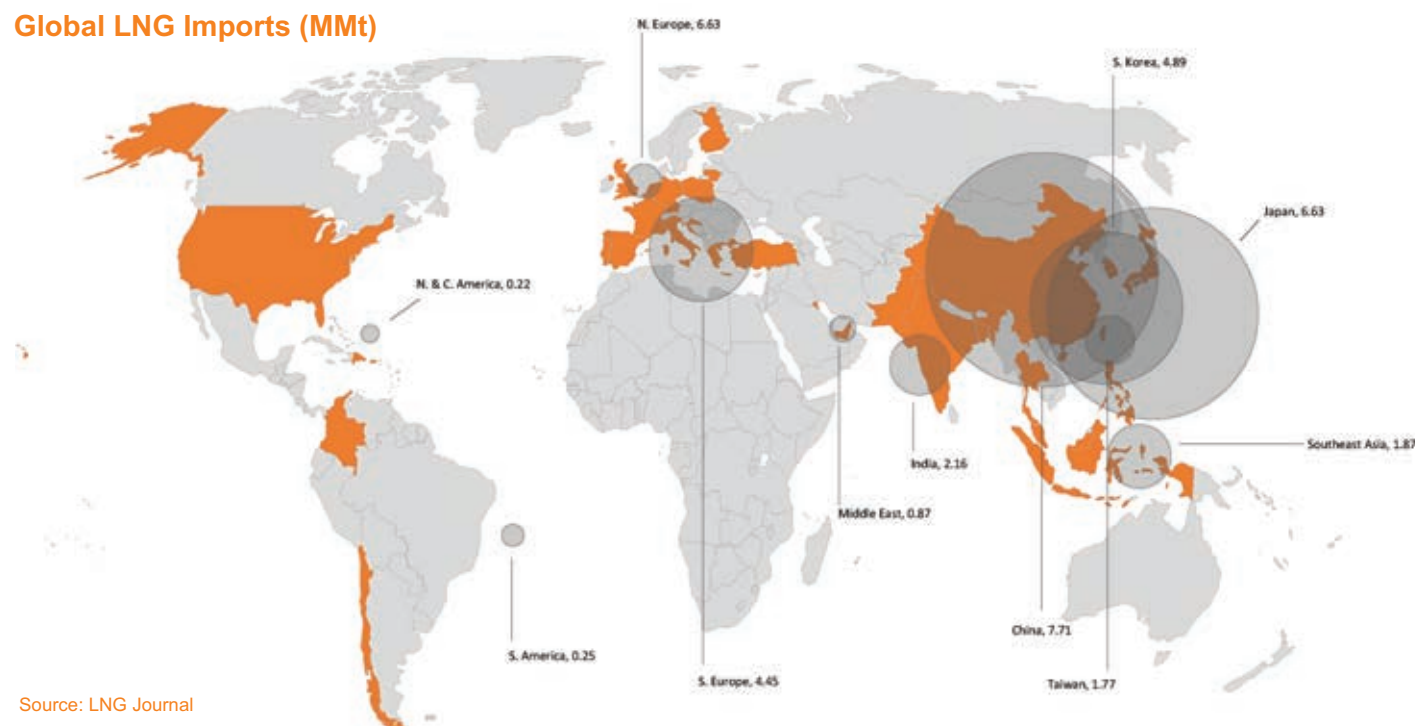
Notably, Russia's Atlantic Basin capacity boosted exports by 0.21mmt (11 percent) to 2.08mmt in December from 1.87mmt in November. For Yamal LNG, we recorded a substantial export increase of 0.28mmt (16 percent) to 2.01mmt in shipments from 1.73mmt in November. The plant thus produced at 139 percent of annualised nameplate capacity. This increase was tempered, however, by a halving in exports to 0.07mmt at Portovaya LNG, which also led to a slump in annualised nameplate capacity utilisation to 42 percent.

Apart from Portovaya LNG, Yamal LNG's export growth in December was also overshadowed by reductions amounting to 0.30mmt in Norway and Algeria.

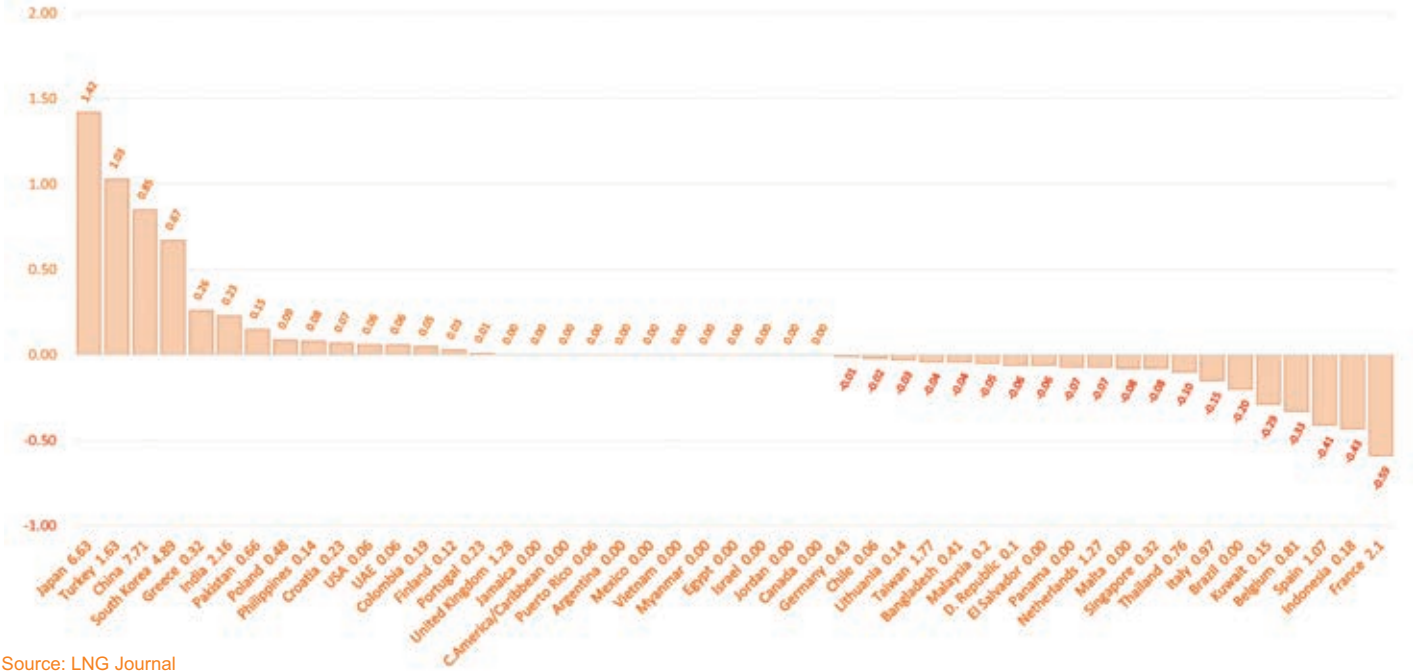
Our data shows Norway's Snohvit LNG decreased exports by 0.04mmt (-12 percent) to 0.29mmt in December from 0.33mmt in November. The plant's annualised capacity utilisation rate thus stood at 83 percent. Norway's negative export growth was driven by lower demand for its LNG in Finland and the Netherlands.

At 0.88mmt, Algeria ended the month with a significant decrease in shipments

Global LNG Imports (MMt)



Incremental LNG Imports by Country (MMt)



Source: LNG Journal

of 0.26mmt (-23 percent) from 1.14mmt in November. Our data shows Arzew faced a decline of 0.21mmt (-23 percent) to 0.70mmt in shipments compared to 0.91mmt in November. whilst Skikda reduced exports more moderately by 0.05mmt (-22 percent) to 0.18mmt. The two plants thus operated at 40 and 28 percent of annualised capacity utilisation, our data indicates. Export reductions to Algeria’s negative export growth in December.

West Africa: West African LNG flows saw a boost of 0.22mmt (14 percent) to 1.80mmt in December compared to 1.58mmt in November as most plants experienced an increase in production.

Prominently, Nigeria’s Bonny Island achieved a substantial export increase of 0.14mmt (15 percent) to 1.07mmt from 0.93mmt in November. Concurrently, Angola LNG grew shipments by 0.07mmt (25 percent) to 0.35mmt whilst Equatorial Guinea’s EG LNG also experienced a significant increase of 0.07mmt (30 percent) to 0.30mmt. These increases were only tempered by an export decrease of 0.06mmt (-43 percent) to 0.08mmt at Cameroon FLNG.

West Africa’s December exports were led by 0.35mmt in shipments to yet to be determined destinations within the Pacific Basin. Concurrently, Thailand maintained imports from the region at 0.21mmt whilst other important destinations such as China slashed their offtakes from West African producers by 0.36mmt (-72 percent).

Americas: Exports from the United States saw a boost of 0.60mmt (7 percent) to 8.75mmt in December from 8.15mmt in November. Cameron LNG experienced a significant export increase of 0.33mmt (28

percent) to 1.53mmt in December from 1.20mmt in November. Sabine Pass LNG also produced a substantial export increase of 0.32mmt (12 percent) with 2.98mmt in shipments compared to 2.66mmt in November. Elba Island LNG further added to US LNG export growth with an increase of 0.08mmt (50 percent) to 0.24mmt in shipments alongside Cove Point LNG and its substantial increase of 0.05mmt (11 percent) to 0.50mmt. These increases were tempered, however, by export decreases totalling 0.18mmt at Freeport LNG, Calcasieu Pass LNG and Corpus Christi LNG. Whilst Freeport LNG faced only a marginal decline of 0.01mmt (-1 percent) to 1.37mmt, Calcasieu Pass LNG saw a more pronounced reduction of 0.03mmt (-3 percent) to 0.90mmt. Finally, Corpus Christi LNG’s December exports decreased by 0.14mmt (-10 percent) to 1.23mmt from 1.37mmt in November.

In South America, Atlantic LNG saw no change in monthly LNG exports, according to our data, with shipments amounting to 0.65mm. The plant's utilisation rate thus stood at 51 percent.

Middle East

Middle Eastern LNG exports in December amounted to 8.73mmt and thus ended the month with a trade boost of 0.92mmt (12 percent) from 7.81mmt in November. Accordingly, our data showed the Basin’s annualised utilisation of operational export capacity (i.e., excluding Yemen) at 112 percent at the end of December. Nevertheless, exports were down by 0.60mmt (-6 percent) year-on-year, mainly due to lower Egyptian exports.

The Middle East’s overall export growth was drive by Qatar’s Ras Laffan LNG complex. Our data shows the facility

exported 6.95mmt in December, an increase of 0.46mmt (7 percent) from November’s 6.49mmt. The plant's annualised capacity utilisation rate thus stood at 108 percent. Notably, Qatar’s December trade was led by shipments to China amounting to 1.69mmt whilst exports to key offtakers in Europe such as

Italy showed substantial decreases by the end of the month.

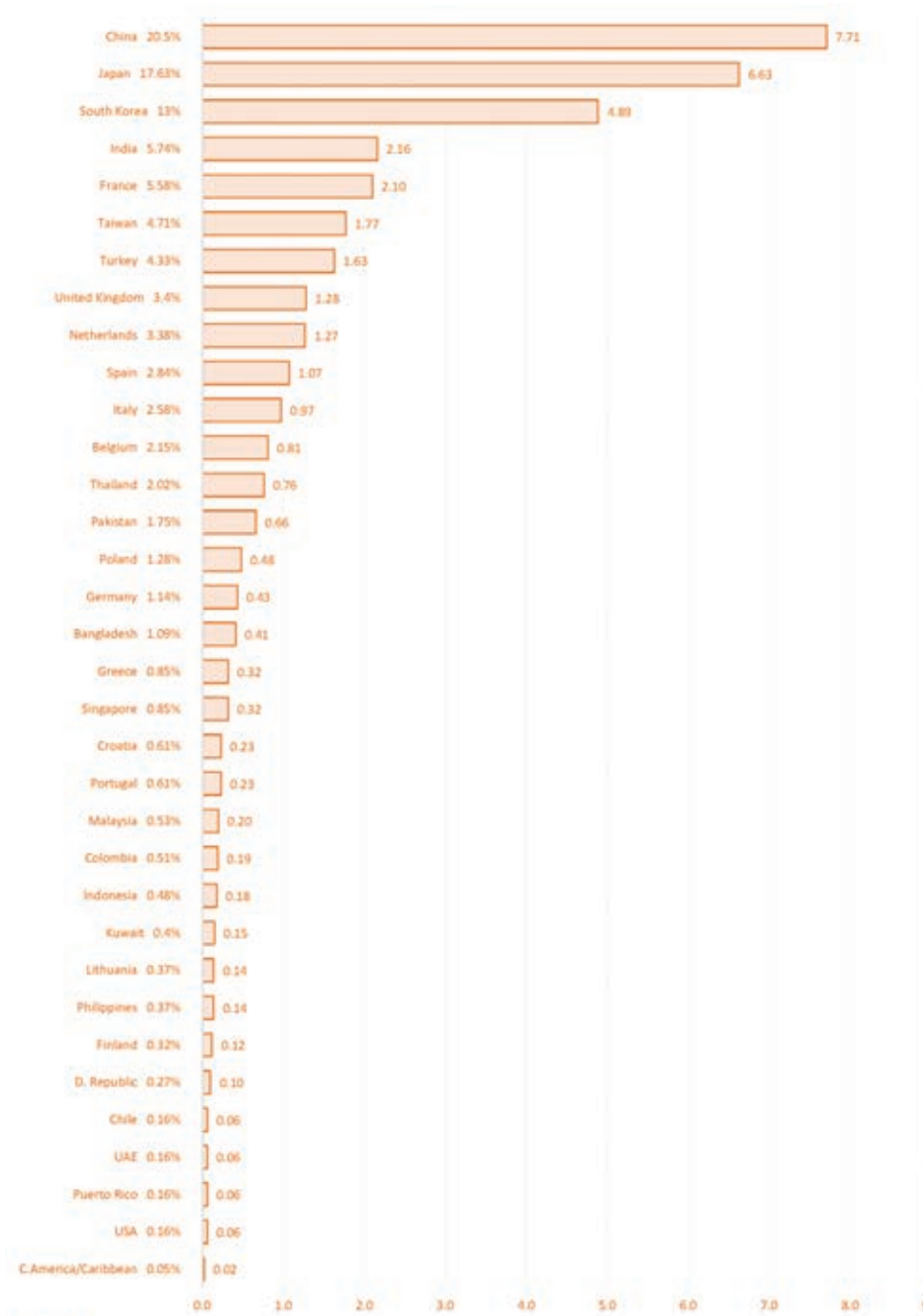
Some export growth in the Middle East also stemmed from Egypt, where Idku LNG almost doubled shipments by 0.14mmt to 0.29mmt in December. The plant's annualised capacity utilisation rate thus stood at 48 percent. However, the neighbouring Damietta LNG plant did not export LNG in December compared to a 0.08mmt shipment in November.

High performance by Qatar was shadowed by a significant increase in Omani LNG exports, which were up by 0.32mmt (43 percent) from 0.74mmt in November to 1.06mmt in December. The plant's annualised capacity utilisation rate thus stood at 122 percent. In the neighbouring UAE, Abu Dhabi's Das Island also recorded a production increase of 0.08mmt (23 percent) to 0.43mmt in December from 0.35mmt in November. The plant's annualised capacity utilisation rate thus stood at 94 percent.

Imports & Domestic Trade

Global LNG imports at the end of

Market Share & LNG Imports by Country (MMt)



Source: LNG Journal

December had increased noticeably by 1.95mmt (5 percent) to 37.59mmt compared to the 35.64mmt our data shows for November. Demand growth at the time of writing materialised in the Pacific Basins but was tempered by reductions in the Atlantic and the Middle East.

Pacific Basin

Month-on-month Pacific Basin imports were up by 2.43mmt (11 percent) net to 25.23mmt from 22.80mmt in November. Among larger-scale importers, China, Japan, South Korea and India increased their offtakes by 3.17mmt (17 percent) in total to 21.39mmt. This was only tempered by a slight demand decrease of 0.04mmt (-2 percent) to 1.77mmt in Taiwan.

Concurrently, the roster of smaller Pacific buyers— including Thailand, Bangladesh, Singapore, Malaysia, Indonesia, the Philippines, Chile, El Salvador and Myanmar – collectively saw imports decrease by 0.70mmt to 2.07mmt in December. This reduction was primarily due to demand decreases in Indonesia and Thailand, where offtakes were down by 0.43mmt (-71 percent) to 0.18mmt and by 0.10mmt (-12 percent) to 0.76mmt, respectively. The roster's overall negative growth was only slightly cushioned by an increase of 0.08mmt (133 percent) to 0.14mmt in the Philippines. Mexico and Myanmar were not seen in the market in December.

Atlantic Basin

In contrast to the Pacific, LNG demand in the Atlantic Basin decreased. Demand was down by 0.61mmt (-5 percent) to 11.51mmt from 12.12mmt in November, with annualised utilisation of installed capacity at 42 percent.

European demand saw a net decrease of 0.18mmt (-2 percent) to 11.08mmt. Strong import growth in Turkey by 1.03mmt (171 percent) to 1.63mmt in addition to increases totalling 0.46mmt in Greece, Poland, Finland, Croatia and Portugal was overshadowed by negative growth of 1.67mmt stemming mainly from several larger-scale European buyers such as France and Spain.

Our December data also shows a significant demand decrease of 0.22mmt in the Americas. Whilst there had been offtakes in the United States with 0.06mmt, we did not record demand in Canada. Moreover, net negative growth amounted to 0.28mmt in the Caribbean and South America. The region had seen

monthly LNG demand decrease particularly in Brazil, where offtakes had vanished in December following imports of 0.20mmt November. Panama and the Dominican Republic also cut their combined offtakes by 0.13mmt to 0.10mmt alongside a lack of demand in Argentina and Jamaica. This negative growth in the Caribbean was only cushioned by steady monthly demand of

0.06mmt in Puerto Rico as well as an increase of 0.05mmt (36 percent) to 0.19mmt in Colombia.

Middle East

Overall Middle Eastern LNG demand of 0.87mmt was down by 0.08mmt (-8 percent) from 0.95mmt in November. Robust offtake growth of 0.15mmt (29 percent) to 0.66mmt in Pakistan and

fresh demand of 0.06mmt in the UAE was overshadowed by a drastic demand reduction of 0.29mmt (-66 percent) to 0.15mmt in Kuwait. Jordan, meanwhile, did not import a cargo in December. The same applied to Egypt's FSRU at Ain Sokhna. As such, the Middle East's annualised import capacity utilisation stood at only 13 percent at the time of writing.







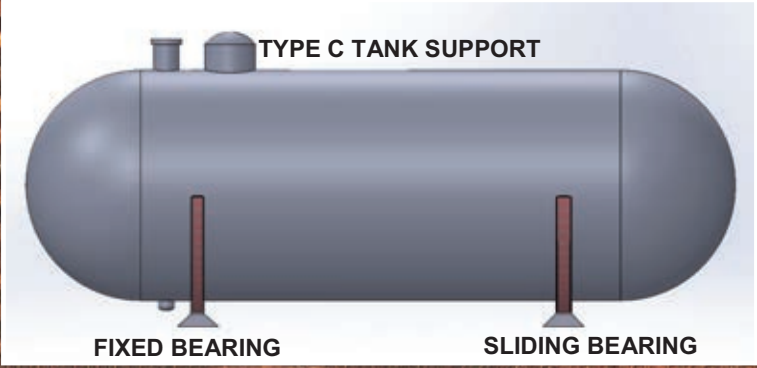




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Problems with South Korea's new cargo containment system ends up in arbitration

Last month, the London Maritime Arbitration Association (LMAA) ordered Samsung Heavy Industries (SHI) to pay \$290 mill in compensation to SK Shipping for defects found in two LNGCs built by the South Korean shipbuilder. Technical Editor Ian Cochran has more.

On 15th December, The LMAA ruled that two LNGCs delivered to SK Shipping's special purpose companies — SHIKC1 and SHIKC2 — had defects in their cargo containment systems (CCS) that were “not adequately repaired within a reasonable time frame,” according to the South Korean Financial Supervisory Service's electronic website.

Both companies had decided to go to arbitration in London to settle the dispute.

The argument stemmed from a contract signed in January, 2015, by which SHI agreed to construct two LNGCs fitted with South Korea's first LNG membrane tank system, KC-1.

KC-1 was designed by Korea Gas Corp (KOGAS) and built by SHI to be fitted on LNGCs operated by SK Shipping. The two vessels at the centre of the dispute were delivered in February and March, 2018, respectively.

However, both ships soon faced operational difficulties, due to defects, such as cold spots, where ice formed on the outer walls of the CCS, risking the cracking of its casing.

As a result, SK Shipping formally launched legal action against SHI citing a ‘decrease in vessel value and losses, due to non-operation.’

“Recognition of liability for damages has been acknowledged, as the cargo containment system defect has not been fully repaired,” SK Shipping said. “However, losses for non-operation have not recognised as



Inside a land-based KC-1 CCS

as they fall under indirect damages according to the contract.”

Responsibility

It was the responsibility for the carriers' suspension of operations that remained under dispute. KOGAS claimed that SHI introduced the construction defects on the vessels, while in turn, SHI blamed KOGAS for design flaws within the LNG tank.

A previous ruling by a South Korean court had held KOGAS responsible and ordered the company to pay SHI Won72.6 bill (\$55.88 mill) for repairs and Won115.4 bill to SK Shipping for non-operational losses.

“We are in negotiations for resolving legal disputes and mediating the issues with SK Shipping and Korea Gas Corp,” SHI said in a filing, adding, “If a three-party agreement fails, we plan to proceed with a damage recovery lawsuit against Korea Gas Corp to recoup the compensation resulting from this arbitration.”

KOGAS developed the KC-1 CCS in a seven-year joint venture project with local shipyards Hyundai, Samsung and Daewoo.

The primary aim of the CCS is to minimise the impact of primary barrier deformation on the insulation system from the hull.

The system uses a 1.5 mm thick corrugated stainless steel 304L membrane as the primary and secondary barriers and polyurethane foam having a density of 115 kg/cu m as the insulating material.

The proprietary membrane containment system technology was tested for performance and reliability in cryogenic operating conditions and is being applied to 200,000 cu m land-based LNG storage tanks in the KOGAS Incheon LNG receiving terminal.

Classing LNGCs

In 2015, class society ABS was selected to class two LNGCs for SK Shipping, featuring the KC-1 CCS.

This agreement brought to five the number of LNGCs to be built to joint ABS/Korean Register class for KOGAS, the world's largest LNG importer.

Two 174,000 cu m LNGCs were to be built with the KOGAS-developed KC-1 CCS for SK Shipping at SHI. Another three 174,000 cu m LNGCs, featuring GTT's No 96-type CCS - two for Korea Line Corp and one for Hyundai LNG Shipping - were to be built at Daewoo Shipbuilding and Marine Engineering (now Hanwha).

Upon delivery, the ships were to be chartered to KOGAS to ship shale gas from the US to South Korean receiving terminals starting in 2017.

ABS had issued an Extended Approval in Principal and General Design Approval for the system in 2014.

In October of last year, ABS granted an Extended General Design approval for the KC-1 CCS.

Sloshing evaluation

Beginning in 2005 and expanded in 2008 and 2013 to cover additional components, ABS' work scope was extended to include a sloshing evaluation using sloshing model tests as part of the structural strength assessment of the new CCS type.

The associated pump tower design and sloshing analyses were reviewed in accordance with ABS' 'Guidance Notes on Sloshing and Structural Analysis of LNG Pump Tower', 'Guidance Notes on Strength Assessment of Membrane-Type LNG Containment Systems under Sloshing Loads' and other applicable industry standards.

In the CCS' final assessment, ABS analysed tank and ship motions, including the sloshing impact and fatigue loading, on an LNGC operating in North Atlantic wave conditions.

“We are delighted to have been granted final design approval by ABS for the KC-1 LNG containment system,” said KOGAS Executive Vice President and CTO of R&D, Dr Young-Myung Yang at the time.

“We have been working closely with ABS for nearly a decade to conduct preliminary safety reviews and obtain design approval for this new LNG technology, which will be installed on recently ordered newbuild LNG carriers,” he concluded. ■

“If a three-party agreement fails, we plan to proceed with a damage recovery lawsuit...” - SHI

compensable,

Equipment suppliers cash in on booming LNG market

Several announcements were made just before the holiday break involving major technology contracts and agreements. Ian Cochran reports.

WinGD adds Tamano to Japanese engine building network

Swiss marine power company, WinGD has signed an agreement with Mitsui E&S Diesel United (MESDU), part of the Mitsui Engineering & Shipbuilding group, to build its engines at Tamano.

This agreement will add considerable engine building capacity and enable WinGD to meet growing demand in the shipbuilding market.

WinGD engines had previously been built at MESDU's Aioi factory, which was acquired from the IHI Group when the Diesel United business was sold to Mitsui E&S a year or so ago.

The new agreement, which complements an earlier co-operation agreement signed with Diesel United in 2015, means that WinGD engines can now be built at both the Aioi and Tamano facilities.

WinGD Director Operations, Rudolf Holtbecker, said: "Expanding in Japan in close collaboration with MESDU is a natural step as we see significant changes in vessel specifications from Japanese shipyards.

"As new designs emerge for vessels using alternative fuels, including methanol and ammonia, as well as cutting edge LNG and hybrid technologies, Mitsui E&S DU (MESDU) will now be ready to fulfil the increased demand for domestically built WinGD engines," he said.



WinGD's Dr Rudolf Holtbecker

MESDU President, Hiroyuki Takumi, added: "This agreement gives Mitsui E&S even more capacity to offer shipyards and shipowners the quality main engines that will power future generations of sustainable vessels.

"We are happy to be able to deliver on WinGD's efficient and reliable engine designs to support even more Japanese vessels through the energy transition," he said.

As well as WinGD's existing diesel-fuelled X-Engines and LNG dual-fuel X-DF engines, the Tamano factory will also be dedicated to X-DF-A ammonia-fuelled and X-DF-M methanol-fuelled engines, which will be available for delivery from the first quarter of 2025.

Japan is a key market for WinGD engines, illustrated by recent notable engine and system integration orders for LNG-hybrid vessel series for NYK Line and K Line.

The country has also long been a core element of WinGD's technology development process; the new variable compression ratio (VCR) technology, which allows dual-fuel engines to dynamically optimise combustion for each fuel, was the result of more than a decade of co-development with MESDU and its forerunner, Diesel United.

Wärtsilä to supply auxiliaries for newbuilding LNGCs

Technology group Wärtsilä, through its joint venture company, CWEC (Shanghai), is to supply four Wärtsilä 34DF dual-fuel auxiliary engines for the sixth and final newbuilding in a series of 175,000 cu m LNGCs.

The six LNGCs are being built at Jiangnan Shipyard in China for ADNOC Logistics & Services, based in the UAE.

The Wärtsilä 34DF engine, together with the Wärtsilä greenhouse gas (GHG) reduction package, was selected based on its ability to deliver both higher performance and lower emissions, the company claimed.

Wärtsilä will also deliver similar systems to the other five vessels in the series.

"We are honoured to have been selected to supply engines for this



Eni's FLNG 'Coral Sul' seen loading the first LNG cargo from the gas field

important series of six modern LNG carriers," said Rajan Khanna – Head of Sales for Middle East. "The Wärtsilä 34DF engine will help ADNOC Logistics & Services' LNG carriers in reducing energy consumption, fewer emissions, and lower operating costs, and when operating on LNG has minimised methane slip."

In addition to the engines, Wärtsilä will also supply the shaft seals for the LNGCs.

The vessels are scheduled for delivery in 2025 and 2026.

In the UAE, Wärtsilä employs more than 300 people and has a workshop.

Svanehøj to supply safety equipment for Eni's second FLNG

After the success of the 'Coral Sul' FLNG project in Mozambique, Italian energy major, Eni is expanding operations in the Coral gas field by utilising another FLNG – 'Coral Norte'.

Danish-based Svanehøj, now part of the ITT Group, has won a contract to deliver safety instrumentation to monitor the stored LNG for both FLNGs.

'Coral Sul', located offshore Mozambique's Cabo Delgado Province, has a liquefaction capacity of 3.4 mill tonnes per year.

The second project will involve six production wells and a subsea production system to transport gas to the FLNG,

which will be able to produce 3.5 mill tonnes of LNG a year.

Svanehøj will deliver a density monitoring system, composed of eight LTD gauges, a PLC acquisition system, and rollover predictor software for the new FLNG.

"We have received an order similar to the solution we delivered for the 'Coral Sul'. We are proud to be chosen for this second project as it shows that we have the right solutions and expertise to meet our client's expectations," said Fabrice Vandewalle, Svanehøj Sales Manager.

Svanehøj's safety instrumentation measures and records density and temperature profiles at various pre-configured levels in the storage tanks, while also detecting potential LNG layer stratification.

The rollover prediction software enables on board operators to adjust the regasification process easily and modify LNG transfer rates if needed and under controlled conditions.

Svanehøj will deliver the LNG safety equipment in the first quarter of 2025, while Eni expects liquefaction and export from 'Coral Norte' to commence in 2027.

Meanwhile, feedgas has started to be pumped into Eni's FLNG 'Tango' lying off the Democratic Republic of Congo in readiness to load the first LNG cargo in the first quarter of this year, the company has confirmed. ■

Data-driven monitoring drives LNG bunkering efficiency

In a world increasingly fuelled by data, the bunkering sector has at times been slow to change however innovation is now charting a course toward real-time analytics that could revolutionize vessel performance and efficiency. While price and availability of fuel have traditionally dominated decision-making, the LNG sector is undergoing a transformation as new technologies provide deeper insights. Fuelling Editor Malcolm Ramsay has more.

French technology group Ascenz Marorka is one firm at the helm of this transformation with the recent unveiling of its state-of-the-art Real-Time Fleet Performance Monitoring Centre, near Paris. This new facility not only empowers ship-owners, charterers, and ship managers to harness the power of continuous monitoring to enable split-second decision-making but is also helping operators to refine decision-making processes and planning.

“The Real-Time Fleet Performance Monitoring Center team consists of former officers and data scientists who work together to provide live and proactive monitoring of the customer's fleet. They deliver precise routing recommendations and analyses,” Félix Mazet, Communication Director at GTT notes. “GTT's LNG expertise, combined with the extensive experience of our officers, helps our customers anticipate and mitigate the effects of complex phenomena such as sloshing, excessive boil-off, and roll-over.”

Formed through the merger of two pioneering maritime technology firms, Ascenz Marorka has origins stretching back to 2002. Singaporean specialist Ascenz was acquired by French naval engineering group Gaztransport & Technigaz (GTT) in 2017, bringing expertise in electronic fuel and bunkering monitoring. In 2020, GTT acquired Icelandic digital developer Marorka, adding capabilities around vessel performance management, data



Weather routing voyage optimisation system

acquisition, and modelling. Having operated separately as subsidiaries of GTT the two firms were ultimately merged to create a new maritime digitalisation specialist.

Real-time analysis

Located at GTT's headquarters in Saint-Rémy-lès-Chevreuse, the centre aims to advance the optimization of LNG-fuelled fleets and features a suite of tools to improve efficiency. One key element is the Weather & E-Navigation Routing solution, which considers an array of dynamic factors, including weather forecasts, navigational challenges, and vessel design data to drive advanced AI predictions. This system recently received an upgrade with a sophisticated variable speed algorithm facilitating smoother navigation through diverse marine conditions, all the while prioritizing fuel efficiency and the

reduction of carbon emissions.

“The models are constantly updated according to measurements at sea, incorporating a combination of physical models, thermodynamic models, and machine learning,” Mazet notes.

While many of the factors are generic to all vessels, the team have also been developing a range of specific tools and indicators focused on LNG utilisation. Mazet explains that “several phenomena specific to LNG as a fuel are considered, including dynamic boil-off generation, sloshing effects, and LNG aging. Additionally, our routing algorithm takes into account the lower GHG content of LNG fuel, allowing us to recommend the best fuel option based on fuel cost and the regulated areas where the ship is sailing.”

