

LNG Transition

LNG AS A TRANSITION FUEL

1st Quarter 2024

NGOs challenge LNG eligibility for green finance

A group of non-profit organisations have raised a legal challenge against the EU's current taxonomy for sustainable activities, claiming that LNG should not be labelled as a green fuel.

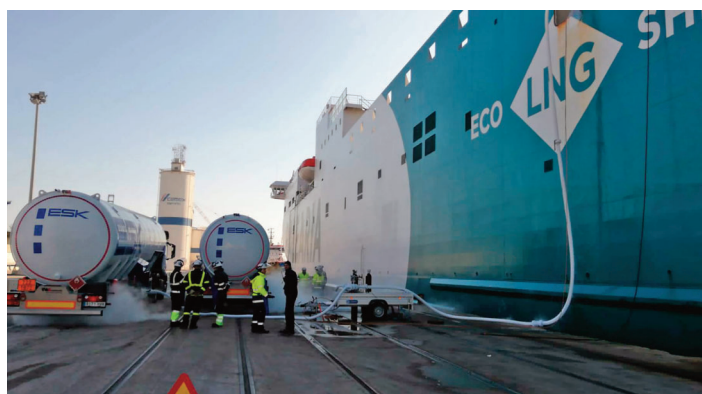
The group, which includes - Fossielvrij, Protect our Winters, Dryade, CLAW and Opportunity Green - have raised concerns about the European Commission's proposed plans to classify the fuel as eligible for green finance.

"The Taxonomy is flying under the radar for most people - but if we don't challenge it these industries will be allowed to rubber stamp planes and ships powered by fossil fuels as sustainable," Hiske Arts at Dutch NGO Fossielvrij said. "This would mean that money that is meant for climate solutions will end up fuelling climate disaster, as it encourages the polluting aviation and shipping industries to sustain their unsustainable growth path."

The EU Taxonomy is a comprehensive framework designed to accelerate the transition towards net-zero by facilitating investment in new projects that are less polluting. LNG has long been held up as an exemplar 'bridge fuel' that allows operators to easily transition fleets away from oil and quickly cut emissions.

Under the Commission's current criteria, ships and planes running on LNG or fossil fuels classed as sustainable could be eligible for green finance. The NGOs argue that there is no robust scientific evidence for these new criteria, despite numerous studies showing that LNG can cut NOx and CO2 emission drastically compared to traditional marine fuel oils.

While the EU has received the NGOs complaint an official response is not expected until May or June this year, with the commission simply stating that it "will



LNG bunkering in Spain

reply to the request in due course".

Ongoing debate

Given the complexity of current energy supply chains, the true impact of fuels often remains obscure but despite this, numerous studies have shown substantial benefits from switching to LNG, not least in particulate emissions.

Paul Balcombe of the Sustainable Gas Institute at Imperial College London has conducted extensive research comparing life-cycle of various engines and propulsion systems and notes: "The best performing LNG engine offers up to 28% reduction in global warming potential when combined with the best-case LNG supply chain.

He goes on to note however that while "LNG performs well for 'long-term' climate change (GTP100), particulates, SOx and fuel costs", the results "are mixed for short-term climate change (GWP20) and NOx, and only under certain conditions are emissions reduced."

For some this is seen as proof that LNG should be excluded from any discussion of green alternatives with Elias Van Marcke of Dryade stating: "Allowing shipping

and aviation to be included in the Taxonomy with these criteria waters down a classification system designed to give investors clear, unequivocal recommendations about green investments. Instead, the EU is sanctioning murky solutions that don't support a green transition to net zero. It is crucial to remember that the taxonomy criteria must be compliant with the Paris Agreement's 1.5°C goal, a legal obligation we believe these criteria fall short of."

Alongside its criticism of LNG as a transport fuel the legal challenge also highlights investment in "sustainable aviation fuels" as problematic, with the claimants stating that many proposed solutions rely on 'weak fuel efficiency standards' and that 'demand growth has historically always outstripped efficiency savings'.

"Given the expected lifespans of planes and ships range from 20-50 years, this means that the Taxonomy could drive investment to planes and ships that pollute the air and seas for decades to come, making a mockery of the urgent need to decarbonise all sectors," a spokesperson for the consortia said.

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James Fisher inaugurates second LNG-fuelled tanker

Marine engineering services firm James Fisher and Sons has inaugurated a new LNG-fuelled chemical tanker, as part of its strategy to develop a 'fleet of the future'.

The *Lady Maria Fisher* was christened at Port of Sunderland in the north of England and is the second LNG-fuelled tanker to enter the fleet.

"The official naming of the *Lady Maria Fisher* stands as a testament to the dedication and collaboration of our fantastic

colleagues and industry partners," Krystyna Tsochlas, Head of Maritime Transport at James Fisher said. "This journey has not been without its challenges, including the construction and commissioning delivered safely throughout the COVID-19 epidemic. We have rallied together, demonstrating resilience and perseverance, which we can all celebrate in today's ceremony."

Hydrodynamic performance

The *Lady Maria Fisher* first entered the fleet in 2023 and follows the arrival of sister vessel the *Sir John*

Fisher. Both vessels were developed to the same specifications and built by China Merchants Jinling (CMJL) shipyard.

Designed with sustainability and efficiency in mind, the vessels both feature enhanced hydrodynamic performance, helping to reduce industry scope three emissions.

"Reducing carbon emissions across the transportation sector is critically important if we are to meet the needs of a low carbon future. Our continued investment in developing the fleet of the future signals James Fisher's firm company commitment to achieving those targets," Jean Vernet, CEO of James Fisher said.

Sustainable future

Tracing its origins to the nine-

teenth century, James Fisher has a long history in maritime energy services, providing a range of solutions for the oil and gas and renewable energy industries today. The group also delivers specialist knowledge, skills and capabilities for the nuclear, construction and transportation sectors on land.

