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Conoco enhances Euro deliverability as it makes global LNG push

Global energy supplier ConocoPhillips has expanded its LNG delivery capabilities in Europe. The company signed a commercial agreement for 1.5 mtpa (2 Bcm) of regasification capacity for 15 years at the Gate LNG terminal in the Port of Rotterdam, the Netherlands, starting in 2031.

“Adding capacity at the Gate LNG terminal fits well with our efforts to deliver reliable, lower-carbon energy into Europe from highly competitive LNG supply,” Conoco CFO Bill Bullock said in a Sept. 14 press release. “Expanding our LNG footprint with agreements like this further enhances a balanced, diversified and attractive portfolio as we progress our global LNG strategy.”

Has secured LNG offtake from projects in Qatar, Australia, U.S. and Mexico.

Terminal operator Gate Terminal BV is a JV of Vopak and Gasunie. On Aug. 23, Gate made a positive FID for an expansion that will add 4 Bcm, bringing the terminal's regas capacity to 20 Bcm per year, and will add a fourth 180,000-cubic-meter storage tank to boost total storage to 720,000 cubic meters. In May, BP and PetroChina each signed on for 2 Bcm per year of regas capacity for 20 years, effectively underwriting the expansion. Commercial operations for the project are targeted in 3Q26. [Read more...](#)

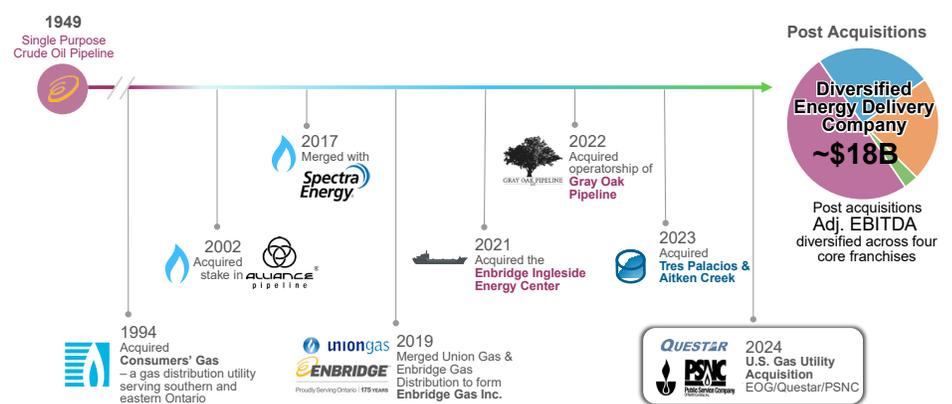
Enbridge buys three U.S. gas utilities from Dominion for \$14B

Enbridge Inc. entered into three separate definitive agreements to acquire a trio of gas utilities—East Ohio Gas Co., Questar Gas Co. and Public Service Co. of North Carolina—from Dominion Energy Inc. for a total of \$14 billion, consisting of \$9.4 billion cash and \$4.6 billion of assumed debt. Through the deals, Enbridge will add gas utility operations in Ohio, North Carolina, Utah, Idaho and Wyoming, representing a significant presence in the U.S. utility sector. Upon closing in 2024, Enbridge's gas utility business will be the largest by volume in North America, delivering more than 9 Bcf/d to 7 million customers with a combined rate base of over C\$27 billion (\$20 billion).

Gas utilities to make up 22% of adjusted EBITDA after closing, up from 12%.

The three utilities serve about 3 million homes and businesses in Ohio, North Carolina, Utah, Idaho and Wyoming, Dominion said. Collectively, they have 78,000 miles of distribution, transmission, gathering and storage pipelines, more than 62 Bcf of storage capacity, and 400 Bcfe of cost-of-service regulated gas reserves as of YE22. [Read more...](#)

Enbridge's Business Integration Track Record



Proven history of effective business integration, including two gas distribution utilities

Source | Enbridge 09/05/23 presentation via Enverus docFinder

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LNG

Freeport restart drives U.S. to top of LNG export leaderboard

The U.S. exported more LNG than any other country during H1, according to data from international market data nonprofit Cedigaz, as reported by the EIA. The agency also reported U.S. Department of Energy data that H1 exports averaged 11.6 Bcf/d, a YOY increase of 4% or 500 MMcf/d. The increase was driven by Freeport LNG's return to service in March after a June 2022 explosion and fire led to the facility being shut in. Australia was the second-largest exporter at 10.6 Bcf/d, and Qatar came in third at 10.4 Bcf/d.