Stakeholder communication

Data may be the bedrock for the algorithms, but the centre is about more than number-crunching. Mazet is quick to point out that the true value for fleet operators come from the integrated approach, that brings together perspectives from crews across the industry to determine optimal processes.

“By having seafarers communicate with seafarers, our goal is to establish a constructive dialogue to help the company achieve its economic and environmental objectives. Our experience has shown that we can create a trustful atmosphere among captains, the company's staff, and our team,” Mazet says, “In addition to the routing algorithm, post-voyage analysis helps identify areas for improvement in voyage planning practices, reducing missed opportunities to save costs and

lower emission.”

The new centre also builds on the success of the innovative Electronic Bunker Delivery Note (eBDN) solution, launched by Ascenz in 2021, which brings stakeholders together to streamline the bunkering bunker delivery financing process.

“A collaborative approach is essential for changing mindsets and delivering solutions that improve performance while ensuring safety, making it acceptable to all parties,” Mazet adds.

An additional benefit of the deep stakeholder communication fostered at the centre is the level of trust that can be built up between the various parties involved. Mazet explains that “for bunkering, regardless of the type of fuel, we act as a trusted third party to ensure that our customers receive what they paid for. This requires specific equipment to be installed on board, which is provided by us. This service is applicable to all types of ships, including deep-sea and offshore vessels.”

With many gains already realised by this data-driving approach GTT is not slowing down and is instead ramping up its investment, predicting the launch of significant new digitisation solutions in the next few years.

“We believe that we are only at the beginning of adapting to new environmental regulations, as many local and global regulations will be enforced,” Mazet states, adding that the firm's future plans include Time Charter Equivalent (TCE) optimization, weather routing through APIs, Fleet Planning Optimization and even routing for wind-propelled ships. ■



Real-Time Fleet Performance Monitoring Centre



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The Crown LNG value chain



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For the Record

ACCELLERON, as Swiss company with expertise in turbocharging technologies and which forms part of the Sauber Group, has had its service contract renewed by the Dutch shipping company Anthony Veder, owner of a growing small-scale LNG carrier fleet.

The Baden, Switzerland-based company said Anthony Veder had extended its turbocharger service agreement with Accelleron, securing Turbo LifecycleCare support across 13 vessels.

“The contract, covering 20 turbochargers on single-fuel and LNG dual-fuel four-stroke engines, build on a service relationship that began in 2017 with four vessels,” said Accelleron.

The Anthony Veder company owns modern gas carriers that it operates worldwide, while specializing in small-scale to mid-scale LNG carriers for transporting and bunkering LNG.

The shipping company in October delivered one of its bunkering ships, the “Coral Favia”, to Eagle LNG Partners of the US for supply and bunkering services around the coast of Florida the US Gulf Coast.

Accelleron noted that Anthony Veder’s fleet also includes vessels such as the “Coral Methane”, the first multi-gas carrier to be converted into an LNG bunker vessel, as well as the “Coral Star” and the “Coral Sticho”, the first gas carriers to use LNG as a fuel without carrying it as cargo.

The majority of the Anthony Veder fleet deploys Accelleron turbochargers for its four-stroke engines.

“Modern ships are enormously sophisticated, with hundreds of interlinked systems. We rely on the expertise of Accelleron engineers to ensure our turbochargers are correctly tuned and operating at optimum levels, wherever they are across the globe,” said Anthony Veder Technical Director, Geert van IJserloo.

“Having third-party expertise working on the turbochargers means we can concentrate on the core of our business,” he added.

“Over several years, our trust in

Accelleron to help us with installations and service wherever and whenever they are required has proven extremely valuable. The Turbo LifecycleCare agreement will ensure this continues,” stated Van IJserloo.

Turbo LifecycleCare agreements are available to four-stroke engine users in marine and power generation. The agreements are focused on controlling operating expenditure through a fixed-fee structure, and can be customized depending on user requirements, including service response time and uptime guarantees.

“Entering into a long-term service relationship is not undertaken lightly and we are delighted to have earned the trust of Anthony Veder over the past six years,” said Ron Vlasblom, an Accelleron Manager in the Benelux countries.

“The new arrangement is a big vote of confidence in Accelleron’s ability to deliver quality service over long periods of time, contributing to effective cost control by flattening fees and reducing exposure to unexpected expenditure,” Vlasblom added.

BP filed a complaint with the US Federal Energy Regulatory Commission against LNG developer Venture Global claiming the Arlington, Virginia-based company was “withholding information” about delays in delivering LNG from its Calcasieu Pass export plant in Louisiana.

The FERC filing by BP was the latest move in an ongoing dispute between Venture Global and customers who claim the US LNG developer of Calcasieu Pass, and which has three other plants under development in Louisiana, was intentionally holding back LNG shipments from contracted customers to sell the cargoes itself on the spot market.

BP claimed in its complaint that Venture Global had repeatedly pushed back the date at which it would begin delivering LNG at contracted rates in an attempt to increase its own profits and has claimed the plant had not yet officially attained “commercial” status as per supply contracts.

“Effective oversight of US LNG export facilities depends on meaningful transparency, including public disclosure of key facts and documents necessary to ensure FERC’s rules are being followed,” stated BP in its filing.

“That’s why BP filed a complaint with FERC against LNG supplier Venture

Global, which is not being transparent about the status of its Calcasieu Pass facility in Louisiana,” the UK major explained.

“FERC requires LNG suppliers to disclose publicly the status of their export facilities to ensure transparency and fairness in the regulatory process. Yet Venture Global has repeatedly submitted redacted filings to FERC that obscure the status of its Calcasieu Pass facility,” BP claimed.

“By doing so without sufficient justification, BP believes Venture Global is not in compliance with FERC’s regulations, withholding critical information and side-stepping public scrutiny of its abnormally lengthy commissioning period,” BP said.

BP declared that the conduct of Venture Global had “shaken confidence in the trustworthiness of LNG suppliers” at a critical time and “was harming the stability and growth” of the LNG industry.

“With this administrative action, BP seeks to bring Venture Global into compliance with FERC’s regulations requiring Venture Global to be fully transparent and unseal its unnecessarily confidential regulatory filings,” the London-based major concluded.

Venture Global is run by a former investment banker Michael Sabel, who is Chief Executive and co-founder of the company and also shares the Executive Chairmanship with the other co-founder Robert Pender, who is a lawyer.

Venture Global has claimed it was still working out issues with the Calcasieu Pass plant that had not yet achieved the level of consistency necessary to say the “commercial operations” had begun and has called earlier accusations by BP, Shell and several other customers as “outrageous”.

BP and Shell have decided to enter into separate arbitration cases against Venture Global at the London Court of International Arbitration.

Other complainants against the conduct of Venture Global include Italian utility Edison SpA and Spanish energy company Repsol.

Venture Global’s existing Calcasieu Pass facility in Louisiana shipped its first cargo in March 2022 and comprises 18 small-scale modular liquefaction Trains each with 0.626 million tonnes per annum of capacity and configured in nine blocks for total nameplate

output of 11.26 MTPA.

The controversial firm is also developing three other plants, Plaquemines LNG on the banks of the Mississippi as well as the CP2 project, so called because it will be built adjacent to the Calcasieu Pass facility, and Delta LNG. The three new plants will each have nameplate capacity of around 20 MTPA.

Venture Global has signed up many energy companies from around the world as long-term customers for its various projects, including seven from Europe.

CENTRICA Plc, the UK owner of the British Gas utility business and an LNG importer, has released stored gas into the grid from the Rough Gas Storage system for the first time this winter season.

At full capacity Rough can store around 13.5 days of average total UK gas usage, including for non-domestic users and gas-fired power generation.

“Centrica has filled Rough with the equivalent of 18 LNG tankers,” said the utility in a statement.

“Rough provides enough energy to heat over 3 million homes, every day, all winter, keeping families warm and bills down,” Centrica added.

The UK’s largest gas storage facility Rough is located 18 miles off the coast of East Yorkshire and now provides half of all of the UK’s natural gas storage.

Centrica had stopped storing gas at Rough in 2017 but the facility was re-opened for gas storage in October 2022. Its capacity was then doubled in the summer of 2023 to underpin energy security.

“Customers are struggling with high energy bills which are driven by international energy prices,” said Chris O’Shea, Group Chief Executive of Centrica.

“Gas storage is vital to ensure the UK can manage demand effectively, keeping prices down, and Rough contributes more than 50 percent of the UK’s total gas storage,” the CEO added.

“I’m proud of the actions our team has taken over the last 18 months, including our decision to bring Rough back online to underpin the UK’s energy security,” he said.

“However, we still have the lowest levels of energy storage of the world’s major economies with the ability to store fewer than 8 days of peak winter demand and this leaves us susceptible

to shocks in international markets,” O’Shea explained.

“Gas will continue to be used as a transition fuel for the foreseeable future and we are prepared to invest around £2 billion (\$2.53Bln) to quadruple the size of Rough and turn it into the world’s biggest methane and hydrogen storage facility,” he stated.

“But to invest this amount of money we need the right regulatory support framework,” O’Shea concluded.

Centrica is based in Windsor near London and over the past year has signed important supply deals including one for US LNG and another for Norwegian pipeline gas.

Centrica signed an accord with Delfin Midstream to purchase 1 million tonnes per annum of LNG for 15 years on a free-on-board (FOB) basis from 2026.

The company also signed an additional agreement last year with Equinor for the delivery of more Norwegian pipeline natural gas to the UK for three winters.

The new supply agreement added around 1 billion cubic metres per annum to Equinor’s existing bilateral contract with Centrica and brings the total volume under the contract above 10 Bcm per year.

In addition to importing Norwegian gas by pipeline, Centrica also receives LNG cargoes from several sources at the Isle of Grain LNG import terminal on the Medway River in Kent.

CHENIERE Energy, the largest US liquefied natural gas exporter with its two plants at Corpus Christi in Texas and Sabine Pass in Louisiana, said the Sabine expansion project known as SPL Stage 5 has signed a long-term Integrated Production Marketing gas supply agreement with the US unit Canadian producer ARC Resources.

Under the IPM agreement, ARC has agreed to sell 140,000 million British thermal units per day of natural gas to SPL Stage 5 for a term of 15 years, commencing with commercial operations of the first Train in the expansion that will be Train 7 at the Louisiana facility.

Cheniere explained that the SPL Stage 5 project would pay ARC an LNG-linked price for its gas, based upon the Dutch Title Transfer Facility (TTF) price after deductions for a fixed regasification fee, fixed LNG shipping costs and a fixed liquefaction fee.

The IPM agreement is subject to, among other things, a positive Final Investment Decision with respect to Train 7.

The LNG associated with this gas supply agreement will see the production of 850,000 tonnes per annum and will be marketed by Cheniere Marketing International.

“This is the second long-term IPM agreement between Cheniere and ARC Resources, and further progresses the commercialisation of the SPL Expansion Project,” said Jack Fusco, Cheniere’s President and Chief Executive.

“This agreement will enable Cheniere to deliver increased quantities of Canadian natural gas to Europe, where energy security has never been more important,” stated Fusco.

“We are pleased to build upon our existing long-term relationship with ARC Resources, and further demonstrate Cheniere’s ability to construct innovative solutions that help meet the needs of customers and counter-parties along the LNG value chain while delivering value to our stakeholders,” Fusco said.

Terry Anderson, President and CEO of ARC, said that Canadian natural gas can play a critical role in helping to meet growing global energy demand.

“Through this agreement, we are advancing our LNG strategy and delivering low-cost, low-emission natural gas to consuming regions in Europe – the first long-term arrangement of its kind for a Canadian producer. We are pleased to further our long-term partnership with Cheniere and bring more responsibly produced Canadian energy to the world,” Anderson added.

In addition to the IPM agreement announced with ARC, Cheniere Marketing has entered into an LNG sale and purchase agreement with Austria’s OMV Gas Marketing and Trading GMBH.

Under the SPA, Cheniere will supply OMV with up to 12 LNG cargoes per year, or around 850,000 tonnes per annum, at a TTF-linked price commencing in late 2029.

The LNG will be sold to OMV on a delivered ex-ship (DES) basis at the Dutch Gate LNG terminal in Rotterdam where OMV holds regasification capacity.

The SPL expansion is being developed with a production capacity of

up to 20 MTPA of total LNG capacity, inclusive of estimated de-bottlenecking opportunities.

CHIYODA Corp., the leading Japanese energy and LNG engineering company, has been awarded a technical service agreement (TSA) by the Indonesian Donggi-Senoro LNG project, the all-Asian venture whose largest shareholder is Japan’s Mitsubishi Corp.

“The agreement covers engineering, technology, and process safety support for the LNG plant and is scheduled to be carried out for three years,” said Chiyoda.

The LNG plant produces around 2 million tonnes per annum of LNG and has long-term contracts with Japanese and South Korean buyers.

Chiyoda said its Operations & Maintenance (O&M) division established at the start of 2023 would take the lead in providing the services.

The contract will also make use of Chiyoda’s consulting and engineering capabilities as a part of the plant-OSTM Services.

Chiyoda noted that this service was set up in September 2023 to offer field-centred physical maintenance support for industrial plants with “inherent digital technologies affording to the customer deep insight” into the plant status.

Production at Donggi-Senoro LNG commenced in August 2015 and the plant has been operating at a high rate since its start-up.

The facilities liquefy and export feed gas from the Senoro-Toili block and the Matindok block onshore gas fields in Indonesia’s Central Sulawesi province.

Mitsubishi owns around 45 percent of the Donggi-Senoro joint venture and the other partners are Korea Gas Corp., the Indonesian state-owned oil and gas company Pertamina and Indonesia’s largest publicly-listed energy company Medco.

When Donggi-Senoro started it was the first LNG project exclusively owned and operated by Asian companies without the participation of international oil majors.

However, Mitsubishi is now one of Japan’s leading LNG stakeholders with assets and supplies from North America, including LNG Canada, Malaysia, Brunei, Australia and Russia.

The Donggi-Senoro customers are Japanese utility giant JERA Co. Inc., which takes delivery of 1 MTPA, Kogas

with 700,000 tonnes per annum and Japan’s Kyushu Electric Power contracted for 300,000 tonnes per annum.

DELTAMARIN, the Finnish ship design company based in the port of Turku and which is part of the China Merchants Group conglomerate headquartered in Hong Kong, has received approvals in principle from the Nordic DNV classification society.

Deltamarin’s three AiPs were awarded by DNV at the Marintec conference and exhibition in the Chinese port of Shanghai.

The certificates were handed over at Marintec China to China Merchants Heavy Industry (Jiangsu), China Merchants Jinling Shipyard (Nanjing) and to Deltamarin.

The vessel designs involved included one for a 180,000 cubic metres capacity LNG carrier design as well as an vessels with 200,000 cubic metres of capacity and a Pure Car and Truck Carrier (PCTC) with 11,000 car equivalent units.

“The designs showcased Deltamarin and CMG’s expertise in creating innovative, technologically advanced and sustainable vessel designs,” said a statement.

The 180,000 cubic metres capacity LNG carrier designed by Deltamarin and being built by CMHI (Jiangsu), features the membrane cargo tanks designed by France’s GTT and is the largest LNG carrier currently under construction in China.

“Featuring key attributes such as strong environmental friendliness, high energy-efficiency, reliability, and compatibility, the Deltamarin-designed twisted skeg hull form aims to achieve world-leading overall efficiency,” Deltamarin said.

Deltamarin explained that it built on the current design with “further optimisations on the main dimension and propulsion configuration” for the design of a second LNG carrier with capacity of 200,000 cubic metres capacity.

“The LNG carrier maximize the total cargo tank capacity within the limited overall length. These design improvements significantly enhance its market competitiveness,” Deltamarin added

Deltamarin collaborated with CMJL (Nanjing) on the development of a new 11 000 CEU PCTC design.

“The new LNG-powered vessel introduces an entirely new size class, characterised by high energy efficiency, excellent Environmental Efficiency Index (EEDI) performance and a hull optimised for hydrodynamic efficiency,” the company said.

The Deltamarin design also incorporates innovative features such as solar panels, waste heat recovery and air lubrication systems.

“It builds upon our track record in developing new PCTC designs in the recent years, marking a natural continuation of our commitment to advancing novel vessel design and delivering innovative and future-proof solutions to the market,” said the Finnish company.

ELENGY, the operator of three terminals in Western and Southern France at Montoir-de-Bretagne, Fos Tonkin and Fos Cavaou has increased the LNG trucking capabilities at the Fos Cavaou facility located west of the Mediterranean port of Marseille.

The Managing Director of Elengy, Nelly Nicoli, inaugurated the two new tank-truck loading bays in December at the Fos Cavaou terminal.

The LNG fuel expansion event was also attended by René Raimondi, Mayor of the town of Fos, Hervé Martel, President of the Grand Port Maritime de Marseilles, and Régis Passerieux, Sub-Prefect of the district of Istres.

The new loading bays at Fos Cavaou now give the West Med terminal four bays with the capacity to offer 22,000 slots a year.

“LNG constitutes an immediate and effective response to the challenges of the energy transition in the road transport sector by reducing carbon-dioxide emissions,” stated Nicoli.

“With this commissioning, Elengy will continue with the development of its infrastructure to provide reliable and sustainable access to LNG for road transport,” added Nicoli.

“The two new bays of Fos Cavaou represented an investment of €10 million (\$10.8M),” she stated.

Elengy has been expanding LNG truck-loading bays since 2013 at the Montoir-de-Bretagne and the Fos Tokin and Fos Cavaou terminals.

Over the past 10 years around 70,000 trucks have been loaded with LNG for the gradually expanding fuel market in the European Union.

Elengy’s three regulated terminals

offer market flexibility for the unloading or loading of any type of LNG carriers as well as trans-shipment services.

The company’s LNG carrier traffic amounts to around 330 ships per annum at the three facilities.

Elengy added that during 2023 LNG had also been loaded into ISO containers at the Fos terminals for transportation by rail.

The company said it was also developing its services by investing in the development of bio-LNG made from waste to reduce the environmental footprint of the fuel.

ENI, the Italian energy company Eni and Swiss gas supply company Open Energy Platform AG signed an agreement to guarantee the flow of natural gas to Switzerland and Italy in the event of interruptions or significant gas flow reductions from Germany.

The agreement promotes the efficient use of the Swiss Transitgas transport infrastructure for gas flows from France to Italy through Switzerland to also support Swiss supply security.

The Zürich-based Swiss Open Energy platform is a gas supply and balancing market player that manages gas procurement.

The company is involved in securing short-term, physical gas supply via the spot market or flexible contracts while also managing storage.

“The initiative is part of the commitment to strengthening cooperation between Italy and Switzerland, stipulated through the Joint Declaration on energy security between the Italian Ministry of Environment and Energy Security and the Swiss Federal Department of Environment, Transport, Energy and Communications, signed on 6 July 2023,” said a statement.

“The agreement will be effective from 2 December 2023 until 30 September 2024. During this period, the Swiss authorities will not adopt any restrictive measures on Eni’s rights to gas transportation through Switzerland,” it added.

The Transitgas transport system consists of a 292 kilometres (182 miles) of natural gas pipeline.

The system runs from the northern border to the southern border of Switzerland and has capacity to carry more than 18 billion cubic metres of natural gas.

Available transport capacity on

Transitgas is allocated to FluxSwiss SA and Swissgas according to a fixed distribution key.

Eni said it continued to advance its strategy of consolidating gas supplies in response to “the energy crisis caused by the difficult, ongoing international situation, confirming the value of gas as the most reliable source” to support the energy transition.

“The basis is the efficient use of the Swiss gas transport infrastructure, regulated by the regional network operators Natural Gas Eastern Switzerland, Gasverbund Mittelland, Gaznat and Natural Gas Central Switzerland as well as Transitgas,” Swiss Open Energy explained in its statement on the Eni agreement.

“The solution package is supplemented by commercial measures. This significantly strengthens the security of supply for all customers,” the Swiss company stated.

EXXONMOBIL Corp. has told investors about the latest schedules for its various liquefied natural gas projects worldwide including a delay in the “mechanical completion” of the Golden Pass LNG export plant on the Gulf Coast and with progress promised in 2024 on Mozambique LNG and on the expansion joint venture in Papua New Guinea.

The statement on ExxonMobil’s LNG business was given at a presentation for investor by Kathy Mikells, Senior Vice President and Chief Financial Officer.

The event took place as the largest US oil company and leading LNG producer is also proceeding through the regulatory process for the acquisition for almost \$60 billion of Texas-based Pioneer Natural Resources.

ExxonMobil indicated that the completion of the Golden Pass liquefaction facilities at the existing import terminal located on the Sabine-Neches Waterway in Texas would be slightly later than previously scheduled.

The three liquefaction Trains will have a nameplate capacity of around 16 million tonnes per annum of LNG and ExxonMobil and QatarEnergy are marketing their own volumes.

CFO Mikells said that ExxonMobil was addressing the global need for LNG and that by 2027 alone will bring onstream 27 MTPA of additional LNG supplies for its portfolio.

She said that the Golden Pass mechanical completion was now set for

“the end of 2024” and under existing plans the second Train completion is expected to follow six-to-eight months later in 2025 and Train 3 six-to-eight months after that.

As regards the long-delayed Mozambique LNG export project in southeast Africa, Mikells stated that the Mozambique Rovuma joint venture would enter the front-end engineering phase in 2024.

She added that the Papua New Guinea LNG expansion project in which ExxonMobil is a shareholder and the current liquefaction plant operator would take a final investment decision in 2024.

“We have a globally diverse and growing portfolio of low-cost, capital-efficient developments to provide needed supply,” said Mikells.

“In the US, construction of the Gulf Coast Golden Pass facility is progressing. This project is a capital-efficient conversion of an import terminal. This conversion offers supply source optionality for our customers and provides global logistics optimization and competitive costs for us and our partner, QatarEnergy,” Mikells explained.

“The three-Train project will have a peak capacity of around 18 MTPA gross. The Train 1 mechanical completion is expected at the end of 2024 with first LNG in the first half of 2025,” the CFO stated.

Mikells noted that in 2022 the company announced an agreement with QatarEnergy to participate in the North Field East project, which will increase ExxonMobil’s participation in Qatar LNG volumes from 52 MTPA to 60 MTPA.

“QatarEnergy LNG will serve as the operator, with the project starting up in 2026,” she added.

“In PNG, we’re working with our partners to develop the Papua LNG project. We progressed front-end engineering and development work this year. The project is targeting 6 MTPA of gross LNG liquefaction capacity, with FID expected in the first half of 2024,” Mikells explained.

The CFO then moved on to Mozambique where the company “continued to work with our partners and the government to optimize” the onshore LNG plans for the Rovuma Basin to develop the 85 trillion cubic feet of gas resources.

“We’re working to ensure the right

conditions are met for full funding, including a sustainable and secure operating environment and a design that will achieve long-term project competitiveness,” Mikells said.

Chief Executive and Chairman Darren Woods said that the actions taken over the past six years “have fundamentally improved the earnings power” of the business, resulting in industry-leading earnings and cash flow growth.

“From 2019 to 2023, the first half of our plan period, we’ve roughly doubled earnings and increased cash flow from operations by about \$10 billion at \$60 real Brent and constant margins,” Woods said.

“This kind of dramatic performance improvement requires consistent strategy execution, with the right organizational structure, and - perhaps most important of all - the right team competing to win every day,” the CEO declared.

“And we’re far from done. We intend to increase earnings and cash flow by a further \$14Bln over the next four years through 2027,” he added.

“This growth is split about evenly between Upstream and Product Solutions. In the Upstream, we’ll grow volumes from advantaged assets in Guyana, the Permian Basin, LNG and Brazil,” Woods said.

He explained that over the next four years, about 90 percent of the company’s planned capital investments in new oil and flowing gas production are expected to generate returns greater than 10 percent at Brent prices of \$35 per barrel or lower.

“All of our LNG investments with new volumes coming online over the next four years generate projected returns greater than 10 percent at prices of \$6 per million BTUs or lower,” he said.

FLUXYS of Belgium and its subsidiary Fluxys LNG said they were seeking market interest for importing low-carbon gases to the LNG terminal at the Port of Zeebrugge.

“With this market initiative, Fluxys is anticipating the need for large-scale decarbonisation. The call for market interest will run from November 2023 until February 2024,” Fluxys explained.

“Fluxys as essential infrastructure partner is taking market-focused action to reshape and extend the Zeebrugge LNG terminal into a multi-molecule hub

for importing low-carbon and climate-neutral molecules as well,” said Fluxys.

“In this way, the terminal can make a significant contribution to the energy transition and further diversify the energy supply of Northwest Europe,” the company added.

Fluxys said it believed the “Zeebrugge Multi-molecule Hub” would provide direct access from the sea for large ships to ensure the supply of not only LNG but also hydrogen and hydrogen derivatives.

The company noted that Zeebrugge is also directly connected by pipelines to the major industrial zones in Belgium and Northwest Europe.

“The Zeebrugge multi-molecule hub showcases our ambition to play a key part in accelerating the energy transition,” said Pascal De Buck, Managing Director and CEO of Fluxys and Fluxys Belgium.

“This project fully shoulders the federal hydrogen strategy and will help the Port of Antwerp-Bruges create a green energy crossroads in its ports. I’m proud that with Fluxys we’re once again thinking ahead and working on the solutions that will be needed tomorrow and beyond for industry and society in Northwest Europe,” De Buck stated.

Fluxys added that the “market consultation presents a golden opportunity” for market players to voice their growing demands.

The terminal’s market model offers all potential customers open access to the proposed services.

“They can express their interest in a range of possibilities: services for carbon-neutral bio-LNG or synthetic LNG, hydrogen, hydrogen derivatives as well as compressed natural gas (CNG) and conventional LNG,” the company said.

“The initial results in terms of market intentions are expected in the Spring of 2024,” Fluxys added.

INPEX Corp., the operator of the Ichthys LNG plant in Australia and developer of the Abadi LNG project in Indonesia, said it received written approval on December 6 for the revised Plan of Development (POD) for the Indonesian Abadi joint venture and would be moving on to the front-end engineering and design phase.

The joint venture for Abadi LNG is composed of Inpex and the subsidiaries of the Indonesian and Malaysian state energy companies, Pertamina and Petronas.

The POD now includes a carbon capture and storage (CCS) component for the Abadi project.

“The project is the first in which CCS-related costs are eligible for recovery based on the production sharing contract (PSC) scheme that governs crude oil and natural gas upstream operations in Indonesia,” Inpex explained.

“The approval of the revised POD paves the way for Inpex and its partners to fully mobilize the venture as a clean energy project,” stated the Tokyo-based company

“Going forward, Inpex and its partners will include CCS in the contractual scope of work and resume project operations including on-site activities and preparation of front-end engineering and design,” added Inpex.

The Indonesian and Malaysian subsidiaries, Pertamina Hulu Energi Masela (PHE Masela) and Petronas Masela, jointly purchased the stake sold by Shell which decided to pull-out of the venture.

That transaction was confirmed by Shell in July 2023 after months of speculation about a deal for the Masela block natural gas resources in Indonesia’s Arafura Sea where the majority shareholder remains Inpex with 65 percent.

The 35 percent participating interest in the Masela block held by the Shell unit, Shell Upstream Overseas, has been transferred to the separate Indonesian and Malaysian energy subsidiaries for an eventual total of \$650 million.

Inpex has finalised the development plan for the onshore liquefaction plant to be constructed on one of the Tanimbar Islands of Indonesia to further boost Asian LNG availability as inter-basin competition grows in the years ahead.

The Indonesian Abadi joint venture is one of the few LNG production projects moving forward in the region outside of the Papua New Guinea expansion and the Pluto Train 2 in Australia.

Inpex submitted a revised POD in April 2023 for the Abadi project incorporating the CCS component attached to the liquefaction facility to be constructed on Yamdena Island in the Tanimbar chain.

The project is Inpex’s second self-operated, large-scale natural gas development project following the Ichthys joint venture in Australia’s Northern Territory.

The future Abadi LNG project’s

annual production volume is expected to be around 9.5 million tonnes per annum and an expansion could be possible.

The Masela block covers an area of 2,503 square kilometres and the resources are also subject to a revised PSC that now runs to 2055.

The original plan for the Abadi project was to produce LNG from a floating production hull, similar to the Shell’s Prelude FLNG project offshore northwest Australia in which Inpex is also a shareholder.

JERA Co. Inc, Japan’s biggest liquefied natural gas importer and utility company, said it expected the LNG demand-supply imbalance to be less serious this winter season than last because the forecast milder weather, the high storage held in Europe and the delayed resurgence of the economy in China.

JERA, which buys around 35 million tonnes per annum of LNG and is Japan’s biggest fossil-fuel electricity generator being owned jointly by Tokyo Electric Power and Chubu Electric, the two largest power companies, gave the LNG market forecast in a company earnings presentation

The presentation in Tokyo was led by JERA President and Chief Executive Hisahide Okuda.

JERA, which currently oversees the operations and provides fuel for a total of 26 power plants in Japan and imports LNG into 11 of Japan’s network of 37 terminals, said the only issue to be concerned with was that of the unexpected.

“Since overall global supply has not grown, there is the potential for LNG production issues on the supply side - a problem at any LNG plant could cause prices to jump. We believe, therefore, that the environment for LNG procurement remains unpredictable,” Okuda explained.

“Turning to LNG fundamentals, although demand for LNG is growing, particularly in Europe, LNG supply is not expected to catch up to that demand until around 2025, leading to a tight supply-and-demand situation,” the CEO said.

“However, at JERA, in addition to building an LNG portfolio that combines long-term, short-term, and spot contracts, we also secure a stable fuel supply by flexibly optimizing procurement and resale through JERA Global Markets,” Okuda added.

He noted that the company was also following the “Strategic Buffer LNG (SBL)” plan proposed by the Ministry of Economy, Trade, and Industry (METI) whereby at least one LNG carrier-load of surplus LNG per month between December and February can be supplied to any domestic operators as determined by METI.

According to METI and its Policy Subcommittee on Electricity and Gas, Japan will have a winter’s reserve margin exceeding the 3 percent minimum necessary to ensure stable supply.

“JERA, however, is taking nothing for granted. We will be doing our utmost to secure both kilowatts and kilowatt hours in order to ensure stable power supply,” CEO Okuda stated.

“JERA is moving steadily forward in replacing older thermal power plants with state-of-the-art facilities. Six units, totalling 4.32 million kilowatts, whose replacement has already been completed, have begun commercial operation,” he added.

The CEO declared that looking to 2024, JERA would continue moving forward with an additional 2.99 million kilowatts in power plant replacement.

“We believe that moving decisively in this way to upgrade power sources is an important part of ensuring safety,” Okuda said.

In addition, given the smooth progress of trial operations at Yokosuka Thermal Power coal-fired power plant’s Unit 2, we will be moving its start of commercial operation forward from February 2024 to December 2023, which will also contribute to this winter’s supply capacity,” the CEO said.

The Yokosuka coal-fired plant is described by JERA as a “high-efficiency coal-fired power station that uses an ultra-supercritical (USC) power generation” system.

“Its generating capacity of 650 megawatts will contribute to a stable electricity supply,” Okuda added.

The JERA CEO said that the company was also moving forward with carbon-capture and storage projects in Asia.

JERA is carrying out joint research with Japanese LNG and energy engineers JGC Holdings Corp. and the Indonesian state electricity company Perusahaan Listrik Negara (PLN) on a project to introduce and commercialise CCS for thermal power.

“With these projects and others, we

are collaborating on decarbonisation with a growing number of Asian countries including Bangladesh, Thailand, Malaysia, the Philippines, Vietnam, Indonesia and Singapore,” Okuda said.

KINDER MORGAN Inc. (KMI), the leading US pipeline feed-gas company for liquefied natural gas plants and a key energy infrastructure operator and developer, has issued increased financial forecasts for 2024.

The Houston, Texas-based company has forecast an increase in gross earnings, particularly from its natural gas pipelines division.

