LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

9 January 2020

Europe dominates 2019 LNG imports

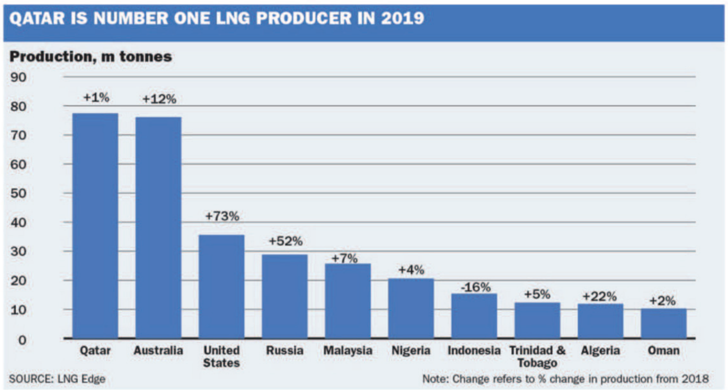
Global LNG production jumped in 2019, triggering an oversupply and low prices that are expected to persist this year, ICIS Global LNG's Ed Cox said in a review.

Initial full-year data from LNG Edge showed total exports running at 355 mill tonnes in 2019, up from 314.9 mill tonnes in 2018 - the largest ever increase in production.

Qatar was the still top, producing 77.4 mill tonnes, according to the provisional data - very close to its nameplate capacity. Australia was a close second, at 76.1 mill tonnes, a rise of over 8 mill tonnes and should take top spot this year, based on the supply forecast (see page 2).

Of the overall supply increase, the majority – 33 mill tonnes – came from Australia, Russia and the US. The US produced 35.6 mill tonnes, up by almost 15 mill tonnes year-on-year.

This year, the US is forecast to produce almost 57 mill tonnes, according to the LNG Edge supply forecast. Much will depend on the successful ramp-ups of the remaining new trains at Freeport and Cameron LNG facilities, Cox said.



European imports

European LNG imports rose close to 76 mill tonnes in 2019, which was the highest ever recorded, according to the provisional data, absorbing over 21% of all LNG produced globally last year, up from 13% in 2018.

This trend will likely continue in 2020 unless there is a major shift in short-term demand in Asia over the winter months and into the summer.

Sharp import increases were recorded across most European countries, with both Dutch and Belgian imports more than doubling.

In volume terms, the most significant increases were seen in France where imports rose by over 6.5 mill tonnes to 16 mill tonnes, and the UK, which received over 13 mill tonnes, up by more than 8 mill tonnes from the previous year.

Asia falling

In a major reversal from the preceding two years, total East Asian LNG imports fell in 2019 year-on-year. Combined imports into Japan, South Korea, China and Taiwan stood at 196.5 mill tonnes, still by far the most significant importing area. But this figure was down by around 1 mill tonnes from 2018.

Japanese LNG imports fell by 7% last year, with South Korea down by 8%. LNG Edge demand forecast showed a small rise in Japanese LNG demand in 2020 linked to lower nuclear power generation, but further declines from South Korea.

However, most important was the slowdown in the growth of Chinese LNG imports, as coal-to-gas switching eased and economic growth struggled. Imports were up by over 8 mill tonnes to 61.9 mill tonnes but this was a smaller increase than recorded in the previous three years.

How China's new independent gas pipeline and infrastructure operator develops in 2020 will be an important factor in the evolution of LNG imports and any new companies' ability to take import positions, Cox said.

South and southeast Asia are also two key import regions, as there is substantial gas demand in this area, at the right price, but the opening up of new markets has been slow in recent years.

Across the existing importers, Pakistan and Bangladesh imported a combined 12 mill tonnes in 2019, up from 7.4 mill tonnes in the previous year.

Indian import growth was restricted by the lack of new available infrastructure, but demand rose by over 1 mill tonnes to 23.8 mill tonnes last year. The addition of more import capacity in 2020 could boost Indian imports to over 26 mill tonnes, according to the forecast.

Elsewhere, the Middle East absorbed 1.9% of global supply, down from 2.9% in 2018, largely a result of Egypt ceasing imports. Kuwait will continue as the most significant importer in the region – especially with the start up of Al-Zour terminal due for 2021. However, Jordanian imports fell by half, due to the first Israeli pipe gas from the Leviathan gas field arriving in the country at the end of the year. ■

SHIPPING NEWS AGENDA

GAC opens in Lake Charles and expands at Ras Laffan

GAC North America has opened an office at Lake Charles to provide ship agency, husbandry and owners' protective agency services 24/7.

It was opened in response to the growth in LNG exports from the port, as well as other vessel types.

Lake Charles is the 12th busiest port in the US, according to the US Army Corps of Engineers waterborne statistics, with around 1,000 vessels calling annually.

"In light of growing exports of US-produced LNG and the continuing expansion of GAC's core agency business, Lake Charles was the natural choice for the newest office to strengthen our nationwide network," explained Darren Martin, GAC North America's Managing Director for shipping services. "Our team of experts have the local in-depth knowledge and global resources needed to deliver compliant, safe and world-class service to the LNG sector."

Qatar development

Meanwhile, HullWiper is to launch its hull cleaning solution at Ras Laffan in early 2020 through GAC Qatar.

GAC Qatar is the only company to have been granted a license by the country's Environment Ministry to operate hull cleaning equipment in its waters.

HullWiper's remotely operated vehicle (ROV) complies with Qatar's strict regulations, which include the collection of 100% of biofouling removed during cleaning for safe disposal at the Qatar Petroleum (QP) facility after a QP test, and the maintenance of proper cleaning records for monthly submissions to the QP Environment office.