"With over 175 years of rich history in maritime, we're ideally positioned to introduce new and innovative solutions for a more sustainable future - and this vessel is no different," Vernet added.

The *Sir John Fisher* and *Lady Maria Fisher* are primarily contracted to service long-time customer P66. They will be deployed for work around the coastline of Northern Europe. ■



The *Lady Maria Fisher*

Seatrium delivers *Brassavola* to Indah Singa Maritime

Singaporean maritime engineering group Seatrium has delivered the bunker vessel *Brassavola* to new owner Indah Singa Maritime, a wholly-owned subsidiary of Mitsui O.S.K. Lines (MOL).

The vessel is expected to commence operations in Singapore this month and will also be deployed by TotalEnergies Marine Fuels to serve its customers under a long-term agreement with Pavilion Energy.

The barge is Singapore's first membrane LNG bunker vessel and was constructed locally by Seatrium. It was built on a proprietary design by LMG Marin, a wholly-owned subsidiary of Seatrium.

"The completion of this LNG bunker vessel with zero losstime incident reinforces our track record in cleaner energy solutions that support the global energy transition. We are proud to play a

significant role in advancing Singapore's maritime decarbonisation ambitions and look forward to the *Brassavola* contributing to this cause," William Gu, Executive Vice President of Seatrium Oil & Gas, said.

Significant step forward

Measuring 116.5 metres in length and 22 metres in width, the vessel delivers a bunkering rate of up to 2,000 cubic metres per hour, mass flow metering and online gas chromatograph systems, for improved bunkering turnover and enhanced operational efficiency.

"The completion of the *Brassavola* is a significant step forward in transitioning towards the use of

cleaner and decarbonised fuels like LNG in Singapore. We look forward to seeing *Brassavola* in operations very soon, setting new standards in LNG bunkering and further strengthening Singapore's position as a global LNG bunkering hub," Kazuya Hamazaki, Managing Executive Officer of MOL, said.

The *Brassavola* features two GTT Mark III Flex membrane tanks which include lower internal pressure, temperature and boil-off rate, enabling greater tank durability, safer fuel transfer operations and reduced cargo loss through evaporation. The twin membrane tanks are also optimised to be lighter and space-saving, offering a larger cargo carrying capacity

and greater fuel efficiency.

Seatrium was formed in 2023 through the merger of Sembcorp Marine and Keppel Offshore & Marine. The firm offers a range of products and services including rigs & floaters, repairs & upgrades, offshore platforms, and specialized shipbuilding. It operates globally through shipyards in Singapore, Indonesia, the United Kingdom, and Brazil.

The transfer of the *Brassavola* has been delayed, following initial christening back in 2022, as Sembcorp Marine faced ongoing financial difficulties. The firm was a subsidiary of Singaporean energy and urban development company Sembcorp until 2020. ■

LNG Fuelling

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Nordsol invests in bioLNG fuelling push

Dutch technology group Nordsol is preparing to open the first bioLNG production facility in the UK, paving the way for new refuelling infrastructure across the country.

The proposed plant will be located near Rushden, around 18 miles east of Northampton, and is currently under development with owner RenEco, and is scheduled to start first production later this quarter.

“Bio-LNG is the best solution for decarbonizing the hard-to-abate long-haul transport sector today,” said Léon van Bossum, CEO of Nordsol. “With this inaugural production plant in the UK we demonstrate that onsite biogas liquefaction to bio-LNG is not only sustainable but also affordable and scalable.”

The plant will convert biogas into bioLNG and is expected to deliver 3.4 kilotons of bioLNG per year, fuelling more than 8 million miles of fossil-free road transport for heavy-duty trucks.

“The plant stands as an integral component of a rapidly developing circular economy,” a spokesperson for the Nordsol said. “RenEco’s initiative involves the collection of organic waste from all parts of the food supply chain, its conversion into biogas

and organic fertilizers via anaerobic digestion, and the transformation of biogas into the renewable products bio-LNG and biogenic CO₂.

Fuel will be generated from organic waste collected from all parts of the food supply chain. It will then be converted into biogas and organic fertilizers via anaerobic digestion, and then further transformed into bioLNG and biogenic CO₂.

Growth of biomethane and anaerobic digestion infrastructure in the UK is forecast to support a new wave of LNG-fuelled transport in the country as access to green finance improves the cost benefits for transport operators.

“The use of biomethane as a transport fuel has grown rapidly over the last few years - increasing from two million litres equivalent in 2015, to eight million litres equivalent in 2018 and 40 million litres in 2021,” Jocelyne Bia of the Anaerobic Digestion and Biore-sources Association (ADBA) said, predicting that this trend will “continue accelerating”.



Artist's rendition of FirstBio2Shipping facility

FirstBio2Shipping progresses

In its home country of the Netherlands', Nordsol has meanwhile finished groundworks for the First-Bio2Shipping project, the first industrial plant converting biogas to renewable bioLNG.

“We’re looking forward to commissioning the bio-LNG installation in early spring 2024. And to contribute to the decarbonization of maritime transport, together with Titan, Attero and European Union. Bio-LNG is now,” a spokesperson for Nordsol said. ■

