



## SEAPEAK BLOOMS UNDER STONEPEAK OWNERSHIP

LNG carrier shipowner busy on newbuild tenders with consideration of steam ships set to start in 2024. LNG shipping-focused Seapeak has had a busy first 18 months under its new name and owner. Formerly Teekay LNG, the company was bought by equity fund manager Stonepeak in January 2022.

### *Shipowner-operator Seapeak says time-charter length shift is 'positive'*

Speaking to TradeWinds, Seapeak president and chief executive Mark Kremin admitted he was a bit nervous about the shift to being controlled by private equity — Stonepeak has more than \$50bn under management — but described it as having been “a delight” so far. He said in its first year under Stonepeak the company committed to more than \$2bn-worth of growth, which was “very different” from what it would have done under its previous Teekay family ownership. “Growth capital is absolutely there so that’s a big difference,” he said. Kremin said the outlook is now also more macro and he enjoys not having to report on a quarterly basis as Teekay LNG did as a public company. Today, Seapeak boasts about 90 ships, including 47 LNG carriers, but Kremin said that over 80% of the company’s business revenue comes from LNG. “That’s our focus for the most part,” he said. In that first year as Seapeak, the company ordered 10 LNG carrier newbuildings fitted with ME-GA propulsion systems booked against 10-year charters with ExxonMobil interests. Kremin is up front that the company

lost out on a first-round batch of charters and was not expecting a second one but was “excited” to get another opportunity. The newbuilding slots assigned to the company were priced at about \$215m at a time when yard prices were in the region of \$250m per ship and have since risen by a further \$10m. “We take less residual risk when there is an energy major that has slots on order at that price,” Kremin said. The company also participated in German energy company EnBW’s recent tender for LNG carriers until “pretty close to the end”. Kremin said Seapeak’s model for fleet development is to secure long-term contracts that will give the company more modern and greener ships rather than picking up acquisitions, and expects that to be a “big part” of what the company does over the next few years. Kremin namechecks a few that he expects to come to the market for shipowners. “Everyone is watching Qatar,” he added, “and that will be of interest to us,” musing that it will be interesting to see the final price agreed between the shipyards holding pre-reserved slots and QatarEnergy. At the opposite end of the age spectrum, Seapeak is also sitting on eight steam turbine LNG carriers.

#### **Seapeak unveils \$1.1bn order for five LNG carriers linked to ExxonMobil business**

The company has been upgrading its vessels, with Kremin mentioning the addition of ballast water treatment systems as “the big-ticket items”, which had to be done. But he said the company has not had to consider its next steps for its steamships yet as they are almost all chartered out. “100% of our fleet is booked out this year and 95% next year and the year after,” he said. For the steamships, the actual rates and utilisation of the vessels, both this year and in 2022, have exceeded those forecasts. Kremin said sale-and-purchase pricings have also been better than Seapeak would have thought at this point, which may justify the dry-docking spends that others are considering. But he said these are not something which needs to come across the company radar just yet, although Seapeak will start talking about it in 2024. There is one ship, however, that the company will be assessing this year — the 89,880-cbm Seapeak Polar (ex-Polar Spirit, built 1993). Seapeak set the tone at the start of this year by selling its sister ship Seapeak Arctic (ex-Arctic Spirit, built 1993) for green recycling in India at a yard compliant with the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. When TradeWinds spoke to Kremin, the sister ship Seapeak Polar had been newly redelivered by its charterer TotalEnergies and the chief said the company was planning to reposition it east to find trade before deciding whether to spend cash on the vessel’s dry-docking. But shortly after this Seapeak confirmed it had also sold this vessel for scrap. At the start of June, the demolition process on the first vessel, the Seapeak Arctic, was about 11% complete.

#### **Seapeak scrapped LNG steamship due to ‘limited’ chartering options**

Technically, the vessel is no longer Seapeak’s but Kremin confided that he receives a weekly detailed report from recycling company Priya Blue Industries and said the company is taking a “very active” role with representatives in India to oversee the job. The two LNG carriers were built with type-B aluminium cargo tanks. Kremin admitted that the scrapping pictures are “a little bit heartbreaking” in that the first cargo tank appears to be in “absolutely pristine” condition. “These vessels reach an age — in this case 30 years — and they’ve got more life but the propulsions have changed and the size just does not cut it anymore, but certainly some of these ships could go longer if the trade was there,” he said. He has not found the green recycling route complex. “I think it’s the minimum an owner should be doing frankly.” source : [www.tradewindsnews.com](http://www.tradewindsnews.com)

**OWNER AND OPERATOR SAYS SHIFT IN CHARTER LENGTH IS ‘POSITIVE’**

Company eyeing FSRUs, CO2 carriers and is embarking on a first onboard carbon capture and storage systems trial. Shipowner Seapeak has identified what it says is “a very positive” chartering change for LNG owners and it is one in which it can offer firsthand experience. Seapeak president and chief executive Mark Kremin noted that under the company’s previous guise as Teekay LNG it built the first two-stroke gas injection vessels and chartered them out to US producer Cheniere Energy for five years. Both 173,000-cbm ships — now renamed the Seapeak Creole and Seapeak Oak (both built 2016) — are fixed out to Chinese importers, on 23 and 10-year charters. Kremin said the standard five-year period has now gone out to 10 to 12 years or longer. “So the market has gone from brand newbuilds for five years to secondhand ship charters that are four or five years or longer,” he said. “I think that’s great for owners so long may that continue. It’s been a definite market shift.” Kremin sees the current two to three-year term-charter market rates for tri-fuel diesel-electric (TFDE) vessels at more than \$100,000 per day as “robust”. Newbuilding pricing is as tough to forecast as interest rates or the oil price, he said, but it may take time for them to fall significantly from their current \$260m highs. The company keeps an eye on the LNG sale-and-purchase sector. It sold off its 50% interest in the 138,000-cbm steam turbine LNG carrier Excalibur (built 2002) in 2022. “If someone is interested in a steamship, we are sellers,” Kremin said. “In terms of being on the buy side, whether it’s TFDE or two-stroke, we are lookers.” He said the company’s real interest kicks in when ships have a long-term charter attached but when they do, the rate is typically lower than if Seapeak had tendered for the business. Kremin confided that Seapeak, which is operating one of its vessels as a floating storage unit for a newly set up German import project, is also looking at floating storage and regasification units — particularly on conversions for its dual-fuel diesel-electric vessels as newbuildings look expensive. The company, which bought Evergas in 2022, is also a believer in the growth of the US ethane trade and also expects to be present in the carriage of CO2 in the future, Kremin said. New technology is also on the radar with charterer TotalEnergies this year set to trial an onboard carbon capture and storage system on the 165,500-cbm Seapeak Arwa (built 2008). source : [www.tradewindsnews.com](http://www.tradewindsnews.com)

**EXMAR TO GROW BACK LNG BUSINESS AS IT SEEKS DELISTING**

Long-time gas industry player Nicolas Saverys says ship-owning and public companies do not work. At the close of the 1990s, Belgian gas shipowner Exmar gave South Korea its first export order for an LNG carrier newbuilding when it contracted a vessel that would later be named after the legendary mythical sword — Excalibur. Over 20 years on — and after seven to eight years that Exmar executive chairman Nicolas Saverys told TradeWinds had, until recently, been some of the most difficult of his life — the 138,000-cbm steam turbine ship Excalibur (built 2002) is heading for a new life as a floating storage unit in the Republic of Congo.