"Qatar is the region's biggest LNG exporter with more than 70 ships transporting cargo all over the world," said Simon Doran, HullWiper Managing Director. "With the increase of LNG production, and other ships operating in the country, the number of vessels calling at its ports is expected to grow significantly and HullWiper's operational presence at Ras Laffan will support Qatar's initiative for safer, cleaner and greener shipping with its hull cleaning solutions." ■

GAIL to import 90 US LNG cargoes

Indian state-owned gas utility GAIL plans to import 90 LNG cargoes — or around 5.8 mill tonnes of LNG — from the US in the fiscal year ending 31st March, 2021.

This amounts to almost the same volume expected to be imported in the current fiscal year (April, 2019-March, 2020), company officials told Platts, amounting to around 75 cargoes.

The additional demand mainly comes from the fertilizer sector.

By comparison, GAIL imported 62 cargoes of US LNG in the last fiscal year, running between April, 2018 and March, 2019.

Overall, in financial year 2020-21, GAIL expects to source 250 LNG cargoes – around 14 mill tonnes – globally, which means that the US will account for around 36% of India's total LNG imports.

"We primarily source LNG cargoes via long term contracts," said Rajeev Singhal, executive director in charge of GAIL's LNG business, speaking with Platts.

He added that demand for LNG could grow by around 3-4% in the next financial year beginning 1st April, 2020.

GAIL, which is also India's gas transmission major, has a long-term contract for 5.8 mill tonnes per year of US LNG, along with long-term swap contracts in place until March, 2022.

Overall, India has long-term LNG supply contracts with countries such as Qatar, Australia, and Russia.

Indian-based Petronet LNG is expected to supply around 70 cargoes, around 4-4.5 mill tonnes, to GAIL in fiscal 2020-21.

The country is the third-biggest energy consumer after the US and China, and aims to secure 15% of its total energy mix from natural gas by 2030, up from current levels of about 6%. ■

Australia takes top export slot

Australia exported an estimated 77.5 mill tonnes of LNG in calendar 2019, beating Qatar's figure.

Qatar was estimated to have exported around 75 mill tonnes last year, according to data from Australian-based consultancy EnergyQuest.

EnergyQuest CEO, Dr Graeme Bethune, said in a tweet that Australia's LNG production capacity of 88 mill tonnes is larger than Qatar's, which stands at 77 mill tonnes.

"Australia's 10 LNG projects have a combined capacity of 87.8 mill tonnes. However, with only 88% of total nameplate capacity used over 2019, there remains opportunity going forward to lift the current production milestone even higher," he claimed.

However, the long-term outlook for gas in Australia is pessimistic, local media said, quoting the Australian Energy Market Operator (AEMO), which said that there will be no supply shortage before 2030 against Wood Mackenzie's forecast that a shortage could occur as early as 2023, as most contingent gas resources are unlikely to be developed.

Qatar's position could be further eroded if the Strait of Hormuz becomes affected following the US' assassination of an Iranian general - Ed. ■

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Saudi Aramco to participate in Port Arthur LNG project

Sempra LNG and Aramco Services Co have signed an Interim Project Participation Agreement (IPPA) for the Port Arthur LNG export project.

The IPPA represents another milestone for both companies after they signed a heads of agreement in May last year to purchase 5 mill tonnes per annum of LNG and a 25% equity investment in the Port Arthur project.

"(This) announcement is a reflection of the growing alignment between our companies' interest in the overall success of the Port Arthur LNG project," said Jeffrey Martin, Sempra Energy Chairman and CEO. "We have a tremendous amount of respect for Saudi Aramco and its leadership team and we are pleased we can support their success in the global natural gas markets."

Saudi Aramco's President and CEO, Amin Nasser, added, "The global demand growth for LNG is expected to continue in the coming years, and we see significant opportunities in this market. This agreement with Sempra Energy is another step forward for Saudi Aramco's long-term gas strategy, and towards becoming the global leading integrated energy and chemicals company."

Saudi Aramco has taken a stake in Port Arthur LNG

Initial phase

Port Arthur LNG's initial phase is fully permitted and it is expected to include two liquefaction trains, up to three LNG storage tanks and associated facilities to enable the export of about 11 mill tonnes per year of LNG on a long-term basis.

Earlier last year, Sempra LNG initiated the US Federal Energy Regulatory Commission (FERC) pre-filing review for the project's potential expansion that would add two additional liquefaction trains for a total export capacity of around 22 mill tonnes per annum.

Definitive agreements in the Port Arthur LNG export project remain subject to finalisation and corporate approvals by each party before they are executed. The IPPA sets forth certain mechanisms for the parties to work towards certain agreements and other pre-FID activities.

Development of Sempra Energy's LNG export projects is contingent upon obtaining binding customer commitments, completing the required commercial agreements, securing all necessary permits, obtaining financing and reaching final investment decisions, among other factors, the company stressed. ■

NLNG takes FID on Train 7

Nigeria LNG Limited (NLNG) took the Final Investment Decision (FID) for its Train 7 project on 27th December.

This will increase its production by 35% and its competitiveness in the global LNG market, the company claimed.

Train 7 will increase NLNG's capacity from 22 mill tonnes per annum to 30 mill tonnes.

The company will award the contracts for the engineering, procurement and construction (EPC), which will follow the closure of bank and Export Credit Agency (ECA) financing, and the finalisation of key supporting commercial agreements expected in early 2020.

NLNG is an incorporated joint-venture involving the Nigerian Government, represented by Nigerian National Petroleum Corp (49%); Shell Gas (25.6%); Total Gaz Electricite Holdings France (15%), and Eni International (10.4%).

Tony Attah, NLNG Managing Director/CEO, said: "Train 7 is the crux of a growth agenda which will ensure the company's position as the fifth major supplier of global LNG is maintained, increasing value to its shareholders and other stakeholders, as well as further reducing the gas that would otherwise have been flared, in fulfilment of its vision of 'being a global company, helping to build a better Nigeria'".