NEWS NUDGES

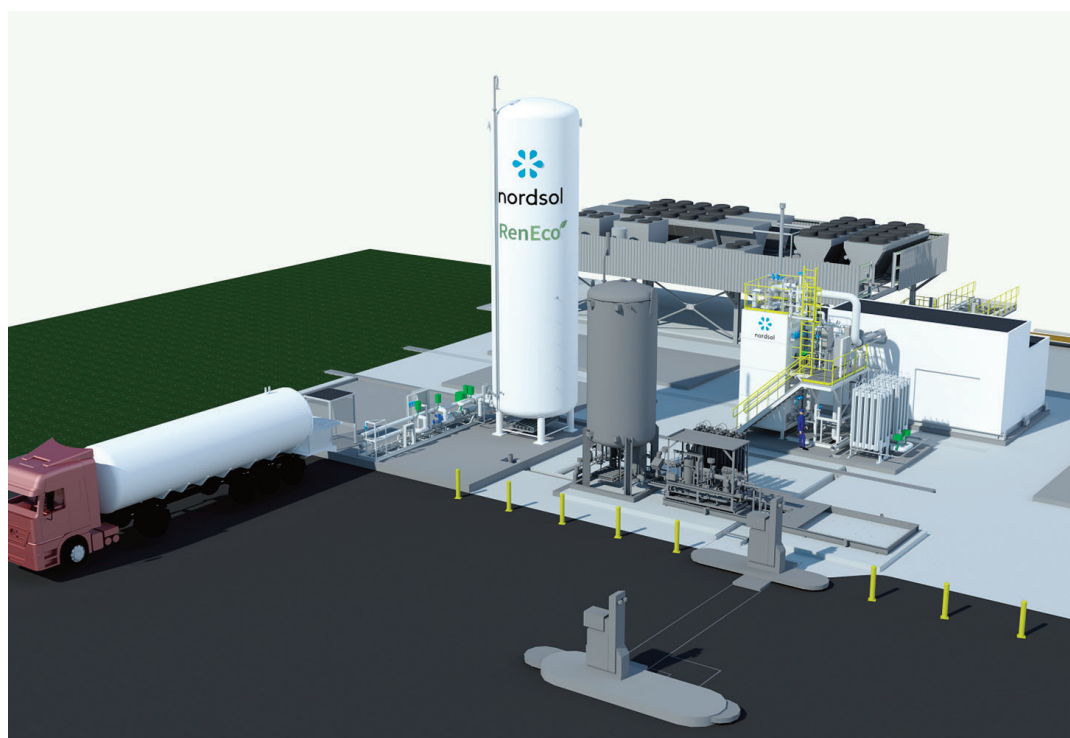
Port of Barcelona achieves LNG bunkering record in 2023

Authorities at the Port of Barcelona have reported that a total of 199 LNG bunkering operations were carried out by vessels at the port last year.

The record milestone saw 143,000 cubic metres of LNG transferred to ships at the port, more than double the previous record of 65,000 cubic metres achieved in 2021. Of 8,783 port calls of ships arriving at the port in 2023, around 7% were powered by LNG, equivalent to 618 vessels. This is twice as many as in 2022, when the impacts of the war in Ukraine reduced bunkering operations in response to rocketing prices.

“The normalisation of prices, and the commissioning of a bunkering barge based in Barcelona called the *Haugesund Knutsen*, has significantly increased LNG bunkering operations, particularly ship-to-ship operations, which tripled in comparison to 2021,” a spokesperson for the port said.

The port also completed the first LNG bunkering operation on a cargo ship at the end of 2023. ■



RenEco, Nordsol bioLNG plant

Molgas accelerates LNG growth plans with Titan stake

Spanish LNG supplier Molgas Energy has acquired a 45% stake in LNG fuelling specialist Titan Energy Holding as part of a strategic partnership to accelerate energy transition projects.

The funding was secured as part of Titan's latest funding round and was backed by infrastructure investor InfraVia Capital Partner. The investment will provide a boost for the Titan's subsidiary Titan Clean Fuels which provides a range of bioLNG and LNG solutions for the maritime and industrial sectors.

"We have been considering a growth partner for some time and believe we have found the perfect partner in InfraVia and Molgas," Niels den Nijs, CEO of Titan, commented. "Titan will retain independence, while benefiting from the complementary service offering of Molgas. Legislation and public scrutiny are stimulating the demand for low and zero emissions fuels with growing momentum. The new capital will allow us to accelerate our growth plans and focus all our efforts on the maritime."

Titan owns and operates a fleet of small-scale LBM/LNG supply

vessels deployed globally and now plans to expand capacity.

"When other alternative fuels are ready to scale, Titan will add them into its supply portfolio, and collaborate with shipowners and operators to create clean fuel delivery programs that are tailored, safe, and cost-effective," den Nijs adds.

Growing partnership

The firm predicts that the LNG pathway to zero-emissions via LNG, bioLNG and hydrogen-derived e-methane (e-LNG) will be the most "practical, safe and feasible route" as well as lucrative.

"Our portfolio of complementary offers will establish the group as the "go to" partner for energy transition LNG and alternative fuels to off-grid industrials, trucking and maritime businesses across Europe," Fernando Sarasola, Executive Chairman of Molgas, explains.



Titan vessel transferring fuel

"We look forward to growing our partnership with Niels den Nijs and the Titan team further and welcome his team in the wider group."

Headquartered in Madrid, Molgas has been operating in the LNG sector for over 20 years and offers gas transport, LNG supply and ancillary services. The firm was acquired by Paris-based infrastructure investor InfraVia Capital Partners in 2020.

"Molgas has grown at a fast pace to become a leader in on-

shore solutions in Western Europe," Athanasios Zoulovits, Partner at InfraVia Capital Partners, commented. "We are very pleased that Molgas will become the strategic partner of Titan who has the specialist expertise and scale to make the group a leader in the high growth maritime space. As other alternative fuels become commercially viable, Titan also has the specialist experience and pipeline to bring those fuels to the maritime space at scale." ■

Pilbara Clean Fuels progresses eLNG bunkering plans

Authorities at Port Hedland in Western Australia have advanced plans to develop new LNG production and bunkering infrastructure to support the world's largest iron ore export port.

Specialists from Pilbara Clean Fuels, Oceania Marine Energy and Italian classification society RINA have signed a Memorandum of Understanding to work on a joint study defining technical options and preparing the way for a world first electrified plant.

"The partnership has the ability to demonstrate an attractive commercial development strategy to meet not only the immediate needs of IMO 2030 emissions compliance, but the engineering step-change needed to create a practical path to IMO 2050 net-zero emissions objectives," PCF Managing Director, Robert Malabar said.

