LNG journal
The World's Leading LNG publication

44 pages essential LNG news!

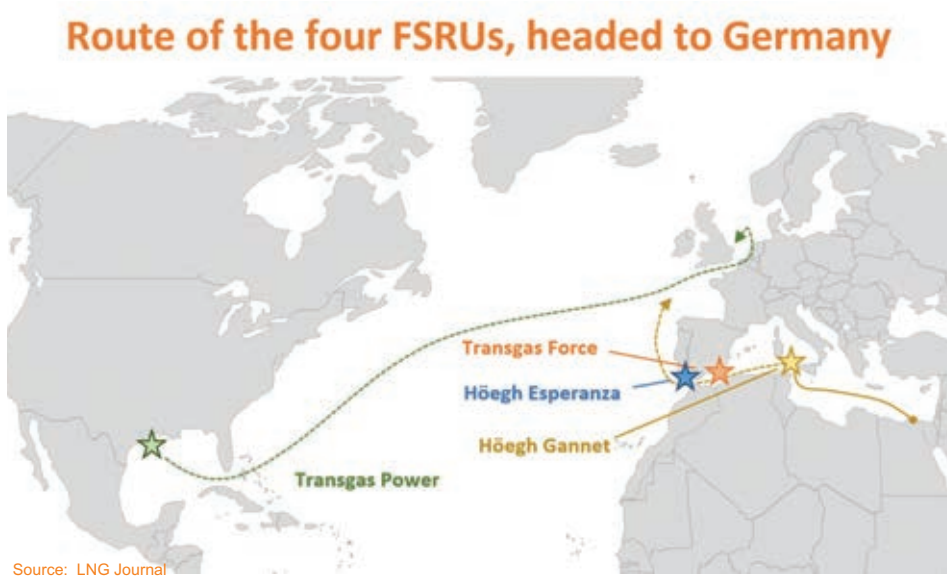
October 2022

In this issue:

The race is on to import first LNG to Germany

Uniper and rival RWE are embroiled in a race as to who will be first in importing LNG to Germany. Starting from December 23, Uniper's chartered floating storage and regas unit (FSRU) at Wilhelmshaven is meant to be ready to take deliveries, while Gasunie helps RWE build a pipeline from its FRSU to Brunsbüttel aiming for the first tanker to land and discharge before the New Year; our Markets Editor Anja Karl finds.

Bringing LNG directly to northern Germany, rather than having to import it e.g. via the Dutch Gate terminal, will help compensate for the missing gas from Russia. Hard-pressed to swiftly source alternative supply, Uniper chartered two FSRUs from Dynagas – the Transgas Force and the Transgas Power – while RWE turned to Höegh to charter two similar-sized FSRUs. All four are due to arrive shortly.



Mapping the chartered FSRUs

Putting these FSRUs on a map, our LNG Journal ship-tracker shows the Transgas Power is currently carrying a 0.08 million tonnes (mmt) cargo from Sabine Pass to southeast England's Isle of Grain. Its estimated arrival is on October 5. The Transgas Force, in contrast, is waiting off Cadiz and at Algeciras in Spain since the beginning of August (see map).

RWE's two chartered FSRUs are understood to be Höegh Gannet and Höegh Esperanza. The former is still controlled by Trafigura but it has a new, undisclosed charter starting from December 1, whilst the latter has reportedly been chartered by RWE since April.

Our ship-tracker shows Höegh Esperanza is waiting off Cadiz since mid-August whilst the Höegh Gannet is carrying a 0.08mmt cargo from Damietta in Egypt to an undisclosed European destination. This might well be Germany, as cargoes from Damietta tend to be sold into the spot market, where both Uniper and RWE are vying to secure cargoes.

All four FSRUs are expected to arrive fully laden at Wilhelmshaven and Brunsbüttel, respectively, because the terminals will need a commissioning cargo to cool down. The vessels are purpose-built FSRUs and modern, so they should be able to cycle through their commissioning cargoes, i.e. use cold LNG to cool down onshore fixtures and re-liquefy warmed up gas and boil-off onboard to reinject it into the system.

First cargo likely from the US

The United States is widely expected to be source of the first LNG shipment to Germany, but cargoes from merchant liquefaction plants like Damietta and others (e.g. Angola LNG) could also end up winning the race. As could any re-routed spot cargo in the Atlantic Basin, as German buyers have their eyes peeled at securing more supply and are frequently forced to accept expensive prices.

In terms of volumes, RWE's two floating regas terminals were charted from Höegh of Norway and can each receive up to 170,000 cubic meters (cbm). Combined, the two FSRUs can make up to 14 billion cubic meters (bcm) available to the German gas market – more than the throughput of a land-based regas terminal of between 8 and 10 bcm per year, RWE underlined, vowing the ships will be "ready for operation this winter."

Uniper's two chartered FSRU's, meanwhile, have a gas-send-out capacity of up to 7.5 bcm per year each as well as an LNG storage capacity of 174,000 cbm. The combined capacity is equivalent to about 30 percent of Russian gas imports into Germany, Uniper claimed, with all two FSRUs due to be fully operational in early 2023 – if not earlier. The new pipeline, built to connect the FSRUs offshore Wilhelmshaven with the port and further with the gas entry point at Etzel, will initially have a capacity of 10 bcm but will be expanded to carry up to 28 bcm in the medium-term. That way, the pipeline could also carry regasified LNG from third-party owned FSRUs in the future.

Struggle to secure firm deliveries

Analysts at Enerdata are more cautious as for timings and volumes in the absence of firm delivery contracts. They reckon Germany will, for starters, merely be able to receive up to 12.5 bcm of LNG a year, about 13 percent of the country's 2021 gas consumption. Uniper committed to purchase 35 percent of the "required gas volumes," while RWE and EnBW/VNG

LNG journal

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Subscription

Print & online **£825/€930/US$1210**

Online only **£755/€835/US$1095**

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www.lngjournal.com
hotline +44 (0)20 7253 2700

Printed by The Manson Group Ltd
Reynolds House, 8 Porters' Wood
Valley Road Industrial Estate
St Albans, Hertz AL3 6PZ, U.K.

said they would contribute 35 percent and 30 percent, respectively. Niek den Hollander, Uniper's Chief Commercial Officer, told press these were "firm delivery commitments" and binding contracts are meant to be signed over the coming weeks.

Investors hope the €30 billion bailout and nationalisation of Uniper will help Germany's largest gas importer to quickly replace large junks of the missing supply from Russia. But talks with Qatargas about possible LNG deliveries have not born fruit yet and sourcing LNG from Canada is deemed unlikely in the near-term future, so high hopes are placed on shipments from the US.

Australia's Woodside also committed to deliver up to 12 cargoes per year, equating around 0.8 mtpa of LNG, from its global portfolio. Shipments will start in January 2023 and are contracted to run through to 2039. Asked about the price for buying super-chilled gas all the way from Australia, Uniper declined to comment though it said it is working on long-term capacity bookings into northwest Europe for deliveries from September 2031. Further out, LNG cargoes will likely come at a much cheaper price than the ones shipped this winter.

Shell secures most slots at Brunsbüttel

Global LNG portfolio players like Shell are keen to get direct access to the German gas market, where demand has gone through the roof following Gazprom's halt in long-term pipeline supplies. Acting quickly, Shell made a long-term booking of a "substantial part" of the LNG import capacity at Brunsbüttel, though talks with German LNG Terminal GmbH are still ongoing on scope and duration of the partnership. Fabian Ziegler, managing director of Shell in Germany, called the MoU with German LNG Terminal a "key step in contributing to security of supply in Germany" and suggested the terminal "should be convertible to hydrogen or thereof such as ammonia."

The Dutch TSO Gasunie is helping to advance RWE's venture by building a 54-kilometre pipeline from the FSRU to the town of Brunsbüttel in Schleswig-Holstein. Officially named German LNG Terminal, the Brunsbüttel venture is being developed at a cost of €450 million by Gasunie and the infrastructure firms Vopak and Oiltanking.

"From a technical viewpoint, we can start building the pipeline immediately," said Jens Schumann, managing director of Gasunie Deutschland. All permits are in place hence pipe-laying works for the ETL 180 gas pipeline from Brunsbüttel to Hetlingen and further to the FSRU offshore, are due to begin in the coming weeks.

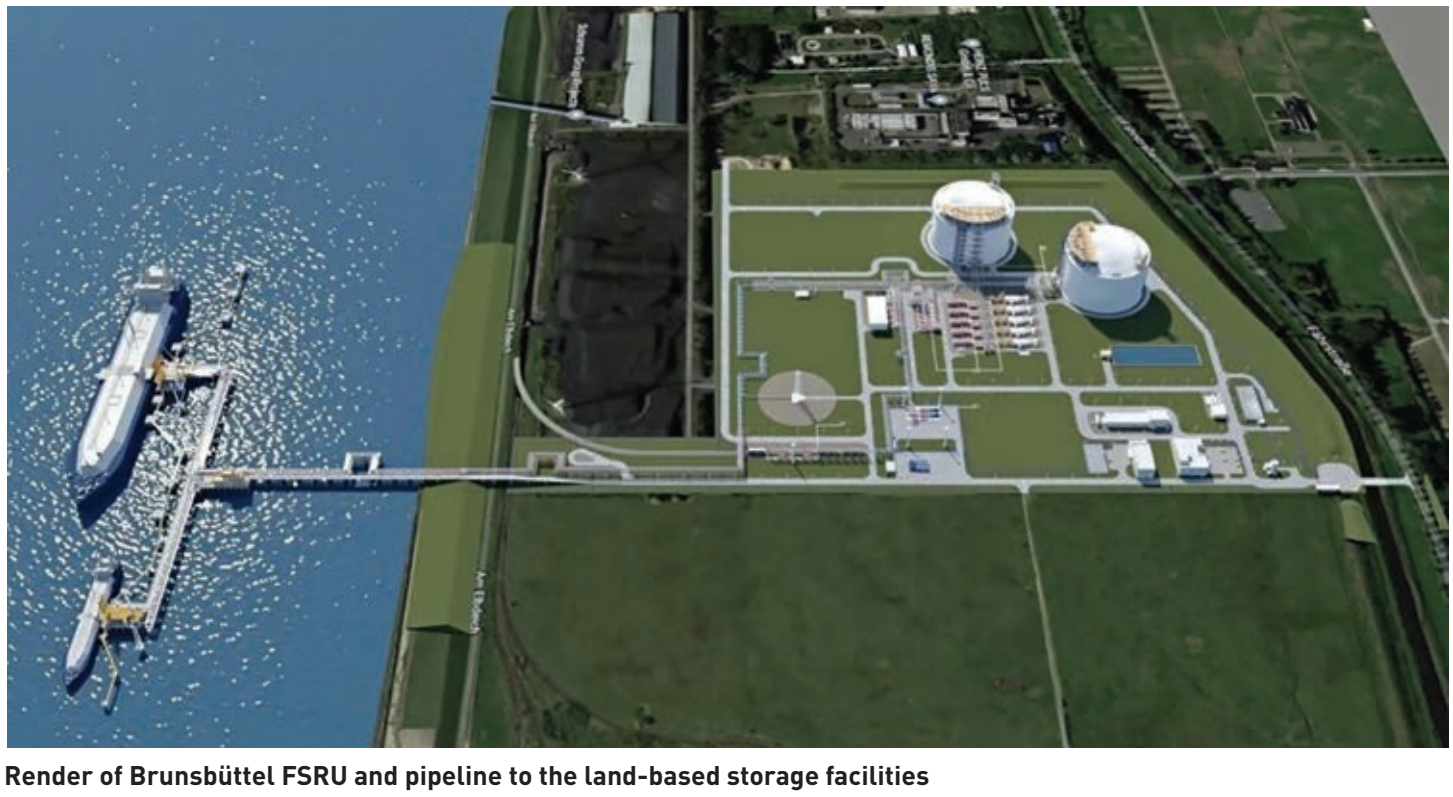
Fitch Germany Gas Balance Forecast

(bcm)	2020	2021	2022	2023
Demand	-86.5	-90.5	-81.5	-77.4
Domestic production	4.5	4.5	4.5	4.5
Import:				
Russia	56.3	45.0	17.0	0.0
Norway	31.2	31.2	34.3	34.3
Netherlands	13.0	13.0	16.9	19.4
Other	1.6	1.6	1.6	1.6
LNG	0.0	0.0	0.6	17.3
Total import	102.1	90.8	70.4	72.7
Other	-25.2	-9.0	0.0	0.0
(Call on)/addition to storage	-5.1	-4.2	-6.5	-0.2
Year-end storage balance	16.3	12.1	5.6	5.4

Source: Fitch Ratings, BP Statistical Review of World Energy, Gas Infrastructure Europe

LNG will lessen, not bridge the supply gap

First LNG shipments to Germany, awaited just before Christmas, will lessen the country's supply shortage – but not solve it. "We cannot un-imagine the problem," Jörg Kukies, states secretary for EU Affairs said, referring to Germany's and Eastern Europe's enormous dependency on Russian gas. Come October, the EU's action plan will be put to the test. The Commission has urged EU member states to reduce their gas consumption by 15 to 20 percent between August 1 and March 31 but Fitch



Render of Brunsbüttel FSRU and pipeline to the land-based storage facilities

Rating warned this will only suffice if Russian gas flows remain at around 20 percent pipeline capacity unit Year End. Voluntary cuts in gas consumption are "a soft way," analysts noted, but industrial gas demand has not been adjusted downwards sufficiently.

"Maximising LNG imports and lowering gas demand by at least 15 percent can bridge the supply gap."

– Fitch Rating

Fitch Rating reckons 'demand destruction' will be vital to keep Europe's gas markets well-balanced assuming Gazprom will stop deliveries from 2023. Maximising LNG imports and lowering gas demand by at least 15 percent can bridge the supply gap, analysts say, anticipating LNG imports will have to rise to about 120 billion cubic meters (bcm) this year and further to 155 bcm in 2023.

The exposure of EU member states to Russian gas varies substantially: "Countries with high gas consumption and limited existing supply diversification, such as Germany, will have little room for error as they execute on the procurement of additional imports while paring back demand for Russian gas," Fitch Rating said, warming any mandated gas supply cuts "will weigh on the Eurozone economy and its corporates."

The European Commission proposed to set the inframarginal revenue cap at €180 per Megawatt-hour (MWh) which is meant to allow electric power producers to cover their investment and operating costs. The measure will be reviewed by February 28, and could run through to March 31, the Commissions' President Ursula von der Leyen said, suggesting total revenues of Europe's utilities above the cap could amount up to €117 billion.

Imposing demand-side response measures, the EU also calls on member states to lower electricity consumption by at least 10 percent until 31 March 2023 – in return for financial compensation. "Reducing demand at peak times would lead to a reduction of gas consumption by 1.2 bcm over the winter," the Commission calculated.

In Europe and the US, inflation is eating away savings and impact industry's profit margins. Gas-based power generators are squeezed by "extreme fuel prices and volatility," Fitch Rating commented, welcoming steps by EU energy regulators to impose price caps. "Supply of natural gas is becoming loss-making where importers did not hedge prudently," analysts said, warning about a "material increase of bad debt" that could herald a wave of bankruptcies. Germany's largest gas importer Uniper nearly collapsed on its debt and has just been nationalised in a historic deal under a $30 billion deal.

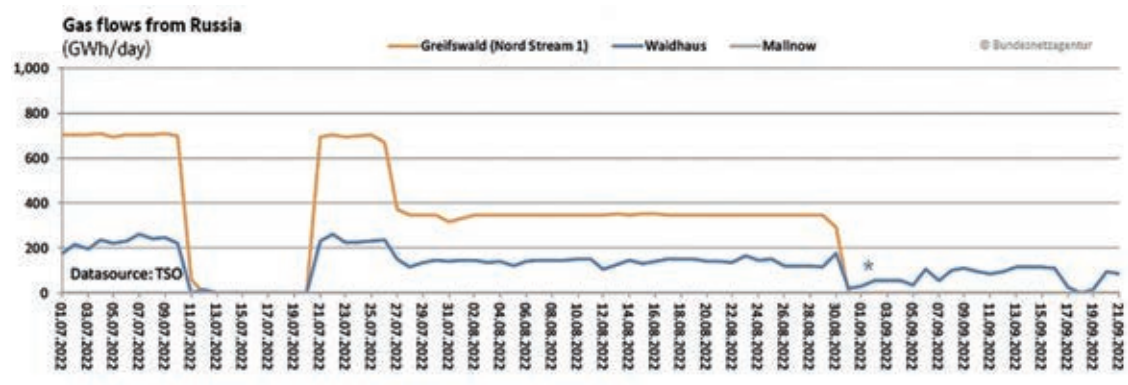
Risk of recession looms large

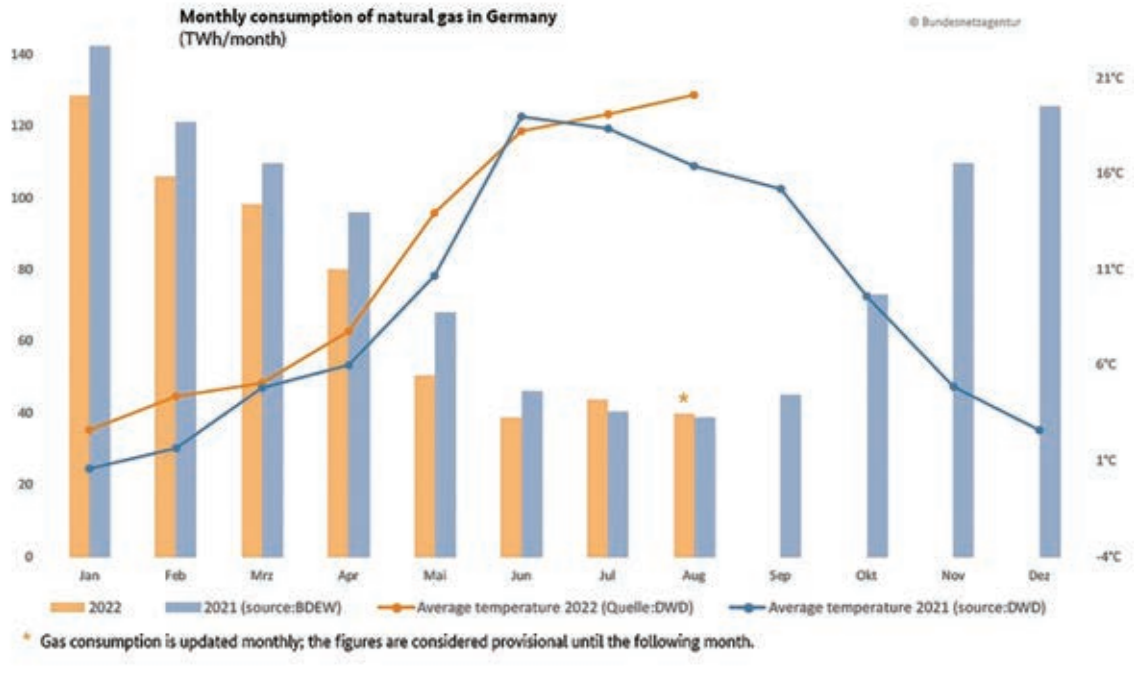
Risks are skewed to the downside and bridging the supply gas is difficult, to say the least: "Unless the world economy plunges into a protracted recession, it is likely that market tightness will continue in the near future. This is despite the increase in investment over the past 18 months as major gas developments will only come on stream after 2025," said Mohamed Hamel, secretary general of the Gas Exporting Countries Forum (GECF).

Considering the sheer size of Russia's former gas exports to Europe it is impossible to fully re-direct sufficient volumes from other markets in the short term. The resulting supply gap is huge, despite production increases in many regions. Sanctions against Russia over the war in Ukraine, and cuts in gas deliveries in retaliation have made the EU shift from being the 'market of last resort for LNG deliveries' to becoming the 'preferred destination.'

Adverse effects of the gas crunch are being felt worldwide. Developing countries, notably in South Asia, face "immense difficulties in acquiring LNG cargos," Hamel said, stressing: "This situation is creating havoc on their economies and affecting people's standard of living."

But the supply crunch may even worsen in case of colder than normal weather in the Northern hemisphere, which would require extremely high prices or even physical curtailments in gas supply to balance the market. Hub-based gas prices have already hit record highs, making power generators scramble to source alternative fuel source ahead of the winter season, more often than not with little success. ■





Unintended consequences signal higher risk to Europe's LNG supply

Portugal faces higher risk of an LNG supply gap due to production issues whilst Germany's takeover of Gazprom assets is causing unintended disruption elsewhere, our Markets Editor Alexander Wilk writes.

The Portuguese government has been contemplating its LNG supply ahead of winter. The country's environment and energy minister Duarte Cordeiro said at a CNN Portugal-hosted conference that his country could face LNG supply problems should Nigeria not deliver all contracted volumes. In his commentary, Cordeiro implied that any supply shortfall from Nigeria would upset Portugal's energy plans for the upcoming winter.

Cordeiro did not specify what would prevent Nigeria from meeting its contractual obligations to supply LNG to the Sines terminal, Portugal's main access point to the global LNG market. Nevertheless, his comments stand in contrast to the recent assurances by his ministerial colleague João Galamba – secretary of state for energy – that cheap Nigerian gas will continue to find its way to Portugal because long-term supply agreements were still in place. His assurance came before he embarked on a visit to Nigeria in relation to LNG supply security at the beginning of September. Notably, Portuguese market commentator Helena Matos, columnist for current affairs journal *Observador*, has pointed out that the prevailing tight market may well incentivise LNG supply normally earmarked for Portugal to be diverted to other, more lucrative destinations. The prevailing high-price environment would then compensate for any contractual penalties.

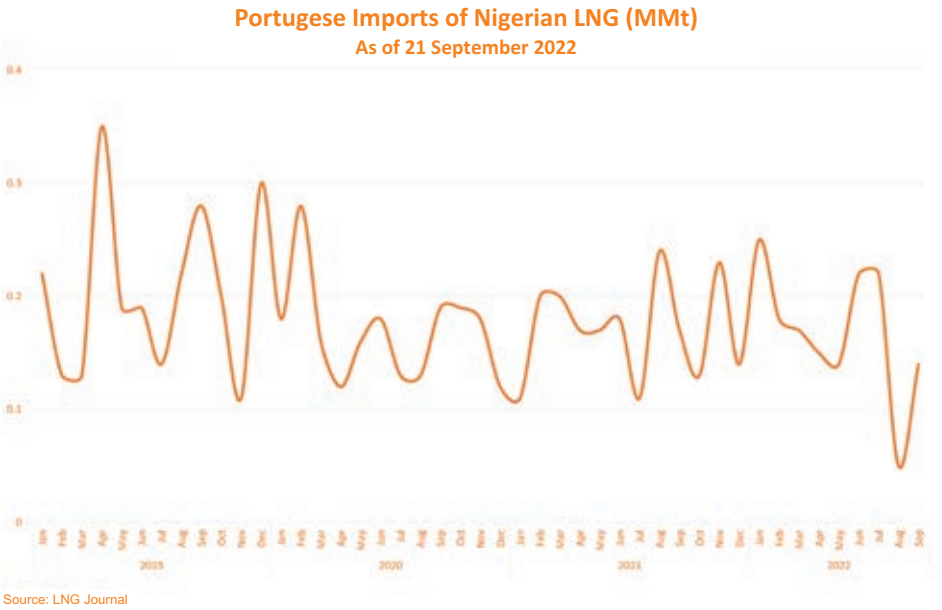
Nigerian production issues

Alongside supply risk stemming from hard-nosed business practices, our data show Nigeria's LNG exports have been on a downward trend since the end of 2019. NLNG, the operator of the 22 million tonnes per annum (mtpa) Bonny Island LNG plant, has been struggling to prevent vandalism to both its onshore and offshore facilities, including feedgas pipelines. A considerable amount of Nigerian crude oil is stolen each year by drilling into pipelines and sold on the black market, during the process of which gas infrastructure may be damaged or shut down as a security precaution. According to our data and calculations, capacity utilisation at Bonny Island LNG stood at 48 percent in August, down 20pp from 68 percent in July, which suggests considerable feedgas issues.

Expiring contracts

Moreover, Portugal's LNG champion Galp Energia has LNG supply contracts with NLNG amounting to 2.41mtpa, according to our database. But two of these contracts totalling 0.99mtpa are due to expire in 2022. At the time of writing, we have not yet seen signs that these contracts would be replaced for 2023.

Notably, Nigeria has been Portugal's main LNG supplier. Portugal imported 2.13mmt of LNG from Nigeria last year, according to our data. The country's other suppliers comprised the United States (31 percent), Russia (14 percent) and Qatar (6 percent), our data show.



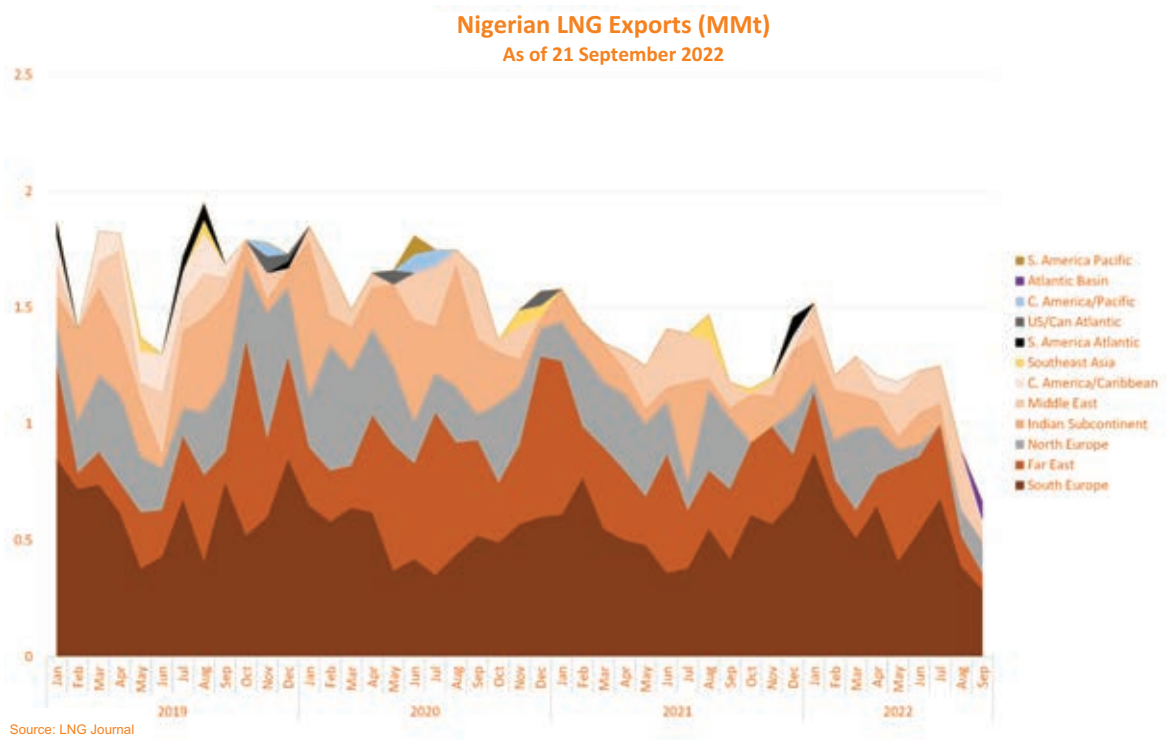
Source: LNG Journal

Expensive portfolio diversification

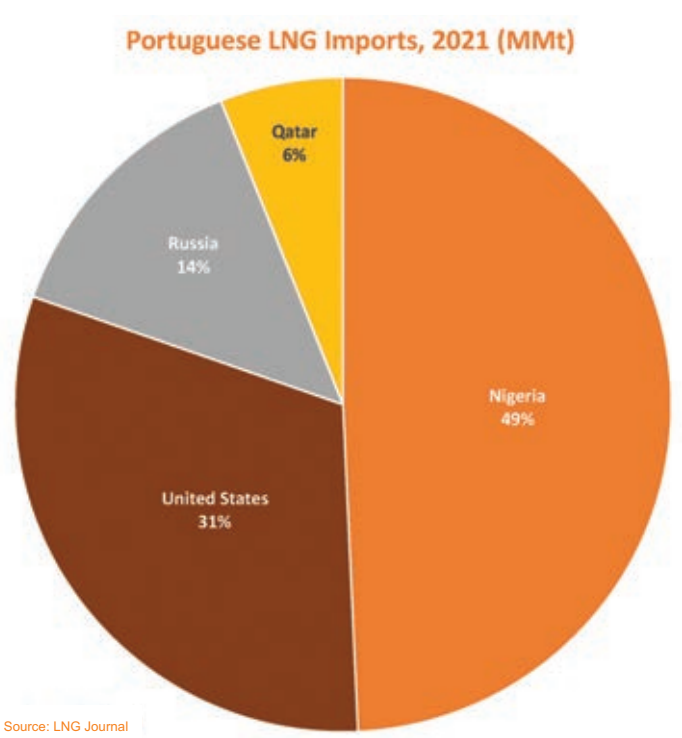
Whilst Cordeiro highlighted his country is diversifying its LNG supply portfolio to increase the country's energy security alongside strategies to lower gas consumption and maintain momentum in growing energy production from renewables, he admitted that "Portugal has been preparing, like the rest of Europe, for a difficult winter". The minister further urged the European Commission to press ahead with the establishment of its proposed Energy Purchase Platform to achieve better import prices.

An analysis of our data shows Portugal has had success in diversifying its LNG supply portfolio this year to date compared to last year. The roster of suppliers expanded to Equatorial Guinea and Trinidad and Tobago, which together have already compensated for a reduction in Nigerian imports. However, we are estimating that much of that supply was procured on the spot market and thus at considerably higher prices than Nigerian supply. The two additional sources of supply have also not managed to compensate for the lack of Qatari LNG shipments and a sharp decline in Russian exports to Portugal.

Although the outage at the Freeport LNG plant in the United States did not affect Portugal's LNG supply directly since its main US sources are Corpus Christi LNG and Sabine Pass LNG, its current market absence and prospects of only partial return by the end of this year



Source: LNG Journal



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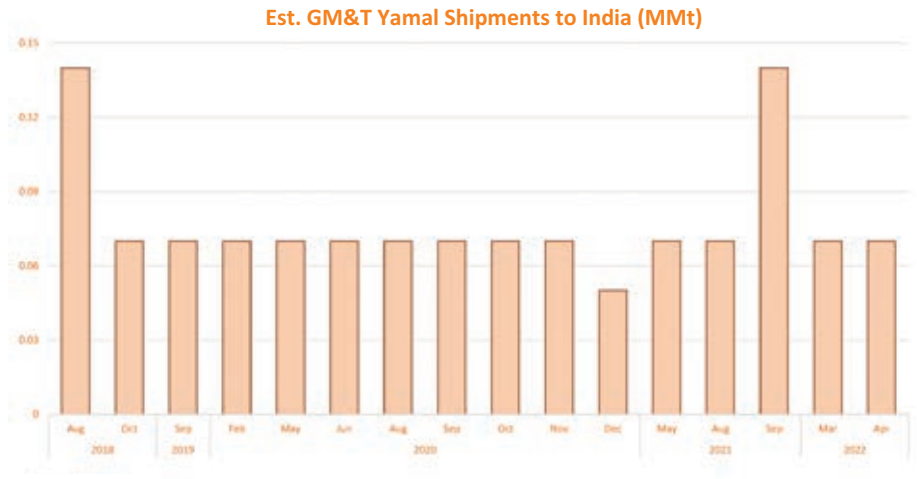
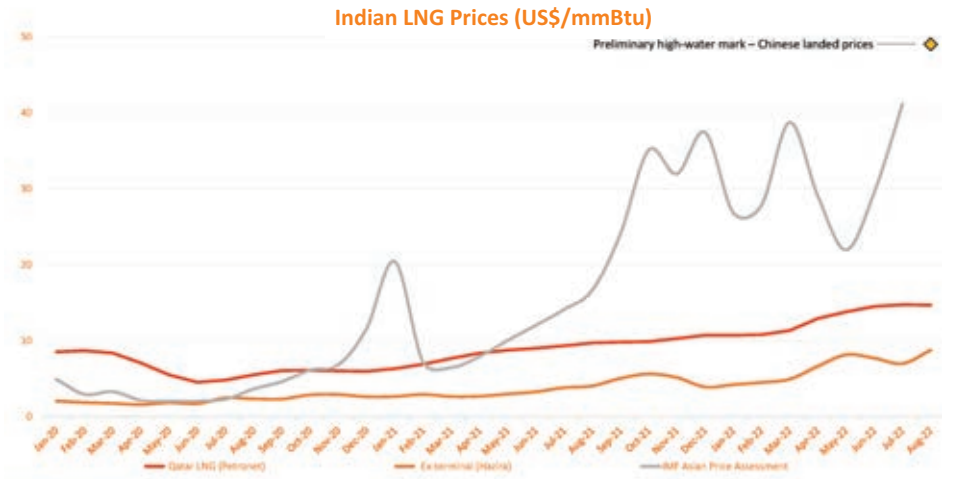


Source: LNG Journal



Source: LNG Journal calculations, MCX, IMF, Chinese Customs

is adding further pressure on global supply capacities.

In this broader context, and without naming Germany, Cordeiro highlighted the additional risk of NLNG not adhering to its contractual obligations as several countries were now looking for alternatives to Russian gas. The minister said that while the Nigerian government had given Lisbon assurances that it would do so, "there is a risk of it not complying".

Germany taking control of cargoes

Ironically, it is one of Portugal's fellow EU Member States – Germany – that has likely been practicing what Portuguese commentator Helena Matos fears may happen to important parts of Portugal's Nigerian supply as the German state now effectively occupies positions both on the demand and supply side following its takeover of Gazprom assets in Germany.

Germany's new control of available LNG cargoes has begun to make an unintended but noticeable impact on the global LNG market. The Singaporean subsidiary of Gazprom Marketing & Trading (GM&T) has already missed five scheduled LNG deliveries to GAIL, India's premier LNG aggregator and operator of the country's largest pipeline network, according to reports by Bloomberg and Reuters.

Contracts in peril

GM&T has been denied access to its contracted supply from Yamal LNG – amounting to 2.90mtpa – after the German government appointed the Bundesnetzagentur, an independent German regulatory authority, as fiduciary for GM&T's parent Gazprom Germania GmbH (now renamed to Securing Energy For Europe, or SEFE) in early April. GAIL, meanwhile, has a long-term contract with GM&T for roughly 40 LNG cargoes per year until 2038, to be supplied from GM&T's global portfolio, according to our LNG contract database.

Emergency measures

Originally, the Bundesnetzagentur was to remain in control of SEFE as trustee with 'full directorial powers' only until the end of September. Germany's Federal Ministry for Economic Affairs and Climate Action initially justified the move with SEFE's attempt to transfer 'the company's shares to a company based abroad' without regulatory approval. However, with an impending gas crunch, the German government decided in June to extend that trusteeship 'beyond September 2022' for reasons of energy security. Apart from owning GM&T, SEFE is also instrumental to the wider German gas economy, owning operating stakes in 'large natural gas storage facilities in Germany and Austria' and two 'German transmission system operators', according to a notice issued by the Bundesnetzagentur.

Supply gap

The missed cargoes are likely to be problematic since GAIL will have baked them into its own supply schedule as well as booked slots at terminals. It now needs to find replacements in an exceptionally tight market. The shortfall thus highlights an unintended consequence of Germany trying to disengage from Russian gas supply and possibly, on occasion, pursuing an aggressive LNG procurement strategy of its own.

Our data suggest GM&T shipments of Yamal gas to India stopped in April, which coincides with the German government taking control of GM&T and Russia's subsequent banning of cargo liftings by the company from Yamal LNG. As a result, India's own gas bill is likely to increase considerably this winter. GAIL bought several cargoes for delivery between October and November, but these will not be delivered because German state-controlled GM&T has opted to pay contractual penalties instead of delivering them.

GM&T initially said it will endeavour to plug the gap with cargoes from non-Russian producers but given current market conditions this may prove difficult. At the time of writing, our data pointed to only one such replacement being made via the LNG carrier Amur River from Das Island LNG in the UAE in August. Concurrently, our data show that the GM&T-controlled LNG carriers Energy Integrity and Ob River have switched their usual destinations from India and the wider Pacific to European terminals, including Zeebrugge, Dunkerque Le Clipton and Barcelona, starting in August. This suggests their cargoes were sold on to benefit from higher-margin spot deliveries. A split delivery by the Energy Integrity to Zeebrugge and Dunkerque Le Clipton may thus well have ended, at least in part, in German gas storage via the TENP pipeline.

Bloomberg reported GAIL has begun seeking new long-term supply it can sign on immediately to replace the 2.0mmt it lost. However, not least because of the outage of Freeport LNG and with winter in the Northern Hemisphere fast approaching, that is likely going to prove to be equally difficult.