“We anticipate generating net income attributable to KMI per share of \$1.21, up 11 percent compared to our year-end 2023 forecast of \$1.09 per share,” said KMI President Tom Martin in a statement.

He also expects gross earnings before interest, taxes, depreciation and amortization (EBITDA) to rise by 5 percent from 2023 to \$8 billion compared with the previously forecast of \$7.6Bln.

KMI expects discounted cash flow of \$5Bln and DCF per share of \$2.21, both up 5 percent from the previous forecast.

“We expect to continue benefiting from strong natural gas market fundamentals driving growth on our existing natural gas transportation, storage, and gathering and processing assets as well as expansion opportunities,” Martin explained.

“In addition, we anticipate benefitting from increased rates in our refined products businesses, demand for renewable diesel and renewable diesel feedstocks, and demand for renewable natural gas,” he added.

Chief Executive Kim Dang said she expected the busines to be boosted by the performance of KMI’s Natural Gas Pipelines and Energy Transition Ventures, as well as from contract rate escalations in its Products Pipelines and Terminals business segments.

“It is important to note that the company’s budget does not include the recently announced acquisition of NextEra Energy Partners’ STX Midstream assets which we expect would have a positive impact on the metrics,” Dang added.

“We are projecting an annualized dividend of \$1.15 in 2024, constituting the 7th year in a row in which we have increased our dividend,” she stated.

KMI agreed in November to acquire STX Midstream, the South Texas unit of NextEra Energy Partners, for \$1.81 billion.

The STX Midstream pipeline system includes a set of integrated, large diameter high-pressure natural gas pipelines that connect the Eagle Ford shale basin to growing Gulf Coast and Mexican demand markets.

The overall assets of STX Midstream comprise 462 miles of pipelines and 4.9 billion cubic feet per day of capacity.

STX Midstream owns and operates Eagle Ford Midstream, a 158-mile residue line connecting the Eagle Ford basin to the Agua Dulce Hub in Nueces County in Texas

KMI also noted in confirming that deal that the Eagle Ford Midstream asset is connected to multiple pipeline systems, including KMI’s Tennessee Gas Pipeline and its Tejas Pipeline and Natural Gas Pipeline Company of America.

STX Midstream also owns a 50 percent interest in Dos Caminos LLC while the other 50 percent is held by operator Howard Energy Partners.

MOODY’S Investors Service, the US credit rating agency, said that record high natural gas storage of almost 98 percent as of end November helped by LNG deliveries positions the European Union well to meet the needs of this winter season with very limited risks of energy shortages.

“It would also place the region in a stronger position than we previously anticipated to refill gas storages for next winter,” said the Moody’s report.

“However, European gas prices will likely remain volatile given increased geopolitical risks, which reflect their intrinsic vulnerability to supply disruptions,” Moody’s stated in its base case.

The report explained that Europe’s improved energy reserves going into this winter are the result of “the effectiveness of government actions” on the supply and demand side, and consistent energy savings by both households and companies despite lower energy prices.

The greater LNG availability in 2023 and the higher availability of nuclear and hydro-electric power plants and a mild winter season so far have also helped improve the supply and demand balance.

The Moody’s report forecasts that gas

storage level would still be at around 55 percent at the end of March 2024, which is higher than it had earlier anticipated.

“This will position Europe well for refilling gas storage ahead of the following 2024-2025 winter,” said the report.

“However, European gas prices will remain high and volatile. The future market indicates Dutch Title Transfer Facility (TTF) prices will remain around €50 a megawatt hour (MWh) in the next two years,” Moody’s added.

“This price level is higher than the historical average. We expect spot electricity prices to also remain higher than the historical average,” it stated.

In the Moody’s downside scenario, a further cut in pipeline gas supply and a colder winter would lead to gas storage of around 35 percent by March.

It noted that this was still a stronger position than previously forecast and was comparable to the 10-year average at the end of the heating season.

“From such a position at the end of the heating season, the EU would be able to refill storage ahead of the 2024-25 winter, although this will require greater efforts than in the base case,” said Moody’s.

“Gas prices would rise but probably not as high as their August 2022 peak, given lower reliance on Russian gas, greater diversification in gas supplies and lower demand,” it said.

Nevertheless, the agency said that geopolitical tensions between Europe and Russia and episodes of supply disruption like strikes at Australian LNG facilities could lead to further tightness in gas supplies and introduce additional uncertainties into the market.

MOZAMBIQUE, the newest liquefied natural gas exporter, has voted for the creation of a Sovereign Wealth Fund similar to that in oil and gas producing nation Norway to make sure the Mozambican people benefit from current and future LNG expansions led by major international energy companies.

The “Coral-Sul FLNG” production vessel deployed offshore Mozambique shipped its first cargo from the Rovuma Basin in November 2022 to launch the southeast African nation as an LNG exporter.

Eni of Italy is the upstream operator of the Area 4 licence resources in the Coral South reservoir and the FLNG

plant has capacity of 3.4 million tonnes per annum for export.

While the FLNG hull has relatively small output, Mozambique's prolific natural gas reserves in the offshore Rovuma Basin will transform the economy once planned onshore projects come on stream from as early as 2028 with up to and eventual 50 MPTA of output in joint ventures involving French major TotalEnergies and ExxonMobil Corp.

The wealth fund moves were announced by Mozambican Finance Minister Max Tonela in the form of a parliamentary bill to govern the planned sovereign wealth fund overseeing revenues from what the state expects will amount to more than \$90 billion in LNG exports through the next 25 years.

"The importance of the sovereign wealth fund lies in the need to ensure that these revenues are used in a sustainable way to drive long-term economic development," said Minister Tonela in a statement.

The world's largest sovereign wealth fund belongs to Norway, the main pipeline natural gas supplier to the European Union and an LNG producer and exporter.

The fund now amounts to \$1.33 trillion. Norway's huge sovereign wealth fund was established in the 1990s to invest the surplus revenues of the country's oil and gas sector to benefit all Norwegians.

The proposed law for the Mozambique sovereign fund will apportion 40 percent of state revenues from LNG to the fund for the first 15 years, with the rest allocated to the national budget.

After that, the money will be split evenly between the fund and the annual required state budget revenues.

The revenues will be important in helping Mozambique repay a \$900 million bond that starts maturing from March 2028 while the new fund will also open the way for beneficial financing from International Monetary Fund.

The existing "Coral-Sul FLNG" vessel currently producing and exporting LNG was constructed at Samsung Heavy Industries shipyard in Geoje in South Korea and is the first floating LNG facility ever deployed in the deep waters of East Africa.

The other partners of Eni in the FLNG project are ExxonMobil, Chinese major China National Petroleum Corp.

(CNPC), Galp Energia of Portugal, Korea Gas Corp. and Mozambique's Empresa Nacional de Hidrocarbonetos (ENH), the state energy company.

There are also two major onshore LNG export projects, one led by TotalEnergies and one guided by ExxonMobil.

The TotalEnergies Mozambique LNG project was suspended in April 2021 and TotalEnergies and its partners declared a "force majeure" on the venture and withdrew all project personnel from the Afungi Peninsula LNG plant site in northeast Cabo Delgado province because of security issues and attacks in the area by an armed Islamist group.

Moves are now underway to resume the French-led project development on the Afungi Peninsula.

This project will monetize Area 1 licence resources and shareholders in addition to TotalEnergies include Mozambican company ENH with 15 percent, Japan's Mitsui & Co, three Indian companies and Thailand's PTTEP.

NAKILAT-KEPPEL Offshore & Marine (N-KOM) located near the main liquefied natural gas production and shipping base of Ras Laffan, is rebranding itself into Qatar Shipyard Technology Solutions (QSTS).

Qatari company Nakilat has N-Kom as a subsidiary venture while also operating an LNG fleet of 69 vessels and the re-named N-Kom remains one of Nakilat's strategic joint ventures offering a full range of marine support services for vessels and infrastructure in the LNG and general energy business.

QSTS said that the rebranding marked a significant move in the company's evolution underscored by its new vision "to be the leading world-class shipyard of choice" delivering sustainable marine and offshore technological solutions.

"The company adopted the launching of the new identity in alignment with its 13th anniversary, confirming its endeavour to make a qualitative leap to the service provided to its customers in all fields, including technology," said a statement.

"This adoption came in the form of the company's new name to become Qatar Shipyard Technology Solutions emphasizing the importance of its geographical location in the State of Qatar," it added.

Established in 2010, the newly-

branded QSTS is a premier global offshore and marine facility.

"From its strategic location within the world-class Erhama Bin Jaber Al Jalahma Shipyard in Ras Laffan Industrial City, Qatar Shipyard Technology Solutions offers a growing, comprehensive range of one-stop repair, conversion, maintenance and fabrication services for marine vessels, offshore and onshore structures," the statement added.

Parent company Nakilat said in its most recent earnings that profits from the joint venture companies operating in LNG transportation and shipyard activities increased by 16.9 percent.

"The launch of the new identity of Qatar Shipyard Technology Solutions marks the beginning of a new chapter in our journey, as it underscores our commitment to adopting technology solutions and sustainable practices which is the driving force behind the variety of value-adding maritime services we offer to our customers around the world," said Abdullah Al-Sulaiti, Chairman of the re-named company.

"Our new identity also highlights our unwavering commitment to excellence, safety and motivation to provide consistent, safe, reliable and high-quality solutions," stated Al-Sulaiti.

Nakilat's LNG fleet is one of the largest in the world and the company also owns and manages one floating storage and regasification unit and four large liquefied petroleum gas carriers as well as the re-branded ship repair and industrial and offshore fabrication business.

"QSTS has gained extensive experience in dealing with many of the largest and most complex ships in terms of technology and techniques over the years, earning a global reputation for its excellent performance and service," the statement added.

OCCIDENTAL Petroleum, the Houston-based company with US oil and gas assets and Warren Buffett as a main shareholder as well as owning oil and natural gas stakes in Algeria, Oman and the United Arab Emirates, has agreed to buy US Permian Basin-focused energy producer CrownRock in a cash and stock deal valued at \$12 billion including debt.

The transaction expands Occidental's presence in the Permian, America's largest oilfield where CrownRock is

developing a 100,000 acre position in the Midland Basin that produces oil and associated gas from nearly a thousand wells.

Both CrownRock and its affiliate CrownRock Minerals are part of a decade-long partnership between CrownQuest and Lime Rock Partners, a leading energy-focused private equity firm.

"CrownRock's over 94,000 net acres of premium stacked pay assets and supporting infrastructure are well positioned alongside Occidental's legacy Midland Basin business," said Oxy in announcing the deal.

Oxy is already a leading producer in the Permian Basin, one of the most prolific oil basins in the world and where it operates in about 2.8 million net acres in Texas and New Mexico and has oil and natural gas production assets in the DJ Basins in Colorado and southeast Wyoming and offshore the Gulf of Mexico.

The US company is also one of Algeria's leading international oil producers and is involved with Algerian national energy company Sonatrach in the Ourhoud, Hassi Berkine and El Merk production projects.

Oxy is additionally a leading oil and gas producer in the Arabian Peninsula's Sultanate of Oman and in the UAE where the US company is a long-term partner of Abu Dhabi National Oil Company.

Oxy and ADNOC have a 30-year-old joint venture called Al Hosn Gas, one of the largest Middle Eastern natural gas developments.

The US company holds a 40 percent participating interest in this basin which is located in the Shah Field and became operational in 2015.

The Oxy-CrownRock transaction is the latest in a long line of mergers and acquisition activities in the US during 2023.

They culminated in October 2023 with multi-billion dollar agreed acquisitions involving US majors ExxonMobil Corp. and Chevron Corp. who are buying Pioneer Natural Resources and Hess Corp. respectively for combined sums of more than \$112Bln in stock.

Analysts note that the Occidental-CrownRock deal obviously has the blessing of the best-known US investor Warren Buffett, whose Berkshire Hathaway company is the largest single shareholder in Occidental with a stake nearing 26 percent.

Occidental said increased cash flow, along with proceeds from a new \$4.5Bln-\$6.0Bln divestiture program, will enable Occidental to reduce its debt principal by at least \$4.5Bln within 12 months and the company expects to retain its investment-grade credit ratings.

“We believe the acquisition of CrownRock’s assets adds to the strongest and most differentiated portfolio that Occidental has ever had,” said Oxy President and Chief Executive Vicki Hollub.

“We found CrownRock to be a strategic fit, giving us the opportunity to build scale in the Midland Basin and positioning us to drive value creation for our shareholders with immediate free cash flow accretion,” added Hollub.

“We are excited about combining CrownRock’s high-performing team into our organization and expect to continue Occidental’s exceptional operational and financial results for years to come,” she stated.

Other highlights of the deal are the inclusion of 1,700 undeveloped locations, including 1,250 development-ready areas at sub-\$60 West Texas Intermediate breakeven as well as 750 locations at sub-\$40 WTI breakeven, increasing Occidental’s US onshore sub-\$40 breakeven inventory by 25 percent.

“Occidental’s purchase of CrownRock is a multi-win proposition for CrownRock, our employees and customers, and our community,” said Tim Dunn, who is Chief Executive of the CrownQuest Operating entity that oversees CrownRock.

“We congratulate Occidental and look forward to seeing their historically successful company continue to grow and prosper,” Dunn added.

PENINSULA, the global independent marine energy supplier founded to fill a gap in the Gibraltar market for bunkering services, has successfully completed the supply of liquefied natural gas as a marine fuel to a crude oil tanker owned by Singapore-based Eastern Pacific Shipping.

The delivery took place at the Gibraltar Port’s Western Anchorage.

Peninsula’s “Levante LNG”, the company’s first purpose-built 12,500 cubic metres capacity LNG bunkering vessel, supplied the EPS Suezmax crude oil tanker, the “Starway”, with around 3,500 cubic metres of LNG.

“EPS vessels like the ‘Starway’ and her sister, the ‘Greenway’, the world’s

first LNG fuelled Suezmax tanker, are paving the way for a lower carbon future,” said Nacho de Miguel, Peninsula’s Head of Alternative Fuels and Sustainability.

“Through our investment in assets like the ‘Levante LNG’ we can close the supply chain loop to give these vessels access to lower-carbon fuels in the world’s leading ports,” De Miguel stated.

“I want to thank EPS for partnering with Peninsula to help power them towards a more sustainable future,” he added.

The EPS General Manager of Operations, Captain Suraj Sundaresan, said Gibraltar was one of those ports that was making efforts to cater for vessels seeking alternative fuels like LNG.

“Peninsula bridges shipowners like us who are at the forefront of the industry’s energy transition, and Ports who are evolving to host alternative-fuel powered vessels,” explained Sundaresan.

“Our vision to lower emissions is mirrored in Peninsula’s desire to provide lower carbon options today. The availability of low-carbon fuel supply is incredibly important, he added.

“As the demand for alternative fuels towards decarbonisation increases, we rely on suppliers like Peninsula to help keep our state-of-the-art alternative-fuelled ships moving,” Sundaresan declared.

Peninsula’s “Levante LNG” bunker ship arrived at her Mediterranean home at the end of September and is now fully operational in the Strait of Gibraltar and the ports of the Western Mediterranean.

The bunkering company is also building its cruise ship portfolio after successfully supplying Royal Caribbean’s cruise liner “Silver Nova” with LNG fuel in another operation in Gibraltar in November.

PEMBINA PIPELINE Corp., the leading Canadian energy pipeline and midstream company with a network of gas gathering, processing and energy export terminals in North America has given a business update including spending plans and a final investment decision date for the planned Cedar LNG project in British Columbia.

Pembina has issued 2024 gross earnings guidance of C\$3.72 billion (US\$2.74Bln) to C\$4.02Bln (US\$2.96Bln) driven by continued

volume growth across the Western Canadian Sedimentary Basin (MCSB), new assets placed into service, re-contracting of certain assets and the prevailing commodity price outlook.

“The 2024 capital investment program of C\$880 million reflects growing volumes and Pembina’s commitment to providing safe, reliable, flexible and cost-effective energy infrastructure solutions,” said the Calgary, Alberta-based company.

“Pembina is in development of additional growth projects, which could add up to C\$280M to the 2024 capital investment program, inclusive of pre-final investment decision (FID) contributions related to the Cedar LNG project,” Pembina explained.

Pembina and the Haisla Nation who live around Kitimat in BC have had a formal 50-50 partnership joint venture for several years to develop a floating export plant with liquefaction capacity of 3 million tonnes per annum of LNG.

Feed gas for Cedar FLNG will be sourced from the prolific Montney natural gas resource basin in northeast BC. The FLNG facilities will be located near-shore on the Douglas Channel.

“Cedar LNG recently achieved a significant milestone with the signing of a heads of agreement (HOA) with Samsung Heavy Industries and Black & Veatch Corp.,” said Pembina in its update.

“The HOA provides Cedar LNG, on an exclusive basis with SHI and Black & Veatch, secure access to shipyard capacity to meet Cedar LNG’s target commercial operations date. The parties expect to finalize a lump-sum engineering, procurement, and construction agreement prior to year-end, which will provide Cedar LNG with the necessary services to construct the project, subject to a positive FID,” Pembina stated.

“In connection with, and following execution of, the lump-sum engineering, procurement, and construction agreement, Pembina expects to take additional steps and will be required to provide letters of credit to progress upstream infrastructure projects prior to an FID,” the company explained.

“Such letters of credit, net to Pembina, are currently expected to be up to C\$200M, which may become payable in the case of a negative FID. In conjunction with a positive FID, these letters of credit will be transferred to Cedar LNG,” Pembina added.

The company noted that Cedar LNG continued to progress the key project deliverables, including finalizing the lump-sum EPC contract, definitive liquefaction tolling agreements and inter-project agreements with Coastal GasLink built by TC Energy and with LNG Canada, the Shell-run project currently being completed in Kitimat.

“Given the complexity and sequencing of aligning the multiple work streams required to facilitate the project financing, an FID is now expected by the end of the first quarter 2024,” stated Pembina.

The company added that continued investment opportunities in the core business were highlighted by the sanctioning of a new cogeneration facility at the Kaybob South 3 Processing Plant by Pembina Gas Infrastructure and continued investment in northeast British Columbia liquids egress.

Pembina continues to progress the previously disclosed 40,000 barrels per day expansion of its North East BC Pipeline system and to evaluate additional pipeline and terminal infrastructure needs in the region.

“Over the next several years, Pembina sees the potential for mid-single digit annual volume growth across the WCSB, driven by near-term catalysts, including up to approximately 2.8 billion cubic feet per day of new natural gas export capacity from new West Coast LNG projects,” said Pembina.

“It also sees 590,000 barrels per day of new crude oil export capacity from the expected completion of the Trans Mountain Pipeline expansion, as well as potential new developments in the Alberta petrochemical industry, including Pembina’s expectation of more than 100,000 barrels per day of incremental ethane demand,” Pembina added.

This ethane demand was linked to Dow Inc.’s recent decision to build a new 1.8 million metric tonne per annum integrated ethylene cracker and derivatives facility in Fort Saskatchewan.

PILBARA Clean Fuels said it was making progress with the development of a mid-scale LNG plant for bunkering and to be located at Port Hedland in Western Australia, the world’s largest iron-ore export port.

The project will provide an

Australian LNG fuel supply capability through a new facility for the conversion of pipeline natural gas to LNG, responding to market demand for cleaner marine bunkering fuel for dry-bulk iron-ore carriers operating “round-trip” voyages between the Pilbara coast and Asia.

Pilbara Clean Fuels said that the liquefaction facility would have initial capacity of 500,000 tonnes per annum with potential additional demand of 1 million tonnes per annum by 2030.

“A key feature of the project is an electrified plant with outsourced power supplied predominantly from renewables,” the statement explained.

“The design intent is to significantly reduce Scope 1 and Scope 2 emissions compared to conventional LNG plants. Thereby providing an ability for round-trip voyages bunkering in Port Hedland to achieve substantially lower overall greenhouse-gas (GHG) life-cycle emissions than other options,” it added.

The LNG re-fuelling concept is based on ship-to-ship bunkering of vessels while at anchor off Port Hedland.

One of the partners, Oceania Marine Energy, is developing a LNG marine fuel bunkering service capability based on the charter, ship management and operation of purpose-designed LNG bunkering vessels.

The vessels are to be provided by Norwegian ship-owner Kanfer Shipping.

Another project participant is the Italian classification society Registro Italiano Navale (RINA), the developer of a concept for a new 209,000 deadweight ton Newcastlemax dry-bulk ship design with an innovative LNG marine fuel system involving novelties such as pre-combustion carbon removal.

“Recognising the complementary aspects of their respective project interests and business objectives PCF, Oceania and RINA have entered into a memorandum of understanding,” the companies said.

Under the terms of the MoU, PCF, Oceania and RINA have agreed to collaborate to develop an “end-to-end” low-carbon profile LNG production and marine vessel bunkering capability concept for the port of Port Hedland.

“Along with our existing partner Oceania, we are delighted to have formed the new collaborative relationship with RINA,” said PCF Managing Director, Robert Malabar.

“We know the maritime community is happy with LNG as a marine fuel. We

believe the outcome of the studies should provide compelling argument in support of the Western Australian Government’s previous announcement to support an International LNG Fuelling Hub in the Pilbara,” Malabar added.

SEATRIUM Group of Singapore, formerly called Sembcorp Marine Ltd and renamed as Seatrium following its merger with Keppel Offshore & Marine, has made the successful delivery and hand-over of the Greek “FSRU Alexandroupoli” to be deployed offshore northeast Greece as part of a Balkans LNG supply hub.

“The project was successfully delivered to GAS-fifteen Ltd, a wholly-owned subsidiary of GasLog LNG Services,” said Seatrium.

The Seatrium work involved converting the conventional LNG carrier “GasLog Chelsea” into a floating storage and regasification unit with various additions and the vessel was handed over after testing.

The FSRU will be stationed in the Sea of Thrace in the northeast part of the Aegean and about 17.6 kilometres (11 miles) from the costal Greek town of Alexandroupolis.

Seatrium earlier in November handed over the LNG production unit for the BP-led FLNG project offshore Senegal and Mauritanian in West Africa.

The converted Greek vessel to supply LNG to the Balkans region was renamed “FSRU Alexandroupoli” to begin its service as an offshore storage and import facility.

The “FSRU Alexandroupoli” will be linked to a pipeline system of 28 kilometres connecting the floating unit to the Greek National Natural Gas Transmission System.

The ship of 155,000 cubic metres capacity has also been reflagged to the Greek flag.

“We are pleased to support Gaslog and contribute towards Greece’s energy future with the delivery of the first FSRU for the country through the Alexandroupolis Independent Natural Gas System (INGS) project,” said Chris Ong, Chief Executive of Seatrium.

“This project marks a significant milestone for Seatrium, affirming our position as a global player with industry-leading engineering expertise in the gas value chain,” added Ong.

“As the first FSRU for Greece, the

INGS project will become a critical energy gateway, supporting its energy security while advancing the energy transition trajectory of Southeast Europe,” stated the CEO.

The FSRU will eventually be owned and managed by Gastrade S.A, a consortium of key players in the wider region’s energy market.

Gastrade is led by the energy group of Mrs Elmina Copelouzou and several other shareholders in addition to the shipping line GasLog.

These other Gastrade project participants include the Public Gas Corporation of Greece (DEFSA), the affiliated Greek company DEPA Commercial, the Hellenic Natural Gas Transmission System Operator and Bulgartransgaz, the Bulgarian natural gas transmission and storage system operator.

This was the second big project hand-over for Seatrium in November 2023 after the Singapore group successfully delivered the converted floating LNG production vessel for the BP-led FLNG project offshore Mauritania and Senegal.

The “Gimi FLNG” will be stationed at a nearshore hub located on the Mauritania and Senegal maritime border, and is expected to begin production next year as part of the first phase of the Greater Tortue Ahmeyim project of BP and US partner Kosmos Energy.

The “Gimi FLNG” was converted in a project in partnership with Norway’s Golar LNG from a 1975-built Moss LNG carrier with a storage capacity of 125,000 cubic metres.

It is designed for 20 years of operations on-site without dry docking, with a liquefaction capacity of 2.7 million tonnes per annum and contracted to operate near shore in 30 metres of water depth.

SERBIA, the Balkan state that was part of the former Yugoslavia and has been a candidate nation for 10 years to be a member of the European Union, has completed an interconnector pipeline to Bulgaria giving the Serbs supply options of regasified LNG from Greece or pipeline gas from Azerbaijan to replace Russian supplies.

Statements from Serbia and Bulgaria outlined the importance of the interconnector for Serbia’s ambitions to join the EU and for Balkan energy security.

“With this interconnector we are securing alternative gas supplies apart from the Russian gas,” said Serbia’s Energy Minister Dubravka Djedovic Handanovic.

Analysts note that while Serbia has always been friendly with Russia it is now having to toe the European Commission line on replacing Russian gas with alternatives to keep its EU membership moving slowly forward.

The interconnector runs from Novi Iskar in Bulgaria to the Serbian city of Nis and is 170 kilometres (106 miles) in length with capacity on the Serb side of 1.8 billion cubic metres per annum.

These volumes will cover around 60 percent of current Serbian natural gas needs of about 3 Bcm per annum.

An opening ceremony for the pipeline was attended on December 10 by Serbian President Aleksandar Vucic and his Bulgarian and Azeri counterparts, Rumen Radev and Ilham Aliyev.

President Radev of Bulgaria said that the commissioning of the gas interconnector between Serbia and Bulgaria would “change the energy map” of Europe.

“The interconnector represents a guarantee for diversification and security of supply not only for our two countries but for the entire region, and it is no coincidence that the European Commission also recognized this as a project of mutual interest,” said Radev.

Serbia has recently signed an agreement with Azerbaijan to purchase 400 million cubic metres of natural gas per annum from 2024.

While Serbia has been in the EU membership waiting room since 2014 the Balkan nation is able to benefit from pre-membership funding to bring infrastructure up to EU standards.

The European Commission gave a grant of almost €50 million (\$54M) to build the Bulgaria-Serbia interconnector and another €25M was secured in a single loan from the European Investment Bank.

Previously another key regional gas link, the Greece-Bulgaria Interconnector, was commissioned in October 2022 to supply gas from three pipelines that make up the Southern Gas Corridor from Caspian Sea gas fields of Azerbaijan through Georgia and Turkey to Greece.

Back-up for the Azeri pipeline gas available for Serbia and Bulgaria will come from the Greek floating storage and regasification unit (FSRU) being

stationed in the Sea of Thrace in the northeast part of the Aegean and about 17.6 kilometres (11 miles) offshore the port of Alexandroupolis.

The shareholders in the FSRU project include the Greek Copelouzou group as well as Greek state natural gas bodies like Public Gas Corporation of Greece (DEGAS) and the Hellenic Natural Gas Transmission System Operator as well as Bulgartransgaz, the Bulgarian natural gas transmission and storage system operator.

TANZANIA, the future LNG exporter, and neighbour Uganda are making progress on oil and natural gas projects and the first shipment of 100 kilometres of line pipe as just arrived at the Tanzanian Port of Dar es Salaam, signalling the start of the main construction phase for the region's first major cross-border pipeline project.

The East African Crude Oil Pipeline (EACOP) will now enter the construction phase and the occasion was marked by a gathering of the EACOP shareholders at the storage yard operated by EACOP's Tanzanian logistics partners.

EACOP will transport crude oil from the onshore fields in the Lake Albert region of land-locked Uganda from Kabaale-Hoima in Uganda to the Chongoleani peninsula near Tanga in Tanzania where will be shipped to world markets.

The East African pipeline will run for over 1,440 kilometres (895 miles) and will transport Uganda's crude oil from Kabaale-Hoima in Uganda to the Chongoleani Peninsula near Tanga in Tanzania for export to international markets.

This major regional export system will include 296km of pipeline in Uganda and 1,147km in Tanzania.

The insulated and buried 24-inch pipeline will have six pumping stations, two pressure reduction stations and a marine export terminal in Tanzania.

The Uganda oil project is drilling more than 450 wells on 35 well-pads for the Kingfisher and Tilenga oil fields and the venture expects to have production of around 230,000 barrels of oil per day from 2025.

The drilling operations aim to ensure that at least 70 wells are in place by 2025 to facilitate the start of commercial production.

The EACOP project represents a major inward investment in Uganda and Tanzania and comes ahead of the

future Tanzanian LNG export project involving energy majors.

Analysts said that during the following 25 years, Uganda's oil will provide a boost for investment in other sectors and is expected to have a potentially transformative impact on the nation's economy.

EACOP said it was focused on ensuring that its activities adhered to the most stringent social, environmental and safety standards.

"The onward transportation of pipes to their point of use will be conducted using new, high specification trucks and trailers," said the company.

"The project has also invested in extensive driver training, focusing on defensive driving practices, route planning and compliance with road regulations," it added.

"The best available technology has also been incorporated for the forthcoming line pipe lifting operations," said EACOP.

"As the on the ground construction of this 1,440km pipeline progresses, EACOP remains committed to delivering this project with the utmost responsibility, contributing to the sustainable growth and prosperity of East Africa," the company stated.

Following the final investment decision that was taken in February 2022, EACOP concluded the formation of the company that will construct and operate the pipeline.

EACOP Ltd. is that special purpose company, governed by its shareholder agreement and in which French major TotalEnergies has 62 percent, Uganda National Oil Company (UNOC) 15 percent, Tanzania Petroleum Development Corp. (15 percent) and China National Offshore Oil Corp. 8 percent.

Tanzania Petroleum Development Corp (TPPDC) is also the company that is part of Tanzania's LNG export project which has suffered delays but could gain traction from the start of the region's trans-nation oil project and pipeline.

TPDC is a minority partner in the Tanzania LNG project with joint operators, Equinor of Norway and UK-based Shell, while ExxonMobil and several smaller energy companies are also shareholders.

Shell is operator of Tanzania's Block 1 and Block 4, which hold 16 trillion cubic feet of estimated recoverable gas, while Equinor operates Block 2 in Tanzanian waters in which ExxonMobil

also holds a stake. This block is estimated to hold more than 20 Tcf of gas.

TC ENERGY Corp., whose activities include the building and ownership of pipelines in the US, Mexico and Canada and the LNG project called Coastal GasLink in British Columbia, has held an investor day with forecasts of a surge in feed gas for US Gulf Coast LNG and more progress on the spin-off of its liquids business.

TC Energy's five divisions include Canadian Natural Gas Pipelines, US Natural Gas Pipeline, Mexican Natural Gas Pipeline, Liquids Pipeline and Energy and Power Solutions.

François Poirier, TC Energy's President and Chief Executive, told investors that the Coastal GasLink was completed while its US Southeast Gateway venture was on track for costs and schedule.

TC Energy's presentation showed that the Calgary-based company was providing 30 percent of US LNG feed gas which is set to surge to 40 billion cubic feet per day of supply for liquefaction in the years ahead.

"We are well positioned to capture the next wave of LNG exports," said the CEO.

At the start of October 2023 TC Energy completed the sale of 40 percent stakes for a total of C\$5.3 billion (US\$3.9Bln) in two US assets, Columbia Gas Transmission and Columbia Gulf Transmission, transporters of 20 percent of US LNG feed-gas volumes.

The company confirmed that the Columbia Gas and Columbia Gulf transactions were completed to the buyer, the New York-headquartered asset management firm Global Infrastructure Partners.

The Columbia Gas and Columbia Gulf pipelines span more than 15,000 miles across the North American natural gas network and are underpinned by strong long-term natural gas supplies and a rate-regulated commercial framework.

"The Southeast Gateway Pipeline project continues to progress with its US\$4.5Bln cost estimate and schedule," said the company.

"TC Energy has made significant progress against its 2023 priorities, including project execution, deleveraging and maximizing the value of its asset base, which continues to generate excellent operational and

financial results through all points in the economic cycle," investors were told.

They were also told that the Liquids Pipelines business spin-off would be called South Bow Corp.

"South Bow symbolizes the historical roots of the company in Alberta, Canada, while acknowledging the pipeline system's strategic path southwards to the strongest US refining markets in the Gulf Coast and Midwest," stated TC Energy.

