



CHINA'S LNG WINTER OUTLOOK

China's gas consumption is set to continue growing for this upcoming winter as a recent upturn in economic activity will help domestic demand maintain momentum, but growth in LNG imports will be squeezed by other cheaper gas sources and levels are unlikely to return to the historical winter peak of 2021. Chinese gas demand has been in robust recovery since the spring

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with apparent consumption in the first eight months of 2023 up by 7.4% year-on-year to 259.81bn m³, according to the country's central economic planning agency. Demand for the full year had been predicted by senior energy officials in July to expand by 5.5–7.0% to 385–390bn m³. The consumption

rebound after last year's unprecedented decline of 1.2% has come amid improving prospects for China's economy, which beat market expectations to expand by a better-than-expected 4.9% in the third quarter (Q4) and lift growth for the first three quarters to 5.2%. Estimates for China's gas use this winter vary. Under a normal winter temperature scenario consumption could increase by 8.9% in Q4 to 106bn m³ compared with an estimated 87.5bn m³ in Q3, according to an outlook from Sinopec. Demand during the heating season – which traditionally runs for four months from mid-November to mid-March – under typical

winter temperatures will rise by 7.8% to about 191bn m³. In the case of significantly warmer winter temperatures, gas demand is expected to be about 104bn m³ in Q4, up 6.8% year-on-year, and by 5.5% to 187bn m³ for the heating season. The base-case for China's gas demand in the upcoming winter – defined as the six months from October to March – is an increase of 7% year-on-year to 214bn m³, supported by higher economic activity than last winter due to the lifting of COVID-19 restrictions and an anticipated fall in gas costs due to declining spot LNG prices, according to recent analysis from CNPC's Economics and Technology Research Institute (ETRI). The institute's analysis was completed before China surprised markets with its Q3 GDP growth. If the economic recovery holds firm, a scenario with higher economic growth close to the optimistic forecasts given at the start of this year could add 3.0bn m³ to the base case.

More demand across the board

Residential and commercial gas consumption for the coming winter is projected to increase to 57bn m³, a 6% rise from a year earlier as gas grids expand and commercial activities resume. Industry gas demand is estimated to see more modest growth

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of 4% year/year this winter amid the steady economic outlook both at home and abroad, with consumption on track to reach 81bn m³. The gas power and transport sectors, both of which experienced a 9% yr/yr drop last winter, are expected to resume growth this winter – a turnaround that can be attributed to lower gas costs and more economic activity than last winter. Gas burn in the Chinese power sector meanwhile

stands to expand by 4% over this winter from last year to reach 29bn m³. China is set to accelerate gas-fired power capacity construction in the coming three years, adding more than 10 GW every year. Lower fuel prices – which represent around two-thirds of operation costs – are also expected to boost gas consumption by power plants. For example, in the southern province of Guangdong, the country's biggest gas-fired power market, a gas price below \$16/mn Btu may keep power plants profitable under the current gas power benchmark tariff. But for gas power plants to be competitive with coal-fuelled plants, fuel prices should be lower than \$10/mn Btu. Gas burn in the power sector still depends on the availability and economics of other electricity sources, such as hydro and coal power. Transport sector demand is likely to see a 35% year-on-year jump this winter to 21bn m³ due to the lifting of COVID-19 travel restrictions and favourable economics compared with diesel-fueled vehicles. Sales of CNG/LNG-fuelled heavy-duty commercial vehicles more than tripled in the first half of 2023 as LNG retail prices fell lower than 70% of diesel prices, which is considered a price threshold for LNG-fuelled vehicles to be more economically competitive than diesel ones. But uncertainties loom as these two sectors are sensitive to fuel prices. Most gas demand by power plants and commercial vehicles is not prioritised by the government in the case of a gas shortage. Total gas supply, excluding gas storage withdrawals, for the coming winter is expected to be 8% higher yr/yr, reaching 209bn m³.