Expensive replacement

Traders speaking to Bloomberg said GAIL bought three spot cargoes in mid-September. According to prevailing LNG prices in Asia, these cargoes are likely to be the most expensive delivered to India to date. Chinese customs data of landed LNG prices in China as well as Asian price data published by the International Monetary Fund (IMF) suggest GAIL paid considerably more than $40/mmBtu. In contrast, our calculations of Brent-linked LNG from Qatar delivered under a long-term contract with Petronet, another important Indian LNG importer, show long-term prices are roughly a third of spot prices.

A presentation by GAIL noted that city gas is now available across roughly 88 percent of Indian territory. Apart from supplying city gas, GAIL also owns 166 gas filling stations for cars and trucks. Overall, India has more than 4,000 such filling stations. The looming supply reduction by GM&T thus comes at an inopportune time as India's minister of petroleum and natural gas Hardeep Singh Puri has called for steady supply of gas-powered vehicles as part of India's strategy to have net zero emissions by 2070.

Whilst GAIL finance director Rakesh Kumar Jain said last month that the failed GM&T deliveries only affected around 15 percent of India's gas supplies, he noted that GAIL was concerned about securing gas supplies in the long-term.

Concluding thoughts

The rather aggressive LNG trading strategy by German state-controlled GM&T, even at the expense of contractual obligations elsewhere, shows the swiftness with which LNG supplies previously thought secure can disappear from buyers' long-term portfolios as high spot prices incentivise cargo cancellations. It also means that, whilst he has not pointed to an imminent threat to supply, concerns expressed by Portugal's Duarte Cordeiro cannot easily be dismissed. This is especially so since our data also point to ongoing LNG production issues at Bonny Island. Cordeiro thus highlighted the current fragility of global LNG supply at the CNN Portugal conference in September. Moreover, it is this fragility that will make it difficult even for established importers such as GAIL to quickly replace lost cargoes economically. Both Germany and Portugal, in their own way, can thus be seen to deal with an imminent risk of the LNG market heating up further in the coming weeks – Germany by redirecting supply and paying penalties when it must and Portugal by preparing for LNG supply shortages precisely because of such practices. ■

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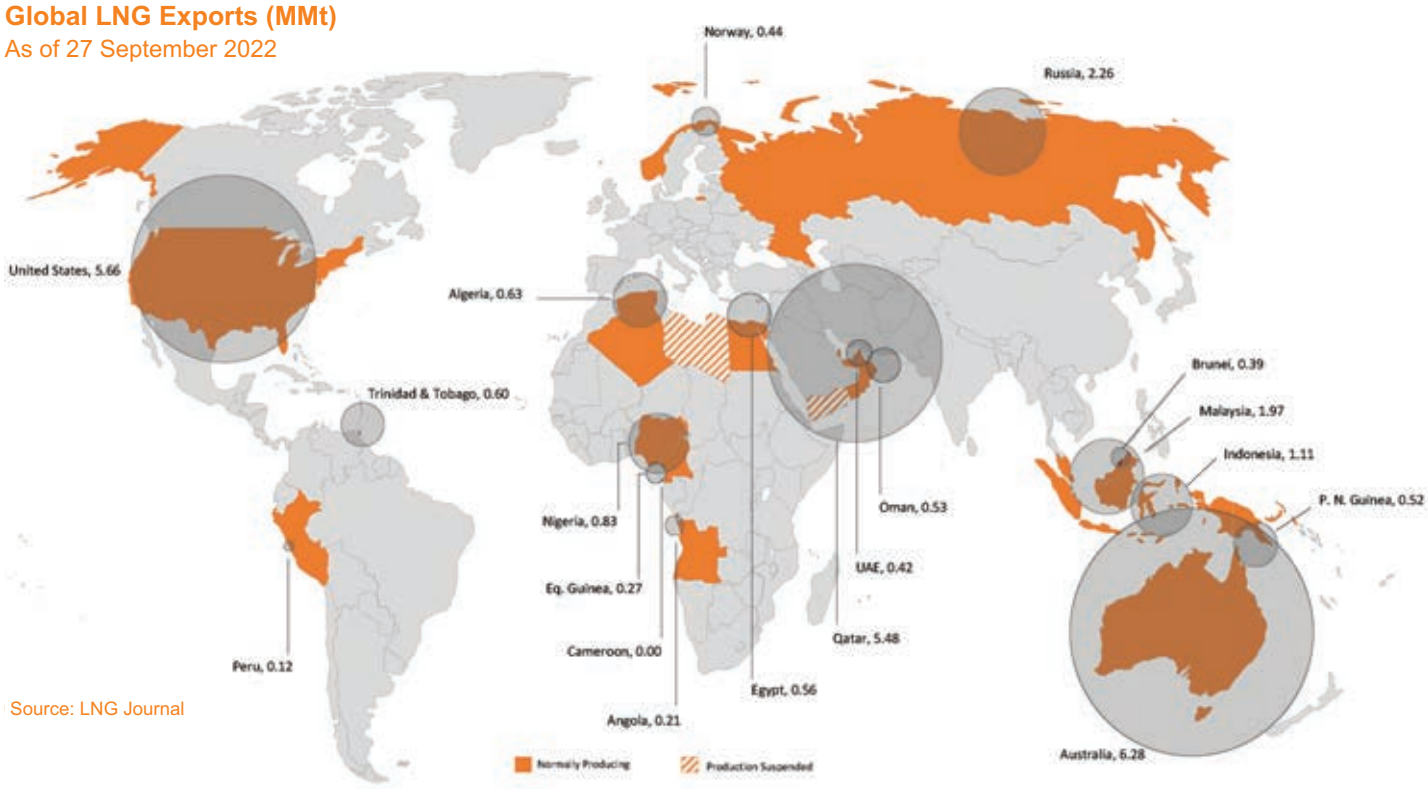
September trade likely to end the month on a high note

Our preliminary September data highlight significant export growth whilst also pointing to weak demand in the Far East, our Markets Editor Alexander Wilk reports.

At the time of writing on 27 September, our data showed global LNG trade had grown robustly period-on-period. The shipped amount of 28.28mmt represented net growth of 1.74mmt (7 percent) from the 26.54mmt shipped by 27 August. Accordingly, we also recorded year-on-year growth of 1.00mmt (4 percent) over the 27.28mmt seen by 27 September 2021. The improvement in September performance was due to an export boost in Australia, helped by the market re-appearance of Shell's Prelude FLNG barge. Additionally, Egypt's Damietta and Idku plants lifted Middle Eastern exports whilst high demand for gas from Russia's Yamal LNG in China and the start-up of Portovaya LNG underpinned export growth in the Atlantic.

Meanwhile, there was negative global net demand growth despite an increase in imports among some key European importers and broadly steady regional demand in the Middle East on account of Pakistan. These offtakes were overshadowed by a significant demand reduction in the Far East.

Global LNG Exports (MMt)
As of 27 September 2022

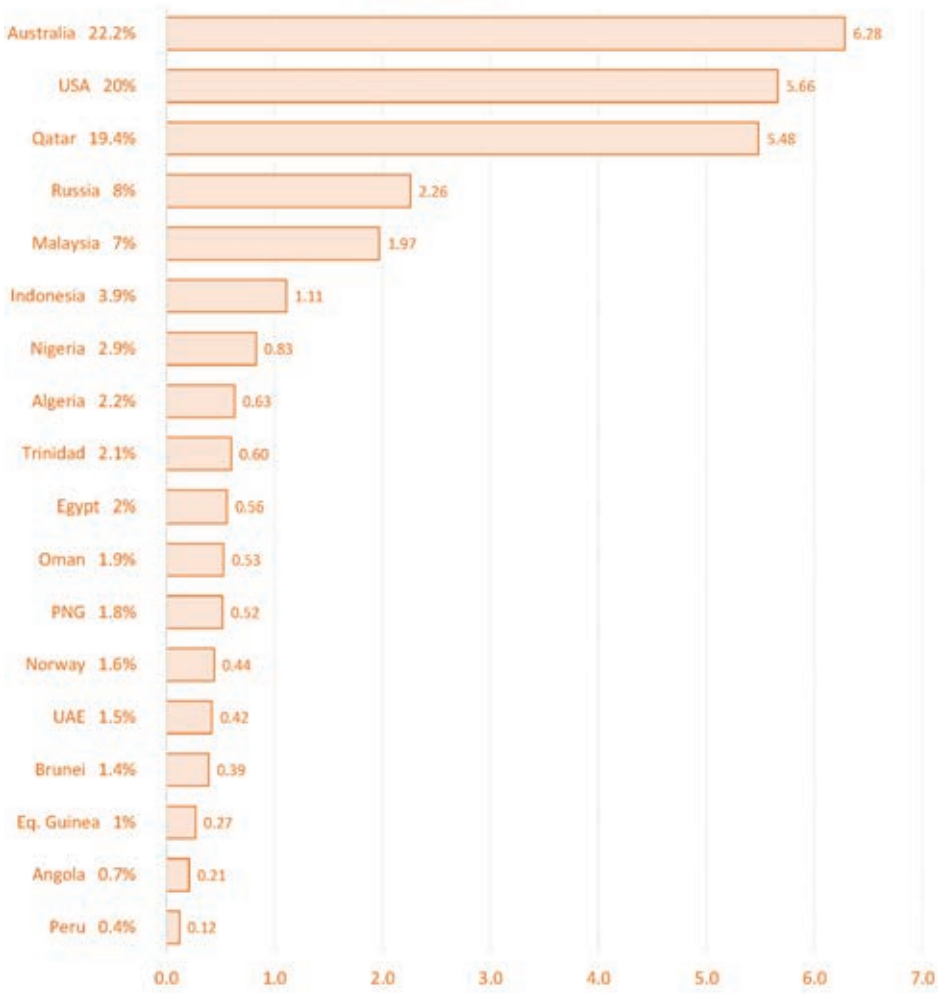


Source: LNG Journal

Exports

At the time of writing on 27 September, 28.28mmt of global exports for the month to date represented an increase of 1.74mmt (7 percent) from 26.54mmt for the equivalent period in August. Pacific Basin shipments were up by 0.86mmt (8 percent) to 11.13mmt whilst Atlantic Basin exports saw growth of 0.54mmt (6 percent) to 10.16mmt in September to date. Middle Eastern shipments equally showed period-on-period growth, albeit at a more modest rate with an increase of 0.34mmt (5 percent) to 6.99mmt.

Market Share & LNG Exports by Country (MMt)
As of 27 September 2022



Source: LNG Journal

Pacific Basin

Our September data showed Pacific exports reached 11.13mmt, coming in above its equivalent August volume of 10.27mmt by 0.86mmt (8 percent). Consequently, annualised capacity utilisation stood at 83 percent at the time of writing.

Australia

The Basin's most significant exporter by installed capacity – Australia – increased exports by 0.75mmt (14 percent) from 5.53mmt as of 27 August to 6.28mmt as of 27 September. Most significantly, Ichthys LNG continued to ramp up production to 0.62mmt after it had been offline in July. In August, the plant's production stood at 0.28mmt. Australia Pacific LNG increased exports by 0.34mmt (61 percent) to 0.71mmt from 0.44mmt in August, which meant the plant again produced close to annualised nameplate capacity. Concurrently, there were export increases totalling 0.27mmt at NWS LNG, Pluto LNG, Wheatstone LNG and Darwin LNG. For NWS LNG, a robust export increase of 0.15mmt (13 percent) to 1.32mmt meant the plant had again produced close to nameplate capacity at the time of writing. Although more modest in volume terms, the 0.06mmt (17 percent) and 0.03mmt (4 percent) increases to 0.53mmt and 0.86mmt for Pluto LNG and Wheatstone LNG, respectively, equally pegged their utilisation at close to or above nameplate capacity. For Darwin LNG, meanwhile, the relatively minor increase in volume terms of 0.03mmt (75 percent) still left the plant's production considerably below annualised capacity at only 26 percent utilisation. These increments, however, were tempered by several significant decreases totalling 0.29mmt at Queensland Curtis LNG, Gorgon LNG and Gladstone LNG, which exported 0.53mmt, 1.22mmt and 0.37mmt, respectively, in September.

Shell's Prelude FLNG barge, meanwhile, had reappeared in the market with two shipments amounting to 0.16mmt at the time of writing. Shell stopped operations on the barge in July due to industrial action. Annualised utilisation for the floating LNG plant thus stood at 50 percent.

Southeast Asia

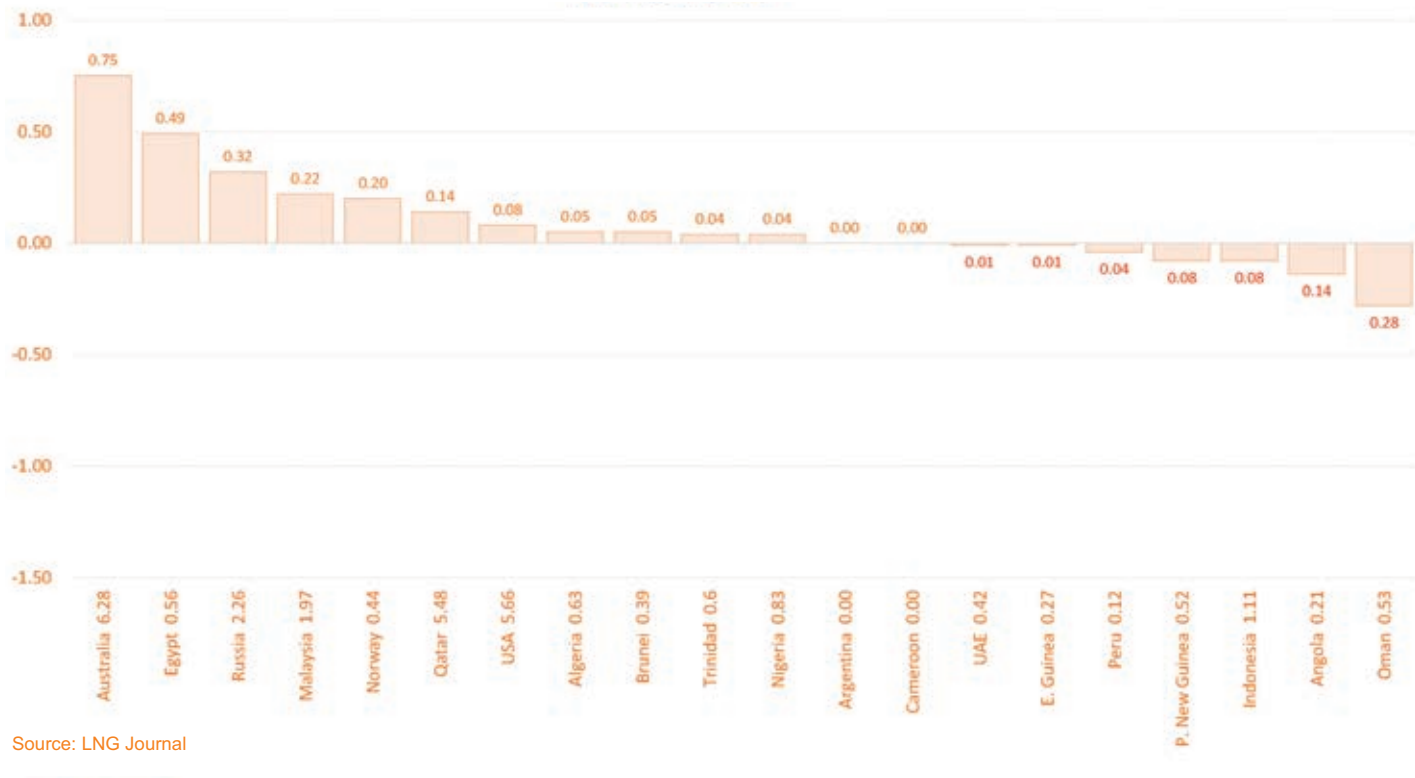
North of Australia, Papua New Guinea's PNG LNG saw shipments decrease period-on-period by 0.08mmt (-13 percent) to 0.52mmt in September compared to 0.60mmt in August. PNG LNG gained market share in China, but which was overshadowed by fewer exports to Japan at the time of writing. At 92 percent, however, the plant continued to operate not far from nameplate capacity, our calculations showed at the time of writing.

In neighbouring Indonesia, the amount of LNG shipped had also decreased by 0.08mmt (-7 percent) to 1.11mmt at the time of writing in September from the 1.19mmt recorded as of 27 August. Notably, the Tangguh plant had increased output by 0.06mmt (11 percent) to 0.59mmt, having exported 0.53mmt in August. The Bontang plant, meanwhile, decreased shipped LNG volumes by 0.09mmt (-20 percent) to 0.36mmt in September alongside a significant drop in exports from Donggi-Senoro LNG. The plant saw a period-on-period decrease of 0.05mmt (-24 percent) in September, shipping 0.16mmt instead of the 0.21mmt seen as of 27 August.

In contrast, Malaysia saw a significant increase in monthly shipments, which was led by a 0.21mmt (14 percent) production growth spurt at Malaysia LNG. The plant's shipments stood at 1.76mmt on 27 September compared to 1.55mmt on 27 August. At the same time, PFLNG Satu and Dua offshore facilities maintained their August production in September, shipping 0.05mmt and 0.14mmt, respectively.

Brunei, meanwhile, also increased LNG exports in September by 0.05mmt (15 percent) to 0.39mmt from 0.34mmt in August.

Incremental LNG Exports by Country (MMt)
As of 27 September 2022



Source: LNG Journal

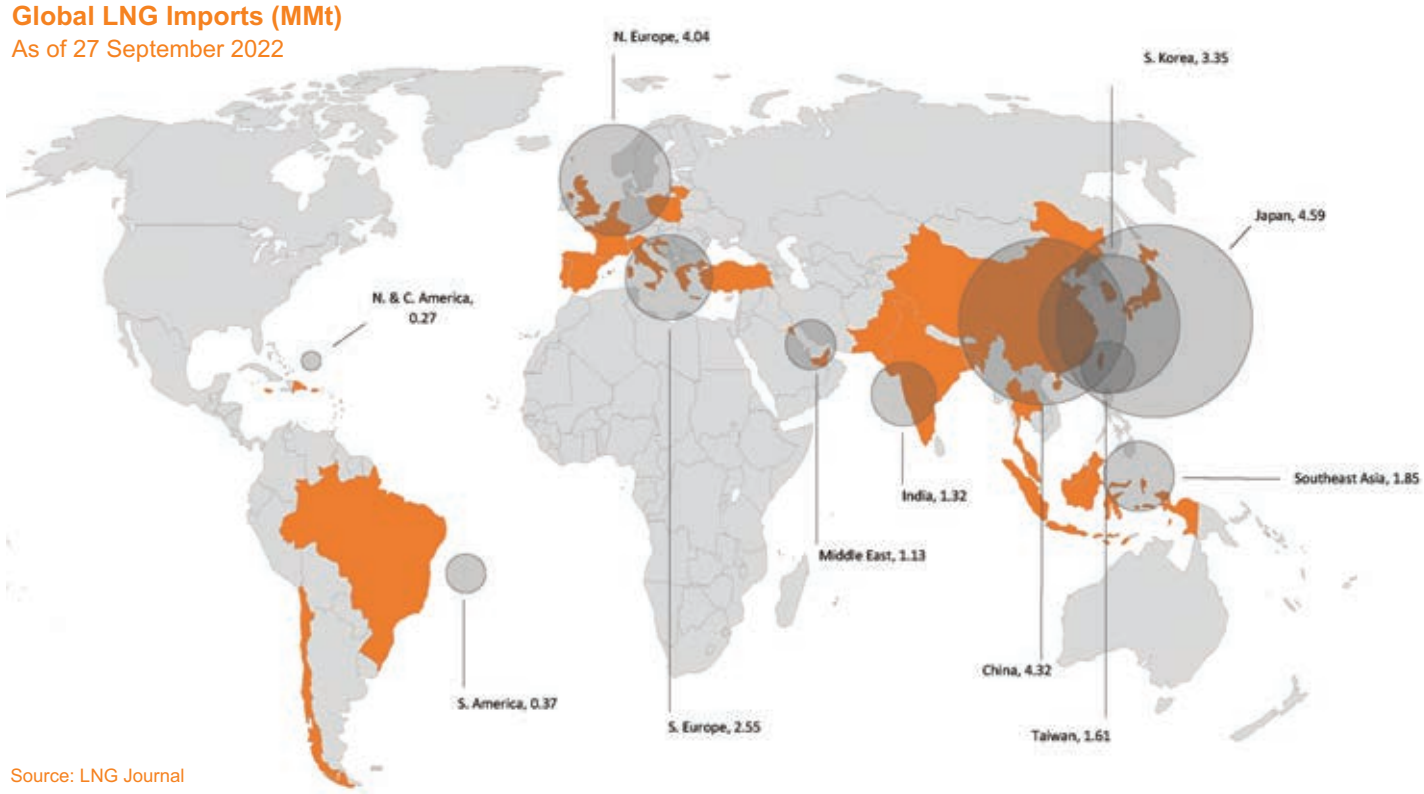
Russia & Peru

Elsewhere in the Pacific, Russia's Sakhalin-2 LNG grew LNG exports by 0.04mmt (6 percent). The plant's shipments amounted to 0.74mmt in September compared to 0.70mmt in August. September's performance benefitted from gains in market share in China and Japan. These gains were only tempered by a lack of exports to South Korea and Taiwan. Nevertheless, Sakhalin-2 LNG continued to operate close to nameplate capacity, with annualised utilisation at 93 percent. Meanwhile, Peru's Pampa Melchorita plant was only sporadically seen in the market in September. The country is still struggling with a domestic gas supply crunch since July, which has impacted available volumes for export. Accordingly, exports of 0.12mmt as of 27 September were 0.04mmt (-25 percent) below the 0.16mmt recorded on 27 August. The plant typically exports between 0.30mmt and 0.40mmt per month, our data showed at the time of writing.

Atlantic Basin

In line with the Pacific, the Atlantic Basin's overall shipped LNG had also increased by 27 September, with growth reaching 0.54mmt (6 percent) period-on-period to 10.16mmt in September from 9.62mmt in August. This translated into annualised export capacity utilisation of 67 percent for the Basin.

Global LNG Imports (MMt)
As of 27 September 2022



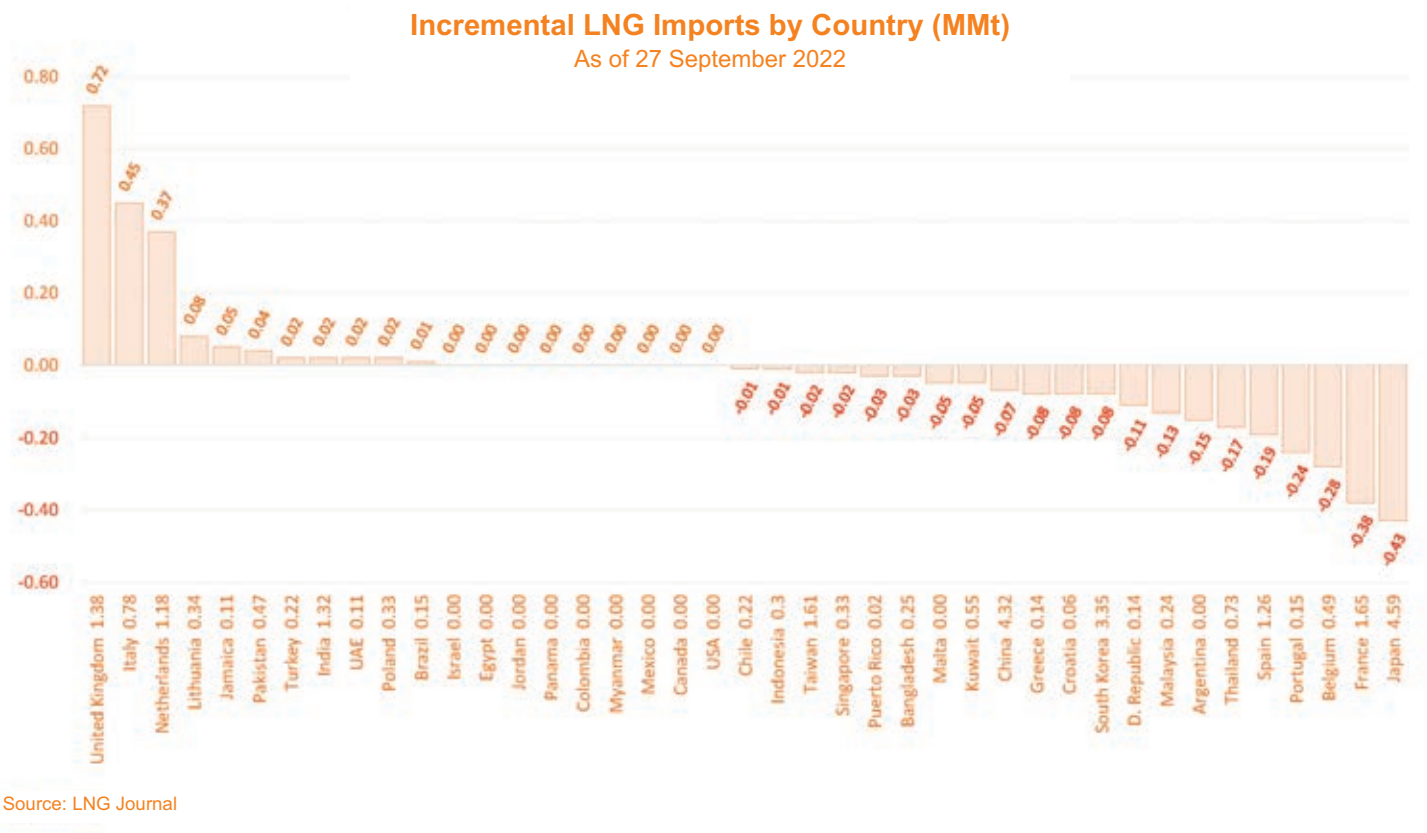
Source: LNG Journal

North Africa & Europe

In line with export growth in the Atlantic Basin, the amount of LNG shipped from within the north-eastern part of the Atlantic Basin – comprising the EEA, Russia and North Africa (and not including re-exports) – increased by 0.38mmt (18 percent) to 2.44mmt as of 27 September compared to 2.06mmt as of 27 August. Accordingly, Snøhvit LNG in Norway shipped 0.44mmt in September compared to exports of 0.24mmt in August, an increase of 0.20mmt (83 percent). Atlantic Basin export levels also benefitted from an increase of 0.05mmt (9 percent) to 0.63mmt from Algeria's Arzew and Skikda LNG plants. However, growth was led by Russia's Yamal LNG, which had increased exports by 0.21mmt (17 percent) to 1.45mmt from 1.24mmt in August. The plant thus continued to produce above nameplate capacity. Yamal LNG flows into Europe remained significant and saw a net increase of 0.18mmt due to significantly higher offtakes in France. Meanwhile, the plant's exports to China via the Northern Sea Route were up by 0.11mmt period-on-period to 0.62mmt. Russia's LNG export growth from its Atlantic Basin capacity was also supported by the first commercial cargo shipment from Portovaya LNG, which was headed for the Pacific via Suez at the time of writing. Notably, Portovaya uses feedgas formerly earmarked for Nord Stream 2.

West Africa

Meanwhile, West African exports were down by 0.04mmt (-3 percent) at the time of writing even as the region's customer



Source: LNG Journal

base diversified. Nigeria maintained period-on-period export growth, although shipments out of Bonny Island had only seen a modest uptick of 0.04mmt (5 percent) to 0.83mmt at the time of writing. However, Angola had decreased exports by 0.07mmt after it had exported 0.35mmt of LNG in August. West African LNG shipment growth was also overshadowed by Equatorial Guinea decreasing loaded volumes by 0.01mmt (-4 percent) to 0.27mmt whilst Cameroon's FLNG facility had not been seen in the market at the time of writing. Overall, West African exporters gained significant market share in Europe, but which could not quite compensate for a continued period-on-period reduction in exports to Asia and the Middle East.

Americas

Exports from the United States grew by 0.15mmt to 5.73mmt at the time of writing in September compared to 5.58mmt for the equivalent period in August. Calcasieu Pass LNG continued its production ramp-up to 0.75mmt, which meant the plant had increased shipments by 0.35mmt in the first 27 days of September. The plant's capacity utilisation this stood at 90 percent. Elba Island LNG also boosted exports by 0.20mmt (143 percent) to 0.34mmt, which pegged its utilisation at 163 percent. However, export growth was still held back due to the protracted shutdown of Freeport LNG. In addition, Corpus Christi LNG curtailed shipments by 0.27mmt (-22 percent) from 1.22mmt in August to 0.95mmt in September as of the time of writing. Concurrently, Sabine Pass LNG reduced exports by 0.11mmt (-5 percent) to 2.22mmt, whilst still maintaining output at above nameplate capacity. Moreover, Cameron LNG decreased exports by 0.09mmt (-8 percent) to 1.02mmt whilst Cove Point LNG kept exports merely steady at 0.38mmt as of the time of writing.

In South America, Atlantic LNG in Trinidad & Tobago saw exports increase by 0.04mmt (7 percent) to 0.60mmt as of 27 September from the 0.56mmt we recorded by 27 August. Atlantic LNG shipments continued their focus on Europe whilst also increasing shipments to the Far East.

Middle East

In line with higher period-on-period Pacific and Atlantic Basin exports, shipments from Middle Eastern plants had also increased as of the time of writing on 27 September. The region's exports grew by 0.34mmt (5 percent) from 6.65mmt in August to 6.99mmt in September. Accordingly, our data showed the Basin's overall utilisation of operational export capacity (i.e., excluding Yemen) at 80 percent on 27 September.

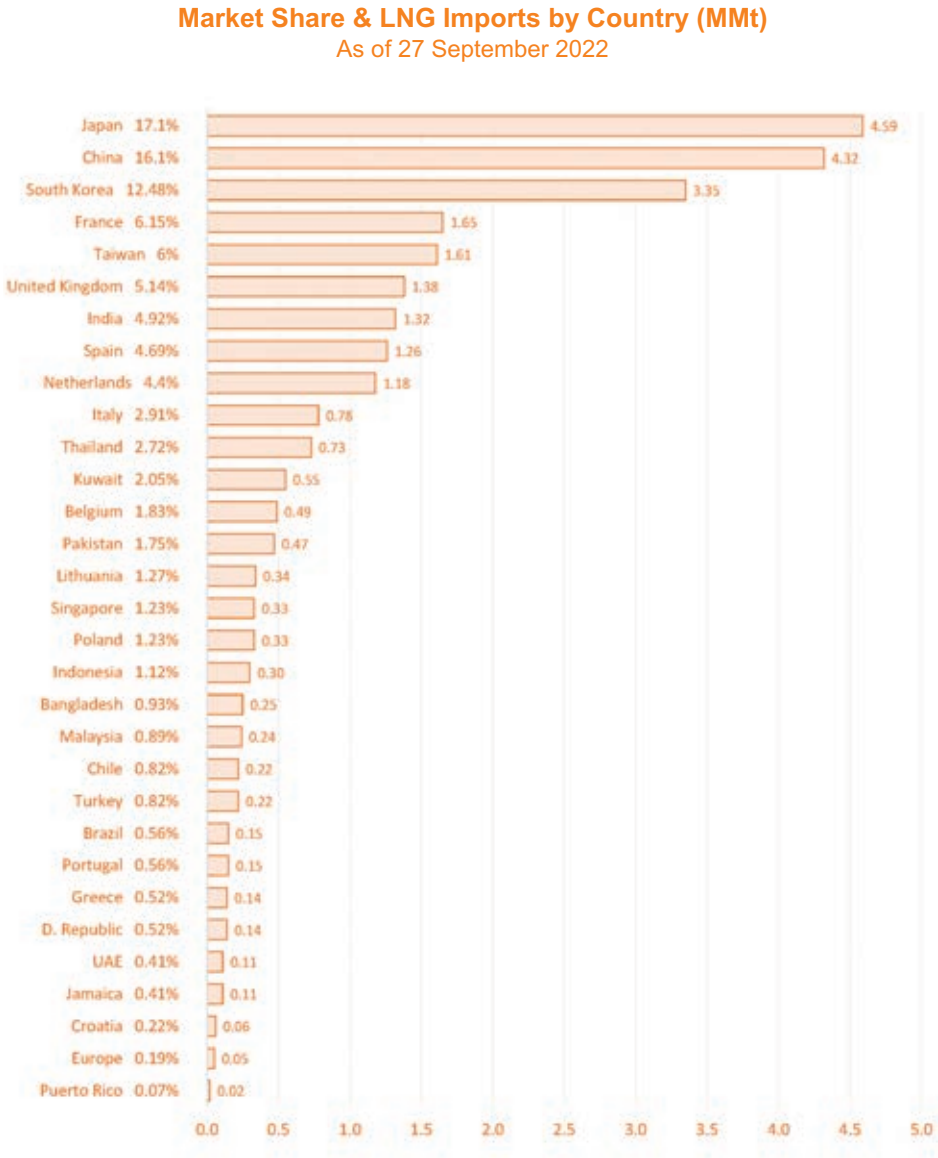
Period-on-period export growth in the region was led by exports from Egypt's Damietta plant, which had shipped 0.36mmt by 27 September, up 0.29mmt (414 percent) from 0.07mmt this time in August. Idku LNG was also seen in the market again, shipping 0.20mmt after its market absence throughout August.

Qatar's Ras Laffan LNG complex, meanwhile, grew shipments only marginally by 0.14mmt (3 percent) to 5.48mmt from 5.34mmt in August. The period-on-period increase was mainly based on significant volumes flowing to Japan, South Korea and Taiwan. Qatar's LNG exports to Europe, meanwhile, remained saw net growth of 0.52mmt, with the largest share of that growth – 0.16mmt – going to Belgium. Meanwhile, Pakistan's imports of Qatari gas were up by 0.11mmt (37 percent) to 0.41mmt. This was compounded by 0.02mmt (22 percent) growth in exports to the UAE. Kuwait's offtakes from Qatar, however, were down by 0.09mmt (-29 percent). In contrast, our data showed a significant downturn in Qatari shipments to the Far East, which had decreased by 0.42mmt (-16 percent) at the time of writing.

In contrast, Qatar's fellow Persian Gulf producers Oman and the UAE saw overall monthly exports decrease significantly in September. Overall, their shipments were down by 0.29mmt (-23 percent) at the time of writing, led by a 0.28mmt decrease in Oman. Higher exports to Taiwan and Japan and even isolated shipments to Europe could not compensate for a general reduction in shipments to the Far East alongside a sharp drop in exports to India by 0.21mmt (-54 percent).

Imports & Domestic Trade

Global LNG imports were down by 0.76mmt (-3 percent) at the time of writing in September. Significantly higher demand in the United Kingdom, Italy and the Netherlands could not compensate for negative demand growth elsewhere in Europe and the Far East.



Source: LNG Journal

Pacific Basin

Period-on-period Pacific Basin imports saw a net decrease of 0.75mmt (-5 percent) in September as Japan, South Korea, China, Thailand and Taiwan together decreased their offtakes by 0.77mmt (-5 percent) in total to 13.74mmt. As such, this period-on-period demand decrease among larger importers in the Pacific overshadowed India's marginal import increase of 0.02mmt (2 percent) to 1.32mmt from 1.30mmt in August.

Alongside the Pacific's net demand decrease, the roster of smaller Pacific buyers in volume terms – including Bangladesh, Thailand, Chile, Indonesia, Malaysia, Mexico, Singapore and Myanmar – collectively saw imports decrease by 0.20mmt (-13 percent) to 1.34mmt in September. This was primarily due to a drop in demand in Malaysia, which was down 0.13mmt (-35 percent) from 0.37mmt in August to 0.24mmt at the time of writing in September. The import reduction in Malaysia came alongside decreases totalling of 0.07mmt (-6 percent) to 1.10mmt in Bangladesh, Singapore, Indonesia and Chile. Myanmar and Mexico had not been seen in the market at the time of writing.

Atlantic Basin

In contrast to their Pacific counterparts, LNG imports in the Atlantic Basin grew by 0.13mmt to 8.45mmt as of 27 September, with annualised utilisation of installed capacity at 39 percent.

Significant growth in European offtakes was a primary factor in the Basin's overall demand picture. Demand in the United Kingdom, Italy and the Netherlands – which together increased imports by 1.54mmt (85 percent) to 3.34mmt – buoyed Europe's offtake increase. In addition, Lithuania, Turkey and Portugal together took in 0.12mmt (16 percent) more to reach 0.89mmt at the time of writing. However, these increases were tempered by offtake decreases totalling 1.30mmt (-35 percent) to 3.75mmt in France, Belgium, Spain, Croatia, Greece, Portugal and Malta.