Electrified production

One of the first steps for the partners will be the creation of plans for a new, mid-scale, low carbon footprint liquification plant that

will convert pipeline natural gas to LNG and provide the basis for so called eLNG, which is expected to have significantly lower overall life-cycle emissions.

"A key feature of the project is an electrified plant with out-sourced power supplied predominantly from renewable sources," a spokesperson for the partners said. "The design intent is to significantly reduce Scope 1 and Scope 2 emissions compared to conventional LNG plants. Thereby providing an ability for round-trip voyages bunkering in Port Hedland to achieve substantially lower overall GHG life-cycle emissions than other options.

The current proposals suggest a base-case capacity for the plant of 0.5 million tonnes per annum (Mtpa), with market analysis for Port Hedland alone indicating

potential demand of 1.0 Mtpa by 2030.

"We know the maritime community is happy with LNG as a marine fuel. We believe the outcome of the studies should provide compelling argument in support of the Western Australian Government's May 2020 announcement to 'Create an International LNG Fuelling Hub in the Pilbara'," Malabar added.

LNG Fuelling Hub

Pilbara Clean Fuels aims to fuel dry-bulk iron ore carriers operating 'round-trip' voyages between the Pilbara and Asia, utilising ship-to-ship bunkering of vessels while at anchor off Port Hedland. The firm has signed an exclusive development partnership with French



Port Hedland

energy group Technip Energies and selected Air Products as preferred liquefaction technology licensor and core equipment supplier.

"Together we are excited to participate in developing Australia's primary green corridor for shipping," Oceania Managing Director, Nick Bentley commented, "supporting significant emission reductions in the short term, and in the future, for a maritime trade route critically important to Western Australia's economy." ■

RINA to develop hybrid Newcastlemax designs

Italian classification society Registro Italiano Navale (RINA) has announced plans to develop ship designs for an LNG-fuelled 'Newcastlemax' dry-bulk vessel featuring onboard hydrogen production.

The novel concept is one of the objectives of a new partnership between RINA and Australian developers Pilbara Clean Fuels and Oceania Marine Energy, that aims to develop designs for a 209,000 deadweight-tonne vessel.

"The combined knowledge and expertise of PCF, Oceania and RINA will allow a comprehensive approach to the project, rather than to the single phases, that will actually maximise the emissions reduction effort," Massimo Volta, RINA Marine Consulting Executive Vice President, said.

Flexible transition

The innovative design will utilise an innovative LNG power train that incorporates pre-combustion carbon removal, according to sources at RINA. Alongside, this the vessel will also include an on-board hydrogen production plant, boosting flexibility of the vessel.

"The shipping industry is living a time of uncertainty that still requires immediate investments. Port Hedland is the world's biggest iron ore export point and providing such system with a solution that allows a more flexible transition while achieving IMO 2050 targets with an existing fuel will be a

massive contribution to the path to West Australia green corridor," Volta added.

The partners expect the new design will meet and exceed IMO 2050 emissions reduction marine vessel Carbon Intensity Index (CII) objectives.

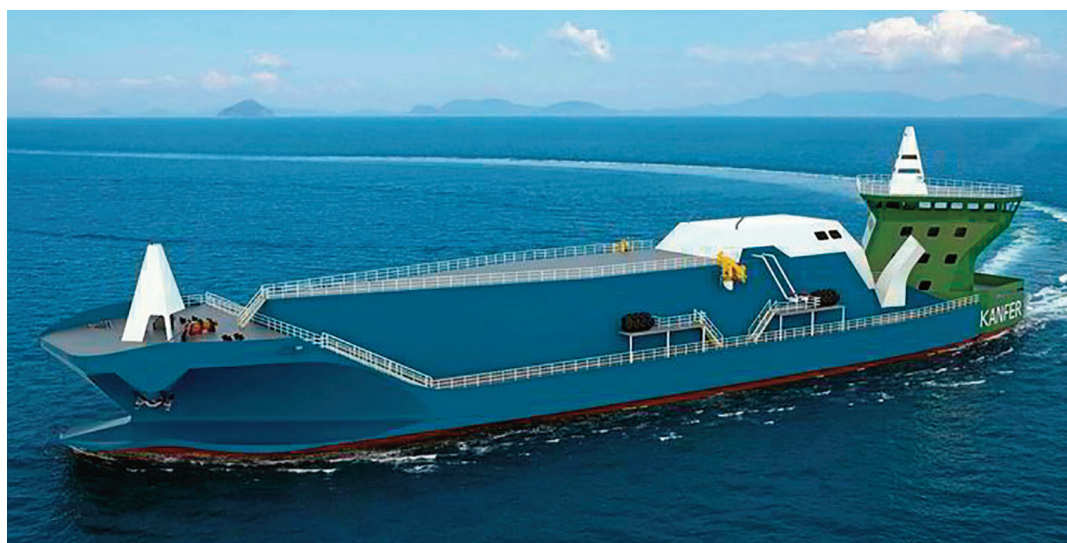
New beginning

Vessels for the project are to be provided by Norwegian ship-owner Kanfer Shipping but no timeframe has yet been announced for prototyping or sea trials.

Oceania Managing Director, Nick Bentley hailed the project as

"the beginning of a new decarbonisation initiative in Western Australia," adding that RINA's concept of new ship and fuel system design would enable "LNG to be viewed as a potential future zero-emissions marine fuel."

Headquartered in Genoa in northern Italy, RINA employs over 5,000 staff worldwide and specialises in testing, inspection, certification and engineering solutions across a wide range of markets including, among others, marine, energy and mobility, real estate and infrastructure, space and defence, industry 4.0. ■



Artist's rendition of Kanfer vessel

NEWS NUDGES

Scale Gas orders new LNG bunkering vessel

Spanish maritime firm Scale Gas has reportedly signed a deal with Chinese shipbuilder Nantong CIMC Sinopacific Offshore & Engineering (CIMC SOE) for the construction of a new LNG bunkering vessel.