fears of a plunge in pipeline gas flows from Central Asia this winter. Uzbekistan did not send any gas to China in Q1 2023, while Kazakhstan's exports decreased to almost zero – both countries experienced surging domestic demand amid cold spells that drained gas supply. Turkmenistan – which accounts for the lion's share of China's piped gas imports – exported around 7.5bn m³ to China in Q1 this year, 7% lower than the 8.1bn m³ it sent in the same period of 2021. With supply locked in and economic prospects improving, the key uncertainty for Chinese gas demand this winter will be weather. Extreme temperatures in the upcoming winter could either add 12bn m³ or subtract 7bn m³ of gas consumption from CNPC ETRI's base-case demand of 214bn m³. There could be less weather variation in Q4 2023 than in Q1 2024. Gas demand in the final quarter could vary from 105bn m³ to 111bn m³, while the range is likely to be 101–115bn m³ in Q1 2024. Northern provinces with central heating are more sensitive to winter weather variations, given the share of gas demand for heating. Extremely cold weather could add an additional 1.8mn t of LNG demand this winter on top of the 38mn t in the base case. In the event of a warmer-than-normal winter, LNG demand would dip by 3.2mn t. China is set to experience El Niño in the coming winter, which might lead to warmer-than-usual weather, according to the National Climate Centre. source : www.naturalgasworld.com

MOL LNG-FUELED NEWBUILD STARTS COAL TRANSPORT FOR KYUSHU ELECTRIC

Japan's MOL has started shipping coal for compatriot Kyushu Electric Power (Kyuden) with a new LNG-powered Panamax-class bulk carrier. MOL said in a statement that the LNG-powered vessel named Reimei has started operations on November 14. Namura Shipbuilding's Imari yard built this 234.92 meters and 38 meters long vessel with gross tonnage of 95,792 tons. MOL operates Reimei and will transport coal from overseas to Kyuden's coal-fired power plants. The vessel departed from the Imari port on November 14 for shore-to-ship bunkering at the Tobata port in Fukuoka on November 15, where it will receive fuel directly from the onshore LNG shipping terminal, MOL said. In the future, ship-to-ship bunkering from an LNG bunkering vessel can also be adopted as a way for the vessel to receive fuel, the firm said. Kyuden concluded a long-term transport deal on December 25, 2019 with both MOL and NYK for LNG-powered carriers. Oshima Shipyard's Koyagi yard delivered the Panamax-class bulk carrier, Shoyo, to NYK on October 2. NYK claims this is the world's first LNG-powered Panamax-class bulk carrier. Ships having a deadweight tonnage of 70,000 to 99,999 dwt are categorized as Panamax-class bulkers. Source : <https://lngprime.com>

shipbuilding program as well as vessels for charter to China's ENN and for charter to China's CNOOC. The Japanese firm has in total 16 LNG carriers on order at Hudong-Zhonghua, the data shows. Moreover, MOL has at least 3 LNG carriers on order at South Korea's Samsung Heavy Industries and 15 LNG carriers on order at Hanwha Ocean, previously known as DEMA, according to the data. Shipbuilding sources previously said that MOL has ordered five LNG carriers this year at Samsung Heavy, including the latest order in October.

MOL booked two LNG carriers at Hanwha Ocean this year.

Last month, MOL signed a new deal to charter one LNG carrier to compatriot LNG trading and power firm Jera. This is the sixth LNG carrier charter contract for the two firms and follows a deal announced in June this year. In June, UK's Ineos also chartered two LNG carriers from MOL to ship its contracted US LNG supplies to Germany. LNG-powered vessels In addition to its growing fleet of LNG carriers, MOL plans to have 90 LNG-fueled vessels and methanol-powered ships in its fleet by 2030 as it looks to phase out heavy fuel oil and decarbonize its operations. A spokeswoman for MOL told LNG Prime that the company currently has 27 oceangoing vessels and 6 coastal vessels powered by LNG in its fleet. This includes vessels on order. In September, MOL ordered two more LNG-powered car carriers at compatriot Nihon Shipyard. MOL has six LNG-powered car carriers with a capacity of 7,000 units on order at Nihon. Besides these vessels, MOL also has four LNG-powered car carriers with the same capacity on order at Shin Kurushima Dockyard. Source : www.lngprime.com

