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Wave of North American LNG supply coming online in 2024-2025

(S&P Global; Dec. 28) – U.S. LNG export capacity will grow in 2024 after 2023 was marked by a lack of major additions, presenting a new source of demand growth for the domestic gas market and additional supply for global LNG buyers facing prices that remain high compared with historical norms.

Most of the North American capacity additions are not expected to materialize until the final months of 2024 before an even bigger wave of new supply arrives in 2025. Around 8.4 million tonnes per year of new capacity could be added by the end of 2024 on top of the 84 million in operation currently, according to S&P Global Commodity Insights. By early 2025, additions could rise to 18 million tonnes beyond current levels, with the full expansion expected to reach more than 53 million tonnes over the course of that year.

"The ramp-up of North American supply at the end of 2024 and through 2025 will allow for Europe to further reduce its reliance on Russian gas, while at the same time supporting demand growth across Asia," Ross Wyeno, director for LNG analytics at S&P Global, said. U.S. projects expected to start commissioning work in 2024 include Venture Global's Plaquemines LNG terminal in Louisiana, Cheniere's midscale expansion of its Corpus Christi plant in Texas, and the QatarEnergy and ExxonMobil-sponsored Golden Pass LNG export facility in Texas.

In addition, the first phase of the Shell-led LNG Canada project in Kitimat, British Columbia, at 14 million tonnes annual capacity, could start up in 2024, according to comments from project participants in recent months.

Political pressure builds against approval of U.S. LNG project

(Houston Chronicle; Dec. 28) - Environmental groups are ramping up pressure on the Biden administration to halt development of LNG export terminals along the Gulf Coast as the Department of Energy weighs an application for the largest U.S. project to date in the Louisiana. In an opinion column last week, Bill McKibben, head of the activist group Third Act, urged the administration to pause Venture Global's CP2 LNG project, arguing that at a capacity of 4 billion cubic feet of gas per day, its lifetime greenhouse gas emissions would dwarf those of Conoco Phillips' controversial Willow project in Alaska.

"It will send a truly powerful signal around the world: The biggest exporter of oil and gas is actually going to change its ways," he wrote. "The U.S. Department of Energy must

decide whether to stop rubber-stamping the single biggest fossil fuel expansion on Earth, the build-out of natural gas exports from the Gulf of Mexico." The department has already approved CP2 for exports to countries with free-trade agreements with the U.S., but not those without. A decision on whether that is in the "public interest" is pending.

With a presidential election only 11 months away, the administration has so far held off its support for CP2, with National Climate Adviser Ali Zaidi telling the New York Times they must balance climate goals against economic impacts. "We need to, as part of our overall climate approach, transition globally away from fossil fuels," he said. The amount of greenhouse gas emissions related to LNG is controversial. Carbon dioxide emissions from gas-fired power plants are less than those of coal, though methane leaks during gas drilling and transport make LNG less climate friendly than it would be otherwise.

<u>Higher U.S. production big factor in lower oil prices</u>

(Wall Street Journal; Dec. 29) - Travelers, truckers and shippers worldwide can thank the U.S. for helping keep a lid on oil and gasoline prices this year. A year ago, Wall Street analysts were predicting the international benchmark for oil prices would surge from around \$85 a barrel to well over \$100 in 2023. Instead, Brent crude will enter 2024 cheaper than where it started this year, though experts warn that any spread in global instability could drive it higher.

Behind the surprise are actions by the Biden administration and U.S. oil companies that resulted in an unexpected surge of petroleum supplies. After Russia invaded Ukraine, many analysts expected Moscow's oil exports would be significantly curtailed by Western sanctions. Instead, a novel price-cap scheme designed by the U.S. and adopted by its allies curbed Russia's oil revenue while allowing its supplies to flow nearly unimpeded, often at a discount to buyers in China and India.

Relaxed U.S. enforcement of sanctions let Iran increase exports to countries including China and Venezuela, further weighing on prices. Meanwhile, the U.S. pumped more petroleum in 2023 than ever before due largely to faster drilling speeds, longer wells and other efficiencies. The country is expected to average a record 12.9 million barrels a day of oil production for 2023, a million more than in 2022 and nearly 600,000 more than previously forecast, according to federal record-keepers. The stepped-up output blunted repeated efforts by OPEC and its allies to lift prices by cutting production.