Two-thirds of U.S. LNG exports were delivered to Europe, with the Netherlands, France, Spain, Germany and the U.K. importing a combined 6 Bcf/d. Notably, for the first time in history, EU and U.K. gas imports by LNG—15.9 Bcf/d in H1—exceeded imports by pipeline, according to Refinitiv Eikon data, as the continent works to reduce imports from Russia. Finland, Germany, Italy, France, Greece and Turkey are all expanding their regasification capacity this year, allowing for even greater LNG imports in the future.

The EIA expects global LNG import capacity to grow by 16%, or 23 Bcf/d, by YE24 compared to 2022. Asia accounts for 52%, or 11.9 Bcf/d, of the anticipated regasification additions, followed by Europe at 38%, or 8.6 Bcf/d. In the first seven months of 2023, Germany, the Philippines and Vietnam imported LNG for the first time, and Antigua, Australia, Cyprus and Nicaragua are expected to import their first LNG by YE24. By the end of next year, 55 countries are expected to have combined regas capacity of 163 Bcf/d.

Germany, the Philippines and Vietnam imported LNG for the first time this year.

Tellurian expands LNG offtake search beyond equity players

Tellurian Inc. is shifting its strategy for the Driftwood LNG project in Louisiana as it works toward an FID. Last fall, the company said it would offer offtake to equity investors. Now, offtake volumes are also available to customers without equity. "Our teams are now re-offering, in addition to what we have offered in the past, a standard offtake agreement at a price that supports the financing," chairman Charif Souki said in a video address.

The path to an FID for Phase 1 of the 27 mtpa project has been rocky. At the beginning of 2022, Tellurian had secured long-term offtake agreements for 9 mtpa with three buyers. In September 2022, Shell asked to be let out of its 3 mtpa contract and Tellurian terminated its 3 mtpa sale and purchase agreement with Vitol, saying the move opened up volumes to attract equity investors. The third agreement, a 3 mtpa contract with Gunvor, was recently discharged.

While Tellurian has not made an FID, it has continued to progress construction of Driftwood. A limited notice to proceed issued to Bechtel in March 2022 was extended into 2023, and operations are still targeted to begin in 2027.

BP buys out Woodfibre LNG offtake; construction imminent

The Woodfibre LNG being developed by Pacific Energy Corp. Ltd. and Enbridge Inc. has committed 100% of its 2.1 mtpa LNG capacity to an indirect subsidiary of BP. Volumes from the project in British Columbia were contracted under three separate agreements, with the latest announced Sept. 5. The third agreement was for 0.45 mtpa sold on a free-on-board basis for 15 years.

In total, the supermajor has committed to firm offtake of 1.95 mtpa and the remaining 0.15 mtpa on a flexible offtake basis. The volumes will aid BP in its goal to build a 30 mtpa LNG portfolio by 2030.

Construction on Woodfibre will commence in September, and startup is expected in 2027. The project is located 7 km southwest of Squamish on the site of an old pulp mill. Pacific owns a 70% stake in the project, while Enbridge owns 30%.

Freeport LNG idles some liquefaction, cancels 4 cargos

Over the last week or so, fluctuations have been observed in the amount of feedgas being piped to Freeport LNG's export facility on Quintana Island, Texas, according to LSEG data cited by Reuters. From Sept. 10 to 13, an average of only 300 MMcf/d was taken in by the facility, compared to the normal 2 Bcf/d. By Sept. 14, volumes had increased to 900 MMcf/d, and on Sept. 15 intake was expected to reach 1.9 Bcf/d.