HD HYUNDAI HEAVY SECURES ORDER TO BUILD LNG CARRIER DUO

South Korean shipbuilder HD Hyundai Heavy Industries has won a contract to build two liquefied natural gas (LNG) carriers worth about \$530 million. HD Korea Shipbuilding & Offshore Engineering said on Tuesday that its unit HD Hyundai Heavy Industries will build the two 174,000-cbm LNG tankers for an owner in Africa. Hyundai Heavy will deliver the vessels by February 2028. The order has a price tag of 698.1 billion won (\$530 million) or about \$265 million per vessel, which is the highest price for a single 174,000-cbm LNG carrier for the shipbuilder. KSOE did not reveal any additional information regarding the new order. Hyundai Heavy won two LNG carriers from Greece's Evalend Shipping in August, marking the latter's entry into the LNG sector. These vessels were also priced at about \$530 million but the price in won (679 billion won) was lower. Shipbuilding sources told LNG Prime that Evalend ordered these two new LNG carriers at Hyundai Heavy as well. This year, KSOE and its units have received orders for a total of 147 ships worth \$20.89 billion, including 39 LNG carriers. The group has previously reached its annual target of \$15.7 billion. State-owned LNG giant QatarEnergy recently signed a deal for 17 LNG carriers with Hyundai Heavy as part of the second phase of its giant shipbuilding tender. Hyundai Heavy will deliver these 299 meters long and 46.4 meters wide vessels sequentially by September 2029. source : www.lngprime.com

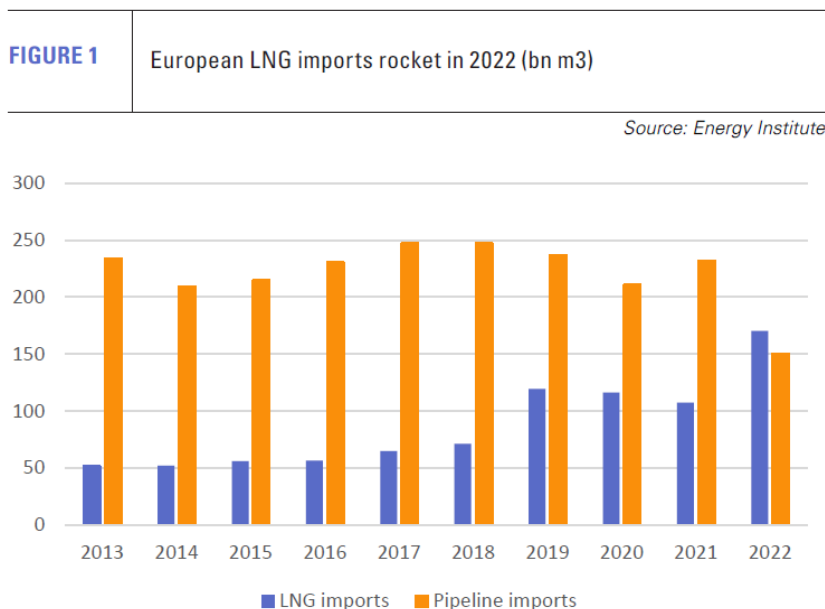
fail to realise it is all very well throwing millions and millions and millions of dollars at technology that is not there... yet. It will work in the future". She concluded, "We must have LNG as a transitional fuel to get to green fuels". source : www.rivieramm.com