The deal covers construction of a 12,500 cubic meter LNG bunkering vessel, set to be delivered in 2026. While the financial terms of the contract remain undisclosed, the vessel is slated to feature electric propulsion technology.

Established in 2017, Scale Gas specializes in small-scale LNG, bio-LNG, and renewable energy gas infrastructure in Spain and the Western Mediterranean region. Currently, the company operates two LNG bunker ships, with an additional 12,500 cubic meter vessel scheduled for delivery from Hyundai Mipo in South Korea in 2024. ■



LNG bunkering operation



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Slovakia LNG plans boost fuelling infrastructure outlook

Slovakian state-owned developer Public Ports has advanced plans to build a new inland LNG terminal in Bratislava, offering the potential for improved fuelling structure across the region.

The proposed €40 million terminal would be located on the river Danube, the country's main waterway, and could potentially drive a range of ancillary LNG fuelling infrastructure along the length of the Rhine-Danube transport corridor.

"From the point of view of gas supply stability, we need to build infrastructure," Slovakia's Environment Minister Tomáš Taraba said, adding that all technical solutions must be safely implemented.

Current plans suggest the terminal should be completed in 2026 and cover an area of 5,500 square metres.

Rhine-Danube corridor

At present there is limited LNG transport via the river Danube but

the development of more terminals and refuelling infrastructure is expected to help the sector grow along the Rhine-Danube corridor, a vital east-west link connecting roads, railways, and inland waterways across central Europe.

"Increasingly, LNG is seen as a viable solution to reduce the emissions of the shipping sector. Investments will need to be made to not only build the adequate infrastructure in ports, but also retrofit existing fleets," Karla Peijs, European Coordinator for a study on the TEN-T Core Network Corridor, said.

As well as providing a new LNG hub in Bratislava, the introduction of LNG barges on the Danube offers the potential for further dis-

tributed network of refuelling stations as LNG can become available along the length and breadth of the waterway system.

LNG transition

The latest plans by the Slovakian government follows soaring gas prices in the aftermath of Russia's invasion of Ukraine. Slovakia had previously relied extensively on Russian pipeline gas at low price but sanctions since 2022 have now accelerated its move towards LNG.

Prior to the Ukraine war there was virtually no LNG use in Slo-

vakia however the national gas importer SPP has since signed an LNG supply deal with ExxonMobil with shipments already delivered from LNG terminals in Italy and Croatia.

Slovakian demand for gas is around 5 billion cubic metres per year but the transition to LNG fuel for heavy road transport could potentially see this figure rise significantly.



LNG Terminal

DFS installs LIQAL BTU at Piacenza station

Dover Fueling Solutions (DFS) has installed a new boil-off gas treatment unit at an LNG refuelling station in Italy.

The firm installed its LIQAL Boil-off Gas Treatment Unit system at the Piacenza station in the Emilia-Romagna region of northern Italy. The work was completed on behalf of public transport operator and site owner LC3 Trasporti.

"We have mitigated the potential risk of direct methane emissions into the atmosphere through this ground-breaking solution implemented at our Piacenza station," Michele Ambrogi, President of LC3 Trasporti, said.

Boil-off gas solution

The new system was added to ad-

dress potential issues around excess consumption at the station, including high pressure inside the LNG tank due to boil-off gas (BOG) and inefficient refuelling of LNG trucks.

"With the LIQAL BTU system, we've addressed inefficiencies that were exacerbated by climate change, significantly improving our refuelling capacity and the dispensing quality of the facility," Ambrogi added.

Higher ambient temperatures in recent years have created a greater differential between the cooled LNG fuel and surrounding environment, impacting costs. To

tackle this, the LIQAL BTU system provides an environment conditioned for the storage of LNG, meaning it can be safely stored for an extended amount of time.

"Rising temperatures due to climate change affect the entire Mediterranean region and Italy, where we operate. This year, we also experienced record heatwaves, especially during the summer months," a spokesperson for DFS said. "We've had the new system in operation for months, even during hotter summer periods, and have not encountered any issues. In fact, we can completely eliminate the risk of overheating. Furthermore, we've conducted Bio-LNG refueling phases at 100% and can confirm that the system is functioning perfectly."

As a modular and fully standalone unit, the LIQAL BTU system removes the need for any active management of storage pressure or LIN consumption and logistics while maximizing the LNG storage capacity for optimal delivery of

LNG fuel. In addition, the LIQAL BTU system protects the environment by preventing the venting of BOG into the atmosphere.

The Piacenza station supplies fuel for up to 160 trucks and the new system will allow LC3 to provide a unified LNG and bio-LNG refueling experience, improving the time taken to refuel LNG vehicles. It is the first refueling station in Italy that combines both LNG and Nitrogen and that can provide 100% BioLNG, not in blended form.

DFS is part of US firm Dover Corporation, which develops advanced energy dispensing equipment, electronic automation and payment systems, automatic tank gauging and subscription solutions to fuelling and convenience retail customers worldwide. Through sister brands, Wayne Fueling Systems, Tokheim, OPW Fuel Management Systems, ClearView, ProGauge, Fairbanks, AvaLAN Networks and LIQAL, provides a range of fuelling solutions across industries.



LC3 Trasporti LNG station in Piacenza

Technip Energies scoops Oman EPC contract

Plans for an LNG bunkering hub in Oman, powered by renewable energy, have advanced with French engineering and technology firm Technip Energies selected to carry out engineering, procurement and construction.

The project is estimated to require investment of at least US\$1 billion and development will be undertaken by Marsa LNG, a joint venture between TotalEnergies and Omani firm Almuzn LNG.