U.S. shale oil and gas helps to supply world, hold down prices

(Wall Street Journal; Jan. 1) - A surprise surge in U.S. oil and gas production and exports is helping to keep the world stocked, blunting the impact of widening conflict in the Middle East that has crimped key shipping lanes. When Iranian-backed Houthi

militants began launching missiles and drones at ships crossing the Red Sea near Yemen in October, many feared disruption to the vital shipping lane would drive up energy prices. But oil and gas prices this past month have sunk about 5% and 23%, respectively. That is largely because of record production of U.S. fossil fuels.

Shippers in November moved more oil out of the U.S. than what was produced in Iraq, OPEC's second-largest member, at a record 4.5 million barrels a day. Likewise, U.S. exports of liquefied natural gas are set to hit a record in December, according to market intelligence firm Kpler. Europe has snapped up more U.S. LNG in recent months, becoming less reliant on shipments through the Suez Canal, a key Red Sea artery.

Many forecasters expected U.S. oil production to grow only modestly in 2023 as shale-rock frackers responded to investor pleas for conservative spending, allowing the companies to pay off debt and fund dividends and share buybacks. It isn't clear how long shale companies can keep increasing production at the fast clip. Much of the production from the wells they drilled in 2022 and 2023 came online recently, but the U.S. rig count dropped in 2023 and drillers have proposed modest budgets for 2024.

Spending by U.S. producers is expected to increase about 2% to a collective \$115 billion in 2024. That is compared with a 19% spending boost in 2023, and still well below the annual average of \$150 billion from 2010 to 2015, the industry's heyday, according to a survey conducted by James West, an analyst at investment bank Evercore ISI. "They don't spend like drunken sailors anymore," West said.

Oil prices fell about \$8 in 2023; largest annual drop since 2020

(Bloomberg; Dec. 29) – Global oil prices in 2023 headed for the biggest annual drop since 2020 as war and OPEC+ production cuts failed to propel prices higher in a year dominated by supply growth outside of the group of aligned oil producers. Brent crude edged higher toward \$78 a barrel on Dec. 29 but is set to close 2023 about \$8 below where it started the year.

U.S. crude oil ended lower on Dec. 28 after official U.S. data showed that stockpiles at the key Cushing, Oklahoma, storage hub grew for the 11th week to hit the highest since August. U.S. crude production has been running at a record clip. U.S. West Texas Intermediate crude futures ended the year at \$72.19.

Crude is capping a tumultuous year, with prices aided by the outbreak of the Israel-Hamas war, as well as speculation that the Federal Reserve is done with hiking interest rates as inflation wanes. Still, despite repeated cuts to supplies from OPEC and its allies, rising production from nations outside the cartel, coupled with concerns about slowing demand growth, have combined to drive crude futures lower. OPEC is facing weakening demand for its crude in the first half of 2024 just as its global market share declines to the lowest since the COVID-19 pandemic.

Reuters poll shows Brent holding around \$80 a barrel in 2024

(Reuters; Dec. 29) - International oil prices are likely to stay near \$80 a barrel in 2024, a Reuters poll showed on Dec. 29, as analysts predicted weak global growth would cap demand, while geopolitical tensions could provide support to prevent prices from falling lower. The analysts questioned whether the Organization of the Petroleum Exporting Countries and allies (OPEC+) would be able to sustain supply cuts to support prices.

The global benchmark Brent crude averaged around \$82.17 a barrel in 2023. A survey of 34 economists and analysts forecast Brent crude would average \$82.56 in 2024, down from November's \$84.43 consensus. U.S. crude was seen averaging \$78.84 next year, down from \$80.50 last month. "From the demand side, we do not expect much impetus in the months to come," said Thomas Wybierek, analyst at NORD Landbk.

"There is still a question mark behind the supply side. There are a lot of doubts (on whether) the OPEC+ alliance will be capable to reduce supply as decided recently," Wybierek said. OPEC+ is cutting some 6 million barrels per day from its output and its market share has fallen to 27%. "While it is difficult to maintain cooperation with all the members of OPEC+ — at this time and price level — all members are supportive of higher oil prices," said John Paisie, president of Stratas Advisors.

Bakken oil production will pass 5 billion barrels in 2024

(KFGO, Prairie Public Radio; North Dakota; Dec. 29) – It's another milestone for oil production in North Dakota. "In mid-2024, we're going to reach 5 billion barrels" of total Bakken oil production, said North Dakota Petroleum Council President Ron Ness. "It took us about 60 years to reach a billion barrels of oil." That first billion came from conventional wells. The heavy growth in recent years has been from shale oil drilling.

Ness said there's more oil in the Bakken that can be recovered. "Somewhere down the line, technology and opportunity are going to align," Ness said. "We have the opportunity to extend the life of the Bakken another 30 to 50 years, and produce another 5 billion to 8 billion more barrels, just because of technology." Ness talked about the use of captured carbon dioxide for enhanced oil recovery.

