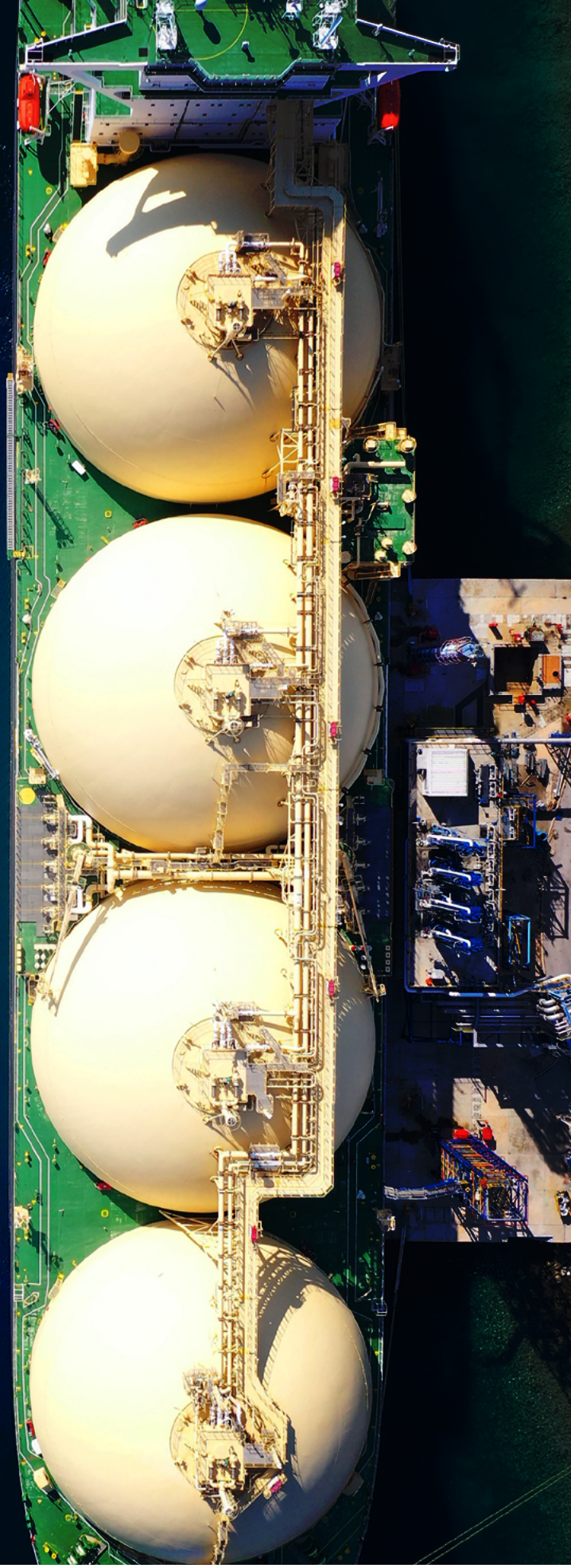
Liquefied Natural Cash

How Methane Exports Reverse Climate Progress, Harm Consumers, and Endanger Communities



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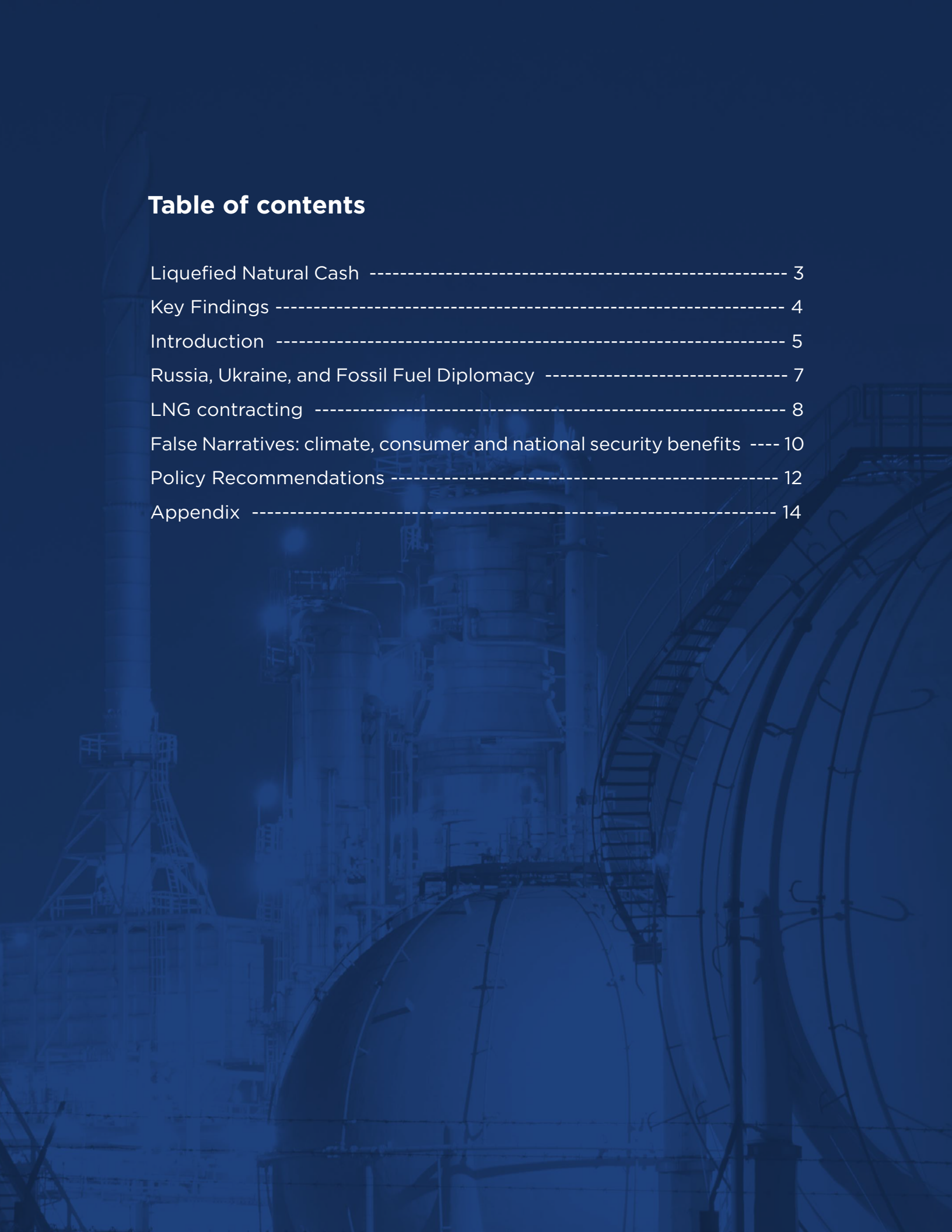