Exmar is also about to embark on a new life as Saverys moves to take the Euronext-listed company private again. “A shipping company should not be on the stock exchange,” Saverys told TradeWinds. The gas-focused executive said shipping moves fast, and quick decisions need to be taken that are not easy to explain to shareholders, who can be remote and inactive in the company. Saverys is also damning in his criticism of emissions reduction rule-making. “If we are now having a shipping industry which will be based on rules and regulations decided upon by some politicians in Brussels or some people from the administration of the IMO ... and we as an industry are going to obey and make investments worldwide of billions of dollars, it is failed as from day one,” he said. Saverys is also no fan of the Carbon Intensity Indicator (CII) regulations and believes companies will try to “cheat” the system. “I have not found anyone yet on CII who really understands how it will have to be applied, how it will be accounted for and what it means for the bottom line on their ships.” He said fuelling decisions have become complicated for shipowners and if they pay out extra capital on a dual-fuel propulsion system but have chosen wrongly their vessel could be obsolete on delivery. After Exmar chartered out and sold off its floating storage and regasification unit and floating LNG production barges last year, Saverys said the company was in a position to pay a fair price with a premium for the outstanding company shares. “It is the right time to go and do it,” he said. Saverys, who now boasts 15 grandchildren, admits he is “meant to be retired”. In 2020, he assumed his current role, shifting over to act as the primary spokesman of the board of directors, handling direct relationships with shareholders and financial institutions, and aiding the sign-off on strategy. But those who know him well said he remains closely engaged with the company. He is clearly taking a very active interest in the next steps for Exmar. The company has taken the plunge on LPG and ammonia carrier newbuildings, contracting four vessels, and Saverys said it may do more, although he highlighted that there are few available slots and prices are high right now. LNG, however, will remain on Exmar’s playlist. Saverys said the company is looking at more LNG infrastructure business including both floating storage and regasification and FLNG units. He revealed that Exmar is working closely on Ceiba Energy’s Portocem LNG-to-power project in Brazil, which would require the company to acquire an LNG carrier to convert into an FSRU. Exmar is also in talks with Italy’s Snam on its planned FSRUs. On FLNG, he believes Exmar can be competitive on a cost per tonne basis of LNG production even with huge land-based liquefaction projects like those in Qatar, which he said proves the advantage of the floating solutions. Saverys added: “We are looking at maybe taking over some companies, which may be undervalued.”

But the market is not likely to see Exmar ordering LNG carriers on speculation or competing for LNG newbuilding tenders. “I think that LNG shipping is a game for financiers where some people are taking risks on the long-term charters at very low returns,” Saverys said. “At single-digit returns, no thank you very much,” he said, detailing that some of these ships have returns on equity that are just above 5%. “This will not work,” he added. Saverys admitted the secondhand LNG carrier market could prove of interest, particularly if Exmar was looking for a vessel to convert into an FSRU or an FLNG unit. “We could maybe sit on one [vessel], operate it a bit and have it as a spare for conversion,” he said. Further ahead, future business areas for Exmar could include CO2 carriers, although Saverys said the market is not there yet. He describes

hydrogen as “the most beautiful product that exists”. But he is concerned about how expensive it will be and is no believer in the large hydrogen carrier largely due to the amount of energy that would be required to liquefy cargoes. Saverys said the LNG shipping market remains difficult to read. It is not very liquid and has many dominating gas producers. He said the LNG carrier business has become a battle of people who want to put up together a financial product that has low returns but a very long-term investment. “Some may like that, but I don’t think it’s the business for a real shipowner. “I don’t think that a shipowner would be happy with these kinds of returns but maybe some owners want this kind of stability at low returns because they have the other parts of the business which are much more cyclical,” he said. “But we are not in that category.” His advice to LNG shipowners with steam turbine vessels like the Excalibur? “Sell them to Exmar for scrap and we will do something with them.” source : [www.tradewindsnews.com](http://www.tradewindsnews.com)

## **BW LNG GIVES FIRST TAKE ON ONBOARD CCS TECH**

Decarbonisation tech-no-logy lends itself to large gas-burning ves-sels such asLNG car-riers but will it become standard for the future world trading fleet? Onboard carbon capture and storage (OCCS) is being touted as a technology that could become standard on the LNG carriers of the future. The vessels lend themselves to the technology in that they predominantly burn gas as a fuel, which has fewer impurities than a compliant fuel oil alternative where the exhaust gas would need cleaning before being put through an OPCS unit.

LNG carriers also have more above-deck space to accommodate the unit than ships where cargo capacity is at a premium, and crews are more experienced in handling liquefied gases. BW LNG is one of a handful of LNG shipowners — Seapeak and GasLog are also testing systems — that has taken an early look at the technology, trialling a system on one of its newbuildings, the 174,000-cbm BW Cassia (built 2022). Serge Schwalenstocker, BW LNG head of newbuilding and new technology, explained that the vessel’s builder Hanwha Ocean, then Daewoo Shipbuilding & Marine Engineering, and technology collaborator Hi Air Korea Co, proposed testing an early-stage version of the equipment. “We will contribute wherever we can to develop technology that can reduce our climate footprint,” he said. “OCCS is a potential tech that can help us move in that direction and lower our greenhouse gas footprint.” Schwalenstocker said for Hi Air it was an opportunity to test its concept outside the lab on a realistic exhaust gas composition with the complexities of a marine environment. The equipment was placed on the casing of the funnel and tied into the main engines’ exhaust line with a portion of the exhaust from one of the ship’s two main engines fed into the OCCS system. Schwalenstocker said the size of the kit looks large for what was captured but stressed that the oversizing allowed different pieces of equipment to be tested to see how they worked together. The system was intended to capture about 50 kg per hour of CO<sub>2</sub> and Schwalenstocker said it “overperformed” in all the conditions. To put this into perspective, he said a modern LNG carrier sailing worldwide at typical speeds will consume about 60 tonnes of LNG per day or 2.5 tonnes per hour and emits about seven tonnes or 7,000 kg of CO<sub>2</sub> per hour. So the system captured about 100th of the hourly CO<sub>2</sub> emissions. But Schwalenstocker said the trial showed that the chemistry of the system worked while also revealing the weak points in the system, which is still under development.