As to demand in the western Atlantic, importers in the Caribbean and South America – including Brazil, Jamaica, Puerto Rico and the Dominican Republic – had seen LNG demand fall by 0.23mmt (-35 percent) to 0.42mmt at the time of writing. Notably, Argentina was a key factor in the region's demand picture as it had not been seen in the market following imports of 0.15mmt during the equivalent period in August. Offtakes in Puerto Rico and the Dominican Republic were also down by 0.14mmt overall. The Dominican Republic had slashed offtakes by 0.11mmt (-44 percent) to 0.14mmt whilst Puerto Rico had curtailed demand by 0.03mmt (-60 percent) to 0.02mmt. LNG demand elsewhere in the region, however, was up 0.06mmt overall. Brazil had increased imports by 0.01mmt (7 percent) from 0.14mmt to 0.15mmt whilst Jamaica grew offtakes by 0.05mmt (83 percent) to 0.11mmt. Panama and Colombia, however, had not yet been seen in the market by the time of writing in September. There were no indications that would change before the end of the month. Finally, LNG demand was also absent in the United States and Canada in September to date, unchanged from August.

Middle East

Middle Eastern LNG demand had remained broadly steady in volume terms as of 27 September. Regional offtakes were up by 0.01mmt (-1 percent) to 1.13 from 1.12mmt on 27 August. Offtake levels were weighed down by a cut in imports by Kuwait, which saw a 0.05mmt (-8 percent) demand reduction from 0.60mmt in August to 0.55mmt in September. This decrease was only partially compensated by offtake increases of 0.04mmt (9 percent) and 0.02mmt (22 percent) to 0.47mmt and 0.11mmt in Pakistan and the UAE, respectively. Israel, Jordan and Egypt saw no LNG import activity as of 27 September, unchanged from August. Accordingly, the Middle East's annualised import capacity utilisation stood at 34 percent at the time of writing in September. ■

Ship-to-shore connections – are they fit for purpose?

In a paper delivered at Gastech, Andrew Stafford, Technical Director, Trelleborg Marine Systems UK, posed the question - is the ship-to-shore link reaching the limits of its capability?*

Today FLNG projects, which are leveraging off the base operational philosophies of existing infrastructure, but have developed rapidly from their initial 'make it work' concepts, are demanding more and more integration of the various assets in whichever layout is in operation.

The common link between all the applications is the ship-to-shore link.

For the first time, the recently updated SIGTTO ESD guidelines have incorporated the required basic safety connectivity, and these safety signals are fully isolated from any process signalling.

However the level of process integration being demanded varies from operator to operator, yet everybody demands the most flexible asset, and although not a requirement for a specific project build, operators are looking to the second and third contracts where the ship may be re-deployed and want as much inherent compatibility built in from the unit's delivery.

These applications have continued to increase in complexity and add significant overheads to the ship-to-shore link infrastructure, which has to date developed piecemeal from application to application and has recently reached the point of potentially not being suitable to support the required functionality by the latest generations of FSRUs, which are now expected to maintain 100% functionality operating as an LNGC or an FSRU at any terminal globally, whatever interface the terminal may have specified.

This has not only significantly increased the various connection options, but with the added enhanced functionality forced the core operations of the ship-to-shore link to be re-addressed with new novel solutions to allow this functionality, whilst retaining the legacy interfaces.

Today, applications are now expecting 'double digital' systems to offer the enhanced functionality on both sides of the vessel, including provision for LNG bunkering, which was previously not a concern, but now seen as a requirement by many players in their operating philosophies.

In his paper, Stafford reviewed the development and deployment of these applications, the options and solutions that have been developed to overcome the limits of the legacy interfaces, and hopefully leading to a roadmap taking ship to shore link systems forward to provide the interfaces demanded by operators in the near and distant future.

Systems integration

As more complex floating assets are being designed to simplify shore infrastructure, more of the traditional shore processes are being taken over by the ship, requiring integration of new systems on board, which need to function as part of the ship's normal operation.

These systems include:

- Loading arms or ship-to-ship connectivity, including ESD2 functionality.
- Quick release hooks.
- Berthing support and monitoring systems.
- Fendering.
- Fiscal/custody transfer management.
- Cargo quality control management.
- Meeting export pipeline specifications.
- New associated LNG export trades, ie bunkering.

The figure reproduced is an illustration of the basic modes of operations expected by an FSRU in LNG and regas modes only, these layouts would not have been possible five years ago with the arrangements of SSL systems at the time.

There can be secondary pages of layouts when considering the additional operating modes some projects are now requiring. Trelleborg's Gen3 SSL has enabled the connectivity of the most complex ship-to-shore arrangements to date, however there is still scope for further integration of this functionality through the SSL systems.

The use of additional cable links between ship-and-shore should only be considered if there is no feasible way of operating with the existing link infrastructure. Network and data management needs to be managed whether integrated within one system or distributed over multiple connector solutions.

Stafford said that in his opinion, the industry needs to be careful in how it is expanding that incompatibility and ultimately safety may be compromised going forward, if project specific solutions do not follow the proven safety system routes.

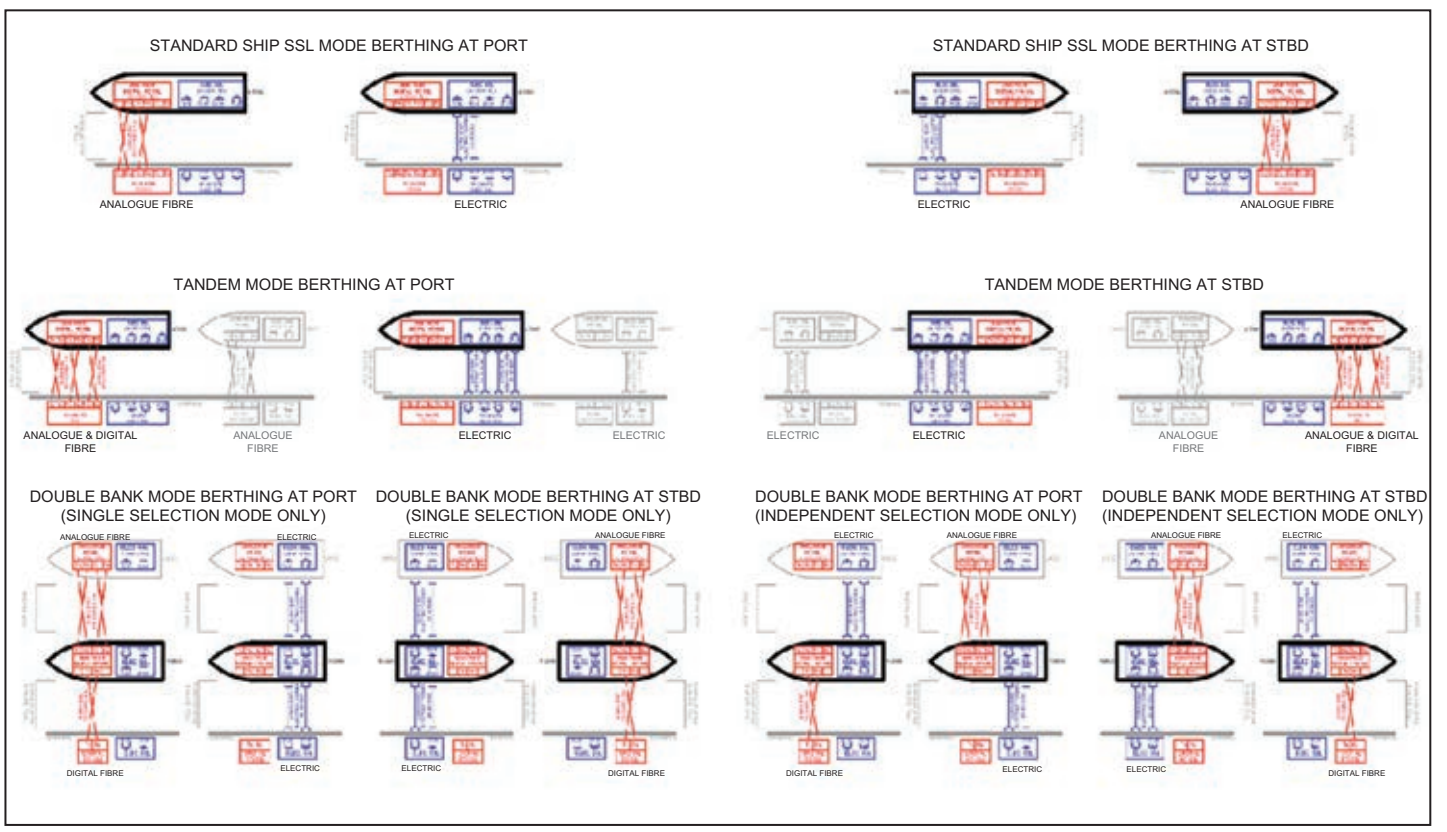
This year, an FSRU arrived at a port and was presented with a shore SSL system not compatible with even the most basic FSRU ESD connectivity used for over 15 years, and detailed within SIGTTO guidance. The operation was eventually conducted with an operational 37w electric link only with no functional option for fibre optics.

Situations like this shouldn't occur, and the more complex the FSRU becomes in terms of on board equipment, the less the terminal will appreciate the systems the vessels rely on, as it's not clear to the terminal operators why these safety and communication systems may be required.

Last year's SIGTTO guidance update was timely, however it didn't cover all operation modes, and with the bulk and bunkering cross overs expecting to increase, the mixtures of guidance within the industry needs to be managed so there is some commonality.

IGC and IGF codes contain conflicting requirements for valve closure times, which under an STS operation could see a bunkering ship close valves within five secs, and with transfers of over 20,000 cu m, operational compatibility is so important in ensuring the enviable position this industry has attained and maintained.

So when we ask if the SSL is nearing its functional capability limits, it's getting closer than it used to, be, but through diligent and constant development, the architecture of systems that have been around since the 1970s are still capable of supporting the most complex operations to date and if anything have capability of even more integration going forward. ■



*About the Author

Andrew Stafford has been working with LNG ESD systems for over 18 years and has been involved with working groups and technical committees in SIGTTO, SGMF and OCIMF.

Industry bodies and an engine manufacturer addresses methane slip

In the past few weeks, the thorny question of methane slip was raised again by several bodies, while we saw the formation of a shipping industry coalition to address this. Technical Editor Ian Cochran reports.

In a report, the International Council of Clean Transportation (ICCT) said that LNG usage in the maritime shipping sector rests on the assumptions that ships can switch to bio and e-LNG (renewable LNG) in the future.

For this to happen, there must be enough renewable LNG to meet future demand and using it must result in a substantial reduction in GHG emissions on a life-cycle basis, compared to fossil LNG.

This report focuses on ships trading with the EU and predicts a tripling of LNG demand as a marine fuel between 2019 and 2030, based on trends in fuel consumption. It also estimates that renewable LNG will cost seven times more than fossil LNG in 2030 and, therefore, subsidies or other policies would be needed.

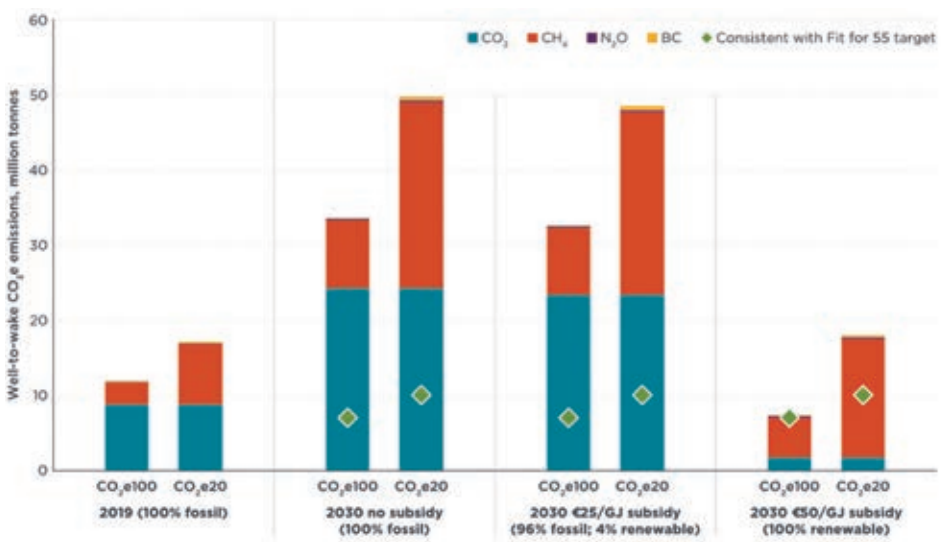
For renewable LNG to significantly contribute to achieving climate goals, ships engines' methane slip needs to be virtually eliminated and methane leaks upstream must be greatly reduced.

In addition, methane leaks from ships' fuel tanks and cargo tanks would need to be near zero. It is important for policy makers and stakeholders to understand that other fuels, including synthetic diesel and green methanol, could offer low life-cycle emissions without the methane problem, the ICCT stressed.

The well-to-wake (WTW) carbon dioxide equivalent (CO2e) emissions associated with three 2030 scenarios in the EU are shown in the graphic. Compare the scenario in which ships use 100% renewable LNG in 2030 (far right, representing a €50 per gigajoule subsidy) to emissions from using 100% fossil in 2019 (see below).

Using renewable LNG could cut WTW CO2e emissions by 38% based on 100-year global warming potentials (GWP, labelled as CO2e100) but raise emissions 6% based on 20-year GWP (CO2e20), due to methane's strong near-term warming effects.

Focusing on the orange portions of the bars, even using 100% renewable LNG doubles methane emissions, compared to 2019, which is primarily down to engine methane slip.



MES' viewpoint

Taking an engine manufacturer's viewpoint, in an in-house Q&A, Gunnar Stiesch, Head of Engineering Engines at MAN Energy Solutions (MES), spoke of the policies that can help reduce methane slip and revealed a new after treatment solution to be piloted on board a vessel next year.

Addressing the question, of why it cannot be captured, he said that once the methane is out, the quantities and concentrations in the atmosphere are so low that it's close to impossible to get a hold of it again, so unlike carbon dioxide, recapturing methane isn't feasible.

He added that carbon dioxide stays in the atmosphere for several thousand years, while methane has an average atmospheric lifetime of only around 12 years, upon which, it naturally decomposes into water vapour and carbon dioxide.

This means that direct prevention offers far more opportunities to control methane in the atmosphere, which is why methane slip needs to be addressed quickly. Using technical solutions to reduce it can have a real impact on climate change and our environment.

To date, MES has managed to reduce methane slip in its ME-GI 2-stroke dual-fuel engines to a range of between 0.2–0.3 g/kW/h.

Stiesch said that methane slip could get even less, but looking at the entire greenhouse gas impact of these engines, it's already close to negligible. Upgrades will definitely result in future lower values, but the main focus is addressing engines that still have a higher methane slip.

For example, Otto-cycle dual-fuel engines have an inherently higher methane slip than an MES Diesel-cycle ME-GI. To minimise this as much as possible, MES uses exhaust gas recirculation (EGR) technology on the Otto-cycle ME-GA engines.

As for 4-stroke engines, two options MES is pursuing are direct gas injection and after treatment with an oxidation catalyst.

Direct gas injection is technically feasible: 4-stroke engines can run with high pressure gas injection on the Diesel combustion scheme that 2-stroke ME-GI engines are running on today. And the resulting methane slip would be in a similar range, lower than for Otto cycle gas engines.

But under current conditions, this is not a cost-competitive solution for 4-stroke engines. At the moment, it makes more sense to focus on all what can be done to improve the Otto cycle technology, he explained.

On a 4-stroke engine, Otto cycle means that gas and air are mixed before the charge enters the cylinder. Then it is compressed and this more-or-less homogeneous mixture in the combustion chamber is ignited with a small pilot flame, resulting in pre-mixed combustion. There are ways to improve this process, Stiesch said.

The most straightforward way is to look at the internal engine architecture and reduce the crevice volumes in the combustion chamber – areas where pockets of unburned methane can't be reached by the flame. Or the overlap of inlet and exhaust valves and the timing of gas admission can be investigated.

MES Head of Engineering Engines Gunnar Stiesch

In the last 10 years, methane slip has been halved from MES 4-stroke gas engines and Stiesch was confident that another 20% could be achieved by further improving the combustion process.

Trade-off

In addition, Otto-cycle gas combustion is characterised by a natural trade-off between methane slip and NOx emissions.

For engines equipped with an SCR catalyst for NOx abatement, this trade-off can be used to tune the combustion process towards lower methane slip and slightly higher NOx, which can then be easily reduced again by the SCR, which is a fully proven technology and available today.

Looking to the future, he advised that after treatment with an oxidation catalyst – or 'oxicat' – is a promising external measure. MES started to develop this in 2017, and great progress has been made in the laboratory with a 70% methane slip reduction.

The first pilot installation on board a vessel will be undertaken next year. Following full testing, a major technological solution for methane slip reduction is expected to be widely available around 2025, he concluded. ■

CMA CGM bets on LNG fuelled future

LNG is at the front and centre of plans to accelerate the energy transition in maritime shipping, according to shipping line CMA CGM, as it plans to be Net Zero Carbon by 2050. Fuelling Editor Malcolm Ramsay has more.

The firm recently announced a US$1.5 billion investment fund designed to accelerate decarbonization across its operations and has allocated a sizeable portion of this budget to new LNG and alternative fuelling projects

"LNG is now the most advanced solution when it comes to preserving air quality, a major public health challenge and it is the best fuel available today on an industrial scale," Claire Sneddon of CMA CGM tells LNG Journal. "CMA CGM aims to be Net Zero Carbon by 2050 [and] has made the pioneering choice of LNG to propel its vessels, reflecting the Group's ambition."

Special Fund for Energies

The group's new fund – dubbed the Special Fund for Energies – will be invested over the next five years and will be overseen by a dedicated in-house team.

One of the key focuses of this spending will be improvement of processes for production of new fuels and research into new, cost-effective techniques that can be used to create industrial-scale production facilities. Alongside LNG, the group is also exploring the production of biomethane, e-methane, carbon-free methanol, and other more experimental fuels that can be provided in large volume.

While many of these alternatives are planned as drop-in replacements or blended substitutes for existing LNG, the group is also exploring entirely new propulsion systems for future vessels.

Commenting on the advantages of the dual-fuel technology that CMA CGM has already deployed in many of its vessels, Sneddon notes that the group "can already propel its LNG running ships with other fuels like bioLNG and synthetic methane, thereby reducing greenhouse gas emissions even more. The dual fuel technology will also enable to running ships with e-methane, a source of carbon-neutral fuel and a key fuel for the decarbonization of CMA CGM's operations."

Alongside development and production of new fuels, the fund will also focus on energy saving measures across the group's portfolio of ports and vessels as well as trialling and launching cutting edge innovation that offers the potential to revolutionise transport.

"In the face of the climate emergency it is our duty to do more and accelerate our actions," Rodolphe Saadé, CEO of CMA CGM, comments, adding "this fund will enable us to make substantial investments in innovative projects to decarbonize our business. We have allocated the resources needed to accelerate our energy transition and that of the entire shipping and logistics industry."

Salamander Project

As a replacement fuel for traditionally sourced natural gas, biomethane is one of the leading contenders as it can readily replace existing fuel throughout the value chain and in most cases requires very little modification of infrastructure.

Biomethane plant

To explore the potential benefits of biomethane for LNG-shipping, CMA CGM is collaborating with French multinational utility company ENGIE to realise the ambitious Salamander project, a pioneering development that aims to create the first industrial and commercial unit for second-generation biomethane production. The partners are currently considering sites for the new facility, with the French port of Le Havre the current frontrunner, backed by the support of the Havre Seine Métropole urban community.

Edouard Sauvage, Executive Vice President Infrastructure at ENGIE, explains that the facility will utilise wood waste, "underpinned by an energy production technology involving pyrogasification" and adds that the "scale of the project reflects our ambitions and accelerated development in renewable gas production."

The project aims to produce 11,000 tonnes of second-generation biomethane per year starting in 2026, with the partners targeting 200,000 tonnes of renewable gas per year by 2028.

In parallel with this project, CMA CGM is also partnering with Dutch LNG specialist Titan to develop a biomethane production and liquefaction project that aims to significantly boost biomethane production in the near term.

"CMA CGM expects alternative fuels such as LNG and biomethane to make up to 10% of its energy mix by 2023," a spokesperson for Titan said. "Such an influential shipowner using LNG and bioLNG is a huge step in the right direction towards decarbonisation."

The joint project is expected to produce up to 100,000 tonnes by 2025, with the potential to double this output by 2027.

Looking further ahead in the energy transition, CMA CGM is also funding research into more experimental fuels such as e-methane, fuel gas that can be produced using electricity made from renewable sources.

A key partner in the Jupiter 1000 project in the port of Fos-sur-Mer in the south of France, the group is working with natural gas transmission system operator GRTgaz to develop means to mass-produce low-carbon e-methane.

"The Jupiter 1000 project will give us access to one of the first demonstrator projects of the kind," Christine Cabau Woehrel, Executive Vice-President at CMA CGM, commented. "Moreover, it is located at Fos-sur-Mer, where we recently completed our first LNG bunkering operations. We intend to support the potential emergence of a whole new industry." ■

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For the Record

ABU DHABI National Oil Company, the owner of the Das Island LNG plant in the United Arab Emirates and Italian oil and gas company and LNG project developer Eni, plan to explore further opportunities to increase worldwide natural gas supply security.

The proposals followed talks between Sultan Ahmed Al Jaber, the UAE Minister of Industry and Advanced Technology and Group Chief Executive of ADNOC, and Claudio Descalzi, Eni's CEO.

Both ADNOC and Eni aim to accelerate their existing gas development projects and the time-to-market of new exploration discoveries and international activities.

In particular, the companies propose to accelerate the multi-billion-dollar Ghasha gas project.

"The project is estimated to hold significant recoverable gas and is expected to produce more than 1.5 billion cubic feet of gas per day, in addition to more than 120,000 barrels of high-value oil and condensates per day," they explained.

The Ghasha ultra-sour gas concession is central to ADNOC's strategic objective of enabling gas self-sufficiency for the UAE.

Eni holds a 25 percent interest in the Ghasha offshore concession, in the development phase.

The company also operates Blocks 1, 2 and 3 with a 70 percent interest, in the exploration phase.

Descalzi illustrated fast-track development options for the recent significant gas discovery in its first exploration well drilled in Offshore Block 2 Abu Dhabi.

The Milan-based company plans to leverage the other projects currently under execution as well as utilizing existing ADNOC facilities with the aim to optimize costs and accelerate common production targets.

Eni has a 70 percent stake and is Operator of Block 2, with partner Thailand's Public Company Exploration and Production (PTTEP), the Asian nation's national energy provider that holds the remaining 30 percent.

A statement added that Al Jaber and Descalzi analysed several initiatives aimed at strengthening the partnership in the frame of energy transition by deploying renewable energy projects and other initiatives to reduce carbon intensity, with focus on the development of a carbon-capture, usage and storage (CCUS) project.

ADNOC's LNG production amounts to about 6 million tonnes per annum of LNG from its liquefaction plant on Das Island off the coast of Abu Dhabi.

The UAE is the longest-standing LNG exporter in the Middle East and shipped its first cargo in 1977.

The Das Island facility is majority-owned by ADNOC, which has a 70 percent share. The other shareholders are Japan's Mitsui & Co (15 percent), BP of the UK (10 percent) and French major TotalEnergies (5 percent).

ACWA POWER, a leading Saudi developer and operator of power generation and a collaborator with US LNG equipment-maker of industrial gas company Air Products, has joined with China to sign a share purchase agreement for a $1 billion combined-cycle gas turbine (CCGT) project in Uzbekistan, the Central Asian nation and leading natural gas producer.

ACWA and China's Silk Road Fund signed a share purchase agreement for the 1.5 gigawatts Sirdarya CCGT facility located in Shirin in southern Uzbekistan.

"The project will support Uzbekistan in providing cost-effective and energy efficient power solutions for the residing communities and displace 2 million tonnes of carbon-emissions per year," said a statement from ACWA and the Silk Road Fund.

Uzbekistan is one of the world's largest natural gas producers with annual output of around 60 billion cubic metres of which 35-40 Bcm are supplied by the Uzbekneftegaz joint-stock company.

Uzbekistan ranks as the world's 11th-largest natural gas nation in terms of output and reserves.

The country is also a leading miner of uranium and has extensive reserves of gold, copper and phosphorites.

The Uzbekistan partnership between the Saudis and China was formalised in a virtual signing ceremony attended by Mohammad Abunayyan, the ACWA Power Chairman, and Zhu Jun, the Chairwoman of the Silk Road Fund.

By the terms of the agreement, ACWA will be the majority shareholder in the Uzbekistan CCGT project, holding a 51 percent stake in the facility.

The Silk Road Fund, which is China's sovereign investment body that implements the Chinese Belt and Road Initiative across the world, will own 49 percent of the Sirdarya project.

Uzbekistan's national grid will function as the sole off-taker of the project for a period of 25 years.

A statement said that once completed in early 2024, the project will account for 8 percent of the country's total power capacity and meet 15 percent of the country's electricity demand across industry and households.

"As ACWA Power continues to expand globally, our mission to provide reliable, responsible, and affordable power and water cannot be achieved alone," said Paddy Padmanathan, Chief Executive and Vice Chairman of ACWA.

"Under our successful public-private partnership model, the support of global investors like Silk Road Fund is critical in ensuring the development of advanced energy infrastructure that benefits both nations and communities, and enables robust socio-economic progress," explained Padmanathan.

"We truly appreciate Silk Road Fund's confidence in our capabilities and look forward to working with them on the benchmarking Sirdarya project in Uzbekistan and jointly creating a cleaner, greener future for all," he added.

The Sirdarya facility is ACWA Power and Silk Road Fund's first strategic partnership in Uzbekistan and Central Asia.

ACWA itself has three other projects in Uzbekistan, chiefly in wind energy, whereas Silk Road Fund has invested in Uzbekistan's tourism and oil and gas sectors.

"The Sirdarya project symbolizes the cooperation under the Belt and Road Initiative among China, Saudi Arabia and Uzbekistan. Silk Road Fund will partner with ACWA Power to bring cleaner power in a more efficient way to local people," said Chairwoman Zhu of the Silk Road Fund.

The Chinese also receive varying volumes of pipeline gas from Uzbekistan and the other former Asian republics of Turkmenistan and Kazakhstan.

The Central Asia-China pipeline originates in Turkmenistan and passes through Uzbekistan and Kazakhstan.

The Asia-China gas pipeline, which is 3,665 kilometres (2.277 miles) in length, starts at Gedaim on the Turkmenistan-Uzbekistan border and terminates at Horgos in the Xinjiang region of China before joining with the Chinese grid.

Air Products, headquartered in LeHigh Valley, Pennsylvania, has close relations with the Saudi ACWA Power group.

The US company signed a Saudi deal in July 2020 and in conjunction with ACWA Power will provide a $5Bln world-scale green hydrogen-based ammonia production facility powered by renewable energy for a new smart city planned in the Kingdom of Saudi Arabia.

The location of the smart city is Neom in the Tabuk Province of northwest Saudi Arabia.

It is planned to incorporate smart-city technologies and also function as a tourist destination. The site is near the Red Sea and the borders of Egypt and Jordan.

BW OFFSHORE is making progress on the Barossa natural gas floating production, storage and offloading (FPSO) project for the Timor Sea as part of plans to prolong the lifespan of the Australian Darwin LNG export plant.

"We continue to execute the Barossa project in a safe and efficient manner, carry out our planned divestments of non-core units and maintain good performance from our core assets," said Marco Beenen, Chief Executive of BW Offshore, a company listed on the Oslo stock exchange and with main offices in Singapore and Oslo.

The company said that as of July, the gas and condensate Barossa FPSO project was close to 40 percent completed in line with the schedule.

"We also selectively progress new infrastructure projects with long-term contracts, investment grade counterparties and attractive partnership models in the FPSO market," stated the CEO.

The Darwin plant in the Northern Territory is operated by Adelaide-based Santos with capacity to produce around 3.7 million tonnes of LNG per annum, mainly for Japanese buyers, including JERA Co. Inc, the Asian nation's largest LNG importer and power group.

The Japanese have participated in the Darwin LNG project since 2003 through the power companies that formed JERA and when the Australian plant was first operated by ConocoPhillips before the US major sold its stake to Santos.

Darwin LNG has constructed to receive feed gas from the Bayu-Undan gas field, located in waters off Timor-Leste, and has contributed to the stable supply of LNG for about 16 years since production began in 2006.

Production at the Bayu-Undan gas field is expected to end within a couple of

years and the Barossa gas field is a successor to supply feed gas to the Darwin plant.

The project will develop the Barossa gas field and link it by pipeline to the Darwin liquefaction plant for LNG production, which is expected to start around 2025.

The Barossa FPSO is financed by a 14-year combined construction and long-term debt facility of US$1.15Bln and US$240M from the equity joint venture.

The equity joint venture consists of BW Offshore with 51 percent and ICMK Offshore Investment, a combination of Japanese firms Itochu Corp. Corporation and Meiji Shipping Co., as well as Australia's Macquarie Bank, which holds 24 percent.

BW Offshore has a fleet of 10 FPSOs with potential for growth to meet the reliable clean energy needs provided by natural gas.

The Barossa update came in BW Offshore's second-quarter earnings statement of US$75.6 million in gross earnings, down from US$84.8M in the previous quarter.

The company said the earnings decrease was mainly driven by high maintenance activity on the fleet combined with provisions for severance and inventory write-down on units coming to end of term.

For the first half, BW Offshore posted net profits US$58.6 million compared with US$103.1M in the first six months of 2021.

BW Offshore said that among second-quarter highlights was the award of a limited notice to proceed (LNTP) by Shell Petróleo Ltd and its partners for early-stage engineering and supplier reservations for the supply of an FPSO for the Gato do Mato oil and gas field offshore Brazil.

"The FPSO fleet of nine operating units continued to deliver stable operations for the six-month period with an average commercial uptime of 95 percent," said the company.

"Commercial uptime was largely impacted by the shutdown (in Nigeria) of the 'Sendje Berge'. The unit restarted production on 26 June 2022," added BW Offshore.

CEZ GROUP, the national utility of the land-locked European Union member, the Czech Republic, said it received US LNG as its first shipment at the new Eemshaven LNG import hub in the Netherlands.

The LNG arrived onboard the 174,260 cubic metres capacity carrier, "GasLog Georgetown", from the Sabine Pass plant in Louisiana, operated by Cheniere Energy.

"The natural gas that we will get thanks to this LNG terminal will help us manage the upcoming winter," said Czech Minister of Industry and Trade Jozef Síkela.

"We have chosen it because it is the very first LNG terminal put into operation in Europe after the start of Russian aggression against Ukraine," explained Síkela.

The Chief Executive of the ČEZ Group utility, Daniel Beneš, said he was glad to see that rapid progress had been made after the commissioning of the terminal, a reference to the arrival of the first cargo on September 6 onboard the carrier "Murex".

"Another two tankers with gas for the Czech Republic will arrive in October, and we will subsequently carry on at a rate of two or three ships every month," stated CEO Beneš.

"This is a significant step for the Czech Republic's energy security and an important safeguard, in the event that gas from other suppliers should cease flowing to the Czech Republic," the CEO added.

Anatol Feygin, Executive Vice President and Chief Commercial Office at Cheniere, said the Houston, Texas-based company was prepared to do its best help Europe with energy supplies, now and into the future.

"This is the result of long-term collaboration between the governments of the United States and the Czech Republic, as well as of the relationship that Cheniere has with ČEZ and with the Czech Ministries of Industry and Foreign Affairs," explained Feygin.

"We look forward to continuing in our dialogue with our Czech partners about how LNG from Cheniere can help the Czech Republic attain its goals in energy security and climate protection in the coming years and decades," added the Cheniere COO.

The terminal at Eemshaven is the first new facility put into operation in Europe since the mid-February 2022 invasion of Ukraine by Russian forces.

The LNG terminal was successfully prepared and commissioned in the record time of just a few months.

The facility will make it possible to supply up to 8 billion cubic metres per annum of natural gas of which 3 Bcm is for the Czech Republic.

The statement said that this volume corresponded to approximately one-third of the country's annual consumption.

The Eemshaven terminal is site on the waterway between the port in the northern Netherlands province of Groningen and the North Sea.

It comprises two floating storage and regasification units (FSRUs), the "Golar Igloo" and the Eemshaven LNG regasification barge provided by Belgian shipping company Exmar.

In addition to the ČEZ regasification capacity at Eemshaven volumes have also been reserved for the Dutch operations of UK major Shell and the French utility and energy group Engie.

CHART Industries, the US LNG equipment-maker and industrial gases company, has signed an accord to bring carbon-capture solutions to customers in the Middle East and Africa.

Chart said it signed a memorandum of understanding (MOU) with Abu Dhabi-based Contract and Trading Group (C.A.T. Group) to focus on the two companies providing carbon reduction services to state-owned firms and energy companies.

Atlanta, Georgia-based Chart has expertise in providing liquefaction, regasification, storage and transportation for LNG and industrial gases and already includes carbon-dioxide measures in its offering through the Cryogenic Carbon Capture™ technology of its subsidiary Sustainable Energy Solutions Inc.

Chart acquired Sustainable Energy Solutions in 2020 and the company has 44 US patents issued, a further 17 pending and 20 patents issued internationally relating to carbon-dioxide storage, evaporators and other technologies.

The US company is continuing its expansion into the carbon-capture and cleaner energy sectors while also being among the leaders in providing equipment for LNG export plants on the US Gulf Coast as well as LNG transportation containers and fuel stations.

Chart's customers include Venture Global's export facilities in Louisiana, including the new Plaquemines project on the Mississippi River south of New Orleans, Cheniere Energy's Corpus Christi plant expansion in Texas and Tellurian's Driftwood project, south of Lake Charles in Louisiana.

"We are excited to partner with C.A.T., a respected global leader in contracting with a particular focus on the energy transition," said Jill Evanko, Chart CEO and President.

"We anticipate that our companies' complementary strategies to adopt carbon-capture technologies and complete project solutions will accelerate customer decisions about their clean energy operations, particularly in the Middle East and Africa where carbon-capture is a natural part of the movement towards more sustainability," added Evanko.

C.A.T. Group has broad customer relationships in the Middle East and Africa and has decades-long project experience.

It offers engineering, procurement and construction as well as project management to customers from its energy, civil, industrial, pipeline, and renewables divisions.

The Group's CEO, Joseph Gebara, said he was pleased to partner with Chart with its expertise in LNG and other sectors.

"Chart's technology, equipment and services are highly regarded in the LNG and CO2-capture sectors and together we will offer our customers in the Middle East and Africa complete solutions for the energy transition," added Gebara.

CHENIERE Energy, the largest US LNG exporter from the Sabine Pass plant in Louisiana and Corpus Christi in Texas, said it had the long-term potential to reach 90 million tonnes per annum of production using brownfield sites at both facilities as it raised its 2022 and future earnings forecasts.

Chief Executive Jack Fusco said energy security had never been more critical and the Houston-based company was confident in the significant long-term role of North American natural gas in the global energy supply mix as the Cheniere board approved a long-term capital allocation plan with expansion hopes.

Capital allocation under the plan a year ago saw Cheniere repay or redeem over $4 billion of long-term debt, repurchase more than $600 million of shares and initiate and pay $1.32 per common share in dividends as of the second quarter of 2022.

The company had also reached a positive final investment decision on the Corpus Christi Stage 3 Liquefaction Project to boost output by 10 MTPA at the Texas plant.

"Given the company's progress on its prior capital allocation plan significantly ahead of schedule, which is driven by continued outperformance, Cheniere has

reached a new cash flow inflection point and now expects to generate over $20Bln of available cash through 2026 and construction of CCL Stage 3," stated the company.

The plan is designed to achieve a run-rate distributable cash flow (DCF) of over $20 per share on a run-rate basis.

Cheniere also raised its full-year 2022 consolidated adjusted EBITDA guidance to $11.0Bln-$11.5Bln and full year 2022 cash flow guidance to $8.1Bln-$8.6Bln due primarily to a change in the expected timing of several cargoes accelerating into 2022 which were previously forecast for 2023, as well as sustained higher margins on LNG throughout 2022.

"The revised capital allocation plan marks another significant milestone for Cheniere and reflects the success achieved by the Cheniere team, particularly in terms of operational excellence and safety," said Jack Fusco, Cheniere's President and Chief Executive.

"The accelerated progress on our 2021 plan would not have been possible without the hard work and dedication of our entire workforce," stated Fusco.

"As a market leading LNG operator, we are proud of our accomplishments thus far and look forward to continuing to reliably supply the global market with our flexible, cleaner-burning LNG in support of our customers and end-users abroad, while delivering on our commitment to create value for all of our stakeholders," explained the CEO.

"Energy security has never been more critical, and we are confident in the significant long-term role of North American natural gas in the global energy supply mix," declared Fusco.