The construction period following FID will last around five years with first LNG rundown expected in 2024.

Earlier, NLNG and Vitol had signed a LNG Sale and Purchase Agreement (SPA) for some of the remarketed volumes from NLNG's Trains 1, 2 and 3.

The agreement is for the supply of 500,000 tonnes per annum of LNG for 10 years on a delivered Ex-ship basis commencing October, 2021. ■

NEWS NUDGE

Ship sales

Tristar has taken delivery of the recently purchased 155,000 cu m LNGC 'Tristar Ruby'.

Formerly the 'British Ruby', she is the first LNGC to be added to the Tristar fleet of 30 deepsea tankers.

'Tristar Ruby' will be chartered back to BP Shipping and technically managed by Wilhelmsen Ship Management.

In other sales agreements, CDB Leasing (International) Co, a wholly-owned subsidiary of China Development Bank Leasing, has agreed to acquire an LNGC from CMB International Leasing Management for $154.5 mill.

In addition, Cyprus interests reportedly purchased the 2002-built 132,564 cu m 'Galea'.

She was thought to be earmarked for conversion to an FSRU to act as a Cypriot import terminal.

The Cypriots are reportedly looking at three different options for the terminal. ■

Tristar has joined the list of LNGC owners

Supply agreements signed

Woodside Energy Trading Singapore Pte Ltd has entered into a long-term sale and purchase agreement (SPA) with Uniper Global Commodities to supply LNG for 13 years commencing in 2021.

The quantity of LNG to be supplied under the SPA will initially be up to 0.5 mill tonnes per annum, increasing to around 1 mill tonnes from 2025.

Supply from 2025 is conditional upon a final investment decision (FID) on the Scarborough development, Woodside said.

This follows the signing of a heads of agreement (HOA) between the two companies in September, 2019.

****LNG Limited is to finalise a binding sale and purchase agreement (SPA) for the delivery of 2 mill tonnes per annum of LNG from its Magnolia LNG facility to the new Bac Lieu LNG-to-power project in Vietnam.

Giving the go-ahead, last month the Vietnamese Government issued a note on the Prime Minister's approval of the inclusion of the Bac Lieu LNG-to-Power project into the National Power Development Plan for 2011-2020 (PDP7R).

The project's inclusion in PDP7R was claimed to be an important milestone that enables the project developers to grant an investment policy decision.

Five days after this is granted, the Investment Registration Certificate (IRC) will be issued to developer Delta Offshore Energy Pte Ltd (DOEPL).

DOEPL will co-ordinate the partners in the project, which include US based companies, General Electric, LNG Limited, Baker Concrete and others to immediately expedite the development phase starting with a feasibility study.

****Qatar Petroleum (QP) is to supply Kuwait with 3 mill tonnes per year of LNG for 15 years, under an agreement signed with Kuwait Petroleum Corp (KPC).

Supplies will begin in 2022 and are expected to meet Kuwait's growing energy needs, particularly from the power sector, the companies said.

Kuwait has signed an LNG supply deal with Qatar

LNG will be imported to Al-Zour, where Kuwait expects to complete a regasification terminal in 2021 with capacity of 11.3 mill tonnes per annum.

Kuwait currently imports LNG via Mina Al-Ahmadi, through an FSRU. Initially this was only to meet increased demand in the summer season, from April to October, but in recent years the import season has widened.

KPC signed a 15 year deal with Shell International Trading Middle East in 2017. This covers LNG deliveries from 2020 for 15 years, with volumes estimated at 2-3 mill tonnes annually. ■

Acajutla opts for FSRU

Energía del Pacífico (EDP) has completed project financing for an LNG-to-power facility currently under construction at Acajutla, El Salvador.

The project comprises a 378 MW natural gas-fired power plant, an FSRU, and an electric transmission line that will connect to the Central American Electrical Interconnection System.

It is scheduled to be operational by the end of 2021.

The plant's use of natural gas will reduce the amount of imported diesel and heavy fuel oil fired generation in El Salvador's electricity mix, resulting in significant environmental benefits for the country and the region, EDP claimed.

US-based Invenergy, a private global developer and operator of sustainable energy solutions, involved EDP in partnership with locally-based partners Grupo Calleja, VC Energy de Centroamerica and Quantum Energy.

"Energía del Pacífico is a transformational project for El Salvador and the entire region – a shining example of the enormous opportunity that can be created, despite prior obstacles, when private initiatives have strong government support," said Michael Polsky, Invenergy Founder and CEO. "Leveraging our decades of development, engineering, finance, construction and operating experience, Invenergy is uniquely positioned to lead this partnership and execute this complex project."

EDP and Shell have executed a long-term agreement to supply LNG for the project. In partnership with BW LNG and BW Offshore, LNG will be converted to natural gas on an FSRU that will be permanently moored offshore.

Saam Towage will provide tug support services for the project.

The regasified LNG will be transported from the FSRU to the power plant through a sub-sea pipeline to be engineered and constructed by Boskalis.

Financial institutions Overseas Private Investment Corp, International Finance Corp, IDB Invest, Finnish Export Credit and KfW IPEX-Bank are lenders to the project. White & Case served as transaction counsel, Arias as Salvadoran counsel and Astris Finance acted as financial advisor for EDP. ■

NEWS NUDGE

New Zeebrugge transhipment tank

OAO Yamal LNG has started using a dedicated LNG transhipment tank at the Zeebrugge LNG terminal in Belgium as part of a 20-year agreement between subsidiary Yamal Trade and Fluxys LNG.