John Harju, the vice president for strategic partnerships at the Energy and Environmental Research Center, said enhanced oil recovery will be the big user of captured CO2. "I think if we don't get adequate volumes of CO2 to our Bakken system, we're going to leave 90-plus percent of the oil in the ground," Harju said. "We ought to be able to double the recovery that we would otherwise get without CO2."

U.S. natural gas prices continue dropping amid record supply

(Reuters; Dec. 29) - U.S. natural gas futures slipped on Dec. 29 and recorded their biggest percentage fall for the year since 2006 under pressure from record production, ample inventories in storage and relatively mild weather conditions. Front-month gas futures for February delivery on the New York Mercantile Exchange settled 4.3 cents, or 1.7% lower, at \$2.51 per million Btu. The contract has lost more than 10% so far this month in a second consecutive monthly loss.

Prices have fallen sharply from around \$10 per million Btu reached last year on a Russia-Ukraine war-fueled rally, but as those concerns eased futures started 2023 at around the \$4 level before declining further as drillers ramped up production. Prices are "reflecting very bearish market fundamentals, which are record production, weak demand thanks to the warmer-than-normal weather, and weak foreign demand as well," said Zhen Zhu, managing consultant at C.H. Guernsey and Company in Oklahoma City.

"We are projecting a (U.S.) storage level at the top of the five-year band at the end of the coming injection season," Zhen added, saying that if this turns out to be true, prices will have no hope of going anywhere in the new year unless there is abnormal weather. Data from LSEG showed that average gas output in the Lower 48 states rose to 103.5 billion cubic feet per day in 2023 from a record 98.4 bcf per day in 2022. The continental U.S. entered the winter heating season with the most gas in storage since 2020.

Permian production continues growing, now at 25% of all U.S. gas

(Business & Industry Connection; Jan. 1) - More natural gas is produced in Texas than in any other state, according to the U.S. Energy Information Administration. Most of it comes from the Haynesville and Eagle Ford formations and multiple shale formations in the Permian Basin. The Permian, which spans western Texas and eastern New Mexico, accounts for a quarter of all marketed gas production in the Lower 48 states. Permian production is up nearly 11% in 2023 from year-ago levels, with a 6% bump in 2024.

Most gas production in the Permian region is associated with oil wells. Advances in hydraulic fracturing and horizontal drilling techniques have improved U.S. oil and gas well productivity. The length of a well's horizontal section, or lateral, which is a key factor in well-level productivity, has increased substantially for wells operating in the Permian, from an average of less than 4,000 feet in 2010 to over 10,000 feet in 2022.

Permian wells that started operations to date in 2023 produced on average 1.85 billion cubic feet of gas during their first full month of operation. Average first-month production for Permian wells has risen in recent years, growing from 1.83 billion cubic feet in 2022 compared with 1.3 billion cubic feet in 2017. To date in 2023, Permian gas output has

increased even as the rig count decreased. According to Baker Hughes, 322 active rigs were operating in the Permian as of September, 31 less than at the start of the year.

More oil production from Permian means more associated gas

(Argus News Media; Dec. 29) - Natural gas output from the Permian Basin is expected to rise in 2024, as newly consolidated producers boost drilling and funnel more gas into an oversupplied U.S. market. Oil prices in the past year have been high enough to support drilling in the Permian, even as sharply lower natural gas prices led to a strong pull-back in the development of gas fields like the Haynesville shale in east Texas and northern Louisiana.

The ongoing development of the Permian, straddling west Texas and southeastern New Mexico, plus additional pipeline capacity, will push production of more associated gas from oil wells to key markets along the U.S. Gulf Coast. The resulting increases in gas supply in 2023 helped push prompt-month prices earlier this month to six-month lows below \$2.50 per million Btu. More supply early next year could help lessen withdrawals from U.S. storage, leaving inventories at high levels and potentially glutting the market.

Permian gas output has been in the spotlight this year as gas prices have slid lower. Gas producers will often rein in drilling when prices collapse, but drilling decisions in the Permian, the second-largest gas field in the U.S., are based on oil prices rather than gas. Gas production growth there is usually a byproduct of oil output and unfettered by a downturn in gas prices. Improved well-level productivity and higher crude prices in 2024 likely will spur more drilling, leading to an increase in associated gas production.