The company noted that it had pre-filed for expansion with the Corpus Christi Midscale Trains 8 and 9 with the Federal Energy Regulatory Commission in August 2022 with the near-term goal to achieve 60 MTPA of output.

Cheniere added that it could develop "large-scale brownfield growth opportunities" at both Sabine Pass and Corpus Christi, with long-term potential to reach a 90 MTPA platform.

"Thanks to Cheniere's continued financial and operational outperformance since we announced our capital allocation framework last fall, we have achieved significant progress on each of the four key pillars of that plan - in a matter of quarters, not years - and are proud to announce our new, revised plan," said Zach Davis, Cheniere's Executive Vice President and Chief Financial Officer.

"Our new '20/20 vision' is designed to return significant capital to shareholders, while solidifying investment-grade credit metrics and pursuing accretive growth of our platform within our disciplined capital investment parameters," explained the CEO.

"We expect to generate over $20Bln of available cash through 2026 and over $20 of distributable cash flow per share on a run-rate basis," stated Davis.

"This revised plan supports our efforts to ensure the long-term success and sustainability of Cheniere, while creating and delivering substantial long-term value for all of our stakeholders," added the CFO.

CHINESE liquefied natural gas imports in August 2022 to its network of 22 regasification terminals tumbled by 29 percent because of a mixed economic recovery, high spot prices and more pipeline natural gas imports.

The nation's LNG deliveries dropped to 4.72 million tonnes, or 70 cargoes, compared with 6.65MT, or 98 cargoes, in August 2021, according to data from the Chinese General Administration of Customs.

The deliveries to China in July had also fallen by 16.3 percent to 4.74MT versus 5.67MT received in July 2021.

Imports to regasification terminals in the January-to-August period also declined sharply by 21.5 percent to 40.64MT compared with 51.8MT in the same eight months in 2021.

China's main LNG suppliers are Australia, Qatar, the US, Malaysia, Indonesia, the Yamal plant in Arctic Russia and Papua New Guinea.

According to shipping data, China is receiving more LNG from Russia, including nine cargoes in August. These comprised six from the Novatek-operated Yamal Peninsula plant and three from the Russian Far East facility at Sakhalin Island.

Deliveries of US LNG to China have tailed off in recent months, though Chinese energy companies have been quick over the past year to sign long-term sales and purchase agreements with new US Gulf Coast liquefaction projects and expansions.

China's LNG imports surpassed those of Japan in 2021 and amounted to 78.93MT, which was 18.3 percent more than in 2020 and made the country the No. 1 global LNG importer.

However, LNG deliveries to Japan's network of 37 terminals in August amounted to 6.27MT, or 92 cargoes, well ahead of the shipments received by Chinese in the months.

Pipeline natural gas deliveries continued to increase from Russia and the Central Asian states during the year and were up by 8.7 percent in August 2022 to 4.13MT compared with 3.80MT in August 2021.

The pipeline gas deliveries for the first eight months of 2022 surged to 30.40MT, an increase of just over 10.3 percent compared with 27.55MT in January-to-August 2021.

The Chinese receive varying volumes of pipeline gas mainly through links from the former Asian republics of Turkmenistan, Kazakhstan and Uzbekistan, as well as from Russia as part of Gazprom's "Power of Siberia" project.

The Central Asia-China pipeline originates in Turkmenistan and passes through Uzbekistan and Kazakhstan.

The Russians have an agreement with China to provide 35.5MT of pipeline gas per annum to the Chinese gas grid in the years ahead, with 7.4MT flowing through a new Far East pipeline and the remaining 28.2MT being transported through the "Power of Siberia" pipeline.

CLEAN ENERGY Fuels Corp. the California-based supplier of liquefied natural gas made from waste to 540 filling stations across the US and Canada and to commercial customers, supplied fuel for the first bunkering with LNG of shipping group Pasha Hawaii's new LNG -powered containership, the "George III".

This was the first LNG bunkering of a container ship on the US West Coast.

Clean Energy said it worked with World Fuel Services and West Coast Clean Fuels to supply the ship with over 300,000 gallons of the clean fuel.

Pasha Hawaii's "George III" is 774-foot containership operating between Long Beach and Oakland in California and Honolulu in Hawaii.

It is the first of three LNG-powered ships that the domestic shipping company is putting into service.

The three ships are expected to consume 105 million gallons of LNG fuel over the next five years.

"The air quality around the Ports of Long Beach and Los Angeles is some of the worst in the country because of in large part the very dirty marine fuels that have been traditionally used by containerships," said Andrew J. Littlefair, President and Chief Executive of Clean Energy.

"The move by Pasha to add ships that operate on clean-burning LNG is one the most forward-thinking and environmentally-progressive actions taken in the maritime industry," added Littlefair.

"We congratulate Pasha on their first successful bunkering operation and look forward to many more as Pasha continues to add the other LNG-powered ships to their fleet," he declared.

Clean Energy noted that LNG-powered ships achieve 99.9 percent reduction in diesel particulate matter and sulfur oxide emissions, 90 percent less nitrogen oxides and a 25 percent reduction in carbon dioxide compared to ships running on traditional fuels.

The LNG that powers the Pasha Hawaii container ships is supplied by the Clean Energy plant in Boron, California, the only one of its kind in the state.

Because of the increase in demand for LNG by Pasha and others, Clean Energy is in the process of expanding its Boron LNG plant by adding a third production Train, which will increase capacity by 50 percent when completed.

The "George III" is scheduled to bunker every second week at the Port of Long Beach.

The second Pasha ship to operate on LNG, the "Janet Marie", is expected in late 2022. The third Pasha ship is expected to be deployed in mid-2023.

Before the LNG-powered vessel arrived at the Port of Long Beach, Clean Energy supported Pasha in the commissioning of the ship.

Clean Energy worked at the shipyard in Brownsville, Texas, to cool down the ship's LNG storage tank to cryogenic temperature and then performed two bunkering operations to load LNG into the ship tanks.

The LNG was provided from Clean Energy's Pickens LNG Plant in Texas. The company is a large-scale producer of gas fuel made from waste with its leading brand for vehicles being called "Redeem".

Clean Energy's largest shareholder is TotalEnergies, the leading European LNG market participant and project developer with a stake of 19 percent.

Clean Energy and UK major BP are additionally working on a joint venture to build on plans to finance and develop new projects at dairy farms in the US Midwest, Texas and other states to make fuel from waste.

COSCO Shipping Heavy Industry of China said it had completed the construction of the floating production, storage and offloading (FPSO) unit that will be deployed as part of the BP-led floating LNG export project offshore the West African nations of Mauritania and Senegal.

Kosmos Energy, based in Dallas, Texas, is the partner of BP in the joint venture centred on the Greater Tortue-Ahmeyim gas fields, the first phase of which is about 80 percent complete.

The first Mauritania-Senegal FLNG production facility is scheduled to have first gas in early 2023.

The Greater Tortue-Ahmeyim LNG project has the FPSO as one of its key installations.

As part of support for the FPSO, mooring piles were pre-installed offshore while Cosco Shipping was completing the facility.

Cosco Shipping confirmed it had completed the construction of the FPSO at its Qidong shipyard and a completion ceremony had been held.

The Chinese company said the FPSO is 270 metres in length, 54.5 metres wide, 31.5 metres deep and the living quarters can accommodate 140 people.

Cosco was responsible for the FPSO's main hull and living quarters, as well as the construction of topside modules.

"This FPSO is a key part of the Greater Tortue-Ahmeyim LNG project and will soon sail to Mauritania and Senegal to create a new energy hub in Africa," added a statement.

In addition to the FPSO, a floating liquefaction plant is being completed at Singapore's Keppel Shipyard.

This involves the conversion to a liquefaction facility of the conventional LNG carrier, the "Gimi", which will have 2.5 million tonne per annum of output.

The FPSO will process gas from the Tortue-Ahmeyim field, removing heavier hydrocarbon components, prior to delivering it to the FLNG hull.

The Greater Tortue-Ahmeyim project is expected to have a second phase producing gas on the Mauritania-Senegal maritime border in partnership with the national oil and gas companies of Senegal and Mauritania, Petrosen and SMHPM respectively.

EXMAR, the Belgian shipping company, reported improved first-half earnings in 2022 compared with the same period in 2021 as rates rose and the business was heading for the future benefits of a key charter deal signed for an LNG regasification barge in The Netherlands and the sale of a liquefaction barge.

Exmar said the overall business was boosted by the combined effects of the contribution of the two new Very Large Gas Carriers (VCLCs), higher charter rates since the second half of last year as the Antwerp-based shipping line was also helped by a five-year charter agreement for an LNG regasification barge deployed at the Dutch port of Eemshaven.

However, the statement added that the earnings were partially offset by the unemployment of the LNG carrier "Excalibur" and a lower number of midsize vessels in the fleet.

"The operating result for the Shipping segment in 2022 was higher than in 2021 as 2022 was positively impacted by higher revenue, lower operating charges and lower net depreciations and impairments," said Exmar.

The company's operating result for the six months was $22.5 million versus $17.6M in the prior-year period.

Shipping revenue came to $69.8M compared with $68.7M in the same period of 2021.

The VLGC rates rose to an average of $31,594M per day in the first half compared with $27,861 in the same period last year.

The company added that the charter agreement for the regasification barge with Dutch utility Gasunie has delivered hire income as from mid-August 2022.

Exmar and Gasunie are joining forces to enhance European energy security with the employment of the "FSRU S188" as a floating LNG import terminal at Eemshaven in Groningen.

The barge has had to be transported from Singapore to the Netherlands for deployment.

The company additionally sealed a deal for the sale of the "Tango FLNG" production hull previously chartered for natural gas liquefaction in Argentina and now set to be used offshore the Republic of Congo in West Africa after being sold to Italian energy company Eni.

The new Dutch LNG facility will operate under the name EemsEnergy Terminal and affiliated structures were being finalise, including mooring for the FLNG barge.

Gasunie has said it would be responsible for taking care of connecting Eemshaven LNG to the nationwide gas pipeline network and distributing the gas across The Netherlands.

The rest of its fleet of around 40 vessels are chartered, managed or joint venture ships in the liquefied petroleum gas (LPG) and pressurized gas markets.

Exmar also has three Very Large Gas Carriers (VLGCs) in its fleet as well as Midsize Gas Carriers (MGCs).

Other highlights included the sale and delivery of the LPG carrier "Brussels" and agreements to sell two other LPG carriers "Eupen" and "Bastogne"

The company additionally repaid a bond in Norwegian crowns in May 2022.

Exmar closed the sale of the FLNG barge "Tango FLNG" to Eni for a value in the range of $572M to $694M on repayment of the vessel's financing to Bank of China and other payments.

During the period Exmar ordered two new build Midsize LPG/ammonia carriers with dual-fuel LPG propulsion and delivery was expected at the end of 2024 or early 2025.

The company declared in the statement that the "the uncertainties for Exmar with regard to the going concern assessment relating to the liquidity position and the covenant compliance" as disclosed in the 2021 annual report, had been resolved.

The Board of Exmar has decided to convene a special general meeting of shareholders to decide on the distribution of an intermediary dividend of gross €0.95 per share.

GERMAN natural gas supplier Verbundnetz Gas AG (VNG), based in the eastern city of Leipzig, has become the second large Russian gas buyer to be approved for a Berlin Government bail-out to stay afloat after LNG buyer Uniper received government funds in return for a stake.

VNG supplies about 20 percent of Germany's gas demand, though the utility said it was in danger because of soaring gas prices after Russia reduced pipeline gas supplies to the European Union.

The company is Germany's third-biggest supplier of natural gas and has significant gas storage infrastructure.

VNG supplies about 400 municipal utilities and industrial operators, many in the former East Germany.

Germany is not the only country helping its struggling domestic energy suppliers, many others are too, including even Finland and Sweden.

In a statement, the company said that it had requested government support in order to "avoid further damage to VNG" and to preserve the VNG group as a viable business.

VNG said it submitted an application to the German Federal Ministry for Economic Affairs and Climate Action (BMWK) on September 9 for stabilisation measures under section 29 of the Energy Security of Supply Act.

"Due to unfulfilled supply obligations by upstream suppliers, it has been and continues to be necessary to procure gas quantities at considerably higher prices on the energy markets in order to maintain the ability to reliably supply VNG customers at contractually agreed significantly lower prices," explained the utility.

"To avert further losses for VNG and to enable the VNG Group's business operations as a whole to continue, VNG sees itself compelled to apply for further supporting measures," it added.

VNG said that until the start of the "Russian war of aggression" the company was a "healthy corporate group" contributing to the security of supply of gas in Germany through its four business areas of Trading & Sales, Transport, Storage and Biogas.

"The impacts of the Russian war on the energy markets placed VNG in an increasingly critical financial situation through no fault of its own," it said.

VNG explained that it had two main contracts that were affected by the Russian supply disruptions.

"There is a direct contract for around 35 terawatt hours (TWh) of gas per year with Gazprom Export, which is currently not being fulfilled and is not expected to be fulfilled for the foreseeable future," stated the company.

"This contract expires at the end of the year. As a direct importer, VNG would be able, by its own means and together with further stabilisation measures from its shareholders, to bear the losses that even with the relief expected from 1 October 2022 as a result of the gas surcharge will amount to around €1 billion ($1Bln) in 2022," it declared.

"The larger of these two contracts relates to gas purchases of approximately 65 TWh per year with a German upstream supplier that imports the corresponding gas quantities. This contract has not been consistently fulfilled since mid-May," added VNG.

"In August, contrary to expectations, VNG had to meet most of the cost of replacement and procurement when gas prices were at an all-time high. With support from the German government, ways have been sought in recent weeks to

reach a final settlement," it explained.

"However, this does not appear achievable in the near future in a form that is economically viable for VNG. The resulting financial burden would be unsustainable for VNG" it declared.

Uniper, based Düsseldorf and which is Germany's biggest Russian pipeline gas importer, was the first to be bailed out with German Government funding.

Uniper is a subsidiary of LNG import terminal developer and leading Finnish power company, Fortum.

In return for the bail-out, the German State acquired a 30 percent equity stake in Uniper.

GRTGAZ, the French natural gas transmission company with three liquefied natural gas import terminals under its control, said LNG would help it through the winter season and was working on reversing flows to Germany following the cut-off of pipeline supplies from Russia to the European Union.

GRTgaz has as its subsidiary Elengy, the operator of three terminals in Western and Southern France at Montoir-de-Bretagne, Fos Tonkin and Fos Cavaou.

France's fourth import terminal is at the Channel port of Dunkirk under the ownership of Belgian utility Fluxys and partners and a fifth will be operational at Le Havre from the next winter season in 2023-2024.

The Port of Le Havre on the northwest coast of Normandy had previously had an onshore facility that handled deliveries of LNG from Algeria for the national utility previously called Gaz de France.

French engineering company Technip Energies has said it would be supplying a marine loading arm to French major TotalEnergies as part of the floating storage and regasification project in Le Havre.

The offloading equipment will be installed on Bougainville dock in the Normandy port to transfer regasified LNG from the FSRU to the shore.

GRTgaz said it expected to be in balance this winter and did not expect shortages, though margins would be tight.

The company explained the country's gas storage supplies were filled at 94 percent and would reach close to 100 percent by the start of the winter season.

In trading terms, the coming winter gas season will run from October 2022 through to March 2023.

The utility GRTgaz said inflows from Germany currently stood at zero and the French utility was working on reversing flows at the border to help Germany traverse a difficult winter.

GRTgaz, which is headquartered in the Bois-Colombes suburb of northwest Paris, is the main natural gas transport operator in France while it is also assisted by another company, Teréga, the operator in Southwest France.

"The gas transmission managers are fully mobilized to steer the gas system, in close collaboration with the managers of the electricity transmission network and the public authorities," stated GRTgaz.

The company explained that in an average winter, the French gas system was able to meet demand, while supporting the electricity system and actively contributing to European security of supply.

"However, situations of tension could develop during the winter. To prevent these situations, using less gas and electricity is essential from now on to limit the risks of imposed reductions in consumption (interruptions, even load-shedding) which would only concern large consumers," added GRTgaz.

The company noted that because of the effects of the war in Ukraine, the flows historically originating in the eastern part of the EU had suffered a reversal.

"A gradual drying up of gas transits from Germany has taken place since the summer of 2022 and GRTgaz is working to adapt its network to develop new export capacity from France to Germany, which will be available in mid-October. Flows previously coming from Belgium have also been reversed," it explained.

GRTgaz said that LNG deliveries had increased sharply and the LNG import terminals were available at near their maximum capacity of 90 percent regasification usage.

"LNG has played a major role in the supply of gas in France since the beginning of 2022. Since the beginning of Spring, the storage facilities have been filling and their rate is already 94 percent (84 percent on average in Europe) and will be close to 100 percent at the onset of winter," said the utility.

GRTgaz said it had worked on several consumption scenarios for the coming winter.

"A reference scenario, with an average winter without a marked cold spell, showed a balanced system, with no gas deficit (inflows and outflows equal to 393 terawatt hours)," said the company.

"However, there is little room for manoeuvre, especially on days with the highest consumption. All sources must then be mobilized (storage and imports via LNG terminals and adjacent networks) to satisfy domestic consumption, including electricity production as well as exports to neighbouring countries," added GRTgaz.

"In the case of very cold winters, the winter deficit can reach 16 TWh, which represents 5 percent of winter consumption, a level that can be absorbed by achieving the 'sobriety' objectives set by the public authorities," the utility stated.

The utility pledged in its statement to pull all the available levers to make it possible to avoid the occurrence of these situations of possible deficits.

"As a last resort, load-shedding targeting large consumers would protect residential customers in extreme situations where the probability of occurrence is very low," said GRTgaz.

"For the following winters, the commissioning of the floating terminal in Le Havre (FSRU) and the acceleration of the development of renewable gases will further reduce the risks," it added.

HOEGH LNG Partners, the company with five ships and listed on the New York Stock Exchange, has notified the NYSE of the anticipated closing date of around September 23 when its merger with Höegh LNG Holdings is finalised and its shares delisted.

The merger will give Höegh LNG Holdings control of 10 floating storage and regasification units (FSRUs) and two conventional carriers on completion and with the fleet additions from the Partnership.

Höegh LNG's two conventional carriers, each with 147,200 cubic metres of capacity, are the "Arctic Lady" chartered to TotalEnergies and the "Arctic Princess", chartered to Norway's Equinor.

Both vessels are mostly on shuttle duty delivering cargoes from the Equinor-operated Hammerfest LNG export plant that resumed shipping cargoes in June 2022 after closing for repairs after a fire in September 2022.

"Upon the closing of the merger on the terms and conditions set forth in the agreement, all of the Partnership's common units will be owned by Höegh LNG," said a statement.

"Following completion of the merger, the common units of the Partnership will cease to be listed on the NYSE and will be deregistered under the Securities Exchange Act of 1934, as amended," it added.

Höegh LNG Holdings revealed the initial merger plan in December 2021 and sealed the deal in May 2022 when it agreed to acquire all outstanding common units not already owned by Höegh LNG Holdings in exchange for $9.25 in cash per common unit.

The merger consideration represented an increase of $5.32 (135.4 percent) per common unit when compared with the closing price per common unit of $3.93 in December 2021, immediately prior to Höegh LNG's initial offer.

The consolidated Höegh LNG Holdings group's list of FSRUs, conventional carriers and charterers is as follows:

"Arctic Princess" (Equinor); "Arctic Lady" (TotalEnergies); "Independence" (Klaipėda port, Lithuania); "Höegh Giant" (pulled from Indian charter and in arbitration dispute); Höegh Esperanza (LNGC trading); "Höegh Gannet" (LNGC trading/Compass Brazil); "Höegh Galleon" (LNGC trading/AIE Australia); and "Höegh Gallant" (Jamaica - New Fortress).

This is the charter list for Höegh LNG Partners LP and now held by Höegh LNG Holdings:

"Neptune" (TotalEnergies); "Cape Ann" (TotalEnergies); "PGN FSRU Lampung" (PGN Indonesia); "Höegh Gallant" (New Fortress/ HLNG); "Höegh Grace" (SPEC, Colombia).

INDIAN imports of liquefied natural gas dropped by 2.7 percent in July, the 11th straight monthly decline, as LNG prices have increased in the spot market and continue to curb purchases in Asia.

LNG imports for the month of July to India's network of six terminals came to 1.90 million tonnes, or 28 cargoes, compared with 1.95MT, or 29 cargoes, in July 2021, according to data published by Ministry of Petroleum and Natural Gas.

Shipments in June 2022 had come to 1.81MT compared with 2.00MT in June 2021.

For the four months of the fiscal year so far from April through July, shipments to Indian terminals dropped by 7.9 percent to 7.37MT compared with 8.01MT in the same period of 2021.

LNG cargoes costs have surged this year. Shipments in July cost around $1.2 billion, or 9,564 crore Indian rupees, compared with about $1.0Bln, or 7,970 crore rupees, in July 2021.

The cost of LNG for the four months of the current fiscal year so far from April through July was $4.5Bln, or 35,865 crore rupees, compared with $3.3Bln, or 26,301 crore rupees, in the same period of last year.

LNG deliveries to Indian terminals come mainly from Qatar, which provides over one-third of volumes, as well as West Africa, the US, Asian nations, Australia, Russia and the spot market.

While LNG imports have declined every month since September 2021 more domestic pipeline natural gas has been produced in the fiscal year so far offshore the East Coast of India in the Bay of Bengal.

The Ministry data showed that the four-month domestic natural gas production total was 11.436 billion cubic metres, up 3.4 percent compared with the 11.062 Bcm recorded in April-July period of 2021.

However, domestic natural gas output for July 2022 fell slightly by 0.4 percent to 2.883 Bcm versus the 2.894Bcm logged in July 2021.

The Krishna-Godavari Basin of Eastern India has seen production increases and output could rise further in the future from several projects involving the UK major BP in partnership with Indian group Reliance Industries, with additional output added by Oil and Natural Gas Corp. of India.

Other oil and gas companies have said they were considering Indian exploration and production ventures.

The latest Ministry data also gave average capacity utilization rates for the six operating LNG terminals during the fiscal year to June, one month in arrears.

The total capacity of the six terminals amounts to 42.7 million tonnes per annum of LNG.

The largest Indian terminal at Dahej, located north of Mumbai and operated by Petronet LNG, has capacity of 17.5 MTPA and the latest utilisation rate from the Ministry for April-June was 86.7 percent compared with 83.8 percent utilization in the previous month.

At the Hazira facility, operated by Shell India, the utilisation rate rose to 43.1 percent for 5.2 MTPA from 36.1 percent previously, while the West Coast terminal at Mundra also saw higher usage of 18.1 percent for its 5 MTPA of capacity, up from 15.9 percent.

The throughput for Gas Authority of India (GAIL) at the Dabhol terminal, located south of Mumbai, tumbled further in April-to-June to 29.9 percent for 5 MTPA of capacity from 42.7 percent previously.

At the Kochi facility in the southwest state of Kerala usage declined to 17.8 percent for 5 MTPA compared with 20.1 percent previously.

At Kamarajar (Ennore), the only East Coast terminal, April-to-June usage edged higher to 13.0 percent for the facility with 5 MTPA of capacity, up from 12.0 percent.

The current average consumption levels of natural gas in India are in the following sectors: fertilizers (30 percent), power (15 percent), city-gas distribution (20 percent), refineries (9 percent), petrochemicals (5 percent) and others (21 percent).

JAPANESE trading houses and energy companies Mitsui & Co. and Mitsubishi Corp. have formally joined the new operating company for the Sakhalin II LNG export plant in the Russian Far East.

A Russian statement said Mitsui and Mitsubishi have taken stakes of 12.5 percent and 10 percent respectively in the new operating company, Sakhalinskaya Energia.

The former operating company Sakhalin Energy had Gazprom as the majority shareholder with 50 percent plus one share while Shell had 27.5 percent of the shares and Mitsui and Mitsubishi 12.5 percent and 10 percent, which they now hold in the new company.

Shell decided to withdraw from operations in Russia after the invasion of Ukraine, though its exit path from Sakhalin LNG is not clear and the shareholding could eventually revert to Gazprom.

After the Shell pull-out, Russian President Vladimir Putin ordered in June 2022 that the Sakhalin LNG company's assets be expropriated and passed on to a new entity.

In the latest statement, the Russians cited Shell Chief Executive Ben van Beurden as saying on July 28: "It's highly unlikely that we will become a member of a Russian legal entity to which our share in Sakhalin Energy may be transferred. It's not consistent with our intention to keep our assets in Russia. It creates a little bit more uncertainty about how exactly we will exit."

The Sakhalin plant began LNG exports in 2009 and has annual capacity from its two Trains of around 10 million tonnes per annum with shipments going to Japan and South Korea.

The Japanese government has backed Mitsui and Mitsubishi in retaining their Sakhalin LNG stakes and officials were cited as saying that potential Chinese shareholders could replace the Tokyo-based companies.

"In accordance with the notification of Mitsubishi Corp. on the consent to take ownership of a share in the authorized capital it will be transferred to a fully owned subsidiary of Mitsubishi," said the Russian statement.

The previous Mitsubishi share in the Sakhalin plant was held by its subsidiary Diamond Gas Sakhalin and a 10 percent stake has been passed to it.

The Russian statement added that the 12.5 percent stake of Mitsui had been transferred to a company subsidiary registered in Dubai in the United Arab Emirates and called MIT SEL Investment.

The new Sakhalinskaya Energia company was incorporated in the capital of Sakhalin Island, Yuzhno-Sakhalinsk, in August 2022 and Gazprom was assigned its majority shareholding from the previous operating company.

JAPAN'S liquefied natural gas imports declined last month by 0.4 percent, the same amount as the previous month, with shipments increasing from Australia, Russia and the spot market while monthly costs rose to over $6 billion for the first time.

Deliveries of LNG to Japan's network of 37 terminals amounted to 6.27 million tonnes in August 2022, or 92 cargoes, compared with 6.29MT, or 93 cargoes, in August 2021, according to the preliminary trade figures from the Japanese Ministry of Finance.

Japan's LNG deliveries had also dropped by 0.4 percent in July 2022 to 6.16MT compared with 6.19MT in the same month of 2021.

The August imports cost 874.47 billion yen ($6.09Bln), the highest ever monthly cost to the nation since LNG imports began from Alaska in 1969.

This bill was 140.1 percent higher than was paid in the same month a year ago when the cargoes cost 364.17Bln yen ($2.54Bln).

The effect on Japan's balance of payments was severe again in August for energy purchases as the yen has lost almost 30 percent of its value against the US dollar this year to hit its lowest level since 1998.

The country's thermal coal imports jumped 16.3 percent to 12.28MT and cost 628.35 billion ($4.38Bln) and Finance Ministry data showed that this was 282.1 percent more than in August 2021.

While LNG imports have edged lower in the past two months they had increased in the first three months of the fiscal year April-to-June as stock-building began.

Japan's 2021 LNG cargo deliveries had been less than those of China for the first time and came to 74.31MT, down 0.2 percent on 2020 and 4.62MT less that the Chinese total for 2021.

The top eight suppliers of LNG to Japan last year were Australia with more than one-third of deliveries, Malaysia, Qatar, the US, Russia, Brunei, Papua New Guinea and Indonesia.

During August the volumes of delivered LNG increased from Australia, the spot market and Russia while the number of cargoes dropped from Asia-Pacific neighbours, the US and the Middle East.

Shipments of LNG to Japan in August fell by 14.6 percent to 1.25MT from Asia-Pacific countries.

The Ministry data also showed that Middle East cargo deliveries from nations like Qatar were down last month by 28.4 percent year-on-year to 900,000 tonnes.

Deliveries from the US dropped by 38.4 percent from a year ago to 333,000 tonnes and this was after amounting to 665,000 tonnes in July 2022.

Russian deliveries in the month were 450,000 tonnes and cost 47.23Bln yen (294.5 million). The volumes, though relatively modest, showed a three-fold increase on a year ago when 144,000 tonnes were delivered.

The balance of LNG imports in August 2022 came from Australia, African nations and the spot market and amounted to 3.33MT compared with 2.89MT in August 2021.

Nuclear power use in Japan is still at a low level with 10 nuclear reactors at six N-power stations having been given the go-ahead to restart, though only four reactors were in operation.

Several Japanese Prefectures have agreed to restart the reactors, though were awaiting the implementation of safety measures and the completion of other construction work.

Before the Fukushima disaster in 2011, 54 nuclear reactors were in operation in Japan, supplying about 30 percent of the country's electric power.

The 10 reactors with start-up approvals are at the following six power stations: Oi, Takahama, and Mihama (Kansai Electric), Genkai and Sendai (Kyushu Electric) and Ikata (Shikoku Electric).

MCDERMOTT International, the US energy and LNG engineering company, has successfully completed the sail away of the Tyra East gas processing module for the Tyra Redevelopment Project, a

crucial part of Denmark's natural gas production hub.

Shareholders in the Tyra Redevelopment are French major TotalEnergies and its Danish Underground Consortium partners Noreco and Nordsøfonden.

The Tyra Redevelopment facilities will be located about 139 miles (225 kilometres) west of Denmark in the North Sea.

The project represents the largest ever oil and gas investment for Denmark in the North Sea.

McDermott said that once the redeveloped Tyra project is back on stream, it is expected to deliver 2.8 billion cubic metres of gas per annum, which amounts to 80 percent of forecast Danish gas production.

"Tyra will secure continued production of natural gas with 30 percent less CO2 emissions, significantly contributing to Denmark's energy security by reducing Denmark and the EU's dependency on Russian gas," said Houston, Texas-based McDermott.

The module weighs around 18,700 tons and set sail on September 1 from McDermott's fabrication facility in Batam in Indonesia.

"The TEG module will be a crucial part of Tyra II, the new high-tech hub for Denmark's natural gas production and will reduce CO2 emissions by 30 percent," said McDermott.

McDermott said the sail away was the culmination of more than 18.8 million work hours spent on engineering and construction of the process module.

"This is an incredible milestone on a large-scale and complex project. As an engineering, procurement, construction, and commissioning contractor for the Tyra Redevelopment, we leveraged synergies throughout the lifecycle of the project while maintaining a high focus on safety," said Tareq Kawash, Senior Vice President for Onshore at McDermott.

"We are proud that our work contributes to TotalEnergies' vision and pursuit of sustainable North Sea operations," added Kawash.

Eric Delattre, Managing Director for TotalEnergies Exploration & Production for Denmark, said the sail away of the process module was of key importance for the Tyra Project as it marked the conclusion of onshore construction, and with this all the remaining work on Tyra will take place in the Danish North Sea.

"The sheer size and magnitude of the process module is just incredible, and it will be fabulous to unite this final major component with the remaining platforms at the Tyra field in the next month," added Delattre.

MSC CRUISES, the Italian global cruise line registered in Switzerland and based in Geneva, said that its first dual-fuelled ship with LNG capability, the "MSC World Europa", would officially be named on November 13 in the Qatari capital Doha at a ceremony including the inauguration of the LNG-producing nation's new Arabian Gulf Grand Cruise Terminal.

"It is only fitting that this event marks the coming into service of the highly anticipated 'MSC World Europa', the first in our trail-blazing 'World Class' of ships," said Pierfrancesco Vago, Executive Chairman of the Cruise Division at the MSC Group.

The "MSC World Europa" was constructed at the French shipyard, Chantiers de l'Atlantique at Saint-Nazaire on the Atlantic Coast of France, and completed her first sea trials in June.

The cruise line's second dual-fuelled vessel using LNG, the "MSC Euribia", has been floated out at the Chantiers de l'Atlantique yard and is scheduled to join the MSC fleet in June 2023.

One of the companies involved in LNG bunkering for Chantiers de l'Atlantique has been Gasum, the Nordic LNG supplier that has used the 7,500 cubic metres capacity vessel "Kairos".

MSC said in addition to using LNG when cleaner fuel is needed said its cruising platform had "future-proof marine and onboard hospitality technologies, state-of-the-art environmental technologies as well as ground-breaking and ultramodern design" for its growing customer base.

"The ship 'MSC World Europa' will become the biggest and most environmentally high-performing passenger ship to sail out of Doha and across the Middle East and welcome guests from around the world for the winter 2022-2023 season," added Executive Chairman Vago.

The keel was laid for the "MSC World Europa" in June 2020 at the Saint-Nazaire yard.

The 200,000-plus GT vessel is the first LNG-fuelled cruise ship to be built in France.

She features a new 50-kilowatt demonstrator system that incorporates solid oxide fuel cell (SOFC) technology and uses LNG to produce electricity and heat on board.

MSC said it had invested €3 billion ($3.014Bln) in three LNG-powered cruise ships and the construction at the Chantiers de l'Atlantique yard of the third ship, "World Class II", is due to start early next year.

The company said the "MSC World Europa" would make her maiden voyage on December 20, offering cruises to Doha, Qatar, Dubai, Abu Dhabi and Sir Bani Yas Island, United Arab Emirates, plus Dammam in Saudi Arabia.

From March 2023, the ship will then move to the Mediterranean Sea to offer cruises to the Italian ports of Genoa, Naples and Messina, as well as Valletta in Malta, Barcelona in Spain and Marseille in France.

MUBADALA Energy, the international exploration and production company based in Abu Dhabi in the United Arab Emirates and with natural gas assets in the Eastern Mediterranean and LNG feed-gas resources in Malaysia, has reported another gas discovery in Malaysian waters offshore Sarawak.

The company said the discovery followed the successful start-up of Pegaga flagship gas project in Malaysia.

Mubadala Energy confirmed the discovery of a "good quality gas reservoir" penetrated by the Cengkih-1 exploration well in Block SK320, off the coast of Sarawak state.

"Preliminary analysis shows a significant gas column of more than 110 metres within the pinnacle carbonate reef reservoir," said the company.

Mansoor Mohamed Al Hamed, CEO of Mubadala Energy, said the latest gas find further cemented the company's position in Malaysia as a reliable and trusted operator with deep technical capabilities.

"Gas demand in Southeast Asia continues to grow and we look forward to helping meet those energy needs, in line with our strategy to play an active role in the energy transition," stated Al Hamed.

The Cengkih-1 exploration well is located nearby the Pegaga field, one of the fields within the SK320 Block, which recently marked the successful production of commercial gas.

The Pegaga gas project is a key producing field supplying gas to the Petronas LNG complex in Bintulu onshore Sarawak.

The Pegaga field had previously recorded the discovery of 1 trillion cubic feet of additional gas in place, following the post-drill results which confirmed a larger and better quality reservoir.

Building on Mubadala Energy's strong position in Malaysia, the company said the results bolstered its strategy to expand its position in natural gas as a key bridge fuel

The Mubadala unit is the operator of Block SK320, with 55 percent participating interest in a production sharing contract.

The remaining 45 percent is held by a subsidiary of Malaysian state energy company, the Petronas Carigali group and Sarawak Shell.

Mubadala Energy has made six gas discoveries displaying a success ratio of 75 percent, a significantly higher number than the industry average.

The company reported a surge in annual output in its June 2022 earnings, reaching the landmark of 500,000 barrels of oil equivalent per day in its operations for the first time.

This achievement further established the company as a strategic player in the international energy sector and marked a 22 percent increase in production from 2021.

The company said the record was reached following a number of significant developments in the last 12 months, including the acquisition of a 22 percent stake in the Tamar gas field offshore Israel from Delek Drilling, now known as NewMed Energy.

Additionally, as of May 2022, Mubadala's operated Pegaga field in Malaysia had achieved natural gas production of 500 million standard cubic feet and 6,000 barrels of condensate per day.

This Mubadala Energy strategy has seen the company reach nearly 70 percent gas in its overall portfolio.

NEXTDECADE Corp., the developer of the Rio Grande LNG export project on the Brownsville Ship Channel in Texas, said it was initiating a private placement of its Nasdaq-listed shares to 10 institutional investors as its proposed venture gathered pace with US and Chinese cargo sales agreements.

NextDecade will sell $85 million of common stock at $5.50 per share, and the placement was closing on September 19, 2022, subject to the satisfaction of customary closing conditions.

"The company intends to use the proceeds from the private placement to continue development activity in preparation for its anticipated positive final investment decision on the first three Trains at its Rio Grande LNG project," said NextDecade.

Credit Suisse Securities (USA) LLC acted as exclusive placement agent for the transaction.

NextDecade is making progress with Sale and Purchase Agreements (SPAs) ahead of the FID with the latest buyer being ExxonMobil Corp.

The US major signed a 20-year supply deal at the end of July 2022 through its trading subsidiary in Asia.

Under the SPA, the US major's Asia unit will purchase 1 million tonnes per annum of LNG supplied from the first two Trains of the Rio Grande facility. The first Train is expected to start commercial operations as early as 2026.

NextDecade mostly recently also signed a third supply agreement with a Chinese company since the start of 2022.