The dedicated tank was built specifically for the transhipment needs of Yamal LNG and has a capacity of 180,000 cu m, allowing the Project to tranship up to 8 mill tonnes of LNG annually.

Newbuildings

Shell has agreed seven year charters for eight newbuilding LNGCs.

The dual-fuelled 174,000 cu m LNGCs are to be built by Hyundai for Knutsen (four), Korea Line and JP Morgan (two each) for delivery in 2022 at a price of around $187.5 mill per vessel.

Elsewhere, SK Shipping is being linked to an LNGC newbuilding order reported at Hyundai Samho Heavy Industries that was concluded in the last few days before the holiday break. ■

DEPA takes stake in Greek FSRU project

Just before the holiday break, DEPA's Board approved the acquisition of a 20% stake in GASTRADE's equity - the company developing an FSRU project in Alexandroupolis.

Northern Greece FSRU is part of the energy strategy implemented by the Greek Government and is part of European Union's policy for Central and South Eastern Europe (CESEC) energy connectivity to the National Natural Gas System.

This project is supplementary to the IGB pipeline, inter-connecting the Greek market with those of Central Europe and Ukraine.

The Terminal consists of i) an FSRU with a storage capacity of up to 170,000 cu m of LNG and daily regasification capacity of 22.7 mill cu m, which is to be moored some 10 km offshore Alexandroupolis and ii) a 28 km long pipeline system.

This transaction is still subject to the approval by the Hellenic Competition Committee.

According to the project's timeframe, the Final Investment Decision (FID) is expected to be taken during the third quarter of 2020 and it is expected to start operation in September, 2022.

DEPA has invested in Gastrade's LNG operations

'WilForce' and 'WilPride' refinancing completed

Awilco LNG has closed and completed the 10-year sale/leaseback facility with CCB Financial Leasing for the LNGCs 'WilForce' and 'WilPride'.

They were sold for $175 mill gross each, including non-amortising and non-interest bearing pre-paid charter hire of $43.75 mill per vessel.

The vessels are chartered back on a bareboat basis to wholly owned subsidiaries of Awilco for up to 10 years.

Awilco LNG said that its finance cost is initially expected to be reduced by about $7 mill annually subject to interest rate fluctuations, compared to the previous financing arrangement. The bareboat rate, which includes amortisation, is expected to be at about $45,000 per day per vessel in 2020.

The company has rolling repurchase options starting after three years and repurchase obligations at maturity of the facility at $37.5 mill per vessel. In addition, Awilco has covered in excess of 60% of available days in 1Q20 at an expected TCE of about $100,000 per day per vessel, and both vessels are expected to be available for new employment in February/ March 2020.

> "The company has rolling repurchase options starting after three years and repurchase obligations at maturity of the facility at $37.5 mill per vessel"

KN negotiates loan for LNG terminal

Nordic Investment Bank has signed a €134.1 mill loan agreement. with Lithuanian LNG and oil terminal operator AB Klaipedos Nafta (KN).

The 25-year maturity loan will be used to finance the rent payable for the FSRU, moored at Klaipeda, which is used for Lithuanian LNG imports.

"Through this loan agreement we are continuing to support Lithuania´s security of energy supply, a strategically important objective for our member country," said Henrik Normann, NIB President & CEO.

Currently, the FSRU is leased from Höegh LNG on a 10-year arrangement that expires in 2024. Following the Lithuanian government's decision to secure long-term LNG import into the country, KN decided to acquire the FSRU 'Independence' or another floating liquefied natural gas storage unit by 2024 and optimise the LNG terminal infrastructure's current costs.

NIB's funding will cover around €26.8 mill of the payments each year during the period 2020–2024, and this will provide an opportunity to reduce the cost of LNG terminal infrastructure for consumers immediately.

Equalised tariffs

The financing will enable equalised tariff levels to be maintained throughout the full lifetime of the terminal, both before and after an FSRU is acquired.

"As a company of strategic importance, KN will contribute to the common goals of the state – in particular, to contribute to the long-term diversification of gas supply, energy security and independence, as well as to competitive gas prices for consumers.

"International energy experts confirm that the use of natural gas and LNG as the cleanest fossil fuel for power generation and heavy-duty road transport will play an important role in the transition for the EU to become a climate-neutral economy by 2050.

"Therefore, it is important for us to find the most cost-effective and sustainable solutions to the reduction of the security supplement of gas supply to ensure the competitiveness of LNG over other forms of energy and fuels," explained Darius Šilenskis, KN CEO.

This is NIB's third loan agreement related to Lithuanian LNG infrastructure developments; the first two loans with Klaipedos Nafta were signed in 2014 and 2017, respectively.

The 'Independence' was inaugurated as an import terminal at Klaipeda in 2014.


The Lithuanians have negotiated extra funds for the FSRU

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Stena increases LNG involvement

Stena has acquired a 75% stake in 7 Seas LNG & Power AS.

The company is now part of the Northern Marine Group (NMG) under a new operating name of Stena Power & LNG Solutions AS.

Based in Grimstad, Norway, Stena Power & LNG Solutions will offer the proprietary Jetty-Less LNG to power solutions, built on flexible commercial structures.

The new company will offer turnkey deliveries of its patented LNG and power technology, including complete technical management.

Svein Hellesmark, founder of 7 Seas LNG & Power, and CTO of Stena Power & LNG Solutions, said: "We are very pleased with the partnership and the strength and credibility that Stena is bringing to our company, including its technical and operational experience in LNG.

"During our discussions with key interested clients over the last years, it had become clear that the Jetty-Less solutions would be even more attractive to our customers if the solutions could be offered on a turnkey or lease structure."

"The alliance with Stena will indeed form a unique platform for such new attractive commercial offerings. We firmly believe that our technology - combined with the new flexible commercial structure - will add value to our key clients," he said.