"After a strong October and reflecting strength in the US dollar, the 2023 comparable EBITDA is now expected to be approximately 8 percent higher than 2022," the company explained.

"The company reaffirms its priority areas for 2024 and provides its expected comparable EBITDA growth outlook of 5 percent to 7 percent from 2023 to 2024, excluding any potential impact of its announced asset divestiture program, and prior to giving effect to the spin-off, which is expected to take place in the second half of 2024," said TC Energy.

CEO Poirier added that over the past few years, TC Energy has been strategically pivoting capital to optimize its portfolio, leveraging core competencies and capturing the long-term growth potential in the natural gas and power businesses.

"Focusing on the value that can be delivered with two distinct strategies, the spin-off will unlock the evident value we see from each company's unique opportunity set," the CEO added.

"Subject to the requisite shareholder and regulatory approvals, upon closing of the spin-off transaction, South Bow is poised to be a low-risk liquids transportation and storage business, and with its anticipated investment-grade credit ratings, it can respond quickly in a market where it holds significant competitive advantages," Poirier declared.

TELLURIAN Inc., the developer of the Driftwood liquefied natural gas export plant near Lake Charles in Louisiana, has ousted co-founder Charif Souki as Executive Chairman and has chosen Souki's long-time business partner Martin Houston as the new Tellurian Chairman.

"Co-Founder Charif Souki will no longer serve as an executive or officer of the company or hold any managerial responsibilities," said Tellurian in a statement while adding that Souki would remain a member of the board.

“These changes are not the result of any material or unexpected financial events,” Tellurian added.

Tellurian’s shares on the New York Stock Exchange rose around 8 percent after the announcement from \$0.63 per share to \$0.68 per share.

Souki previously headed Cheniere Energy as a founder but was ousted from Cheniere by activist shareholders in 2016 and went on to found Tellurian with Martin Houston, who had also been a former executive of BG Group prior to its takeover by Shell.

Following the appointment of Martin Houston as Chairman of the Board, the Board also named former General Counsel Daniel Belhumeur as President of Tellurian, and former Deputy General Counsel Meredith Mouer as General Counsel and Chief Compliance Officer.

Current Chief Executive Octávio Simões remains in his post despite handing over the Presidency.

“This is an important moment for Tellurian as we navigate several key initiatives,” said Simões.

“We are focused on unlocking shareholder value via execution of potential development and commercial partners at Driftwood LNG, while also evaluating options to refinance our existing debt, streamline costs and improve our balance sheet. These management changes ensure alignment and continuity,” stated the CEO.

“I look forward to working with Daniel as he oversees key functions while I prioritize bringing Driftwood LNG, now with growing commercial momentum, to a final investment decision,” Simões stated.

Tellurian Chairman Houston commented on the end of an era for Gulf Coast LNG projects.

“The Board and I are confident in Tellurian’s ongoing leadership and would like to thank Charif Souki for his leadership and contributions to Tellurian. He holds a special place in the industry and the founding of US LNG,” Houston declared.

Tellurian’s shares had once traded as high as \$10.70 per share on April 3, 2019, but have steadily slumped because of delays in progressing with the Driftwood project, which has permits to produce 27 million tonnes per annum of LNG.

Analysts note that setbacks for Tellurian have included changing its investment and equity strategies while potential initial backers such as Shell and global commodities firm Vitol and

others withdrew their interest in being among the first cargo buyers.

Tellurian, posted a third-quarter loss of \$12.55 million in November 2023 compared with a profit \$40.07M in the same quarter of 2022.

As of the end of September, Tellurian said it had about \$1.3Bln in total assets, including \$59.3M of cash and cash equivalents.

Tellurian generates cash from natural gas assets included 31,149 net acres and interests in 159 producing wells.

Its main production area of operations is the Haynesville Basin covering northwest Louisiana and East Texas.

Tellurian had also invested over \$1Bln to develop and advance construction of the Driftwood plant and “remained on target” to produce first LNG in 2027.

The Driftwood project involves constructing 20 mid-scale processing Trains, each with 1.38 MTPA of capacity and built as five blocks of four Trains.

The Phase One development would include the first two of these blocks for 11 MTPA of output and two of three planned 235,000 cubic metres storage tanks and the first of three planned loading berths for LNG carriers.

Tellurian also signed an accord in April 2023 to sell the site of the Driftwood plant to institutional investors for \$1Bln and to lease back the site comprising 800 acres of land.

Tellurian’s main contractor for the Driftwood construction is the US engineering company Bechtel Energy.

In September 2023, Tellurian also signed an agreement with US LNG-equipment supplier Baker Hughes to secure a delivery schedule for eight LM6000PF+ gas turbines, main refrigerant compressors and control units required for Phase One construction.

Tellurian said that agreement supported its aim of having the Driftwood venture achieving initial LNG production in four years’ time.

TLOU ENERGY, the company developing projects in Sub-Saharan Africa, said the Lesedi gas-to-power project remained on track to get natural gas-fired power into the grid in Botswana from the southern African nation’s own coal-seam gas (CSG), a resource that is used by companies in Australia to produce and export LNG.

Tlou Energy has a large gas field in Botswana with independently certified

gas reserves and contingent resources.

“Gas has started to flow at the Lesedi 6 production pod and has been flared,” said Tlou in a project update filed to the London Stock Exchange Alternative Investment Market.

The company is also listed on the Australian Securities Exchange and the Botswana Stock Exchange.

The Lesedi production wells continue to produce gas and a key focus in 2023 and 2024 has been to drill more production wells for the 10 megawatts Botswana gas-to-power project.

Tlou then plans to rapidly expand to 25 MW and beyond. The first electricity generated at the Lesedi project will be sold under a 10MW power purchase agreement (PPA) to Botswana Power Corp., the national power utility in Botswana.

The latest Botswana gas flows followed the drilling of the new Lesedi 6 production pod and the redrill of the lateral sections of the Lesedi 4 production pod.

Post drilling operations for each pod comprised flushing to clear the wells.

“Production equipment was then installed and dewatering commenced in late October 2023,” the company explained.

“In recent days Lesedi 6 experienced a rapid increase in casing pressure in both lateral wells with first gas production to surface occurring soon thereafter,” said Tlou.

“The rapid build-up of casing pressure and comparatively short time taken from commencement of dewatering to first gas to surface is very encouraging. It represents the fastest gas to surface in the Lesedi field to date,” stated the company.

Tlou explained that the next step was to allow the gas flow rate to develop and obtain an initial sustained flow rate.

“The company will continue production testing at both Lesedi 4 and Lesedi 6 and update the market in due course,” it added.

At the company’s recent annual meeting in October shareholders were told that during the year Tlou progressed the construction of transmission lines to connect the Lesedi project to the grid, acquired a 4,000-hectare farm for the central processing facility, contracted the construction of the Lesedi sub-stations and the next phase of the production drilling commenced.

Tlou’s current 2P gas reserves stand at approximately 41 billion cubic feet in

the form coal bed methane (CBM), also called CSG.

Tlou said it was “privileged” to have the continued support of the government of Botswana and the inclusion of CBM as part of the country’s forward plan to combat power deficiency.

Trafigura, the global commodities trading firm, said its traded liquefied natural gas volumes declined slightly in the past year and while market volatility had eased the energy supply chain remained “brittle” amid changing inventories and continuing geopolitical concerns.

The firm’s LNG activities are within its Gas, Power & Renewables division and the volumes handled dropped to 11.2 million tonnes for the year through September 2023 compared with 13MT in the previous year.

Natural gas volumes that were traded edged higher to 23.9MT versus 23.7MT for a total of 35.1MT in the pipeline gas and LNG sectors, down from the prior year’s 36.7MT.

TRAFIGURA said it had adapted its strategy to build a pan European flexible portfolio with a strong focus on storage and pipeline capacity and this had paid dividends with strong results.

Trafigura posted overall record net profits for the financial year through September. The profits rose 5 percent to \$7.39 billion from \$7.03Bln in the previous year with strong underlying contributions recorded across all group.

“Over the year, we worked hard to achieve closer cooperation between our Gas and Power teams as the new division expanded its footprint in Europe and North America,” Trafigura said.

“There was a ground-breaking deal to supply significant amounts of natural gas to Germany’s national importer. When the agreement was signed it was worth more than \$12Bln at market prices,” Trafigura explained.

The company also entered a \$3Bln loan deal for four years and underwritten by the German Federal Government to help secure the LNG cargoes that were part of the agreement.

Trafigura during 2023 also expanded into markets that have previously been dependent on Russian pipeline natural gas, including Slovakia, Hungary, the Czech Republic and Austria.

“Trafigura was one of the few companies to inject gas into Ukraine storage as European Union storage approached capacity,” said the company.

“In the US, we continued to focus on exports by using our pipeline transportation network to carry gas from the Permian and Eagle Ford Basins to the Gulf Coast and Mexico markets,” it added.

“In the coming years, this is a business we expect to grow as global gas markets become more interconnected. US natural gas prices fell substantially at the start of the year and subsequently traded in a narrow range near \$3 per million British thermal Units (MMBtu) reflecting a mild winter, relatively robust supply and high storage levels,” it added.

Trafigura explained that the 2023 market had remained volatile as highlighted by concerns about supply disruptions.

“In LNG, our services remained in high demand throughout the year. We brought cargoes to Europe when they were needed and diverted them away when storage was nearing capacity,” Trafigura said.

“In Asia, we continued to be a reliable supplier for traditional demand centres and new locations,” it added.

“Our ability to adjust to changing market conditions during the year owes much to our strong presence in shipping and the close collaboration between our LNG and natural gas teams,” Trafigura stated.

Trafigura concluded that the firm expected gas prices in Europe to remain “unstable” until a wave of new LNG projects come on stream later in the decade.

“Until then, Europe will have to compete with Asia for LNG cargoes. Our strategy will be to remain agile and respond to changing customers’ needs by drawing on the size and scale of our operations and our integrated approach,” the firm said.

US energy outlook forecasts for December see a lower benchmark Henry Hub natural gas spot prices for the rest of the winter heating season to March 2024 because of higher production and storage levels.

The latest forecast is for the Henry Hub spot price to average about \$2.80 per million British thermal units for the rest of the winter.

“We lowered our forecast for natural gas prices this winter by more than 60 cents compared with our November forecast,” said the report from the Energy Information Administration.

The EIA said the lower price forecast was due to recent increases in natural gas production, which reduced natural gas prices in November and high natural gas storage inventory levels.

The Henry Hub spot price averaged \$2.71 per MMBtu in November, which was down 27 cents from October.

“Increased US natural gas production in October and November 2023 contributed to the natural gas price decline. US dry natural gas production averaged about 105 billion cubic feet per day in November, the most for any month on record,” explained the EIA.

It said that dry natural gas production averaged almost 103 Bcf per day in the first half of the year and has increased in most months during the second half.

“We forecast dry natural gas production to remain close to 105 Bcf per day for the rest of winter,” the report stated.

Increased natural gas production throughout all of 2023 contributed to more natural gas in US storage to start the winter heating season.

Storage inventories started the winter heating season at more than 3,800 Bcf or 5 percent more than the five-year (2018-2022) average.

The EIA said that mild winter weather in the US in November reduced natural gas consumption.

“Less natural gas consumption along with increased natural gas production helped increase storage inventories to 3,771 Bcf at the end of November, 7 percent more than the five-year average,” stated the EIA.

“We forecast natural gas storage inventories to remain above the five-year average throughout winter and for all of 2024” the agency said.

It forecasts US natural gas consumption in the residential and commercial sectors to average almost 40 Bcf per day for the rest of the winter heating season, 2 percent less than the five-year average.

“For the rest of the winter heating season, we forecast close-to-normal weather with 44 fewer heating degree days (HHDs) than the five-year average,” the EIA said.

“If temperatures are colder-than-forecast, the residential and commercial sectors will likely consume more natural gas than our forecast. Extreme winter weather events or prolonged cold temperatures have the potential to cause more significant disruptions to markets,” it noted.

For the oil market, the EIA said the Brent crude oil spot price averaged \$83 per barrel in November, a decrease of \$8 per barrel compared with October.

“Although crude oil prices declined further during the first week of December, with the Brent spot price closing close to \$76/b on December 8, we expect upward crude oil price pressures in the coming months as global oil inventories decline in our forecast in the first quarter of 2024,” the EIA stated.

The forecast decline in oil inventories is driven in part by the recently announced production cuts on November 30 by the Organization of Petroleum Exporting Countries and its allies, known as OPEC+.

“We forecast the Brent price will increase from an average of \$78/b in December 2023 to an average of \$83/b for all of 2024,” said the EIA.

The EIA said that growth in global crude oil supply has been limited in 2023 because of voluntary production cuts from Saudi Arabia and reduced production targets from other OPEC+ countries.

“We estimate countries within the OPEC+ agreement have lowered crude oil production by 1.4 million barrels per day in 2023, partly offsetting production growth of 2.4 million barrels per day by non-OPEC+ producers,” the report said.

“We forecast OPEC+ crude oil production to fall by an additional 0.6 million barrels per day on average in 2024. This forecast assumes some voluntary production cuts from Saudi Arabia will be extended through 2024 and overall production from OPEC+ countries will remain below targets,” the EIA concluded.

WILLIAMS Companies, the US natural gas pipelines operator with projects aimed at boosting feed-gas supplies for Gulf Coast LNG export plants, successfully closed two strategic transactions that now position the company as the third-largest gatherer in the Denver-Julesburg Basin.

“First, there is the acquisition of Cureton Front Range LLC, whose assets include gas gathering pipelines and two processing plants serving producers across 225,500 dedicated acres,” said Williams.

“And second, the purchase of the Kohlberg Kravis Roberts (KKR) 50 percent ownership interest in Rocky Mountain Midstream Holdings (RMM), resulting in 100 percent ownership of

RMM for Williams,” said the company.

Tulsa, Oklahoma-based Williams has also said that its plans include the more than doubling of LNG export feed-gas volumes along the Transcontinental (Transco) Gas Pipe Line corridor through 2032.

“We remain committed to executing on acquisitions that progress our overall strategy to maintain top positions in the basins we serve,” said Alan Armstrong, President and Chief Executive of Williams.

“The combination of the Cureton and RMM assets will deliver tangible operational synergies that include increased volumes on our existing processing facilities, as well as increased revenues on our downstream NGL transportation, fractionation and storage assets,” added Armstrong.

Williams first announced the Cureton and RMM transactions in its third-quarter earnings in November 2023.

The acquisitions have a combined value of \$1.27 billion, representing a blended multiple of approximately 7x 2024 Adjusted EBITDA.

“Proceeds of \$355 million from the company’s recent sale of its Bayou Ethane Pipeline system along with \$533M in net proceeds now received from the Energy Transfer legal judgment of \$627M (which included legal fees owed to others) partially funded the transactions,” said Williams.

Williams had reported strong third-quarter results and a 10 percent increase in net profits.

Net income in the quarter came to \$654M compared with \$599M in the third quarter of 2022, while nine-month earnings soared to \$2.12Bln in 2023 versus \$1.37Bln in the same period last year.

Analysts note that Williams has proven its ability to grow through a variety of commodity cycles and its natural gas strategy is benefiting from increased demand to serve electric power generation and LNG exports.

In major project advanced during the last quarters, Williams placed the first phase of its latest Transco expansion project, Regional Energy Access, into service ahead of schedule.

The company also made progress on an additional 2 billion cubic feet per day of Transco expansions for completion by year-end 2025, and executed precedent agreements on the 1.4 Bcf per day Southeast Supply Enhancement project. ■

Explanatory Notes

- The tables do not include the following types of LNG facilities:
 - ◆ Small marine satellite terminals receiving LNG from liquefaction plants in their own country (such as exist in Norway) or which receive LNG transhipped from nearby reception terminals in their own country (such as in Japan)
 - ◆ Satellite LNG storage facilities that receive LNG transported only by road or rail
- Expansions of LNG reception terminals are only shown if they involve new storage tanks
- Where there is a blank in the table the information is uncertain or unknown.

In addition to our own database, the information in these tables has been derived and cross-referenced from multiple sources, including GEM, IEEJ, IGU, GIE, GIIGNL and facility operators/ developers.

Comments, corrections or additional information would be most welcome. They should be sent to alexander@lngjournal.com

Conventional LNG Terminals

Country	Location (Project)	Owners	Start up	Nom. Capacity (MTPA)	Storage Tanks	Capacity
Belgium	Zeebrugge	Fluxys	1987	6.6	5	566,000
Canada	St. John (Canaport) LNG	Repsol	2009	7.1	3	480,000
Chile	Mejillones LNG	Tractebel Engie, Ameris Capital AGF	2010	1.5	1	187,000
	Quintero	ENAP, Metrogas, Enagas	2009	3.8	3	334,000
China	Beihai LNG	PipeChina	2013	6.0	4	640,000
	Caofeidian LNG	PetroChina	2012	10.0	8	1,280,000
	Caofeidian Xintian LNG	China Suntien Green Energy Corp.	2023	5.0	2	—
	Dalian LNG	PipeChina	2011	6.0	3	480,000
	Dongguan LNG	JOVO Energy	2010	1.5	2	160,000
	Fujian LNG	CNOOC	2008	6.3	6	960,000
	Guangdong Dapeng LNG	CNOOC	2006	6.8	4	640,000
	Hainan LNG	PipeChina	2014	3.0	2	320,000
	Hainan Transfer Station	PetroChina	2020	0.6	2	40,000
	Jiangsu LNG	PetroChina	2011	10.0	5	1,080,000
	Jieyang LNG	PipeChina	2018	4.2	3	480,000
	Nansha LNG	Guangzhou Gas	2023	1.0	2	160,000
	Pinghu LNG	Zhejiang Hangjiixin Clean Energy	2022	1.0	2	200,000
	Qidong LNG	Guanghui Energy	2009	4.0	5	620,000
	Qingdao LNG	Sinopec	2006	7.0	6	960,000
	Shanghai (Yangshan) LNG	CNOOC	2009	3.0	5	895,000
	Shanghai Peak Shaving	Shenergy	2008	1.5	5	320,000
	Shenzhen Peak Shaving	Hua'an	2012	0.8	1	80,000
	Shenzhen Diefu LNG	PipeChina	2018	4.0	4	640,000
	Tianjin - Nangang LNG	Sinopec	2018	6.0	4	640,000
	Tianjin LNG	PipeChina	2013	6.0	7	397,000
	Tianjin Binhai LNG	Beijing Gas	2023	5	10	—
	Wenzhou LNG	Zhejiang Energy, Sinopec	2023	3.0	4	—
	Yancheng LNG	CNOOC	2022	3.0	4	880,000
	Zhejiang LNG	CNOOC	2018	6.0	6	960,000
	Zhoushan LNG	ENN	2018	5.0	4	640,000
	Zhuhai LNG	CNOOC	2014	3.4	3	480,000
Dominican Republic	Andres LNG	AES Andres	2003	1.9	1	160,000
France	Dunkerque Le Clijton	EDF, Fluxys, TotalEnergies	2016	9.5	3	600,000
	Fos-sur-Mer	TotalEnergies, Elengy	2010	9.2	4	410,000
	Montoir-de-Bretagne	Elengy	1980	8.0	3	360,000
Greece	Revithoussa	DESFA	2000	7.1	3	225,000
India	Cochin	Petronet	2013	5.0	2	368,000
	Dabhol	GAIL, NTPC	2007	5.0	3	480,000
	Dahej	Petronet	2004	17.5	6	932,000
	Ennore LNG	IndianOil LNG	2019	5.0	2	360,000
	Hazira	Shell, TotalEnergies	2005	5.0	2	320,000
	Mundra LNG	Adani, GSP	2019	5.0	2	320,000
Indonesia	Arun Conversion	Pertamina	2015	3.0	4	508,000
Italy	Panigaglia	Snam	1963	2.5	2	100,000
	Rovigo Adriatic LNG	QatarEnergy, ExxonMobil, Snam	2009	6.6	2	250,000
Jamaica	Montego Bay	New Fortress Energy	2020	0.5	7	7,000
Japan	Chita	JERA, Toho Gas	1977	24.0	14	1,560,000
	Fukuoka	Saibu Gas	1993	0.8	1	70,000
	Futtsu	JERA	1985	20.0	10	1,110,000
	Hachinohe	ENEOS	2015	1.6	2	280,000
	Hatsukaichi	Hiroshima Gas	1996	0.9	2	170,000
	Hibiki LNG	Saibu Gas, Kitakyushu Gas	2014	4.0	2	360,000
	Higashi-Ogishima	Tokyo Electric	1984	15.0	9	540,000
	Himeji	Kansai Electric, Osaka Gas	1979	12.9	15	1,360,000
	Hitachi LNG	JERA	2015	2.2	2	230,000
	Ishikari LNG	Hokkaido Gas	2012	1.4	1	180,000
	Joetsu LNG	JERA	2012	2.3	3	540,000
	Kagoshima	JERA	1996	0.2	1	86,000
	Kawagoe	Chubu Electric	1997	8.0	3	480,000
	Mizushima	Chugoku Electric, ENEOS	2006	1.7	2	320,000
	Nagasaki LNG	Saibu Gas	2003	0.1	1	35,000
	Nakagusuku LNG	Okinawa Electric	2012	0.7	2	280,000
	Negishi	TEPCO, JERA	1969	11.0	14	1,180,000
	Niigata	Tohoku Electric	1984	10.0	8	720,000
	Ogishima	JERA	1998	3.0	4	850,000

Conventional LNG Terminals (Continued)

Country	Location (Project)	Owners	Start up	Nom. Capacity (MTPA)	Storage Tanks	Storage Capacity
Japan (continued)	Oita	Kyushu Electric	1990	5.1	5	460,000
	Sakai	Kansai Electric	2006	6.4	4	420,000
	Sakaide	Shikoku Electric, Cosmo Oil, Shikoku-Gas	2010	1.2	1	180,000
	Senboku	Osaka Gas	1972	12.5	20	1,675,000
	Shin Sendai	Tohoku Electric	2016	1.0	2	320,000
	Sodegaura	JERA	1973	29.4	35	2,660,000
	Sodeshi Shimizu	Shizuoka Gas, ENEOS	1996	2.9	3	337,200
	Soma LNG	JAPEX	2018	1.5	2	460,000
	Tobata Ward	Kita-Kyushu LNG	1977	7.6	8	480,000
	Toyama LNG	Hokuriku Electric	2018	1.8	1	180,000
	Yanai	Chugoku Electric	1990	2.4	6	480,000
	Yokkaichi	Chubu Electric	1987	7.2	2	320,000
Kuwait	Al Zour LNG	KIPIC	2022	22.0	8	1,800,000
Malaysia	Pengerang LNG	Petronas	2017	3.5	2	400,000
Mexico	Energia Costa Azul	Sempra	2008	7.6	2	320,000
	Manzanillo	Samsung, KOGAS, Mitsui	2012	3.8	2	300,000
Netherlands	Maasvlakte Gate Terminal	Gasunie	2011	8.9	3	540,000
Panama	AES Costa Norte LNG	AES	2018	1.5	1	130,000
Philippines	PHLNG	AG&P	2023	5.0	1	137,512
	Batangas FSRU	First Gen Corp.	2023	3.5	1	162,400
Poland	Swinoujscie LNG	Polskie LNG	2015	3.6	2	320,000
Portugal	Sines	REN	2004	5.6	3	390,000
Puerto Rico	Penuelas	EcoElectrica	2000	1.4	1	160,000
Singapore	Singapore LNG	Singapore LNG Corp.	2013	11.0	4	800,000
South Korea	Boryeong	GS Energy	2017	10.8	6	1,200,000
	Gwangyang	POSCO Energy	2005	7.1	5	730,000
	Incheon	KOGAS	1996	54.4	23	3,480,000
	Pyeongtaek	KOGAS	1986	41.0	23	3,360,000
	Samcheok	KOGAS	2014	11.6	12	2,400,000
	Tongyeong	KOGAS	2002	26.6	17	2,600,000
	Jeju Island	KOGAS	2019	1.1	2	90,000
Spain	Bahia de Bizkaia LNG	BP, Enagás, EVE	2003	6.9	3	450,000
	Barcelona	Enagás	1969	12.6	6	760,000
	Cartagena	Enagás	1989	8.7	5	587,000
	Huelva	Enagás	1988	8.7	5	619,500
	Mugardos	Reganosa	2007	2.6	2	300,000
	Sagunto	Enagás	2006	6.4	4	600,000
	El Musel	Enagás	2023	5.8	2	300,000
Taiwan	Taichung	CPC	2009	7.0	6	960,000
	Yung-An	CPC	1990	10.5	6	690,000
Thailand	Map Ta Phut LNG	PTT	2011	19.0	6	940,000
Turkey	Izmir	EgeGaz	2006	10.6	2	280,000
	Marmara Ereglisi	BOTAS	1994	4.2	3	255,000
UK	Dragon LNG	Shell, Ancala Partners	2009	6.5	2	320,000
	Isle of Grain	National Grid	2005	14.8	8	1,000,000
	South Hook LNG	QatarEnergy, ExxonMobil, TotalEnergies	2009	15.6	5	775,000
United States	Everett Marine Terminal	Constellation Energy	1971	5.1	2	155,000
Vietnam	Thi Vai LNG	PetroVietnam Gas	2023	1.0	1	180,000

FSRU Terminals

Country	Location (Project)	Owners	Start up
Argentina	Escobar GasPort	Excelerate/Enarsa	2011
	Bahia Blanca	YPF	2023
Bangladesh	Moheshkhali	Excelerate, PetroBangla	2018
	Cox's Bazar	Summit Power International, Excelerate Energy	2019
Brazil	Pecem, FSRU	Petrobras	2009
	Guanabara Bay FSRU	Petrobras	2009
	Salvador, Bahia FSRU	Petrobras	2013
	Porto Sergipe FSRU	Golar LNG/Stonepeak	2020
	Porto do Acu FSRU	GNA	2020
China	Tianjin FSRU	CNOOC, Hoegh, various	2013
Croatia	Hrvatska LNG	Hrvatska Elektroprivreda Plc, Plinacro Ltd	2021
Colombia	Cartagena FSRU	Promigas, Sociedad Portuaria El Cayao	2016
Egypt	Ain Sokhna, Suez	EGAS, BW Gas	2015
El Salvador	Acajutla	Energía del Pacífico	2022
Finland	Inkoo FSRU	Gasgrid Finland	2022
France	Le Havre	TotalEnergies	2023
Germany	Wilhelmshaven FSRU	Uniper	2022
	Lubmin FSRU	Deutsche ReGas	2022
	Brunsbüttel	RWE	2023
Ghana	Tema LNG	Helios/GNPC	2021
Greece	Revithoussa FSU	DESFA	2022
Hong Kong, China	FSRU Bauhinia	CLP Power	2023

Country	Location (Project)	Owners	Start up
India	Dhamra	Adani, TotalEnergies	2023
Jaigarh (Mothballed)		H-Energy	2022
Indonesia	Lampung	Hoegh LNG, PGN LNG	2014
	Nusantara (Jakarta Bay)	Golar LNG, Pertamina	2012
	Benoa LNG	PT Pertagas Niaga	2016
	Amurang	Karadeniz	2020
	Jawa Satu FSRU	Pertamina	2021
Italy	Livorno	OLT Offshore LNG Toscana	2013
	Piombino	Snam	2023
Jamaica	Old Harbour	Golar FSRU, New Fortress	2019
Jordan	Aqaba, Jordan	Golar LNG	2015
Lithuania	Klaipeda	Klaipedos Nafta Hoegh LNG	2014
Malaysia	Malacca FSRU	Petronas	2012
Malta	FSU Armada Mediterrana	ElectroGas	2016
Myanmar	Thanlyin	CNTIC Vpower	2020
Netherlands	Eemshaven	Gasunie	2022
Pakistan	Port Qasim	Excelerate, Engro Corp	2015
	Port Qasim	BW-Mitsui, PGP Consortium	2017
Philippines	Batangas	AG&P International	2023
Russia	Kaliningrad FSRU	Gazprom	2020
Senegal	Dakar	KarMOL	2023
Turkey	Iskenderun & Saros FSRUs	BOTAS	2016 & 2023
	Aliaga (ETKI LNG)	Etki Liman	2017
UAE	Ruwais, Abu Dhabi	Gasco (UAE)	2016
	Jebel Ali Port, Dubai	DSA (UAE)	2010

