LNG Transition

LNG AS A TRANSITION FUEL 2nd Quarter 2025

MEPC drives change for LNG shipowners, as NZF targets agreed

Ahead of the implementation of a major new regulatory frameworks by the International Maritime Organization (IMO), shipowners have clashed over the role of LNG.

The IMO completed a critical round of negotiations in April, as it aims to finalise aspects of its upcoming net-zero targets. The 83rd session of the Marine Environment Protection Committee was largely focused on discussing the draft IMO Net-Zero Framework (NZF), designed to bolster maritime action on climate change.

From the perspective of LNG, several key points emerged, notably the introduction of GHG Fuel Intensity (GFI) targets that will significantly impact the choice of fuels. Under these proposed measures, vessels will need to meet both a Base Target (BT) and a stricter Direct Compliance Target (DCT). Achieving these targets will require the adoption of cleaner, more sustainable fuels, potentially limiting LNG's role as a fuel in the long-term.

MEPC 83 in session

LNG disputes

The economic element of the framework involves shipowners purchasing Remedial Units (RU) for vessels that do not meet the GFI targets, adding a financial burden for those who rely on LNG. As tighter limits come into force it is feared that a greater number of vessels may fail to meet GFI levels, pushing them to other cleaner alternatives.

As a result, shipowners have clashed over the best approach for any future framework, with those that support LNG calling for more accommodation of the fuel. Mitsui OSK Lines (MOL) challenged its rival AP Møller-Maersk over moves to place a higher regulatory cost on LNG compared to other zero-carbon fuels.

"Until zero or near-zero fuels can be adopted on a wide scale, LNG is clearly a practical means for decarbonising shipping, given its availability, economic viability and safety," Takeshi Hashimoto, president of MOL, said, criticising proposals to differentiate "between LNG and other low-emission options".

Maersk, the world's second-largest shipowner, in contrast has backed methanol as a clean fuel source for its future fleet and as such is keen to see regulation support the high-cost of this investment. The Danish firm has warned IMO that a proposed shipping emissions trading scheme should penalise LNG more severely while providing greater leniency for alternative fuels.

While methanol produces less pollution in some analysis, global production of the fuel remains limited and bunkering infrastructure is largely non-existent. This has led many to favour LNG as a mature option that provides a clear pathway to transition to lower-emission biofuels.

Next vote October

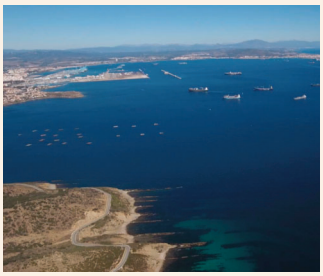
Following the MEPC, the IMO has now outlined a NZF that is conceptually similar to FuelEU Maritime but with a two-tier system. This could mean that LNG, which might comply with FuelEU Maritime, may not fully meet the NZF's requirements, especially the DCT. The IMO regulation is now awaiting a second round of votes that will take place during the MEPC's next extraordinary session in October this year, this will require two thirds of of the votes in favour to pass. Plans to decide BTs and DCTs for years after 2035 will be decided by 1 January 2032.

"The approval of draft amendments to MARPOL Annex VI mandating the IMO net-zero framework represents another significant step in our collective efforts to combat climate change, to modernize shipping and demonstrates that IMO delivers on its commitments," Secretary-General Arsenio Dominguez said. "Now, it is important to continue working together, engaging in dialogue and listening to one another, if we are to create the conditions for successful adoption."

The MEPC also discussed the creation of an Emission Control Area (ECA) for NOx and SOx in the North-East Atlantic, potentially affecting LNG use, due to its level of NOx emissions.

While LNG offers immediate emission reductions compared to traditional fuels, the long-term viability of LNG will depend on how well it can meet evolving targets and economic shipowners will now need to carefully consider their fuel strategies more carefully. ■

FUELLING NEWS AGENDA



YPF opts for floating LNG solution

In a strategic move, Argentina's state-run oil firm YPF has announced that it will forego the construction of an onshore natural gas liquefaction plant. Instead, the company will rely on floating liquefaction vessels to process and export LNG.

YPF is at the forefront of developing Argentina's Vaca Muerta formation, an area rich in shale gas and oil reserves that holds the world's second-largest shale gas reserves and fourth-largest shale oil reserves, making it a critical asset for Argentina's energy ambitions.

Under the Southern Energy Project, YPF and other oil firms plan to launch Argentina's first liquefaction vessel by 2027, with a capacity of 11.5 million cubic meters per day. A second vessel is scheduled to come online the following year, further enhancing Argentina's LNG export capabilities.

Strategic partnerships

YPF has also signed several high-profile strategic partnerships to bolster its LNG initiatives. These include a deal with energy group Shell that will involve participation in the production, liquefaction, and sale of LNG.

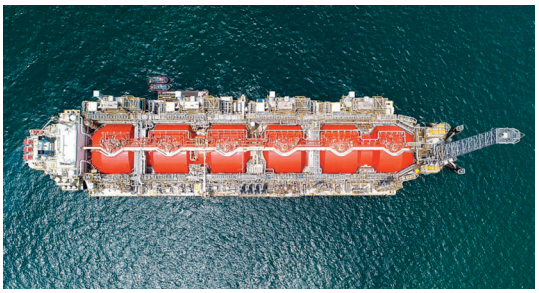
In parallel, YPF has also agreed terms with Italian oil major Eni to develop upstream LNG facilities in the country. This will include transporting natural gas to two floating liquefaction facilities with a combined capacity of 6 million metric tons per year.

"YPF's choice of Eni as a strategic partner stems from the specific and distinctive know-how, we have developed in FLNG projects in Congo and Mozambique, and from the recognition of our global leadership in implementing projects with this technology," Claudio Descalzi, CEO of Eni, said.

Added clarity

The decision to commit to floating liquefaction vessels not only adds clarity but is also expected to speed up development.

In the interview with Diario Rio Negro, CEO Horacio Marin said there would be no onshore plant and the three phases in its plan to export LNG would be through ships.



YPF plans on utilising FLNG solution

"The time frames are much faster than on a land-based plant, and they're all turnkey projects so you know exactly what they will cost," Horacio Marin, CEO of YPF said.

As part of the Southern Energy Project, the firm and its partners are now expecting to begin operations of Argentina's first liquefaction vessel in 2027, with a forecast capacity of 11.5 million cubic meters per day. A second vessel is then scheduled to be added by 2028.