Philip Fullerton, Managing Director, Northern Marine Group, said "We continue to invest in new technology within the LNG space. This investment supplements our innovative small-scale LNG designs developed by our subsidiary Tritec Marine.

"Our overall offering to the LNG space, whether through new building support, shipmanagement, concept designs and now Jetty-Less solutions, places us in a unique position," he said.

Göran Hermansson, General Manager Stena LNG and board member, added: "We are very excited about the Jetty-Less LNG to power technology for two main reasons.

"First, it offers significant CAPEX savings, and with a low LNG price, a competitive value chain could be an enabler for new projects. Second, a Jetty-Less solution also offers a reduced environmental footprint in comparison to fixed infrastructure. In addition, the technology is proven, quick to deploy, modular and scalable, so it works for mid/small scale LNG as well," he concluded. ■

Stena invests in a jetty-less LNGC project

GTT systems continue to be in demand

Towards the end of last year, GTT reported more success for its tank containment designs.

The company reported it had received an order from Hudong-Zhonghua for the tank design of two LNGCs on behalf of an undisclosed shipowner.

Each vessel will have a capacity of 174,000 cu m. GTT will design the tanks of the vessels, which will be fitted with the NO96 L03+ membrane containment system.

The delivery of the vessels is planned during the second half of 2021.

In addition, GTT received an order from Hyundai Samho Heavy Industries (HSHI) for another tank design for a 174,000 cu m LNGC.

This vessel will be fitted with a Mark III Flex membrane containment system.

She will be built for an Asian shipowner and her delivery will take place during the first quarter of 2022.

Last month, GTT received another order from Daewoo Shipbuilding & Marine Engineering (DSME) concerning the tank design of one new 174,000 cu m LNGC on behalf of an undisclosed European shipowner.

GTT's membrane containment system NO96 GW was chosen for the design of the tanks. The delivery of the ship is planned in early 2022. ■

LNGC attacked in Gulf of Guinea

The Bermudan flag LNGC 'LNG Lokoja' successfully avoided a pirate attack in the Gulf of Guinea by increasing speed.

She was reported to be 65 nautical miles Northwest of Sao Tome heading for Bonny on 28th December when she was approached by a speedboat with 10 armed men on board.

An SSAS security alert was received by RCC Bermuda from the LNGC. An official said that the vessels Company Security Officer (CSO) was alerted by RCC Bermuda and the vessel was found to be under attack. 'LNG Lokoja' was able to increase speed to avoid being boarded and continued to her next port of call.

According to Dryad Global, the pirates were understood to have opened fire on the vessel, which conducted evasive manoeuvres causing the attack to fail.

The vessel was then met by a Nigerian Patrol vessel and a Portuguese Naval vessel, which escorted 'LNG Lokoja' following the incident. ■

Shell to retrofit Silverstream's underwater technology

UK-based Silverstream Technologies has signed a framework agreement to retrofit a number of Shell operated LNGCs with air lubrication systems to reduce fuel consumption and lower greenhouse gas emissions.

The deal will see Shell International Trading and Shipping Co Ltd and Silverstream develop a close working relationship to design, engineer, procure and execute the Silverstream System.

It will enable Shell to expedite installing the air lubrication technology in its LNGC fleet. Initially covering the next three years, the agreement will ultimately reduce contract lead times and the total cost of ownership for vessel operators.

The co-operation between Shell and Silverstream Technologies follows in the wake of the delivery of 'Maran Gas Andros', the first LNGC fitted with an air lubrication system.

Built by Daewoo Shipbuilding & Marine Engineering (DSME), 'Maran Gas Andros' uses Daewoo's air lubrication system (ALS). Maran Gas is expected to fit all of its LNGC newbuilds with the DSME ALS.

The latest agreement indicates that ALS technology is gaining momentum and credibility as a fuel and emissions savings tool for LNGCs.

Since 2014, Silverstream and Shell have collaborated on a number of vessel performance studies and sea trials to evaluate and verify the fuel savings potential of the Silverstream System.

Based on in-operation trials, Silverstream Technologies claimed that its system reduces fuel consumption and associated greenhouse gas (GHG) emissions by between 5-10%, depending on the vessel's operational profile.

Silverstream's CEO, Noah Silberschmidt, said, "Shell has been a longstanding and important partner for our organisation, and strengthening this relationship will help to drive clean technology uptake within a crucial market segment.

"That is why signing this framework agreement makes sense. Given the rate of change within our industry, we hope that this will prove to the sector that retrofitted clean technologies, such as the Silverstream System are easy to procure and execute and should form an integral part of an overall GHG emissions reduction strategy for existing vessels and fleets."

The company also recently signed a licence and co-operation agreement with Wärtsilä, which intends to fully integrate Silverstream's ALS within its propulsion solutions.

Silverstream's CEO Noah Silberschmidt

LNG rate assessments

Spot market (155,000-165,000 cu m)

Region	This week	Change*
East of Suez	$85,000	-$2,000
West of Suez	$92,000	-$3,000
12 mos T/C	$75,500	-$1,500

**Since last report 11/12/19* *Source: Fearnleys (09/01/20)*

NEWS NUDGE

LNGC charters

JERA is to timecharter a Maran Gas newbuilding LNGC.

The 12-year charter, signed by JERA's subsidiary, LNG Marine Transport Limited, is due to start between October and December, 2021.

The construction of the 174,000 cu m LNGC is due to commence in 2020 at Daewoo Shipbuilding & Marine Engineering. JERA plans to increase its LNG fleet to 25 vessels by 2025 as its ratio of FOB contracts grows. Going forward, JERA will continue to actively develop and optimise its fuel transportation businesses to achieve a stable, competitive, and flexible fuel portfolio, the company said.