Future LNG Import Projects

Country	Location/Project	Owners	Start up	Nom. Capacity (MTPA)	Storage Tanks	Capacity	Status
Albania	Port of Vlora FSRU	Excelerate Energy, ExxonMobil	–	3.5	–	–	Speculative
Antigua and Barbuda	Antigua Power LNG	Antigua Power Co Ltd, Eagle LNG Partners	2023	–	–	–	Speculative
Australia	Port Phillip Bay FSRU	Vopak	2024	–	–	–	Speculative
	Geelong FSRU	Viva Energy	2024	–	–	–	Speculative
	Adelaide FSRU	Venice Energy	2024	–	–	–	Speculative
	Port Kembla FSRU	Squadron Energy	2023	1.9	1	170,000	U. Construction
Bangladesh	Matarbari LNG	Petrobangla	2028	7.5	–	–	Speculative
	Payra FSRU	Excelerate Energy	2028	–	–	–	Speculative
Belgium	Zeebrugge Exp. I	Fluxys	2024	4.6	–	–	U. Construction
	Zeebrugge Exp. II	Fluxys	2026	1.3	–	–	U. Construction
Brazil	Tergás Rio Grande LNG	Grupo Cobra	2024	1.61	–	–	Speculative
	Geramar FSRU	–	2026	–	–	–	Speculative
	Porto Norte Fluminense FSRU	Porto Norte Fluminense SA	2027	5.64	–	–	Speculative
	Imetame LNG	Imetame	2025	–	–	–	Speculative
China	Penglai LNG	Shandong Penglai Baota Ina Natural Gas Co., Ltd.	2026	2.8	–	–	Proposed
	Wuhan LNG	Hubei Minsheng Petroleum Liquefied Gas Co., Ltd.	2035	1.86	–	–	Speculative
	Zhiwan Island LNG	Macau Gas Co.	–	5	–	–	Speculative
	Yueyang LNG	Yueyang LNG Co., Ltd.	2023	2	–	–	U. Construction
	Yangjiang LNG	Guangdong Yangjiang Hailing Bay LNG Co., Ltd.	2023	2.8	–	–	U. Construction
	Rudong LNG (Jiangsu Guoxin)	Jiangsu Guoxin LNG Co., Ltd.	2024	2.95	–	–	U. Construction
	Jiangyin LNG (Garson Gas)	Jiangsu Jiasheng Gas Co., Ltd.	2023	3	–	–	U. Construction
	Huizhou LNG	Guangdong Huizhou LNG Co., Ltd.	2023	4	–	–	U. Construction
	Longkou	PipeChina	2024	5	6	1,420,000	U. Construction
	Yingkou LNG	China Urban Rural Energy	2025	6.5	4	800,000	U. Construction
	Yancheng LNG Expansion	CNOOC	2023	3	–	1,620,000	U. Construction
	Yantai LNG	China Urban Rural Energy	–	5.9	5	1,000,000	U. Construction
	Zhangzhou LNG	PipeChina	2024	3	3	–	U. Construction
Colombia	Buenaventura FSRU	Unidad de Planeación Minero Energética (UPME)	2024	–	–	–	Speculative
Cyprus	Vasilikos FSRU	DEFA	2023	0.6	–	–	U. Construction
Ecuador	Jambelí FSRU	Sycar LLC	2025	0.38	–	–	Proposed
Estonia	Paldiski LNG	Espa	2024	1.8	–	–	Proposed
France	Le Havre FSRU	TotalEnergies	2023	1.8	–	–	U. Construction
Germany	Stade LNG	Buss Group, Dow Chemical, Fluxys, Partners Group	2026	9.78	–	–	Proposed
	TES Wilhelmshaven LNG	Tree Energy Solutions	2025	11.76	–	–	Proposed
	Stade FSRU	German company Hanseatic Energy Hub	2023	3.5	–	–	U. Construction
Greece	Dioriga FSRU	Motor Oil	2024	1.91	–	–	Proposed
	Argo FSRU	Mediterranean Gas	2023	3.38	–	–	Proposed
	Thessaloniki FSRU	Edison, Hellenic Petroleum	2025	5.37	–	–	Proposed
	Alexandroupolis FSRU	GasTrade	2023	4.04	1	135,000	U. Construction
India	Jaigarh LNG	H-Energy	–	8	–	–	Speculative
	Kakinada FSU	H-Energy	2024	4	–	–	Speculative
	Kukrahati LNG	H-Energy	2024	3	–	180,000	Speculative
	Chhara LNG Terminal	Hindustan Petroleum	2025	5	–	–	U. Construction
	Karaikal LNG	AG&P	TBC	5	–	–	Speculative
Indonesia	Karimun Island LNG	Panbil Group	2024	–	–	–	Speculative
	Sengkang LNG	Energy World	–	2	–	–	U. Construction
Ireland	Mag Mell FSRU	Predator Oil & Gas	–	1.91	–	–	Speculative
Italy	Porto Torres FSRU	Snam	2023	0.5	–	–	Proposed
	Gioia Tauro LNG	Iren Group, Sorgenia	2026	8.6	–	–	Proposed
	Portovesme FSRU	Snam SpA	2024	–	–	–	Speculative
Morocco	Jorf Lasfar LNG	SIGER/ERGIS Group	2025	5.15	–	–	Speculative
Mozambique	Matola FSRU	Gigajoule, TotalEnergies, CTB, Matola Gas Co.	2025	0.5	–	–	Speculative
Myanmar	Mee Laung Gyaing FSRU	Supreme Group, ZHEFU Hydropower	2023	–	–	–	Speculative
	Ahlone LNG	TTCL	2024	–	–	–	Speculative
	Thilawa LNG	Eden Group, Marubeni Corp., Mitsui, Sumitomo Corp.	2026	–	–	–	Speculative
Pakistan	Tabeer Energy FSRU	Mitsubishi	–	5.7	–	–	Speculative
Philippines	Vires FSRU	Argo Group	–	3	–	–	Speculative
	Pagbilao Power	Energy World	–	3	2	260,000	U. Construction
Poland	Gdańsk FSRU	PGNiG	2028	8.82	–	–	Speculative
South Africa	Richards Bay FSRU	South Africa Department of Public Enterprises	2027	1	–	–	Speculative
South Korea	Dangjin LNG	POSCO	2027	3.5	–	–	Proposed
	Hanyang LNG	Hanyang Group	2024	–	–	–	Speculative
Sri Lanka	New Fortress Colombo LNG	New Fortress Energy	–	0.71	–	–	Speculative
Taiwan	Hsieh-Ho LNG	Taipower	2025	1.8	–	–	Proposed
	Taichung (TaiPower) LNG	Taipower	2025	3	–	–	Proposed
Thailand	Chana LNG	–	2028	2	–	–	Speculative
Vietnam	Hai Linh	Hai Linh Co. Ltd.	2020	3	3	219,000	Mothballed
	Mui Ke Ga FSRU	B.Grimm Power, Energy Capital Vietnam, Gunvor	2025	1.5	–	–	Proposed
	Son My LNG	AES, PetroVietnam	2026	3.6	–	–	Proposed
	Thai Binh FSRU	–	2026	0.5	–	–	Speculative
	South West FSRU	–	2030	1	–	–	Speculative
	Bac Lieu LNG	Delta Offshore Energy	–	2	–	–	Speculative
	Cat Hai FSRU	Chubu Electric, ExxonMobil, Government of Hai Phong, TEPCO	2030	3	–	–	Speculative
	Khanh Hoa LNG	Millenium Energy	2030	3	–	–	Speculative
	Long Son LNG	EVN	2025	4.4	–	–	Speculative
	Tien Lang FSRU	ExxonMobil, Chubu Electric Power, Tokyo Electric Power Co.	2026	–	–	–	Speculative
	Ca Na LNG	Novatek	2024	–	–	–	Speculative
	Chan May LNG	Chan May LNG	2024	–	–	–	Speculative
	Vung Ang LNG	KG Electric Power Corp., PECC2, Siemens	2026	–	–	–	Speculative
	Hai Lang LNG	T&T Group, Hanwa, KOGAS, KOSPO	2026	1.5	2	160,000	U. Construction

LNG Export Plants

Country	Location/Project	Shareholders	Start up	Liquefaction		Storage	
				Trains	Nom. capacity (MTPA)	No. of tanks	Capacity m³
UAE	Das Island	ADNOC, Mitsui, BP, TotalEnergies	1977/1994	3	5.7	3	240,000
Algeria	Arzew	Sonatrach	1964-2014	13	20.8	6	920,000
	Skikda	Sonatrach	1980/2013	4	7.9	5	308,000
Angola	Soyo	Sonangol, Chevron, BP, Eni, TotalEnergies	2012	1	5.2	2	370,000
Australia	NWS LNG	BP, Chevron, MIMI, Shell, Woodside Energy, CNOOC	1989-2004	5	16.3	6	520,000
	Darwin LNG	Santos, Eni, INPEX, JERA, Tokyo Gas	2006	1	3.7	1	188,000
	Australia Pacific LNG	ConocoPhillips, Origin, Sinopec	2016	2	9.0	2	320,000
	Gladstone LNG	Santos, Petronas, TotalEnergies, KOGAS	2015-2016	2	7.8	2	280,000
	Gorgon LNG	Chevron, Shell, ExxonMobil, Osaka Gas, Tokyo Gas, JERA	2016-2017	3	15.6	2	360,000
	Pluto LNG	Woodside Energy, Kansai Electric, Tokyo Gas	2012	1	4.9	2	240,000
	Queensland C. LNG	Shell, CNOOC	2014	2	4.5	2	280,000
	Wheatstone LNG	Chevron, KUFPEC, Woodside Petroleum, Kyushu Electric Power Co., PEW	2017	2	8.9	2	300,000
	Ichthys LNG	INPEX, TotalEnergies, CPC, Tokyo Gas, Osaka Gas, Kansai Electric, JERA, Toho Gas	2018	2	8.9	2	330,000
	Prelude FLNG	Shell, INPEX, CPC, KOGAS	2018	1	3.6	6	228,000
Brunei	Brunei LNG	Gov. of Brunei, Shell, Mitsubishi	1972-74	5	7.2	3	195,000
Cameroon	Cameroon FLNG	Golar LNG	2018	4	2.4	1	125,000
Egypt	Damietta	Eni, EGAS, EGPC	2004	1	5.0	2	300,000
	Idku	EGPC, EGAS, Shell, Petronas, TotalEnergies	2005	1	7.2	2	280,000
Equ. Guinea	EG LNG	Marathon, Sonagas, Marubeni	2007	1	3.4	2	272,000
Indonesia	Bontang (E-H)	Pertamina, VICO, JILCO, TotalEnergies	1990-1998	4	11.5	5	635,000
	Dongi-Senoro	Medco Energi, Pertamina, Mitsubishi	2015	1	2.0	1	170,000
	Tangguh	BP, Mitsubishi, Inpex, CNOOC, JX Nippon, KG Mitsui, LNG Japan	2008	2	7.6	2	340,000
Malaysia	Malaysia LNG	Petronas, Shell, Sarawak, Mitsubishi, Nippon Oil	1983-2016	9	29.3	6	445,000
	PFLNG Satu	Petronas	2016	1	1.2	4	177,000
	PFLNG Dua	Petronas	2020	1	1.5	4	177,000
Mozambique	Coral Sul FLNG	Eni, ExxonMobil, CNPC, GALP, KOGAS, ENH	2022	1	3.4	8	227,840
Nigeria	Bonny Island	NNPC, Shell, TotalEnergies, Eni	1999-2007	6	22.2	6	505,200
Norway	Snøhvit LNG	Equinor, TotalEnergies, Petoro, Neptune Energy, Wintershall DEA Norge	2007	1	4.2	2	250,000
Oman	Oman LNG	Oman Gov., Shell, TotalEnergies, Korea LNG, Mitsubishi, Mitsui, Partex O&G, Itochu Corp.	2000	3	10.4	4	480,000
Papua New Guinea	PNG LNG	ExxonMobil, Oil Search, Santos, JX Nippon Oil	2014	2	8.3	2	320,000
Peru	Pampa Melchorita	Hunt Oil, Shell, Marubeni, SK Group	2010	1	4.5	2	260,000
Qatar	Ras Laffan	QatarEnergy, Shell, ExxonMobil, TotalEnergies, ConocoPhillips et al.	1997-2010	14	77.4	18	2,340,000
Russia	Sakhalin-2 LNG	Gazprom, Sakhalin Energy, Mitsubishi, Mitsui	2009	2	9.6	2	200,000
	Yamal LNG	Novatek, TotalEnergies, CNPC, Silk Road Investment Fund	2017-2019	3	17.4	4	640,000
	Portovaya LNG	Gazprom	2022	1	1.5	-	-
Trinidad & Tobago	Atlantic LNG	BP, Shell, NGC	1999-2005	4	15.3	4	640,000
USA	Sabine Pass LNG	Cheniere	2016-2022	6	30.0	5	800,000
	Corpus Christi LNG	Cheniere	2019-2021	3	15.0	3	480,000
	Freeport LNG	Freeport LNG, JERA, Osaka Gas	2019-2020	3	15.5	3	480,000
	Cameron LNG	Sempra, TotalEnergies, Mitsui, Mitsubishi	2019	3	15.0	3	480,000
	Calcasieu Pass LNG	VentureGlobal	2022-2023	18	11.3	2	440,000
	Cove Point LNG	BHE GT&S, Dominion Energy, Brookfield Asset Management	2017	1	5.3	7	695,000
	Elba Island LNG	Kinder Morgan, EIG Energy, Blackstone	2019-2020	10	2.5	5	560,000
Yemen	Balhaf LNG (Mothballed)	TotalEnergies, Hunt Oil, SK Innovation, Hyundai, KOGAS, Yemen Gas Corp., GASSP	2009	2	6.7	2	320,000

LNG Export Projects U. Construction

Country	Project	Project Developers	Planned Start Up	Number of Trains	Capacity In MTPA
Canada	LNG Canada	Shell, Petronas, PetroChina, Mitsubishi	2025	2	14
	Woodfibre LNG	Pacific Energy Corp., Enbridge	2027	2	2.2
Indonesia	Sengkang LNG	Energy World	2023+	4	2
	Tangguh LNG T3	BP, MI Berau B.V., CNOOC, Nippon Oil Expl. et al	2023	1	3.8
Malaysia	ZLNG FLNG	Petronas	2027	1	2
Mauritania	Greater Tortue Ahmeyim FLNG	BP, Kosmos Energy	2023+	–	2.52
Mexico	Costa Azul Export	Sempra Energy, TotalEnergies	2024	1	3.25
Mozambique	Mozambique LNG Ph. I	TotalEnergies, Mitsui, ONGC, ENH, PTTEP, Bharat Petroleum, Oil India	2024+	2	–
Nigeria	Nigeria LNG Expansion	Nigeria LNG	2024	1	8
Qatar	Ras Laffan Expansion I	QatarEnergy	2026	4	33
	Ras Laffan Expansion II	QatarEnergy	2027	2	16
Russia	Ust Luga LNG	RusKhimAlyans	2024+	2	13
	Arctic LNG 2 T1	Novatek et al	2023+	1	6.6
United States	Golden Pass LNG T1-2	Golden Pass LNG	2024	2	12
	Golden Pass LNG T3	Golden Pass LNG	2025	1	6.03
	Corpus Christi LNG Stage 3	Cheniere Energy	2027	7	11.48
	Plaquemines LNG Ph. I	Venture Global	2024	1	10
	Plaquemines LNG Ph. II	Venture Global	2025	1	10

Future LNG Export Projects

Country	Project	Project Developers	Estimated Start Up	Number of Trains	Capacity In MTPA
Argentina	Vaca Muerta (YPF) LNG	YPF	2024+	–	5.37
Australia	Browse FLNG	Woodside Energy, Japan Australia LNG, Shell, BP, PetroChina	–	2	11.4
	Darwin LNG Life Extension	Santos, SK E&S, JERA, INPEX, Eni SpA, Tokyo Gas	2025	1	3.7
	Pluto LNG T2	Woodside Burrup Train 2A Pty Ltd., Global Infrastructure Partners	2026	1	5
Cameroon	Etinde FLNG	Perenco, Bowleven	2023+	–	1.3
Canada	Bear Head LNG	Bear Head LNG	2027	4	12
	Cedar FLNG	Haisla Nation, Pembina Pipeline Corp.	2027	–	3
	Energie Saguenay LNG	GNL Quebec	2026	2	11
	Ksi Lisims FLNG	Ksi Lisims LNG GP Ltd.	2027	–	12
	Placentia Bay FLNG	Horizon Maritime Services, LNG Newfoundland and Labrador Ltd.	2030	–	4
	Tilbury Island LNG T1	FortisBC	2026	1	0.9
	Tilbury Island LNG T2	FortisBC	2028	1	2.5
Equatorial Guinea	Fortuna FLNG	New Fortress Energy	–	1	–
Gabon	Boudji FLNG	Petronas	–	–	–
Guinea	Guinea LNG	West Africa LNG Group	2026+	1	–
Indonesia	Abadi FLNG	INPEX Masela Ltd.	2030	–	9.5
Israel	NewMed FLNG	NewMed Energy	2026	–	5
Mauritania	New Fortress Banda LNG	New Fortress Energy	2024	–	1.4
Mexico	Mexico Pacific LNG Ph. I	AECOM Capital, DKRW Energy	2025	2	9.4
	Mexico Pacific LNG Ph. II	AECOM Capital, DKRW Energy	2026+	1	4.7
	AMIGO LNG	Epsilon LNG, LNG Alliance	2026	1	4.2
	Vista Pacifico LNG	Sempra Energy	2025+	–	4
	Lakach FLNG	New Fortress Energy	–	1	1.4
	Altamira FLNG	New Fortress Energy	–	2	2.8
Mozambique	Rovuma LNG	Eni, ExxonMobil, CNPC, ENH, Galp, KOGAS	2025+	2	15.2
Nigeria	Brass LNG	Brass LNG Ltd.	–	2	10
	Greenville LNG	Greenville LNG	–	1	1.1
	UTM Offshore FLNG	UTM Offshore	2026	–	1.52
Papua New Guinea	Papua LNG	TotalEnergies, ExxonMobil, Papua New Guinea Gov., Santos	2027	2	5.4
	PNG LNG Expansion	ExxonMobil, Kumul Petroleum, Santos, JX Nippon O&G, MRDC	2025	1	2.6
Republic of the Congo	Congo FLNG	Eni Congo	2025	2	3
Russia	Yakutia LNG	A-Property, Globaltek, Zhejiang Energy	2027	–	18
	Far East LNG I	ExxonMobil, SODECO, ONGC, Rosneft	2027+	1	6.2
	Far East LNG II	ExxonMobil, SODECO, ONGC, Rosneft	2035	1	10
	Vladivostok LNG	Gazprom, INPEX, Itochu Corp., JAPEX, Marubeni Corp.	2025	3	1.5
	Arctic LNG II	Novatek	2027	–	19.8
	Obsky LNG	Novatek	2026	–	6.6
	Chernomorsky LNG	Gazprom	2025	–	1.5
	Arctic LNG III	OOO Arctic LNG 3	2032	–	19.8
	Kara LNG	Rosneft	2030	–	30
Tanzania	Tanzania LNG	Equinor, ExxonMobil, Ophir Energy, Pavilion Energy, Shell, TPDC	2027	2	10
United Arab Emirates	Ruwais (ex Fujairah) LNG	ADNOC	2027+	2	6
United States	Fourchon LNG	Energy World	–	1	2
	Alaska LNG	Alaska Gasline Development Corp.	2030	3	20.1
	Cameron LNG Expansion	Cameron LNG LLC	2026	1	6.75
	Commonwealth LNG	Commonwealth LNG	2026	6	9.3
	Corpus Christi LNG Midscale Expansion	Cheniere Energy	2031	2	3.28
	Delfin FLNG	Delfin LNG LLC	2026+	4	12
	Driftwood LNG T1-5	Tellurian	–	5	27.6
	Freeport LNG Expansion	Freeport LNG Dev.	2026	1	5.1
	Gulf LNG	KinderMorgan	–	2	10.86
	Lake Charles LNG	Energy Transfer	2026+	3	17.79
	Magnolia LNG	Glenfarne Group	–	4	8.8
	Port Arthur LNG Ph. I	PALNG Common Facilities Co., Port Arthur LNG, LLC	–	2	13.5
	Port Arthur LNG Ph. II	PALNG Common Facilities Co., Port Arthur LNG, LLC	–	2	13.5
	Texas LNG	Glenfarne Energy Transition	2027	2	4
	Rio Grande LNG Ph. I	NextDecade	2026	2	10.8
	Rio Grande LNG Ph. II	NextDecade	–	3	16.2
	Pointe LNG	Pointe LNG, Pointe Pipeline Co.	2026	3	6
	Repauno Works LNG	Delaware River Partners LLC	–	–	1.5
	Qilak LNG	Qilak Energy	2026	–	4
	CP2 LNG Ph. I	Venture Global	2026+	9	10
	CP2 LNG Ph. II	Venture Global	2027+	9	10
	Delta LNG Ph. I	Venture Global	2028+	–	10
	Delta LNG Ph. II	Venture Global	2029+	–	10
	West Delta LNG Deepwater Port	LNG21 Group	2026+	6	6.1
	Grand Isle FLNG	New Fortress Energy	2025+	–	2.8

World LNG Carrier Fleet

LNG Carrier	Capacity m ³	Registered Owner	Builder	Delivery	Flag	Power Plant	Cargo System	No. of Tanks	Original Project	Hull Number
Aamira	268,000	Nakilat SHI 1753 Inc.	Samsung	16/04/2010	M. Islnds	Diesel	TZ Mk. III	10	Qatargas IV	1753
Abadi	135,000	Tost Two (NBD) Sendirian Berhad	Mitsubishi	29/05/2002	Liberia	Steam	Moss	5	Lumut	2163
Adam LNG	162,000	Oman Shipping Co.	HHI	10/07/2014	M. Islnds	Diesel	TZ Mk. III Flex	4	Oman LNG	2584
Adamastos	170,800	Shin Doun Kisen Co. Ltd.	HHI	23/08/2021	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3109
Adriano Knutsen	180,000	Knutsen OAS Shipping	HHI	13/07/2019	Spain	ME-GI	TZ Mk. III Flex	4	Corpus Christi	2963
Al Aamriya	210,168	J5 Nakilat No.1 Ltd.	Daewoo	04/05/2008	M. Islnds	Diesel	GT NO 96	5	RasGas III	2249
Al Areesh	148,786	Al Areesh LLC	Daewoo	01/01/2007	Bahamas	Steam	GT NO 96	4	RasGas II	2239
Al Bahiya	210,100	Nakilat DSME 2286 Inc.	Daewoo	02/12/2009	M. Islnds	Diesel	GT NO 96	5	Qatargas IV	1726
Al Bidda	137,339	Mitsui O.S.K. Lines	Kawasaki	08/11/1999	M. Islnds	Steam	Moss	5	Qatargas I	1470
Al Daayen	148,853	Seaspirit Leasing	Daewoo	21/03/2007	Bahamas	Steam	GT NO 96	4	RasGas II	2240
Al Dafna	268,000	Nakilat SHI 1726 Inc.	Samsung	03/10/2009	M. Islnds	Diesel	TZ Mk. III	10	RasGas	1726
Al Deebel	145,000	Peninsula LNG Transport No. 3	Samsung	15/11/2005	Bahamas	Steam	TZ Mk. III	4	RasGas II	1442
Al Gattara	216,200	Overseas LNG H1 Corp.	HHI	06/11/2007	M. Islnds	Diesel	TZ Mk. III	4	Qatargas II	1791
Al Ghariya	210,150	Neptora Schiffsbetriebsgesellschaft	Daewoo	13/12/2007	Bahamas	Diesel	GT NO 96	4	Qatargas II	2248
Al Gharrafa	216,200	Overseas LNG H2 Corp.	HHI	11/01/2008	M. Islnds	Diesel	TZ Mk. III	5	Qatargas II	1792
Al Ghashamiya	217,591	Nakilat SHI 1696 Inc.	Samsung	29/04/2009	M. Islnds	Diesel	TZ Mk. III	10	Qatargas III	1696
Al Ghuwairiya	263,300	Nakilat Al Ghuwairiya Inc.	Daewoo	15/12/2008	M. Islnds	Diesel	GT NO 96	5	Qatargas II	2255
Al Hamla	216,200	Overseas LNG S2 Corp.	Samsung	15/02/2008	M. Islnds	Diesel	TZ Mk. III	4	Qatargas II	1606
Al Hamra	137,000	Al Hamra Ltd.	STX	24/11/1996	Liberia	Steam	Moss	4	Das Island	1332
Al Huwaila	217,000	Al Huwaila Inc.	Samsung	06/05/2008	Bahamas	Diesel	TZ Mk. III	10	RasGas III	1643
Al Jasra	137,227	Mitsui O.S.K. Lines	Mitsubishi	05/06/2000	M. Islnds	Steam	Moss	5	Qatargas I	2117
Al Jassasiya	145,700	Venice Maritime Inc.	Daewoo	21/05/2007	Greece	Steam	GT NO 96	4	RasGas II	2243
Al Karaana	210,100	Nakilat DSME 2284 Inc.	Daewoo	06/10/2009	M. Islnds	Diesel	GT NO 96	4	Qatargas III	2284
Al Kharaitiyat	216,300	Nakilat HHI 1909 Inc.	HHI	30/06/2009	M. Islnds	Diesel	TZ Mk. III	4	Qatargas III	1909
Al Kharsaah	217,000	Al Kharsaah Inc.	Samsung	12/06/2008	Bahamas	Diesel	TZ Mk. III	10	RasGas III	1644
Al Khattiya	210,150	Nakilat DSME 2283 Inc.	Daewoo	08/07/2009	M. Islnds	Diesel	GT NO 96	4	Qatargas IV	2283
Al Khaznah	135,496	Al Khaznah Inc.	Mitsui E&S	01/07/1994	Liberia	Steam	Moss	5	Das Island	1390
Al Khor	137,354	Mitsui O.S.K. Lines	Mitsubishi	15/11/1996	M. Islnds	Steam	Moss	5	Qatargas I	2089
Al Khuwair	217,000	Al Khuwair Inc.	Samsung	27/06/2008	Bahamas	Diesel	TZ Mk. III	10	RasGas III	1646
Al Mafyar	266,000	Nakilat SHI 1697 Inc.	Samsung	28/04/2009	M. Islnds	Diesel	TZ Mk. III	5	Qatargas III	1697
Al Marrouna	149,539	Seaspirit Leasing	Daewoo	19/09/2006	Bahamas	Steam	GT NO 96	4	RasGas II	2238
Al Mayeda	266,000	Nakilat SHI 1694 Inc.	Samsung	06/01/2009	M. Islnds	Diesel	TZ Mk. III	5	Qatargas III	1694
Al Nuaman	210,100	Nakilat DSME 2285 Inc.	Daewoo	06/12/2009	M. Islnds	Diesel	GT NO 96	4	Qatargas III	2286
Al Oraiq	210,200	J5 Nakilat No.3 Ltd.	Daewoo	13/06/2008	M. Islnds	Diesel	GT NO 96	18	RasGas III	2250
Al Rayyan	137,420	Mitsui O.S.K. Lines	Kawasaki	14/03/1997	M. Islnds	Steam	Moss	5	Qatargas I	1445
Al Rekayyat	216,293	Nakilat HHI 1910 Inc.	HHI	30/06/2009	M. Islnds	Diesel	TZ Mk. III	4	Qatargas III	1910
Al Ruwais	210,150	Neptana Schiffsbetriebsgesellschaft	Daewoo	09/08/2007	Bahamas	Diesel	GT NO 96	4	Qatargas II	2245
Al Sadd	210,200	Nakilat DSME 2265 Inc.	Daewoo	07/03/2009	M. Islnds	Diesel	GT NO 96	12	Qatargas III	2265
Al Safliya	210,150	Nausola Schiffsbetriebsgesellschaft	Daewoo	12/09/2007	Bahamas	Diesel	GT NO 96	5	Qatargas II	2246
Al Sahla	216,200	J5 Nakilat No.5 Ltd.	HHI	13/06/2008	M. Islnds	Diesel	TZ Mk. III	4	RasGas III	1863
Al Samriya	263,300	Nakilat Al Samriya Inc.	Daewoo	28/02/2009	M. Islnds	Diesel	GT NO 96	5	Qatargas II	2257
Al Shamal	217,000	Al Shamal Inc.	Samsung	28/04/2008	Bahamas	Diesel	TZ Mk. III	10	RasGas III	1645
Al Sheehaniya	210,100	Nakilat DSME 2264 Inc.	Daewoo	17/02/2009	M. Islnds	Diesel	GT NO 96	12	Qatargas III	2264
Al Thakhira	145,000	Peninsula LNG Transport No. 2	Samsung	22/08/2005	Bahamas	Steam	TZ Mk. III	4	RasGas II	1441
Al Thumama	216,200	J5 Nakilat No.2 Ltd.	HHI	27/02/2008	M. Islnds	Diesel	TZ Mk. III	4	RasGas III	1862
Al Utouriya	215,000	J5 Nakilat No.8 Ltd.	HHI	01/09/2008	M. Islnds	Diesel	TZ Mk. III	4	RasGas III	1875
Al Wajbah	137,308	Mitsui O.S.K. Lines	Mitsubishi	22/06/1997	M. Islnds	Steam	Moss	5	Qatargas I	2090
Al Wakrah	137,371	Mitsui O.S.K. Lines	Kawasaki	26/11/1998	M. Islnds	Steam	Moss	5	Qatargas I	1446
Al Zubarah	137,573	Mitsui O.S.K. Lines	Mitsui E&S	30/11/1996	M. Islnds	Steam	Moss	5	Qatargas I	1411
Alexandroupoli	153,000	Gas-Fifteen Ltd.	Hanjin (Busan)	01/06/2010	Greece	TFDE	TZ Mk. III	4	–	193
Alicante Knutsen	174,000	–	Hyundai Samho	01/09/2022	France	X-DF	TZ Mk. III Flex+	4	Portfolio	8093
Alto Acrux	147,798	Bahamas LNG Shipping	Mitsubishi	17/03/2008	Bahamas	Steam	Moss	4	Darwin LNG	2219
Amadi	154,800	Brunei Gas Carriers	HHI	16/07/2015	Brunei	–	TZ Mk. III	4	Lumut	2607
Amali	148,000	BGC SPV NBD	Daewoo	01/08/2011	Brunei	–	GT NO 96	4	Lumut	2277
Amani	154,800	Brunei Gas Carriers	HHI	13/10/2014	Brunei	–	TZ Mk. III	4	Lumut	H2606
Amberjack LNG	174,000	LNGShips	HHI	17/04/2020	Malta	X-DF	TZ Mk. III Flex	–	–	3021
Amur River	149,700	Seacrown Maritime	HHI	01/11/2007	M. Islnds	Steam	TZ Mk. III	4	Sakhalin II	1734
Arctic Aurora	155,000	Fareastern Shipping	HHI	04/07/2014	Malta	Diesel/Gas-Electric	TZ Mk. III	4	Snøhvit LNG	2580
Arctic Discoverer	142,612	Northern LNG Transport II Company S.A.	Mitsui E&S	12/02/2006	Bahamas	–	Moss	4	Hammerfest	1564
Arctic Lady	147,200	Leif Hoegh (UK) Ltd.	Mitsubishi	12/04/2006	Norway	Steam	Moss	4	Hammerfest	2185