The Houston, Texas-based company signed a 20-year SPA with China Gas Hongda Energy Trading Co., a wholly-owned subsidiary of China Gas Holdings.

This deal was also for 1 MTPA of LNG indexed to Henry Hub and delivered on a free-on-board (FOB) basis.

NextDecade in April 2022 signed a 20-year SPA with the Singapore trading arm of ENN Group of China and another with China's Guangdong Energy Group Natural Gas.

The company has ultimate plans and permits to produce up to 27 MTPA of LNG from five liquefaction Trains at the Rio Grande facility.

NEW FORTRESS Energy Inc., the expanding LNG terminals, production, shipping and power assets owner, plans to hold a floating LNG investor day at the Kiewit Offshore Services shipyard near Corpus Christi in Texas.

New Fortress has chosen the energy subsidiary of Omaha, Nebraska-based construction giant Kiewit as its partner for the building of FLNG units on the US Gulf Coast and the presentation event will be held from 10:00 am Central Time on November 22.

The Kiewit yard is on 400 acres along the LaQuinta Channel, providing unrestricted deepwater access to the US Gulf of Mexico.

"Specializing in the fabrication and integration of offshore projects, the 555-acre KOS facility is home to NFE's 'Fast LNG' program and the ongoing conversion of marine infrastructure into floating liquefaction units," explained NFE in a filing with the Securities and Exchange Commission.

Wes Edens, Chairman and Chief Executive of NFE, said he looked forward to hosting the event at the Texas facility.

"We expect to achieve mechanical completion of our first FLNG unit in March 2023 and deploy FLNG 1 into operation by mid-year, with additional units to follow soon thereafter," explained Edens.

"Utilizing a highly skilled workforce on the US Gulf Coast, we have developed an efficient and repeatable construction process - essentially an FLNG factory - that substantially reduces the cost and time to build incremental liquefaction capacity to meet the urgent needs of the global energy markets," declared the NFE CEO.

New York-based NFE also recently signed an agreement with Mexico's national energy company Petróleos Mexicanos (Pemex) to form a strategic partnership including a floating LNG project in the Gulf of Mexico.

The agreement involves the joint development of the Lakach deepwater natural gas field for Pemex to supply natural gas to Mexico's onshore domestic market and for NFE to produce LNG for export to global markets.

The US company will produce the LNG using its "Fast LNG" vessels to be built at the Kiewit yard.

NFE's "Fast LNG" pairs modular, midsize liquefaction technology with jack-up rigs or similar floating infrastructure to enable a lower cost and faster deployment schedules.

The US company is additionally involved in other FLNG ventures, including one offshore the US Gulf state of Louisiana and another offshore the Republic of Congo in West Africa.

NFE is additionally advancing LNG-for-power projects in nations like Mexico, Nicaragua and Brazil as well as in the Caribbean.

NFE also said recently that it had entered a joint venture valued at $2 billion with New York-based asset management firm Apollo relating to floating storage and regasification units (FSRUs) in the LNG sector and this opened up a long-term financing arrangement.

The July 2022 deal involves NFE selling LNG infrastructure vessels it owns to the newly formed joint company whereby 80 percent would be held by Apollo funds and 20 percent by NFE.

That transaction would create a global marine infrastructure platform underpinned by long-term contracts, benefitting from NFE's LNG downstream operations and development activities, as well as Apollo's leading investment and maritime experience.

Outwith the Kiewit Offshore Services shipyard plans NFE has an existing fleet that came from its acquisition in 2021 of Golar LNG Partners and its assorted FSRUs and LNG carriers.

The 11-vessel portfolio of the venture consists of six FSRUs, two conventional LNG carriers and three floating storage units (FSUs).

As part of the Apollo transaction, NFE has agreed to charter 10 of the 11 of the vessels from the Apollo-controlled venture for a period of up to 20 years.

Apollo is a high-growth, global alternative asset management business focusing on select investment strategies.

OMAN, the LNG producer and exporter, has signed an exploration and production sharing agreement with UK major Shell and French company TotalEnergies to explore, appraise and develop natural gas resources at Block 11 onshore the Sultanate on the Arabian Peninsula.

A statement from the companies and Oman's Ministry of Energy and Minerals, said that under the agreement Shell would have a 67.5 percent working interest and be the operator of Block 11.

TotalEnergies and Oman Oil Company, now known as OQ, would hold 22.5 percent and 10 percent stakes respectively.

"There is a continuous focus on enhancing the natural gas reserves of Oman through exploration and appraisal activities undertaken by several companies in the country," said Salim bin Nasser al Aufi, Oman's Minister of Energy.

"This agreement strengthens the strategic relations with partners in the sector such as Shell, TotalEnergies, OQ and others to ensure Oman's energy security and to attract more foreign investment," he added.

Block 11 is located on the western side of Oman and is known to have very high exploration potential as the Sultanate moves forward with LNG production, more domestic gas consumption and bunkering plans.

The bunkering proposal is for the port of Sohar, north of the capital Muscat.

The country also continues steady LNG output for Asia from the Oman LNG export plant at Sur, located south of Muscat, and with production capacity of around 10.25 million tonnes per annum in 2021.

"Shell's entry into this block signifies a further commitment to Oman, while enhancing and diversifying its gas supply," said Walid Hadi, head of Shell in Oman and a senior vice president.

"For Shell, this partnership will strengthen our integrated gas business and generate value for Oman and our shareholders," he stated.

Block 11 is located in Al Wusta region, adjacent to Block 10, and is about 400km from Muscat. Block 11 covers an area of around 2,900 square kilometres in the centre of the country.

Shell also holds interests in Petroleum Development Oman (34 percent), Oman LNG (30 percent) and Shell Oman Marketing Company (49 percent).

The UK major is the operator of Block 10 in Oman following a concession agreement that was signed in December 2021. Shell is also exploring Blocks 42 and Block 55 in the Sultanate.

Laurent Vivier, the TotalEnergies Senior Vice President for Exploration and Production in the Middle East and North Africa, said entry into Block 11 gave the company the opportunity to unlock additional potential to meet domestic and export gas demand.

"It strengthens our strategic relationship with the Sultanate of Oman, as illustrated last December by our entry into the neighbouring Block 10 gas concession," added Vivier.

TotalEnergies also owns about 7.50 percent of the Oman LNG complex and is an oil producer through its Block 6 participation.

The company also holds a 26.55 percent stake in Block 10 where first gas is expected in 2023.

TotalEnergies additionally operates Block 12 in which it owns 80 percent.

The French company has said it would use its equity gas entitlement in Block 12 as feedstock to develop an Omani regional hub for LNG bunkering services.

Oman is a major anchorage and stop-over point for tankers and other vessels on trade routes between the Middle East, Asia and Europe.

POLAND has seen the inauguration of a new natural gas pipeline interconnector between Poland and Slovakia as European Union funding is helping to create a Polish gas hub supplying central and northeast EU countries.

The latest pipeline connects the gas networks of the two countries and will ensure supply delivery to comply with the EU strategy of diversifying routes.

A statement from the European Commission said the completion of the pipeline helped create a North-South gas infrastructure corridor between the Baltic Sea, the Adriatic and Aegean Seas,

the eastern Mediterranean Sea and the Black Sea.

The pipeline, with a total length of 165 kilometres (103 miles), was an EU Project of Common Interest over the period of 2013-2022 and has received more than €100 million ($99.6M) of EU funding through the Connecting Europe Facility and which represented around 40 percent of the project's costs.

Poland already has a well-developed and interconnected natural gas network that supplies domestic gas demand.

The network previously supported flows between the Russian Federation and Western Europe before the Ukraine invasion in mid-February 2022.

The Polish gas network covers around 75 percent of the territory of the country.

The Poles were already engaged in several diversification projects to significantly increase import capacity post-2022 when the supply contract with Russian gas company Gazprom was set to expire anyway.

The Polish LNG import terminal at Świnoujście was opened in 2016 and has a maximum regasification capacity of 5 billion cubic metres per annum and this is set to rise to 8.3 Bcm in 2023.

The operator of the terminal is Polskie LNG, a subsidiary of the Gaz-System, the national transmission system operator.

All regasification capacity of the LNG terminal has been reserved by the Polish Oil and Gas Company, which has also lined up additional LNG cargo imports from the US.

In addition to the LNG terminal in Świnoujście, Poland has seven major pipeline interconnections with Germany, Slovakia, the Czech Republic, Ukraine and Belarus.

Current natural gas import capacities are in the process of doubling because of projects mostly partly financed by the EU.

In addition to the LNG expansion, there is the Baltic Pipe, which is a Polish-Danish project transporting gas from the Norwegian Continental Shelf in the North Sea, an LNG floating storage and regasification unit and the Poland-Lithuania Gas Interconnector.

"I would like to congratulate the transmission system operators, Gaz-System and Eustream, as well as the Governments of Poland and Slovakia, for their effective collaboration and for completing the project in challenging circumstances," said the European Commissioner for Energy, Kadri Simson, in a pipeline inauguration statement.

"This interconnector will significantly improve the EU's security of supply and the resilience of our energy system, in line with our objectives," she added.

SCHLUMBERGER, a leading Western subsea oil and gas field services company and its peers, Aker Solutions and Subsea 7, plan to join forces to form a separate joint venture to deliver a step change in subsea production economics as energy exploration and production is set to gather pace amid the supply crisis.

The three companies propose to help customers unlock reserves, reduce time to first oil and lower development costs while simultaneously delivering on their decarbonization objectives.

The proposed joint venture will comprise the subsea businesses of Schlumberger and Aker Solutions, with Subsea 7 purchasing 10 percent of the joint venture for $306.5 million.

"This combination brings together deep reservoir domain and engineering design expertise, an extensive field-proven subsea production and processing technology portfolio, world-class manufacturing scale and capabilities, and a comprehensive suite of life-of-field solutions to customers all over the world," said a statement.

It added that the transaction was subject to regulatory approvals as well as other customary closing conditions and is expected to close during the second half of 2023.

Following completion of the transaction, Schlumberger will own 70 percent of the joint venture, with Aker and Subsea 7 owning 20 percent and 10 percent respectively.

The Board of Directors of the joint venture will consist of three representatives from Schlumberger, two from Aker and one from Subsea 7.

The new joint venture will form part of the Subsea Integration Alliance, currently an unincorporated alliance between Schlumberger and Subsea 7.

The alliance will be extended by 10 years from the transaction completion date.

"This joint venture will bring together world-class businesses that are uniquely positioned to provide subsea technologies to help our customers improve recovery and reduce overall subsea development costs," said Olivier Le Peuch, Chief Executive of Schlumberger, whose main offices are in Paris and Houston.

"Customers will benefit from enhanced services that leverage digital and technology innovation to drive improved performance while increasing energy efficiency and reducing CO2 emissions," added Le Peuch.

Schlumberger CEO Peuch had forecast in January 2022 that a super-cycle may be underway for natural gas and oil markets.

Kjetel Digre, CEO of Norway-based Aker Solutions, said that by combining strong and complimentary competence and technologies, this compelling combination will deliver an industry step-change that will benefit all involved and the customers.

"The offshore market activity is increasing, and this joint venture will drive enhanced offerings both in terms of subsea production economic," added Digre.

John Evans, CEO of Subsea 7, said he was excited to build on the highly successful alliance with Schlumberger and partnership with Aker Solutions.

"This new joint venture is a critical step as we collaborate on the integrated subsea projects that drive maximum value for our customers," added Evans for Subsea 7, headquartered in London and domiciled in Luxembourg.

Other transaction details show that Aker will receive $306.5M from Schlumberger which will be settled in the form of shares in Schlumberger.

The shares will be settled based on the volume-weighted average trading price of Schlumberger shares in the 10 business days preceding the closing of the transaction and are subject to a lock-up period of a minimum of 180 days.

Subsea 7 will purchase a 10 percent interest in the joint venture from Aker Solutions for $306.5M, which will be settled in cash.

Of this, 50 percent will be settled upon closing of the transaction and the remainder will be settled, with interest, by June 30, 2024.

Aker will receive $87.5M in proceeds from a vendor note from the joint venture. Of this, at least 50 percent will be paid, with interest, one year after the transaction closes and the remainder within two years.

SINOPEC, also known as China Petroleum & Chemical Corp. and an importer of liquefied natural gas cargoes from Queensland in Australia and from the US and Qatar, reported a more than 5 percent first-half increase in domestic natural gas output to partially offset its LNG needs.

Sinopec said in its first-half earnings presentation that risks of inflation and a slowdown would affect the global economy, though China's economic growth was anticipated to rebound and remain within a "reasonable" range

"Domestic demands for refined oil and chemical products are expected to pick up and demand for natural gas will maintain its growth path while international crude oil prices are expected to remain high and volatile," said Sinopec in its second-half outlook.

First half revenues came to a record 1.612 trillion Chinese yuan ($223.22 billion) compared with 1.260 trillion yuan ($182.39Bln) in the first six months of 2021.

Net profits for the first half increased by 10.5 percent to 44.45 billion yuan ($6.43Bln) versus 40.22Bln yuan ($1.82Bln) in the prior-year period.

Sinopec said its natural gas production from January to June increased by 5.4 percent year-on-year to 613.92 billion cubic feet from 582.60 Bcf in the same period of 2021.

The company said that realised natural gas prices came to 1.74 yuan per cubic metre compared with 1.52 yuan per cubic metre in the first half last year.

Oil and gas production during the six months increased by 2.9 percent to 242 million barrels of oil equivalent from 235 million barrels in the prior-year period.

The company's domestic crude oil production edged higher by 0.8 percent to 169.65 million barrels.

Sinopec's refining throughput dropped to 121 million tonnes of crude from 126MT in the same period of 2021.

The company said it seized the favourable opportunity of high oil price, intensified efforts in exploration and development and improved operational performance.

"In terms of development, we accelerated the capacity building of major oilfields, such as Shunbei, Tahe and offshore blocks, and strengthened efficiency adjustment and fine-tuned development of mature oil fields," said the company.

"We also actively promoted the capacity building of key natural gas blocks in Sichuan and the Erdos Basin, and enhanced optimisation and profitability improvement of the whole natural gas business chain," added Sinopec.

Sinopec Chairman Ma Yong Sheng said that the company would buy back its Hong Kong-listed and Shanghai-listed shares for the first time since listing on the stock exchanges over 20 years ago and would choose an appropriate time to do so.

"The company will focus in oil and gas on stabilizing oil production, increasing gas output, reducing costs and improving indicators such as R/P ratio and breakeven point," said Chairman Ma in his post-earnings address.

"In the refining and chemicals sector, Sinopec will build integrated clusters, pacing up the shift to chemicals and specialty products and accelerating development of high-end new materials," he added.

"More efforts will be made on green and low carbon technology R&D and increasing energy efficiency to steadily achieve the goals of a carbon peak and carbon neutrality," the Chairman declared.

He said Sinopec would also accelerate the establishment of a carbon technology company and start up China's first one million tonne carbon-capture and storage project.

TOTALENERGIES has approved the final investment decision for the Fénix gas development offshore LNG importer Argentina in partnership with Germany's main oil and gas company Wintershall Dea.

The French major will develop a gas field located 60 kilometres off the coast of Tierra del Fuego in southern Argentina with Wintershall, which is based in the central German city of Kassel.

Through its Total Austral affiliate, TotalEnergies operates the Fénix project with a 37.5 percent interest in partnership with Wintershall, which also owns 37.5 percent, while Buenos Aires-based Pan American Sur holds 25 percent.

TotalEnergies, Wintershall and Pan American Sur recently received extensions of more than 10-year from the Argentine government until 2041 on their offshore exploration concessions in the Austral Basin offshore Tierra del Fuego.

For Wintershall, which has been a shareholder in the Nord Stream pipeline gas projects with Russia's Gazprom, has other assets closer to Germany and also has plans to provide pipeline gas to the country from offshore Norway.

Wintershall's latest oil and gas discovery in Norway with a partner, UK-based Neptune Energy, was in the Hamlet prospect in the Norwegian North Sea and where Wintershall holds a 28 percent interest.

For the Argentine venture, the Government in Buenos Aires recently endorsed a $700 million investment plan from the three companies, allowing TotalEnergies, Wintershall and Pan American Sur to proceed with the Fénix gas project.

"This is an important step for Argentina, Wintershall Dea and all partners involved," said Thilo Wieland, Wintershall Dea's board member responsible for Latin and South America.

"Fénix is a major natural gas project, that will contribute significant natural gas volumes for more than 15 years to the country's long-term energy supply," added Wieland,

"At the same time, this decision is a proof of our commitment to Argentina and will strengthen its role as a core country in our global portfolio," he stated.

Data from the Argentine Oil and Gas Institute shows that the Austral basin, located mainly in Tierra del Fuego province, produces around 25 percent of Argentina's natural gas, making it the second-biggest producing basin behind the Neuquen basin for shale gas and oil, which produces around 55 percent.

"The Fénix field will be developed through three horizontal wells, drilled from a new unmanned platform in 70 metres water," said a statement from TotalEnergies.

"The gas will be transported through a 35-kilometres pipeline to the TotalEnergies-operated Véga Pleyade platform and treated onshore at the Rio Cullen and Cañadon Alfa plants, also operated by the company," added TotalEnergies.

The partners said they expected a production start-up in early 2025 for Fénix with output of 10 million cubic metres per day of natural gas (70,000 barrels of oil equivalent per day).

"This latest development demonstrates TotalEnergies' ability to leverage its hydrocarbon portfolio with projects that have low technical costs and low emissions, that can be brought on stream fast by harnessing synergies with existing facilities," said David Mendelson, Senior Vice President for the Americas at TotalEnergies Exploration and Production.

"With first gas less than two and a half years from FID, Fénix will contribute to maintaining our production levels in Tierra del Fuego and securing supply to the Argentinean gas market," stated Mendelson.

TotalEnergies also confirmed it would benefit from tax breaks brought in to encourage foreign investments in Argentina's oil and gas fields.

US LNG export data for June was published by the Department of Energy. It showed European nations and Argentina leading the destinations list with Spain surpassing China in cargo numbers and France overtaking the UK, while Sempra's Cameron LNG plant in Louisiana shipped the most expensive cargoes for a third month.

The DoE data showed 98 US cargoes were delivered versus 114 in the previous month and 91 shipments in June 2021.

The total number of US cargoes delivered worldwide since March 2016 now amounts to 3,639 shipments, or 11,748.7 billion cubic feet of natural gas.

A further 1,071 ISO containers of LNG have been shipped to nations in the Caribbean and Latin America from ports in Florida.

The average year-to-date price at the export points of the six US export plants listed in the data came to $9.48 per million British thermal units versus $8.92 per MMBtu in the previous month, according to the DoE August LNG report covering the month of June.

Shipments from the Cameron LNG plant in Louisiana, operated by the California-based utility Sempra and its LNG projects unit Sempra Infrastructure, cost the most for a third month through June 2022.

Cargoes lifted from the Cameron facility cost $16.05 per MMBtu in June. Shipments from the Sempra plant were also the most costly in the previous month at $14.85 per MMBtu.

The average price at the export point for the six plants combined was $13.82 per MMBtu for June versus $11.87 per MMBtu for the previous month.

The average prices for each of the five other plants (from the export point) from highest to lowest in June 2022 were: Corpus Christi in Texas $13.57 per MMBtu ($11.95 May, 2022); Sabine Pass (Louisiana) $12.90 per MMBtu ($10.93, May); Freeport LNG (Texas) $12.83 per MMBtu ($11.23, May); Cove Point (Maryland) $12.33 per MMBtu ($10.85, May); and Elba Island (Georgia) $11.40 per MMBtu ($9.66, May).

The Sabine Pass plant remained the volume leader in June 2022 with six Trains on stream and supplying 32 cargoes followed by Cameron 28, Corpus Christi with 21, Cove Point 7, Freeport 5 and Elba Island 3.

The Venture Global Calcasieu Pass plant on the Gulf Coast was still gradually ramping up as more modular Trains came on stream and shipped commissioning cargoes in June with no pricing data released.

The top five countries of destination, representing 50.6 percent of total US LNG exports in June 2022, were France (37.6 Bcf - 11 cargoes), the Netherlands (34.4 Bcf - 10 cargoes), Spain (29.6 Bcf - nine cargoes), Argentina (25.2 Bcf - seven) and South Korea (25.1 Bcf - seven cargoes).

The list of the Top 10 countries of destination overall since 2016 through June 2022 showed two Asian nations, South Korea and Japan leading and with Spain in third and China fourth.

The top 10 recipients of US LNG by overall numbers of cargoes at the end of May 2022 were: 1) South Korea 447 cargoes. 2) Japan 331. 3) Spain 279. 4) China 266. 5) France 213; 6) Brazil 211 (includes split cargoes) 7) UK 209; 8) India 167; 9) Mexico 163; and 10) Turkey 159.

Other vessel-borne delivery price data showed that imported shipments to the US territory of Puerto Rico cost an average of $13.54 per MMBtu in June, up from $12.15 per MMBtu in the previous month.

US LNG had been received in vessels by 42 different countries through June 2022. This includes ISO containers carried by cargo ships.

The US sends regular ISO containers to Caribbean nations such as Jamaica, Barbados, the Bahamas, Haiti, Antigua and Barbuda and to Nicaragua in Latin America.

A total of 35 containers were delivered in June compared with 34 in the previous month. The recipients were the Bahamas 17, Jamaica 10, Haiti four and Antigua and Barbuda four.

Most of the Caribbean volumes during the month were in containers shipped by American LNG Marketing and Eagle LNG Partners from the Florida ports of Fort Lauderdale and Miami.

Additionally, Barbados received two re-exported cargoes from Puerto Rico.

WOODSIDE Energy, the operator of the Australian North West Shelf and Pluto LNG export plants, has published the Environmental Impact Statement (EIS) for the latest export proposal from Western Australia.

The EIS was drawn up on the directions of the Australian Department of Climate Change, Energy, the Environment and Water.

The final EIS includes responses to comments received during the public consultation process held over an eight-week period from December 2019 to February 2020.

As operator of the proposed Browse-to-NWS Project, Woodside said it welcomed the publication of the final EIS as a milestone for the project.

The Canberra Ministry will now prepare its recommendation report and provide it to the Minister.

The proposed Browse-to-NWS Project would send feed gas from fields in the offshore Browse Basin to be processed at the NWS facility's Karratha Gas Plant.

"Browse and the NWS Project Extension are expected to contribute to our communities for decades to come," said Woodside.

"The proposed Browse-to-NWS Project could contribute to energy security in Western Australia and in the Asia-Pacific region, with production capacity of 11.4 million tonnes per year (LNG, LPG and Domestic Gas)," said the Perth-based company.

Woodside Chief Executive Meg O'Neill said moving into the assessment phase for the proposed Browse Basin project was a significant and positive step in the regulatory approval process.

The Browse Basin natural gas resources offshore Western Australia have been the subject of previous project suggestions, including floating LNG.

"The final EIS provides comprehensive detail of potential environmental impacts, proposed mitigations and management measures," stated O'Neill.

"The processing of Browse gas through the Karratha Gas Plant could provide energy needed in Western Australia and overseas, while providing jobs and taxation revenue that support our host communities," she explained.

Woodside noted that key work activities continued in support of progress towards front-end engineering design.

The company added that the corresponding State Environmental Review Document Response to Submissions would also be published once accepted by the Western Australian Environmental Protection Authority.

Diary of events

Americas LNG & Gas Summit & Exhibition
1-4 November
Lake Charles, Louisiana, USA
https://www.worldlngamericas.com/

22nd World LNG Summit & Awards
29 November - 2 December
Athens, Greece
https://www.worldlngsummit.com

WOODSIDE Energy confirmed a first-half net profit after tax (NPAT) of US$1.64 billion with operating revenues surging 132 percent to US$5.81Bln after a more than doubling of commodity prices.

Woodside Energy Chief Executive Meg O'Neill said the results reflected a strong operational performance and higher realised prices of $96.4 per barrel of oil equivalent across the expanded portfolio.

"Our first results since the completion of the merger with BHP's petroleum business highlight the increased financial and operational strength delivered by our larger, geographically diverse portfolio of high-quality operating assets," explained O'Neill.

"Production for the half year was 19 percent higher at 54.9 million barrels of oil equivalent, benefiting from the contribution in the month of June of the former BHP assets and improved reliability at our LNG facilities," stated the CEO.

O'Neill noted in particular, production from Pluto was increased by the start of the Pyxis Hub and of gas flows through the Interconnector pipeline to the Karratha Gas Plant.

"This well-timed investment allowed us to supply three LNG cargoes, one condensate cargo and pipeline gas into a strong market, generating $419 million in revenue and delivering additional value to our shareholders," she stated.

"The start-up of the Pluto-KGP Interconnector also marked the beginning of the North West Shelf Project's transformation into a tolling facility, which is essential to the long-term future of Australia's first and largest LNG plant," added O'Neill.

Woodside's subsea project teams also successfully delivered the Greater Western Flank Phase 3 and Julimar-Brunello Phase 2 projects in Australia. They also completed the Shenzi subsea multi-phase pump in the Gulf of Mexico.

"The upheavals in global and Australian energy markets witnessed over the course of the past six months have shone a spotlight on the importance of gas in the world's energy mix and underscores our confidence in the longer-term demand outlook for gas, which makes up 70 percent of Woodside's portfolio," explained O'Neill.

"Safe and reliable supplies of gas are not only critical to global energy security but will play a key role as our customers seek to decarbonise, alongside new energy sources Woodside is investing in," she stated.

The CEO said the company was increasing activities at its Scarborough and Pluto Train 2 projects in Western Australia, with all major equipment items procured, fabrication of the floating production unit topsides and Pluto Train 2 construction works underway.

In Senegal, the Sangomar Field Development Phase 1 was also progressing strongly, with drydock activities for the Floating Production Storage Offloading (FPSO) unit's conversion completed during the period and the subsea installation campaign commencing in August.

The company added that a second drillship started drilling in July, supporting the 23-well development drilling campaign offshore Senegal.

"Woodside continues to deliver a disciplined approach to capital management, generating $2.56Bln of free cash flow during the half and demonstrating our commitment to shareholder returns with the declaration of a fully franked interim dividend of 109 US cents per share," said O'Neill.

"We are the largest energy company listed in Australia and we are proud to be making a significant economic contribution through our continued investment in existing operations and growth projects and through our tax payments, including petroleum resource rent tax," added the CEO.

"We paid approximately A$700 million in Australian taxes, royalties and excise in the first half of this year," she said.

"Our strategy to thrive through the energy transition as a low-cost, lower-carbon energy provider continues to progress through recently announced initiatives across hydrogen refuelling, carbon-capture and storage and carbon to products technologies," the CEO concluded.

ZIM Integrated Shipping Services, the Israeli containership company listed on the New York Stock Exchange, has signed a liquefied natural gas bunkering accord valued at $1 billion with UK-based energy major Shell.

The Haifa, Israel-based company has signed the deal to secure LNG fuel for 10 LNG-powered vessels that will be deployed for ZIM's flagship ZIM Container Service Pacific (ZCP) business covering the Asia-to-US East Coast trade route.

These 10 vessels of 15,000 twenty-foot equivalent units (TEU) are expected to enter into service during 2023-2024 and will be transporting goods from China and South Korea to the US East Coast and the Caribbean.

The bunkering deal with Shell follows long-term charter agreements signed by ZIM in 2021 to charter the dual-fuel containerships being constructed in South Korea.

ZIM's charter deal was in the form of strategic agreement with the owners of the ships, Seaspan Corp.

While ZIM's headquarters are in the Israeli port of Haifa it also has a North American base at Norfolk in Virginia.

ZIM noted in its statement that about 23 percent of total shipping emissions are from the container segment alone and with increasing global trade of goods, these emissions need to be addressed on a prompt basis.

The company stated that LNG remained the lowest carbon fuel available at scale today and it provides 20 percent less greenhouse-gas emissions when compared to conventional marine fuels.

"With the addition of significant LNG-powered capacity to our fleet, beginning in 2023, we have positioned ZIM as a leader in carbon intensity reduction among global liners," said Eli Glickman, ZIM's President and Chief Executive.

"We are pleased to execute this long-term supply agreement with Shell to secure LNG at competitive terms and look forward to partnering with a global industry leader such as Shell as we take an important step to ensure our fuel sourcing is well planned and of the highest quality," explained Glickman.

"Our growing LNG-powered fleet will enable ZIM to be more carbon and cost efficient, while improving our competitive position, particularly on the strategic Asia to USEC trade, and allowing customers to reduce their carbon footprint," he stated.

Steve Hill, Executive Vice President of Energy Marketing at Shell, said he congratulated ZIM for introducing the world's first LNG-fuelled Very Large Container Ship (VLCS) fleet to operate on the Asia-North America shipping route.

"We are delighted to collaborate with them on their impressive efforts to reduce emissions in their maritime supply chain," added Hill.

"Decarbonization of the shipping industry must begin today, and LNG is a lower emission fuel choice currently available in meaningful volumes," stated Hill.

ZIM was founded in Israel in 1945 and the company is a leading global container shipping line with established operations in about 100 countries serving approximately 30,000 customers. ■

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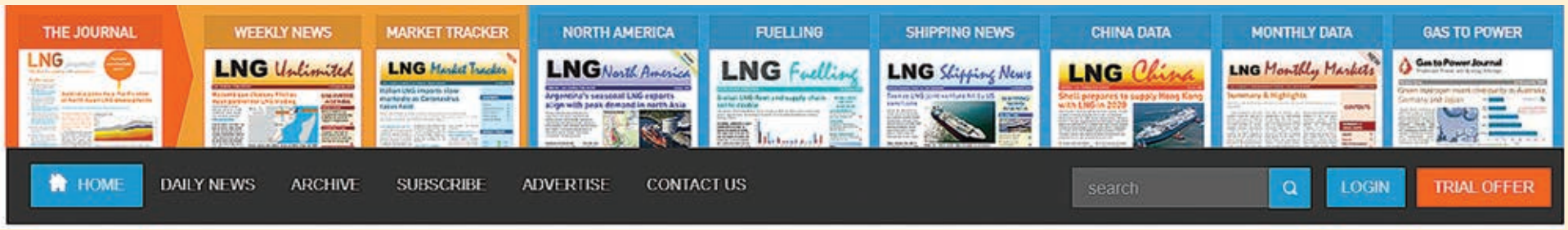

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LNG Import Terminals

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.

Any comments on the tables, and corrections / additional information from terminal shareholders and project developers would be most welcome, and should be sent to editor@lngjournal.com

Country	Location (Project)	Owners	Start up	Storage Tanks	Storage Capacity
Belgium	Zeebrugge	Fluxys	1987	4	380,000
Canada	Canaport Saint John	Irving Oil, Repsol	2009	3	480,000
Chile	Quintero	ENAP, Metrogas, Enagas	2009	3	334,000
	Mejillones	Engie, Ameris Capital AGF	2010	1	175,000
China	Beihai LNG, Guangxi	Sinopec	2015	4	640,000
	Dalian	PetroChina	2011	3	480,000
	Dapeng ND Guangdong	CNOOC	2018	4	640,000
	Dongguan, Guangdong	Jovo Group	2013	2	160 000
	Fujian LNG (Xiuyu)	CNOOC, Fujian I&D Corp.	2008	2	640,000
	Guangdong	CNOOC,BP	2006	3	480,000
	Haikou, Hainan LNG	CNOOC	2014	3	480,000
	Jiangsu Binhai LNG	CNOOC	2022	4	880,000
	Ningbo, Zheijang	CNOOC, Zhejiang Energy	2012	3	480,000
	Pinghu LNG	Z. H. Clean Energy	2022	2	160,000
	Qidong, Jiangsu	Guanghui Energy	2018	1	60,000
	Qingdao, Shandong	Sinopec	2014	3	480,000
	Rudong	PetroChina	2011	3	530,000
	Shanghai	CNOOC, Shenergy Group	2009	3	495,000
	Shanghai, Mengtougou	Shanghai Gas	2008	3	120 000
	Shenzen, Diefu	CNOOC	2016	2	320,000
	Tangshan, Hebei	PetroChina	2013	3	480,000
	Tianjin North	Sinopec	2017	2	320,000
	Yuedong, Guangdong	CNOOC	2016	2	320,000
Dominican Republic	Zhoushan Zhejiang	Enn Group	2018	2	320,000
Finland	Zhuhai, Gaolan	CNOOC	2013	3	480,000
	Punta Caucedo	AES Andres	2003	1	160 000
France	Pori	Gasum Skangas	2016	1	30,000
	Tornio	Gasum Skangas	2018	1	30,000
	Fos Tonkin	Elengy	1972	3	150,000
	Montoir-de-Bretagne	Elengy	1980	3	360,000
Gibraltar	Fos Cavaou	Engie, Total	2010	3	330,000
Greece	Dunkirk LNG	EDF, Fluxys, Total	2016	3	570,000
India	Gasnor	Shell	2018	1	5,000
	Revithoussa	DEPA	2000	3	225,000
	Dabhol	GAIL, NTPC (Ratnagiri Gas & Power)	2009	3	480,000
	Dahej	Petronet LNG	2004	4	592,000
	Hazira	Shell India, Total	2005	2	320,000
	Kochi, Kerala	Petronet LNG	2013	2	320,000
Indonesia	Mundra	Gujarat State Petroleum, Adani Group	2018	2	320,000
Italy	Kamarajar (Ennore), Tamil Nadu	Indian Oil, DFC, ICICI Bank	2019	2	360,000
	Arun	Pertamina	2015	5	507,000
Jamaica	Panigaglia	Snam	1969	2	100,000
Japan	Porto Levante (offshore GBS)	ExxonMobil, Qatar Petroleum, Edison Gas	2009	2	250,000
	Montego Bay	New Fortress	2018	1	7,000
	Negishi	Tokyo Gas	1969	14	1,180,000
	Sodegaura	Tokyo Gas JERA Co. Inc	1973	35	2,660,000
	Ohgishima	Tokyo Gas	1998	4	850,000
	Higashi-Ohgishima	JERA Co. Inc.	1984	9	540,000
	Futtsu	JERA Co. Inc.	1985	10	1,360,000
	Yokkaichi LNG	JERA Co. Inc.	1988	4	320,000
	Kawagoe	JERA Co. Inc.	1997	6	840,000
	Yokkaichi Works	Toho Gas	1991	2	160,000
	Chita LNG Joint	Toho Gas, Chubu Electric	1978	4	300,000
	Chita LNG	Toho Gas, Chubu Electric	1983	7	640,000
	Chita - Midorihama	Toho Gas	2001	3	600,000
	Senboku I	Osaka Gas	1972	4	180,000
	Senboku II	Osaka Gas	1977	18	1,585,000
	Himeji	Osaka Gas	1984	8	740,000
	Himeji LNG	Kansai Electric	1979	7	520,000
	Yanai	Chugoku Electric	1990	6	480,000
	Niigata	Nihonkai LNG, Tohoku Electric	1984	8	720,000
	Oita	Oita Gas, Kyushu Electric	1990	5	460,000
	Tobata	Kitakyushu LNG	1977	8	480,000
	Fukuoka	Saibu Gas	1993	2	70,000
	Sodeshi	Shizuoka Gas	1996	3	337,200
	Hatsukaichi	Hiroshima Gas	1996	2	170,000
	Kagoshima	Nippon Gas	1996	2	136,000
	Shin-Minato	Sendai City Gas	1997	1	80,000
	Nagasaki	Saibu Gas	2003	1	36,000

LNG Import Terminals (continued)