This accelerated development schedule greatly improves the outlook for the use of LNG in the region with the potential for bunkering capacity to be added to floating liquefication vessels in the near term. This move also helps to position Argentina as a significant player in the global LNG supply chain with the potential for greater shipping activity in the region towards the end of this decade. ■

CMA CGM receives record LNG-fuelled boxship

French shipping line CMA CGM has taken delivery of the world's largest LNG-fuelled container vessel from China State Shipbuilding Corporation (CSSC), marking a new milestone for the LNG fuelling sector.

The giant *CMA CGM Siene* was built by CSSC's Hudong-Zhonghua Shipbuilding at its fabrication site in Pudong New Area, eastern Shanghai.

With capacity for 23,872 TEU, the ship is the first of four sister vessels to be delivered to CMA CGM as part of the contract with CSSC.

LNG commitment

The landmark delivery follows nine LNG-powered ships that CSSC built for CGA CGM at the start of the decade and is part of a large-scale investment programme by the shipping line to bolster LNG fuel in its fleet.

"By choosing LNG, CMA CGM confirms its ambition to be a leading force in the industry in environmental protection by being a pioneer in innovative and eco-responsible technologies," Rodolphe Saadé, CMA CGM Group CEO, said adding that the firm had made the 'bold decision' to focus its largest new vessels on LNG fuel in order to protect the environment.

The *CMA CGM Seine* measures almost 400 metres in length, and over 61 metres in width. It comprises plug slots for 2,200 refrigerated containers within its total capcity as well as the ability to carry 220,000 tonnes of cargo.

MARK III storage

LNG storage onboard is care of a 18,600-cubic-meter MARK III membrane LNG tank, providing 20,000 nautical miles of range from a single LNG refuelling.

Following completion of all tests and other preparations the vessel as deployed on a Far East-Europe route starting from mid-April.

Headquartered in Marseille, France, CMA CGM is the third largest container shipping company in the world. ■

CMA CGM Seine delivery ceremony

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India faces tough LNG transition challenges

Authorities in India are facing an 'inflection point' when it comes to the country's LNG use, with the potential for the fuel to emerge as a key driver of growth over the next decade.

Analysts by the IEA shows that with appropriate investment and policy support India's gas market is prepped for 'unprecedented growth' in consumption.

"India's gas market is entering a new phase of growth, supported by significant infrastructure development and clear policy direction," IEA Director of Energy Markets and Security Keisuke Sadamori, said. "The prospect of higher gas demand in India coincides with an expected wave of new global LNG supply. However, it will require careful planning and market coordination to ensure supply security and to help gas to compete in a price-sensitive market."

Price switching

Despite this positive outlook, the realities of the current global economy are dampening support for LNG in India, with energy importers switching from pricey LNG to cheaper oil products. Major buyers, such as Gail India and Indian Oil Corp, have recently cancelled LNG purchase tenders due to the current high prices.

In April, India's LNG imports were estimated to have fallen 5% on a monthly basis, taking them to the lowest monthly volume since December 2023.

Outages at export plants in Malaysia and Australia were blamed for the dip but there remains the concern that global trade tensions will ultimately reduce LNG demand. Indian refiners, which account for 12% of the country's LNG consumption, are already switching from LNG to naphtha.

Growth trajectory

Longer-term however, the fundamentals of LNG as a transition fuel remain strong. Forecasts shows the country's gas consumption is set to reach 103 billion cubic meters annually by the end of the decade.

"Following over a decade of slow growth and periodic declines, India's natural gas demand increased by more than 10% in both 2023 and 2024," Sadamori notes. "As legacy contracts expire, India faces a widening gap between contracted supply and projected demand after 2028, potentially increasing exposure to spot market volatility unless new long-term contracts are secured in the coming years."

LNG cryogenic tank in Pune, India

Domestic gas production meets only around half of demand and while this is forecast to grow gradually, reaching just under 38 bcm by 2030, a gap will still remain. This limited growth in domestic supply will mean that LNG imports need to more than double to around 65 bcm a year by 2030 to meet rising demand.

Under an accelerated growth scenario total demand could even reach 120 bcm by 2030, comparable to the current gas consumption of South America, however this will require additional policy support to drive higher utilisation of gas-fired power plants, faster adoption of LNG in heavy-duty transport, and more rapid expansion of city gas infrastructure. ■

Gail India terminal

Osaka Gas brokers new era for Japanese LNG refuelling

Japanese energy company Osaka Gas has launched its first shore-to-ship LNG bunkering service, marking the first gas utility company in the country to offer LNG direct from its own terminal.

The landmark operation by the utility group signals a wider shift in the Japanese fuelling sector, with LNG emerging as the clear pathway for the transition to cleaner maritime fuel.

"This new initiative aims to significantly reduce CO2 emissions in the maritime industry," a spokesperson for Osaka Gas said.

Senboku LNG Terminal

The new LNG bunkering infrastructure is now complete at Osaka Gas' Senboku LNG Terminal in Takaishi City, Osaka, adding to the firm's existing truck-to-ship LNG bunkering service which has been operational since 2019.

The debut bunkering operation from the terminal was carried out with the *Verde Heraldo,* an LNG-fuelled vessel operated by Mitsui O.S.K. Lines (MOL)

"This vessel serves JFE Steel Corporation by transporting raw materials essential for steel production," a spokesperson for Osaka Gas explained, adding that the new facility enhances the group's "LNG fuel delivery capabilities to address the current scarcity of facilities in Japan."

Following the success of this first operation, the company now plans to expand its LNG offerings, with the launch of a new LNG bunkering vessel scheduled for 2026. The bunkering vessel is currently under construction by Shitanoe Shipbuilding in Oita Prefecture.

"In addition to expanding LNG fuel supply to vessels, Osaka Gas is exploring the potential of replacing LNG with e-methane as marine fuel," the group's spokesperson states. "This effort aligns with the Daigas Group Energy Transition 2050 initiative announced in February 2025, reflecting the Group's dedication to fostering a low-carbon and decarbonized maritime industry,

LNG bunkering at Senboku LNG Terminal

ADNOC partnership

In early 2025, Osaka Gas announced a new partnership with ADNOC Group, securing a long-term LNG Sale and Purchase Agreement (SPA). This agreement involves the annual delivery of up to 0.8 million metric tonnes of liquefied natural gas (LNG), representing Osaka Gas's first long-term LNG deal with ADNOC.