EUROPE READY FOR WINTER 2023/24

With Europeans in October basking through an unexpectedly extended summer, they might be worried by a changing climate, but in the short term, this is what Europe needs – a delayed start to the winter heating season with the prospect of a warmer-than-average winter to come. El Niño appears to be playing a major part in the warmer weather. According to the US Climate Prediction Center (CPC), in August, sea surface temperatures were above average across the equatorial Pacific Ocean. Tropical atmospheric anomalies are also consistent with El Niño, and the CPC in mid-September predicted that the phenomenon would continue through the northern hemisphere winter with a greater than 95% chance through January–March 2024. This suggests warmer than average temperatures in the US, keeping US gas consumption low. This is good news for Europe, which continues to rely heavily on imports of US LNG to make up for its lost imports of Russian pipeline gas. In the second quarter of 2023, the US supplied 46.4% of EU LNG imports, according to Eurostat. In Europe, the effect of El Niño is milder, wetter weather at the beginning of winter and colder, dry weather towards the end. There are, of course, no guarantees – the best that can be said is that the development of a strong El Niño increases the probability of certain weather outcomes.

European gas stocks in good shape

Europe should welcome the warm weather because of the impact it has on winter heating demand and the reduced call on



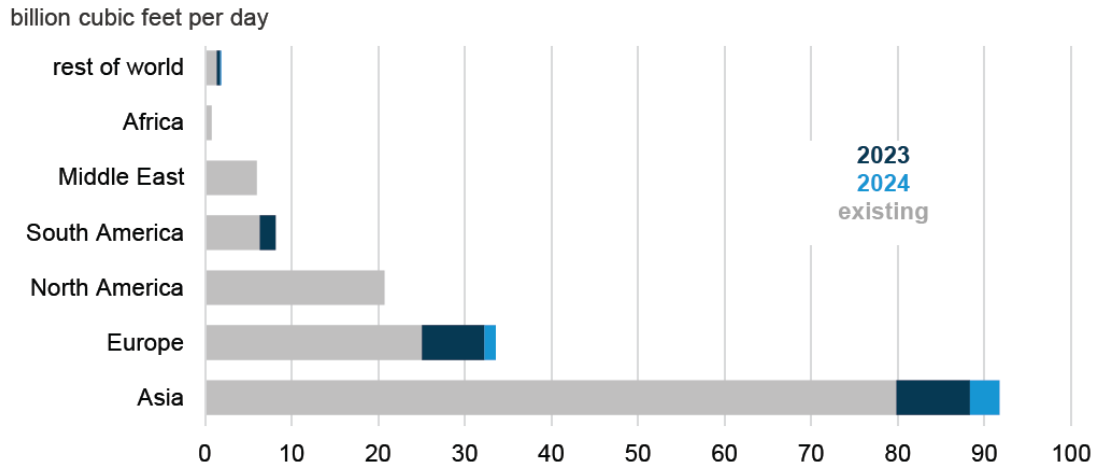
limited gas stocks. These are in good shape, but their capacity is finite. Helped by a high level of carried over stocks from last winter, owing in large part to much increased LNG imports (see figure 1), EU gas inventories hit 90% of capacity ten weeks early on August 16. Continued conservation efforts and curtailed demand have meant gas prices have been more moderate, compared with 2022 (still high based on long-term averages), allowing restocking to take place fairly easily.

Moreover, with European inventory levels close to tank top, the pace of the region's LNG imports has moderated, allowing more space for other countries, notably in Asia, to rebuild their own stocks ahead of winter. Flat forward prices for LNG in Europe have meant LNG cargoes floating off Europe's shores, in the hope of high winter prices, have moved elsewhere. This, in turn, has freed up LNG carriers, taking the heat out of the charter market.