Country	Location (Project)	Owners	Start up	Storage Tanks	Storage Capacity
	Sakai	Kansai Electric, Cosmo Oil	2006	3	420,000
Japan (continued)	Mizushima	Nippon Oil, Chugoku Electric	2006	2	320,000
	Sakaide	Shikoku Electric, Cosmo Oil	2011	1	180,000
	Ishikari LNG	Hokkaido Gas, Hokkaido Electric	2012	2	380,000
	Okinawa	Okinawa Electric Power	2012	2	280,000
	Naoetsu	Inpex	2013	2	360,000
	Joetsu	JERA Co. Inc.	2011	3	540,000
	Hachinohe LNG	Nippon Oil	2015	2	280,000
Korea	Hitachi LNG	Tokyo Gas	2015	1	230,000
	Soma Fukushima	Japan Petroleum Exploration	2017	1	225,000
	Boryyeong	GS Energy, SK E&S	2017	3	200,000
	Incheon	Kogas	1996	20	2,880,000
	Kwangyang	POSCO SK E&S	2005	4	530,000
	Pyeong-Taek	Kogas	1986	23	3,360,000
	Samcheok	Kogas	2014	3	600,000
Kuwait	Tong-Yeong	Kogas	2002	17	2,620,000
Malaysia	Jeju	Kogas	2019	2	90,000
Mexico	Al Zour LNG	KIPIC	2021	8	1,800,000
	Pengerang Johor	Petronas Gas	2017	2	400,000
	Altamira	Vopak, Enagas	2006	2	300,000
Netherlands	Energia Costa Azul	Sempra LNG	2008	2	320,000
Panama	Manzanillo	Samsung, Kogas, Mitsui	2012	2	300,000
Phillipines	Gate LNG	Gasunie, Royal Vopak	2011	3	540,000
Poland	Costa Norte	AES	2018	1	130,000
Portugal	Pagbilao LNG	Energy World Corp.	2017	1	130,000
Puerto Rico	Swinoujscie	Baltic Gaz System	2015	2	320,000
Singapore	Sines	REN Atlantico	2004	3	390,000
Spain	Penuelas	EcoElectrica	2000	1	160,000
	Singapore	Singapore Energy Authority	2013	3	540,000
	Barcelona	Enagas	1969	8	840,000
	Huelva	Enagas	1988	5	610,000
	Cartagena	Enagas	1989	5	587,000
	Bilbao	Enagas, EVE	2003	3	450,000
	Sagunto	GNF, Osaka Gas, Oman Oil	2006	4	600,000
Sweden	Mugardos, El Ferrol	Reganosa, Sonatrach, Sojitz Corp.	2006	2	300,000
	El Musel, Gijón,	Enagas	2013	2	300,000
Taiwan	Lysekil	Gasum	2014	1	30,000
	Nynashamn	AGA Gas	2011	1	20,000
Thailand	Yung-An	CPC	1990	6	690,000
Turkey	Tai-Chung	CPC	2009	5	800,000
	Map Ta Phut	PTT LNG	2011	2	320,000
USA	Marmara Ereglisi	Botas	1994	3	255,000
	Izmir	EgeGaz	2006	2	280,000
	Everett	Suez LNG NA	1971	2	155,000
	Lake Charles	Shell, ETE	1982	4	425,000
	Freeport	Freeport LNG Development	2008	2	320,000
UK	Golden Pass, TX	Qatar Petroleum, ExxonMobil	2010	5	775,000
	Pascagoula, MS	Gulf LNG, Kinder	2012	2	320,000
	Isle of Grain	National Grid	2005	8	1,000,000
	South Hook	ExxonMobil, Qatar Petroleum,Total	2009	5	775,000
	Dragon LNG, Milford Haven	Shell, Petronas	2009	2	310,000

LNG Import Terminal Projects

Country	Location/Project	Owners/Project Developers	Start up	Storage Tanks	Storage Capacity
China	Shenzhen	CNPC Yudean Power	2021	2	120,000
	Tianjin (Nangang)	Beijing Energy	2022	10	2,000,000
	Yangjiang	CNPC Yudean Power	2023	2	120,000
	Zhangzhou Fujian	CNOOC	2022	2	160,000
India	Dhamra Odisha	Indian Oil, Adani, GAIL	2020	2	320,000
	Jaigarh	Hiranandani Group	2021	2	320,000
	Kodinar	Hindustan Petroleum Corp.	2022	1	160,000
Japan	Himuka	Diagas Group-Osaka Gas	2022	1	65,000

LNG FSRU Import Facilities

Country	Location (Project)	Owners	Start up
Argentina	Escobar GasPort	Excelerate/Enarsa	2011
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
Ghana	Tema LNG	Helios/GNPC	2021
Indonesia	Lampung	Hoegh LNG, PGN LNG	2014
	Nusantara (Jakarta Bay)	Golar LNG, Pertimana	2012
	Benoa LNG	PT Pertagas Niaga	2016
	Amurang	Karadeniz	2020
	Jawa Satu FSRU	Pertamina	2021
Israel	Hadera Gateway	Israel Electric	2013
Italy	Livorno	OLT Offshore LNG Toscana	2013
Jamaica	Old Harbour	Golar FSRU, New Fortress	2019
Jordan	Aqaba, Jordan	Golar LNG	2015
Kuwait	Mina Al-Ahmadi	KPC	2009
Lithuania	Klaipeda	Klaipedos Nafta Hoegh LNG	2014
Malaysia	Malacca FSRU	Petronas	2012
Malta	FSU Armada Mediterrana	ElectroGas	2016
Myanmar	Thanlyin	CNTIC Vpower	2020
Pakistan	Port Qasim	Excelerate, Engro Corp	2015
	Port Qasim	BW-Mitsui, PGP Consortium	2017
Russia	Kaliningrad FSRU	Gazprom	2020
Turkey	Aliaga FSRU, Turquoise FLNG	Etki LNG	2016
	Dortyol FSRU Terminal	Botas	2018
UAE	Ruwais, Abu Dhabi	Gasco (UAE)	2016
	Jebel Ali Port, Dubai	DSA (UAE)	2010

LNG Export Projects

Country	Location/Project	Project Developers	Planned Start Up	Number of Trains	Capacity In MTPA
AUSTRALIA	Pluto LNG expansion	Woodside	2021+	2	10.0
CANADA	Bear Head LNG, Nova Scotia	LNG Ltd.	2024	4	8.0
	Goldboro LNG, Nova Scotia	Pieridae Energy	2024	2	10.0
	Kitimat LNG, BC	Woodside, Chevron	2024	2	10.0
	LNG Canada, BC	Shell, Mitsubishi, Kogas, PetroChina, Petronas	2024	2	12.0
	Kwispaa FLNG, Vancouver	Steelhead LNG	2024	4	12.0
	Vancouver Tilbury	WesPac Midstream	2021	1	3.25
	Woodfibre LNG, Squamish	Pacific Oil & Gas Co	2020	2	2.1
INDONESIA	Sengkang LNG	Energy World Corp.	2021+	4	2.0
MALAYSIA	Rotan FLNG (Sabah)	Petronas, Murphy Oil	2021	1	1.5
MOZAMBIQUE	Area 1 Onshore	Anadarko Petroleum and partners	2023+	2	10.0
	Area 4 Onshore	Eni and partners	2023+	2	10.0
	Area 4 FLNG	Eni and partners	2022	1	3.4
NIGERIA	NLNG Train 7	NNPC, Shell, Eni, Total	2022+	1	7.0
PAPUA NEW GUINEA	Elk-Antelope LNG	Total, ExxonMobil Oil Search, Petromin	Studies		
RUSSIA	Arctic LNG II Siberia	Novatek, Total	2023	3	19.8
	Portovaya LNG	Gazprom	2022	2	1.5
	Sakhalin II expansion	Gazprom, Shell, Mitsui, Mitsubishi	2021	studies	
	Vladisvostok LNG	Gazprom, Itochu, various	2023+	2	10.0
USA	Alaska LNG Nikiski	Alaska Gasline Development Corp.	2023+	3	20.0
	Annova LNG, Brownsville	Exelon Corp.	2023+	6	6.0
	Commonwealth LNG, Louisiana	Commonwealth LNG LLP	2023+	8	9.0
	Delfin LNG, Louisiana	Delfin	2023+	3	9.0
	Driftwood LNG, Louisiana	Tellurian, Total and others	2023	6	27.6
	Galveston Bay LNG	NextDecade	2023+	6	27.0
	Golden Pass, Texas	Qatar Petroleum, ExxonMobil	2024	3	15.6
	Jacksonville, St John's River	Eagle LNG, Ferus Natural Gas Fuels	2021+	small	TBC
	Jordan Cove, Coos Bay	Pembina Corp.	2024	2	7.8
	Lake Charles, Louisiana	Shell, ETE	2024	3	15.0
	Magnolia LNG	Louisiana LNG Ltd.	2023+	4	8.0
	Port Arthur LNG	Sempra	2023+	2	10.0
	Rio Grande LNG	NextDecade	2023+	6	27.0
	Sabine Pass LNG, Louisiana	Cheniere	2016-19	1	4.5
	Texas LNG Brownsville	Chandra, Meyer, Samsung, others	2023+	2	4.0
	VG LNG (Cameron Parish)	Venture Global	2022	5	12.0
	VG LNG (Plaquemines)	Venture Global	2022	10	20.0
	VG LNG (Delta-Plaquemines)	Venture Global	2024	36	22.5

LNG Exporters

Country	Location/Project	Shareholders	Start up	Liquefaction		Storage	
				Trains	capacity (nominal) mtpa	No. of tanks	Total capacity m³
ABU DHABI (UAE)	Das Island (Adgas)	ADNOC, Mitsui, BP, Total	1977	2	3.2	3	240,000
			1994	1	2.5		
ALGERIA	Arzew	Sonatrach GL4Z	1964	3	1.1	3	35,000
	Arzew	Sonatrach GL1Z	1978	6	7.8	3	300,000
	Arzew	Sonatrach GL2Z	1980	6	8.0	3	300,000
	Arzew	Sonatrach	2014	1	4.7		
	Skikda	Sonatrach GL1K II	1980	3	3.0	5	308,000
	Skikda	Sonatrach (rebuild)	2013	1	4.5		
ANGOLA	Soyo	Sonangol, Chevron, BP, ENI, Total	2012	1	5.2	2	370,000
AUSTRALIA	Karratha	NWS Woodside, Shell, BHP	1989	2	5.0	4	260,000
		(BP, Chevron	1992	1	2.5	1	130,000
		(Mistubishi/Mitsui)	2004	1	4.4	1	130,000
		NWS partners	2008	1	4.4	1	130,000
	Darwin	Darwin (Bayu Undan) ConocoPhillips, Santos, Eni, Inpex, TEPCO, Tokyo Gas	2006	1	3.5	1	188,000
	Australia Pacific LNG	ConocoPhillips, Origin Energy, Sinopec	2016	2	7.5	2	320,000
	Gladstone LNG	Santos, Petronas, Total, Kogas	2015	2	7.8	2	280,000
	Gorgon LNG	Chevron, Shell, ExxonMobil	2016	3	15.6	2	360,000
	Pluto LNG	Woodside, Tokyo Gas, Kansei	2012	1	4.8	2	240,000
	QCLNG	Shell, CNOOC	2014	2	8.0	2	280,000
	Wheatstone LNG	Chevron, Woodside, Kuwait (KUFPEC), Jera, Kyushu	2017	2	8.9	2	300,000
	Ichthys LNG	Inpex Corp., Total	2018	2	8.9	2	330,000
	Prelude FLNG	Shell, Inpex, Kogas CPC	2019	1	3.5		
BRUNEI	Lumut	Brunei/Shell/Mitsubishi/Total	1972-74	5	7.2	3	176,000
CAMEROON	Hilli Episeyo FLNG	Kribi Perenco	2018	1	1.2	1	125,000
EGYPT	Damietta	Union Fenosa, EGPC, EGAS	2004	1	5.0	2	300,000
	Idku	EGPC, EGAS, Shell, Total, Petronas	2005	2	7.2	2	280,000
EQ.GUINEA	Bioko Island	Marathon, Sonagas, Mitsui, Marubeni	2007	1	3.4	2	272,000
INDONESIA	Bontang I	Pertamina, VICO, JILCO, Total	1977	2	5.2	5	635,000
	Bontang II		1983	2	5.2		
	Bontang III		1989	1	2.8		
	Bontang IV		1993	1	2.8		
	Bontang V		1997	1	2.8		
	Bontang VI		1999	1	3.0		
	Sulawesi LNG	Medco Energi, Pertamina, Mitsubishi	2015	1	2.0	1	170,000
	Tangguh	BP, MI Berau, CNOOC, Nippon, LNG Japan	2008	2	7.6	2	340,000
MALAYSIA	Bintulu (MLNG Satu)	Petronas, Sarawak, Mitsubishi	1983	3	8.1	4	260,000
	Bintulu (MLNG Dua)	Petronas, Shell, Sarawak, Mitsubishi	1995	3	7.8	1	65,000
	Bintulu (MLNG Tiga)	Petronas, Shell, Sarawak, Mitsubishi, Nippon Oil	2003	2	6.8	1	120,000
	Bintulu Train 9	Petronas	2016	1	3.6		
	Kanowit FLNG	Petronas	2016	1	1.2		
NIGERIA	Bonny Island	NNPC, Shell, Total, Eni	1999	2	6.4	2	168,400
		Nigeria LNG (formed by above)	2002	1	3.2	1	84,200
		Nigeria LNG	2006	2	8.2		
		Nigeria LNG	2008	1	4.1	1	84,200
NORWAY	Snøhvit/Melkoya	Equinor, Total, Petoro	2007	1	4.2	2	280,000
OMAN	Oman LNG	Oman Govt., Shell, Total, Korea LNG	2000	2	7.1	2	240,000
		Mitsubishi, Mitsui, Partex and Itochu					
		Oman Govt.,Oman LNG Union Fenosa, Osaka Gas, & Itochu	2006	1	3.7	2	240,000
PAPUA NEW GUINEA	PNG LNG	ExxonMobil, Oil Search, Santos, JX Nippon Oil	2014	2	6.9	2	320,000
PERU	Peru LNG	Hunt Oil, Shell, Marubeni, SK Group	2010	1	4.4	2	260,000
QATAR	Qatargas 1-T1&2	QP, ExxonMobil, Total, Marubeni, Mitsui	1997	2	6.4	4	340,000
	Qatargas 1-T3	QP, ExxonMobil, Total, Marubeni, Mitsui	1999	1	3.1		
	Qatargas II-T1	QP, ExxonMobil	2009	1	7.8		
	Qatargas II-T2	QP, ExxonMobil, Total	2009	1	7.8	8	1,160,000
	Qatargas III-T1	QP, ConocoPhillips, Mitsui	2010	1	7.8		
	Qatargas IV-TI	QP, Shell	2010	1	7.8		
	RasGas I- T1&2	QP, ExxonMobil, Kogas, Itochu, LNG Japan	1999	2	6.6		
	RasGas II- T3	QP, ExxonMobil	2004	1	4.7		
	RasGas II- T4	QP, ExxonMobil	2005	1	4.7	6	840,000
	RasGas II- T5	QP, ExxonMobil	2007	1	4.7		
	Rasgas III – T6	QP, ExxonMobil	2009	1	7.8		
	Rasgas III – T7	QP, ExxonMobil	2010	1	7.8		
RUSSIA	Sakhalin Island	(Sakhalin Energy) Gazprom, Shell, Mitsui, Mitsubishi	2009	2	9.6	2	200,000
	Yamal LNG Siberia	Novatek, Total, CNPC, Silk Fund	2017	3	16.5	4	640,000
TRINIDAD & TOBAGO	Point Fortin Train 1	BP, Shell, CIC, NGC	1999	1	3.0	2	204,000
	Train 2	BP, Shell	2002	1	3.3	1	160,000
	Train 3	BP, Shell	2003	1	3.3	1	160,000
	Train 4	BP, Shell, NGC	2005	1	5.2	1	160,000
USA	Cheniere Sabine Pass	Cheniere Energy	2016	5	22.5	5	800,000
	Cove Point LNG	Dominion Energy	2017	1	5.3	7	695,000
	Cheniere Corpus Christi	Texas Cheniere	2018	3	15.0	3	480,000
	Cameron Hackberry	Sempra, Total, Mitsui, Mitsubishi	2019	2	9.8	3	480,000
	Elba Island Georgia	Kinder Morgan, EIG Energy	2019	10	2.5	5	535,000
	Freeport LNG,Texas	Freeport LNG	2019	2	10.2	3	483,000
	Calcasieu Pass LNG	Venture Global	2022	18	11	2	400,000
YEMEN	Bal-Haf	Yemen LNG, Total, Yemen Gas, Hunt Oil, SK Group, Hyundai	2009	2	6.7	2	320,000

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	Apr-10	M. Islnds.	Diesel	TZ Mk. III	10	Qatargas IV	1753
Abadi	135,000	Tost Two (NBD) Sendirian Berhad	Mitsubishi	May-02	Brunei	Steam	Moss	5	Lumut	2163
Adam LNG	162,000	Oman Shipping Co.	HHI	Jul-14	Malta	Diesel	TZ Mk. III Flex	4	Oman LNG	2584
Adamastos	170,800	Shin Doun Kisen Co. Ltd.	HHI	Aug-21	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3109
Adriano Knutsen	180,000	Knutsen OAS Shipping	HHI	Jul-19	Spain	ME-GI	TZ Mk. III Flex	4	Corpus Christi	2963
Al Aamriya	210,168	J5 Nakilat No.1 Ltd.	Daewoo	May-08	M. Islnds.	Diesel	GT NO 96	5	RasGas III	2249
Al Areesh	148,786	Al Areesh LLC	Daewoo	Jan-07	Bahamas	Steam	GT NO 96	4	RasGas II	2239
Al Bahiya	210,100	Nakilat DSME 2286 Inc.	Daewoo	Dec-09	M. Islnds.	Diesel	GT NO 96	5	Qatargas IV	1726
Al Bidda	137,339	Mitsui O.S.K. Lines	Kawasaki	Nov-99	Japan	Steam	Moss	5	Qatargas I	1470
Al Daayen	148,853	Seaspirit Leasing	Daewoo	Mar-07	Bahamas	Steam	GT NO 96	4	RasGas II	2240
Al Dafna	268,000	Nakilat SHI 1726 Inc.	Samsung	Oct-09	M. Islnds.	Diesel	TZ Mk. III	10	RasGas	1726
Al Deebel	145,000	Peninsula LNG Transport No. 3	Samsung	Nov-05	Bahamas	Steam	TZ Mk. III	4	RasGas II	1442
Al Gattara	216,200	Overseas LNG H1 Corp.	HHI	Nov-07	M. Islnds.	Diesel	TZ Mk. III	4	Qatargas II	1791
Al Ghariya	210,150	Neptora Schiffsbetriebsgesellschaft mbH & Company ts Julia KG	Daewoo	Dec-07	Bahamas	Diesel	GT NO 96	4	Qatargas II	2248
Al Gharrafa	216,200	Overseas LNG H2 Corp.	HHI	Jan-08	M. Islnds.	Diesel	TZ Mk. III	5	Qatargas II	1792
Al Ghashamiya	217,591	Nakilat SHI 1696 Inc.	Samsung	Apr-09	M. Islnds.	Diesel	TZ Mk. III	10	Qatargas III	1696
Al Ghuwairiya	263,300	Nakilat Al Ghuwairiya Inc.	Daewoo	Dec-08	M. Islnds.	Diesel	GT NO 96	5	Qatargas II	2255
Al Hamla	216,200	Overseas LNG S2 Corp.	Samsung	Feb-08	M. Islnds.	Diesel	TZ Mk. III	4	Qatargas II	1606
Al Hamra	137,000	Al Hamra Ltd.	STX	Nov-96	Liberia	Steam	Moss	4	Das Island	1332
Al Huwaila	217,000	Al Huwaila Inc.	Samsung	May-08	Bahamas	Diesel	TZ Mk. III	10	RasGas III	1643
Al Jasra	137,227	Mitsui O.S.K. Lines	Mitsubishi	Jun-00	Japan	Steam	Moss	5	Qatargas I	2117
Al Jassasiya	145,700	Venice Maritime Inc.	Daewoo	May-07	Bermuda	Steam	GT NO 96	4	RasGas II	2243
Al Karaana	210,100	Nakilat DSME 2284 Inc.	Daewoo	Oct-09	M. Islnds.	Diesel	GT NO 96	4	Qatargas III	2284
Al Kharaitiyat	216,300	Nakilat HHI 1909 Inc.	HHI	Jun-09	M. Islnds.	Diesel	TZ Mk. III	4	Qatargas III	1909
Al Kharsaah	217,000	Al Kharsaah Inc.	Samsung	Jun-08	Bahamas	Diesel	TZ Mk. III	10	RasGas III	1644
Al Khattiya	210,150	Nakilat DSME 2283 Inc.	Daewoo	Jul-09	M. Islnds.	Diesel	GT NO 96	4	Qatargas IV	2283
Al Khaznah	135,496	Al Khaznah Inc.	Mitsui E&S	Jul-94	Liberia	Steam	Moss	5	Das Island	1390
Al Khor	137,354	Mitsui O.S.K. Lines	Mitsubishi	Nov-96	Japan	Steam	Moss	5	Qatargas I	2089
Al Khuwair	217,000	Al Khuwair Inc.	Samsung	Jun-08	Bahamas	Diesel	TZ Mk. III	10	RasGas III	1646
Al Mafyar	266,000	Nakilat SHI 1697 Inc.	Samsung	Apr-09	M. Islnds.	Diesel	TZ Mk. III	5	Qatargas III	1697
Al Marrouna	149,539	Seaspirit Leasing	Daewoo	Sep-06	Bahamas	Steam	GT NO 96	4	RasGas II	2238
Al Mayeda	266,000	Nakilat SHI 1694 Inc.	Samsung	Jan-09	M. Islnds.	Diesel	TZ Mk. III	5	Qatargas III	1694
Al Nuaman	210,100	Nakilat DSME 2285 Inc.	Daewoo	Dec-09	M. Islnds.	Diesel	GT NO 96	4	Qatargas III	2286
Al Oraiq	210,200	J5 Nakilat No.3 Ltd.	Daewoo	Jun-08	M. Islnds.	Diesel	GT NO 96	18	RasGas III	2250
Al Rayyan	137,420	Mitsui O.S.K. Lines	Kawasaki	Mar-97	Japan	Steam	Moss	5	Qatargas I	1445
Al Rekayyat	216,293	Nakilat HHI 1910 Inc.	HHI	Jun-09	M. Islnds.	Diesel	TZ Mk. III	4	Qatargas III	1910
Al Ruwais	210,150	Neptana Schiffsbetriebsgesellschaft mbH & Company ts Alexandra KG	Daewoo	Aug-07	Bahamas	Diesel	GT NO 96	4	Qatargas II	2245
Al Sadd	210,200	Nakilat DSME 2265 Inc.	Daewoo	Mar-09	M. Islnds.	Diesel	GT NO 96	12	Qatargas III	2265
Al Safliya	210,150	Nausola Schiffsbetriebsgesellschaft mbH & Company ts Britta KG	Daewoo	Sep-07	Bahamas	Diesel	GT NO 96	5	Qatargas II	2246
Al Sahla	216,200	J5 Nakilat No.5 Ltd.	HHI	Jun-08	M. Islnds.	Diesel	TZ Mk. III	4	RasGas III	1863
Al Samriya	263,300	Nakilat Al Samriya Inc.	Daewoo	Feb-09	M. Islnds.	Diesel	GT NO 96	5	Qatargas II	2257
Al Shamal	217,000	Al Shamal Inc.	Samsung	Apr-08	Bahamas	Diesel	TZ Mk. III	10	RasGas III	1645
Al Sheehaniya	210,100	Nakilat DSME 2264 Inc.	Daewoo	Feb-09	M. Islnds.	Diesel	GT NO 96	12	Qatargas III	2264
Al Thakhira	145,000	Peninsula LNG Transport No. 2	Samsung	Aug-05	Bahamas	Steam	TZ Mk. III	4	RasGas II	1441
Al Thumama	216,200	J5 Nakilat No.2 Ltd.	HHI	Feb-08	M. Islnds.	Diesel	TZ Mk. III	4	RasGas III	1862
Al Utouriya	215,000	J5 Nakilat No.8 Ltd.	HHI	Sep-08	M. Islnds.	Diesel	TZ Mk. III	4	RasGas III	1875
Al Wajbah	137,308	Mitsui O.S.K. Lines	Mitsubishi	Jun-97	Japan	Steam	Moss	5	Qatargas I	2090
Al Wakrah	137,371	Mitsui O.S.K. Lines	Kawasaki	Nov-98	Japan	Steam	Moss	5	Qatargas I	1446
Al Zubarah	137,573	Mitsui O.S.K. Lines	Mitsui E&S	Nov-96	Japan	Steam	Moss	5	Qatargas I	1411
Alto Acrux	147,798	Bahamas LNG Shipping	Mitsubishi	Mar-08	Bahamas	Steam	Moss	4	Darwin LNG	2219
Amadi	154,800	Brunei Gas Carriers	HHI	Jul-15	Brunei	Steam	TZ Mk. III	4	Lumut	2607
Amali	148,000	BGC SPV NBD	Daewoo	Aug-11	Brunei	Steam	GT NO 96	4	Lumut	2277
Amani	154,800	Brunei Gas Carriers	HHI	Oct-14	Brunei	Steam	TZ Mk. III	4	Lumut	H2606
Amberjack LNG	174,000	LNGShips	HHI	Apr-20	Malta	X-DF	TZ MK. III Flex	–	Portfolio	3021
Amur River	149,700	Seacrown Maritime	HHI	Nov-07	M. Islnds.	Steam	TZ Mk. III	4	Sakhalin II	1734
Arctic Aurora	155,000	Fareastern Shipping	HHI	Jul-14	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III	4	Snøhvit LNG	2580

Arctic Discoverer	142,612	Northern LNG Transport II Company S.A.	Mitsui E&S	Feb-06	Bahamas	–	Moss	4	Hammerfest	1564
Arctic Lady	147,200	Leif Hoegh (UK) Ltd.	Mitsubishi	Apr-06	Norway	Steam	Moss	4	Hammerfest	2185
Arctic Princess	147,200	R.B. Quadrangle Leasing	Mitsubishi	Jan-06	Norway	Steam	Moss	4	Hammerfest	2184
Arctic Voyager	142,759	Lloyds TSB Equipment Leasing (No.1)	Kawasaki	Jul-06	Bahamas	Steam	Moss	4	Hammerfest	1532
Aristarchos	174,000	Dias Gas Carrier Corp.	HHI	Jun-21	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3107
Aristidis I	174,000	Atrotos Gas Carrier Corp.	HHI	Jan-21	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3106
Aristos I	174,000	Xiang Ch25 HK International	HHI	Nov-20	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3105
Arkat	148,000	BGC SPV NBD	Daewoo	Feb-11	Brunei	–	GT NO 96	4	Lumut	2273
Aseem	155,003	India LNG Transport Company No.3 S.A.	Samsung	Nov-09	Malta	Diesel	TZ Mk. III	4	RasGas	1686
Asia Endeavour	154,948	Chevron Global Technology Services Co.	Samsung	Jun-15	Bahamas	Diesel/Gas-Electric	TZ MK. III	4	Gorgon	1942
Asia Energy	154,948	Chevron Global Technology Services Co.	Samsung	Oct-14	Bahamas	Diesel/Gas-Electric	TZ MK. III	4	Gorgon	1921
Asia Excellence	154,948	Chevron Global Technology Services Co.	Samsung	Jan-15	Bahamas	Diesel/Gas-Electric	TZ MK. III	4	Gorgon	1941
Asia Integrity	154,948	Chevron Global Technology Services Co.	Samsung	Feb-17	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Wheatstone	2069
Asia Venture	154,948	Chevron Global Technology Services Co.	Samsung	Jul-17	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Wheatstone	2070
Asia Vision	154,948	Chevron Global Technology Services Co.	Samsung	Jul-14	Bahamas	Diesel/Gas-Electric	TZ MK. III	4	Gorgon	1920
Asklipios	170,816	Sea 199 Leasing Co Ltd.	HHI	Sep-21	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3110
Attalos	170,800	Sea 200 Leasing Co. Ltd.	HHI	Aug-21	Malta	X-DF	TZ Mk. III Flex	4	–	3108
Barcelona Knutsen	173,400	Norspan LNG V AS	Daewoo	Jan-10	Spain	Diesel/Gas-Electric	GT NO 96	4	Portfolio	2267
Beidou Star	172,000	Mitsui O.S.K. Lines	Hudong Zhonghua	Sep-15	H.K., China	Diesel	GT NO 96	4	PNG LNG	H1672A
Berge Arzew	138,088	Sonatrach Berge Arzew Corp.	Daewoo	Jul-04	Norway	Steam	GT NO 96	4	Arzew	2217
Bilbao Knutsen	138,000	Norspan LNG AS	Izar	Jan-04	Spain	Steam	GT NO 96	4	Portfolio	321
Bishu Maru	164,700	"K" Line - Kawasaki Kisen Kaisha	Kawasaki	Dec-17	Panama	TFDE	Moss	4	Wheatstone	1713
Bonito LNG	174,000	LNGShips	HHI	May-20	Malta	X-DF	TZ MK. III Flex	4	–	3022
Boris Davydov	172,410	Arctic LNG 4 Ltd.	Daewoo	Dec-18	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2428
Boris Vilkitsky	172,410	Arctic LNG 1 Ltd.	Daewoo	Jun-17	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2421
British Achiever	173,644	BP	Daewoo	Nov-18	Isle of Man	ME-GI	GT NO 96 GW	4	Freeport	2442
British Contributor	173,644	BP	Daewoo	Dec-18	Isle of Man	ME-GI	GT NO 96 GW	4	Freeport	2443
British Listener	173,644	BP	Daewoo	Jan-19	Isle of Man	ME-GI	GT NO 96 GW	4	Freeport	2444
British Mentor	173,644	BP	Daewoo	Mar-19	Isle of Man	ME-GI	GT NO 96 GW	4	Freeport	2445
British Partner	173,400	BP	Daewoo	Jun-18	Isle of Man	ME-GI	GT NO 96 GW	4	Freeport	2441
British Sapphire	155,000	RBSSAF (19) Ltd.	HHI	Jun-08	Isle of Man	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	1779
British Sponsor	173,644	BP	Daewoo	May-19	Isle of Man	ME-GI	GT NO 96 GW	4	Freeport	2446
Broog	137,529	Mitsui O.S.K. Lines	Mitsui E&S	Apr-98	Japan	Steam	Moss	5	Qatargas I	1412
Bu Samra	266,000	Nakilat Bu Samra Inc.	Samsung	Dec-08	M. Islnds.	–	TZ Mk. III	5	Qatargas II	1677
Bushu Maru	180,000	Mitsui O.S.K. Lines	Mitsubishi	Jul-19	Bahamas	Reheat Steam Turbine	TZ MK. III Flex	4	Sabine Pass	2327
BW Boston	138,059	Partrederiet BW Gas GDF Suez EMT DA	Daewoo	Jan-03	Norway	Steam	GT NO 96	4	Atlantic LNG	2207
BW Brussels	162,400	Ines LNG	Daewoo	Aug-09	Bermuda	Diesel/Gas-Electric	GT NO 96	4	Balhaf	2259
BW Everett	138,028	BW Gas SLNG	Daewoo	Jun-03	Norway	Steam	GT NO 96	4	Atlantic LNG	2212
BW Helios	174,000	Selene Navigation Pte Ltd.	Daewoo	May-21	Bermuda	ME-GI	GT NO 96 GW	4	–	2497
BW Lesmes	174,000	BW Gas AS	Daewoo	Mar-21	Bermuda	ME-GI	GT NO 96 GW	4	–	2496
BW Lilac	173,400	BW Maritime	Daewoo	Mar-18	Isle of Man	ME-GI	GT NO 96 GW	4	–	2436
BW Magna	173,000	BW Group	Daewoo	Mar-19	Singapore	ME-GI	GT NO 96	4	–	2488
BW Magnolia	173,400	Helen Navigation Pte Ltd.	Daewoo	Feb-20	Singapore	ME-GI	GT NO 96 GW	–	–	2490
BW Paris	162,400	SNC Elias	Daewoo	Jul-09	Bermuda	Diesel/Gas-Electric	GT NO 96	4	Balhaf	2258
BW Pavilion Aranda	173,400	BW Group	Daewoo	Sep-19	Singapore	ME-GI	GT NO 96 GW	4	Portfolio	2489
BW Pavilion Aranthera	173,400	BW Diamond LNG Pte Ltd.	Daewoo	Jul-20	Singapore	ME-GI	GT NO 96 GW	4	Portfolio	2491
BW Pavilion Leeara	158,629	BW LPG FPSOI	HHI	Jun-15	Singapore	Diesel/Gas-Electric	TZ Mk. III Flex	4	Portfolio	2572
BW Pavilion Vanda	155,000	BW LPG FPSOI	HHI	Feb-15	Singapore	DFDS	TZ Mk. III Flex	4	Portfolio	2571
BW Tatiana	135,269	Shell Tankers Singapore	Mitsubishi	Dec-02	Singapore	Steam	Moss	5	Atlantic LNG	2173
BW Tulip	173,400	BW Maritime	Daewoo	Dec-17	Singapore	ME-GI	GT NO 96 GW	4	–	2435
Cadiz Knutsen	138,826	Norspan LNG II AS	Navantia	Apr-04	Spain	Steam	GT NO 96	4	Portfolio	103
Cape Ann	145,130	SRV Joint Gas Two Ltd.	Samsung	Apr-10	Norway	Diesel/Gas-Electric	TZ Mk. III	4	Jaigarh LNG	1689
Castillo de Caldelas	176,300	Empresa Naviera Elcano	Imabari Shipbuilding	Jun-18	Malta	ME-GI	TZ Mk. III Flex	–	Portfolio	8188
Castillo De Merida	176,300	Empresa Naviera Elcano	Imabari Shipbuilding	Mar-18	Spain	ME-GI	TZ MK. III Flex	4	Portfolio	8177
Castillo de Santisteban	170,000	Naviera Trans Gas AIE	STX	Jun-10	Malta	Diesel Electric	GT NO 96	4	Portfolio	3008
Castillo de Villalba	138,000	Empresa Naviera Elcano	Navantia Cadiz	Sep-03	Spain	Steam	GT NO 96	4	Portfolio	87
Catalunya Spirit	138,000	Teekay Shipping Spain S.L.	Izar	Jun-03	Spain	Steam	GT NO 96	4	Atlantic LNG	319