Hi Air's next step is to size the equipment to show what a one-tonne-per-hour capture system looks like. Schwalenstocker, who is a naval architect by training, explained that Hi Air's system uses lime which, when combined with other chemicals will react, bond with the CO<sub>2</sub> and form calcium carbonate. The result is a stable solid which is basically shell sand. The challenge is to find a large enough source of lime, he said.

BW LNG — the BW Group is a founder member of the Global Centre for Maritime Decarbonisation — is being approached by many technology providers, Schwalenstocker said. He said the bulk of the OCCS systems under development use so-called carbon looping. In this, a mix of amines and water is sprayed onto the exhaust which bonds to the CO<sub>2</sub>. Schwalenstocker described the amines as acting like a sponge, which needs to then be squeezed out. This is done by heating up the product and it is the efficiency of that process — that consumes more energy on board — which currently is one of the key research and development topics in this sector. The concentrated CO<sub>2</sub> produced then needs to be liquefied on board and stored in pressurised tanks before being offloaded for storage ashore. On the cost of OCCS, the newbuilding and technology chief said this comprises three elements — the cost of capturing the CO<sub>2</sub>, storing it on board — which could entail liquefaction and specialised tanks and the price for discharge — and onshore storage. “When you piece all these three together, you get a full cycle cost of what it takes to capture CO<sub>2</sub> from a ship and never put it into the atmosphere,” he said. But at present, Schwalenstocker said the industry only has a rough idea of the carbon capture cost on board, which BW LNG sees as ranging from between \$50 and \$200 per tonne of CO<sub>2</sub> captured. On board liquefaction, storage, energy consumption and final disposal ashore will add to the figure. LNG carriers trade worldwide and there is no global CO<sub>2</sub> storage market yet, he said, explaining that the pricing is still very project specific. But Schwalenstocker pointed to “an interesting aspect” to OCCS technology. “With onboard carbon capture, the climate downside of higher energy consumption is reduced and only the cost disadvantage remains.” He said that with incoming carbon regulations and taxes that is on its way to being levelled out. “We usually look at higher [energy] consumption having a climate impact but this is higher consumption for carbon capture. Climate disadvantage is at least heavily reduced.” Schwalenstocker said BW LNG has not put a preference on any OCCS technology as the company sees that it is still at the development stage. “It takes quite a bit of runway still before we have wide-scale commercialisation of OCCS. It is still dominated by R&D and there are a vast range of techs,” he said. “In theory, we could go out and buy something and put it on, but we don't see the shelf product yet. In a world where ships are a commodity, we do also rely on shelf. We can't be all F1 every day.” Schwalenstocker said there is now a race to improve the efficiencies of OCCS systems. He is reluctant to say when the technology will be rolled out commercially, saying there are too many unknowns at present. Improving vessel efficiencies remains key as this will in turn cut the amount of CO<sub>2</sub> needed to be captured on board, he said. “Our efforts to improve efficiency in equipment and operations is an important part of making OCCS a viable solution. “When it is a shelf and viable product, and we can see the full picture — how to capture and store it on board and on shore — when those three building blocks are available to us, we will support them coming to life. “From a tech side, for us the most important thing is that we will be ready.” source :

[www.tradewindsnews.com](http://www.tradewindsnews.com)

## **NEXTDECADE SECURES LENDER COMMITMENTS, SET TO TAKE FID IN JULY**

NextDecade Corp has committed to the Rio Grande LNG project after receiving binding commitments from a syndicate of lenders. The company said together with expected project equity funding, this will help support a positive final investment decision (FID) of the first three liquefaction trains (Phase 1) at the Rio Grande LNG export facility in Brownsville, Texas. The lender group includes leading banks from Asia, Europe, the Middle East and North America. NextDecade has sold 16.2M tonnes per annum (mta) of LNG from Phase 1 of the project. The export facility is targeting commercial start-up in 2027. 92% of the nameplate capacity of 17.61 mta has been accounted for under long-term sale and purchase agreements, sufficient to support the binding debt commitments from lenders and the near-term FID. French energy major TotalEnergies signed a framework agreement with NextDecade this month, taking both a 16.7% stake in the Rio Grande LNG project and a 20-year offtake deal. Global Infrastructure Partners is the majority shareholder in the project and has authorisations from the US Federal Energy Regulatory Commission. Due in part to the observance of various holidays around the world, including the 4 July holiday in the US, NextDecade said it is now targeting FID on Phase 1 in early July with FIDs of its remaining trains to follow thereafter. source : [www.rivieramm.com](http://www.rivieramm.com)

## **MOL, CNOOC AND COSCO GET CHINESE BACKING FOR THREE LNG CARRIERS**

MOL says the lease, with BOCOM Leasing, is its first with a Chinese bank for LNG carriers and is part of a strategic diversification strategy. Mitsui OSK Lines (MOL) has entered into a lease agreement for three new 174,000-m<sup>3</sup> LNG carriers under construction at Hudong-Zhonghua Shipbuilding group with China's Bank of Communications Financial Leasing Co (BOCOM Leasing). The lease is being taken through MOL's joint venture with China Ocean Shipping Company (COSCO)'s investment arm COSCO Shipping Investment Co, a Singapore-based trading and marketing subsidiary of China National Offshore Oil Corp (CNOOC), and CETS Investment Management Co. BOCOM Leasing is a subsidiary of Bank of Communications Co Ltd and the largest leasing company in China, and this marks MOL's first contract with a Chinese leasing company based in Hong Kong. MOL said the move is part of a "regional strategy" management plan to promote "deeper regional strategies by diversification of financing". "MOL sets its sights on expanding business in emerging markets, including China. This lease agreement was achieved with a local financial institution in collaboration with a Chinese partner, in line with MOL's regional strategy. Through these initiatives, MOL will expand its funding sources and diversify its funding methods to strengthen its competitiveness, and it aims to realise a regional strategy while increasing its presence in China and other Asian markets," a statement from MOL said. source : [www.rivieramm.com](http://www.rivieramm.com)

## **KNUTSEN TAKES DELIVERY OF NEW LNG CARRIER**

Norwegian shipowner Knutsen has taken delivery of a new LNG carrier from South Korean yard Hyundai Samho Heavy Industries 174,000-m<sup>3</sup> Gordon Waters Knutsen will go on long-term charter to French utility Engie and is the first of two vessels ordered by Engie. The LNG carrier is equipped with GTT's Mark III Flex system, a reliquefaction unit, air lubrication system and engine manufacturer MAN Energy Systems' new MEGA engine. The vessel price was not disclosed. source :

[www.rivieramm.com](http://www.rivieramm.com)