The LNG will be primarily supplied from the Ruwais LNG project, currently under development in Al Ruwais Industrial City, Al Dhafra, Abu Dhabi. Scheduled to begin commercial operations in 2028, this project will be the first LNG export facility in the Middle East and North Africa region to run on clean power. ■

Nikkiso expands from LNG to hydrogen

Technology developer Nikkiso is to design a new hydrogen-pump unit, as it seeks to diversify its existing LNG fuel systems portfolio.

The firm announced the move to design and manufacture the new pump unit following an order by Kawasaki Heavy Industries for a hydrogen-fuelled ship.

"Nikkiso has long been a market leader in supplying the marine industry with cryogenic pumps and fuelling systems for LNG-powered vessels," Adrian Ridge, President and CEO, Nikkiso CE&IG Group, says. "Now we are designing and manufacturing the first-of-their-kind hydrogen and ammonia pumps for the marine market."

Nikkiso hydrogen tank

High-pressure hydrogen

The design for the new pump system will be based around a low speed, two-stroke engine that will offer dual fuel capabilities. This will act as the main propulsion engine.

The firm aims to combine its existing technologies and products that are designed for LNG-fuelled ships and hydrogen stations. It is hoped that this will allow for multiple types of pumps to boost the pressure, helping to supply high-pressure liquefied hydrogen from the hydrogen fuel tank to the evaporator.

"Our history and commitment of working with customers to deliver innovative solutions means we are perfectly positioned in the marine market to apply the technology of high-pressure pump units for LNG-fuelled ships to the design and manufacture of units for hydrogen-fuelled ships," Ridge adds.

Green Innovation Fund

Nikkiso Clean Energy & Industrial Gases Group is part of Nikkiso's Industrial Division. The group is working closely with Kawasaki as part of its "Development of marine hydrogen engines and marine hydrogen fuel systems" project.

This ambitious project was approved by the New Energy and Industrial Technology Development Organization (NEDO), Japan's largest public R&D management organization. ■

Alternative fuel blends challenge LNG pathways

As the marine industry undergoes its most significant transformation in decades, the drive to decarbonize is powering growth for a range of new fuel types.

While LNG has emerged as a cornerstone in many future shipping roadmaps, the introduction of alternative fuels is also of key importance and presents both opportunities and challenges for the sector.

Biofuels, particularly plant-based blends, are one area that has gained traction in recent years as viable alternatives to traditional fossil fuels. These biofuels offer the potential to significantly reduce greenhouse gas emissions and are increasingly being tested by operators.

"Among these, cashew nutshell liquid (CNSL) and FAME have been explored as options alongside several other alternatives," Stanley George, Group Technical and Science Manager at VPS, said.

Drop-in fuel alternatives

Typically used as replacements for diesel, these fuels offer an alternative pathway to decarbonize beside LNG and warrant consideration for operators considering switching their fleet.

The first of these, CNSL, is a renewable resource containing key phenolic compounds including anacardic acid, cardanol, and cardol, which improve lubricity and energy content. However, CNSL has limitations, including high acidity, poor combustion properties, and corrosive tendencies.

In contrast, FAME is more widely used, with extensive uptake in road transportation providing valuable insights for the shipping industry. Between 2023 and 2024, the use of used cooking oil methyl ester (UCOME) increased significantly, with many operators testing B100 blends to prepare for regulatory requirements.

Operational considerations

The introduction of MARPOL Annex VI, Regulation 18.3.2, which mandates verification of NOx impacts for blends exceeding 30%, led to a noticeable uptick in B30 blends in 2024, suggesting maritime operators are considering this as an option. George of VPS Group notes however that "there are some important operational considerations to consider for FAME blends", including a tendency to absorb water, "potentially leading to microbial growth".

Alongside this, there can be material compatibility issues when used at higher concentrations, while FAME's solvency can dissolve deposits in fuel systems, potentially clogging filters. However, despite these considerations, when managed correctly, FAME blends have been shown to be effective alongside conventional fuels.

"The evolution of marine fuels, from VLSFO to alternative options like CNSL and FAME, underscores the need for comprehensive fuel and lubrication management strategies," George concludes, noting that "The more traditional fossil fuels are continuing to satisfy the day-to-day demand in terms of fuels supplied to vessels at this time" and highlighting the fact that LNG remains a prime decarbonisation pathway for the moment. ■

LNG tank

Biofuel tank

NEWS NUDGES

Global ports prepare for LNG upgrades

More than 50 ports could receive LNG bunkering upgrades by the end of next year, according to findings from Intermodal Shipbrokers.

The shipbroking house predicts that growth in newbuild orders will spur rapid development of infrastructure over the next year, with orders currently standing at 1,037 vessels, equivalent to 38% of the global orderbook.

The number of ports currently equipped with LNG bunkering infrastructure - such as storage tanks, LNG distribution pipelines, and advanced safety systems - has risen to 201 globally, with Intermodal expecting a further 57 ports to be upgraded with LNG bunkering facilities by the end of 2026.

The firm counts 1,329 vessels capable of using LNG as fuel, as of March 2025. This compares to just 558 such vessels that were in the water in 2021. ■

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Sirius partners with RMK and TGE for new LNG bunker vessel

Engineering firm TGE Marine has announced its collaboration with Turkish shipbuilder RMK Marine to develop a new LNG bunker vessel.

The ship will feature capacity for 7,800 cubic metres of LNG and has been ordered by Swedish shipping line Sirius Shipping in partnership with Finnish state-owned energy company Gasum.

"I am very happy that our close cooperation with RMK Marine has yielded us this project," Johannes Dziuba, TGE Marine's Technical Sales Director, said. "We have previous experience working together with Sirius and we know that it will be a great vessel. Even more special for us, this is the first vessel we see being built in Turkey."

Headquartered in Bonn, Germany, TGE Marine Gas Engineering is a specialist in liquefied gas systems, specialising in the design and engineering of cargo handling systems and tanks.

Bi-lobe storage

The project has been underway since mid-2024 and is based around TGE Marine's Type C Bi-lobe storage system. These tanks are paired with a customised cargo handling- and fuel gas system on board.

"As we are using Type C tanks, these tanks can handle gases in high pressure and cryogenic conditions, which allows for the safe handling and efficient transport of LNG," Dzuiba added. "All operations can be carried out with the utmost crew safety in mind."