Up to 2 of Freeport's 3 trains were idle at some point during Sept. 10-13.

As a result of the reduced feedstock, four LNG cargos have been canceled, according to industry sources. A "major portfolio player" and Japanese firm were impacted. Freeport's offtake customers include supermajors BP and TotalEnergies, Japanese firms Osaka Gas and Jera, and South Korea's SK Gas Trading.

Freeport LNG has three liquefaction trains with 15 mtpa in capacity. As much as 2.1 Bcf/d of gas can be processed by the trains, which are responsible for 20% of U.S. LNG exports. Analysts estimate that the recent reduction in intake suggests up to two of the trains were idle. The increase on Sept. 14 suggests one train is back online. Freeport does not comment on commercial activity.

In its Sept. 13 natural gas weekly update, the EIA noted that gas deliveries to U.S. LNG export facilities fell nearly 7%, or 0.9 Bcf/d, week over week. Nominations on the Gulf South and Texas Eastern pipelines that deliver to Freeport LNG were down over 86%, or 1.3 Bcf/d, and over 63%, or 100 MMcf/d, respectively, from Sept. 7 to 13. Additionally, 18 LNG vessels—six from Sabine Pass, four each from Cameron and Corpus Christi, three from Calcasieu Pass and one from Freeport—departed U.S. facilities during the week, falling below 20 per week for the first time since Jan. 4.



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Looney out as BP chief after getting loose with colleagues

LNG

KKR closes purchase of 42% stake in Port Arthur LNG Phase 1

Sempra Infrastructure Partners completed the sale of a non-controlling 42% indirect interest in its Port Arthur LNG Phase 1 project to KKR for an undisclosed amount. The sale agreement was announced in March when the LNG and renewables affiliate of midstream giant Sempra issued its FID for the \$13 billion phase of the project in Jefferson County, Texas.

The KKR sale results in Sempra Infrastructure retaining a controlling 28% indirect interest in Phase 1 at the project level. ConocoPhillips owns the remaining 30%. KKR already owns a 20% equity stake in Sempra Infrastructure, while Sempra owns 70% and Abu Dhabi Investment Authority 10%.

Sempra Infrastructure contracted Bechtel Energy to build the project, which will include two trains with 13 mtpa of combined nameplate capacity and two 160,000-cubic-meter LNG storage tanks. The first train is expected to reach commercial operations in 2027, and the second will come online in 2028. More than 2.8 million hours of work have been completed since construction began this spring, with no lost-time incidents, Sempra Infrastructure said.

Phase 1's 10.5 mtpa in contractable capacity is fully committed under long-term offtake agreements, including 5 mtpa secured by ConocoPhillips. Other counterparties are RWE (2.25 mtpa), PKN Orlen (1 mtpa), Ineos (1.4 mtpa) and Engie (0.875 mtpa). Sempra Infrastructure is actively marketing Port Arthur Phase 2, which is expected to have similar offtake capacity to Phase 1.

"The closing of this transaction continues the positive momentum of our world-class Port Arthur LNG facility and highlights Sempra Infrastructure's ability to access capital to support the growth of its infrastructure business," Sempra Infrastructure CEO Justin Bird said. "We remain committed to developing energy infrastructure projects with strong partners to continue growing our portfolio while advancing global decarbonization and energy security."

Phase 1's 10.5 mtpa is fully committed under long-term offtake agreements.

Commonwealth moves toward 1 mtpa tolling deal with EQT

Gulf Coast LNG developer Commonwealth LNG signed a non-binding heads of agreement with Appalachian gas producer EQT Corp. EQT aims to provide feedgas to Commonwealth's namesake proposed liquefaction facility in Cameron, Louisiana, and offtake 1 mtpa from the project under a 15-year tolling agreement.

"This agreement will connect EQT's vast natural gas assets to Commonwealth's LNG facility, thus creating a robust value chain from wellhead to water," Commonwealth founder and executive chairman Paul Varello said. The EQT announcement comes less than two weeks after Commonwealth signed an HOA to supply European integrated energy firm MET Group with 1 mtpa for 20 years.