## **CHINA'S DAPENG LNG IMPORT TERMINAL HITS MILESTONE**

China's Guangdong Dapeng LNG terminal, in which CNOOC and BP hold stakes, reached a new milestone last month. According to separate statements by CNOOC Gas and Power and BP China, the GDLNG terminal hit the milestone on June 2 with supplying over 100 million metric tons to downstream gas customers in the Guangdong-Hong Kong-Macao Bay Area since its launch in 2006. With this, the facility became the first LNG import terminal in China to reach the 100 million tons mark, the two firms said. China's first LNG import terminal has a design capacity of 6.8 million tons per year. The facility features four 160,000-cbm LNG tanks and also a truck loading station. According to data by GIIGNL, CNOOC owns 33 percent in GDLNG, the province of Guangdong 30 percent, BP 30 percent, HK & China Gas 3 percent, and Hong Kong Electric 3 percent. In 2021, BP started to directly supply customers in China with regasified LNG from the LNG terminal in Shenzhen. With this, BP has created a fully integrated gas value chain into China, directly connecting upstream resources, transportation, and trading with downstream gas customers. The energy firm has 600,000 tons a year tolling regasification capacity at GDLNG. BP China and CNOOC Gas and Power said that GDLNG's cumulative gas supply volume accounts for about 40 percent of the gas consumption in Guangdong province and also about 30 percent of the gas consumption in Hong Kong. source : [www.lngprime.com](http://www.lngprime.com)

## **GLADSTONE LNG PLANTS SHIPPED 28 CARGOES IN JUNE**

LNG exports from the Gladstone port in Australia's Queensland rose by about 4.8 percent in June due to higher volumes going to China, according to the monthly data by Gladstone Ports Corporation. Curtis Island is home to the Santos-operated GLNG plant, the ConocoPhillips-led APLNG terminal, and Shell's QCLNG facility. These are the only LNG export facilities on Australia's east coast. Last month, about 1,869 million tonnes of LNG or 28 cargoes left the three Gladstone terminals on Curtis Island. This compares to 1,783 million tonnes or 28 cargoes in June 2022, the data shows. June LNG exports dropped by about 3 percent compared to the previous month when LNG exports reached some 1,927 million tonnes of LNG or 29 cargoes. Moreover, most of June LNG exports or 1,325 million tonnes landed in China, marking a rise of 54.3 percent when compared to 858,456 tonnes last year. Besides China, volumes to Malaysia were almost flat in June and they reached 125,836 tonnes, while volumes to South Korea dropped to 222,988 tonnes last month from 357,018 tonnes last year. GPC also reported that 123,413 tonnes of LNG were sent to Thailand in June and 71,837 tonnes were sent to Singapore. source :

[www.lngprime.com](http://www.lngprime.com)



## **K LINE'S LNG CARRIER NEARING COMPLETION IN CHINA**

China's Hudong-Zhonghua has almost completed the third 79,960-cbm LNG carrier the yard is building for owner K Line and charterer Petronas. According to a statement by Hudong-Zhonghua, the 239 meters long vessel, Lagenda Setia (H1838A), has completed its sea trials in just 72 hours, setting a new record for the shipbuilder in LNG carrier construction. The shipbuilder plans to start the vessel's gas trials in mid-July. Hudong-Zhonghua said this is the third vessel for the Petronas project, but it did not name the owner of the ship. This is the third medium-sized LNG carrier K Line ordered at the shipbuilder back in 2021. Hudong-Zhonghua launched this vessel in November last year. The new LNG carrier is a sister vessel to the 79,960-cbm Lagenda Serenity and Lagenda Suria, delivered in May and June last year, respectively. K Line chartered both of these ship to Petronas for a period of 12 years. They transport LNG from Malaysia to China under a long-term deal Petronas signed with China's Shenergy Group. The Wuhaogou-Max (W-Max) vessels are optimized for the delivery of LNG cargoes to Shenergy's Wuhaogou terminal in Shanghai. The ships feature WinGD's dual-fuel X-DF propulsion and GTT's NO96 L03+ containment system. source : [www.lngprime.com](http://www.lngprime.com)

## **ITALY'S ADRIATIC LNG TO LAUNCH BINDING OPEN SEASON FOR REGAS CAPACITY**

Italy's Adriatic LNG terminal said it will later this month launch the binding open season for multiyear LNG regasification services at its facility in the Adriatic Sea. The LNG terminal operator owned by ExxonMobil, QatarEnergy, and Snam, previously completed a non-binding expression of interest for annual and long-term regasification capacity from January 2029 to December 2048. Now Adriatic LNG launched the accreditation phase for Open Season 2023 aimed at operators of the natural gas market interested in acquiring regasification capacity, it said in a statement. It is offering incremental capacity, subject to conditions, starting from the first quarter of 2026, and multiyear LNG regasification services during the period January 2029-December 2048. The incremental capacity is proposed up to 0.5 bcm per year, with an annual minimum threshold of 0.4 bcm per year. Adriatic LNG is inviting firms to apply by July 14 to accredit themselves to participate in the binding phase of the open season, which will begin on July 19 and end on August 2. Last year, Adriatic LNG offered about 147 bcm of regasification capacity for the period from October 2022 to December 2047. According to Adriatic LNG, it has already allocated all the available capacities until the end of December 2028. Launched in 2009, the world's first offshore gravity-based LNG import terminal sits about 14 kilometers offshore of Porto Levante and has regasification capacity of about 9 bcm per year. In March, Adriatic LNG received its 1000th cargo of LNG since 2009. ExxonMobil has a 70.7 percent stake in Adriatic LNG, while QatarEnergy holds 22 percent and Snam owns 7.3 percent. source : [www.lngprime.com](http://www.lngprime.com)

## UAE – TIME TO ACCELERATE LNG EXPANSION PLANS

Two announcements in May carried importance for the UAE’s attempts to achieve gas self-sufficiency and expand its LNG export capacity to take advantage of growing demand for the fuel. First was the announcement that its planned second LNG plant, with proposed capacity of 9.6mn mt/yr, will be built at the Ruwais downstream oil and gas hub in Abu Dhabi rather than in Fujairah. The new location came as something of a surprise, particularly given the seizure by Iran of two Greek-

owned oil tankers, the Prudent Warrior and the Delta Poseidon, in the preceding days.

The seizures highlight the continued risk to shipping presented by the Strait of Hormuz, the narrow channel between Iran and the Musandam governorate of Oman.