Eni expects exports from Congo LNG project to start early this year

(Offshore Energy; Dec. 28) - Italian oil and gas company Eni has introduced the first gas into the Tango floating liquefaction facility moored in Congolese waters. Eni announced this "key milestone for the Congo LNG project" on Dec. 28, noting that gas introduction was achieved in record time — 12 months after the final investment decision. Following the commissioning phase, Tango is scheduled to produce its first cargo by the first quarter of 2024, placing the Republic of Congo on the list of LNG-producing countries.

The Tango facility has a liquefaction capacity of about 100 million cubic feet of gas per day. It is moored alongside the Excalibur floating storage unit and uses a configuration called "split mooring," implemented for the first time in a floating LNG terminal. Tango and Excalibur sailed away from Dry Docks World shipyard in Dubai to Congo's offshore site on Oct. 21, after refurbishment work by Exmar.

The Congo LNG project, which will see the installation of two floating liquefaction plants, is expected to reach an overall LNG production capacity of 3 million tonnes per year (approximately 400 million cubic feet of gas per day) in 2025. It will exploit the gas resources of the Marine XII project, fulfilling the country's power generation needs while also creating LNG exports. The second FLNG plant is already under construction. The project's entire volume of LNG will be marketed by Eni.

French partner may sell off its equity stake in U.S. LNG developer

(Reuters; Dec. 27) - NextDecade has filed for registration that would allow the French oil and gas major TotalEnergies to sell its 17.5% stake in the U.S. liquefied natural gas company over time. A unit of TotalEnergies currently holds 44.9 million shares of NextDecade, bought for \$219 million in June as part of a broader deal to develop NextDecade's Rio Grande LNG export project in south Texas that has faced repeated delays. The first phase, at \$12 billion, is scheduled to start operations in 2027.

NextDecade, which signed a contract to supply 5.4 million tonnes of LNG per year to TotalEnergies, said in a filing dated Dec. 22 it would not receive any proceeds from any stock sales by TotalEnergies. The prospectus with the U.S. Securities and Exchange Commission registers the shares owned by TotalEnergies and enables them to sell them in the future, said NextDecade spokesperson Susan Richardson.

TotalEnergies did not immediately respond to a request for comment. Its decision is likely a reflection that, having helped get the LNG facility to a final investment decision, an equity position was no longer required, said Rapidan Energy Group Research Director Alex Munton. "The equity investment in Next Decade may have been needed to help Rio Grande being financed, and that now the project the under construction TotalEnergies may have decided that there is little value in holding onto its position, as the overriding interest is in the offtake volumes, which it was able to secure at low cost."

LNG carrier fleet growing in number and in costs

(Riviera News; Dec. 29) - With 709 LNG carriers in the water in 2023, and a further 373 carriers on the orderbook, the fleet will surpass 1,000 vessels sometime in the near future. There was a report of a new LNG carrier order in nearly every week in 2023. In May, more than \$2 billion in newbuild orders were reported in just one week when South Korean shipbuilding giant HHI clinched major LNG contracts to build 12 gas carriers.

Speaking at the LNG Shipping & Terminals Conference 2023 in London in November, Howe Robinson Partners senior broker Debbie Turner said, "Almost 50% of the LNG fleet is on the orderbook — something we have never seen, which is brilliant." Shipyard

demand remains strong, she said, with limited slots available at South Korean yards in 2027 and Qatar starting its second phase of orders for its massive expansion project.

"Prices have gone up phenomenally, we've gone from \$170 million and \$180 million a couple of years ago to around \$260 million to \$262 million for a newbuild (in South Korea) with China only slightly lower, but the demand continues," said Turner. There is still the promise of the next phase of the QatarEnergy LNG tonnage, which is expected to require 40 newbuild slots across the big three South Korean shipyards.

Russia faces challenges in building up LNG trade amid sanctions

(Reuters; Dec. 28) - U.S. sanctions pose a major obstacle to Russia's plans to increase exports of seaborne liquefied natural gas to offset the decline in pipeline gas exports to Europe, analysts said, as expectations mount of delays to a \$20 billion flagship project. The world's fourth-largest LNG producer after the U.S., Qatar and Australia, Russia has an ambitions to increase its share of the global market by tripling its output by 2035.

But whereas Moscow in the face of sanctions has successfully diverted oil exports, once intended for Europe, to China and India, the impact of restrictions on LNG is more severe because of the relatively small number of tankers that can carry the supercooled fuel and Russia's lack of access to technology and finance. Russia's efforts to redirect gas sales to China, the world's second-largest energy consumer after the U.S., have had limited success as protracted talks to more than double current sales to the country via the proposed Power of Siberia 2 pipeline have yet to deliver a solid contract.