In late August, Commonwealth said it had secured development capital for the project from private funds managed by Kimmeridge Energy Management. Kimmeridge also agreed in principle to offtake 2 mtpa for 20 years, adding to a 20-year and up-to-2.5 mtpa HOA signed with Australia's Woodside Energy. Including the latest two HOAs, Commonwealth is negotiating for up to 6.5 mtpa in offtake.

Commonwealth aims to make an FID for the six-train, 9.3 mtpa export terminal in 1Q24 and ship the first cargo in 2027. The company says its modular design will allow the project to be built in just three years. FEED work was completed in March, and Commonwealth is finalizing an EPC contract with Technip.

For its part, EQT has been seeking international price exposure for some of its volumes. In July, the company signed a nearly identical HOA with Energy Transfer to supply the proposed Lake Charles LNG facility with 135 MMcf/d, or the equivalent of 1 mtpa, under a 15-year tolling agreement that would commence in 2H27. The strategy gives EQT access to higher global prices and a vast customer base beyond the U.S., while limiting downside price exposure. EQT ships 25% of its output, or about 1.2 Bcf/d, to the Gulf Coast. Gas-producing peer Chesapeake Energy is pursuing a similar strategy.

Long-Term Sale & Purchase Agreements for Gulf Coast LNG YTD

Date	Seller	Buyer	Amount (mtpa)	Duration (years)	Facility	Capacity (mtpa)	Total SPAs (mtpa)
08/22/23	Cheniere	BASF	0.80	15	Portfolio ¹		
07/11/23	Delfin LNG	Centrica	1.00	15	Delfin LNG	2.1	13.3
06/26/23	Cheniere	ENN	1.75	15	Portfolio ¹		
06/22/23	Venture Global	SEFE	2.25	20	CP2	9.25 ²	20
06/21/23	Cheniere	Equinor	1.75	15	Portfolio ¹		
06/14/23	NextDecade	TotalEnergies	5.40	20	Rio Grande	16.15	27
05/16/23	Cheniere	Korea Southern Power	0.40	19	Portfolio ¹		
04/28/23	Venture Global	Jera	1.00	20	CP2		20
04/24/23	Delfin LNG	Hartree Partners	0.60	20	Delfin LNG		13.3
02/28/23	Venture Global	Excelerate Energy	0.70	20	Plaquemines	20 ³	20
02/23/23	Venture Global	China Gas	1.00	20	CP2		20
02/23/23	Venture Global	China Gas	1.00	20	Plaquemines		20
01/25/23	Sempra	PKN Orlen	1.00	20	Port Arthur	10.525	27
01/19/23	NextDecade	Itochu	1.00	15	Rio Grande		27

Notes | 1. Cheniere does not assign volumes to specific projects, but SPA is contingent on SPL expansion.

2. October 2022 SPA does not clearly assign volumes to this facility, so range is 9.0-9.5 mtpa.

3. October 2022 SPA does not clearly assign volumes to this facility, so range is 19.75-20.25 mtpa.

Source | Enverus Intelligence

LNG

Conoco enhances Euro deliverability, makes LNG push ◀ From PG.1

On Sept. 15, Vinci Construction Grands Projets-Entrepose Contracting, Sener and Sacyr Proyecta were awarded contracts to design and build the expansion, which is expected to cost €350 million.

Conoco already has secured German regas capacity at the Brunbittel LNG terminal, where it will supply 2 mtpa starting in 2026 via its participation in QatarEnergy's North field expansion projects. Gasunie is also one of the Brunbittel owners, along with RWE, and the project's floating storage and regasification unit accepted its first cargo in February.

"The bottom line is, the long-term outlook for global gas is very robust, not just due to Europe's immediate goal to reduce dependence on Russian supplies, but in meeting the energy demand of a growing global population, displacing coal and working alongside intermittent renewables. So LNG is a key element of our long-term strategy," Conoco sustainability and technology EVP Dominic Macklon said at an April investors day.