The charter was announced just a day before JERA signed a Memorandum of Understanding (MOU) with PetroChina International Co Limited (PCI), a subsidiary of China National Petroleum Corp, to co-operate in the LNG business.

Under the MOU, JERA and PCI will discuss opportunities to co-operate in LNG bunkering, LNG shipping optimisation, joint sale and procurement of LNG and generating new demand for LNG, including overseas LNG value chain investments.

Elsewhere, Spanish utility Endesa has signed a one-year charter agreement for Flex LNG's 174,000 cu m LNGC 'Flex Ranger', starting from June next year.

The charter will start after the vessel's current one-year charter with Italy's Enel expires, Endesa confirmed. An option has been agreed to extend the charter by a year when it ends in June, 2021.

'Flex Ranger' will be the third LNGC Endesa has chartered to load at Cheniere's Corpus Christi facility in Texas, from which the company has 20-year deals for a combined 2.2 mill tonnes per year of offtake.

WORLD LNG CARRIER ORDERBOOK

Name	Containment system	Yard	Propulsion	Capacity	Delivery date	Primary Owner
Marvel Pelican	Moss	Kawasaki	TFDE	155,000	15/12/2019	MOL
BW Magnolia	GT NO 96	DSME	MEGI	173,400	15/12/2019	BWGas
HHI / Total	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/01/2020	Cardiff Marine
HHI / Cardiff #1	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/02/2020	Cardiff Marine
HHI / Total / Sovc	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	28/02/2020	Sovcomflot
LNG Merak	GT NO 96	Hudong-Zhonghua	MEGI	174,000	01/03/2020	MOL
Elisa Larus	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	30/03/2020	NYK
Maran Gas Psara	GT NO 96	DSME	MEGI	173,400	01/04/2020	Maran Gas Maritime
Gaslog Windsor	GTT Mark III Flex	Samsung	XDF	180,000	15/04/2020	GasLog
HHI / Cardiff #2	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/04/2020	Cardiff Marine
SHI Gaslog #1	GTT Mark III Flex	Samsung	XDF	180,000	15/04/2020	GasLog
Samsung 2271	GTT Mark III Flex	Samsung	XDF	174,000	15/04/2020	Cardiff Marine
Daewoo 2478	GT NO 96	DSME	MEGI	173,400	15/05/2020	Nakilat
Flex Aurora	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/05/2020	Flex LNG
Bw Pavilion Aramhera	GT NO 96	DSME	MEGI	173,400	01/06/2020	BWGas
Traiano Knutsen	GTT Mark III Flex	Hyundai Heavy	MEGI	180,000	01/06/2020	Knutsen
Flex Reliance	GT NO 96	DSME	MEGI	173,400	01/07/2020	Flex LNG
Flex Amber	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	01/07/2020	Flex LNG
MOL HUDONG-ZHONGHUA 3/4	GT NO 96	Hudong-Zhonghua	MEGI	174,000	15/07/2020	MOL
SHI Gaslog #2	GTT Mark III Flex	Samsung	XDF	180,000	15/07/2020	GasLog
SHI #1	GTT Mark III Flex	Samsung	XDF	174,000	15/07/2020	Cardiff Marine
Flex Resolute	GT NO 96	DSME	MEGI	173,400	01/08/2020	Flex LNG
Energy Pacific	GT NO 96	DSME	MEGI	173,400	01/08/2020	Alpha Gas
HHI Sovcom #1	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	30/08/2020	Sovcomflot
Cool Discoverer	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	01/09/2020	Thenamaris
HHI 3037	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/09/2020	Cardiff Marine
HHI NYK DG #1	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/09/2020	NYK
MOL HUDONG-ZHONGHUA 4/4	GT NO 96	Hudong-Zhonghua	MEGI	174,000	01/10/2020	MOL
Samsung 2300	GTT Mark III Flex	Samsung	XDF	174,000	01/10/2020	GasLog
Maran Gas DSME	GT NO 96	DSME	MEGI	173,400	15/10/2020	Maran Gas Maritime
Flex Freedom	GT NO 96	DSME	MEGI	173,400	15/10/2020	Flex LNG
Aristos I	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/10/2020	Capital Gas
Celcius #1	GTT Mark III Flex	Samsung	XDF	180,000	15/10/2020	Celcius Shipping
SHI #17	GTT Mark III Flex	Samsung	XDF	174,000	15/10/2020	Cardiff Marine
Aristidis I	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	01/11/2020	Capital Gas
Flex Volunteer	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/11/2020	Flex LNG
HHI 3038	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/11/2020	Cardiff Marine
DSME 2484	GT NO 96	DSME	MEGI	173,400	01/12/2020	Alpha Gas
Samsung 2301	GTT Mark III Flex	Samsung	XDF	174,000	01/12/2020	GasLog
Celcius #2	GTT Mark III Flex	Samsung	XDF	180,000	15/12/2020	Celcius Shipping

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Data last updated = 12th December 2019