One of Fujairah’s key advantages is

that it provides access to the Gulf of Oman east of the Strait. In the event of the Strait’s closure to shipping, UAE LNG exports would have a better chance of continuing uninterrupted. The issue has long been of concern. The security provided by an export point in Fujairah lay behind the construction in 2012 of the Abu Dhabi oil pipeline, which runs from the Habshan onshore oil field to Fujairah. However, concerns over the Strait’s vulnerability appear to have been abandoned in the decision to locate the new LNG plant at Ruwais. In May last year, engineering company McDermott was awarded a front-end engineering and design contract for the LNG plant in Fujairah. The plan was a fully electric-drive system, allowing for a low emissions basis for LNG production. However, it was not made clear whether the plant would have dedicated renewable energy capacity, or would source electricity from the UAE grid, where the generation mix is changing, but is still heavily dependent on gas-fired generation. At the time of the FEED contract, McDermott expected engineering, procurement and construction contracts to be awarded this year, but these may face delay as a result of the changed location. The UAE’s existing LNG plant consists of three trains with a total capacity of 5.8mn mt/yr. It is located on Das Island about 100 km northwest of the UAE mainland in the Persian Gulf, west of the Strait of Hormuz. The completion of Trains 1 and 2 in 1977 made it only the fifth modern LNG plant to be constructed. A third train was added in 1994.

### Gas balance set to improve

UAE gas demand has risen fast over the last 25 years, driven by a rapidly expanding power sector. By the turn of the millennium, gas demand was outstripping gains in production and new sources of gas were needed. These came initially from Oman via the Al Ain-Fujairah gas pipeline, built in 2003 to supply gas-fired generation and desalination plants in Fujairah.

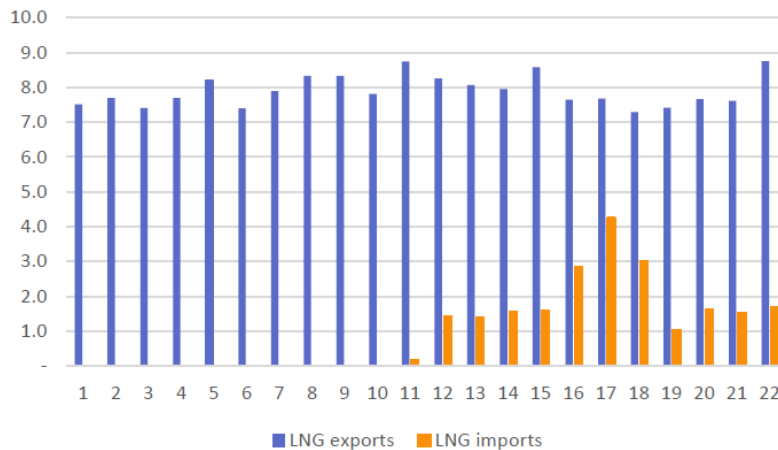
*“Demand-side curbs have been accompanied by major plans for new gas production.”*

This was followed by the Dolphin gas project, which was constructed in 2006. This brought North Field gas from Ras Laffan in Qatar by subsea pipeline to Taweelah on the UAE’s western coast. Gas was distributed further into the country via the Taweelah–Fujairah gas pipeline. Qatari gas now also reaches Oman following the reversal of the Al Ain pipeline in 2008.

**LNG exporter turns importer**

However, even with supplies ramping up via the Dolphin pipeline, the UAE needed more gas, and, in 2010, Dubai imported its first LNG cargo (see figure 1). Despite sitting on huge gas reserves, the UAE had joined the select group of countries which both export and import LNG.

**FIGURE 1** The UAE turned to LNG imports in 2020 (bn m3) Source: BP Statistical Review of World Energy, 2022



The second announcement in May was an extension to the time charter of the Floating Storage and Regasification Unit (FSRU) Explorer, which serves Dubai. The vessel is chartered

by the Dubai Supply Authority (DUSUP) from Excelerate Energy and located at the Jebel Ali LNG import terminal. The FSRU was built in 2008 and substantially upgraded in 2015, including new HP vaporizers and pumps, a dual-fuel diesel generator and an LNG bunker port. The improvements increased the terminal’s send out capacity from 690mn ft3/d to 960mn ft3/d. DUSUP has extended its charter agreement by five years from the end of its current contract, which expires in late 2025. With a contract now in place until the end of 2030, DUSUP clearly expects to continue importing LNG until the end of the decade, or at least wants to secure the capacity to do so, should it have to.

**New power generation mix**

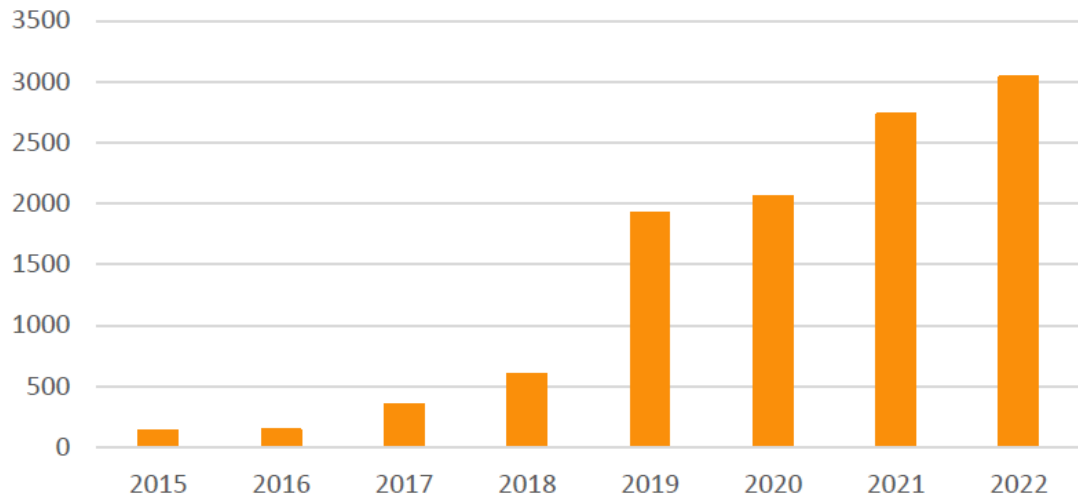
Curbing domestic demand growth for gas is a key element in the UAE’s self-sufficiency plans. The UAE’s electricity system has historically been entirely dependent on gas-fired generation. As a result, its gas demand has until recently closely mirrored power consumption. Gas-for-power generation more than doubled between 2000 and 2010, rising from 39.9 TWh to 93.9 TWh, before increasing further to 134.7 TWh in 2018 and 2019. Diversification into two other forms of electricity generation – nuclear and solar – saw the first decline in gas for power use in 2020 and then, much more substantially, in 2021, as nuclear generation rose to 10.5 TWh and solar to 5.1 TWh. The UAE now has three South Korean-built nuclear reactors in operation, providing 4,019 MW of capacity and a fourth, with 1,310 MW, in the final stages of commissioning.

The first unit was connected to the grid in August 2020, the second unit in September 2021 and the third in October 2022.