Conoco's LNG portfolio also includes upcoming supplies from Sempra Infrastructure Partners' Port Arthur Phase 1 on the Gulf Coast, where it holds a 30% equity stake and signed a 20-year sales and purchase agreement for 5 mtpa in 2022; and Mexico Pacific's Saguaro LNG Phase 1 on the west coast of Mexico, where it has secured 2.2 mtpa for 20 years in an agreement signed Aug. 3. The two-train, 13 mtpa Port Arthur and the three-train, 15 mtpa Saguaro LNG are both expected to come online in 2027.

Conoco also operates the 9 mtpa Australia Pacific LNG export facility. A \$1.6 billion transaction in 2022 brought its ownership to 47.5% after partner Origin divested 10%. Origin is being acquired by Brookfield Renewable Partners and EIG Partners, and when that deal closes Conoco will take over operatorship of the associated upstream assets and gain another 2.49% stake. Sinopec holds 25% WI in the project.

Conoco currently has 6 mtpa of supplies from existing Qatar projects and APLNG. When Port Arthur and the North field expansions come online, the supplies will more than double by 2028, even before the recently secured Saguaro LNG offtake. The company will invest \$4 billion between the Qatar projects and Port Arthur.

Bulk transport of LNG on U.S. railways put on hold

Large LNG shipments will have to wait a little longer, or forever, to ride the rails. The U.S. Pipeline and Hazardous Materials Safety Administration put on hold a controversial rule that would have allowed LNG to be transported in bulk with DOT-113-C120W9 tank cars. These tank cars are double-walled, double-hulled and double-insulated to safely transport cryogenic liquids by rail; the PHMSA previously conducted two successful impact tests that showed the tanks to be safe.

Shippers with prior permits or shippers using ISO tanks may still ship LNG.

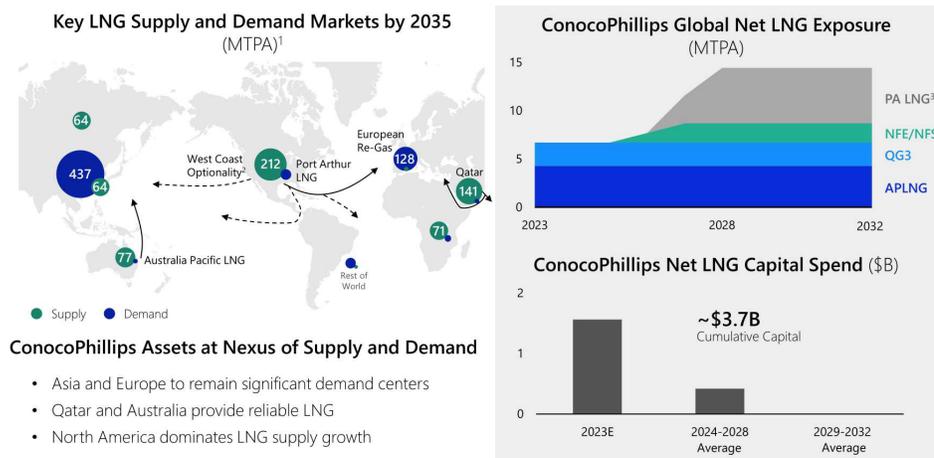
The now-suspended rule was issued in July 2020 under the Trump administration and was immediately challenged by 14 states and numerous environmental groups. Now, the PHMSA says it will study the safety of transporting LNG and issue a new rule or let the original rule permanently expire on June 30, 2025. Shippers with prior permits or shippers using ISO tanks may still ship LNG.

"We need to do more safety investigative work," PHMSA Deputy Administrator Tristan Brown said. "Until we do that work, we don't want someone to make investments and deploy something where we haven't fully done the process we normally do need to do."

Thus far, no companies have ordered the DOT-113-C120W9 tank cars. Rail freight company CSX told the PHMSA that proposed LNG projects along its lines have been paused or canceled because of the regulatory uncertainty. The vast majority of natural gas in the U.S. is moved through pipelines.