Fearnley LNG

Name	Containment system	Yard	Propulsion	Capacity	Delivery date	Primary Owner
DSME Dec #1	GT NO 96	DSME	MEGI	180,000	15/12/2020	MOL
HHI Sovcom #2	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/12/2020	Sovcomflot
Global Star	GT NO 96	DSME	MEGI	173,400	01/01/2021	Nakilat
DSME Minerva #1	GT NO 96	DSME	MEGI	173,400	15/01/2021	Minerva Marine
Cool Racer	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/01/2021	Thenamaris
SHI Minerva #1	GTT Mark III Flex	Samsung	XDF	174,000	15/01/2021	Minerva Marine
HHI 3112	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/01/2021	Cardiff Marine
Samsung 2313	GTT Mark III Flex	Samsung	XDF	180,000	01/02/2021	Celcius Shipping
DSME Minerva #2	GT NO 96	DSME	MEGI	173,400	15/02/2021	Minerva Marine
HHI Latsco #1	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/02/2021	Latsco Shipping
DSME 2496	GT NO 96	DSME	MEGI	174,000	15/02/2021	BWGas
DSME Dec #2	GT NO 96	DSME	MEGI	180,000	15/02/2021	MOL
Marvel Swan	GTT Mark III Flex	Samsung	XDF	173,400	01/03/2021	Navigare
Aristarchos	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/03/2021	Capital Gas
Flex Vigilant	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/03/2021	Flex LNG
HHI 3039	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/03/2021	Cardiff Marine
SHI #18	GTT Mark III Flex	Samsung	XDF	174,000	15/03/2021	Cardiff Marine
DSME 2485	GT NO 96	DSME	MEGI	173,400	15/04/2021	Alpha Gas
SHI NYK	GTT Mark III Flex	Samsung	XDF	174,000	15/04/2021	NYK
Celcius #4	GTT Mark III Flex	Samsung	XDF	180,000	15/04/2021	Celcius Shipping
DSME 2495	GT NO 96	DSME	XDF	174,000	15/05/2021	Maran Gas Maritime
HHI NYK DG #2	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/05/2021	NYK
Attalos	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/06/2021	Capital Gas
DSME 2497	GT NO 96	DSME	MEGI	174,000	15/06/2021	BWGas
HHI NYK DG #3	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/06/2021	NYK
SHI Gaslog CE #1	GTT Mark III Flex	Samsung	XDF	180,000	15/06/2021	GasLog
Alpha Gas	GT NO 96	DSME	MEGI	174,000	15/06/2021	Alpha Gas
CSSC #1	GT NO 96	Hudong-Zhonghua	XDF	174,000	15/06/2021	CSSC
Capital Gas #5	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/07/2021	Capital Gas
DSME MOL #3	GT NO 96	DSME	MEGI	173,400	15/07/2021	MOL
HHI Latsco #2	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/08/2021	Latsco Shipping
SHI Gaslog CE #2	GTT Mark III Flex	Samsung	XDF	180,000	15/08/2021	GasLog
DSME Maran	GTT Mark III Flex	DSME	MEGI	174,000	15/08/2021	Maran Gas Maritime
DSME Maran #2	GTT Mark III Flex	DSME	XDF	173,400	15/08/2021	Nakilat
Samsung 2305	GTT Mark III Flex	Samsung	XDF	174,000	01/09/2021	Minerva Marine
SHI 2306	GTT Mark III Flex	Samsung	XDF	174,000	15/09/2021	NYK
Capital Gas #6	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/09/2021	Capital Gas
HHI SK E&S	GTT Mark III Flex	Hyundai Heavy	XDF	180,000	15/09/2021	SK Shipping
DSME Maran #3	GTT Mark III Flex	DSME	XDF	173,400	15/10/2021	Nakilat
Samsung #11	GTT Mark III Flex	Samsung	XDF	174,000	15/10/2021	NYK
SHI 2307	GTT Mark III Flex	Samsung	XDF	174,000	15/11/2021	NYK

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Fearnley LNG

Name	Containment system	Yard	Propulsion	Capacity	Delivery date	Primary Owner
HHI TEN	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/11/2021	Tsakos Energy Navigation
DSME Maran 2504	GT NO 96	DSME	XDF	174,000	15/12/2021	Maran Gas Maritime
HHI Capital Gas #7	GTT Mark III Flex	Hyundai Heavy	XDF	174,000	15/12/2021	Capital Gas
DSME 2507	GT NO 96	DSME	XDF	174,000	15/12/2021	Maran Gas Maritime
HSHI	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/12/2021	Hanjin Shipping
CSSC #2	GT NO 96	Hudong-Zhonghua	XDF	174,000	15/01/2022	CSSC
HHI Samho Edison	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/01/2022	NYK
Samsung N/A	GTT Mark III Flex	Samsung	XDF	174,000	15/01/2022	Minerva Marine
Samsung 2019 #9	GTT Mark III Flex	Samsung	XDF	174,000	15/01/2022	JP Morgan
SHI Mar19	GTT Mark III Flex	Samsung	XDF	174,000	15/03/2022	Nisshin Shipping
H Samho NYK	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/03/2022	NYK
Hyundai European #1	GTT Mark III Flex	Hyundai Heavy	XDF	180,000	15/03/2022	Dynagas
Maran gas dec19	GT NO 96	DSME	XDF	174,000	15/03/2022	Maran Gas Maritime
H-Line #2	GTT Mark III Flex	Hyundai Samho	XDF	174,000	15/04/2022	Hanjin Shipping
DSME May19	GT NO 96	DSME	MEGI	174,000	15/05/2022	Maran Gas Maritime
Hyundai European #2	GTT Mark III Flex	Hyundai Heavy	XDF	180,000	15/06/2022	Dynagas
BW oct 2019 #1	GT NO 96	DSME	MEGI	174,000	15/06/2022	BWGas
Samsung 2019 #10	GTT Mark III Flex	Samsung	XDF	174,000	15/07/2022	JP Morgan
BW oct 2019 #2	GT NO 96	DSME	MEGI	174,000	15/09/2022	BWGas
Samsung 2364	GTT Mark III Flex	Samsung	XDF	174,000	01/01/2023	MISC
Samsung 2365	GTT Mark III Flex	Samsung	XDF	174,000	01/02/2023	MISC