The partnership with Sirius Shipping builds on previous collaborations with TGE, dating back to 2017 when with the firm helped develop the bunker vessel *Coralius*.

"We are happy that we can work with TGE Marine again," Jonas Backman from Sirius Shipping comments. "Our vision is to be the long term first choice for our clients, suppliers and colleagues, and to be able to use TGE Marine's equipment once again is a proof that we are moving towards our vision."

Artist's rendition of *Celsius* LNG bunker vessel

Vital infrastructure

The vessel will be named *Celsius* and is set to be deployed in the Nordic region initially. Jakob Nielsen, Sales Director at TGE notes that it will "play a very important part of the much-needed infrastructure for the rapid growing LNG fuelled shipping fleet in the Baltic Sea and Kattegat Sea."

The *Celsius* will be chartered by Gasum from 2027 to serve its customers in the region as part of a strategy to boost LNG and bio-LNG availability in the Northwestern European maritime market.

Gasum provides integrated gas services across the Nordic region and northern Europe. The firm is also the transmission system operator of the natural gas grid of Finland, a natural gas importer and seller and biogas refiner in Finland and Sweden. ■

***Celsius* will feature 7,800 cbm capacity**

NEWS NUDGES

Somtrans books LNG bunker vessel from CIMC SOE

Belgian shipping firm Somtrans has ordered a new LNG bunker vessel from China's Nantong CIMC Sinopacific Offshore & Engineering.

This vessel, set to be the largest in Somtrans' fleet, is expected to be delivered by April 2027 and will feature 20,000 cubic meter capacity.

Based in Wijnegem, Somtrans is a family-owned business, established in 1975. The new vessel is expected to significantly enhance Somtrans' capabilities, aligning with the company's commitment to innovation and growth in the LNG sector. ■

Rotterdam LNG rise meets transition demand

LNG throughput at the Port of Rotterdam strengthened in the first quarter of the year, as demand for the fuel rose.

Total LNG throughput at the port rose to 3.2 million tonnes in the three months to March, as compared to 3.1 million tonnes in the same period last year. Reflecting the growing trend towards cleaner and more sustainable maritime fuels, Rotterdam sees the fuel playing an increasingly pivotal role in the global energy transition.

"The first three months of this year were characterized by a high degree of volatility in world trade as a result of threatened import duties in the United States and conflicts in Ukraine and the Middle East," Boudewijn Siemons, CEO of Port of Rotterdam Authority, said. "In these uncertain times, it remains as important as ever that, together with national and European governments, the Port of Rotterdam continues to work towards a competitive European investment climate."

Bunker sales leap

Earlier this year, the authority reported a leap in LNG bunker sales for 2024 and confirmed its continued position as the world's second-largest bunkering hub. While traditional fuel types such as fuel oil and marine gas oil showed a small decline last year, emerging alternative fuels like LNG recorded substantial growth, signalling a shift in demand toward more sustainable options in the maritime sector.

The total volume of fuel bunkered at the port in 2024 reached 9.8 million tonnes, representing a modest 0.9% decrease from the 9.9 million tonnes recorded in 2023.

"Volatility has led to uncertainty among companies in the areas of trade and investment," Siemons said. "We see this reflected in throughput volumes and the willingness to invest."

Biofuel success

In this context, the rise in LNG throughput is particularly noteworthy as LNG sales at the Port of Rotterdam reached 423,615 tonnes, marking a significant 52% increase from the previous year. Biofuel was another success story, with rapid growth in demand for alternative fuels such as bio-methanol.

"Following the inaugural bunkering of bio-methanol in the port of Rotterdam in 2023, the demand for bio-methanol surged in 2024, reaching nearly 4,000 tonnes, a remarkable increase from 750 tonnes in 2023," a spokesperson for the port authority said.

Authorities now plan to invest further in LNG infrastructure this year, with the goal to make Rotterdam the leading global hub for decarbonized shipping. ■

LNG storage at Port of Rotterdam

MERR poses challenges for LNG as transition fuel

The roll out of European methane regulation this year is set to reshape the LNG sector, with the potential for significant upside depending on the final implementation.

The Regulation on the Reduction of Methane emissions in the Energy sector (MERR) is one of several regulatory frameworks developed by the EU to reduce fossil fuel impacts. This legislation first entered into force on 4 August 2024 but is set to be implemented in phases over the coming years.

While much of the regulation has been agreed there remains some room for debate on key aspects and some within the bloc are now calling for tweaks to boost LNG imports. Lithuania's energy minister, Zygimantas Vaiciunas, is one proponent, calling for "serious talks" to take place to boost imports of LNG from the US.

"There should not be too many technical burdens, technically no thresholds for US LNG to come into the market," Vaiciunas said.

Fos Cavaou LNG Terminal

Tightening requirements

While the MERR is only one in a raft of regulatory measures imposed by the EU, it is set to become increasingly important for operators as it focuses across the entire supply chain.

In May this year, MERR will require operators to submit a leak detection and repair (LDAR) programme to authorities. This will require a detailed audit to identify and detect sources of methane leaks and other unintentional methane emissions for existing sites. For new sites, there is a stay of six months from the date of start of operations.

Next year, routine flaring and venting will become prohibited in nearly all cases, with limited exceptions only in case of an emergency, malfunction or where otherwise unavoidable. The European Commission is also expected to establish a methane transparency database and a methane monitoring tool based on satellite data in 2026.

This initiative aims to enhance the tracking and management of methane emissions, ensuring that operators comply with the regulation's stringent requirements. The database and monitoring tool will be crucial in identifying and addressing methane super-emitting events, further reinforcing the EU's commitment to reducing methane emissions.

The investments required to detect and repair methane leaks, as well as to monitor and report emissions, will all add to the overall cost of compliance, but on the flip side this may act as an accelerator for the energy transition. As new biofuels enter the market it is hoped that monitoring will help provide better justification for LNG pathways over more polluting alternatives. ■

Avenir plans continuous bioLNG bunkering ops

Fuelling specialist Avenir LNG has announced plans to operate the first bunker vessel continuously on bio-LNG.

The world first will see its bunker vessel *Avenir Ascension* rely solely on bioLNG for its own propulsion for the rest of the year.