Arctic Princess	147,200	R.B. Quadrangle Leasing	Mitsubishi	13/01/2006	Norway	Steam	Moss	4	Hammerfest	2184
Arctic Voyager	142,759	Lloyds TSB Equipment Leasing (No.1)	Kawasaki	14/07/2006	Bahamas	Steam	Moss	4	Hammerfest	1532
Aristarchos	174,000	Dias Gas Carrier Corp.	HHI	15/06/2021	Malta	X-DF	TZ Mk. III Flex	4	–	3107
Aristidis I	174,000	Atrotos Gas Carrier Corp.	HHI	04/01/2021	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3106
Aristos I	174,000	Xiang Ch25 HK International	HHI	13/11/2020	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3105
Arkat	148,000	BGC SPV NBD	Daewoo	18/02/2011	Brunei	–	GT NO 96	4	Lumut	2273
Arrow Spirit	154,982	Luster Maritime S.A. et al	Koyo Dockyard	08/02/2008	Panama	Steam	TZ Mk. III	4	Portfolio	2258
Aseem	155,003	India LNG Transport Company No.3 S.A.	Samsung	16/11/2009	Malta	Diesel	TZ Mk. III	4	RasGas	1686
Asia Endeavour	154,948	Chevron Global Tech Services Co.	Samsung	17/06/2015	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Gorgon	1942
Asia Energy	154,948	Chevron Global Tech Services Co.	Samsung	03/10/2014	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Gorgon	1921
Asia Excellence	154,948	Chevron Global Tech Services Co.	Samsung	20/01/2015	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Gorgon	1941
Asia Integrity	154,948	Chevron Global Tech Services Co.	Samsung	27/02/2017	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Wheatstone	2069
Asia Venture	154,948	Chevron Global Tech Services Co.	Samsung	06/07/2017	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Wheatstone	2070
Asia Vision	154,948	Chevron Global Tech Services Co.	Samsung	11/07/2014	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Gorgon	1920
Asklipios	174,000	Sea 199 Leasing Co Ltd.	HHI	29/09/2021	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3110
Asterix I	174,000	Sea 335 Leasing Co Ltd	HHI	12/02/2023	Greece	X-DF	TZ Mk. III Flex	4	Portfolio	3111
Attalos	170,800	Sea 200 Leasing Co. Ltd.	HHI	13/08/2021	Malta	X-DF	TZ Mk. III Flex	4	–	3108
Barcelona Knutsen	173,400	Norspan LNG V AS	Daewoo	21/01/2010	Spain	Diesel/Gas-Electric	GT NO 96	4	Portfolio	2267
Beidou Star	172,000	Mitsui O.S.K. Lines	Hudong Zhonghua	14/09/2015	H.K., China	Diesel	GT NO 96	4	PNG LNG	H1672A
Berge Arzew	138,088	Sonatrach Berge Arzew Corp.	Daewoo	29/07/2004	Bahamas	Steam	GT NO 96	4	Arzew	2217
Bilbao Knutsen	138,000	Norspan LNG AS	Izar	29/01/2004	Spain	Steam	GT NO 96	4	Portfolio	321
Bishu Maru	164,700	"K" Line - Kawasaki Kisen Kaisha	Kawasaki	12/12/2017	Panama	TFDE	Moss	4	Wheatstone	1713
Bonito LNG	174,000	LNGShips	HHI	19/05/2020	Malta	–	TZ Mk. III Flex	–	–	3022
Boris Davydov	172,410	Arctic LNG 4 Ltd.	Daewoo	23/12/2018	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2428
Boris Vilkitsky	172,410	Arctic LNG 1 Ltd.	Daewoo	04/06/2017	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2421
British Achiever	173,644	BP	Daewoo	06/11/2018	U.K.	ME-GI	GT NO 96 GW	4	Freeport	2442
British Contributor	173,644	BP	Daewoo	16/12/2018	U.K.	ME-GI	GT NO 96 GW	4	Freeport	2443
British Listener	173,644	BP	Daewoo	31/01/2019	U.K.	ME-GI	GT NO 96 GW	4	Freeport	2444
British Mentor	173,644	BP	Daewoo	15/03/2019	U.K.	ME-GI	GT NO 96 GW	4	Freeport	2445
British Partner	173,400	BP	Daewoo	18/06/2018	U.K.	ME-GI	GT NO 96 GW	4	Freeport	2441
British Sponsor	173,644	BP	Daewoo	01/05/2019	U.K.	ME-GI	GT NO 96 GW	4	Freeport	2446
Broog	137,529	Mitsui O.S.K. Lines	Mitsui E&S	27/04/1998	M. Islnds	Steam	Moss	5	Qatargas I	1412
Bu Samra	266,000	Nakilat Bu Samra Inc.	Samsung	06/12/2008	M. Islnds	–	TZ Mk. III	5	Qatargas II	1677
Bushu Maru	180,000	Mitsui O.S.K. Lines	Mitsubishi	08/07/2019	Bahamas	Reheat Steam Turbine	TZ Mk. III Flex	4	Sabine Pass	2327
BW Boston	138,059	Partrederiet BW Gas GDF Suez EMT DA	Daewoo	23/01/2003	Norway	Steam	GT NO 96	4	Atlantic LNG	2207
BW Brussels	162,400	Ines LNG	Daewoo	03/08/2009	Singapore	Diesel/Gas-Electric	GT NO 96	4	Balhaf	2259
BW Cassia	174,000	MP-SGP Pte Ltd	Daewoo	02/10/2022	Singapore	ME-GI	–	4	–	2510
BW Enn Snow Lotus	174,000	BW LNG II Pte Ltd	Daewoo	11/09/2022	Singapore	ME-GI	–	4	–	2509
BW Everett	138,028	BW Gas SLNG	Daewoo	16/06/2003	Singapore	Steam	GT NO 96	4	Atlantic LNG	2212
BW Helios	174,000	Selene Navigation Pte Ltd.	Daewoo	25/05/2021	Singapore	ME-GI	GT NO 96 GW	4	–	2497
BW Lesmes	174,000	BW Gas AS	Daewoo	26/03/2021	Singapore	ME-GI	GT NO 96 GW	4	Portfolio	2496
BW Lilac	173,400	BW Maritime	Daewoo	17/03/2018	Malta	ME-GI	GT NO 96 GW	4	–	2436
BW Magna	173,000	BW Group	Daewoo	11/03/2019	Singapore	ME-GI	GT NO 96	4	–	2488
BW Magnolia	173,400	Helen Navigation Pte Ltd.	Daewoo	28/02/2020	Singapore	–	GT NO 96 GW	–	–	2490
BW Pavilion Aranda	173,400	BW Group	Daewoo	10/09/2019	Singapore	ME-GI	GT NO 96 GW	4	Portfolio	2489
BW Pavilion Aranthera	173,400	BW Diamond LNG Pte Ltd	Daewoo	04/07/2020	Singapore	–	GT NO 96 GW	–	–	2491
BW Pavilion Leeara	158,629	BW LPG FPSOI	HHI	01/06/2015	Singapore	Diesel/Gas-Electric	TZ Mk. III Flex	4	Portfolio	2572
BW Pavilion Vanda	155,000	BW LPG FPSOI	HHI	12/02/2015	Singapore	–	TZ Mk. III Flex	4	Portfolio	2571
BW Tatiana	135,269	Shell Tankers Singapore	Mitsubishi	27/12/2002	Panama	Steam	Moss	5	Atlantic LNG	2173
BW Tulip	173,400	BW Maritime	Daewoo	01/12/2017	Singapore	ME-GI	GT NO 96 GW	4	–	2435
Cadiz Knutsen	138,826	Norspan LNG II AS	Navantia	13/04/2004	Spain	Steam	GT NO 96	4	Portfolio	103
Cape Ann	145,130	SRV Joint Gas Two Ltd.	Samsung	25/04/2010	Norway	Diesel/Gas-Electric	TZ Mk. III	4	Jaigarh LNG	1689
Castillo de Caldelas	176,300	Empresa Naviera Elcano	Imabari Shipbuilding	13/06/2018	Malta	ME-GI	TZ Mk. III Flex	–	Portfolio	8188
Castillo De Merida	176,300	Empresa Naviera Elcano	Imabari Shipbuilding	31/03/2018	Malta	ME-GI	TZ Mk. III Flex	4	Portfolio	8177
Castillo de Santisteban	170,000	Naviera Trans Gas AIE	STX	20/06/2010	Malta	Diesel Electric	GT NO 96	4	Portfolio	3008
Castillo de Villalba	138,000	Empresa Naviera Elcano	Navantia Cadiz	29/09/2003	Spain	Steam	GT NO 96	4	Portfolio	87
Celsius Canberra	180,000	Xiang CH27 HK International	Samsung	–	M. Islnds	X-DF	TZ Mk. III Flex	–	US Portfolio	2298
Celsius Carolina	180,000	Oriental Fleet LNG 03 Ltd.	Samsung	13/08/2021	M. Islnds	X-DF	TZ Mk. III Flex	4	US Portfolio	2314
Celsius Charlotte	180,000	Xiang CH28 HK International	Samsung	14/06/2021	M. Islnds	X-DF	TZ Mk. III Flex	4	US Portfolio	2313
Celsius Copenhagen	180,000	Greenheart Gas Shipco I LLC	Samsung	01/11/2020	M. Islnds	X-DF	TZ Mk. III Flex	4	Portfolio	2297
Celsius Geneva	176,400	Xiang H14 International	Samsung	15/07/2023	M. Islnds	ME-GI	TZ Mk. III Flex	4	Portfolio	2459
CESI Beihai	174,000	COSCO Shipping Energy Transportation Co.	Hudong Zhonghua	12/06/2017	H.K., China	–	GT NO 96	4	APLNG	1717A
CESI Gladstone	174,000	China Shipping Co.	Hudong Zhonghua	31/10/2016	H.K., China	–	GT NO 96	4	APLNG	1715A

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CESI LianYungAng	174,000	COSCO Shipping Energy Transportation Co.	Hudong Zhonghua	07/06/2018	H.K., China	Diesel-Electric	GT NO 96	4	APLNG	1720A
CESI Qingdao	174,000	China Shipping Co.	Hudong Zhonghua	04/02/2017	H.K., China	–	GT NO 96	4	APLNG	1716A
CESI Tianjin	174,000	COSCO Shipping Energy Transportation Co.	Hudong Zhonghua	17/07/2017	H.K., China	TFDE	GT NO 96	4	APLNG	1718A
CESI Wenzhou	174,000	COSCO Shipping Energy Transportation Co.	Hudong Zhonghua	04/02/2018	H.K., China	Diesel-Electric	GT NO 96	4	APLNG	1719A
Cheikh Bouamama	75,558	Skikda LNG Transport Corp.	Universal SB	19/07/2008	Bahamas	Steam	TZ Mk. III	4	Arzew/Skikda	88
Cheikh el Mokrani	75,759	Mediterranean LNG Transport Corp.	Japan Marine United	10/06/2007	Bahamas	Steam	TZ Mk. III	4	Skikda	55
Christophe De Margerie	170,000	DY Shipping Limited	Daewoo	09/11/2016	Panama	Diesel/Gas-Electric	GT NO 96 GW	–	Yamal	2418
Clean Cajun	180,000	Platia Shipping Ltd.	HHI	01/05/2022	Malta	X-DF	Membrane	4	–	3137
Clean Copano	180,000	Psili Shipping Ltd	HHI	30/07/2022	Malta	X-DF	Membrane	4	–	3138
Clean Energy	149,700	Pegasus Shipholding	HHI	02/03/2007	M. Islnds	Steam	TZ Mk. III	4	Portfolio	1748
Clean Horizon	162,000	Dynagas	HHI	10/04/2015	Malta	Diesel/Gas-Electric	TZ Mk. III Flex	4	Portfolio	2566
Clean Ocean	162,000	Dynagas	HHI	21/05/2014	M. Islnds	Diesel/Gas-Electric	TZ Mk. III Flex	4	Sabine Pass	2558
Clean Planet	162,000	Dynacom Tankers Management	HHI	29/08/2014	M. Islnds	Diesel Electric	TZ Mk. III Flex	4	Yamal	H2565
Clean Vision	162,000	Olinda	HHI	11/08/2015	Malta	Diesel/Gas-Electric	TZ Mk. III Flex	4	Portfolio	2567
CNTIC VPower Energy	127,500	Shell Tankers Australia	Mitsubishi	01/01/1992	Liberia	Steam	Moss	4	North West Shelf	2041
Cobia LNG	174,000	Cardiff LNG ETA Owning LLC	HHI	28/02/2021	Malta	X-DF	TZ Mk. III Flex	4	–	3038
Condor LNG	145,000	Cardiff LNG FI Owning Ltd	Samsung	28/08/2006	Greece	Steam	TZ Mk. III	4	Idku	1555
Cool Discoverer	174,000	Serendipity Maritime Ltd.	HHI	28/09/2020	Malta	X-DF	TZ Mk. III Flex	–	–	S970
Cool Explorer	160,000	Thenamaris Ships Management Inc.	Samsung	01/01/2015	Malta	–	TZ Mk. III Flex	4	Spot	2049
Cool Racer	174,000	Eloquent Shipping Ltd	HHI	10/02/2021	Malta	X-DF	TZ Mk. III Flex	4	–	3126
Cool Rider	155,000	RBSSAF (19) Ltd.	HHI	02/05/2007	Malta	–	TZ Mk. III	4	Portfolio	1777
Cool Rover	155,000	RBSSAF (19) Ltd.	HHI	20/06/2008	Malta	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	1779
Cool Runner	160,000	Thenamaris Ships Management Inc.	Samsung	27/03/2014	Malta	Diesel Electric	TZ Mk. III Flex	4	Wheatstone	H2046
Cool Voyager	160,000	Energy Shipping & Trading	Samsung	31/10/2013	Malta	TFDE	TZ Mk. III Flex	4	Wheatstone	–
Corcovado LNG	160,162	Drytank	Daewoo	03/04/2014	Malta	Diesel Electric	GT NO 96 L03	4	Spot	H2297
Cubal	160,276	Mint LNG IV	Samsung	12/01/2012	Bahamas	–	TZ Mk. III	4	Soyo	1813
Cygnus Passage	145,400	Cygnus LNG Shipping	Mitsubishi	06/01/2009	Bahamas	Steam	Moss	4	Sakhalin II	2235
Dapeng Moon	147,200	Yue Gang LNG Ship Management Co.	Hudong Zhonghua	17/07/2008	H.K., China	Steam	GT NO 96	4	Pluto	1309
Dapeng Princess	79,960	–	Hudong Zhonghua	19/02/2023	Singapore	DFDE	GTT 96	4	–	H1837A
Dapeng Star	147,210	Yue Peng LNG Shipping Co.	Hudong Zhonghua	04/11/2009	H.K., China	Steam	GT NO 96	4	Pluto	1379
Dapeng Sun	147,200	Yue Peng LNG Shipping Co.	Hudong Zhonghua	03/04/2008	H.K., China	Steam	GT NO 96	4	North West Shelf	1308
Diamond Gas Crystal	174,000	Diamond LNG Shipping 5 Pte Ltd.	Hyundai Samho	28/06/2021	Singapore	X-DF	TZ Mk. III Flex	4	–	8030
Diamond Gas Metropolis	174,000	Diamond LNG Shipping 4 Ltd.	HHI	03/11/2020	Bahamas	–	TZ Mk. III Flex	4	–	8029
Diamond Gas Orchid	165,000	NYK Line	Mitsubishi	02/06/2018	Bahamas	STaGE	Sayaringo	4	Cameron	2325
Diamond Gas Rose	165,000	NYK Line	Mitsubishi	02/08/2018	Bahamas	STaGE	Sayaringo	4	Cameron	2325
Diamond Gas Sakura	165,000	Tokyo Gas	Japan Marine United	17/05/2019	Singapore	STaGE	Sayaringo	4	Cameron	2332
Diamond Gas Victoria	174,000	Diamond LNG Shipping 6 Pte Ltd.	Hyundai Samho	30/06/2021	Singapore	X-DF	TZ Mk. III Flex	4	–	8031
Disha	136,025	India LNG Transport Company No.1 Ltd.	Daewoo	25/12/2003	Malta	Gas Turbine	GT NO 96	4	RasGas	2210
Doha	137,262	Mitsui O.S.K. Lines	Mitsubishi	03/06/1999	M. Islnds	Steam	Moss	5	Qatargas I	2091
Dorado LNG	174,000	Hai Kuo Shipping 2052G Ltd.	Samsung	25/12/2020	Malta	X-DF	TZ Mk. III Flex	–	–	2276
Duhail	210,150	Nauranto Schiffsbetriebsgesellschaft	Daewoo	04/12/2007	Bahamas	Diesel	GT NO 96	4	Qatargas II	2247
Dukhan	137,661	Qatar LNG Transport	Mitsui E&S	29/09/2004	Liberia	Steam	Moss	5	Qatargas II	1561
East Energy	122,255	Bonny Gas Transport	STX	11/08/1982	Bermuda	Steam	Membrane	4	NLNG	26B
Eduard Toll	172,410	Teekay Corp.	Daewoo	22/09/2017	Bahamas	TFDE - Azipod	GT NO 96 GW	4	Yamal	2423
Ejnan	145,000	Peninsula LNG Transport No. 3	Samsung	16/01/2007	Bahamas	Steam	TZ Mk. III	4	RasGas II	1594
Ekaputra 1	136,400	Cometco Shipping Inc.	Mitsubishi	01/01/1989	Indonesia	Steam	Moss	5	Bontang	2011
Elisa Aquila	174,000	Caroline 82 SASU	Hyundai Samho	04/03/2022	France	X-DF	TZ Mk. III Flex	4	Portfolio	S917
Elisa Larus	174,000	Caroline 77 SASU	Hyundai Samho	18/05/2020	France	X-DF	TZ Mk. III Flex	4	Portfolio	S970
Energos Grand	145,700	Golar Grand Corp.	Daewoo	01/01/2006	M. Islnds	Steam	GT NO 96	4	Gorgon	2226
Energy Advance	147,624	Tokyo LNG Tanker Co. & . Toho LNG Shipping Co	Kawasaki	20/03/2005	Japan	Steam	Moss	4	Portfolio	1521
Energy Atlantic	156,000	Alpha Tankers	STX	28/09/2015	Malta	TFDE	GT NO 96 L03	4	Sabine Pass	1670
Energy Confidence	153,000	Tokyo LNG Tanker Co. & NYK	Kawasaki	20/04/2009	Japan	Steam	Moss	4	Darwin LNG	1611
Energy Endeavour	173,400	Rossini Navigation SA	Daewoo	01/01/2021	M. Islnds	ME-GI	GT NO 96 GW	–	–	2484
Energy Fidelity	174,000	–	Hyundai Samho	13/04/2023	M. Islnds	X-DF	–	4	–	8105
Energy Frontier	147,599	Tokyo LNG Tanker Co.	Kawasaki	01/09/2003	Japan	Steam	Moss	4	Sakhalin II	1520
Energy Glory	165,000	NYK Line	Japan Marine United	21/03/2019	Japan	TFDE	TZ Mk. III Flex+	4	Cove Point	5071
Energy Horizon	177,000	Tokyo LNG Tanker Co. & NYK	Kawasaki	31/08/2011	Japan	Steam	Moss	4	Pluto	1664
Energy Innovator	165,000	Tokyo Gas	Japan Marine United	22/06/2019	Japan	TFDE	TZ Mk. III Flex+	4	Cove Point	5072
Energy Integrity	173,400	Mozart Navigation SA	Daewoo	14/05/2021	M. Islnds	ME-GI	GT NO 96 GW	4	–	2485
Energy Intelligence	173,400	Strauss Navigation SA	Daewoo	30/06/2021	M. Islnds	ME-GI	GT NO 96 GW	4	–	2500
Energy Liberty	165,000	Mitsui O.S.K. Lines	Japan Marine United	11/10/2018	Japan	TFDE	TZ Mk. III Flex+	4	Cove Point	5070

Energy Navigator	145,000	Tokyo LNG Tanker Co.	Kawasaki	22/05/2008	Japan	Steam	Moss	4	Sakhalin II	1600
Energy Pacific	173,400	Ravel Navigation SA	Daewoo	24/08/2020	M. Islnds	ME-GI	GT NO 96 GW	–	–	2483
Energy Progress	147,558	Jovial Shipping Navigation	Kawasaki	24/11/2006	Japan	Steam	Moss	4	Darwin LNG	1540
Energy Spirit	74,100	GDF Armateur 2	STX	23/01/2004	Singapore	Diesel/Gas-Electric	CS1	4	Portfolio	32M
Energy Universe	166,571	Tokyo LNG Tanker Co.	Japan Marine United	03/08/2019	Panama	TFDE	TZ Mk. III Flex	4	Cove Point	5073
Enshu Maru	164,700	Mitsui O.S.K. Lines	Kawasaki	12/08/2018	Panama	Reheat Steam Turbine	Moss	4	Wheatstone	1720
Esshu Maru	153,000	Mitsui O.S.K. Lines	Mitsubishi	16/12/2014	Bahamas	–	Sayaendo	4	Portfolio	–
Etyfa Prometheas	135,269	Shell Bermuda (Overseas) Ltd.	Mitsubishi	02/10/2002	Singapore	Steam	Moss	5	Peru LNG	2172
Excalibur	138,034	Exmar Excalibur Shipping Co.	Daewoo	22/05/2002	Belgium	Steam	GT NO 96	4	Portfolio	2206
Extremadura Knutsen	174,000	Caroline 86 SASU	Hyundai Samho	17/02/2023	France	X-DF	Mark III Flex	4	Portfolio	8096
Fedor Litke	172,410	Arctic LNG 2 Ltd.	Daewoo	18/05/2017	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2422
Ferrol Knutsen	174,000	Caroline 85 SASU	Hyundai Samho	01/01/2023	France	X-DF	Mark III Flex	4	Portfolio	8095
Flex Amber	174,000	Bund 10 Holding Ltd	HHI	17/10/2020	M. Islnds	X-DF	TZ Mk. III Flex	–	Wheatstone	8011
Flex Artemis	174,000	Flex LNG Rreliance Ltd.	Daewoo	20/08/2020	M. Islnds	ME-GI	NO-96-GW+FRS	–	Portfolio	2479
Flex Aurora	174,000	Flex LNG Aurora Ltd.	HHI	25/06/2020	M. Islnds	X-DF	TZ Mk. III Flex	–	Portfolio	8010
Flex Constellation	173,400	Frontline	Daewoo	10/06/2019	M. Islnds	ME-GI	NO-96-GW+PRS	4	Portfolio	H2470
Flex Courageous	173,400	Frontline	Daewoo	27/08/2019	M. Islnds	ME-GI	NO-96-GW+PRS	4	–	2471
Flex Endeavour	172,400	Flex LNG	Daewoo	14/01/2018	M. Islnds	ME-GI	NO-96-GW+PRS	4	Corpus Christi LNG	2447
Flex Enterprise	172,400	Flex LNG	Daewoo	01/01/2018	M. Islnds	ME-GI	NO-96-GW+PRS	4	Wheatstone	2448
Flex Freedom	173,400	Flex Freedom Ltd.	Daewoo	01/01/2021	M. Islnds	ME-GI	NO-96-GW+FRS	–	–	2492
Flex Rainbow	174,000	Flex LNG	Samsung	14/06/2018	M. Islnds	ME-GI	TZ Mk. III Flex	4	Portfolio	2108
Flex Ranger	174,101	Flex LNG	Samsung	24/06/2018	M. Islnds	ME-GI	TZ Mk. III Flex	4	–	2107
Flex Resolute	173,400	Flex LNG Resolute Ltd.	HHI	04/09/2020	M. Islnds	ME-GI	NO-96-GW+FRS	4	Portfolio	2480
Flex Vigilant	174,000	Flex Vigilant Ltd.	HHI	31/05/2021	M. Islnds	X-DF	TZ Mk. III Flex	4	Portfolio	8013
Flex Volunteer	174,000	Flex Volunteer Ltd.	HHI	20/01/2021	M. Islnds	X-DF	TZ Mk. III Flex	4	Portfolio	8012
Fraiha	210,100	J5 Nakilat No.6 Ltd.	Daewoo	20/08/2008	M. Islnds	Diesel	GT NO 96	18	RasGas III	2252
Fuji LNG	149,172	Aletheia Owning Co.	Kawasaki	31/03/2004	Malta	Steam	Moss	4	Sabine Pass	1527
Fuwairit	138,200	Camartina Shipping Co.	Samsung	13/01/2004	Bahamas	Steam	TZ Mk. III	4	RasGas II	1406
Gail Bhuwan	180,000	Primavera Montana SA	Daewoo	10/02/2021	Cyprus	X-DF	GT NO 96 GW	4	Portfolio	2499
GasLog Galveston	174,000	Gas-Thirty Three Ltd.	Samsung	05/01/2021	Bermuda	X-DF	TZ Mk. III Flex+	4	US Portfolio	2301
GasLog Geneva	174,000	GasLog	Samsung	04/10/2016	Bermuda	TFDE	TZ Mk. III Flex	4	Portfolio	2102
GasLog Genoa	174,000	GasLog	Samsung	31/03/2018	Bermuda	X-DF	TZ Mk. III Flex	4	Portfolio	2130
GasLog Georgetown	174,000	Gas-Thirty Two Ltd.	Samsung	16/11/2020	Bermuda	–	TZ Mk. III Flex+	4	Portfolio	2300
GasLog Gibraltar	174,000	Gas-Fourteen Ltd.	Samsung	04/11/2016	Bermuda	TFDE	TZ Mk. III Flex	4	Portfolio	2103
GasLog Gladstone	174,000	GasLog	Samsung	14/03/2019	Bermuda	X-DF	TZ Mk. III Flex+	4	Portfolio	2131
GasLog Glasgow	174,000	GasLog	Samsung	25/07/2016	Bermuda	TFDE	TZ Mk. III Flex	4	Portfolio	2073
GasLog Greece	174,000	GasLog	Samsung	29/03/2016	Bermuda	TFDE	TZ Mk. III Flex	4	Portfolio	2072
GasLog Hong Kong	174,000	GasLog	HHI	25/03/2018	Bermuda	X-DF	TZ Mk. III Flex	4	Portfolio	2801
GasLog Houston	174,000	GasLog	HHI	01/12/2018	Bermuda	X-DF	TZ Mk. III Flex	4	GoM	2800
GasLog Salem	155,000	GasLog	Samsung	06/05/2015	Bermuda	TFDE	TZ Mk. III	4	Portfolio	2044
GasLog Santiago	155,000	Gas-Four Ltd.	Samsung	28/03/2013	Bermuda	TFDE	TZ Mk. III	4	Portfolio	1947
GasLog Saratoga	155,000	GasLog	Samsung	19/12/2014	Bermuda	TFDE	TZ Mk. III	4	Spot	2043
GasLog Savannah	155,000	Gas-One Ltd.	Samsung	31/05/2010	Bermuda	TFDE	TZ Mk. III	4	Portfolio	1641
GasLog Seattle	155,000	Gas-Seven Ltd.	Samsung	28/10/2013	Bermuda	TFDE	TZ Mk. III	4	Portfolio	2041
GasLog Shanghai	155,000	Gas-Three Ltd.	Samsung	05/02/2013	Bermuda	TFDE	TZ Mk. III	4	Portfolio	1946
GasLog Singapore	155,000	Gas-Two Ltd.	Samsung	06/08/2010	Bermuda	TFDE	TZ Mk. III	4	Portfolio	1642
GasLog Skagen	155,000	Gas-Six Ltd.	Samsung	01/08/2013	Bermuda	TFDE	TZ Mk. III	4	Portfolio	2017
GasLog Sydney	155,000	Gas-Five Ltd.	Samsung	06/06/2013	Bermuda	–	TZ Mk. III	4	Portfolio	2016
GasLog Wales	180,000	GasLog	Samsung	11/05/2020	Bermuda	X-DF	TZ Mk. III Flex+	4	Portfolio	2274
GasLog Warsaw	180,000	GasLog	Samsung	31/07/2019	Greece	X-DF	TZ Mk. III Flex+	4	Portfolio	2212
GasLog Wellington	176,400	GAS-Thirty Four Ltd.	Samsung	15/06/2021	Bermuda	X-DF	TZ Mk. III Flex+	4	US Portfolio	2311
GasLog Westminster	180,000	Gas-Thirty Ltd.	Samsung	15/07/2020	Bermuda	X-DF	TZ Mk. III Flex	–	Portfolio	2262
GasLog Winchester	176,400	Gas-Thirty Five Ltd.	Samsung	24/08/2021	Bermuda	X-DF	TZ Mk. III Flex+	4	US Portfolio	2312
GasLog Windsor	180,000	GasLog	Samsung	02/04/2020	Bermuda	X-DF	TZ Mk. III Flex	4	Portfolio	2213
Georgiy Brusilov	172,410	Arctic LNG 3 Ltd.	Daewoo	11/11/2018	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2427
Georgiy Ushakov	172,652	Teekay Corp.	Daewoo	16/09/2019	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2433
Ghasha	137,000	Ghasha Inc.	Mitsui E&S	01/06/1995	Liberia	Steam	Moss	5	Das Island	1392
Gigira Laitebo	177,419	Cleopatra LNG Shipping Co.	HHI	09/02/2010	Bahamas	–	TZ Mk. III	4	RasGas	1876
Global Energy	173,400	–	Daewoo	22/05/2020	M. Islnds	ME-GI	GT NO 96 GW	–	Portfolio	2478
Global Sea Spirit	169,932	Global Sea Spirit Inc	Daewoo	20/10/2021	M. Islnds	ME-GI	GT NO 96 GW	4	US Portfolio	2502
Global Sealine	174,000	Jackar Shiptrade SA	Daewoo	27/12/2021	M. Islnds	ME-GI	–	–	US Portfolio	2503
Global Star	173,400	Hai Kuo Shipping 2119G Ltd.	Daewoo	06/01/2021	M. Islnds	ME-GI	GT NO 96 GW	4	Portfolio	2487
Golar Arctic	140,648	Golar LNG 2216 Corp.	Daewoo	16/10/2003	M. Islnds	Steam	GT NO 96	4	Jamaica LNG	2216
Golar Bear	160,000	Golar LNG	Samsung	15/09/2014	M. Islnds	Diesel/Gas-Electric	TZ Mk. III Flex	4	Spot	2027
Golar Celsius	160,000	Golar Hull M2026 Corp.	Samsung	08/10/2013	M. Islnds	Diesel/Gas-Electric	TZ Mk. III Flex	4	Spot	2026

CARRIER FLEET

Golar Crystal	159,800	Golar LNG	Samsung	22/09/2014	M. Islnds	–	TZ Mk. III Flex	4	Portfolio	2022
Golar Glacier	162,000	Golar LNG	Hyundai Samho	10/11/2014	M. Islnds	TFDE	TZ Mk. III Flex	4	Spot	–
Golar Kelvin	162,000	Golar LNG	Hyundai Samho	12/01/2015	M. Islnds	–	TZ Mk. III Flex	4	Spot	S659
Golar Maria	145,700	Golar LNG 2234 LLC	Daewoo	16/06/2006	M. Islnds	Steam	GT NO 96	4	Spot	2234
Golden Isaia	145,000	Lloyds TSB Leasing No.8 Ltd.	Samsung	26/02/2007	Indonesia	Steam	TZ Mk. III	4	Punta Europa	1585
Grace Acacia	149,700	Algawin Shipping Inc.	HHI	13/02/2007	Bahamas	Steam	TZ Mk. III	4	Spot	1728
Grace Barleria	149,700	NYK LNG Shipmanagement	HHI	05/04/2007	Japan	–	TZ Mk. III	4	Portfolio	1729
Grace Cosmos	150,000	Algahunt Shipping Inc.	HHI	13/02/2008	Bahamas	Steam	TZ Mk. III	4	Portfolio	1730
Grace Dahlia	177,000	NYK Line	Kawasaki	16/09/2013	Japan	Steam	Moss	4	Spot	1665
Grace Emilia	174,000	Akizuki Maritima SA	Hyundai Samho	31/10/2021	Bahamas	X-DF	TZ Mk. III	4	Portfolio	8032
Grace Freesia	174,000	Okusankichi Maritima SA	Hyundai Samho	27/03/2022	Bahamas	X-DF	–	4	Portfolio	8033
Grand Aniva	145,000	NYK-SCF LNG Shipping No. 1	Mitsubishi	04/01/2008	Cyprus	Steam	Moss	4	Sakhalin II	2230
Grand Elena	145,580	NYK-SCF LNG Shipping No. 1	Mitsubishi	17/10/2007	Cyprus	Steam	Moss	4	Sakhalin II	2229
Grand Mereya	147,000	Ice Gas LNG Shipping Co.	Mitsui E&S	16/03/2008	Cyprus	Steam	Moss	4	Sakhalin II	1681
Grazyna Gesicka	174,000	Knutsen OAS Shipping c/o SNC Diderot Financement 33	HHI	02/05/2023	France	X-DF	–	4	Portfolio	3244
Gui Ying	170,701	Fortune Power Shipping Ltd.	Hudong Zhonghua	08/10/2021	Singapore	X-DF	GT NO 96 L03+	4	–	H1828A
Hanjin Muscat	138,366	Pluto Lease Corp.	Hanjin (Busan)	30/07/1999	South Korea	Steam	GT NO 96	4	Oman LNG	54
Hanjin Pyeongtaek	130,636	Hanjin Shipping Co.	Hanjin (Busan)	26/09/1995	South Korea	Steam	GT NO 96	4	Bontang	16
Hanjin Ras Laffan	138,214	KSH International	Hanjin (Busan)	20/07/2000	South Korea	Steam	GT NO 96	4	RasGas I	62
Hanjin Sur	138,333	KSG International	Hanjin (Busan)	27/02/2000	South Korea	Steam	GT NO 96	4	Oman LNG	61
Hellas Athina	170,520	Kronos Shipping LLC	Hyundai Samho	01/09/2021	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	8040
Hellas Diana	174,000	Zeus Shipping LLC	Hyundai Samho	31/03/2021	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	8039
Hoegh Gandria	160,000	Golar Hull M2021 Corp.	Samsung	13/09/2013	M. Islnds	Diesel/Gas-Electric	TZ Mk. III Flex	4	Spot	2021
HongKong Energy	138,000	Chevron LNG Shipping Co.	Daewoo	20/02/2004	M. Islnds	Steam	GT NO 96	4	North West Shelf	2214
Huelva Knutsen	174,000	Sea 201 Leasing Co Ltd	Hyundai Samho	13/10/2022	Norway	X-DF	TZ Mk. III Flex+	4	Portfolio	8094
Hyundai Aquapia	137,415	H&S Shipping	HHI	04/05/2000	M. Islnds	Steam	Moss	4	Oman LNG	1156
Hyundai Cosmopia	137,415	H&B Shipping	HHI	08/02/2000	M. Islnds	Steam	Moss	4	RasGas I	1074
Hyundai Ecopia	149,745	KLT 1 International	HHI	30/11/2008	Panama	–	TZ Mk. III	4	Balhaf	1903
Hyundai Greenpia	125,000	Hyundai Merchant Marine	HHI	01/05/1996	South Korea	Steam	Moss	4	MLNG	853
Hyundai Oceanpia	135,000	H&T Shipping	HHI	19/06/2000	M. Islnds	Steam	Moss	4	Oman LNG	1157
Hyundai Peacepia	174,000	Hyundai LNG Shipping	Daewoo	08/06/2017	Panama	ME-GI	GT NO 96 GW	4	Sabine Pass	2452
Hyundai Princepia	174,000	Hyundai LNG Shipping	Daewoo	11/05/2017	Panama	ME-GI	GT NO 96 GW	4	Sabine Pass	2451
Hyundai Technopia	137,415	H&K Shipping	HHI	31/07/1999	M. Islnds	Steam	Moss	4	RasGas I	1073
Hyundai Utopia	125,182	Hyundai Merchant Marine	HHI	01/06/1994	South Korea	Steam	Moss	4	Donggi Senoro	760
Iberica Knutsen	138,000	Norspan LNG III AS	Daewoo	08/08/2006	Norway	Ultra Steam Turbine	GT NO 96	4	Portfolio	2236
Ibra LNG	147,000	SNC Corentin	Samsung	19/07/2006	Panama	Steam	TZ Mk. III	4	Oman LNG	1573
Ibri LNG	147,569	Dune LNG Carrier	Mitsubishi	01/07/2006	Panama	Steam	Moss	4	Oman LNG	2215
Isabella	169,932	Kasimia Marine Co.	Daewoo	22/07/2021	Greece	ME-GI	GT NO 96 GW	4	–	2495
Ish	137,000	Ish Inc.	Mitsubishi	10/11/1995	Liberia	Steam	Moss	5	Das Island	2067
John A Angelicoussis	174,000	Varta Shipping Ltd	Daewoo	31/03/2022	Greece	ME-GI	–	4	–	2508
K. Acacia	138,017	Horizon Maritime Shipholding	Daewoo	31/12/1999	South Korea	Steam	GT NO 96	4	Oman LNG	2203
K. Freesia	138,015	Meridian Maritime Shipholding	Daewoo	20/08/2000	South Korea	Steam	GT NO 96	4	RasGas I	2204
K. Jasmine	145,878	Kolt JV No. 1	Daewoo	09/05/2008	Panama	Steam	GT NO 96	4	Sakhalin II	2260
K. Mugungwha	151,812	Kolt JV No. 2	Daewoo	20/11/2008	Panama	Steam	GT NO 96	4	Oman LNG	2261
Kinisis	173,400	Chandris Group	Daewoo	01/10/2018	Liberia	ME-GI	GT NO 96 GW	4	Portfolio	2464
Kita LNG	147,895	Cardiff LNG	Daewoo	29/05/2014	Malta	Diesel Electric	GT NO 96 L03	4	Spot	H2298
Kmarin Diamond	155,000	RBSSAF (19) Ltd.	Hyundai Samho	28/07/2008	U.K.	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	S297
Kool Baltic	170,200	Sovcomflot	STX	03/01/2015	Liberia	Diesel Electric	GT NO 96 GW	4	Portfolio	1912
Kool Blizzard	160,000	Golar LNG	Samsung	12/01/2015	M. Islnds	Diesel/Gas-Electric	TZ Mk. III Flex	4	Spot	2047
Kool Boreas	170,200	Sovcomflot	STX	23/04/2015	Liberia	Diesel Electric	GT NO 96 GW	4	Portfolio	1913
Kool Firn	174,000	Heliconia Maritime SA	HHI	18/09/2020	Liberia	DFDS	TZ Mk. III Flex	4	Portfolio	8007
Kool Frost	160,000	Golar LNG	Samsung	01/10/2014	M. Islnds	Diesel/Gas-Electric	TZ Mk. III Flex	4	Portfolio	2055
Kool Ice	160,000	Golar LNG	Samsung	31/01/2015	M. Islnds	Diesel Electric	TZ Mk. III Flex	4	Spot	2048
Kool Orca	174,000	Headliner Maritime SA	HHI	15/01/2021	Liberia	X-DF	NO-96-GW+PRS	4	Portfolio	8008
KPS LNG Anatolia	154,472	GDF Armateur 2	STX	21/11/2006	Liberia	Diesel/Gas-Electric	CS1	4	Portfolio	32N
Kumul	170,000	Mitsui O.S.K. Lines	Hudong Zhonghua	05/12/2015	H.K., China	Diesel	GT NO 96	4	PNG LNG	1673A
Kun Lun	174,400	–	Hudong Zhonghua	05/04/2023	China	X-DF	–	4	Portfolio	H1833A
La Mancha Knutsen	176,300	Norspan LNG IX	HHI	21/09/2016	Spain	ME-GI	TZ Mk. III Flex	4	Portfolio	2733
La Seine	174,000	Xiang CH16 HK International	HHI	29/02/2020	Malta	X-DF	TZ Mk. III Flex	–	Portfolio	3020
Lagenda Serenity	79,960	Kawasaki Kisen Kaisha	Hudong Zhonghua	10/06/2022	Singapore	LP-DF	–	3	Malaysia LNG	H1789A
Lagenda Suria	79,960	Silk LNG Transport No 1 Pte Ltd	Hudong Zhonghua	27/05/2022	Singapore	LP-DF	–	3	Malaysia LNG	H1788A
Lalla Fatma N'Soumer	145,000	Algerian Nippon Gas Transport Corp.	Kawasaki	18/10/2004	Bahamas	Steam	Moss	4	Arzew	1534
Lech Kaczynski	174,000	SNC Martin	HHI	09/12/2022	France	X-DF	–	4	Portfolio	3243
Lena River	155,000	Solana Holdings	HHI	24/09/2013	M. Islnds	–	TZ Mk. III	4	Portfolio	H2557