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Fearnley LNG

WORLD SMALL SCALE LNG FLEET*

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
1974	Seagas	187	LNG	Sweden	Yes	AGA
1988	Kayoh Maru	1,517	LNG	Japan	Yes	Daiichi
1993	Aman Bintulu	18,928	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
1996	Surya Aki	19,475	LNG	Indonesia - Japan	Yes	MCGC
1997	Aman Sendai	18,928	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
1998	Pelita Energy	18,800	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
2000	Triputra	23,096	LNG	Indonesia - Japan	Yes	MCGC
2003	Pioneer Knutsen	1,100	LNG	Norway	Yes	Knutsen
2003	Shinju Maru No.1	2,540	LNG	Japan	Yes	Shinwa
2005	North Pioneer	2,500	LNG	Japan	Yes	Japan Liquid Gas
2007	Sun Arrows	19,531	LNG	Malaysia-Russia-Japan	Yes	Mitsui
2008	Kakurei Maru	2,536	LNG	Japan	Yes	Hogaki Zosen
2008	Shinju Maru No.2	2,540	LNG	Japan	Yes	Shinwa
2009	Coral Methane	7,551	LNG/LPG/Ethylene	Northwest Europe/Baltics	Yes, sometimes	Anthony Veder
2010	Coral Favia	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2010	Coral Fraseri	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2011	Akebono Maru	3,556	LNG	Japan	Yes	Chuo Kaiun
2011	Coral Furcata	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2011	Coral Fungia	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2011	Vision Spirit	12,000	LNG/LPG/Ethylene	Worldwide	No	Teekay
2011	Unikum Spirit	12,000	LNG/LPG/Ethylene	Worldwide	No	Teekay
2012	Coral Energy	15,600	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2013	JX Energy TBN	2,500	LNG	Japan	Yes	JX Energy
2013	Kakuyu Maru	2,500	LNG	Japan	Yes	Tsurumi Sunmarine
2013	Coral Anthelia	6,500	LNG/Ethylene			Anthony Veder
2015	LNG Barge TBN	3,000	LNG	US Coast	Yes	LNG America
2015	JS Ineos Ingenuity	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	JS Ineos Insight	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	JS Ineos Intrepid	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	PetroChina TBN	30,000	LNG	China		PetroChina
2016	Clean Jacksonville	2,200	LNG	US Coast	Yes	CME
2016	LNG Prime	2,250	LNG	Northwest Europe	Yes	Veka Deen LNG
2016	JS Ineos Indepence	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Innvovation	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Inspiration	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	Hai Yang Shi You 301	30,000	LNG	Bali FSU	Yes	CETS (CNOOC)
2017	Oizmendi	600	LNG	Bilbao	Yes	Itsas Gas
2017	ENGIE Zeebrugge	5,000	LNG	Northwest Europe	Yes	NYK
2017	Coralius	5,800	LNG	Northwest Europe/Baltics	Yes, for Skangas	Anthony Veder
2017	Cardissa	6,500	LNG	Northwest Europe	Yes	Shell

For more information please visit http://small-lng.com
*Includes multi-gas, ethylene and LNG bunker ships with 40,000 cubic metres LNG cargo capacity or less
TBN = To Be Nominated indicates ships are still at construction/planning stage
** = project shelved † =Data to be verified Data last updated = 27th November 2019

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Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	Coral EnergICE	18,000	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2017	JS Ineos Invention	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2017	JS Ineos Intuition	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2017	Coral Encanto	30,000	LNG	China	Yes	Anthony Veder
2018	HUA XIANG 8	13,720	LNG	China	Yes	Zhejiang Huaxiang
2018	LNG London	3,000	LNG	Northwest Europe	Yes	Shell
2018	Shell Bunker Barge TBN 2	6,500	LNG	Northwest Europe	Yes	Shell
2018	Shell Bunker Barge TBN 3	6,500	LNG	Northwest Europe	Yes	Shell
2018	Kairos	7,500	LNG	Baltic	Yes	Bernhard Schulte
2018	Qi Yuan	28,000	LNG	China	Yes	Dalian Inteh Group
2018	Bunker Breeze	0	LNG	Barcelona	Yes	Suardiaz Energy Shipping
2019	KLine TBN	7,500	LNG	Korea	Yes	Korea Line
2019	KLine TBN	7,500	LNG	Korea	Yes	Korea Line
2019	Stolt TBN	7,500	LNG	Mediterranean	Yes	Stolt-Nielsen Gas
2019	Stolt TBN	7,500	LNG	Mediterranean	Yes	Stolt-Nielsen Gas
2019	Gas Agility	18,600	LNG	NWE	Yes	MOL
2019	Flexfueller 001	1,480	LNG	Amsterdam	Yes	Titan LNG
2020	Q-LNG 4000	4,000	LNG	US Coast	Yes	Q-LNG Transport/Harvey Gulf
2020	Stolt TBN (option) **	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	FuelLNG TBN	7,500	LNG	Singapore	Yes	FuelLNG
2020	CLS TBN	3,500	LNG	Japan	Yes	CLS
2020	Elenger TBN	6,000	LNG	NWE	Yes	Elenger
2020	ENN TBN	8,500	LNG	China	Yes	ENN
2020	Flexfueller 002	1,480	LNG	Antwerp	Yes	Titan LNG
2021	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2021	Knutsen TBN	30,000	LNG	Mediterranean	Yes	Knutsen OAS
2021	Gazprom Neft TBN	5,800	LNG	Russia	Yes	Gazprom Neft
2021	PE TBN	12,000	LNG	Singapore	Yes	MOL
2021	JMU TBN	2,500	LNG	Japan	Yes	JMU
2022	Stolt TBN	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2022	Stolt TBN	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2022	PNE TBN	5,400	LNG	USG	Yes	PNE
2024	Stolt TBN (option)	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2024	Stolt TBN (option)	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2026	Stolt TBN (option)	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2026	Stolt TBN (option)	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas

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