"To further demonstrate our commitment to more sustainable marine fuels we have elected to run the *Avenir Ascension* on bio-oLNG on a voluntary basis for 2025, making a positive statement alongside our customers to reduce emissions well beyond existing regulatory requirements," Jonathan Quinn, Managing Director Avenir LNG, comments.

The *Avenir Ascension* began operating purely on bioLNG began on 1 April.

Avenir LNG offices

Growing demand

With a focus on midstream LNG and bioLNG, Avenir has established itself as a key player in the small-scale LNG industry since it was founded in 2018. Headquartered in London, the firm operates a fleet of five LNG bunkering and supply vessels, including the *Avenir Advantage, Avenir Aspiration,* and *Avenir Accolade,* which serve various regions such as Southeast Asia and Brazil.

"We are seeing a growing demand from our customers for the supply of low emission bio-LNG. We have developed a flexible and efficient supply chain to enable the cost-effective delivery of Bio-LNG across Northwest Europe," Quinn adds

Avenir LNG currently has two more vessels under construction by shipbuilder Nantong CIMC Sinopacific Offshore & Engineering (SOE), with the first of these scheduled for delivery in the first quarter of 2027.

Stolt-Nielsen acquisition

Chemical and bulk liquid group Stolt-Nielsen recently completed its takeover of Avenir LNG, making it a fully owned subsidiary of Stolt-Nielsen Gas. As a result, Avenir LNG will be delisted from the Euronext N-OTC.

"This strategic move not only strengthens our position in the LNG sector but also underscores our commitment to pursuing more sustainable energy solutions for the maritime, industrial, and power generation markets," Udo Lange, CEO of Stolt-Nielsen, said. "I am excited about the possibilities ahead and confident that this partnership will propel us into new avenues of growth and impact."

The all-share deal was completed for an undisclosed sum with DNB Markets, a part of DNB Bank, acting as financial advisor to Stolt-Nielsen.

"I wish to extend my thanks to the founding shareholders whose support and guidance has been instrumental in positioning Avenir LNG at the forefront of the marine energy transition since we launched in October 2018," Quinn commented, adding that the firm was now "well positioned to act dynamically as we pursue our growth strategy in this burgeoning market."

Founded in 1959 in southern Norway, Stolt-Nielsen now has corporate headquarters in London and operates through five segments: Tankers, Terminals, Tank Containers, Stolt Sea Farm, and Stolt-Nielsen Gas. Stolt-Nielsen is known for pioneering the parcel tanker concept and has since expanded into tank containers, offshore oilfield services, and sustainable land-based aquaculture. ■

Avenir Ascension

NEWS NUDGES

E&S Tankers hits bioLNG milestone

E&S Tankers has completed the first bio-LNG bunkering operation for its newly built chemical tanker, the *John T. Essberger.*

"Bio-LNG – biomethane liquefied from the gas grid and produced from European feedstocks – offers a viable way for us to help further decarbonize our operations with the existing LNG infrastructure on board," a spokesperson for E&S Tankers said.

The dual-fuel stainless steel tanker was refuelled at the Hamina LNG terminal in Finland. E&S Tankers is a partnership between Essberger Tankers and Stolt Tankers.

"This transition aligns with our Group's efforts and supports our mission to provide efficient, responsible, and safe shipping solutions," the firm said in a statement. ■


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Axpo expands LNG Bunkering in Algeciras

International energy company Axpo has announced a major milestone in its LNG bunkering operations, with the successful completion of its first ship-to-ship LNG delivery in the Port of Algeciras.

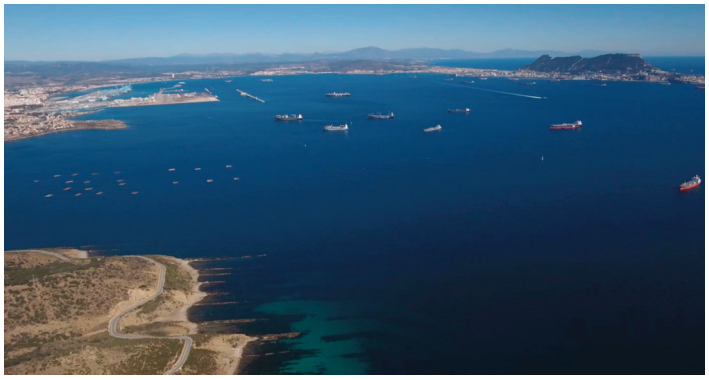
The operation marks Axpo's second bunkering at a Spanish port, further solidifying its presence in key Mediterranean hubs.

Avenir Aspiration

The refuelling procedure was executed by Axpo's 7,500-cubic-metre small-scale LNG vessel, the *Avenir Aspiration*, which transferred approximately 5,000 cubic metres (cbm) of LNG to the *Mariacristina*, a vessel owned by container shipping line MSC.

"This successful delivery marks another important milestone for our LNG bunkering business," Daniele Corti, Head of Small-Scale LNG at Axpo, commented.

Founded in 1914 and headquartered in Baden, Switzerland, Axpo is owned by the cantons of Northeastern Switzerland. The group is focused on production, trading, and sale of energy, with a growing portfolio of renewable energy sources. Alongside the generation and distribution of electricity and natural gas, Axpo's core business includes energy services and project development.



Port of Algeciras

The Algeciras bunker operation follows a similar ship-to-ship bunkering last month in the Port of Málaga, where around 5,800 cbm of LNG was delivered to another MSC vessel.

Small-scale LNG growth

The group sees the Spanish market as critical to its long-term LNG business, with the Iberian peninsula acting as a springboard for global growth.

"By expanding our operations to a second port in Spain, we continue to implement Axpo's ambitious small-scale LNG growth strategy and strengthen our presence as a reliable LNG partner," Corti added.

Axpo is also committed to reducing its carbon footprint and invests in numerous renewable energy projects, including hydropower, wind, and solar assets.

"Demand for LNG is increasing, as it offers a cleaner and more cost-effective alternative to the traditional fuels used in the maritime sector," the firm states, adding that it is now targeting growth from small and medium-sized enterprises as well as larger, more energy-intensive industrial companies. ■

AD Ports completes LNG bunkering first at Khalifa

Integrated maritime operator AD Ports Group has competed its first ship-to-ship LNG bunkering operation at Khalifa Port, paving the way for increased uptake of the fuel in the region.

The transfer was carried out between the bunker vessel *Green Zeebrugge* and the container vessel *MSC Thais,* while at berth in Abu Dhabi Terminals. Fuel for the bunkering procedure was supplied by marine fuels provider Monjasa.