**FIGURE 2**

Solar capacity shows steady growth (MW)

Source: IRENA



The UAE has also embraced solar power, recording some of the lowest bids for new solar capacity in the world (see figure 2). Capacity at the end of 2022 had reached 3,040 MW, according to the International Renewable Energy Agency. Solar capacity is set to rise further as the 2.1-GW Al Dhafra project comes fully online. The giant project is expected to go into service officially this summer. A robust project pipeline suggests the UAE’s solar capacity could reach 8.5 GW by 2025, most of which will be sited in Abu Dhabi and Dubai. The Mohammad bin Rashid Al Maktoum solar farm is being developed in phases and will total 5 GW of capacity alone by 2030. Wind power is also expected to enter the mix. An area in the Hatta area of Dubai was identified in 2021 for the country’s first wind farm, which is expected to have a capacity of 28 MW. Dubai made a venture into coal-fired generation with construction of the 2.4-GW supercritical Hassyan coal-fired plant. Construction started in 2016 and two of the plant’s 600-MW units were reported to be complete in 2021. However, the plant was switched to run on natural gas from February 2022. All four units are expected to be online by the end of this year. The fuel switch increased the country’s dependence on imported gas, but was more in line with its emerging greenhouse gas emissions policies. The UAE has a target of generating half of its electricity from renewable energy by 2050 – the addition of a major coal plant would not have helped its emissions profile.

**New gas production**

Demand-side curbs have been accompanied by major plans for new gas production. Last year, the Abu Dhabi National Oil Company (ADNOC) announced plans to form ADNOC Gas, bringing together ADNOC Gas Processing and ADNOC LNG into one entity. A five-year plan for capital expenditure of 550bn dirhams (\$150bn) was approved for the period 2023–2027. A 4% stake in the new company was floated earlier in the year on the Abu Dhabi Securities Exchange, raising \$2.5bn. A second initial public offering is underway for 15% of ADNOC Logistics and Services. The UAE currently imports 2bn ft<sup>3</sup>/d of gas (20bn m<sup>3</sup>/yr) from Qatar, which meets almost a third of demand. In 2021, Dubai also imported 1.7bn m<sup>3</sup> of LNG.

However, the country's gas balance is set to change. The Ghasha Mega project, the world's largest sour gas development, comprises the Ghasha, Hail, Hair Dalma, Satah, Bu Haseer, Nasr, SARB, Shuwaihat and Mubarraz gas fields. The increased spending plans announced last year are designed to accelerate the project, which was previously scheduled to start production in 2025 with output rising to 1.5bn ft<sup>3</sup>/d by 2030.

*“The major new discoveries made in the last two to three years underline the size of the country's gas potential, as well as promising a lower cost base than the current sour gas developments.”*

In addition, the Ruwais Diyab onshore gas field, which lies in the Ruwais Diyab unconventional gas concession, is expected to see a commercial start in 2025 and reach production of 1bn ft<sup>3</sup>/d by 2030 and 2bn ft<sup>3</sup>/d at its peak in 2035. The field is operated by France's TotalEnergies, which has a 40% stake in the project. A further boost to the UAE's gas plans was a major discovery in 2020 in Jebel Ali, which is estimated to hold some 80 trillion ft<sup>3</sup> of reserves across a 5,000 square-km area straddling Abu Dhabi and Dubai. The find was the largest worldwide since the discovery of the giant Galkynysh field in Turkmenistan in 2005. A significant discovery was also made in Sharjah the same year, where Italian major Eni, which has a 25% stake in the Jebel Ali discovery, found the Mahani reservoir. According to the company, the first well flowed 50mn ft<sup>3</sup>/d of gas and condensate. Although still under evaluation, production from the field started up in early 2021, just one year on from the initial well. Further discoveries in Abu Dhabi's Offshore Block 2 also hold promise with estimated gas potential of 2.5-3.5 trillion ft<sup>3</sup>. Current projects underway both upstream and in the power sector suggest the UAE will become self-sufficient in gas sometime between 2025 and 2030, at which point it will still be in receipt of Qatari gas imports. The contract for pipeline gas from Qatar runs until 2032. The major new discoveries made in the last two to three years underline the size of the country's gas potential, as well as promising a lower cost base than the current sour gas developments. This, in turn, implies that it needs to proceed directly with its LNG expansion plans, if it is to get surplus gas, either domestic or imported, to wider markets in a timely manner. Source : [www.naturalgasworld.com](http://www.naturalgasworld.com)

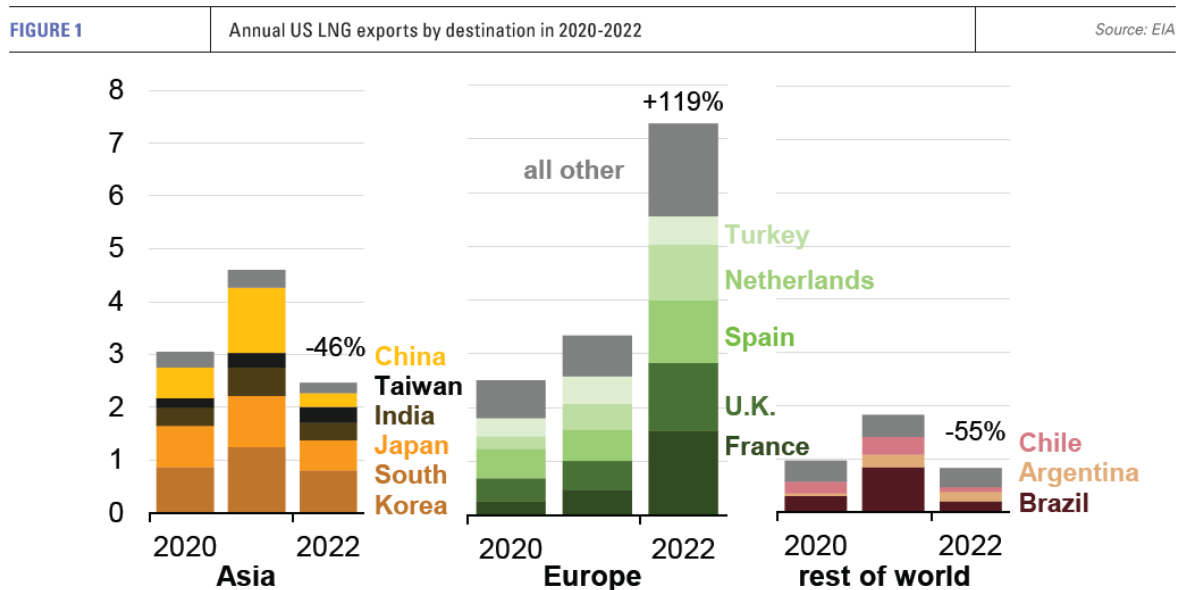
## **SINOPEC ADVANCES LONGKOU LNG TERMINAL PROJECT**