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How Methane Exports Reverse Climate Progress, Harm Consumers, and Endanger Communities

US methane gas exports, which have skyrocketed in recent years, are poised to boom in the wake of the war in Ukraine, threatening to push up prices for consumers and unleash massive climate-warming emissions.

Fossil fuel executives are exploiting the Russian invasion of Ukraine to justify contracts that commit the United States to keep exporting LNG into the 2040s. These long-term supply contracts, which have proliferated in the year since the Russian invasion, make it possible to build new export terminals by guaranteeing annual delivery of millions of tons of gas for 20 years or more to overseas consumers.

The contracts are a key precursor to infrastructure expansion — a permanent "solution" for the short-term problem of European gas market volatility. That concern is already easing, yet most of the new contracts do not deliver gas until 2026 or later. **The expansion of domestic LNG-export infrastructure, supported by the Biden administration, provides extractive industries with a lucrative lifeline to maintain their dominance. Yet it undermines efforts to protect communities, reduce carbon emissions and combat the spiraling climate crisis.**

After Russia invaded Ukraine, global benchmark prices for methane gas soared. Exporters and drillers generated windfall profits by redirecting shipments from Asia to Europe. In time, with stockpiling and energy conservation, the European market stabilized. Despite that, **the industry seized on the price volatility to lock in 45 long-term contracts and contract expansions to send US-produced methane gas overseas since the start of the war, more than double the previous two years combined.**

These deals threaten to greenlight a new generation of polluting LNG export terminals, decimating frontline communities already hard-hit by climate impacts, locking in higher emissions, and forcing higher energy costs on consumers. With the bulk of the fuel going to Asia and commodity traders, meanwhile, the deals have little impact on Europe's short-term energy needs.

LNG is nearly as dirty as coal after accounting for leakage and other emissions along its supply chain, despite the greenwashing public-relations efforts of powerful energy interests. Before it's too late, **the Biden administration and Congress must pump the brakes on this latest fossil fuel debacle.**

Key Findings

Long-term LNG contracting has exploded in the year since Russia invaded Ukraine: The industry finalized 45 long-term deals to send U.S.-produced LNG overseas in the past year, up from 14 in 2021 and three in 2020.

- LNG volumes set to be delivered under these past-year contracts total 58.1 million metric tons per annum (mtpa) every single year — more than double the total volume contracted in the previous two years combined. It's enough gas to cover more than half the gas burned for cooking and heating in U.S. homes in 2021.
- These past-year LNG contracts represent 351 million metric tons of CO2 emissions per year — equivalent to the yearly emissions of 94 coal plants or one-third of all U.S. households.

Long-term contracting is the lynchpin of LNG infrastructure expansion. Nine proposed (but as-yet-unbuilt) facilities secured contracts in 2022. If the deals succeed in justifying final investment, the terminals will add 88.9 mtpa of export capacity. Together with existing and under-construction projects, the total could reach 222 mtpa — equivalent to more than 90 percent of all the methane gas consumed by the U.S. power sector in 2021.

Claims by the industry and officials that the exports support European national security against Russia are misleading. More than three-fourths of LNG set to be delivered under these contracts is destined for the Asia-Pacific region or Big Oil companies and commodity trading firms making speculative bets.