Celsius Canberra	180,000	Xiang CH27 HK International	Samsung	Jan-21	Marshall Isl.	X-DF	TZ Mk. III Flex	4	US Portfolio	2298
Celsius Carolina	180,000	Oriental Fleet LNG 03 Ltd.	Samsung	Aug-21	Marshall Isl.	X-DF	TZ Mk. III Flex	4	US Portfolio	2314
Celsius Charlotte	180,000	Xiang CH28 HK International	Samsung	Jun-21	Marshall Isl.	X-DF	TZ Mk. III Flex	4	US Portfolio	2313
Celsius Copenhagen	180,000	Greenheart Gas Shipco I LLC	Samsung	Nov-20	Bermuda	X-DF	TZ Mk. III Flex	4	Portfolio	2297
CESI Beihai	174,000	COSCO Shipping Energy Transportation Co.	Hudong Zhonghua	Jun-17	H.K., China	DFDS	GT NO 96	4	APLNG	1717A
CESI Gladstone	174,000	China Shipping Co.	Hudong Zhonghua	Oct-16	H.K., China	–	GT NO 96	4	APLNG	1715A
CESI LianYungAng	174,000	COSCO Shipping Energy Transportation Co.	Hudong Zhonghua	Jun-18	H.K., China	Diesel-Electric	GT NO 96	4	APLNG	1720A
CESI Qingdao	174,000	China Shipping Co.	Hudong Zhonghua	Feb-17	H.K., China	DFDS	GT NO 96	4	APLNG	1716A
CESI Tianjin	174,000	COSCO Shipping Energy Transportation Co.	Hudong Zhonghua	Jul-17	China	TFDE	GT NO 96	4	APLNG	1718A
CESI Wenzhou	174,000	COSCO Shipping Energy Transportation Co.	Hudong Zhonghua	Feb-18	China	Diesel-Electric	GT NO 96	4	APLNG	1719A
Cheikh Bouamama	75,558	Skikda LNG Transport Corp.	Universal SB	Jul-08	Liberia	Steam	TZ Mk. III	4	Arzew/Skikda	88
Cheikh el Mokrani	75,759	Mediterranean LNG Transport Corp.	Japan Marine United	Jun-07	Liberia	Steam	TZ Mk. III	4	Skikda	55
Christophe De Margerie	170,000	DY Shipping Limited	Daewoo	Nov-16	Russia	Diesel/Gas-Electric	GT NO 96 GW	–	Yamal	2418
Clean Cajun	180,000	Platia Shipping Ltd.	HHI	May-22	Panama	X-DF	Membrane	4	–	3137
Clean Energy	149,700	Pegasus Shipholding	HHI	Mar-07	M. Islnds.	Steam	TZ Mk. III	4	Portfolio	1748
Clean Horizon	162,000	Dynagas	HHI	Apr-15	Malta	Diesel/Gas-Electric	TZ Mk. III Flex	4	Portfolio	2566
Clean Ocean	162,000	Dynagas	HHI	May-14	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III Flex	4	Sabine Pass	2558
Clean Planet	162,000	Dynacom Tankers Management	HHI	Aug-14	M. Islnds.	Diesel Electric	TZ Mk. III Flex	4	Yamal	H2565
Clean Vision	162,000	Olinda	HHI	Aug-15	Malta	Diesel/Gas-Electric	TZ Mk. III Flex	4	Portfolio	2567
CNTIC VPower Energy	127,500	Shell Tankers Australia	Mitsubishi	Jan-92	Bermuda	Steam	Moss	4	North West Shelf	2041
Cobia LNG	174,000	Cardiff LNG ETA Owning LLC	HHI	Feb-21	Malta	X-DF	TZ Mk. III Flex	4	–	3038
Cool Discoverer	174,000	Serendipity Maritime Ltd.	HHI	Sep-20	Greece	X-DF	TZ MK. III Flex	4	Portfolio	S970
Cool Explorer	160,000	Thenamaris Ships Management Inc.	Samsung	Jan-15	Malta	DFDS	TZ Mk. III Flex	4	Spot	2049
Cool Racer	174,000	Eloquent Shipping Ltd.	HHI	Feb-21	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3126
Cool Rider	155,000	RBSSAF (19) Ltd.	HHI	May-07	Malta	–	TZ Mk. III	4	Portfolio	1777
Cool Runner	160,000	Thenamaris Ships Management Inc.	Samsung	Mar-14	Malta	Diesel Electric	TZ Mk. III Flex	4	Wheatstone	H2046
Cool Voyager	160,000	Energy Shipping & Trading	Samsung	Oct-13	Malta	TFDE	TZ Mk. III Flex	4	Wheatstone	–
Corcovado LNG	160,162	Drytank	Daewoo	Apr-14	Malta	Diesel Electric	GT NO 96 L03	4	Spot	H2297
Cubal	160,276	Mint LNG IV	Samsung	Jan-12	Bahamas	–	TZ Mk. III	4	Soyo	1813
Cygnus Passage	145,400	Cygnus LNG Shipping	Mitsubishi	Jan-09	Panama	Steam	Moss	4	Sakhalin II	2235
Dapeng Moon	147,200	Yue Gang LNG Ship Management Co.	Hudong Zhonghua	Jul-08	H.K., China	Steam	GT NO 96	4	Pluto	1309
Dapeng Star	147,210	Yue Peng LNG Shipping Co.	Hudong Zhonghua	Nov-09	H.K., China	Steam	GT NO 96	4	Pluto	1379
Dapeng Sun	147,200	Yue Peng LNG Shipping Co.	Hudong Zhonghua	Apr-08	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	Jun-21	Singapore	X-DF	TZ Mk. III Flex	4	–	8030
Diamond Gas Metropolis	174,000	Diamond LNG Shipping 4 Ltd.	HHI	Nov-20	Bahamas	X-DF	TZ Mk. III Flex	4	Portfolio	8029
Diamond Gas Orchid	165,000	NYK Line	Mitsubishi	Jun-18	Japan	STaGE	Sayaringo	4	Cameron	2325
Diamond Gas Rose	165,000	NYK Line	Mitsubishi	Aug-18	Bahamas	STaGE	Sayaringo	4	Cameron	2325
Diamond Gas Sakura	165,000	Tokyo Gas	Japan Marine United	May-19	Panama	STaGE	Sayaringo	4	Cameron	2332
Diamond Gas Victoria	174,000	Diamond LNG Shipping 6 Pte Ltd.	Hyundai Samho	Jun-21	Bahamas	X-DF	TZ MK. III Flex	4	–	8031
Disha	136,025	India LNG Transport Company No.1 Ltd.	Daewoo	Dec-03	Malta	Gas Turbine	GT NO 96	4	RasGas	2210
Doha	137,262	Mitsui O.S.K. Lines	Mitsubishi	Jun-99	Japan	Steam	Moss	5	Qatargas I	2091
Dorado LNG	174,000	Hai Kuo Shipping 2052G Ltd.	Samsung	Dec-20	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	2276
Duhail	210,150	Nauranto Schiffsbetriebsgesellschaft mbH & Company ts Gabriela KG	Daewoo	Dec-07	Bahamas	Diesel	GT NO 96	4	Qatargas II	2247
Dukhan	137,661	Qatar LNG Transport	Mitsui E&S	Sep-04	Liberia	Steam	Moss	5	Qatargas II	1561
East Energy	122,255	Bonny Gas Transport	STX	Aug-82	Bermuda	Steam	Membrane	4	NLNG	26B
Eduard Toll	172,410	Teekay Corp.	Daewoo	Sep-17	Bahamas	TFDE - Azipod	GT NO 96 GW	4	Yamal	2423
Ejnan	145,000	Peninsula LNG Transport No. 3	Samsung	Jan-07	Bahamas	Steam	TZ Mk. III	4	RasGas II	1594
Ekaputra 1	136,400	Cometco Shipping Inc.	Mitsubishi	Jan-89	Liberia	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	May-20	France	X-DF	TZ Mk. III Flex	4	Portfolio	S970
Energy Advance	147,624	Tokyo LNG Tanker Co. & Toho LNG Shipping Co.	Kawasaki	Mar-05	Japan	Steam	Moss	4	Portfolio	1521
Energy Atlantic	156,000	Alpha Tankers	STX	Sep-15	Greece	TFDE	GT NO 96 L03	4	Sabine Pass	1670
Energy Confidence	153,000	Tokyo LNG Tanker Co. & NYK	Kawasaki	Apr-09	Japan	Steam	Moss	4	Darwin LNG	1611
Energy Endeavour	173,400	Rossini Navigation SA	Daewoo	Jan-21	M. Islnds.	ME-GI	GT NO 96 GW	–	–	2484
Energy Frontier	147,599	Tokyo LNG Tanker Co.	Kawasaki	Sep-03	Japan	Steam	Moss	4	Sakhalin II	1520
Energy Glory	165,000	NYK Line	Japan Marine United	Mar-19	Japan	TFDE	TZ Mk. III Flex+	4	Cove Point	5071
Energy Horizon	177,000	Tokyo LNG Tanker Co. & NYK	Kawasaki	Aug-11	Japan	Steam	Moss	4	Pluto	1664
Energy Innovator	165,000	Tokyo Gas	Japan Marine United	Jun-19	Panama	TFDE	TZ Mk. III Flex+	4	Cove Point	5072

Energy Integrity	173,400	Mozart Navigation SA	Daewoo	May-21	M. Islnds.	ME-GI	GT NO 96 GW	4	–	2485
Energy Intelligence	173,400	Strauss Navigation SA	Daewoo	Jun-21	M. Islnds.	ME-GI	GT NO 96 GW	4	–	2500
Energy Liberty	165,000	Mitsui O.S.K. Lines	Japan Marine United	Oct-18	Japan	TFDE	TZ Mk. III Flex+	4	Cove Point	5070
Energy Navigator	145,000	Tokyo LNG Tanker Co.	Kawasaki	May-08	Japan	Steam	Moss	4	Sakhalin II	1600
Energy Pacific	173,400	Ravel Navigation SA	Daewoo	Aug-20	M. Islnds.	ME-GI	GT NO 96 GW	4	Portfolio	2483
Energy Progress	147,558	Jovial Shipping Navigation	Kawasaki	Nov-06	Bahamas	Steam	Moss	4	Darwin LNG	1540
Energy Universe	166,571	Tokyo LNG Tanker Co.	Japan Marine United	Aug-19	Panama	TFDE	TZ Mk. III Flex	4	Cove Point	5073
Enshu Maru	164,700	Mitsui O.S.K. Lines	Kawasaki	Aug-18	Panama	Reheat Steam Turbine	Moss	4	Wheatstone	1720
Esshu Maru	153,000	Mitsui O.S.K. Lines	Mitsubishi	Dec-14	Bahamas	–	Sayaendo	4	Portfolio	–
Etyfa Prometheas	135,269	Shell Bermuda (Overseas) Ltd.	Mitsubishi	Oct-02	Singapore	Steam	Moss	5	Peru LNG	2172
Excalibur	138,034	Exmar Excalibur Shipping Co.	Daewoo	May-02	Belgium	Steam	GT NO 96	4	Portfolio	2206
Fedor Litke	172,410	Arctic LNG 2 Ltd.	Daewoo	May-17	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2422
Flex Amber	174,000	Bund 10 Holding Ltd.	HHI	Oct-20	M. Islnds.	X-DF	TZ Mk. III Flex	4	Portfolio	8011
Flex Artemis	174,000	Flex LNG Rreliance Ltd.	Daewoo	Aug-20	M. Islnds.	ME-GI	NO-96-GW+FRS	4	Portfolio	2479
Flex Aurora	174,000	Flex LNG Aurora Ltd.	HHI	Jun-20	M. Islnds.	X-DF	TZ Mk. III Flex	4	Portfolio	8010
Flex Constellation	173,400	Frontline	Daewoo	Jun-19	M. Islnds.	ME-GI	NO-96-GW+PRS	4	Portfolio	H2470
Flex Courageous	173,400	Frontline	Daewoo	Aug-19	M. Islnds.	ME-GI	NO-96-GW+PRS	4	–	2471
Flex Endeavour	172,400	Flex LNG	Daewoo	Jan-18	U.K.	ME-GI	NO-96-GW+PRS	4	–	2447
Flex Enterprise	172,400	Flex LNG	Daewoo	Jan-18	U.K.	ME-GI	NO-96-GW+PRS	4	Portfolio	2448
Flex Freedom	173,400	Flex Freedom Ltd.	Daewoo	Jan-21	M. Islnds.	ME-GI	NO-96-GW+FRS	4	Portfolio	2492
Flex Rainbow	174,000	Flex LNG	Samsung	Jun-18	Isle of Man	ME-GI	TZ Mk. III Flex	4	–	2108
Flex Ranger	174,101	Flex LNG	Samsung	Jun-18	Isle of Man	ME-GI	TZ Mk. III Flex	4	–	2107
Flex Resolute	173,400	Flex LNG Resolute Ltd.	HHI	Sep-20	M. Islnds.	ME-GI	NO-96-GW+FRS	4	Portfolio	2480
Flex Vigilant	174,000	Flex Vigilant Ltd.	HHI	May-21	Liberia	X-DF	TZ Mk. III Flex	4	Portfolio	8013
Flex Volunteer	174,000	Flex Volunteer Ltd.	HHI	Jan-21	M. Islnds.	X-DF	TZ Mk. III Flex	4	–	8012
Fraiha	210,100	J5 Nakilat No.6 Ltd.	Daewoo	Aug-08	M. Islnds.	Diesel	GT NO 96	18	RasGas III	2252
Fuji LNG	149,172	Aletheia Owning Co.	Kawasaki	Mar-04	Malta	Steam	Moss	4	Sabine Pass	1527
Fuwairit	138,200	Camartina Shipping Co.	Samsung	Jan-04	Bahamas	Steam	TZ Mk. III	4	RasGas II	1406
Gail Bhuwan	180,000	Primavera Montana SA	Daewoo	Feb-21	M. Islnds.	X-DF	GT NO 96 GW	4	Portfolio	2499
GasLog Chelsea	153,000	Gas-Fifteen Ltd.	Hanjin (Busan)	Jun-10	Bermuda	TFDE	TZ Mk. III	4	–	193
GasLog Galveston	174,000	Gas-Thirty Three Ltd.	Samsung	Jan-21	Bermuda	X-DF	TZ Mk. III Flex+	4	US Portfolio	2301
GasLog Geneva	174,000	GasLog	Samsung	Oct-16	Bermuda	TFDE	TZ Mk. III Flex	4	Portfolio	2102
GasLog Genoa	174,000	GasLog	Samsung	Mar-18	Bermuda	X-DF	TZ Mk. III Flex	4	Portfolio	2130
GasLog Georgetown	174,000	Gas-Thirty Two Ltd.	Samsung	Nov-20	Bermuda	–	TZ Mk. III Flex+	4	Portfolio	2300
GasLog Gibraltar	174,000	Gas-Fourteen Ltd.	Samsung	Nov-16	Bermuda	TFDE	TZ Mk. III Flex	4	Portfolio	2103
GasLog Gladstone	174,000	GasLog	Samsung	Mar-19	Bermuda	X-DF	TZ Mk. III Flex+	4	Portfolio	2131
GasLog Glasgow	174,000	GasLog	Samsung	Jul-16	Bermuda	TFDE	TZ Mk. III Flex	4	Portfolio	2073
GasLog Greece	174,000	GasLog	Samsung	Mar-16	Bermuda	TFDE	TZ Mk. III Flex	4	Portfolio	2072
GasLog Hong Kong	174,000	GasLog	HHI	Mar-18	Bermuda	X-DF	TZ Mk. III Flex	4	Portfolio	2801
GasLog Houston	174,000	GasLog	HHI	Dec-18	Bermuda	X-DF	TZ Mk. III Flex	4	GoM	2800
GasLog Salem	155,000	GasLog	Samsung	May-15	Bermuda	TFDE	TZ Mk. III	4	Portfolio	2044
GasLog Santiago	155,000	Gas-Four Ltd.	Samsung	Mar-13	Bermuda	TFDE	TZ Mk. III	4	Portfolio	1947
GasLog Saratoga	155,000	GasLog	Samsung	Dec-14	Bermuda	TFDE	TZ Mk. III	4	Spot	2043
GasLog Savannah	155,000	Gas-One Ltd.	Samsung	May-10	Liberia	TFDE	TZ Mk. III	4	Portfolio	1641
GasLog Seattle	155,000	Gas-Seven Ltd.	Samsung	Oct-13	Bermuda	TFDE	TZ Mk. III	4	Portfolio	2041
GasLog Shanghai	155,000	Gas-Three Ltd.	Samsung	Feb-13	Bermuda	TFDE	TZ Mk. III	4	Portfolio	1946
GasLog Singapore	155,000	Gas-Two Ltd.	Samsung	Aug-10	Liberia	TFDE	TZ Mk. III	4	Portfolio	1642
GasLog Skagen	155,000	Gas-Six Ltd.	Samsung	Aug-13	Bermuda	TFDE	TZ Mk. III	4	Portfolio	2017
GasLog Sydney	155,000	Gas-Five Ltd.	Samsung	Jun-13	Bermuda	–	TZ Mk. III	4	Portfolio	2016
GasLog Wales	180,000	GasLog	Samsung	May-20	Bermuda	X-DF	TZ Mk. III Flex+	4	Portfolio	2274
GasLog Warsaw	180,000	GasLog	Samsung	Jul-19	Bermuda	X-DF	TZ Mk. III Flex+	4	Portfolio	2212
GasLog Wellington	176,400	GAS-Thirty Four Ltd.	Samsung	Jun-21	Bermuda	X-DF	TZ Mk. III Flex+	4	US Portfolio	2311
GasLog Westminster	180,000	Gas-Thirty Ltd.	Samsung	Jul-20	MAlta	X-DF	TZ Mk. III Flex	4	Portfolio	2262
GasLog Winchester	176,400	Gas-Thirty Five Ltd.	Samsung	Aug-21	Bermuda	X-DF	TZ Mk. III Flex+	4	US Portfolio	2312
GasLog Windsor	180,000	GasLog	Samsung	Apr-20	Bermuda	X-DF	TZ Mk. III Flex	4	Portfolio	2213
Georgiy Brusilov	172,410	Arctic LNG 3 Ltd.	Daewoo	Nov-18	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2427
Georgiy Ushakov	172,652	Teekay Corp.	Daewoo	Sep-19	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2433
Ghasha	137,000	Ghasha Inc.	Mitsui E&S	Jun-95	Liberia	Steam	Moss	5	Das Island	1392
Gigira Laitebo	177,419	Cleopatra LNG Shipping Co.	HHI	Feb-10	Bahamas	–	TZ Mk. III	4	RasGas	1876
Global Energy	74,100	GDF Armateur 2	STX	Jan-04	France	Diesel/Gas-Electric	CS1	4	Portfolio	32M
Global Energy	173,400	Hai Kuo Shipping 2118G Ltd.	Daewoo	May-20	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2478
Global Sea Spirit	169,932	Global Sea Spirit Inc	Daewoo	Oct-21	Greece	ME-GI	–	4	US Portfolio	2502
Global Star	173,400	Hai Kuo Shipping 2119G Ltd.	Daewoo	Jan-21	M. Islnds.	ME-GI	GT NO 96 GW	4	Portfolio	2487

Golar Arctic	140,648	Golar LNG 2216 Corp.	Daewoo	Oct-03	Singapore	Steam	GT NO 96	4	Jamaica LNG	2216
Golar Bear	160,000	Golar LNG	Samsung	Sep-14	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III Flex	4	Spot	2027
Golar Celsius	160,000	Golar Hull M2026 Corp.	Samsung	Oct-13	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III Flex	4	Spot	2026
Golar Crystal	159,800	Golar LNG	Samsung	Sep-14	M. Islnds.	–	TZ Mk. III Flex	4	Spot	2022
Golar Frost	160,000	Golar LNG	Samsung	Oct-14	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III Flex	4	Portfolio	2055
Golar Glacier	162,000	Golar LNG	Hyundai Samho	Nov-14	M. Islnds.	TFDE	TZ Mk. III Flex	4	Spot	–
Golar Ice	160,000	Golar LNG	Samsung	Jan-15	Bermuda	Diesel Electric	TZ Mk. III Flex	4	Spot	2048
Golar Kelvin	162,000	Golar LNG	Hyundai Samho	Jan-15	M. Islnds.	DFDS	TZ Mk. III Flex	4	Spot	S659
Golar Maria	145,700	Golar LNG 2234 LLC	Daewoo	Jun-06	M. Islnds.	Steam	GT NO 96	4	Spot	2234
Golar Penguin	160,000	Golar LNG	Samsung	Sep-14	M. Islnds.	–	TZ Mk. III Flex	4	Spot	2023
Golar Seal	160,000	Golar Hull M2021 Corp.	Samsung	Sep-13	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III Flex	4	Spot	2021
Golar Snow	160,000	Golar LNG	Samsung	Jan-15	Bermuda	Diesel/Gas-Electric	TZ Mk. III Flex	4	Spot	2047
Grace Acacia	149,700	Algawin Shipping Inc.	HHI	Feb-07	Bahamas	Steam	TZ Mk. III	4	Spot	1728
Grace Barleria	149,700	NYK LNG Shipmanagement	HHI	Apr-07	Bahamas	–	TZ Mk. III	4	Portfolio	1729
Grace Cosmos	150,000	Algahunt Shipping Inc.	HHI	Feb-08	Bahamas	Steam	TZ Mk. III	4	Portfolio	1730
Grace Dahlia	177,000	NYK Line	Kawasaki	Sep-13	Japan	Steam	Moss	4	Spot	1665
Grace Emilia	174,000	Akizuki Maritima SA	Hyundai Samho	Oct-21	Bahamas	X-DF	–	4	Portfolio	8032
Grace Freesia	174,000	Okusankichi Maritima SA	Hyundai Samho	Mar-22	Bahamas	X-DF	–	4	Portfolio	8033
Grand Aniva	145,000	NYK-SCF LNG Shipping No. 1	Mitsubishi	Jan-08	Cyprus	Steam	Moss	4	Sakhalin II	2230
Grand Elena	145,580	NYK-SCF LNG Shipping No. 1	Mitsubishi	Oct-07	Cyprus	Steam	Moss	4	Sakhalin II	2229
Grand Mereya	147,000	Ice Gas LNG Shipping Co.	Mitsui E&S	Mar-08	Cyprus	Steam	Moss	4	Sakhalin II	1681
Gui Ying	170,701	Fortune Power Shipping Ltd.	Hudong Zhonghua	Oct-21	Singapore	X-DF	GT NO 96 L03+	4	Portfolio	H1828A
Hanjin Muscat	138,366	Pluto Lease Corp.	Hanjin (Busan)	Jul-99	Panama	Steam	GT NO 96	4	Oman LNG	54
Hanjin Pyeongtaek	130,636	Hanjin Shipping Co.	Hanjin (Busan)	Sep-95	Panama	Steam	GT NO 96	4	Bontang	16
Hanjin Ras Laffan	138,214	KSH International	Hanjin (Busan)	Jul-00	Panama	Steam	GT NO 96	4	RasGas I	62
Hanjin Sur	138,333	KSG International	Hanjin (Busan)	Feb-00	Panama	Steam	GT NO 96	4	Oman LNG	61
Hellas Athina	170,520	Kronos Shipping LLC	Hyundai Samho	Sep-21	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	8040
Hellas Diana	174,000	Zeus Shipping LLC	Hyundai Samho	Mar-21	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	8039
HongKong Energy	138,000	Chevron LNG Shipping Co.	Daewoo	Feb-04	Australia	Steam	GT NO 96	4	North West Shelf	2214
Hyundai Aquapia	137,415	H&S Shipping	HHI	May-00	Panama	Steam	Moss	4	Oman LNG	1156
Hyundai Cosmopia	137,415	H&B Shipping	HHI	Feb-00	Panama	Steam	Moss	4	RasGas I	1074
Hyundai Ecopia	149,745	KLT 1 International	HHI	Nov-08	Panama	–	TZ Mk. III	4	Balhaf	1903
Hyundai Greenpia	125,000	Hyundai Merchant Marine	HHI	May-96	Panama	Steam	Moss	4	MLNG	853
Hyundai Oceanpia	135,000	H&T Shipping	HHI	Jun-00	Panama	Steam	Moss	4	Oman LNG	1157
Hyundai Peacepia	174,000	Hyundai LNG Shipping	Daewoo	Jun-17	Panama	ME-GI	GT NO 96 GW	4	Sabine Pass	2452
Hyundai Princepia	174,000	Hyundai LNG Shipping	Daewoo	May-17	Panama	ME-GI	GT NO 96 GW	4	Sabine Pass	2451
Hyundai Technopia	137,415	H&K Shipping	HHI	Jul-99	Panama	Steam	Moss	4	RasGas I	1073
Hyundai Utopia	125,182	Hyundai Merchant Marine	HHI	Jun-94	Panama	Steam	Moss	4	Donggi Senoro	760
Iberica Knutsen	138,000	Norspan LNG III AS	Daewoo	Aug-06	Norway	Ultra Steam Turbine	GT NO 96	4	Portfolio	2236
Ibra LNG	147,000	SNC Corentin	Samsung	Jul-06	Panama	Steam	TZ Mk. III	4	Oman LNG	1573
Ibri LNG	147,569	Dune LNG Carrier	Mitsubishi	Jul-06	Panama	Steam	Moss	4	Oman LNG	2215
Isabella	169,932	Kasimia Marine Co.	Daewoo	Jul-21	Greece	ME-GI	GT NO 96 GW	4	–	2495
Ish	137,000	Ish Inc.	Mitsubishi	Nov-95	Liberia	Steam	Moss	5	Das Island	2067
John A. Angelicoussis	174,000	Varta Shipping Ltd	Daewoo	Mar-22	Greece	ME-GI	–	4	–	2508
K. Acacia	138,017	Horizon Maritime Shipholding	Daewoo	Dec-99	Panama	Steam	GT NO 96	4	Oman LNG	2203
K. Freesia	138,015	Meridian Maritime Shipholding	Daewoo	Aug-00	Panama	Steam	GT NO 96	4	RasGas I	2204
K. Jasmine	145,878	Kolt JV No. 1	Daewoo	May-08	Panama	Steam	GT NO 96	4	Sakhalin II	2260
K. Mugungwha	151,812	Kolt JV No. 2	Daewoo	Nov-08	Panama	Steam	GT NO 96	4	Oman LNG	2261
KARMOL LNGT Powership Asia	127,500	BHP Consortium	Kawasaki	Jan-91	Bermuda	Steam	Moss	4	North West Shelf	1410
Kinisis	173,400	Chandris Group	Daewoo	Oct-18	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2464
Kita LNG	147,895	Cardiff LNG	Daewoo	May-14	Malta	Diesel Electric	GT NO 96 L03	4	Spot	H2298
Kmarin Diamond	155,000	RBSSAF (19) Ltd.	Hyundai Samho	Jul-08	Isle of Man	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	S297
Kool Baltic	170,200	Sovcomflot	STX	Jan-15	Liberia	Diesel Electric	GT NO 96 GW	4	Portfolio	1912
Kool Boreas	170,200	Sovcomflot	STX	Apr-15	Liberia	Diesel Electric	GT NO 96 GW	4	Portfolio	1913
Kool Firn	174,000	Heliconia Maritime SA	HHI	Sep-20	Liberia	DFDS	TZ Mk. III Flex	4	Portfolio	8007
Kool Orca	174,000	Headliner Maritime SA	HHI	Jan-21	Liberia	X-DF	NO-96-GW+PRS	4	Portfolio	8008
Kumul	170,000	Mitsui O.S.K. Lines	Hudong Zhonghua	Dec-15	H.K., China	Diesel	GT NO 96	4	PNG LNG	1673A
La Mancha Knutsen	176,300	Norspan LNG IX	HHI	Sep-16	Spain	ME-GI	TZ Mk. III Flex	4	Portfolio	2733
La Seine	174,000	Xiang CH16 HK International	HHI	Feb-20	Malta	X-DF	TZ MK. III Flex	4	Portfolio	3020
Lagenda Serenity	79,960	Kawasaki Kisen Kaisha	Hudong Zhonghua	Jun-22	Panama	LP-DF	–	3	Malaysia LNG	H1789A
Lagenda Suria	79,960	Silk LNG Transport No 1 Pte Ltd	Hudong Zhonghua	May-22	Singapore	LP-DF	–	3	Malaysia LNG	H1788A
Lalla Fatma N'Soumer	145,000	Algerian Nippon Gas Transport Corp.	Kawasaki	Oct-04	Bahamas	Steam	Moss	4	Arzew	1534

Lena River	155,000	Solana Holdings	HHI	Sep-13	M. Islnds.	–	TZ Mk. III	4	Portfolio	H2557
Lijmiliya	263,300	Nakilat Lijmiliya Inc.	Daewoo	Dec-08	M. Islnds.	Diesel	GT NO 96	5	Qatargas II	2256
LNG Abalamabie	162,000	Bonny Gas Transport	Samsung	Jul-16	Bermuda	DFDS	TZ Mk. III Flex	4	NLNG	2079
LNG Abuja II	162,000	Bonny Gas Transport	Samsung	Mar-16	Bermuda	–	TZ Mk. III Flex	4	NLNG	2078
LNG Adamawa	141,000	Bonny Gas Transport	HHI	Apr-05	Bermuda	Steam	Moss	4	NLNG	1470
LNG Adventure	174,000	Diderot Financement 28 SNC	Samsung	Mar-21	M. Islnds.	X-DF	TZ Mk. III Flex	4	Portfolio	2302
LNG Akwa Ibom	141,000	Bonny Gas Transport	HHI	Oct-04	Bermuda	Steam	Moss	4	NLNG	1469
LNG Alliance	154,472	NYK Armateur	STX	Mar-07	France	Diesel/Gas-Electric	CS1	4	Portfolio	32P
LNG Aquarius	126,300	P.T. Hanochem Shipping	General Dynamics	Jan-77	Indonesia	Steam	Moss	5	Bontang	41
LNG Barka	155,982	Lloyd's TSB General Leasing (No. 3)	Kawasaki	Dec-08	Bahamas	Steam	Moss	4	Oman LNG	1591
LNG Bayelsa	137,500	Bonny Gas Transport	HHI	Mar-03	Bermuda	–	Moss	4	NLNG	1429
LNG Benue	145,952	BW Gas LNG Carriers	Daewoo	Apr-06	Bermuda	Steam	GT NO 96	4	NLNG	2224
LNG Bonny II	174,000	Nigeria LNG	HHI	Dec-15	Bermuda	Diesel/Gas-Electric	TZ Mk. III Flex	4	NLNG	2636
LNG Borno	149,600	Okra Shipping No. 1	Samsung	Aug-07	Bermuda	Steam	TZ Mk. III	4	NLNG	1563
LNG Cross River	141,000	Bonny Gas Transport	HHI	Aug-05	Bermuda	Steam	Moss	4	NLNG	1471
LNG Dream	145,000	Osaka Gas Consortium	Kawasaki	Sep-06	Bahamas	Steam	Moss	4	North West Shelf	1545
LNG Dubhe	174,000	Mitsui O.S.K. Lines	Hudong Zhonghua	Nov-19	Panama	ME-GI	GT NO 96 L03+	4	Yamal	1810A
LNG Ebisu	147,546	LNG Ebisu Shipping Corp.	Kawasaki	Jul-08	Bahamas	–	Moss	4	Pluto	1588
LNG Endeavour	170,520	Fortune Great Shipping Ltd.	Samsung	Oct-21	France	X-DF	TZ Mk. III Flex	4	Portfolio	2355
LNG Endurance	170,520	DuPlessis Bail SNC	Samsung	Dec-21	France	X-DF	TZ Mk. III Flex	4	Portfolio	2307
LNG Enterprise	170,520	Hanovre Financement 20 SASU	Samsung	Oct-21	France	X-DF	TZ Mk. III Flex	4	Portfolio	2360
LNG Enugu	145,926	BW Gas LNG Carriers	Daewoo	Oct-05	Bermuda	Steam	GT NO 96	4	NLNG	2222
LNG Finima II	162,000	Bonny Gas Transport	Samsung	Dec-15	Bermuda	–	TZ Mk. III Flex	4	NLNG	2076
LNG Fukurokuju	164,700	Mitsui O.S.K. Lines	Kawasaki	Jul-16	Panama	Steam	Moss	4	APLNG	1712
LNG Imo	148,452	Bergesen LNG XI Ltd.	Daewoo	Jun-08	Bermuda	–	GT NO 96	4	NLNG	2232
LNG Jamal	135,333	Osaka Gas Consortium	Mitsubishi	Oct-00	Japan	Steam	Moss	5	Oman LNG	2157
LNG Juno	180,000	Mitsui O.S.K. Lines	Mitsubishi	Oct-18	Japan	STaGE	Moss	–	Freeport	2323
LNG Jupiter	153,000	Osaka Gas Consortium	Kawasaki	Jul-09	Panama	Steam	Moss	4	PNG LNG	1592
LNG Jurojin	160,000	LNG Jurojin Shipping Corp.	Mitsubishi	Nov-15	Bahamas	Steam	Moss	4	Portfolio	2299
LNG Kano	148,565	Bergesen LNG IX Ltd.	Daewoo	Jan-07	Bermuda	Steam	GT NO 96	4	NLNG	2230
LNG Kolt	153,595	KLT 5 International	Hanjin (Busan)	Dec-08	Panama	Steam	TZ Mk. III	4	Portfolio	192
LNG Lagos II	174,000	Nigeria LNG	HHI	Jan-16	Bermuda	DFDS	TZ Mk. III Flex	4	NLNG	2637
LNG Lerici	65,000	LNG Shipping S.p.A.	Sestri Ponente	Apr-98	Italy	Steam	GT NO 96	4	Portfolio	5911
LNG Lokoja	148,471	Bergesen LNG VIII Ltd.	Daewoo	Nov-06	Bermuda	Steam	GT NO 96	4	NLNG	2229
LNG Maleo	127,544	Mitsui O.S.K. Lines	Mitsui E&S	Jan-89	Japan	Steam	Moss	4	North West Shelf	1351
LNG Mars	155,693	Osaka Gas Consortium	Mitsubishi	Oct-16	Japan	Steam	Moss	4	PNG LNG	2296
LNG Megrez	174,000	Mitsui O.S.K. Lines	Hudong Zhonghua	Nov-20	Panama	ME-GI	GT NO 96 L03+	4	Yamal	1813A
LNG Merak	174,000	Mitsui O.S.K. Lines	Hudong Zhonghua	Jan-20	Panama	ME-GI	GT NO 96 L03+	4	Yamal	1811A
LNG Ogun	149,000	Okra Shipping No. 1	Samsung	Jul-07	Bermuda	Steam	TZ Mk. III	4	NLNG	1564
LNG Ondo	148,478	Bergesen LNG X Ltd.	Daewoo	Sep-07	Bermuda	Steam	GT NO 96	4	NLNG	2231
LNG Oyo	145,842	BW Gas LNG Carriers	Daewoo	Jan-06	Bermuda	Steam	GT NO 96	4	NLNG	2223
LNG Phecda	174,000	Mitsui O.S.K. Lines	Hudong Zhonghua	Sep-20	Panama	ME-GI	GT NO 96 L03+	4	Yamal	1812A
LNG Port Harcourt II	162,000	Bonny Gas Transport	Samsung	Dec-15	Bermuda	–	TZ Mk. III Flex	4	NLNG	2077
LNG Prima Carrier	137,000	Pacific Eurus Shipping	Mitsubishi	Mar-06	Bahamas	Steam	Moss	4	Das Island	2187
LNG River Niger	141,000	Bonny Gas Transport	HHI	Jul-06	Bermuda	Steam	Moss	4	NLNG	1472
LNG River Orashi	145,914	BW Gas LNG Carriers	Daewoo	Nov-04	Bermuda	Steam	GT NO 96	4	NLNG	2221
LNG Rivers	137,200	Bonny Gas Transport	HHI	Jun-02	Bermuda	–	Moss	4	NLNG	1295
LNG Rosenrot	176,523	Fair Wind Navigation SA	Daewoo	Jan-21	M. Islnds.	X-DF	GT NO 96 GW	4	Portfolio	2498
LNG Sakura	177,000	Mitsui O.S.K. Lines	Kawasaki	Feb-18	Bahamas	TFDE	Moss	–	Freeport	1731
LNG Saturn	155,300	Mitsui O.S.K. Lines	Mitsubishi	Feb-16	Bahamas	Ultra Steam Turbine	Moss	4	Gorgon	2311
LNG Schneeweisschen	180,000	Mitsui O.S.K. Lines	Daewoo	Sep-18	Bermuda	TFDE	GT NO 96 GW	–	Freeport	2462
LNG Sokoto	137,425	Bonny Gas Transport	HHI	Sep-02	Bermuda	–	Moss	4	NLNG	1296
LNG Unity	154,472	GDF Armateur 2	STX	Nov-06	France	Diesel/Gas-Electric	CS1	4	Portfolio	32N
LNG Venus	153,000	Mitsui O.S.K. Lines	Mitsubishi	Nov-14	Japan	–	Sayaendo	4	North West Shelf	2295
LNG Vesta	127,386	Tokyo LNG Tanker Co.	Mitsubishi	Jun-94	Japan	Steam	Moss	4	–	2061
LNGShips Athena	170,618	Cardiff LNG Iota Owning LLC	HHI	Mar-21	Malta	X-DF	TZ Mk. III Flex	4	–	112
LNGShips Empress	174,000	Cardiff LNG Kappa Owning LLC	Samsung	Mar-21	Malta	X-DF	TZ Mk. III Flex	4	QCLNG	2380
LNGShips Manhattan	174,000	Cardiff LNG Theta Owning LLC	HHI	May-21	Malta	X-DF-HPSCR	NO-96-GW+PRS	4	QCLNG	3039
Lobito	160,276	Mint LNG III	Samsung	Nov-11	Bahamas	–	TZ Mk. III	4	Soyo	1812
Lusail	145,000	Peninsula LNG Transport No. 1	Samsung	May-05	Bermuda	–	TZ Mk. III	4	RasGas II	1440
Macoma	145,400	Teekay LNG Partners	Daewoo	Sep-17	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2417
Magdala	173,400	Teekay Corp.	Daewoo	Feb-18	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2453