"By adhering to the highest safety and environmental standards, AD Ports Group and Monjasa are ensuring that shipowners have reliable access to a diversified fuel mix that supports their decarbonisation objectives," Captain Saif Al Mheiri, Chief Sustainability Officer at AD Ports Group, said. "AD Ports Group will continue to explore and implement forward-looking solutions that drive progress toward global sustainability goals."

Bunkering expansion

The operation was hailed as a landmark for regional development of LNG bunkering, with Abu Dhabi keen to position itself as a key hub for alternative marine fuels and sustainable maritime solutions.

"With this achievement, AD Ports Group is accelerating the shift toward sustainable marine fuels, while reinforcing Abu Dhabi's leadership in the global energy transition," a spokesperson for the firm said.

AD Ports Group and Monjasa have announced that they will continue to expand LNG bunkering services across the Group's commercial ports in Abu Dhabi, including cruise vessels at Zayed Port.

Alongside LNG, the firms will continue to offer a comprehensive fuel portfolio in the medium-term, including Very Low Sulphur Fuel Oil (VLSFO), Marine Gas Oil (MGO), and High-Sulfur Fuel Oil (HSFO).

Net Zero strategy

Longer-term the partners are keen to explore lower carbon alternatives, with plans to invest in new frameworks to support a wider range of fuel options as well as advancing LNG bunkering protocols and guidelines.

The UAE is also exploring new legislation to promote clean fuel bunkering as part of the UAE's Net Zero 2050 Strategy. This framework aims to build on policy from the International Maritime Organization (IMO), International Association of Ports and Harbors (IAPH), International Organization for Standardization (ISO), and Society of International Gas Tanker and Terminal Operators (SIGTTO) amongst others to establish the UAE as a go-to hub for LNG and clean fuel pathways.

Headquartered in Abu Dhabi, AD Ports Group operates across five key clusters – Digital, Economic Cities & Free Zones, Logistics, Maritime & Shipping, and Ports. The group operates in 38 locations globally and is one of the Gulf region's largest holding companies. ■

Green Zeebrugge refuelling at Abu Dhabi Terminals

GreenLine, Bekaert partner on LNG pilot project

Sustainable trucking group GreenLine Mobility Solutions has partnered with tire reinforcement specialist Bekaert to decarbonise road logistics in India.

The two partners have announced plans for a pilot project to focus on GreenLine's LNG-powered fleet of trucks in the state of Maharashtra.

"Heavy-duty transport contributes nearly 90% of emissions in Indian logistics," Dinesh Mukhedkar, Procurement Operations Lead at Bekaert said. "Switching to LNG helps reduce CO_2 by up to 30% and particulate matter by up to 91% compared to diesel."

Headquartered in Zwevegem, Belgium, Bekaert is specialist in steel wire transformation and coating technologies. The firm employing 28,000 people worldwide and in 2015, acquired Pirelli's steel cord business, the largest acquisition in Bekaert's history. This helped the firm establish its position as a major manufacturer of one of the key components in rubber car tires.

Ranjangaon plant

Under the terms of the recent agreement with GreenLine, the firm will build on deployment of LNG trucks at Bekaert's Ranjangaon plant in Maharashtra.

Each LNG truck is expected to reduce up to 24 tonnes of CO_2 emissions annually, contributing to Bekaert's goal of achieving carbon neutrality by 2050 and generating 65% of its sales from sustainable solutions.

"As part of our purpose 'Establishing the new possible,' and our ambition to lead in safe, smart, and sustainable solutions, decarbonizing logistics is an essential step," Mukhedkar added. "GreenLine's mission and integrated support made them the ideal partner. Together, we are shaping a cleaner, more sustainable future for logistics in India."

GreenLine Mobility Solutions is a division of Indian multinational conglomerate Essar, and one of India's largest operators of LNG and electric-powered heavy commercial trucks. The company uses LNG-powered trucks for long-haul transportation and electric vehicles (EVs) for short-haul operations.

Expansion plans

Through its subsidiary, Ultra Gas and Energy, GreenLine is also building a nationwide network of LNG refuelling infrastructure to support logistics. By integrating advanced technologies and sustainable practices, GreenLine aims to create a cleaner, more efficient, and environmentally responsible future for India's transportation and logistics sectors.

Greenline LNG truck

Currently, GreenLine operates a fleet of 650 LNG trucks, which forms the backbone of its sustainable logistics strategy, with ambitious plans to scale up to 10,000 trucks in the coming years, including both LNG and EV trucks.

"GreenLine aims to reduce 1 million tons of carbon emissions annually while supporting India's goal to cut greenhouse gas emissions by 30% by 2030," Anand Mimani, CEO of GreenLine, said, noting that Essar's green mobility ecosystem has been pivotal in supporting operations to date. "This ecosystem allows GreenLine to operate the country's first and largest fleet of LNG-powered trucks, helping customers significantly reduce their Scope 3 emissions," Mimani explains. ■