- More than one-fifth of contracted volume is with Chinese companies. House Republicans have recently attacked US oil sales to China, yet these LNG deals have so far escaped notice.

Introduction

In just a few years, the U.S. has become the world's largest methane gas exporter by constructing seven new liquefied natural gas (LNG) export terminals, five of them on the Gulf Coast of Louisiana and Texas.

The market for compressing and exporting methane gas from the U.S. is a relatively recent phenomenon: The first major export of liquefied methane gas from the U.S. — 3 billion cubic feet sent to Brazil on a giant tanker — departed Cheniere Energy's Sabine Pass export terminal in Louisiana in early 2016. Since then, the industry has boomed. More than 19 percent of U.S. methane gas production was exported in 2022, up from about 6.5 percent in 2015, according to U.S. Energy Information Administration (EIA) data.

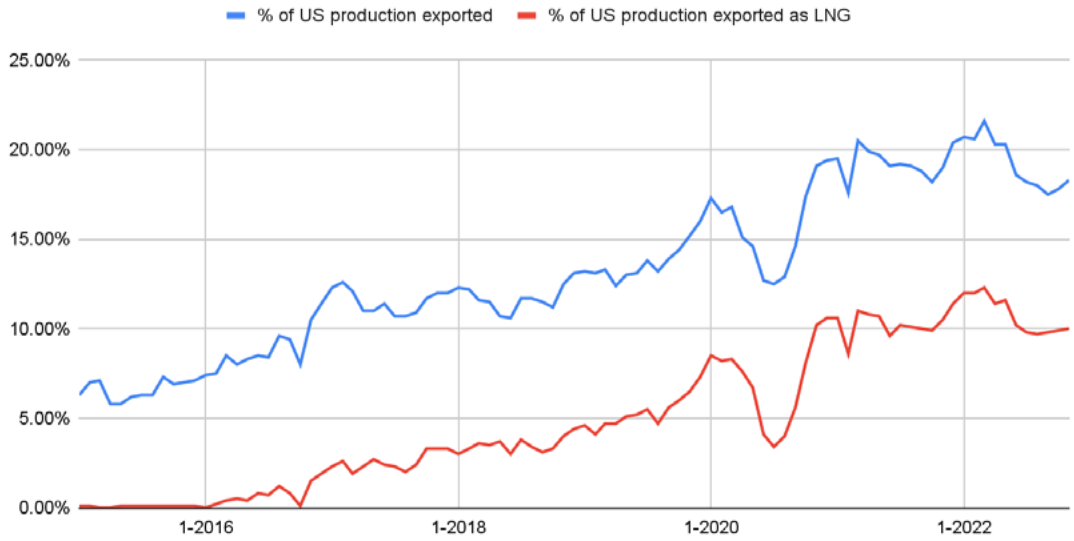
It is incredibly expensive and energy-intensive to freeze methane gas into a liquid, ship it overseas, and turn it back into a gas again. The upfront costs are considerable, as well; the Plaquemines LNG project in Louisiana required $13.2 billion of funding just for the first phase.

This cost presents a dilemma for investors: How can they ensure a project producing dirty fuel will stay in service long enough to break even, given the increased competition fossils face from renewable energy?

Enter long-term contracts. Generally lasting at least 15 years, these supply agreements commit buyers — mostly utilities, chemical manufacturers, energy traders, or Big Oil companies — to pay for a set annual volume of LNG, whether or not they need and receive the shipment. These deals are known in the industry as "take-or-pay" agreements. Projects generally must lock in contracts covering at least 80 percent of their capacity to be considered "fully subscribed" and a safe bet for investors.

Since the Russian invasion of Ukraine, industry executives have been scrambling for contracts that will guarantee their solvency amid efforts to transition away from fossil fuels. Speaking to investors the day the war began last year, Cheniere CEO Jack Fusco predicted the dynamic: "It's tragic what's going on in Eastern Europe...but if anything, these high prices [and] the volatility drive even more energy security and long-term contracting."