At the same time, the Arctic LNG-2 project controlled by Novatek, Russia's largest LNG producer, faces delays. Industry sources said commercial cargoes from the project are expected no earlier than the second quarter of 2024. Already Novatek has issued force majeure notices to customers that it will not be able to deliver cargoes on its original schedule. Jason Feer, of LNG shipping and brokering firm Poten & Partners, said the declaration Russia could not meet contractual obligations was "a wake-up call."

"Force majeure is a sign it will be very difficult to move ahead with any other projects," Feer said. "Russia also likely needs foreign equipment and other support to complete other projects, and (Western) sanctions make that difficult." French engineering group Gaztransport & Technigaz has suspended its contract with Russian shipbuilder Zvezda for 15 ice-breaking LNG carriers. Feer said it would be hard to replace GTT. "There are a few other companies offering LNG containment systems, but GTT is the leading firm."

Russia's pipeline gas exports to China grow

(Reuters; Dec. 28) – Russia's natural gas exports to China via the Power of Siberia 1 pipeline will exceed 800 billion cubic feet this year, Alexei Miller, the head of state-owned energy giant Gazprom, said on Dec. 28. Gas supplies from Russia to China via Power of Siberia are due to reach the planned annual peak of almost 1.35 trillion cubic feet in 2025, Miller said. That would equal about 9% of China's total gas consumption in 2023. Exports via the route started in late 2019.

Russia has also been in talks for years about building the Power of Siberia-2 pipeline to carry almost 1.8 tcf of additional gas each year from the Yamal region in northern Russia to China via Mongolia — almost matching the volumes the now idle Nord Stream 1 pipeline that was damaged by explosions last year which used to carry under the Baltic Sea to Europe.

The plan for a second Siberian pipeline to China has gained urgency as Moscow aims to double its gas exports to energy-hungry China to make up for the collapse of its exports to Europe following the start of the war in Ukraine in 2022. But agreement on key issues including pricing remains elusive.

U.S. gains by refilling reserves at lower price than it sold oil in 2022

(Wall Street Journal; Dec. 31) - Head of state. Commander in chief. Oil-trading whale? President Biden's unprecedented release of oil from America's petroleum reserves in 2022 turned the White House into an unusually active player in the volatile crude market. The flood of emergency supplies helped arrest surging oil prices after Russia invaded Ukraine, pulling billions of dollars into the Energy Department's coffers.

Oil prices have sputtered since and allowed officials who sold high to start replenishing U.S. stockpiles on the cheap. The question that will echo from Washington to Wall Street in 2024 is how the Biden administration might finish off a trade many investors would envy. The Energy Department says it has already snapped up about 13.8 million barrels of crude, with accelerating deals in recent weeks signaling the agency could move more aggressively next year.

At an average price of \$75.63 a barrel, the purchases so far total a nearly \$270 million discount from last year's average sale price of \$95 a barrel. But the administration's opportunity to build on its gains could slip away if prices rise. The Strategic Petroleum Reserve peaked in size in 2010 near 727 million barrels. Biden's release after Russia's invasion of Ukraine was the largest ever. Emergency sales of roughly 180 million barrels helped shrink the reserves to as little as 347 million barrels, a 40-year low.

U.S. sanctions make it harder for India to pay for Russian crude

(Bloomberg; Dec. 31) - India's crude oil imports from its largest supplier, Russia, plunged in December to their lowest since January 2023, as six tankers carrying Sokol grade crude could not deliver due to payment issues amid tightening U.S. sanctions, according to data intelligence company Kpler. After rising to an all-time record of 2.15 million barrels a day in May, imports from Russia fluctuated downward, experiencing a sharp drop between November and December to 1.48 million barrels a day last month.

Indian refiners, which bought an average 140,000 barrels a day of Sokol in 2023, couldn't receive any such cargoes last month. Sakhalin-1, which extracts crude from Russia's Far East, has not been able to open a bank account in the United Arab Emirates to enable buyers to pay in dirham, the UAE currency, as agreed, Viktor Katona, lead crude analyst with Kpler, said in an email on Dec. 31.

Of the six tankers left idle around India's coast, two indicated they may reroute to China, he said. Despite roadblocks, Sokol grade oil trade between Russia and India looks likely to continue, with three additional ship-to-ship transfers of Sokol cargoes and three new cargoes now indicating India as their final destination, Katona said. For all of 2023, India's oil imports from Russia more than doubled to 1.79 million barrels a day, while those from the second biggest supplier, Iraq, contracted 11% to 908,000 barrels a day.