“The LNG plant will be built on land that has already been reclaimed in the Sohar Industrial Port Area (SIPA), located in the Wilaya of Liwa in the Governorate of North Al Batinah,” a spokesperson for the partners said.

TotalEnergies maintains a controlling 80% stake in Marsa LNG with the remainder owned by Almuzn, a wholly owned subsidiary of Omani integrated energy group OQ.

Technip Energies was selected from a shortlist of three contenders for the large scale Engineering, Procurement and Construction (EPC) contract, beating JGC Corporation of Japan and McDermott of the US.

Gateway fuel

The new complex will be fed by a planned liquefaction plant, with capacity of 1 million tonnes per annum (mtpa) and the developers aim to create a major regional destination for LNG bunkering.

“LNG is the cleanest marine fuel solution available at scale, delivering a range of benefits in helping to drive down GHG emissions whilst improving ports’ air

quality with assurance that the fuel does not release any black carbon.,” Jérôme Leprince-Ringuet, Vice-President Marine Fuels, TotalEnergies, said. “Crucially, LNG also provides us with the gateway to the development of next generation solutions, including lower carbon bioLNG, which I believe will serve as an important pathway to enable the shipping sector in reaching its decarbonization goals.”

Gas for the project will be delivered and processed at the LNG Plant will be supplied through the OQGN network, which is Oman’s exclusive gas transportation system operator.

Solar power

A new solar energy project is also planned for the site, a short distance from Sohar Port, and will rely on photovoltaic systems.

“The LNG plant will consume around 44% of the energy produced by the Solar Plant during the day through power wheeling agreements with OETC for usage of their grid network for power supply. Night-time electricity will be procured from the OETC Grid through the same dedicated power connection,” the partners state.

An initial environmental study was complete by TotalEnergies in November and the project now requires permitting by the Environ-



Map of proposed LNG bunkering site

mental Authority, to be delivered through the Sohar Industrial Port Company (SIPC). Omani group Five Oceans Environmental Services has been appointed in partnership with ERM to undertake the Environmental and Social Impact Assessment (ESIA) as an independent environmental consultancy. ■



Proposed Oman LNG facility

NEWS NUDGES

EPS hits LNG bunkering milestone

Singaporean maritime firm Eastern Pacific Shipping has announced the successful completion of its 150th LNG bunkering operation this month.

The milestone was achieved at Yangshan, Shanghai, and saw the bunker vessel *Hai Gang Wei Lai* transfer fuel to the EPS-managed dual-fuel vessel *CMA CGM Bali*.

“To date, we have cumulatively received 404,958MT of LNG over our fleet of DF vessels,” a spokesperson for EPS said. ■

Texas advances Galveston LNG bunkering infrastructure

The City of Texas has signed a new lease-agreement with Galveston LNG Bunker Port (GLBP), advancing plans to develop new LNG fuelling capabilities at Shoal Point.

The deal will see GLBP lease an area of 140 acres of land at Shoal Point at the head of Galveston Bay and paves the way for construction of a new facility at the site.

“GLBP is fortunate to have a collaborative partner in Texas City, and we believe this is the best possible site in the entire Galveston Bay region for our clean energy facility,” Jonathan Cook, CEO of Pilot LNG said.

Launched in late 2023, GLBP is a joint venture between Seapath Group and Pilot LNG.

FID 2024

The partners currently aim to announce a Final Investment Decision on the Shoal Point project in the second half of 2024, with operations set to begin in late 2026.

“Its strategic location and

proximity to the key ports of Texas City, Galveston, and Houston is critical in ensuring the successful delivery of this LNG marine fuels project. We look forward to more announcements in the coming weeks and months as additional milestones are achieved towards the successful delivery of the project,” Cook adds.

Seapath is the maritime subsidiary of Libra Group, a privately held international holding company operating across the aerospace, renewable energy, hospitality, real estate, maritime, and diversified investment sectors.

Two train facility

The proposals for the site include a two train and two tank facility producing 600,000 gallons per day. The first phase of the GLBP project



Galveston, Texas

is expected to produce 300,000 gallons per day of LNG for sale into the marine bunker fuel market in the Galveston Bay, and Western Gulf of Mexico region.

“Texas City is excited to be partnering with GLBP to develop Shoal Point,” Texas City Mayor, Dedrick Johnson commented. “Shoal Point and Texas City are an integral part of the maritime economy both in the State of Texas and throughout the U.S. We are very happy to have GLBP in our City and look forward to the jobs and economic opportunities that the project will bring to Texas City.”

Houston-based energy infrastructure developer Pilot LNG is also currently working on the Cork LNG and Salina Cruz LNG infrastructure projects in Ireland and Mexico respectively.

Since the project was announced in September, GLBP has assembled a team of top advisors and has begun front-end engineering and design development. GLBP estimates it will file applications with the necessary federal and state agencies to permit, construct, and operate the small-scale LNG terminal for marine fuel in early 2024.



Artist's rendition of the proposed GLBP facility

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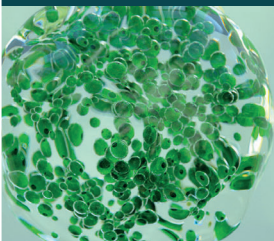
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CMA CGM, SIPG complete RoRo LNG bunkering

Container shipping line CMA CGM and Shanghai International Port Group (SIPG) have reportedly completed the first ship-to-ship (STS) LNG bunkering of a roll-on, roll-off (RoRo) ship in China.

The successful operation was carried out at Luhuashan Anchorage, near Shanghai and saw the bunker barge Hai Gang Wei Lai deliver 3,199 cubic metres of LNG fuel to the *CMA CGM Indianapolis*.

"The Shanghai Port's bonded LNG bunkering for international sailing ships has received great attention from the Shanghai Committee of the CPC and People's Government of Shanghai Municipality and has received strong support

from relevant competent departments and units in Shanghai," Gu Jinshan, Chairman of SIPG, said.