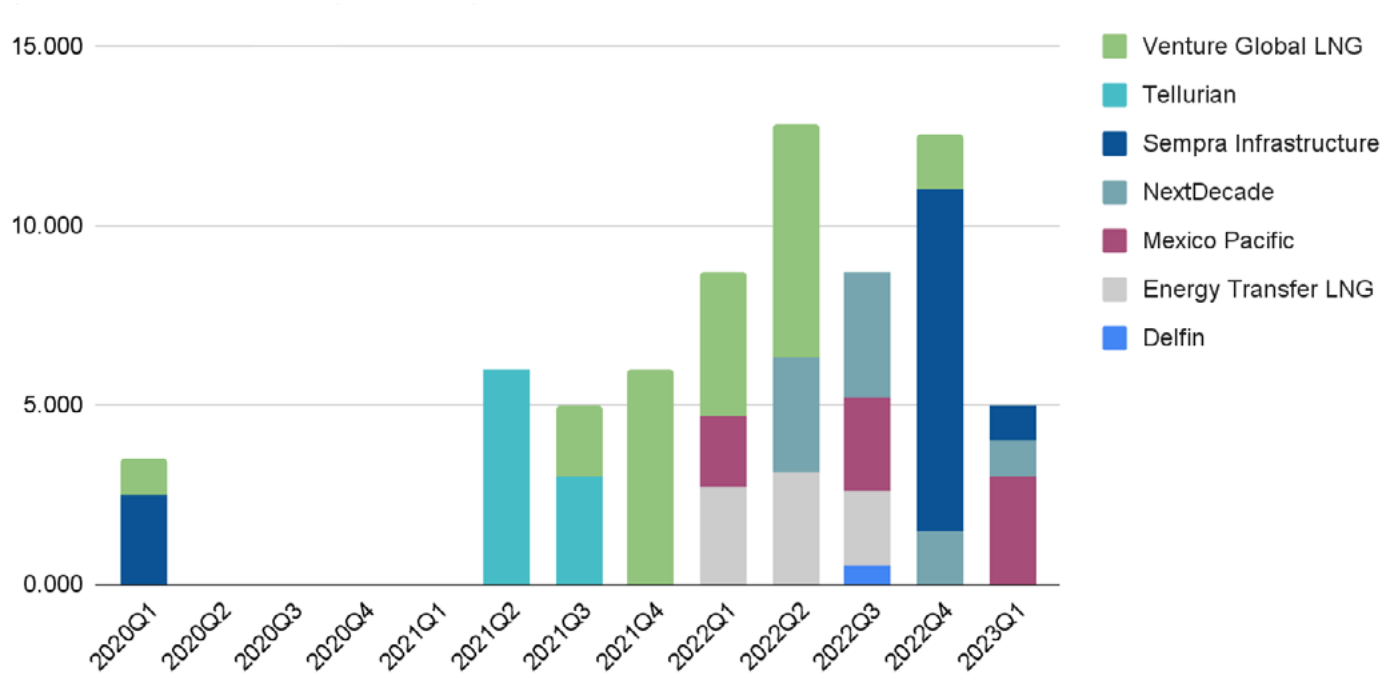
Percentage of US Gas Production Exported, Total and LNG (1/2015-11/2022)



Source: Analysis of Energy Information Administration data

Signed Contracts to Export Liquefied Methane Gas from and Mexico, 2022-Present

(Volume in million tonnes per annum)



The last 12 months have proved him out. The total volume of new long-term contracts signed since the start of the Russian invasion cover more than 58.1 million metric tons per annum (mtpa), more than double the 20.8 million agreed to in 2021 and fifteen times the 3.5 million agreed to in 2020. With the explosion of contracts, export terminals are proceeding more quickly to construction and those that had been stalled are attracting new commercial interest.

When sanctions against Russian gas pushed European price benchmarks even higher than other global prices, U.S. LNG exports were redirected from Asia to Europe. That trend will likely reverse in 2023, many analysts believe. European leaders are focused on accelerating the transition to renewables and reducing demand, making them less keen to sign long-term LNG contracts. The addition of new gas-fired power plants in China and rising gas consumption as China emerges from its zero-COVID lockdown policy points to strong demand from Asia. Meanwhile, LNG exporters have seen their share prices soar while Wall Street and trading profits have surged.

Russia, Ukraine, and Fossil Fuel Diplomacy

Notwithstanding Republican accusations that the Biden Administration is hostile to fossil fuels, prominent administration officials are working closely with industry to devise long-term plans for massive LNG exports. A key Biden administration State Department official Amos Hochstein unapologetically argues for using US LNG as a political cudgel. Speaking on CNBC in March 2022, he touted how American methane gas exports added to European gas stockpiles in anticipation of the Russian invasion. "We are the largest LNG player in the world, and our role is to support our European allies during this time," said Hochstein, who spent the Trump years working at Tellurian, a LNG company that has struggled to obtain financing. After the invasion, Hochstein helped lead the newly established US-EU Energy Security Taskforce. Among its hallmarks: a European commitment to demand at least an additional 50 billion cubic meters of US LNG annually through at least 2030. Speaking at the Atlantic Council last year, Hochstein explicitly tied these commitments to the industry's goals, saying that the new commitments between the US and Europe were meant to, "...allow for those facilities to be financed, so that additional LNG can come on the market sooner rather than later."

The State Department's role in quietly supporting the LNG industry is not well understood, mainly because the agency has resisted disclosing key documents, including Hochstein's calendar, that courts already found are subject to the Freedom of Information Act. Methane gas export companies Cheniere Energy and Freeport LNG have said publicly that they have participated in a task force meeting, but little else is known.

LNG contracting

Since the Russian invasion, two new facilities in the Gulf Coast were greenlit to commence construction by investors: the Venture Global Plaquemines Project in Louisiana and Cheniere's latest expansion of its Corpus Christie facility in Texas. Expected to come online in 2024 and 2025 respectively, the two projects represent a combined 22 mtpa — or about 25 percent to existing US LNG export capacity.