Bekaert employees in Ranjangaon

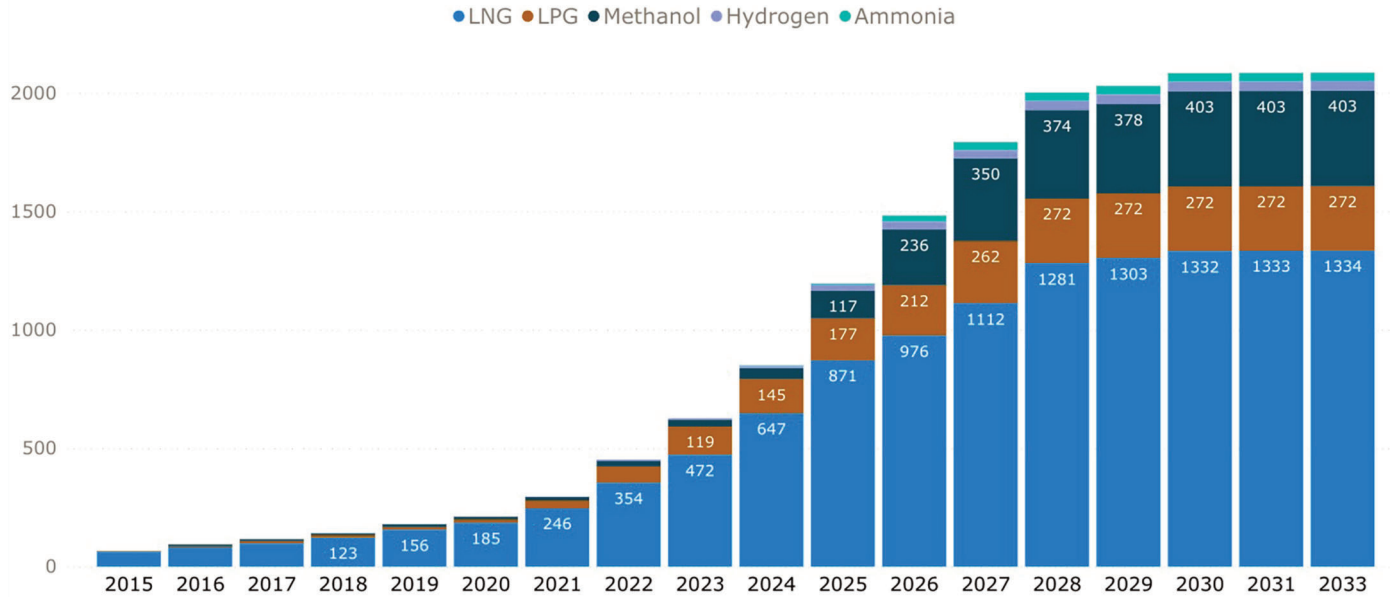
WORLD SMALL SCALE LNG FLEET*

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	Coral Furcata	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2011	Coral Fungia	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2011	Akebono Maru	3,556	LNG	Japan	Yes	Chuo Kaiun
2011	Titan Vision	12,000	LNG/LPG/Ethylene	Europe	No	Titan LNG
2011	Titan Unikum	12,000	LNG/LPG/Ethylene	Europe	No	Titan LNG
2012	Coral Energy	15,600	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2013	Coral Anthelia	6,500	LNG/Ethylene			Anthony Veder
2013	JX Energy TBN	2,500	LNG	Japan	Yes	JX Energy
2013	Kakuyu Maru	2,500	LNG	Japan	Yes	Tsurumi Sunmarine
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	LNG Barge TBN	3,000	LNG	US Coast	Yes	LNG America
2015	PetroChina TBN	30,000	LNG	China		PetroChina
2016	Hai Yang Shi You 301	30,000	LNG	Bali FSU	Yes	CETS (CNOOC)
2016	Clean Jacksonville	2,200	LNG	US Coast	Yes	CME
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	LNG Prime	2,250	LNG	Northwest Europe	Yes	Veka Deen LNG
2017	Coralius	5,800	LNG	Northwest Europe/Baltics	Yes, for Skangas	Anthony Veder
2017	Coral EnergICE	18,000	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2017	Coral Encanto	30,000	LNG	China	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	Oizmendi	600	LNG	Spain	Yes	Itsas Gas
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	Green Zeebrugge	5,000	LNG	Northwest Europe	Yes	NYK
2017	New Frontier 1	6,500	LNG	Northwest Europe	Yes	Shell
2018	Kairos	7,500	LNG	Baltic	Yes	Bernhard Schulte
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	Bunker Breeze	1,200	LNG	Barcelona	Yes	Suardiaz Energy Shipping
2018	HUA XIANG 8	13,720	LNG	China	Yes	Zhejiang Huaxiang
2019	Blue Whale	7,500	LNG	Korea	Yes	Korea Line
2019	Gas Agility	18,600	LNG	NWE	Yes	MOL
2019	Flexfueller 001	1,480	LNG	Amsterdam	Yes	Titan LNG
2020	Avenir Advantage	7,500	LNG	Mediterranean	Yes	Avenir LNG
2020	Avenir Accolade	7,500	LNG	Mediterranean	Yes	Avenir LNG
2020	Avenir Aspiration	7,500	LNG		Yes	Avenir LNG

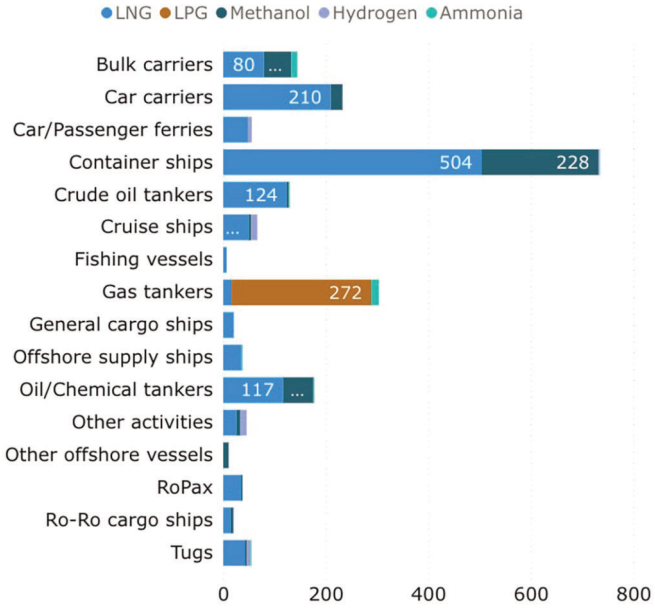
Data last updated = 30 April 2025 | For more information please visit http://small-lng.com