Long-term partnership

The bunkering was coordinated by teams from SIPG and CMA CGM based in Shanghai and follows an agreement signed by the two partners in 2022 to deliver LNG bunkering services in Shanghai.

"Bonded LNG bunkering for international sailing ships LNG

bunkering contributes in creating a world-class business environment in the port city of Shanghai, and is of great significance to improving Shanghai's port service functions and enhancing the comprehensive competitiveness of Shanghai's international shipping centre."

Under the terms of the partnership, SIPG will provide Simultaneous Operations (SIMOPS) LNG bunkering service for CMA CGM's vessels for a duration of 10 years. Refuelling will initially be provided by SIPG's new LNG bunker barge, which features capacity of 20,000 cubic metres, and will offer bunkering for vessels sailing from Yangshan Port to the US.

Decarbonisation strategy

The *CMA CGM Indianapolis* is a vehicle carrier, measuring 199 metres in length and 38 metres in

width, with a capacity of 19157 deadweight-tonnes. It can carry 7,050 Car Equivalent Units (CEU) and is the first in a series of the dual-fuel car carriers introduced by CMA CGM as part of its decarbonisation strategy.

The *Indianapolis* was delivered by China Merchants' Jinling Shipyard in Weihai in December last year and has been chartered by CMA CGM from Singapore-based Eastern Pacific Shipping (EPS).

The vessel is equipped with two 2,000 cubic meter LNG gas storage tanks and includes a shaft generator, photovoltaic systems and a lithium battery energy storage system developed by Corvus with 751 kWh ESS capacity. EPS has placed an order for 16 similar vessels with Jinling Shipyard, with delivery of the final ships expected by 2026. ■



The *CMA CGM Indianapolis*

Fratelli Cosulich charts LNG bunker vessel to PETCO

Italian maritime group Fratelli Cosulich has signed a two-year charter deal with Malaysian shipping firm PETCO Trading Labuan (PTLCL) for a new LNG bunker barge.

The agreement will see the LNG barge *Paolina Cosulich* enter service in key hubs in Southeast Asia, Japan, Middle East and South Africa.

"I am extremely pleased with the agreement we have reached with PTLCL," Guido Cardullo, Marine Energy Head of Business Development at Fratelli Cosulich, said. "It underscores our mutual commitment to advancing alternative fuels, and I am excited for a fruitful and long-lasting partnership."

PTLCL is a trading arm of Malaysian state-owned oil giant Pateronas.

LNG focus

The *Paolina Cosulich* is the second LNG bunker barge launched by Fratelli Cosulich, following the launch of *Alice Cosulich* in early 2023. The company's inaugural

LNG bunker barge was launched at CIMC SOE shipyard in China in May.

Giulia Cosulich, ESG corporate director for the firm, hailed the firm's entry into the LNG bunkering sector as an 'important investment' for the group, highlighting a "commitment to safeguard the environment, while decreasing our carbon footprint and operating with absolute safety."

Both vessels feature capacity of 8,200 cubic metres, and provide flexibility for complex operations, such as cooldowns and gas-ups across various vessel types. In addition to LNG, the bunker barges can provide 500 tonnes of Marine Gas Oil (MGO), accommodating different fuelling regimes.

The *Alice Cosulich* has been chartered to Titan Clean Fuels for a multi-year period.



Paolina Cosulich

Biofuel strategy

In December 2023, Fratelli Cosulich initiated procurement of its inaugural methanol dual-fuelled bunker tanker, also boasting capacity of more than 8,000 cubic metres. The new vessel will have capability to transport both green methanol and biofuels and is anticipated for delivery in the final quarter of 2025.

The tanker is set to be stationed at the Port of Singapore and

will operate on a fixed-rate time charter contract with Trafigura, a leading global commodities trader.

Headquartered in Genoa, Italy, Fratelli Cosulich is a diversified multinational, fully owned by the Cosulich family. Tracing its origins back to 1857, it currently operates in 15 countries with core activities including ship agency, marine fuel trading, manning, catering, yacht services, freight-forwarding, amongst others. ■

Seaside completes inaugural bunkering operations with Clean Everglades

Fuelling specialist Seaside LNG has completed the first bunkering of fuel from its newest vessel, the *Clean Everglades*, near Jacksonville, Florida.

The *Clean Everglades* was built by Fincantieri Bay Shipbuilding and delivered to Seaside LNG in October last year. Featuring capacity of 500 cubic metres of LNG. The vessel is similar in design and appearance to its sister ship, the LNG barge *Clean Canaveral*.

“As the demand for LNG as a cleaner maritime fuel continues to grow, our team and barge fleet are ready to deliver,” Tim Casey, CEO of Seaside LNG, said. “*Clean Everglades* gives us the ability to expand our LNG bunkering business to the Gulf of Mexico. Partnering with the talented and professional staff at Fincantieri has produced a second exceptional vessel.”

Clean Everglades bunkered fuel to the *Isla Bella* at the TOTE Maritime’s terminal near Jacksonville. The delivery was part of a long-term service contract with TOTE that includes regularly scheduled refuelling from Polaris New Energy (PNE), the bunkering arm of Seaside LNG.

Galveston landmark

In a separate milestone, Seaside LNG also recently completed the

first delivery of fuel to the *Carnival Jubilee*, an LNG propelled cruise ship stationed in Galveston, Texas.

“We were the first to introduce LNG-powered cruise ships into the North American market,” Tom Strang, Senior Vice President of Maritime Affairs, Carnival Corporation, said, adding “we appreciate Seaside for moving quickly to mobilize, find supply, and bring the parties together to create a new LNG supply chain to support our LNG bunkering needs.”

The firm provided the service under a term bunkering agreement with Carnival Corporation after careful coordination with all parties involved.