FIGURE 2

Global LNG import capacity by region (as of July 2023)

Source: EIA



Moreover, the LNG market’s expansion on the demand side is not confined to the rapid expansion of European regasification capacity (see figure 2) in response to the Ukraine crisis. Part of the bearish narrative has been that LNG scarcity and price volatility during the European energy crisis has caused potential LNG market entrants to back off and instead place their faith in alternatives such as renewables. However, as the US Energy Information Administration (EIA) noted in August, three new importers entered the LNG market this year, two of which, the Philippines and Vietnam, are in Asia. By the end of 2024, Antigua, Australia, Cyprus and Nicaragua should all join the club, while several other countries are also in the advanced stages of preparing for LNG imports. Over the last ten years, regasification capacity globally has grown by 49% to reach 140.0bn ft³/d (1.2 trillion m³/yr, 863mn t/yr) across 48 countries. By the end of 2024, the EIA estimates there will be 55 countries importing LNG with a combined regasification capacity of 163bn ft³/d. This growth is being led by Asia not Europe. Asia will account for 52% of the new import capacity, compared with Europe’s 38%.

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LNG provides essential security of supply

The Ukraine crisis and spike in LNG prices may have delayed import expansion plans, but they have not been derailed. Europe's response on the one hand has been effective, aided by some large slices of luck with the weather, supporting the view that the crisis is temporary. In addition, the LNG's industry's response in terms of new capacity has been substantial, even if it takes a long time to bring new projects into production. As a result, the utility of LNG as the primary source of gas flexibility to resolve the European energy crisis is now being given more weight than concerns over exposure to a volatile international market for importers. A response has been seen in terms of Asian buyers, in particular, shifting to long-term contracts rather than spot purchases as a means of reducing their exposure to price volatility. However, the broad-based nature of the expansion of regasification capacity suggests more a period of market normalisation and, who knows, perhaps relative tranquillity, than a glut. source : www.naturalgasworld.com

SINOPEC PUTS WORLD'S LARGEST LNG STORAGE TANK INTO SERVICE

China Petroleum & Chemical Corp. (Sinopec) put China's first, and also the world's largest, LNG storage tank of 270 000 m³ into service on 2 November 2023 at its Qingdao LNG Receiving Terminal. The tank will add 165 million m³ of storage capacity to meet the gas demand of 2.16 million households for five months during the winter heating season, which will enhance and guarantee the natural gas supply in North China. The mega LNG storage tank, independently designed, developed, and built by Sinopec, has a diameter of 100.6 m and a height of 55 m, a key project of Sinopec Qingdao LNG Receiving Terminal's phase III construction. The 270 000 m³ tank adopted 17 patented technologies with independent intellectual property, the main structure was completed in only 18 months, and it is in full service within 27 months. In the construction process, Sinopec has localised the applications of over 20 core equipment that significantly reduced procurement costs and boosted the localisation level of the tank to 95%, the highest in China. On the same day, Sinopec's Tianjin LNG Receiving Terminal completed the phase II construction with three 220 000 m³ storage tanks coming into full service, adding over 400 million m³ of natural gas storing capacity to bring the total storage capacity of Tianjin terminal to 1.08 billion m³, the largest in China. Sinopec's two LNG terminals in Qingdao and Tianjin, with seven and nine storage tanks respectively, have a total of 1.68 billion m³ of storage capacity, further guaranteeing the supply of resources in the winter season. Sinopec has continued to expand the natural gas storage capacity following a strategic plan covering the full scope of production, supply, storage, and sales, the group now has about 5 billion m³ of LNG storage capacity. Sinopec has built 12 natural gas storage depots including the Zhongyuan cluster, Jintan, Wen 96, and Jiangnan Yanxue, while it is also expanding the LNG receiving terminals in Tianjin and Qingdao. source : www.lngindustry.com

The group reported a total income of \$131 million and an Ebitda of \$89.4 million for the third quarter of 2023, compared to \$126.8 million and \$78.7 million for the preceding quarter. The increase in Ebitda of \$10.7 million during the third quarter was primarily due to the full employment of Hoegh Giant and Hoegh Gandria which resulted in higher time charter revenues, it said. source : www.lngprime.com

GASLOG INKS \$2.8 BILLION FINANCING DEAL, SECURES NEW CHARTER CONTRACTS

Greek LNG shipping firm GasLog has signed a new five-year sustainability-linked credit facility in the amount of \$2.8 billion. The firm also secured new charter deals for its LNG carriers. The Peter Livanos-led company, which earlier this year completed its merger with GasLog Partners, revealed these deals in its third-quarter report issued on Thursday. According to GasLog, the senior secured revolving credit facility includes decarbonization and social key performance targets as a component of the facility pricing.