Built	Name	CBM	Cargo Type	Trading Area	Trading in LNG?	Ship Owner / Operator
2020	Kaguya	3,500	LNG	Japan	Yes	CLS
2020	CNTIC VPOWER Global	28,000	LNG	Myanmar	Yes	Dalian Inteh Group
2020	Ecobunker Tokyo Bay	2,500	LMG	Japan	Yes	Ecobunkers
2020	Optimus	6,000	LNG	NWE	Yes	Elenger
2020	FueLNG Bellina	7,500	LNG	Singapore	Yes	FuelLNG
2020	SM Jeju LNG2	7,500	LNG	Korea	Yes	Korea Line
2020	Q-LNG 4000	4,000	LNG	US Coast	Yes	Q-LNG Transport / Harvey Gulf
2020	Flexfueller 002	1,480	LNG	Antwerp	Yes	Titan LNG
2021	Avenir Ascension	7,500	LNG		Yes	Avenir LNG
2021	Hai Gang Wei Lai	20,000	LNG	China	Yes	SSES
2021	Bergen LNG	850	LNG	Norway	Yes	Bergen Tankers
2021	Dmitry Mendeleev	5,800	LNG	Russia	Yes	Gazprom Neft
2021	JMU TBN	2,500	LNG	Japan	Yes	JMU
2021	Ravenna Knutsen	30,000	LNG	Mediterranean	Yes	Knutsen OAS
2021	Brassavola	12,000	LNG	Singapore	Yes	MOL
2021	Gas Vitality	18,600	LNG	Mediterranean	Yes	MOL
2021	TG TBN	500	LNG	Korea	Yes	Trans Gas
2021	Titan Hyperion	8,000	LNG	Benelux	Yes	Titan LNG
2022	Xin Ao Pu Tuo Hao	8,500	LNG	China	Yes	ENN
2022	Coral Nordic	30,000	LNG	Worldwide	Yes	Anthony Veder
2022	Avenir Achievement	20,000	LNG	Worldwide	Yes	Avenir LNG
2022	Haugesund Knutsen	5,000	LNG	Spain	Yes	Knutsen OAS
2022	Clean Cañaveral	5,400	LNG	USG	Yes	PNE
2022	K.Lotus	18,000	LNG	Korea	Yes	K Line
2023	Cryopeak TBA	4,000	LNG	West Canada	Yes	Cryopeak
2023	Levante LNG	12,500	LNG	Spain	Yes	Knutsen OAS
2023	SM Jeju LNG3	7,500	LNG	Korea	Yes	Korea Line
2023	New Frontier 2	18,000	LNG	USG	Yes	Shell
2023	Krios	4,200	LNG	Benelux	Yes	Titan LNG
2023	Alice Cosulich	8,000	LNG	Mediterranean	Yes	Fratelli Cosulich
2023	Kanfer TBN	6,000	LNG	Worldwide	Yes	Kanfer Shipping
2023	Kanfer TBN	6,000	LNG	Worldwide	Yes	Kanfer Shipping
2023	Clean Everglades	5,500	LNG	USG	Yes	PNE
2023	FueLNG Venosa	18,000	LNG	Singapore	Yes	FuelLNG
2023	LNG Erasmus	8,000	LNG	NWE	Yes	Shell
2023	Energy Stockholm	8,000	LNG	NWE	Yes	Shell
2024	Coral Evolution	30,000	LNG	Australia	Yes	Anthony Veder ?
2024	Progress	12,000	LNG	US Coast	Yes	Crowley Maritime
2024	CNOOC TBN	12,000	LNG	China	Yes	CNOOC
2024	TBN	12,500	LNG	Worldwide	Yes	???
2024	Keys TBN	3,500	LNG	Japan	Yes	Keys Bunkering West Japan Co
2024	Seaspan Garbaldi	7,600	LNG	Panama	Yes	Seaspan ULC
2024	Paolina Cosulich	8,000	LNG	Mediterranean	Yes	Fratelli Cosulich
2024	Huaihe Nengyuan Qihang	14,000	LNG	China	Yes	Anhui Changjiang LNG
2024	Keys Azalea	3,500	LNG	Japan	Yes	Keys Bunkering West Japan
2024	Seaspan Lions	7,600	LNG	Canada	Yes	Seaspan ULC
2024	Hai Yang Shi You 302	12,000	LNG	China	Yes	CETS (CNOOC)
2025	Axpo TBN	7,500	LNG	Italy	Yes	Axpo
2025	Seaspan Baker	7,600	LNG	Canada	Yes	Seaspan ULC
2026	Avenir TBN	20,000	LNG	Worldwide	Yes	Avenir LNG
2026	ScaleGas TBN	12,500	LNG	Spain	Yes	ScaleGas
2026	Vitol TBN 1	12,500	LNG	Worldwide	Yes	Vitol
2026	Total TBN	18,600	LNG	Worldwide	Yes	Total Energies
2026	Vitol TBN 3	20,000	LNG	Worldwide	Yes	Vitol
2027	Avenir TBN	20,000	LNG	Worldwide	Yes	Avenir LNG
2027	Vitol TBN 2	20,000	LNG	Worldwide	Yes	Vitol
2027	Peninsula TBN	18,000	LNG	Europe	Yes	Peninsula
2027	Fuzhou Wuyang TBN	12,000	LNG	China	Yes	Fuzhou Wuyang Refined Oil Trading
2027	Equatorial Marine TBN	20,000	LNG	China	Yes	Equatorial Marine
2027	Somtrans TBN	20,000	LNG	Europe	Yes	Somtrans
2027	SIPG Energy TBN	20,000	LNG	China	Yes	SIPG Energy
2028	Fuzhou Wuyang TBN	12,000	LNG	China	Yes	Fuzhou Wuyang Refined Oil Trading

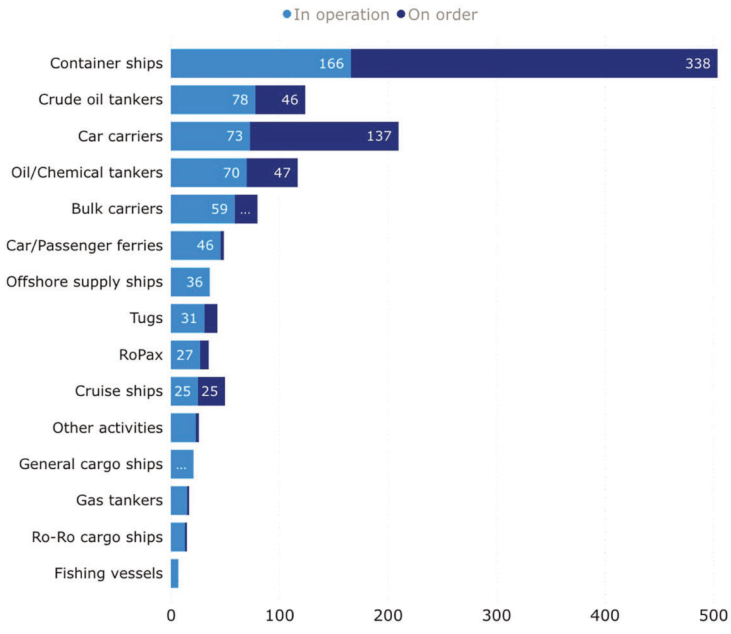
Growth of alternative fuel uptake by number of ships



Alternative fuel uptake by ship type



LNG-fuelled fleet by ship type



Location of worldwide LNG bunker fleet / facilities by region