“This operation marked the first in port ship-to-ship LNG bunkering delivery not only in Galveston but also along the entire U.S. Gulf Coast,” a spokesperson for the firm said.



The *Carnival Jubilee*

Seaside recently moved *Clean Jacksonville* from Jacksonville to operate out of Galveston and serve the Texas Gulf Coast. Having been in operation since 2018, the *Clean Jacksonville* has now completed more than 350 bunkering operations.

“The Seaside LNG team is excited to start 2024 off strong with these two deliveries. We appreciate the trust our customers put in us to arrange these important fuelling operations. We also recognize TOTE Services for their contributions as a reliable operating partner,” Casey said.

Alongside its wholly owned

subsidiary Polaris New Energy, Seaside owns a 50% stake of JAX LNG, a small-scale LNG production facility operating two trains in Jacksonville. Polaris New Energy maintains the largest fleet of Jones Act-compliant bunkering vessels in the US, including *Clean Canaveral*, *Clean Jacksonville* and tug *Polaris*, and tug *Tortuga*.



Clean Everglades

NEWS NUDGES

Peninsula refuels MSC Virginia in Gibraltar

Fuel specialist Peninsula has completed first LNG bunkering for the containership *MSC Virginia* at anchorage near Gibraltar.

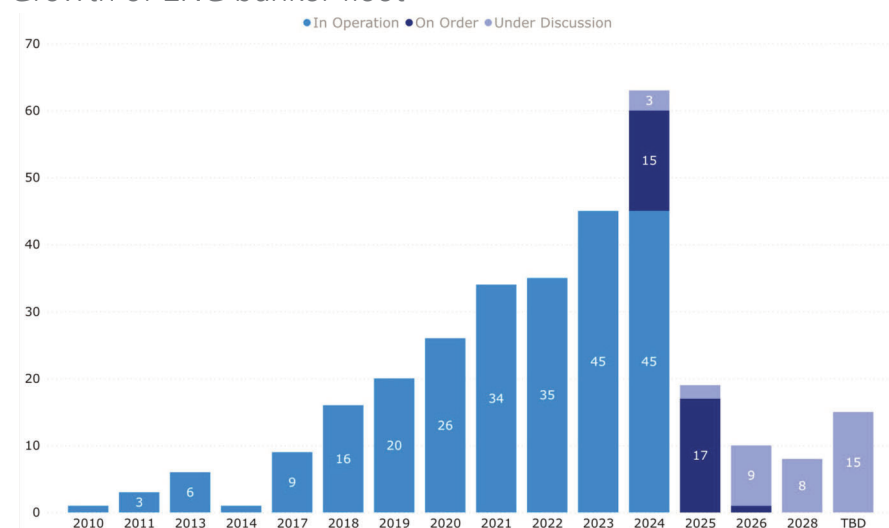
The refuelling operation was carried using the purpose-built LNG bunker vessel *Levante*, which has capacity for 12,500 cubic metres of LNG. The *MSC Virginia* is owned by shipping line Mediterranean Shipping Company.

The successful operation follows the approval of Peninsula’s LNG bunkering operator license by the Government of Gibraltar and the Gibraltar Port Authority and the arrival of the *Levante* LNG at anchorage in October last year.

PLANNED NEWBUILD LNG BUNKER VESSELS

Vessel Name	Delivery Year	Project status	Country	Home Port
K LNG Dream	2024	Decided	South Korea	
LNG Erasmus	2024	Decided	Europe	ARA
KEYS Bunkering West Japan LBV	2024	Decided	Japan	Kyushu and Setouchi regions
Paolina Cosulich	2024	Decided	Italy	Malacca Strait
Brassavola	2024	In operation	Singapore	Singapore
Titan Hyperion	2024	Under discussion	Netherlands	TBD
Hai Yang Shi You 302	2024	Decided	China	To be decided (China)
Seaspan LNG bunker vessel	2024	Decided	Canada	Vancouver
Crowley/Shell LNG bunker barge	2024	Decided	United States	U.S. East Coast
Seaspan LNG bunker vessel 2	2024	Decided	North America	Vancouver
Seaspan LNG bunker vessel 3	2024	Decided	North America	Vancouver
TBN	2024	Decided	China	Yangtze River
Ecobunker Tokyo Bay	2024	Decided	Japan	Yokohama
Titan Krios	2024	Under discussion	Belgium	Zeebrugge
Net Zero hive Canarias	2025	Decided	Spain	Canary Islands
Axpo LBV	2025	Decided	Italy	Coast of Naples
Woodside Western Australia LNG bunker vessel	2025	Under discussion	Australia	Dampier
Petronas LNGBV	2026	Under discussion	Malaysia	
Scale Gas Algeciras	2026	Decided	Spain	Algeciras
Oceania Marine Energy	2026	Under discussion		Dampier
Osaka Bay LBV	2026	Under discussion	Japan	Osaka/Himeji
Oceania Marine Energy LBV	2026	Under discussion	Australia	Dampier
FSU and LNG Bunker Barge, Port of Coega, South Africa	2026	Under discussion	South Africa	Port of Coega
LNG bunker vessel Swinoujscie	2026	Under discussion	Poland	Swinoujscie
Domestic LNG Bunkering Vessel in China	2026	Under discussion	China	To be decided (China)
Kanfer Shipping LNG bunker vessel 1	2028	Under discussion	--	Not yet decided
TBN 1	TBD	Under discussion	Germany	Germany
TBN 2	TBD	Under discussion	Germany	Germany
TBN 3	TBD	Under discussion	Germany	Germany
FlexFueler 004	TBD	Under discussion	Germany	Lubeck
Q-LNG ATB Bunker Barge 8000	TBD	Under discussion	United States	TBD
SK Gas LBV	TBD	Under discussion	South Korea	Ulsan
FlexFueler 003	TBD	Under discussion	Belgium	Zeebrugge

Growth of LNG bunker fleet



Bunker fleet by tank capacity