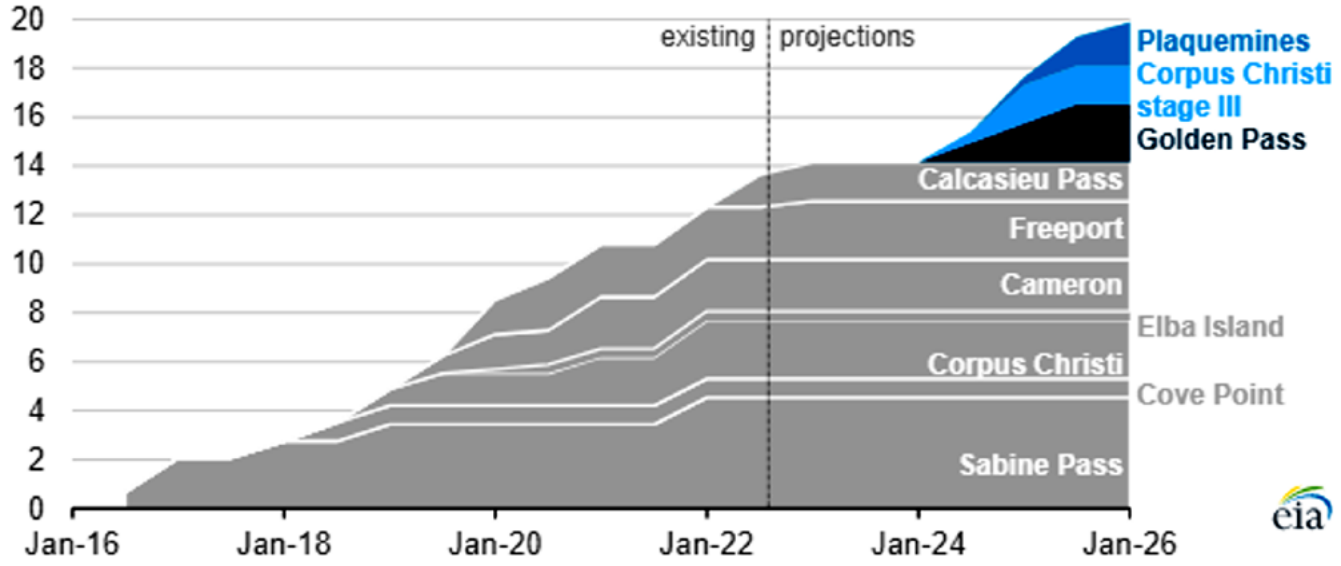
A third facility, Sempra's Port Arthur Phase I in southeast Texas, announced in January 2023 that it had secured contracts covering 80% of its output for the next 20 years, meaning the start of construction is likely imminent. This is a major turnaround for a project that struggled for years to gain traction. After securing necessary federal permits in 2019, a cornerstone contract with Saudi Aramco fell through in 2021. But in a span of just two months between November and January, Port Arthur Phase 1 was able to finalize contracts and become "fully subscribed."

NextDecade Corp's Rio Grande LNG project in Brownsville, Texas, also was revived by the recent surge in LNG demand. Even though the project obtained its permits in 2016 and 2017, over 80 percent of its current contracts were secured after April 2022. The project expects investors' final approval for construction before April 2023. Sixty percent of RioGrande's currently contracted volume is currently locked into 20-year contracts with Asian customers, casting doubt on claims that LNG boosterism reflects support for Europe.

Yet another proposed Gulf Coast terminal, the Commonwealth LNG project in Louisiana, was approved by federal regulators in November 2022 despite concerns about its impact on nearby poor, Black and brown communities. Environmental and community groups are now suing over this decision. Despite the legal uncertainty, the project has already secured a 20-year supply contract covering 30 percent of its annual expected production, or 2.5 mtpa.

liquefied natural gas export projects:
existing and under construction (2016-2025)

(billion cubic feet per day)



The buyer, Woodside Energy Trading Singapore, is a commodity trader active predominantly in the Asia-Pacific region.

Asian markets are already the target customer for multiple LNG export terminal projects being built on Mexico's pacific coast. Exports from these locations have a geographical advantage: They don't have to navigate the busy Panama Canal. The terminals will rely on U.S.-produced gas almost exclusively because Mexico does not even produce enough gas for its domestic needs. Companies developing LNG export terminals have cited strong interest in Asia for their projects under development on Mexico's West Coast.

Sempra Energy, the company behind several projects along Mexico's Pacific coast, is poised to largely rely on gas from the Permian basin in Texas and New Mexico as well as other parts of the western U.S. to ship gas to Asia. Drawing from a familiar political playbook, the company in 2021 hired former Trump Energy Secretary Dan Brouillette to run its newly created Sempra Infrastructure business, which is backed by private equity firm KKR. Sempra has been under fire in California for raising executive pay at its other businesses while consumers pay high home heating bills. On its own website, Sempra subsidiary SoCal Gas says it passes along the cost of gas to customers and "does not profit from the movement of gas commodity prices." However, the company does not mention the role of its corporate sibling, Sempra Infrastructure, in promoting exports of U.S-drilled gas, effectively constraining supply and driving prices higher.