Lerici	65,000	LNG Shipping S.p.A.	Sestri Ponente	03/04/1998	Singapore	Steam	GT NO 96	4	Portfolio	5911
Lijmiliya	263,300	Nakilat Lijmiliya Inc.	Daewoo	11/12/2008	M. Islnds	Diesel	GT NO 96	5	Qatargas II	2256
LNG Abalamabie	162,000	Bonny Gas Transport	Samsung	23/07/2016	Bermuda	–	TZ Mk. III Flex	4	NLNG	2079
LNG Abuja II	162,000	Bonny Gas Transport	Samsung	02/03/2016	Bermuda	–	TZ Mk. III Flex	4	NLNG	2078
LNG Adamawa	141,000	Bonny Gas Transport	HHI	25/04/2005	Bermuda	Steam	Moss	4	NLNG	1470
LNG Adventure	174,000	Diderot Financement 28 SNC	Samsung	31/03/2021	France	X-DF	TZ Mk. III Flex	4	–	2302
LNG Akwa Ibom	141,000	Bonny Gas Transport	HHI	11/10/2004	Bermuda	Steam	Moss	4	NLNG	1469
LNG Alliance	154,472	NYK Armateur	STX	30/03/2007	France	Diesel/Gas-Electric	CS1	4	Portfolio	32P
LNG Aquarius	126,300	P.T. Hanochem Shipping	General Dynamics	01/01/1977	Indonesia	Steam	Moss	5	Bontang	41
LNG Barka	155,982	Lloyd's TSB General Leasing (No. 3)	Kawasaki	29/12/2008	Bahamas	Steam	Moss	4	Oman LNG	1591
LNG Bayelsa	137,500	Bonny Gas Transport	HHI	08/03/2003	Bermuda	–	Moss	4	NLNG	1429
LNG Benue	145,952	BW Gas LNG Carriers	Daewoo	05/04/2006	Bermuda	Steam	GT NO 96	4	NLNG	2224
LNG Bonny II	174,000	Nigeria LNG	HHI	02/12/2015	Bermuda	Diesel/Gas-Electric	TZ Mk. III Flex	4	NLNG	2636
LNG Borno	149,600	Okra Shipping No. 1	Samsung	16/08/2007	Bermuda	Steam	TZ Mk. III	4	NLNG	1563
LNG Cross River	141,000	Bonny Gas Transport	HHI	22/08/2005	Bermuda	Steam	Moss	4	NLNG	1471
LNG Dream	145,000	Osaka Gas Consortium	Kawasaki	02/09/2006	Bahamas	Steam	Moss	4	North West Shelf	1545
LNG Dubhe	174,000	Mitsui O.S.K. Lines	Hudong Zhonghua	07/11/2019	H.K., China	ME-GI	GT NO 96 L03+	4	Yamal	1810A
LNG Ebisu	147,546	LNG Ebisu Shipping Corp.	Kawasaki	12/07/2008	Bahamas	–	Moss	4	Pluto	1588
LNG Endeavour	170,520	Fortune Great Shipping Ltd.	Samsung	20/10/2021	France	X-DF	TZ Mk. III Flex	4	Portfolio	2355
LNG Endurance	174,000	DuPlessis Bail SNC	Samsung	01/12/2021	France	X-DF	TZ Mk. III Flex	4	Portfolio	2370
LNG Enterprise	170,520	Hanovre Financement 20 SASU	Samsung	03/10/2021	France	–	TZ Mk. III Flex	4	–	2360
LNG Enugu	145,926	BW Gas LNG Carriers	Daewoo	05/10/2005	Bermuda	Steam	GT NO 96	4	NLNG	2222
LNG Finima II	162,000	Bonny Gas Transport	Samsung	02/12/2015	Bermuda	–	TZ Mk. III Flex	4	NLNG	2076
LNG Fukurokuju	164,700	Mitsui O.S.K. Lines	Kawasaki	18/07/2016	Bahamas	–	Moss	4	APLNG	1712
LNG Harmony	174,000	Jupiter 5 Ltd.	HHI	21/07/2023	Liberia	X-DF	TZ Mk. III Flex	4	Portfolio	3190
LNG Imo	148,452	Bergesen LNG XI Ltd.	Daewoo	25/06/2008	Bermuda	–	GT NO 96	4	NLNG	2232
LNG Jamal	135,333	Osaka Gas Consortium	Mitsubishi	31/10/2000	Japan	Steam	Moss	5	Oman LNG	2157
LNG Juno	180,000	Mitsui O.S.K. Lines	Mitsubishi	18/10/2018	Bahamas	STaGE	Moss	–	Freeport	2323
LNG Jupiter	153,000	Osaka Gas Consortium	Kawasaki	01/07/2009	Bahamas	Steam	Moss	4	PNG LNG	1592
LNG Jurojin	160,000	LNG Jurojin Shipping Corp.	Mitsubishi	30/11/2015	Bahamas	–	Moss	4	Portfolio	2299
LNG Kano	148,565	Bergesen LNG IX Ltd.	Daewoo	26/01/2007	Bermuda	Steam	GT NO 96	4	NLNG	2230
LNG Kolt	153,595	KLT 5 International	Hanjin (Busan)	24/12/2008	Panama	Steam	TZ Mk. III	4	Portfolio	192
LNG Lagos II	174,000	Nigeria LNG	HHI	22/01/2016	Bermuda	–	TZ Mk. III Flex	4	NLNG	2637
LNG Lokoja	148,471	Bergesen LNG VIII Ltd.	Daewoo	28/11/2006	Bermuda	Steam	GT NO 96	4	NLNG	2229
LNG Maleo	127,544	Mitsui O.S.K. Lines	Mitsui E&S	01/01/1989	Japan	Steam	Moss	4	North West Shelf	1351
LNG Mars	155,693	Osaka Gas Consortium	Mitsubishi	14/10/2016	Japan	Steam	Moss	4	PNG LNG	2296
LNG Megrez	174,000	Mitsui O.S.K. Lines	Hudong Zhonghua	01/11/2020	H.K., China	ME-GI	GT NO 96 L03+	4	Yamal	1813A
LNG Merak	174,000	Mitsui O.S.K. Lines	Hudong Zhonghua	08/01/2020	H.K., China	ME-GI	GT NO 96 L03+	4	Yamal	1811A
LNG Ogun	149,000	Okra Shipping No. 1	Samsung	07/07/2007	Bermuda	Steam	TZ Mk. III	4	NLNG	1564
LNG Ondo	148,478	Bergesen LNG X Ltd.	Daewoo	21/09/2007	Bermuda	Steam	GT NO 96	4	NLNG	2231
LNG Oyo	145,842	BW Gas LNG Carriers	Daewoo	06/01/2006	Bermuda	Steam	GT NO 96	4	NLNG	2223
LNG Phecda	174,000	Mitsui O.S.K. Lines	Hudong Zhonghua	02/09/2020	H.K., China	ME-GI	GT NO 96 L03+	4	Yamal	1812A
LNG Port Harcourt II	162,000	Bonny Gas Transport	Samsung	14/12/2015	Bermuda	–	TZ Mk. III Flex	4	NLNG	2077
LNG Prima Carrier	137,000	Pacific Eurus Shipping	Mitsubishi	14/03/2006	Indonesia	Steam	Moss	4	Das Island	2187
LNG Prosperity	174,000	Hai Kuo Shipping 2001G Ltd (c/o Oceonix Services)	HHI	07/01/2023	Liberia	X-DF	TZ Mk. III Flex+	4	Portfolio	3188
LNG River Niger	141,000	Bonny Gas Transport	HHI	06/07/2006	Bermuda	Steam	Moss	4	NLNG	1472
LNG River Orashi	145,914	BW Gas LNG Carriers	Daewoo	04/11/2004	Bermuda	Steam	GT NO 96	4	NLNG	2221
LNG Rivers	137,200	Bonny Gas Transport	HHI	20/06/2002	Bermuda	–	Moss	4	NLNG	1295
LNG Rosenrot	176,523	Fair Wind Navigation SA	Daewoo	25/01/2021	M. Islnds	X-DF	GT NO 96 GW	4	Portfolio	2498
LNG Sakura	177,000	Mitsui O.S.K. Lines	Kawasaki	26/02/2018	Bahamas	TFDE	Moss	–	Freeport	1731
LNG Saturn	155,300	Mitsui O.S.K. Lines	Mitsubishi	03/02/2016	Bahamas	Ultra Steam Turbine	Moss	4	Gorgon	2311
LNG Schneeweisschen	180,000	Mitsui O.S.K. Lines	Daewoo	01/09/2018	Panama	TFDE	GT NO 96 GW	–	Freeport	2462
LNG Sokoto	137,425	Bonny Gas Transport	HHI	28/09/2002	Bermuda	–	Moss	4	NLNG	1296
LNG Venus	153,000	Mitsui O.S.K. Lines	Mitsubishi	14/11/2014	Japan	–	Sayaendo	4	North West Shelf	2295
LNG Vesta	127,386	Tokyo LNG Tanker Co.	Mitsubishi	30/06/1994	Japan	Steam	Moss	4	–	2061
LNGShips Athena	170,618	Cardiff LNG Iota Owning LLC	HHI	29/03/2021	Malta	X-DF	TZ Mk. III Flex	4	QCLNG	112
LNGShips Empress	174,000	Cardiff LNG Kappa Owning LLC	Samsung	31/03/2021	Malta	X-DF	TZ Mk. III Flex	4	QCLNG	2380
LNGShips Manhattan	174,000	Cardiff LNG Theta Owning LLC	HHI	07/05/2021	Malta	X-DF-HPSCR	NO-96-GW+PRS	4	QCLNG	3039
Lobito	160,276	Mint LNG III	Samsung	08/11/2011	Bahamas	–	TZ Mk. III	4	Soyo	1812
Lusail	145,000	Peninsula LNG Transport No. 1	Samsung	02/05/2005	Bahamas	–	TZ Mk. III	4	RasGas II	1440
Macoma	145,400	Teekay LNG Partners	Daewoo	16/09/2017	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2417
Magdala	173,400	Teekay Corp.	Daewoo	13/02/2018	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2453
Malaga Knutsen	174,000	Millenaire Financement 17 SASU	Hyundai Samho	29/07/2022	France	X-DF	TZ Mk. III Flex+	4	Portfolio	8092
Malanje	160,276	Mint LNG II	Samsung	05/10/2011	Bahamas	–	TZ Mk. III	4	Soyo	1811

Maran Gas Achilles	174,000	Maran Gas Maritime	Hyundai Samho	21/01/2016	Greece	–	TZ Mk. III Flex	4	Portfolio	S689
Maran Gas Agamemnon	174,000	Maran Gas Maritime	Hyundai Samho	11/05/2016	Greece	–	TZ Mk. III Flex	4	Portfolio	S690
Maran Gas Alexandria	161,870	Maran Gas Maritime	Hyundai Samho	02/10/2015	Greece	–	TZ Mk. III Flex	4	QCLNG	S627
Maran Gas Amorgos	169,932	Vero Maritime Inc	Daewoo	19/11/2021	Greece	ME-GI	GT NO 96	4	–	2506
Maran Gas Amphipolis	174,000	Maran Gas Maritime	Daewoo	01/08/2016	Greece	–	GT NO 96 L03	4	Portfolio	2412
Maran Gas Andros	173,400	Maran Gas Maritime	Daewoo	01/11/2019	Greece	ME-GI	GT NO 96 GW	4	Freeport	2467
Maran Gas Apollonia	161,870	Maran Gas Maritime	Hyundai Samho	08/01/2014	Greece	Diesel Electric	TZ Mk. III Flex	4	Punta Europa	S624
Maran Gas Asclepius	145,000	Sea Satin Corp.	Daewoo	29/07/2005	Greece	Steam	GT NO 96	4	RasGas II	H2227
Maran Gas Chios	170,000	Maran Gas Maritime	Daewoo	26/03/2019	Greece	ME-GI	GT NO 96 GW	4	–	2456
Maran Gas Coronis	145,700	Jopica Shipping Company	Daewoo	27/07/2007	Greece	Steam	GT NO 96	4	RasGas II	2244
Maran Gas Delphi	159,800	Maran Gas Maritime	Daewoo	06/02/2014	Greece	Diesel Electric	GT NO 96 L03	4	Portfolio	2296
Maran Gas Efessos	159,800	Maran Gas Maritime	Daewoo	12/06/2014	Greece	–	GT NO 96 L03	4	Portfolio	H-2291
Maran Gas Hector	174,000	Maran Gas Maritime	Hyundai Samho	08/11/2016	Greece	Diesel/Gas-Electric	TZ Mk. III Flex	–	Portfolio	S691
Maran Gas Hydra	173,400	Maran Gas Maritime	Daewoo	14/02/2019	Greece	ME-GI	GT NO 96 GW	4	Sabine Pass	2459
Maran Gas Ithaca	174,000	Arona Maritime Inc.	Daewoo	26/10/2021	Greece	X-DF	GT NO 96 GW	4	–	2507
Maran Gas Kalymnos	169,932	Hai Kuo Shipping 2028G Ltd	Daewoo	15/09/2021	Greece	ME-GI	Membrane	4	–	2504
Maran Gas Leto	174,000	Maran Gas Maritime	Hyundai Samho	29/03/2016	Greece	–	TZ Mk. III	4	Portfolio	S688
Maran Gas Lindos	161,870	Maran Gas Maritime	Daewoo	02/07/2015	Greece	–	GT NO 96 L03	4	Punta Europa	2292
Maran Gas Marseille	174,000	–	Samsung	14/08/2023	Greece	–	–	4	–	2425
Maran Gas Mystras	155,900	Maran Gas Maritime	Daewoo	03/08/2015	Greece	–	GT NO 96 L03	4	QCLNG	2405
Maran Gas Olympias	174,000	Maran Gas Maritime	Daewoo	04/02/2017	Greece	ME-GI	GT NO 96 L03	–	Portfolio	2415
Maran Gas Pericles	173,400	Maran Gas Maritime	Hyundai Samho	24/08/2016	Greece	–	TZ Mk. III Flex	4	Portfolio	S734
Maran Gas Posidonia	161,870	Maran Gas Maritime	Hyundai Samho	27/05/2014	Greece	–	TZ Mk. III Flex	4	Punta Europa	S625
Maran Gas Psara	173,595	Highseas Shiptrade Co.	Daewoo	07/05/2020	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2469
Maran Gas Roxana	174,000	Maran Gas Maritime	Daewoo	12/01/2017	Greece	ME-GI	GT NO 96 L03	4	Portfolio	2413
Maran Gas Sparta	159,800	Maran Gas Maritime	Hyundai Samho	22/04/2015	Greece	–	TZ Mk. III Flex	4	QCLNG	S626
Maran Gas Spetses	173,400	Maran Gas Maritime	Daewoo	03/07/2018	Greece	ME-GI	GT NO 96 GW	4	GoM	2458
Maran Gas Troy	155,000	Maran Gas Maritime	Daewoo	24/09/2015	Greece	–	GT NO 96 L03	4	–	2406
Maran Gas Ulysses	173,400	Maran Gas Maritime	Hyundai Samho	23/01/2017	Greece	Diesel/Gas-Electric	TZ Mk. III Flex	–	Portfolio	S735
Maran Gas Vergina	174,000	Santa Lucia Enterprises Inc.	Daewoo	07/12/2016	Greece	ME-GI	GT NO 96	–	Portfolio	2414
Maria Energy	174,000	Tsakos Energy Navigation	HHI	01/09/2016	Liberia	Diesel/Gas-Electric	TZ Mk. III Flex	4	–	2612
Marshal Vasilevskiy	170,520	Gazprom	HHI	10/01/2019	Russia	Diesel/Gas-Electric	TZ Mk. III Flex	4	Kaliningrad LNG	2854
Marvel Crane	177,000	NYK Line	Mitsubishi	28/03/2019	Singapore	STaGE	Moss	–	Cameron	2321
Marvel Eagle	155,000	Mitsui O.S.K. Lines	Kawasaki	19/10/2018	Panama	Reheat Steam Turbine	Moss	–	Cameron	1728
Marvel Falcon	174,000	Mitsui O.S.K. Lines	Samsung	20/04/2018	Singapore	TFDE	TZ Mk. III Flex	4	Cameron	2148
Marvel Hawk	177,000	Mitsui O.S.K. Lines	Samsung	01/12/2018	Singapore	TFDE	TZ Mk. III Flex	4	Cameron	2149
Marvel Heron	177,000	Mitsui O.S.K. Lines	Mitsubishi	28/09/2019	Panama	STaGE	Moss	–	Cameron	2322
Marvel Kite	177,000	Mitsui O.S.K. Lines	Samsung	31/01/2019	Singapore	TFDE	TZ Mk. III	4	Cameron	2150
Marvel Pelican	156,265	Mitsui O.S.K. Lines	Kawasaki	13/12/2019	Panama	Reheat Steam Turbine	Moss	4	Cameron	1729
Marvel Swan	174,000	MIF I NO 20 K/S	Samsung	08/04/2021	Denmark	X-DF	TZ Mk. III Flex	4	–	2310
Megara	173,400	Teekay LNG Partners	Daewoo	19/07/2018	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2455
Mekaines	266,000	Nakilat SHI 1695 Inc.	Samsung	03/04/2009	M. Islnds	–	TZ Mk. III	5	Qatargas III	1695
Merchant	138,000	Sea Breeze Leasing	Samsung	23/07/2003	M. Islnds	Steam	TZ Mk. III	4	Portfolio	1381
Mesaimeer	216,312	Nakilat HHI 1908 Inc.	HHI	12/03/2009	M. Islnds	Diesel	TZ Mk. III	4	Qatargas III	1908
Methane Alison Victoria	145,000	Lloyds TSB Leasing No.8 Ltd.	Samsung	27/04/2007	Bermuda	Steam	TZ Mk. III	4	Punta Europa	1587
Methane Becki Anne	170,000	Methane Services (Shell)	Samsung	14/09/2010	Bermuda	–	TZ Mk. III	4	Singapore	1858
Methane Heather Sally	145,000	Lloyds TSB Leasing No.8 Ltd.	Samsung	08/01/2007	Bermuda	Steam	TZ Mk. III	4	Punta Europa	1586
Methane Jane Elizabeth	145,000	British Gas Asia Pacific	Samsung	05/06/2006	Bermuda	Steam	TZ Mk. III	4	Idku	1554
Methane Julia Louise	170,000	Methane Services (Shell)	Samsung	19/04/2010	Bermuda	–	TZ Mk. III	9	Singapore	1745
Methane Mickie Harper	170,000	Methane Services (Shell)	Samsung	28/12/2010	Panama	Diesel/Gas-Electric	TZ Mk. III	4	Singapore	1859
Methane Nile Eagle	145,000	Egypt LNG Shipping	Samsung	05/12/2007	Bermuda	Steam	TZ Mk. III	4	Idku	1588
Methane Patricia Camila	170,000	Methane Services (Shell)	Samsung	29/10/2010	Panama	–	TZ Mk. III	4	Singapore	1746
Methane Princess	138,000	Golar LNG	Daewoo	29/08/2003	M. Islnds	Steam	GT NO 96	4	Portfolio	2215
Methane Rita Andrea	145,000	British Gas Asia Pacific	Samsung	07/04/2006	Bermuda	Steam	TZ Mk. III	4	Idku	1553
Milaha Qatar	145,500	Qatar Shipping Co.	Samsung	15/04/2006	Malta	Steam	TZ Mk. III	4	RasGas II	1562
Milaha Ras Laffan	138,270	Milaha Ras Laffan GmbH & Co. KG	Samsung	06/04/2004	Malta	Steam	TZ Mk. III	4	RasGas II	1425
Min Lu	147,100	Minlu LNG Shipping Co.	Hudong Zhonghua	29/08/2009	H.K., China	–	GT NO 96	4	Tangguh	1378
Min Rong	145,000	Min Rong LNG Shipping Co.	Hudong Zhonghua	24/02/2009	H.K., China	–	GT NO 96	4	Tangguh	1320
Minerva Amorgos	170,520	Vitamin Shipping SA	Samsung	21/09/2022	Malta	X-DF	TZ Mk. III Flex+	4	–	2332
Minerva Chios	170,520	Peninsula Shipping SA	Samsung	02/08/2021	Malta	X-DF	TZ Mk. III Flex+	4	–	2305
Minerva Kalymnos	174,000	Koje Shipping SA	Samsung	28/02/2021	Malta	X-DF	TZ Mk. III Flex+	4	–	2304
Minerva Limnos	173,400	Roland Shipping SA	Daewoo	30/06/2021	Malta	ME-GI	TZ Mk. III Flex+	4	–	2482
Minerva Psara	173,400	Wimbledon Shipping SA	Daewoo	04/01/2021	Malta	–	GT NO 96 GW	4	–	2481
MOL Hestia	173,400	LNG Harmonia Shipping Corp	Daewoo	26/07/2021	M. Islnds	X-DF	GT NO 96 GW	4	–	2505
Mozah	266,000	Nakilat Haloul Inc.	Samsung	11/08/2009	M. Islnds	Diesel	TZ Mk. III	5	Qatargas II	1675

Mraweh	137,000	Mraweh Ltd.	STX	30/04/1996	Liberia	Steam	Moss	4	Das Island	1331
Mu Lan	174,400	Fortune Great Shipping Ltd.	Hudong Zhonghua	31/08/2021	Liberia	X-DF	GT NO 96 L03+	4	–	1827A
Mubaraz	137,000	Mubaraz Ltd.	STX	14/12/1995	Liberia	Steam	Moss	4	Das Island	1330
Murex	173,400	Teekay LNG Partners	Daewoo	18/07/2017	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2416
Murwab	210,100	J5 Nakilat No. 4 Ltd.	Daewoo	30/06/2008	M. Islnds	Diesel	GT NO 96	18	RasGas III	251
Myrina	173,400	Teekay Corp.	Daewoo	10/05/2018	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2454
Neo Energy	150,000	Sea Optima	HHI	01/01/2007	Liberia	Steam	TZ Mk. III	4	Portfolio	1754
Neptune	145,130	SRV Joint Gas Ltd.	Samsung	30/11/2009	Norway	–	TZ Mk. III	4	Portfolio	1688
New Apex	174,000	POS Maritime AF SA	Samsung	26/01/2023	Panama	X-DF	–	4	Portfolio	2426
NFE Penguin	160,000	Golar LNG	Samsung	15/09/2014	M. Islnds	–	TZ Mk. III Flex	4	Spot	2023
Nikolay Urvantsev	172,658	China Shipping Development Co.	Daewoo	31/07/2019	H.K., China	ME-GI	GT NO 96 GW	4	Yamal	2432
Nikolay Yevgenov	172,410	Teekay Corp.	Daewoo	19/04/2019	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2430
Nikolay Zubov	172,410	Arctic LNG 5 Ltd.	Daewoo	20/11/2018	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2429
Nizwa LNG	147,684	Oryx LNG Carrier	Kawasaki	19/12/2005	Panama	Steam	Moss	4	Oman LNG	1562
Nohshu Maru	180,000	Mitsui O.S.K. Lines	Mitsubishi	27/02/2019	Bahamas	Reheat Steam Turbine	Moss	4	–	2326
North Air	170,520	–	Samsung	27/09/2023	Singapore	–	Mark III Flex	4	Arctic LNG-2	2580
Northwest Sanderling	127,525	Shell Tankers Australia	Mitsubishi	01/01/1989	Australia	Steam	Moss	4	North West Shelf	1996
Northwest Sandpiper	125,042	Shell Tankers Australia	Mitsui E&S	01/01/1993	Australia	Steam	Moss	4	North West Shelf	1370
Northwest Snipe	127,500	International Gas Transportation Co., Ltd.	Mitsui E&S	01/01/1990	Australia	Steam	Moss	4	North West Shelf	1352
Northwest Stormpetrel	127,500	Shell Tankers Australia	Mitsubishi	11/12/1994	Australia	Steam	Moss	4	North West Shelf	2074
Ob River	149,700	Lance Shipping	HHI	29/05/2007	M. Islnds	Steam	TZ Mk. III	4	Sakhalin II	1719
Oceanic Breeze	155,300	"K" Line - Kawasaki Kisen Kaisha	Mitsubishi	21/04/2018	M. Islnds	Reheat Steam Turbine	Moss	4	Ichthys	2310
Onaiza	210,150	Nakilat DSME 2266 Inc.	Daewoo	30/04/2009	M. Islnds	Diesel	GT NO 96	12	Qatargas III	2266
Orion Bohemia	174,000	SNC Cantica Lease	HHI	24/11/2022	Malta	X-DF	TZ Mk. III Flex+	4	Portfolio	3187
Orion Jessica	174,000	–	HHI	23/06/2023	Malta	X-DF	–	4	Portfolio	3189
Orion Monet	174,000	Jupiter 3 Ltd	Samsung	01/04/2022	Malta	X-DF	–	4	–	2319
Orion Sea	170,852	Meridian 23 Ltd.	Samsung	04/01/2022	Malta	X-DF	–	4	–	2336
Orion Sun	174,000	Meridian 24 Ltd.	Samsung	01/07/2022	Malta	X-DF	–	4	Portfolio	2337
Ougarta	170,000	Hyproc Shipping Co.	HHI	31/03/2017	Algeria	–	TZ Mk. III Flex	4	Arzew	2814
Pacific Arcadia	145,400	Bahamas LNG Shipping	Mitsubishi	20/10/2014	Bahamas	–	Moss	4	PNG LNG	MHISB 2289
Pacific Breeze	180,000	"K" Line - Kawasaki Kisen Kaisha	Kawasaki	10/03/2018	M. Islnds	TFDE	Moss	4	Ichthys	1718
Pacific Enlighten	145,400	Pacific Hope Shipping	Mitsubishi	16/03/2009	Bahamas	Steam	Moss	4	North West Shelf	2236
Pacific Mimosa	155,300	NYK Line	Mitsubishi	31/03/2018	Japan	Reheat Steam Turbine	Moss	–	Wheatstone	2316
Pacific Notus	137,006	Pacific LNG Shipping	Mitsubishi	08/09/2003	Bahamas	Steam	Moss	5	Darwin LNG	2176
Palu LNG	159,800	Cardiff LNG	Daewoo	06/11/2014	Malta	TFDE	GT NO 96 L03	4	Spot	2400
Pan Africa	174,000	Teekay LNG Partners	Hudong Zhonghua	12/01/2019	H.K., China	TFDE	GT NO 96	4	QCLNG	1666A
Pan Americas	174,000	Teekay LNG Partners	Hudong Zhonghua	15/01/2018	H.K., China	TFDE	GT NO 96	4	QCLNG	H1664A
Pan Asia	174,000	Teekay LNG Partners	Hudong Zhonghua	22/09/2017	H.K., China	TFDE	GT NO 96	4	QCLNG	1663A
Pan Europe	174,000	Teekay LNG Partners	Hudong Zhonghua	12/07/2018	H.K., China	TFDE	GT NO 96	4	QCLNG	H1665A
Papua	170,000	Mitsui O.S.K. Lines	Hudong Zhonghua	27/11/2014	H.K., China	–	GT NO 96	4	PNG LNG	H1670A
Paris Knutsen	174,000	–	Hyundai Samho	02/10/2023	–	XDF	–	4	–	8101
Patris	174,000	Chandris Group	Daewoo	01/01/2018	Liberia	ME-GI	GT NO 96 GW	4	Freeport	2460
Pearl LNG	174,000	Cardiff LNG Delta Owning LLC	Samsung	01/08/2020	Malta	X-DF	NO-96-GW+PRS	–	Portfolio	2275
Pioneer Spirit	138,121	M & S Shipping 3 S.A.	Daewoo	29/07/2005	Singapore	Steam	GT NO 96	4	Das Island	2219
Point Fortin	154,200	Los Halillos Shipping Co.	Koyo Dockyard	12/01/2010	Panama	Steam	TZ Mk. III	4	Portfolio	2263
Portovenere	65,000	LNG Shipping S.p.A.	Sestri Ponente	21/04/1997	Singapore	Steam	GT NO 96	4	Portfolio	5910
Portovyy	138,107	Monteriggioni Inc.	Daewoo	20/08/2003	Russia	Steam	GT NO 96	4	Portfolio	2213
Prachi	162,000	India LNG Transport Company No. 4 Ltd.	HHI	30/11/2016	Singapore	Diesel/Gas-Electric	TZ Mk. III Flex	–	Gorgon	2633
Prima Concord	138,267	BG Group	Samsung	24/05/2004	Indonesia	Steam	TZ Mk. III	4	Singapore	1428
Prism Agility	180,000	SK Shipping	HHI	17/05/2019	Panama	X-DF	TZ Mk. III Flex	4	Portfolio	2937
Prism Brilliance	180,000	SK Shipping	HHI	31/05/2019	Panama	X-DF	TZ Mk. III Flex	4	Portfolio	2938
Prism Courage	176,462	Millenaire Financement 12 SASU	HHI	19/10/2021	Panama	X-DF	TZ Mk. III Flex	4	–	2939
Prism Diversity	180,000	HHIENS4 Shipholding SA	HHI	21/06/2022	Panama	X-DF	–	4	–	3145
Pskov	170,200	Sovcomflot	STX	01/09/2014	Liberia	–	GT NO 96	4	Portfolio	1911
Puteri Delima	130,400	Puteri Delima S.Bhd.	STX	12/01/1995	Malaysia	Steam	GT NO 96	4	MLNG II	30F
Puteri Delima Satu	137,100	MISC	Mitsui E&S	31/10/2002	Malaysia	Steam	GT NO 96	4	MLNG III	1506
Puteri Firus Satu	137,100	Puteri Firus S.Bhd.	Mitsubishi	23/08/2004	Malaysia	Steam	GT NO 96	4	MLNG III	2177
Puteri Intan	137,100	Puteri Intan S.Bhd.	STX	24/08/1994	Malaysia	Steam	GT NO 96	4	MLNG II	30E
Puteri Mutiara Satu	137,100	MISC	Mitsui E&S	06/04/2005	Malaysia	Steam	GT NO 96	4	MLNG III	1562
Puteri Nilam	130,400	Puteri Nilam S.Bhd.	STX	17/07/1995	Malaysia	Steam	GT NO 96	4	MLNG II	30G
Puteri Nilam Satu	137,100	Puteri Nilam S.Bhd.	Mitsubishi	30/07/2003	Malaysia	Steam	GT NO 96	4	MLNG III	2169
Puteri Zamrud	130,400	Puteri Zamrud S.Bhd.	STX	02/06/1996	Malaysia	Steam	GT NO 96	4	MLNG II	30H
Puteri Zamrud Satu	137,100	MISC	Mitsui E&S	04/02/2004	Malaysia	–	GT NO 96	4	MLNG III	1507