This financing involves 14 international banks.

The facility refinances all outstanding debt of \$2.1 billion secured by 23 LNG carriers across both GasLog and GasLog Partners, it said. Moreover, the 23 LNG carriers (12 GasLog vessels and 11 GasLog Partners vessels) included in the facility are comprised of ten dual-fuel two-stroke engine propulsion (X-DF) LNG carriers, ten TFDE LNG carriers, and three steam LNG carriers. The facility has a five-year tenor, includes two one-year extension options and simplifies GasLog's debt structure, providing incremental available liquidity to the company while reducing interest cost and debt service requirements, the firm said. GasLog said the transaction was completed on November 13, with the company drawing down an amount of \$2.1 billion and \$672 million remaining available for general corporate purposes.

New charter deals

Beside this financing deal, GasLog secured new charter deals for its LNG carriers. During the third quarter, GasLog Partners signed a multi-year time charter agreement for the steam LNG carrier, Methane Rita Andrea, with an "Asian LNG buyer". The charter for the 2006-built 145,000-cbm LNG carrier will expire in March 2026, according to GasLog. Post-quarter end, GasLog extended by five years the time charter agreement of the TFDE LNG carrier, GasLog Singapore, with New Fortress Energy Transport Partners. This charter now will last until June 2030. Earlier this year GasLog and NFE extended the charter deal for the 2010-built 155,000-cbm, GasLog Singapore, for about two years. In addition to this LNG carrier, GasLog Partners signed a multi-year time charter agreement for the TFDE LNG carrier GasLog Santiago, with a "major energy exploration company", it said. The 2013-built 155,000-cbm vessel is now chartered to Trafigura Maritime Logistic and the charter expires in December this year. Source : www.lngprime.com

Sinokor initially paid the deposit on the first ship but in the past 18 months, brokers said this initial newbuilding was also circulated for sale in 2022 at a strong price of \$270m. Those who follow Sinokor now report that the shipowner is keen to take delivery of the vessel and is working to find employment for it. Sinokor is also understood to have paid the first deposits on the other three LNG newbuildings that are listed as scheduled for handover dates in 2024, although brokers have suggested the second will not emerge until at least 2025. The shipowner is now believed to control at least seven existing LNG carriers in Sinokor's fleet, three of which are listed on databases as laid up. source : www.tradewindsnews.com

EVALEND LINKED TO TWO-SHIP ORDER AT HD HYUNDAI

Greek owner appears to be doubling up on LNG vessels after recent break into sector, Greek shipowner Evalend Shipping is being named as the company behind a two-ship newbuilding order at HD Hyundai Heavy Industries that would double its emerging LNG fleet. HD Korea Shipbuilding & Offshore Engineering Co (HD KSOE), the holding company for HD Hyundai Group's shipyard interests, announced on Tuesday that it had won an order for two ships priced at KRW 698.1bn (\$525.4m). The order prices the vessels, which are believed to be options the shipowner was holding, at around \$262.7m each. The pair will be built at HD Hyundai Heavy Industries and is due for delivery by February 2028. HD KSOE did not name the contracting party, but described it as "an African shipper". TradeWinds has contacted Evalend for confirmation. Kriton Lendoudis-led Evalend made a surprise break into the LNG sector in late July, ordering two ships at HHI priced at just under \$260m each and scheduled for handover in 2027. Evalend, which has been a particularly active player across the newbuilding market in the past two years, also has crude oil and LPG carrier tonnage on order at the South Korean shipbuilding giant. HD KSOE has won \$20.9bn worth of orders to date in 2023. The group has won contracts to build 146 vessels, including one floating production unit, and has achieved 133% of its \$15.7bn target for the year. source : www.tradewindsnews.com

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