Malaga Knutsen	174,000	Millenaire Financement 17 SASU	Hyundai Samho	Jul-22	France	X-DF	TZ Mk. III Flex+	4	Portfolio	8092
Malanje	160,276	Mint LNG II	Samsung	Oct-11	Bahamas	–	TZ Mk. III	4	Soyo	1811
Maran Gas Achilles	174,000	Maran Gas Maritime	Hyundai Samho	Jan-16	Greece	DFDS	TZ Mk. III Flex	4	Portfolio	S689
Maran Gas Agamemnon	174,000	Maran Gas Maritime	Hyundai Samho	May-16	Greece	DFDS	TZ Mk. III Flex	4	Portfolio	S690
Maran Gas Amorgos	169,932	Vero Maritime Inc	Daewoo	19/11/2021	Greece	ME-GI	GT NO 96	4	–	2506
Maran Gas Alexandria	161,870	Maran Gas Maritime	Hyundai Samho	Oct-15	Greece	–	TZ Mk. III Flex	4	QCLNG	S627
Maran Gas Amphipolis	174,000	Maran Gas Maritime	Daewoo	Aug-16	Greece	–	GT NO 96 L03	4	Portfolio	2412
Maran Gas Andros	173,400	Maran Gas Maritime	Daewoo	Nov-19	Greece	ME-GI	GT NO 96 GW	4	Freeport	2467
Maran Gas Apollonia	161,870	Maran Gas Maritime	Hyundai Samho	Jan-14	Greece	Diesel Electric	TZ Mk. III Flex	4	Punta Europa	S624
Maran Gas Asclepius	145,000	Sea Satin Corp.	Daewoo	Jul-05	Greece	Steam	GT NO 96	4	RasGas II	H2227
Maran Gas Chios	170,000	Maran Gas Maritime	Daewoo	Mar-19	Greece	ME-GI	GT NO 96 GW	4	–	2456
Maran Gas Coronis	145,700	Jopica Shipping Company	Daewoo	Jul-07	Greece	Steam	GT NO 96	4	RasGas II	2244
Maran Gas Delphi	159,800	Maran Gas Maritime	Daewoo	Feb-14	Greece	Diesel Electric	GT NO 96 L03	4	Portfolio	2296
Maran Gas Efessos	159,800	Maran Gas Maritime	Daewoo	Jun-14	Greece	–	GT NO 96 L03	4	Portfolio	H-2291
Maran Gas Hector	174,000	Maran Gas Maritime	Hyundai Samho	Nov-16	Greece	Diesel/Gas-Electric	TZ Mk. III Flex	–	Portfolio	S691
Maran Gas Hydra	173,400	Maran Gas Maritime	Daewoo	Feb-19	Greece	ME-GI	GT NO 96 GW	4	Sabine Pass	2459
Maran Gas Ithaca	174,000	Arona Maritime Inc.	Daewoo	Oct-21	Greece	X-DF	TZ Mk. III Flex	4	Portfolio	2507
Maran Gas Kalymnos	169,932	Hai Kuo Shipping 2028G Ltd	Daewoo	Sep-21	Greece	ME-GI	Membrane	4	–	2504
Maran Gas Leto	174,000	Maran Gas Maritime	Hyundai Samho	Mar-16	Greece	DFDS	TZ Mk. III	4	Portfolio	S688
Maran Gas Lindos	161,870	Maran Gas Maritime	Daewoo	Jul-15	Greece	DFDS	GT NO 96 L03	4	Punta Europa	2292
Maran Gas Mystras	155,900	Maran Gas Maritime	Daewoo	Aug-15	Greece	DFDS	GT NO 96 L03	4	QCLNG	2405
Maran Gas Olympias	174,000	Maran Gas Maritime	Daewoo	Feb-17	Greece	ME-GI	GT NO 96 L03	–	Portfolio	2415
Maran Gas Pericles	173,400	Maran Gas Maritime	Hyundai Samho	Aug-16	Greece	DFDS	TZ Mk. III Flex	4	Portfolio	S734
Maran Gas Posidonia	161,870	Maran Gas Maritime	Hyundai Samho	May-14	Greece	–	TZ Mk. III Flex	4	Punta Europa	S625
Maran Gas Psara	173,595	Highseas Shiptrade Co.	Daewoo	May-20	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2469
Maran Gas Roxana	174,000	Maran Gas Maritime	Daewoo	Jan-17	Greece	ME-GI	GT NO 96 L03	4	Portfolio	2413
Maran Gas Sparta	159,800	Maran Gas Maritime	Hyundai Samho	Apr-15	Greece	–	TZ Mk. III Flex	4	QCLNG	S626
Maran Gas Spetses	173,400	Maran Gas Maritime	Daewoo	Jul-18	Greece	ME-GI	GT NO 96 GW	4	GoM	2458
Maran Gas Troy	155,000	Maran Gas Maritime	Daewoo	Sep-15	Greece	DFDS	GT NO 96 L03	4	–	2406
Maran Gas Ulysses	173,400	Maran Gas Maritime	Hyundai Samho	Jan-17	Greece	Diesel/Gas-Electric	TZ Mk. III Flex	–	Portfolio	S735
Maran Gas Vergina	174,000	Santa Lucia Enterprises Inc.	Daewoo	Dec-16	Greece	ME-GI	GT NO 96	–	Portfolio	2414
Maria Energy	174,000	Tsakos Energy Navigation	HHI	Sep-16	Greece	Diesel/Gas-Electric	TZ Mk. III Flex	4	–	2612
Marshal Vasilevskiy	170,000	Gazprom	HHI	Jan-19	Russia	Diesel/Gas-Electric	TZ Mk. III Flex	4	Kaliningrad LNG	2854
Marvel Crane	177,000	NYK Line	Mitsubishi	Mar-19	Japan	STaGE	Moss	–	Cameron	2321
Marvel Eagle	155,000	Mitsui O.S.K. Lines	Kawasaki	Oct-18	Panama	Reheat Steam Turbine	Moss	–	Cameron	1728
Marvel Falcon	174,000	Mitsui O.S.K. Lines	Samsung	Apr-18	Singapore	TFDE	TZ Mk. III Flex	4	Cameron	2148
Marvel Hawk	177,000	Mitsui O.S.K. Lines	Samsung	Dec-18	Japan	TFDE	TZ Mk. III Flex	4	Cameron	2149
Marvel Heron	177,000	Mitsui O.S.K. Lines	Mitsubishi	Sep-19	Japan	STaGE	Moss	–	Cameron	2322
Marvel Kite	177,000	Mitsui O.S.K. Lines	Samsung	Jan-19	Japan	TFDE	TZ Mk. III	4	Cameron	2150
Marvel Pelican	156,265	Mitsui O.S.K. Lines	Kawasaki	Dec-19	Panama	Reheat Steam Turbine	Moss	4	Cameron	1729
Marvel Swan	174,000	MIF I NO 20 K/S	Samsung	Apr-21	Denmark	X-DF	TZ MK. III Flex	4	–	2310
Megara	173,400	Teekay LNG Partners	Daewoo	Jul-18	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2455
Mekaines	266,000	Nakilat SHI 1695 Inc.	Samsung	Apr-09	M. Islnds.	–	TZ Mk. III	5	Qatargas III	1695
Merchant	138,000	Sea Breeze Leasing	Samsung	Jul-03	Isle of Man	Steam	TZ Mk. III	4	Portfolio	1381
Mesaimeer	216,312	Nakilat HHI 1908 Inc.	HHI	Mar-09	M. Islnds.	Diesel	TZ Mk. III	4	Qatargas III	1908
Methane Alison Victoria	145,000	Lloyds TSB Leasing No.8 Ltd.	Samsung	Apr-07	Bahamas	Steam	TZ Mk. III	4	Punta Europa	1587
Methane Becki Anne	170,000	Methane Services (Shell)	Samsung	Sep-10	Bermuda	–	TZ Mk. III	4	Singapore	1858
Methane Heather Sally	145,000	Lloyds TSB Leasing No.8 Ltd.	Samsung	Jan-07	Bahamas	Steam	TZ Mk. III	4	Punta Europa	1586
Methane Jane Elizabeth	145,000	British Gas Asia Pacific	Samsung	Jun-06	Bermuda	Steam	TZ Mk. III	4	Idku	1554
Methane Julia Louise	170,000	Methane Services (Shell)	Samsung	Apr-10	Bermuda	–	TZ Mk. III	9	Singapore	1745
Methane Lydon Volney	145,000	BG Group	Samsung	Aug-06	Bermuda	Steam	TZ Mk. III	4	Idku	1555
Methane Mickie Harper	170,000	Methane Services (Shell)	Samsung	Dec-10	Bermuda	Diesel/Gas-Electric	TZ Mk. III	4	Singapore	1859
Methane Nile Eagle	145,000	Egypt LNG Shipping	Samsung	Dec-07	Bermuda	Steam	TZ Mk. III	4	Idku	1588
Methane Patricia Camila	170,000	Methane Services (Shell)	Samsung	Oct-10	Bermuda	–	TZ Mk. III	4	Singapore	1746
Methane Princess	138,000	Golar LNG	Daewoo	Aug-03	U.K.	Steam	GT NO 96	4	Portfolio	2215
Methane Rita Andrea	145,000	British Gas Asia Pacific	Samsung	Apr-06	Bermuda	Steam	TZ Mk. III	4	Idku	1553
Methane Shirley Elisabeth	145,000	Lloyds TSB Leasing No.8 Ltd.	Samsung	Feb-07	Bermuda	Steam	TZ Mk. III	4	Punta Europa	1585
Milaha Qatar	145,500	Qatar Shipping Co.	Samsung	Apr-06	Malta	Steam	TZ Mk. III	4	RasGas II	1562
Milaha Ras Laffan	138,270	Milaha Ras Laffan GmbH & Co. KG	Samsung	Apr-04	Malta	Steam	TZ Mk. III	4	RasGas II	1425
Min Lu	147,100	Minlu LNG Shipping Co.	Hudong Zhonghua	Aug-09	H.K., China	–	GT NO 96	4	Tangguh	1378
Min Rong	145,000	Min Rong LNG Shipping Co.	Hudong Zhonghua	Feb-09	H.K., China	–	GT NO 96	4	Tangguh	1320
Minerva Chios	170,520	Peninsula Shipping SA	Samsung	Aug-21	Greece	X-DF	TZ Mk. III Flex+	4	–	2305
Minerva Kalymnos	174,000	Koje Shipping SA	Samsung	Feb-21	Malta	X-DF	GT NO 96 GW	4	–	2304

Minerva Limnos	173,400	Roland Shipping SA	Daewoo	Jun-21	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2482
Minerva Psara	173,400	Wimbledon Shipping SA	Daewoo	Jan-21	Malta	–	GT NO 96 GW	4	–	2481
MOL Hestia	173,400	LNG Harmonia Shipping Corp	Daewoo	Jul-21	M. Islnds.	X-DF	GT NO 96 GW	4	–	2505
Mozah	266,000	Nakilat Haloul Inc.	Samsung	Aug-09	M. Islnds.	Diesel	TZ Mk. III	5	Qatargas II	1675
Mraweh	137,000	Mraweh Ltd.	STX	Apr-96	Liberia	Steam	Moss	4	Das Island	1331
Mu Lan	174,400	Fortune Great Shipping Ltd.	Hudong Zhonghua	Aug-21	Liberia	X-DF	GT NO 96 L03+	4	Portfolio	1827A
Mubaraz	137,000	Mubaraz Ltd.	STX	Dec-95	Liberia	Steam	Moss	4	Das Island	1330
Murex	173,400	Teekay LNG Partners	Daewoo	Jul-17	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2416
Murwab	210,100	J5 Nakilat No. 4 Ltd.	Daewoo	Jun-08	M. Islnds.	Diesel	GT NO 96	18	RasGas III	251
Myrina	173,400	Teekay Corp.	Daewoo	May-18	Bahamas	ME-GI	GT NO 96 GW	4	Portfolio	2454
Neo Energy	150,000	Sea Optima	HHI	Jan-07	Liberia	Steam	TZ Mk. III	4	Portfolio	1754
Neptune	145,130	SRV Joint Gas Ltd.	Samsung	Nov-09	Norway	–	TZ Mk. III	4	Portfolio	1688
NFE Grand	145,700	Golar Grand Corp.	Daewoo	Jan-06	M. Islnds.	Steam	GT NO 96	4	Gorgon	2226
Nikolay Urvantsev	172,658	China Shipping Development Co.	Daewoo	Jul-19	H.K., China	ME-GI	GT NO 96 GW	4	Yamal	2432
Nikolay Yevgenov	172,410	Teekay Corp.	Daewoo	Apr-19	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2430
Nikolay Zubov	172,410	Arctic LNG 5 Ltd.	Daewoo	Nov-18	Cyprus	TFDE - Azipod	GT NO 96 GW	4	Yamal	2429
Nizwa LNG	147,684	Oryx LNG Carrier	Kawasaki	Dec-05	Panama	Steam	Moss	4	Oman LNG	1562
Nohshu Maru	180,000	Mitsui O.S.K. Lines	Mitsubishi	Feb-19	Bahamas	Reheat Steam Turbine	Moss	4	–	2326
Northwest Sanderling	127,525	Shell Tankers Australia	Mitsubishi	Jan-89	Australia	Steam	Moss	4	North West Shelf	1996
Northwest Sandpiper	125,042	Shell Tankers Australia	Mitsui E&S	Jan-93	Australia	Steam	Moss	4	North West Shelf	1370
Northwest Snipe	127,500	International Gas Transportation Co., Ltd.	Mitsui E&S	Jan-90	Australia	Steam	Moss	4	North West Shelf	1352
Northwest Stormpetrel	127,500	Shell Tankers Australia	Mitsubishi	Dec-94	Australia	Steam	Moss	4	North West Shelf	2074
Oak Spirit	173,400	Teekay LNG Partners	Daewoo	Mar-16	Bahamas	ME-GI	GT NO 96 GW	–	Sabine Pass	2408
Ob River	149,700	Lance Shipping	HHI	May-07	M. Islnds.	Steam	TZ Mk. III	4	Sakhalin II	1719
Oceanic Breeze	155,300	"K" Line - Kawasaki Kisen Kaisha	Mitsubishi	Apr-18	Japan	Reheat Steam Turbine	Moss	4	Ichthys	2310
Onaiza	210,150	Nakilat DSME 2266 Inc.	Daewoo	Apr-09	M. Islnds.	Diesel	GT NO 96	12	Qatargas III	2266
Orion Sea	170,852	Meridian 23 Ltd.	Samsung	Jan-22	Liberia	X-DF	TZ Mk. III	4	Portfolio	2336
Orion Star	174,000	Jupiter 3 Ltd	Samsung	Apr-22	Liberia	–	–	4	–	2319
Orion Sun	174,000	Meridian 24 Ltd.	Samsung	Jul-22	Liberia	X-DF	–	4	Portfolio	2337
Ougarta	170,000	Hyproc Shipping Co.	HHI	Mar-17	Algeria	DFDS	TZ Mk. III Flex	4	Arzew	2814
Pacific Arcadia	145,400	Bahamas LNG Shipping	Mitsubishi	Oct-14	Bahamas	–	Moss	4	PNG LNG	MHISB 2289
Pacific Breeze	180,000	"K" Line - Kawasaki Kisen Kaisha	Kawasaki	Mar-18	Japan	TFDE	Moss	4	Ichthys	1718
Pacific Enlighten	145,400	Pacific Hope Shipping	Mitsubishi	Mar-09	Panama	Steam	Moss	4	North West Shelf	2236
Pacific Mimosa	155,300	NYK Line	Mitsubishi	Mar-18	Japan	Reheat Steam Turbine	Moss	–	Wheatstone	2316
Pacific Notus	137,006	Pacific LNG Shipping	Mitsubishi	Sep-03	Bahamas	Steam	Moss	5	Darwin LNG	2176
Palu LNG	159,800	Cardiff LNG	Daewoo	Nov-14	Malta	TFDE	GT NO 96 L03	4	Spot	2400
Pan Africa	174,000	Teekay LNG Partners	Hudong Zhonghua	Jan-19	H.K., China	TFDE	GT NO 96	4	QCLNG	1666A
Pan Americas	174,000	Teekay LNG Partners	Hudong Zhonghua	Jan-18	H.K., China	TFDE	GT NO 96	4	QCLNG	H1664A
Pan Asia	174,000	Teekay LNG Partners	Hudong Zhonghua	Sep-17	H.K., China	TFDE	GT NO 96	4	QCLNG	1663A
Pan Europe	174,000	Teekay LNG Partners	Hudong Zhonghua	Jul-18	H.K., China	TFDE	GT NO 96	4	QCLNG	H1665A
Papua	170,000	Mitsui O.S.K. Lines	Hudong Zhonghua	Nov-14	H.K., China	–	GT NO 96	4	PNG LNG	H1670A
Patris	174,000	Chandris Group	Daewoo	Jan-18	Liberia	ME-GI	GT NO 96 GW	4	Freeport	2460
Pearl LNG	174,000	CardiffF LNG Delta Owning LLC	Samsung	Aug-20	Malta	X-DF	NO-96-GW+PRS	4	Portfolio	2275
Pioneer Spirit	138,121	M & S Shipping 3 S.A.	Daewoo	Jul-05	Bahamas	Steam	GT NO 96	4	Das Island	2219
Point Fortin	154,200	Los Halillos Shipping Co.	Koyo Dockyard	Jan-10	Panama	Steam	TZ Mk. III	4	Portfolio	2263
Portovenere	65,000	LNG Shipping S.p.A.	Sestri Ponente	Apr-97	Italy	Steam	GT NO 96	4	Portfolio	5910
Portovyy	138,107	Monteriggioni Inc.	Daewoo	Aug-03	Belgium	Steam	GT NO 96	4	Portfolio	2213
Prachi	162,000	India LNG Transport Company No. 4 Ltd.	HHI	Nov-16	Singapore	Diesel/Gas-Electric	TZ Mk. III Flex	–	Gorgon	2633
Prima Concord	138,267	BG Group	Samsung	May-04	Bermuda	Steam	TZ Mk. III	4	Singapore	1428
Prism Agility	180,000	SK Shipping	HHI	May-19	Panama	X-DF	TZ Mk. III Flex	4	Portfolio	2937
Prism Brilliance	180,000	SK Shipping	HHI	May-19	Panama	X-DF	TZ Mk. III Flex	4	Portfolio	2938
Prism Courage	176,462	Millenaire Financement 12 SASU	HHI	Oct-21	Panama	X-DF	TZ Mk. III Flex	4	Portfolio	2939
Prism Diversity	176,400	HHIENS4 Shipholding SA	HHI	Jun-22	M. Islnds.	X-DF	–	4	–	3145
Pskov	170,200	Sovcomflot	STX	Sep-14	Liberia	–	GT NO 96	4	Portfolio	1911
Puteri Delima	130,400	Puteri Delima S.Bhd.	STX	Jan-95	Malaysia	Steam	GT NO 96	4	MLNG II	30F
Puteri Delima Satu	137,100	MISC	Mitsui E&S	Oct-02	Malaysia	Steam	GT NO 96	4	MLNG III	1506
Puteri Firus Satu	137,100	Puteri Firus S.Bhd.	Mitsubishi	Aug-04	Malaysia	Steam	GT NO 96	4	MLNG III	2177
Puteri Intan	137,100	Puteri Intan S.Bhd.	STX	Aug-94	Malaysia	Steam	GT NO 96	4	MLNG II	30E
Puteri Intan Satu	137,100	MISC	Mitsubishi	Aug-02	Malaysia	Steam	GT NO 96	4	MLNG III	2165
Puteri Mutiara Satu	137,100	MISC	Mitsui E&S	Apr-05	Malaysia	Steam	GT NO 96	4	MLNG III	1562
Puteri Nilam	130,400	Puteri Nilam S.Bhd.	STX	Jul-95	Malaysia	Steam	GT NO 96	4	MLNG II	30G

Puteri Nilam Satu	137,100	Puteri Nilam S.Bhd.	Mitsubishi	Jul-03	Malaysia	Steam	GT NO 96	4	MLNG III	2169
Puteri Zamrud	130,400	Puteri Zamrud S.Bhd.	STX	Jun-96	Malaysia	Steam	GT NO 96	4	MLNG II	30H
Puteri Zamrud Satu	137,100	MISC	Mitsui E&S	Feb-04	Malaysia	–	GT NO 96	4	MLNG III	1507
Qogir	174,000	LNGShips	Samsung	Jun-20	Malta	X-DF	TZ MK. III Flex	–	Portfolio	2271
Raahi	138,076	India LNG Transport Company No.2 Ltd.	Daewoo	Oct-04	Malta	Steam	GT NO 96	4	RasGas	2211
Rasheeda	266,000	Nakilat SHI 1754 Inc.	Samsung	Aug-10	M. Islnds.	Diesel	TZ Mk. III	10	Qatargas IV	1754
Rias Baixas Knutsen	180,000	Knutsen OAS Shipping	HHI	Sep-19	Norway	ME-GI	TZ Mk. III Flex	4	Corpus Christi	2964
Ribera del Duero Knutsen	173,400	Norspan LNG VIII AS	Daewoo	Dec-10	Norway	–	GT NO 96	4	Portfolio	2275
Rioja Knutsen	170,000	Norspan LNG X	HHI	Dec-16	Norway	ME-GI	TZ Mk. III Flex	4	Portfolio	2734
Rudolf Samoylovich	172,410	Teekay Corp.	Daewoo	Aug-18	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2425
Salalah LNG	147,000	Tiwi LNG Carrier S.A.	Samsung	Dec-05	Panama	Steam	TZ Mk. III	4	Oman LNG	1536
Santander Knutsen	174,000	Sea 194 Leasing Co Ltd.	Hyundai Samho	Jun-22	Norway	X-DF	TZ Mk. III Flex+	4	Portfolio	8091
SCF La Perouse	174,000	Albus Shipping Ltd.	HHI	Feb-20	Liberia	X-DF	NO-96-GW+PRS	4	Portfolio	8006
Seapeak Arctic	89,800	Artic Spirit LLC	Ishikawajima	Dec-93	Liberia	Steam	IHI SPB	4	Atlantic LNG	3016
Seapeak Arwa	165,500	Membrane Shipping	Samsung	Aug-08	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III	4	Balhaf	1625
Seapeak Catalunya	138,000	Teekay Shipping Spain S.L.	Izar	Jun-03	Spain	Steam	GT NO 96	4	Atlantic LNG	319
Seapeak Creole	173,400	Teekay LNG Partners	Daewoo	Feb-16	Bahamas	ME-GI	GT NO 96 GW	–	Sabine Pass	2407
Seapeak Galicia	140,624	Teekay Gas II	Daewoo	Jul-07	Liberia	Steam	GT NO 96	4	Portfolio	2209
Seapeak Glasgow	174,162	Teekay LNG Partners	Hyundai Samho	Dec-18	Bermuda	ME-GI	TZ Mk. III Flex	–	Freeport	S856
Seapeak Hispania	145,500	Teekay Gas Naviera SL	Daewoo	Aug-02	Spain	Steam	GT NO 96	4	Peru LNG	2205
Seapeak Madrid	138,000	Teekay Shipping Spain S.L.	Navantia	Dec-04	Spain	Steam	GT NO 96	4	Atlantic LNG	105
Seapeak Magellan	165,500	Magellan Spirit ApS	Samsung	Apr-09	Denmark	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	1626
Seapeak Marib	165,500	Membrane Shipping	Samsung	Apr-08	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III	4	Balhaf	1608
Seapeak Meridian	165,500	Meridian Spirit Aps	Samsung	Jan-10	Denmark	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	1633
Seapeak Methane	165,500	Malt Singapore Pvt. Ltd.	Samsung	Feb-08	M. Islnds.	Diesel/Gas-Electric	TZ Mk. III	4	Atlantic LNG	1607
Seapeak Polar	89,800	Polar Spirit LLC	Ishikawajima	Jun-93	Liberia	Steam	IHI SPB	4	Atlantic LNG	3015
Seapeak Vancouver	173,400	Teekay LNG Partners	Daewoo	Nov-16	Bahamas	ME-GI	GT NO 96 GW	–	Portfolio	2411
Seishu Maru	138,000	Mitsui O.S.K. Lines	Mitsubishi	Sep-14	Bahamas	–	Moss	4	PNG LNG	2297
Seri Alam	145,572	MISC	Samsung	Jul-05	Malaysia	–	TZ Mk. III	4	Bintulu	1502
Seri Amanah	145,709	MISC	Samsung	Mar-06	Malaysia	Steam	TZ Mk. III	4	Bintulu	1503
Seri Anggun	145,731	MISC	Samsung	Oct-06	Malaysia	Steam	TZ Mk. III	4	North West Shelf	1589
Seri Angkasa	145,130	MISC	Samsung	Dec-06	Malaysia	Steam	TZ Mk. III	4	Bintulu	1590
Seri Ayu	145,894	MISC	Samsung	Oct-07	Malaysia	Steam	TZ Mk. III	4	Bintulu	1591
Seri Bakti	152,944	MISC	Mitsubishi	Apr-07	Malaysia	Steam	GT NO 96	4	Gladstone	2220
Seri Balhaf	152,000	MISC	Mitsubishi	Jan-09	Malaysia	Steam	GT NO 96	4	Bontang	2223
Seri Balqis	152,000	MISC	Mitsubishi	Mar-09	Malaysia	Steam	GT NO 96	4	NLNG	2224
Seri Begawan	152,900	MISC	Mitsubishi	Nov-07	Malaysia	Steam	GT NO 96	4	Bintulu	2221
Seri Bijaksana	152,300	MISC	Mitsubishi	Apr-08	Malaysia	Steam	GT NO 96	4	Bintulu	2222
Seri Camar	150,000	MISC	HHI	Feb-18	Malaysia	Ultra Steam Turbine	Moss	4	Pacific Northwest	2732
Seri Camellia	159,800	MISC	HHI	Sep-16	Malaysia	Ultra Steam Turbine	TZ MK. III Flex	4	Pacific Northwest	2729
Seri Cemara	150,200	MISC	HHI	Apr-18	Malaysia	Ultra Steam Turbine	Moss	4	Portfolio	2735
Seri Cempaka	162,000	MISC	HHI	Aug-17	Malaysia	Ultra Steam Turbine	TZ MK. III Flex	4	Pacific Northwest	2731
Seri Cenderawasih	162,000	MISC	HHI	Feb-17	Malaysia	Ultra Steam Turbine	Moss	4	Pacific Northwest	2730
Sestao Knutsen	136,947	Norspan LNG IV AS	Navantia Cadiz	Oct-07	Spain	Steam	GT NO 96	4	Portfolio	331
Sevilla Knutsen	173,400	Norspan LNG VI AS	Daewoo	May-10	Spain	Diesel/Gas-Electric	GT NO 96	4	Portfolio	2269
Shagra	268,000	Nakilat SHI 1751 Inc.	Samsung	Nov-09	M. Islnds.	Diesel	TZ Mk. III	10	Qatargas IV	1751
Shahamah	135,496	Shahamah Inc.	Kawasaki	Oct-94	Liberia	Steam	Moss	5	Das Island	1438
Shandong Juniper	135,269	Shell Bermuda (Overseas) Ltd.	Mitsubishi	Feb-04	Singapore	Steam	Moss	5	Peru LNG	2183
Shen Hai	147,200	Shanghai LNG Shipping Co.	Hudong Zhonghua	Dec-12	H.K., China	Steam	GT NO 96	4	Bintulu	H1621A
Shinshu Maru	180,000	Mitsui O.S.K. Lines	Kawasaki	Feb-19	Japan	DERST (aka STaGE)	Moss	4	Freeport	1734
Simaisma	145,889	Greenwell Corporation	Daewoo	Jul-06	Bermuda	Steam	GT NO 96	8	RasGas II	2235
Singapore Energy	138,000	Sea Breeze Leasing	Samsung	Feb-03	Isle of Man	Steam	TZ Mk. III	4	Portfolio	1416
SK Audace	174,000	Milestone LNG Transport	Samsung	Aug-17	Panama	X-DF	TZ Mk. III Flex	4	Portfolio	2080
SK Resolute	180,000	Milestone LNG Transport	Samsung	Nov-17	Panama	X-DF	TZ Mk. III Flex	4	Ichthys	2081
SK Serenity	174,000	SK Shipping	Samsung	Feb-18	South Korea	TFDE	KC-1	4	Sabine Pass	2153
SK Spica	174,117	SK Shipping	Samsung	Mar-18	South Korea	TFDE	KC-1	–	Sabine Pass	2154
SK Splendor	138,370	Optima Leasing	Samsung	May-00	Panama	Steam	TZ Mk. III	4	Oman LNG	1258
SK Stellar	138,375	Stellar Shipholding	Samsung	Dec-00	Panama	Steam	TZ Mk. III	4	RasGas I	1259
SK Summit	138,003	Omnia Enterprises	Daewoo	Aug-99	Panama	Steam	GT NO 96	4	RasGas I	2202
SK Sunrise	138,306	Methane Navigation S.A.	Samsung	Aug-03	Panama	Steam	TZ Mk. III	4	RasGas II	1405
SK Supreme	138,225	Celeste Maritime	Samsung	Feb-00	Panama	Steam	TZ Mk. III	4	RasGas I	1207
SM Eagle	174,000	Korea Line Corp.	Daewoo	May-17	Panama	ME-GI	GT NO 96 GW	4	Sabine Pass	2449

SM Seahawk	174,000	Korea Line Corp.	Daewoo	Jun-17	Panama	ME-GI	GT NO 96 GW	4	Sabine Pass	2450
Sohar LNG	137,248	Energy Spring LNG Carriers	Mitsubishi	Oct-01	Malta	Steam	Moss	5	Oman LNG	2162
Sohshu Maru	177,000	Mitsui O.S.K. Lines	Kawasaki	Jul-19	Japan	DERST (aka STaGE)	Moss	4	Freeport	1735
Solaris	155,000	GasLog	Samsung	Jul-14	Bermuda	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	2042
Sonangol Benguela	160,500	Sonangol Benguela Ltd.	Daewoo	Dec-11	Bahamas	–	GT NO 96	4	Soyo	2282
Sonangol Etosha	160,500	Sonangol Etosha Ltd.	Daewoo	Sep-11	Bahamas	–	GT NO 96	4	Soyo	2281
Sonangol Sambizanga	160,500	Sonangol Sambizanga Ltd.	Daewoo	Aug-11	Bahamas	–	GT NO 96	4	Soyo	2280
Southern Cross	172,000	Mitsui O.S.K. Lines	Hudong Zhonghua	Jul-15	H.K., China	ME-GI	GT NO 96	4	PNG LNG	H1671A
Soyo	160,276	Mint LNG I	Samsung	Aug-11	Bahamas	–	TZ Mk. III	4	Soyo	1810
Spirit of Hela	177,000	Nefertiti LNG Shipping Co.	Hyundai Samho	Nov-10	Bahamas	Diesel Electric	TZ Mk. III	4	PNG LNG	S324
Stena Blue Sky	145,700	Blue Sky LNG	Daewoo	Aug-06	Panama	Steam	GT NO 96	4	Spot	2233
Stena Clear Sky	171,800	Clear Sky LNG Shipping	Daewoo	May-11	U.K.	Diesel/Gas-Electric	GT NO 96	4	Portfolio	2278
Stena Crystal Sky	171,800	Stena Drilling Cyprus	Daewoo	May-11	U.K.	Diesel/Gas-Electric	GT NO 96	4	Portfolio	2268
Symphonic Breeze	145,394	Reborn Maritime	Kawasaki	Dec-07	Bahamas	Steam	Moss	4	Portfolio	H1587
Taitar No 1	145,000	NiMic No 1 S.A.	Mitsubishi	Oct-09	Panama	–	Moss	4	RasGas	2241
Taitar No 2	145,000	NiMic No 2 S.A.	Kawasaki	Dec-09	Panama	–	Moss	4	RasGas	1625
Taitar No 3	145,000	NiMic No 3 S.A.	Mitsubishi	Dec-09	Panama	–	Moss	4	RasGas	2242
Taitar No 4	147,000	NiMic No 4 S.A.	Kawasaki	Aug-10	Panama	–	Moss	4	RasGas	1626
Tangguh Batur	145,700	LNG North-South Shipping Co.	Daewoo	Dec-08	Singapore	Steam	GT NO 96	4	Tangguh	2242
Tangguh Foja	155,000	Ocean 1919 Shipping No. 1	Samsung	Nov-08	Panama	–	TZ Mk. III	4	Tangguh	1619
Tangguh Hiri	155,000	Tangguh Hiri Finance Ltd.	HHI	Dec-08	Isle of Man	–	TZ Mk. III	4	Tangguh	1780
Tangguh Jaya	155,000	Ocean 1919 Shipping No. 2	Samsung	Dec-08	Panama	–	TZ Mk. III	4	Tangguh	1620
Tangguh Palung	155,000	Ocean 1919 Shipping No. 3	Samsung	Mar-09	Panama	–	TZ Mk. III	4	Tangguh	1634
Tangguh Sago	155,000	Teekay Shipping (Canada) Limited	Hyundai Samho	Dec-08	Bahamas	Diesel/Gas-Electric	TZ Mk. III	4	Tangguh	S298
Tangguh Towuti	145,700	LNG East-West Shipping Co.	Daewoo	Oct-08	Singapore	Steam	GT NO 96	4	Tangguh	2241
Tembek	216,200	Overseas LNG S1 Corp.	Samsung	Nov-07	M. Islnds.	Diesel	TZ Mk. III	4	Qatargas II	1605
Tenergy	170,520	Briety Shipping Inc	HHI	Jan-22	Greece	X-DF	TZ Mk. III	4	Portfolio	3157
Tessala	170,000	Hyproc Shipping Co.	HHI	Feb-17	Algeria	Diesel/Gas-Electric	TZ Mk. III Flex	–	Arzew	2813
Trader	138,000	K Line LNG Shipping (UK) Ltd.	Samsung	Nov-02	Isle of Man	Steam	TZ Mk. III	4	Portfolio	1380
Traiano Knutsen	180,000	Hai Kuo Shipping 1901 G Ltd.	HHI	Jul-20	Belgium	ME-GI	TZ Mk. III Flex	4	Portfolio	3086
Trinity Arrow	154,982	Luster Maritime S.A. & Cypress Maritime Panama & Los Halillos Shipping Co.	Koyo Dockyard	Feb-08	Panama	Steam	TZ Mk. III	4	Portfolio	2258
Trinity Glory	154,000	Cypress Maritime Consortium	Koyo Dockyard	Nov-08	Panama	Steam	TZ Mk. III	4	Bontang	2260
Tristar Ruby	155,000	RBSSAF (19) Ltd.	HHI	Apr-08	Isle of Man	Diesel/Gas-Electric	TZ Mk. III	4	Portfolio	1778
Umm Al Amad	210,200	J5 Nakilat No. 7 Ltd.	Daewoo	Sep-08	M. Islnds.	Diesel	GT NO 96	18	RasGas III	2253
Umm Al Ashtan	137,000	Umm Al Ashtan Ltd.	STX	May-97	Liberia	Steam	Moss	4	Das Island	1333
Umm Bab	145,000	Sea Trade International Inc.	Daewoo	Nov-05	Greece	Steam	GT NO 96	4	RasGas II	2228
Umm Slal	266,000	Nakilat Umm Slal Inc.	Samsung	Nov-08	M. Islnds.	–	TZ Mk. III	5	Qatargas II	1676
Valencia Knutsen	173,400	Norspan LNG VII AS	Daewoo	Sep-10	Spain	–	GT NO 96	4	Portfolio	2274
Velikiy Novgorod	170,200	Sovcomflot	STX	Dec-13	Liberia	–	GT NO 96	4	Portfolio	1910
Vivit Americas LNG	174,000	Cardiff LNG Zeta Owning LLC	HHI	Oct-20	Malta	X-DF	TZ Mk. III Flex	4	Portfolio	3037
Vivit Arabia LNG	174,000	Kaiser 2 SA	Hyundai Samho	Jun-22	Liberia	X-DF	TZ Mk. III Flex	4	Portfolio	8026
Vivit City LNG	174,103	Kaiser SA	Hyundai Samho	Dec-21	Liberia	X-DF	TZ Mk. III Flex	4	Portfolio	8025
Vladimir Rusanov	174,000	Mitsui O.S.K. Lines	Daewoo	Jan-18	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2424
Vladimir Vize	172,000	China Shipping Development Co.	Daewoo	Sep-18	H.K., China	ME-GI	GT NO 96 GW	4	Yamal	2426
Vladimir Voronin	172,652	Teekay Corp.	Daewoo	Jul-19	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2431
WilForce	155,900	Wilforce LLC	Daewoo	Sep-13	Norway	–	GT NO 96	4	–	H2289
WilPride	155,900	Wilpride LLC	Daewoo	Nov-13	Norway	–	GT NO 96	4	–	H2290
Woodside Chaney	174,000	Maran Gas Maritime	Daewoo	Jul-19	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2457
Woodside Charles Allen	173,400	Hai Kuo Shipping 2027G Ltd.	Daewoo	Oct-20	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2486
Woodside Donaldson	165,500	Malt Singapore Pvt. Ltd.	Samsung	Oct-09	Singapore	Diesel/Gas-Electric	TZ Mk. III	4	Pluto	1632
Woodside Goode	159,800	Armour Company Ltd.	Daewoo	Nov-13	Greece	Diesel Electric	GT NO 96 GW	4	RasGas	H2295
Woodside Rees Withers	173,400	Maran Gas Maritime	Daewoo	Oct-19	Greece	ME-GI	GT NO 96 GW	4	–	2466
Woodside Rogers	159,800	Margie Seaway Corp.	Daewoo	Jul-13	Greece	Diesel/Gas-Electric	GT NO 96 GW	4	Pluto	H2288
Yakov Gakkel	172,658	DSME Hull No.2434 LLC	Daewoo	Nov-19	Bahamas	ME-GI	GT NO 96 GW	4	Yamal	2434
Yamal Spirit	174,000	Teekay LNG Partners	Hyundai Samho	Jan-19	Bermuda	ME-GI	TZ Mk. III Flex	–	Freeport	S857
Yari LNG	159,800	Cardiff LNG	Daewoo	Nov-14	Malta	TFDE	GT NO 96 L03	4	Spot	2401
Yenisei River	155,000	Navajo Marine	HHI	Jul-13	M. Islnds.	–	TZ Mk. III	4	Yamal	2556
Yiannis	169,932	Onerato Marine SA	Daewoo	Sep-21	Greece	ME-GI	GT NO 96 GW	4	Portfolio	2501
YK Sovereign	127,125	SK Shipping	HHI	Dec-94	Panama	Steam	Moss	4	MLNG	761
Zarga	268,000	Nakilat SHI 1752 Inc.	Samsung	Jan-10	M. Islnds.	–	TZ Mk. III	5	Qatargas IV	1752
Zekreet	137,482	Mitsui O.S.K. Lines	Mitsui E&S	Dec-98	Japan	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 Vermogensverwaltung	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 Schiffahrts 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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