False Narratives: climate, consumer and national security benefits

An all-out lobbying and public relations blitz by Big Oil falsely presents LNG expansion as necessary for Europe and beneficial to the climate, while ignoring the perilous consequences for Americans. Each of these issues in fact presents a strong argument against the further expansion of export infrastructure:

Climate and Environmental Justice Costs

LNG is just another fossil fuel, and an especially dirty one at that. Before it is supercooled into a liquid, gas still must be extracted and transported — messy processes that leak large amounts of methane, a potent short-term greenhouse gas 84 times worse than CO2 over a 20 year timeframe. In fact, within that 20-year window, due to methane leakage and the emissions from cooling and shipping, LNG is little better than coal, a literature review conducted by the Natural Resources Defense Council found.

Industry claims of "carbon neutral LNG" are based on carbon offsets, a notoriously flawed greenwashing tactic that should be met with extreme skepticism. These frameworks allow alleged carbon reductions to be bought and traded in opaque and often scandal-ridden voluntary markets. In reality, 90 percent of the rainforest offsets from the leading market provider are bogus and do not accurately reflect emission reductions, a recent investigation found. Industry promises to install carbon capture and sequestration to reduce direct emissions at LNG facilities are equally problematic. Often, the captured CO2 is simply redeployed to stimulate more oil production as part of "enhanced oil recovery projects." Regardless, more than 90 percent of LNG's lifecycle emissions occur outside of the export terminals themselves.

Bogus promises of "green" LNG conceal export terminals' real harms. Communities of color and those with low household incomes make up about 38 percent of the people living within three miles of proposed gas export facilities. Public health in these hotspot communities is threatened by air pollution from gas processing, including carcinogenic particulates, poisons like benzene and mercury, volatile organic compounds, ammonia, sulfuric acid, sulfur oxides, and nitrogen oxides. One gas export terminal in Corpus Christi routinely exceeds its permitted limits for air pollutants like soot and volatile organic compounds, and it was a leading contributor to the region's air pollution jumping 83% in recent years.

Consumer Costs

These record exports have come with a cost: American households, power producers and industrial consumers of gas are now forced to compete with consumers in Asia and Europe. US benchmark methane gas prices, while still generally lower than those in Europe or Asia, are more influenced by global energy markets, exposing Americans to higher prices and increased volatility.

These high prices are creating significant economic hardship for tens of millions of American families. In the summer of 2022, 26 percent of respondents to a U.S. Census Bureau survey said they had forgone necessities like food or medicine to pay their energy bills sometime during the preceding year. Rising

energy costs — to which record LNG exports are a key contributor — are driving domestic inflation. When polled anonymously, industry executives candidly acknowledge this fact. A September survey by the Federal Reserve Bank of Dallas revealed that nearly 70% of oil and gas executives say the increase in exports to Europe will end "the age of inexpensive U.S. natural gas."

With methane gas representing the largest share of fuel (37%) for electric power generation in the U.S., combined with many families' reliance on methane gas for home heating, the export-driven energy spikes are resulting in profound energy insecurity for millions of Americans. Former Federal Energy Regulatory Commission Chairman Richard Glick described the dynamic with concern in May 2022, saying: "LNG demand is not going to go down. It's going to continue to go up. Obviously, that has a big impact on electricity prices."

A massive explosion at the Freeport LNG export terminal south of Houston in the summer of 2022 made clear the connection between LNG exports and the price paid by consumers. The day after the $14 billion terminal shut down, domestic methane gas prices plunged by 12%. Market-makers understood that eliminating a major consumer of methane gas would leave more supply available for domestic use. After the company said production would not fully resume until later in 2022, prices fell again — and they continued to bounce up and down based on changes in the plant's expected restart date. (The plant remains closed.)

Rising energy costs — stemming in part from record LNG exports — are a major contributor to inflation, creating significant economic hardship for tens of millions of American families. Utility bill burdens are regressive, meaning lower-income families pay larger proportions of their income compared with their more affluent neighbors. This is a pertinent reminder that as fossil fuels are phased out, industry and policymakers must protect ratepayers and other consumers from volatile commodity prices.

Security Costs

Despite dire predictions, Europe has largely escaped an energy crisis. Warm winter weather, aggressive fuel stockpiling and efforts to implement renewables and reduce demand have driven methane gas prices back down to where they were before Russia invaded Ukraine a year ago. However, the continent will need to emphasize energy conservation to navigate the winter of 2023-2024.

The crisis in Europe is fundamentally short-term. Long-term infrastructure investments are the wrong response. An analysis by the Institute for Energy Economics and Financial Analysis found that the U.S. has enough capacity to boost LNG exports to Europe through 2030 without building new infrastructure apart from that already under construction.