Currently has 6 mtpa of supply, which will more than double by 2028.

Conoco's Global LNG Portfolio



1. Wood Mackenzie Q4 2022, North America as marginal supplier.
 2. Offtake and/or equity at Energia Costa Azul (ECA) Phase 2 and offtake from ECA Phase 1.
 3. 5 MTPA offtake and access to excess cargoes when Phase 1 liquefaction exceeds the 10.5 MTPA contracted under long term SPAs.

Source | ConocoPhillips 04/12/23 presentation via Enverus docFinder



Thank you! We hope you've enjoyed your sample of our Midstream Pulse report.

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Introduction

Mathematics is the language of science and technology.

Mathematics is a branch of science that deals with the study of numbers, shapes, and patterns. It is a universal language that helps us understand the world around us. Mathematics is used in many fields, including physics, engineering, and economics. It is a tool that helps us solve problems and make predictions. Mathematics is a subject that is both challenging and rewarding. It is a subject that requires logical thinking and problem-solving skills. Mathematics is a subject that is essential for our modern world.

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Mathematics in the Real World

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Section 1: Algebra

Problem 1: Solving a Linear Equation

Solve for x in the equation $3x + 5 = 20$.

Problem 2: Simplifying an Expression

Simplify the expression $2(x + 3) - 4(x - 1)$.

Answer: $2x + 6 - 4x + 4 = -2x + 10$

Problem 3: Solving a System of Equations

Solve the system of equations:

$$\begin{cases} x + y = 5 \\ 2x - y = 1 \end{cases}$$

Answer: $x = 2, y = 3$

Problem 4: Finding the Area of a Rectangle

A rectangle has a length of 8 units and a width of 5 units. Find its area.

Answer: $Area = length \times width = 8 \times 5 = 40$ square units.

Problem 5: Solving a Quadratic Equation

Solve for x in the equation $x^2 - 5x + 6 = 0$.

Answer: $x = 2$ or $x = 3$

Problem 6: Finding the Slope of a Line

Find the slope of the line passing through the points $(1, 2)$ and $(3, 4)$.

Answer: $Slope = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 2}{3 - 1} = 1$

Problem 7: Solving a Word Problem

A number is 5 more than twice another number. If the sum of the two numbers is 17, find the numbers.

Answer: Let the first number be x and the second be y . Then $x = 2y + 5$ and $x + y = 17$. Solving gives $y = 2$ and $x = 9$.

Problem 8: Finding the Perimeter of a Triangle

A triangle has side lengths of 3, 4, and 5 units. Find its perimeter.

Answer: $Perimeter = 3 + 4 + 5 = 12$ units.

Problem 9: Solving a System of Inequalities

Solve the system of inequalities:

$$\begin{cases} x > 2 \\ x < 7 \end{cases}$$

Answer: $2 < x < 7$

Introduction to the Study of Mathematics

Mathematics is a branch of science that deals with the study of numbers, shapes, and patterns. It is a universal language that helps us understand the world around us. From the simplest counting to the most complex theories, mathematics provides a framework for logical thinking and problem-solving.

The study of mathematics is not just about memorizing formulas and solving problems. It is about understanding the underlying principles and the relationships between different concepts. Mathematics is a discipline that requires patience, persistence, and a willingness to explore new ideas.

Mathematics is a beautiful and powerful tool that has shaped human civilization. It has led to the development of technology, science, and art. Mathematics is a subject that is both challenging and rewarding. It is a subject that is always there, waiting for us to discover its secrets.

As you begin your journey into the world of mathematics, remember that it is a subject that is always with you. It is a subject that is both simple and complex. It is a subject that is both ancient and modern. It is a subject that is both a science and an art.

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Mathematics in the Real World

Mathematics is not just a subject in a classroom. It is a part of our everyday lives. From the way we measure things to the way we manage our money, mathematics is everywhere. It is a subject that is both practical and theoretical.

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