Sinopec, China's leading energy company, on June 30 announced the successful completion of the gas jacking operation for the No. 2 storage tank of the Longkou LNG import and regasification terminal project. The project was approved by National Development and Reform Commission (NDRC), China's highest planning body, in October 2021. This development means the company has completed gas jacking operations for all four 220,000 m<sup>3</sup> storage tanks in the project's first phase. Situated in Shandong province, the Longkou LNG import and regasification terminal has earned a spot on the list of key oil and gas infrastructure projects jointly issued by the NDRC and the National Energy Administration. Scheduled for

completion and operation in October 2023, the first phase of the project will provide an initial LNG handling capacity of 6.5mn metric tons/year (mn mt/yr). As the project progresses into its second phase, the terminal's capacity is set to nearly double to 12mn mt/yr. Sinopec said that the Longkou LNG terminal will play a pivotal role in ensuring gas supplies in the Bohai Rim, North China, and East China regions. Moreover, it is expected to optimise the regional energy structure, fostering sustainable economic and social development in the area, the company added. Source : [www.naturalgasworld.com](http://www.naturalgasworld.com)

## LNG PROJECT SANCTIONING IN AN UNCERTAIN ENVIRONMENT

With Russia's pipeline gas supplies to Europe expected to be down to 25bn m3 in 2023, global gas and LNG markets have undergone a huge change. US LNG exports to Europe increased massively, by about 120% in 2022, while exports to the rest of the world went down (*see figure 1*).



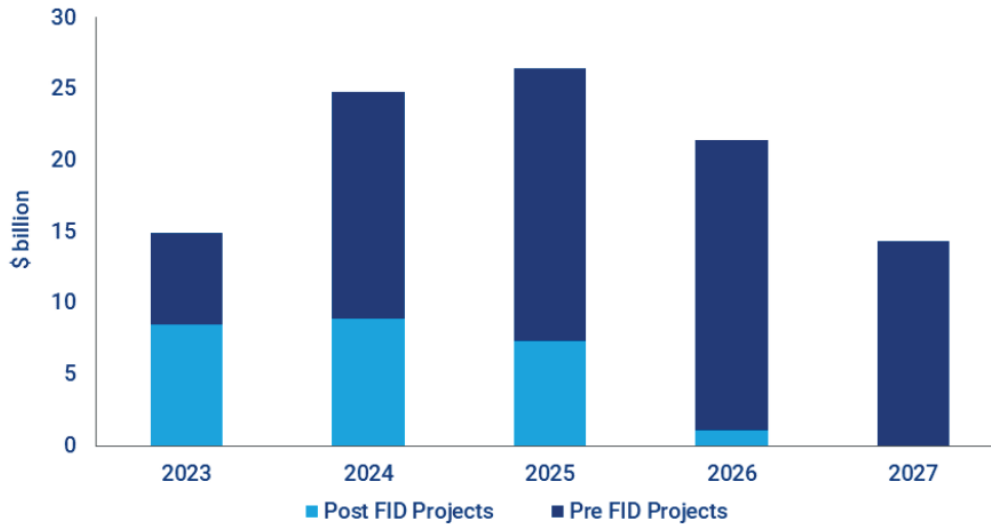
In total, the US exported 76.4mn metric tons of LNG in 2022, third behind Australia and Qatar. With a record 65mn m/tyr of long-term contracts signed in 2022, almost four-times more

than the 18.5mn mt/yr of new contracts signed in 2021, and Freeport LNG back in operation, the US is poised to become the world's largest exporter of LNG in 2023. And there is more to come (*see figure 2*). However, the acceleration in energy transition, reduced demand, geopolitical risk, inflation and lenders' focus on ESG are contributing to a more uncertain environment to developing more LNG projects. Even though, until recently, high demand and high prices spurred interest in new LNG, this is unlikely to continue at the same pace, especially beyond the next three years. At least some of the projects at pre-FID stage may find it difficult to move to the next stage. European utilities' reluctance to enter into long-term LNG purchase contracts is making things even more difficult.

FIGURE 2

Planned investment into US LNG projects 2023-2025

Source: Wood Mackenzie



Overall gas use in the EU dropped by 17.7% from August to March, compared with the five-year average for the same period, according to Eurostat, and it is expected to drop by 30% by 2030. This is the

target in RePowerEU, which also expects gas demand in Europe to carry on declining in line with EU's net-zero target by 2050. In addition, the EU has made a commitment to ban long-term LNG contracts after 2049. These developments contribute to the uncertain long-term environment and are having a destabilising effect on markets. And so is geopolitical risk. The energy crisis and Russia's invasion of Ukraine are changing the rationale for LNG projects. The war in Ukraine has increased geopolitical risk. Focus has now shifted to energy security and long-term contracts.

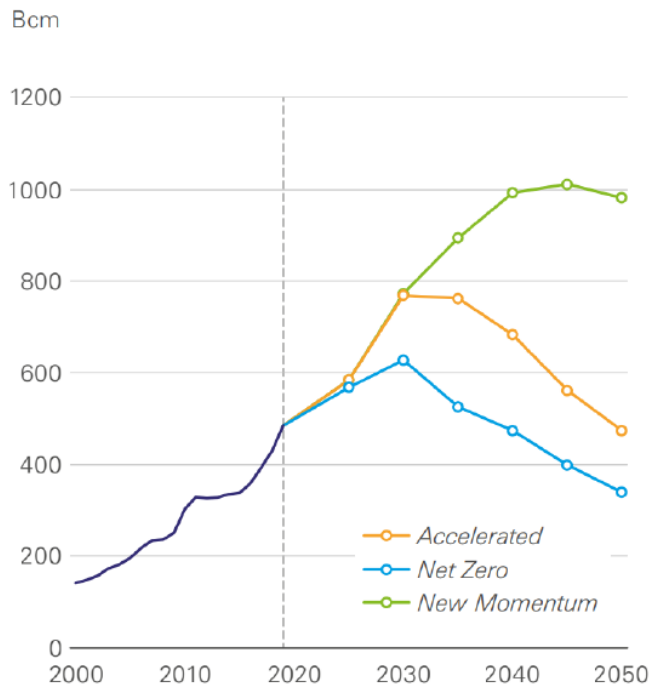
**An accelerated energy transition**

The drive to accelerate energy transition, brought about by the impact of Russia's invasion of Ukraine on global energy markets, is making the longer-term future of LNG projects more uncertain. While an LNG project's construction phase may last five or so years, most companies building LNG plants now look for project lifespans of at least 30 years. That would take such a project beyond the 2050 net-zero horizon, with decarbonisation becoming increasingly critical. Doubts about the longer-term future of such projects will start increasing as we approach 2030. In fact, BP's Net-zero scenario in its 2023 Energy Outlook shows LNG trade peaking by 2030 and then declining by almost 50% by 2050 (see figure 3). Even though scenarios are not predictions of what is likely to happen, they explore possible outcomes. As such, BP's net-zero scenario is adding to the uncertainties surrounding new LNG projects. And then there is low-carbon hydrogen coming to replace gas. BP's Energy Outlook states that its "pace of growth accelerates in the 2030s and 2040s as falling costs of production and tightening carbon emissions policies allow low-carbon hydrogen to compete against incumbent fuels in hard-to-abate processes and activities." According to BP's net-zero scenario, global natural gas demand will decline by 60% by 2050 (see figure 4). It is already happening in Europe.