Meanwhile, European governments are working to scale back energy consumption, especially by energy-intensive industries, to ensure households retain heat and power over the winter. European governments' climate efforts would require a 40% reduction in gas demand by 2030. "While balances will remain tight for a couple of years, current policies and necessary demand reductions imply that the EU would build substantial natural gas overcapacity by 2030," concluded a study by Bruegel, a think tank based in Brussels.

Policy Recommendations

Since the Russian invasion of Ukraine, the fossil fuel industry and its allies on Capitol Hill have aggressively pushed the Biden administration to support more pipelines and export terminals. The American Petroleum Institute and the U.S. Chamber of Commerce have made LNG expansion a centerpiece of their energy lobbying. EQT, the largest methane gas producer in the US, launched a new "Unleashing LNG" initiative in March 2022. Its stated goal is the quadrupling of export capacity by 2030.

Biden Administration officials and lawmakers face a true test of climate leadership: They must stand up to Big Oil and expose efforts to lock in another generation of emissions and extraction under the guise of LNG boosterism and energy security.

1 President Biden should order the Department of Energy to overhaul the process for granting LNG export permits.

Under the 85-year-old Natural Gas Act, the Energy Department has ample authority to require that LNG companies evaluate the impact of exports on the climate crisis, domestic energy poverty and marginalized communities near export facilities. This requirement impacts exports to countries that do not have free trade agreements with the U.S., which covers about 75 percent of U.S.-produced LNG. Both the Obama and Trump administrations based determinations about the national interest on dubious criteria, assuming that anything boosting oil company profits was good for the country, because some citizens invest in Big Oil. Yet more Americans face direct threat from these terminals than own any stocks at all. The Biden Administration should impose rigorous new standards that put the climate and consumers, not fossil fuel profits, first.

2 President Biden should order the State Department to cease its advocacy for LNG infrastructure at home and abroad.

The State Department must cease acting as an informal fossil fuel matchmaker, bringing together US exporters with European clients. Evidence that European partners are resistant to long-term contracts notwithstanding, former LNG executives like Amos Hochstein should have no role in developing LNG policy — particularly not if he is actively supporting his former industry. It is impossible to reconcile US global climate leadership with a commitment to expanding export infrastructure.

3 President Biden should nominate (and the Senate should confirm) a climate and consumer champion to the vacancy on the Federal Energy Regulatory Commission.

FERC, which regulates interstate methane gas pipelines and LNG export terminals, is theoretically an independent panel whose majority shifts depending on which party controls the White House. An earlier effort by Chairman Glick to include climate concerns in the permitting process in 2021 failed largely because of disapproval from Sen. Joe Manchin. With Manchin's vote no longer decisive, President Biden should nominate a candidate for FERC willing to continue Chairman Glick's climate work while also protecting consumers from market manipulation and frontline communities from reckless permitting decisions.

4 President Biden and Congress must prevent deregulation of LNG exports, including under the bogus mantle of "permitting reform."

The new House Republican majority is pushing Big Oil's agenda, including by advancing a set of bills eliminating the already inadequate oversight of LNG. Two bills, passed by the House Energy and Commerce Committee in February, would eliminate DOE reviews for cross-border pipelines and automatically grant exports a positive national interest determination, even to countries without free trade agreements.

Senator Manchin spent the last months of 2022 pushing for legislation that would have dangerously undermined community input into major infrastructure projects–all under the dubious heading of "permitting reform." It is possible that GOP bills like these could become the basis for a bipartisan deal, potentially putting bedrock laws like the Clean Air Act, the Clean Water Act, and the National Environmental Policy Act in jeopardy. This is not an area in which either Senate Democrats or President Biden should be open to compromise.

Methodology

We tracked a total of 62 new and expanded Sale and Purchase (SPA) agreements executed by US projects and Mexican projects subject to FERC and DOE oversight in 2020, 2021, 2022, and 2023 up to 7 February.

No SPAs shorter than ten years were included in the dataset. Two of the contracts entered into in 2021 by Tellurian's Driftwood project were subsequently terminated by the counterparties. In three cases where contracts allowed for a flexible volume to be delivered, we recorded the maximum. In one case where a flexible volume was replaced with a fixed volume, we counted only the fixed volume to prevent double-counting. We assumed the regional destination of the LNG to be the region of the purchaser, except in cases where the volume is contracted to a portfolio or other global commodity trader. In instances where a single SPA includes shipments from multiple projects, they are highlighted in the chart below in yellow. Expansions of existing contracts are highlighted in blue.

For total existing export capacity, we relied on EIA data for baseload as opposed to peak capacity, corrected to include the uprating Corpus Christi and Sabine Pass, for a total of 92.22 mtpa. This total assumes the full baseload capacity of both Calcasieu and Freeport.