CARRIER FLEET

Qogir	174,000	LNGShips	Samsung	01/06/2020	Malta	X-DF	TZ Mk. III Flex	–	Portfolio	2271
Raahi	138,076	India LNG Transport Company No.2 Ltd.	Daewoo	18/10/2004	Malta	Steam	GT NO 96	4	RasGas	2211
Rasheeda	266,000	Nakilat SHI 1754 Inc.	Samsung	12/08/2010	M. Islnds	Diesel	TZ Mk. III	10	Qatargas IV	1754
Rias Baixas Knutsen	180,000	Knutsen OAS Shipping	HHI	04/09/2019	Spain	ME-GI	TZ Mk. III Flex	4	Corpus Christi	2964
Ribera del Duero Knutsen	173,400	Norspan LNG VIII AS	Daewoo	02/12/2010	Norway	–	GT NO 96	4	Portfolio	2275
Rioja Knutsen	170,000	Norspan LNG X	HHI	02/12/2016	Spain	ME-GI	TZ Mk. III Flex	4	Portfolio	2734
Rudolf Samoylovich	172,410	Teekay Corp.	Daewoo	22/08/2018	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2425
Salalah LNG	147,000	Tiwi LNG Carrier S.A.	Samsung	14/12/2005	Panama	Steam	TZ Mk. III	4	Oman LNG	1536
Santander Knutsen	174,000	Sea 194 Leasing Co Ltd.	Hyundai Samho	16/06/2022	Norway	X-DF	TZ Mk. III Flex+	4	Portfolio	8091
SCF La Perouse	174,000	Albus Shipping Ltd.	HHI	10/02/2020	Liberia	X-DF	NO-96-GW+PRS	4	Portfolio	8006
Seapeak Arctic	89,800	Artic Spirit LLC	Ishikawajima	17/12/1993	Saint Kitts & Nevis	Steam	IHI SPB	4	Atlantic LNG	3016
Seapeak Arwa	165,500	Membrane Shipping	Samsung	13/08/2008	M. Islnds	Diesel/Gas-Electric	TZ Mk. III	4	Balhaf	1625
Seapeak Catalunya	138,000	Teekay Shipping Spain S.L.	Izar	19/06/2003	Spain	Steam	GT NO 96	4	Atlantic LNG	319
Seapeak Creole	173,400	Teekay LNG Partners	Daewoo	18/02/2016	Bahamas	ME-GI	GT NO 96 GW	–	Sabine Pass	2407
Seapeak Galicia	140,624	Teekay Gas II	Daewoo	01/07/2004	Spain	Steam	GT NO 96	4	Portfolio	2209
Seapeak Glasgow	174,162	Teekay LNG Partners	Hyundai Samho	10/12/2018	Bahamas	ME-GI	TZ Mk. III Flex	–	Freeport	S856
Seapeak Hispania	145,500	Teekay Gas Naviera SL	Daewoo	21/08/2002	Spain	Steam	GT NO 96	4	Peru LNG	2205
Seapeak Madrid	138,000	Teekay Shipping Spain S.L.	Navantia	30/12/2004	Spain	Steam	GT NO 96	4	Atlantic LNG	105
Seapeak Magellan	165,500	Magellan Spirit ApS	Samsung	10/04/2009	Denmark	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	1626
Seapeak Marib	165,500	Membrane Shipping	Samsung	10/04/2008	M. Islnds	Diesel/Gas-Electric	TZ Mk. III	4	Balhaf	1608
Seapeak Meridian	165,500	Meridian Spirit Aps	Samsung	15/01/2010	Denmark	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	1633
Seapeak Methane	165,500	Malt Singapore Pvt. Ltd.	Samsung	13/02/2008	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Atlantic LNG	1607
Seapeak Oak	173,400	Teekay LNG Partners	Daewoo	03/03/2016	Bahamas	ME-GI	GT NO 96 GW	–	Sabine Pass	2408
Seapeak Polar	89,800	Polar Spirit LLC	Ishikawajima	04/06/1993	Bahamas	Steam	IHI SPB	4	Atlantic LNG	3015
Seapeak Vancouver	173,400	Teekay LNG Partners	Daewoo	02/11/2016	Bahamas	ME-GI	GT NO 96 GW	–	Portfolio	2411
Seapeak Yamal	174,000	Teekay LNG Partners	Hyundai Samho	31/01/2019	Bahamas	ME-GI	TZ Mk. III Flex	–	Freeport	S857
Seishu Maru	138,000	Mitsui O.S.K. Lines	Mitsubishi	09/09/2014	Bahamas	–	Moss	4	PNG LNG	2297
Seri Alam	145,572	MISC	Samsung	22/07/2005	Malaysia	–	TZ Mk. III	4	Bintulu	1502
Seri Amanah	145,709	MISC	Samsung	15/03/2006	Malaysia	Steam	TZ Mk. III	4	Bintulu	1503
Seri Anggun	145,731	MISC	Samsung	30/10/2006	Malaysia	Steam	TZ Mk. III	4	North West Shelf	1589
Seri Angkasa	145,130	MISC	Samsung	23/12/2006	Malaysia	Steam	TZ Mk. III	4	Bintulu	1590
Seri Ayu	145,894	MISC	Samsung	01/10/2007	Malaysia	Steam	TZ Mk. III	4	Bintulu	1591
Seri Bakti	152,944	MISC	Mitsubishi	14/04/2007	Malaysia	Steam	GT NO 96	4	Gladstone	2220
Seri Balhaf	152,000	MISC	Mitsubishi	01/01/2009	Malaysia	Steam	GT NO 96	4	Bontang	2223
Seri Balqis	152,000	MISC	Mitsubishi	02/03/2009	Malaysia	Steam	GT NO 96	4	NLNG	2224
Seri Begawan	152,900	MISC	Mitsubishi	14/11/2007	Malaysia	Steam	GT NO 96	4	Bintulu	2221
Seri Bijaksana	152,300	MISC	Mitsubishi	28/04/2008	Malaysia	Steam	GT NO 96	4	Bintulu	2222
Seri Camar	150,000	MISC	HHI	13/02/2018	Malaysia	Ultra Steam Turbine	Moss	4	Pacific Northwest	2732
Seri Camellia	159,800	MISC	HHI	30/09/2016	Malaysia	–	TZ Mk. III Flex	4	Pacific Northwest	2729
Seri Cemara	150,200	MISC	HHI	09/04/2018	Malaysia	Reheat Steam Turbine	Moss	4	Portfolio	2735
Seri Cempaka	162,000	MISC	HHI	01/08/2017	Malaysia	–	TZ Mk. III Flex	4	Pacific Northwest	2731
Seri Cenderawasih	162,000	MISC	HHI	08/02/2017	Malaysia	–	Moss	4	Pacific Northwest	2730
Seri Damai	174,000	Polaris LNG One Pte Ltd	Samsung	03/02/2023	Singapore	X-DF	Mark III Flex Plus	4	Portfolio	2364
Seri Daya	174,000	Polaris LNG Two Pte Ltd	Samsung	02/04/2023	Singapore	X-DF	Mark III Flex Plus	4	Portfolio	2365
Sestao Knutsen	136,947	Norspan LNG IV AS	Navantia Cadiz	11/10/2007	Spain	Steam	GT NO 96	4	Portfolio	331
Sevilla Knutsen	173,400	Norspan LNG VI AS	Daewoo	31/05/2010	Spain	Diesel/Gas-Electric	GT NO 96	4	Portfolio	2269
Shagra	268,000	Nakilat SHI 1751 Inc.	Samsung	23/11/2009	M. Islnds	Diesel	TZ Mk. III	10	Qatargas IV	1751
Shahamah	135,496	Shahamah Inc.	Kawasaki	01/10/1994	Liberia	Steam	Moss	5	Das Island	1438
Shandong Juniper	135,269	Shell Bermuda (Overseas) Ltd.	Mitsubishi	05/02/2004	Singapore	Steam	Moss	5	Peru LNG	2183
Shaolin	174,400	United Prosperity LNG Shipping Co Ltd	Hudong Zhonghua	31/10/2022	H.K., China	X-DF	–	4	Portfolio	H1831A
Shen Hai	147,200	Shanghai LNG Shipping Co.	Hudong Zhonghua	10/12/2012	H.K., China	Steam	GT NO 96	4	Bintulu	H1621A
Shinshu Maru	180,000	Mitsui O.S.K. Lines	Kawasaki	15/02/2019	Bahamas	DERST (aka STaGE)	Moss	4	Freeport	1734
Simaisma	145,889	Greenwell Corporation	Daewoo	24/07/2006	Greece	Steam	GT NO 96	8	RasGas II	2235
Singapore Energy	138,000	Sea Breeze Leasing	Samsung	21/02/2003	M. Islnds	Steam	TZ Mk. III	4	Portfolio	1416
SK Audace	174,000	Milestone LNG Transport	Samsung	03/08/2017	Panama	–	TZ Mk. III Flex	4	Portfolio	2080
SK Resolute	180,000	Milestone LNG Transport	Samsung	01/11/2017	Panama	X-DF	TZ Mk. III Flex	4	Ichthys	2081
SK Serenity	174,000	SK Shipping	Samsung	14/02/2018	South Korea	TFDE	KC-1	4	Sabine Pass	2153
SK Spica	174,117	SK Shipping	Samsung	12/03/2018	Panama	TFDE	KC-1	–	Sabine Pass	2154
SK Splendor	138,370	Optima Leasing	Samsung	01/05/2000	South Korea	Steam	TZ Mk. III	4	Oman LNG	1258
SK Stellar	138,375	Stellar Shipholding	Samsung	31/12/2000	South Korea	Steam	TZ Mk. III	4	RasGas I	1259
SK Summit	138,003	Omnia Enterprises	Daewoo	04/08/1999	South Korea	Steam	GT NO 96	4	RasGas I	2202
SK Sunrise	138,306	Methane Navigation S.A.	Samsung	27/08/2003	Panama	Steam	TZ Mk. III	4	RasGas II	1405
SK Supreme	138,225	SK Shipping Co Ltd	Samsung	05/02/2000	South Korea	Steam	TZ Mk. III	4	RasGas I	1207

SM Albatross	174,000	SMKLC LNG3 SA	HHI	25/07/2022	Panama	X-DF	TZ Mk. III Flex+	4	Portfolio	3185
SM Bluebird	174,000	SMKLC LNG4 SA	HHI	30/09/2022	Panama	X-DF	TZ Mk. III Flex+	4	Portfolio	3186
SM Eagle	174,000	Korea Line Corp.	Daewoo	04/05/2017	Panama	ME-GI	GT NO 96 GW	4	Sabine Pass	2449
SM Golden Eagle	174,000	–	HHI	23/08/2023	Panama	X-DF	–	4	Portfolio	3191
SM Seahawk	174,000	Korea Line Corp.	Daewoo	05/06/2017	Panama	ME-GI	GT NO 96 GW	4	Sabine Pass	2450
Sohar LNG	137,248	Energy Spring LNG Carriers	Mitsubishi	29/10/2001	Panama	Steam	Moss	5	Oman LNG	2162
Sohshu Maru	177,000	Mitsui O.S.K. Lines	Kawasaki	24/07/2019	Bahamas	DERST (aka STaGE)	Moss	4	Freeport	1735
Solaris	155,000	GasLog	Samsung	19/07/2014	Bermuda	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	2042
Sonangol Benguela	160,500	Sonangol Benguela Ltd.	Daewoo	08/12/2011	Bahamas	–	GT NO 96	4	Soyo	2282
Sonangol Etosha	160,500	Sonangol Etosha Ltd.	Daewoo	17/09/2011	Bahamas	–	GT NO 96	4	Soyo	2281
Sonangol Sambizanga	160,500	Sonangol Sambizanga Ltd.	Daewoo	10/08/2011	Bahamas	–	GT NO 96	4	Soyo	2280
Southern Cross	172,000	Mitsui O.S.K. Lines	Hudong Zhonghua	07/07/2015	H.K., China	–	GT NO 96	4	PNG LNG	H1671A
Soyo	160,276	Mint LNG I	Samsung	01/08/2011	Bahamas	–	TZ Mk. III	4	Soyo	1810
Spirit of Hela	177,000	Nefertiti LNG Shipping Co.	Hyundai Samho	05/11/2010	Bahamas	Diesel Electric	TZ Mk. III	4	PNG LNG	S324
Stena Blue Sky	145,700	Blue Sky LNG	Daewoo	01/08/2006	U.K.	Steam	GT NO 96	4	Spot	2233
Stena Clear Sky	171,800	Clear Sky LNG Shipping	Daewoo	31/05/2011	U.K.	Diesel/Gas-Electric	GT NO 96	4	Portfolio	2278
Stena Crystal Sky	171,800	Stena Drilling Cyprus	Daewoo	27/05/2011	U.K.	Diesel/Gas-Electric	GT NO 96	4	Portfolio	2268
Symphonic Breeze	145,394	Reborn Maritime	Kawasaki	14/12/2007	Bahamas	Steam	Moss	4	Portfolio	H1587
Taitar No 1	145,000	NiMic No 1 S.A.	Mitsubishi	08/10/2009	Panama	–	Moss	4	RasGas	2241
Taitar No 2	145,000	NiMic No 2 S.A.	Kawasaki	18/12/2009	Panama	–	Moss	4	RasGas	1625
Taitar No 3	145,000	NiMic No 3 S.A.	Mitsubishi	16/12/2009	Panama	–	Moss	4	RasGas	2242
Taitar No 4	147,000	NiMic No 4 S.A.	Kawasaki	04/08/2010	Panama	–	Moss	4	RasGas	1626
Tangguh Batur	145,700	LNG North-South Shipping Co.	Daewoo	15/12/2008	Singapore	Steam	GT NO 96	4	Tangguh	2242
Tangguh Foja	155,000	Ocean 1919 Shipping No. 1	Samsung	25/11/2008	Panama	–	TZ Mk. III	4	Tangguh	1619
Tangguh Hiri	155,000	Tangguh Hiri Finance Ltd.	HHI	05/12/2008	Bahamas	–	TZ Mk. III	4	Tangguh	1780
Tangguh Jaya	155,000	Ocean 1919 Shipping No. 2	Samsung	31/12/2008	Panama	–	TZ Mk. III	4	Tangguh	1620
Tangguh Palung	155,000	Ocean 1919 Shipping No. 3	Samsung	09/03/2009	Panama	–	TZ Mk. III	4	Tangguh	1634
Tangguh Sago	155,000	Teekay Shipping (Canada) Limited	Hyundai Samho	28/12/2008	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Tangguh	S298
Tangguh Towuti	145,700	LNG East-West Shipping Co.	Daewoo	15/10/2008	Singapore	Steam	GT NO 96	4	Tangguh	2241
Tembek	216,200	Overseas LNG S1 Corp.	Samsung	19/11/2007	M. Islnds	Diesel	TZ Mk. III	4	Qatargas II	1605
Tenergy	170,520	Briety Shipping Inc	HHI	21/01/2022	Greece	X-DF	TZ Mk. III	4	–	3157
Tessala	170,000	Hyproc Shipping Co.	HHI	07/02/2017	Algeria	Diesel/Gas-Electric	TZ Mk. III Flex	–	Arzew	2813
Trader II	138,000	K Line LNG Shipping (UK) Ltd	Samsung	07/11/2002	U.K.	Steam	TZ Mk. III	4	Portfolio	1380
Trader III	137,100	MISC	Mitsubishi	09/08/2002	Liberia	Steam	GT NO 96	4	MLNG III	2165
Traiano Knutsen	180,000	Hai Kuo Shipping 1901 G Ltd.	HHI	01/07/2020	Norway	ME-GI	TZ Mk. III Flex	4	–	3086
Trinity Glory	154,000	Cypress Maritime Consortium	Koyo Dockyard	26/11/2008	Panama	Steam	TZ Mk. III	4	Bontang	2260
Tristar Ruby	155,000	RBSSAF (19) Ltd.	HHI	14/04/2008	Liberia	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	1778
Umm Al Amad	210,200	J5 Nakilat No. 7 Ltd.	Daewoo	12/09/2008	M. Islnds	Diesel	GT NO 96	18	RasGas III	2253
Umm Al Ashtan	137,000	Umm Al Ashtan Ltd.	STX	29/05/1997	Liberia	Steam	Moss	4	Das Island	1333
Umm Bab	145,000	Sea Trade International Inc.	Daewoo	01/11/2005	Greece	Steam	GT NO 96	4	RasGas II	2228
Umm Slal	266,000	Nakilat Umm Slal Inc.	Samsung	26/11/2008	M. Islnds	–	TZ Mk. III	5	Qatargas II	1676
Valencia Knutsen	173,400	Norspan LNG VII AS	Daewoo	30/09/2010	Spain	–	GT NO 96	4	Portfolio	2274
Velikiy Novgorod	170,200	Sovcomflot	STX	20/12/2013	Liberia	–	GT NO 96	4	Portfolio	1910
Vivit Americas LNG	174,000	Cardiff LNG Zeta Owning LLC	HHI	17/10/2020	Malta	X-DF	TZ Mk. III Flex	–	Portfolio	3037
Vivit Arabia LNG	174,000	Kaiser 2 SA	Hyundai Samho	10/06/2022	Liberia	X-DF	TZ Mk. III Flex	4	Portfolio	8026
Vivit City LNG	174,103	Kaiser SA	Hyundai Samho	06/12/2021	Liberia	X-DF	TZ Mk. III Flex	4	Portfolio	8025
Vladimir Rusanov	174,000	Mitsui O.S.K. Lines	Daewoo	01/01/2018	H.K., China	ME-GI	GT NO 96 GW	4	Yamal	2424
Vladimir Vize	172,000	China Shipping Development Co.	Daewoo	30/09/2018	H.K., China	ME-GI	GT NO 96 GW	4	Yamal	2426
Vladimir Voronin	172,652	Teekay Corp.	Daewoo	19/07/2019	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2431
WilForce	155,900	Wilforce LLC	Daewoo	18/09/2013	Malta	–	GT NO 96	4	–	H2289
WilPride	155,900	Wilpride LLC	Daewoo	29/11/2013	Malta	–	GT NO 96	4	–	H2290
Woodside Chaney	174,000	Maran Gas Maritime	Daewoo	02/07/2019	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2457
Woodside Charles Allen	173,400	Hai Kuo Shipping 2027G Ltd.	Daewoo	31/10/2020	Greece	ME-GI	GT NO 96 GW	–	–	2486
Woodside Donaldson	165,500	Malt Singapore Pvt. Ltd.	Samsung	19/10/2009	Singapore	Diesel/Gas-Electric	TZ Mk. III	4	Pluto	1632
Woodside Goode	159,800	Armour Company Ltd.	Daewoo	04/11/2013	Greece	Diesel Electric	GT NO 96 GW	4	RasGas	H2295
Woodside Rees Withers	173,400	Maran Gas Maritime	Daewoo	01/10/2019	Greece	ME-GI	GT NO 96 GW	4	–	2466
Woodside Rogers	159,800	Margie Seaway Corp.	Daewoo	01/07/2013	Greece	Diesel/Gas-Electric	GT NO 96 GW	4	Pluto	H2288
Wudang	174,400	United Glory LNG Shipping Co Ltd	Hudong Zhonghua	07/10/2022	H.K., China	X-DF	–	4	Portfolio	H1832A
Yakov Gakkel	172,658	DSME Hull No.2434 LLC	Daewoo	12/11/2019	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2434
Yari LNG	159,800	Cardiff LNG	Daewoo	03/11/2014	Malta	TFDE	GT NO 96 L03	4	Spot	2401
Yenisei River	155,000	Navajo Marine	HHI	31/07/2013	M. Islnds	–	TZ Mk. III	4	Yamal	2556
Yiannis	169,932	Onerato Marine SA	Daewoo	29/09/2021	Greece	ME-GI	GT NO 96 GW	4	–	2501
YK Sovereign	127,125	SK Shipping	HHI	01/12/1994	South Korea	Steam	Moss	4	MLNG	761
Zarga	268,000	Nakilat SHI 1752 Inc.	Samsung	23/01/2010	M. Islnds	–	TZ Mk. III	5	Qatargas IV	1752
Zekreet	137,482	Mitsui O.S.K. Lines	Mitsui E&S	01/12/1998	M. Islnds	Steam	Moss	5	Qatargas I	1432

Fleet – LNG Bunkering

Name	Built	Capacity	Registered Owner	Builder	Flag	Engine Type	Cargo System	No. of tanks	Project
Seagas	Sep-74	170	Linde Gas AB	Havyard Leirvik	Sweden	Diesel	Cylinder	1	Stockholm Viking Line
Coral Methane	Apr-09	7,551	Coral Methane Shipping BV	AVIC Dingheng	Netherlands	Gas-Diesel	Cylinder	4	Portfolio
Oizmendi	Jul-09	600	Itsas Gas Bunker Supply SL	Astilleros Zamakona	Spain	Diesel	Cylinder	2	Huelva
Green Zeebrugge	Feb-17	5,000	LNG Link Investment AS	Hanjin Heavy Industries	Belgium	Diesel/Gas-Electric	Cylinder	2	Zeebrugge
Cardissa	Jun-17	6,500	Shell Western LNG BV	STX	Netherlands	Diesel/Gas-Electric	Cylinder	1	Portfolio
Coralius	Aug-17	5,800	Sirius Veder Gas AB	Bodewes Shipyards	Sweden	DFDE	Cylinder	4	Portfolio
Kairos	Oct-18	7,500	Uranos Vermögensverwaltung	Hyundai Mipo	Cyprus	Gas-Diesel	Type C	4	Portfolio
Bunker Breeze	Oct-18	6,050	Molucas Naviera AIE	Astilleros Zamakona	Spain	Gas-Diesel	Cylinder	4	Algeciras
LNG London	Apr-19	3,000	LNG Shipping S.A.	Severnav S.A.	Belgium	LNGPac	Cylinder	6	ARA
SM Jeju LNG 1	Sep-19	7,500	Jeju LNG 1 S.A.	Samsung	Panama	Diesel/Gas-Electric	KC-1	1	Portfolio
SM Jeju LNG 2	Jan-20	7,500	Jeju LNG 2 S.A.	Samsung	Panama	Diesel/Gas-Electric	KC-1	1	Portfolio
Gas Agility	Apr-20	18,600	Emerald Green Maritime Ltd.	Hudong Zhonghua	Malta	DFDE	TZ Mk III Flex	2	Rotterdam
Kaguya	Sep-20	3,469	Central LNG Shipping Japan	Kawasaki	Japan	Gas-Diesel	Cylinder	1	JERA TPS
Avenir Advantage	Oct-20	7,500	Avenir L Pte Ltd.	Keppel Nantong	Malta	Gas-Diesel	Type C	2	Portfolio
Avenir Accolade	Nov-20	7,500	Stolt-Nielsen Gas Ltd.	Keppel Nantong	Malta	Gas-Diesel	Type C	2	Portfolio
FueLNG Bellina	Nov-20	7,500	FueLNG Pte Ltd.	Kappel Nantong	Singapore	Diesel/Gas-Electric	Cylinder	2	Portfolio
Dalian No. 1	Dec-20	8,330	Xinao Marine Shipping Co. Ltd.	Dalian Yard	China	Gas-Diesel	Cylinder	2	Portfolio
Marine Vicky	Jan-20	9,900	Sinanju Tankers Pte. Ltd.	Keppel Nantong	Singapore	Gas-Diesel	TBC	TBC	Portfolio
Imperial Gas 92	Oct-17	3,800	Imperial Logistics International BV & Co. KG	Centromost	Germany	Diesel	Cylinder	TBC	Portfolio
Imperial Gas 93	Nov-17	3,800	Imperial Logistics International BV & Co. KG	Centromost	Germany	Diesel	Cylinder	TBC	Portfolio

Fleet – Small-scale/Multipurpose

Name	Built	Capacity	Registered Owner	Builder	Flag	Engine Type	Cargo System	No. of tanks	Project
Akebono Maru	Jun-11	3,500	Chuo Kaiun K.K.	Higaki	Japan	Diesel	Cylinders	2	Japan coastal trade
Aman Sendai	May-97	18,928	Asia LNG Transport	NKK	Malaysia	Steam	TZ Mk. III	3	Malaysia LNG
Coral Acropora	Dec-12	6,573	Coral Acropora Shipping	AVIC Dingheng	Netherlands	Gas-Diesel	Cylinders	4	Portfolio
Coral Actinia	Jan-13	6,573	Coral Actinia Shipping	AVIC Dingheng	Netherlands	Gas-Diesel	Cylinders	4	Portfolio
Coral Alicia	Dec-12	6,573	Coral Alicia Shipping	AVIC Dingheng	Netherlands	Gas-Diesel	Cylinders	4	Portfolio
Coral Anthelia	May-13	6,500	Coral Anthelia Shipping	AVIC Dingheng	Netherlands	Gas-Diesel	Cylinders	4	Portfolio
Coral Energice	Feb-18	18,000	Anthony Veder Chartering	Neptun Werft	Netherlands	Gas-Diesel	TZ MK. III Flex	2	Portfolio
Coral Energy	Dec-12	15,600	Anthony Veder Rederijzaken	Meyer Werft	Netherlands	Gas-Diesel	IMO Type C	3	Portfolio
Coral Favia	Jul-10	10,000	Somargas II Pvt. Ltd.	Wuzhou Shipbuilding	Singapore	Diesel	Cylinders	2	Baltic portfolio
Coral Fraseri	Jan-10	10,000	Innovation Shipping Co.	Wuzhou Shipbuilding	Singapore	Diesel	Cylinders	2	Portfolio
Coral Fungia	Jan-11	10,000	Somargas II Pvt. Ltd.	Wuzhou Shipbuilding	Singapore	Diesel	Cylinders	2	Baltic portfolio
Coral Furcata	Nov-11	10,000	Conception Shipping Company	Wuzhou Shipbuilding	Singapore	Diesel	Cylinders	2	Portfolio
Hai Yang Shi You 301	Apr-15	30,000	COSL	Jiangnan Shipyard	China	Gas-Diesel	Membrane	4	Hainan LNG shuttle
Kakurei Maru	Nov-08	2,536	Tsurumi Sunmarine Co.	Higaki	Japan	Diesel	Cylinders	2	Japan coastal trade
Kakuyu Maru	Nov-13	2,538	Tsurumi Sunmarine Co.	Kawasaki	Japan	Diesel	Cylinders	1	Japan coastal trade
Lucia Ambition	Dec-93	18,927	Asia LNG Transport	NKK	Malaysia	Steam	TZ Mk. III	3	Malaysia-Hainan
North Pioneer	Nov-05	2,500	Japan Liquid & Gas Transport Co. & Japan Railway Agency	Shin Kurushima	Japan	Diesel	Cylinders	2	Japan coastal trade
Pioneer Knutsen	Mar-04	1,100	Knutsen Kyst LNG K/S	Bijlsma Lemmer B.V. Scheepswerf	Norway	LNG-Diesel	Cylinders	2	Norway coastal trade
Ravenna Knutsen	Feb-21	30,000	Norspan LNG 14 AS	Hyundai Mipo	Spain	X-DF	Cylinders	3	Italy coastal trade
Seoul Gas	Jul-98	4,365	Chemgas Schifffahrts GmbH & Co. mt Oste KG	Severnav Shipbuilding	Liberia	Diesel	Cylinders	2	S. Korea-China
Shinju Maru No. 1	Aug-03	2,538	JRTT & NS United Coastal Tankers	Kawasaki	Japan	Diesel	Cylinders	2	Japan coastal trade
Shinju Maru No. 2	Oct-08	2,536	Chuo Kaiun K.K.	Higaki	Japan	Diesel	Cylinders	2	Japan coastal trade
Sun Arrows	Sep-07	19,531	Maple LNG Transport Inc.	Kawasaki	Bahamas	Diesel	Moss	3	Malaysia LNG
Surya Aki	Feb-96	19,538	MCGC International Limited & Hiroshima Gas Co.	Kawasaki	Bahamas	Steam	Moss	3	Thanlyin LNG
Triputra	Dec-00	23,097	Nusantara Shipping	NKK	Indonesia	Steam	TZ Mk. III	3	Pertamina Portfolio
Unikum Spirit	Jun-11	12,000	DHJS Hull No.2007-001 LLC	AVIC Dingheng	Singapore	Diesel	Cylinders	2	Kuantan
Vision Spirit	Sep-11	12,000	I.M. Skaugen Marine Services	AVIC Dingheng	Singapore	Diesel	Cylinders	2	Portfolio

Any observations, additions or suggested revisions to the LNG journal World LNG Carrier Fleet list should be sent to editor@lngjournal.com

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