Accelerating energy transition would increase such uncertainties. That is one of the main reasons European utilities are not keen to enter into long-term contracts without a change of policy by the EU recognising the longer-term need for gas. Strong resistance by climate change activists to new LNG projects adds to the uncertainties. In a report released in April, Greenpeace accused US LNG exporters of profiting from Europe’s gas crisis. It said that Europe should move away from gas, focus on reducing demand and invest more in renewables and energy efficiency. Of those who disagree, many do not see the need for new LNG to extend beyond the 2030s-2040s.

**FIGURE 3** Global LNG trade

Source: BP Energy Outlook 2023



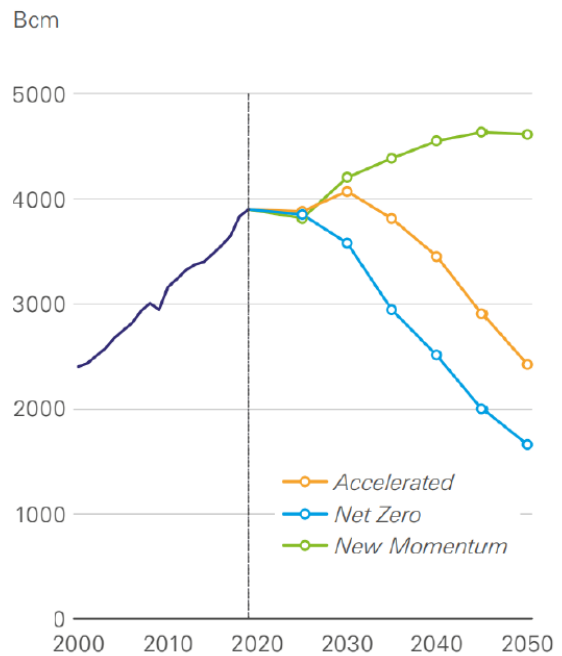
Rising interest rates are having an impact on project finance, affecting the cost of new LNG projects, forcing US producers infrastructure companies to seek long-term LNG deals. Wood MacKenzie says that its “benchmarking analysis indicates we have already seen inflation of over 20% on the US Gulf Coast, compared to projects which were built in the last five years.” In addition, while the number of new projects is increasing (see figure 2), developers are faced with services, work force and material price rise and cost challenges. Ultimately, these challenge new LNG project sanctioning. The banking crisis has also added to these challenges.

## High inflation and interest rates

High inflation has led to higher interest rates increasing costs for borrowers. The IMF expects the US inflation rate to drop to 2% only by 2025 and remain at that level up to 2030. This is impacting interest rates that are expected to average 5.25% in 2023, drop to 3.75% in 2024 and 3.25% in 2025, compared to about 1.5% pre-pandemic.

**FIGURE 4** Global natural gas demand

Source: BP Energy Outlook 2023



and



**Focus on ESG**

In the US lenders’ focus on ESG is adding new environmental hurdles to new LNG projects, as is the enforcement of the Clean Air Act emissions regulations. The Inflation Reduction Act (IRA) has gone further. In addition to enforcing methane emission monitoring and mitigation, it has introduced a charge on methane emitted by oil and gas companies, including from the LNG value-chain, making methane emissions expensive. On top of this, the EU is planning to extend its new methane emission reduction regulations to imports of oil and gas, including LNG. In the US, the Office of Fossil Energy and Carbon Management recently issued a new policy on LNG exports and greenhouse gas and methane emissions mitigation in April. It states that its “goal is to bring transparency and best practices to the US and global natural gas supply chains. This, in turn, will help American industry achieve among the lowest emissions profiles of any natural gas producer in the world, demonstrating that natural gas production, consumption and exports from the US can effectively align our energy security and climate goals.” Reducing emissions is now becoming a ‘standard’ requirement for new projects, adding to costs. A survey by McKinsey showed that “more than 50% of buyers already have targets in place to reduce their emissions from LNG and, furthermore, nearly 25% in total target emissions from the full value chain, such as upstream LNG.” Increasing environmental compliance requirements are adding to the cost of new LNG projects in what is becoming a more competitive market. In the US, ESG is also impacting regulator approval of new permits. These are taking longer and costing more. Poten & Partners reported that the cost of applying for permits alone has escalated to between \$100mn to \$150mn for a project. With such a large choice of new US LNG projects, investors are becoming more demanding, choosing the cleanest and most profitable projects. ESG is also impacting European LNG buyers. According to Bloomberg Intelligence, “most European utilities don’t want to touch gas-related projects with a barge pole as companies seek to improve their ESG metrics, improve valuation and avoid stranded asset risks.”

**Impact on sanctioning new projects**

These challenges have driven those US LNG developers that can afford it to seek more equity or balance-sheet financing to

*“The recent collapse in global LNG prices is adding to the problem. Increased inflation and interest rates mean that LNG project developers need to recover higher costs through higher liquefaction fees, reducing profitability, delaying project sanctioning.”*

ensure sanctioning of their projects.

But even then, escalating costs impact project profitability. Wood MacKenzie says that “The combination of low

fees and increasing costs mean we estimate unlevered internal rates of return (IRRs) as low as 5%-6% for some projects.

Based on these returns, some projects are finding it challenging to secure finance, particularly via equity raises.”



The recent collapse in global LNG prices is adding to the problem. Increased inflation and interest rates mean that LNG project developers need to recover higher costs through higher liquefaction fees, reducing profitability even further, delaying project sanctioning. In such an environment, projects that secure long-term LNG sale and purchase contracts have an advantage. Two such examples are Venture Global LNG and Sempra Energy LNG. Both secured about 90% of production capacity under long-term deals. This helped them win approvals and financing. In addition to the uncertain economic environment impacting LNG project sanctioning, there is an increasing view that acceleration of energy transition means that the current LNG supply is enough to meet future energy demand. Nevertheless, despite the challenging environment, the outlook and interest in new LNG export projects in the US remains strong. source : [www.naturalgasworld.com](http://www.naturalgasworld.com)

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