The 40.85 mtpa of under construction capacity refers to the baseload capacity of Plaquemines 1 (12 mtpa), Corpus Christi Stage 3 (10 mtpa), Golden Pass (15.6 mtpa), and Energia Costa Azul (3.25 mtpa). The nine unbuilt facilities that signed contracts in 2022 but which have not yet reached FID are: Port Arthur Phase 1 (13.5 mtpa), Plaquemines Phase 2 (6.7 mtpa), Lake Charles (16.5 mtpa), CP2 (10 mtpa), Delfin (3.5 mtpa), Commonwealth (8.4), Rio Grande (17.6 mtpa), Mexico Pacific (9.4 mtpa), and Corpus Christi 4 (3.28)--for a total of 88.9 mtpa. This total reflects the assumption that the Rio Grande project will proceed with only three trains.

The estimates for the total potential carbon emissions use the same methodology as the Sierra Club LNG Tracker project and assume a global warming potential of 20-years, factoring in upstream methane leakage, liquefaction, shipping, regasification, and combustion as electricity. The carbon equivalencies from coal plants come from the EPA Greenhouse Gas Equivalencies Calculator.

Appendix

Long-Term Liquefied Methane Contracts from U.S and Mexico Pacific Coast, 2020-present

Buyer	Destination	Seller	Origin Facility	Volume (million tonnes per annum)	Years	Announcement Date
EDF	Europe	Venture Global LNG	Plaquemines Phase 1	1	20	25-February-2020
Total Gas & Power Asia	Asia-Pacific	Sempra Infrastructure	Energia Costa Azul Liquefaction (Baja California, Mexico)	1.7	20	30-April-2020
Mitsui	Asia-Pacific	Sempra Infrastructure	Energia Costa Azul Liquefaction (Baja California, Mexico)	0.8	20	30-April-2020
Gunvor	Portfolio	Tellurian	Driftwood	3	10	27-May-2021
Vitol	Portfolio	Tellurian	Driftwood	3	10	3-June-2021
Engie	Europe	Cheniere	Cheniere Marketing/ Flexible	0.4-1.2[1]	11	23-June-2021
Shell	Portfolio	Tellurian	Driftwood	2	10	3-August-2021
Shell	Portfolio	Tellurian	Driftwood	1	10	3-August-2021
PGNiG	Europe	Venture Global LNG	Plaquemines Phase 1	1.5	20	2-September-2021
PGNiG	Europe	Venture Global LNG	Calcasieu	0.5	20	2-September-2021
ENN	Asia-Pacific	Cheniere	Cheniere Marketing/ Flexible	0.9	13	11-October-2021
Glencore	Portfolio	Cheniere	Cheniere Marketing/ Flexible	0.8	13	25-October-2021
China Petroleum and Chemical Corp (Sinopec)	Asia-Pacific	Venture Global LNG	Plaquemines Phase 1	1.2	20	4-November-2021
China Petroleum and Chemical Corp (Sinopec)	Asia-Pacific	Venture Global LNG	Plaquemines Phase 1	2.8	20	4-November-2021
Sinochem	Asia-Pacific	Cheniere	Corpus Christi Phase 3	0.9	17.5	5-November-2021
Sinochem	Asia-Pacific	Cheniere	Cheniere Marketing/ Flexible	0.9	17.5	5-November-2021
Foran Energy Group	Asia-Pacific	Cheniere	Cheniere Marketing/ Flexible	0.3	20	24-November-2021
CNOOC	Asia-Pacific	Venture Global LNG	Plaquemines Phase 1	2	20	9-December-2021
Shell	Portfolio	Venture Global LNG	Plaquemines Phase 1	2	20	7-March-2022
Engie	Europe	Cheniere	Corpus Christi 1-3	0.9	20	9-March-2022
NFE North Trading	Portfolio	Venture Global LNG	Plaquemines Phase 2	1	20	16-March-2022
NFE North Energy	Portfolio	Venture Global LNG	CP2	1	20	16-March-2022

1 This 2021 contract between Engie and Cheniere with a variable volume was subsequently updated and replaced in March 2022 with a fixed volume contract. This was the only instance in the data set where a large range of possible volumes was replaced with a single fixed volume. To avoid double-counting, only the second long-term contract from March 2022 is reflected in the annual totals.

Buyer	Destination	Seller	Origin Facility	Volume (million tonnes per annum)	Years	Announcement Date
ENN NG	Asia-Pacific	Energy Transfer LNG	Lake Charles LNG	1.8	20	29-March-2022
ENN Energy	Asia-Pacific	Energy Transfer LNG	Lake Charles LNG	0.9	20	29-March-2022
Guangzhou Development Group	Asia-Pacific	Mexico Pacific	Mexico Pacific (Puerto Libertad, Sonora, Mexico)	2	20	1-April-2022
ENN LNG (Singapore)	Asia-Pacific	NextDecade	Rio Grande	1.5	20	6-April-2022
Petronos	Asia-Pacific	Venture Global LNG	Plaquemines Phase 2	1	20	29-April-2022
Engie	Europe	NextDecade	Rio Grande	1.75	15	2-May-2022
Gunvor	Portfolio	Energy Transfer LNG	Lake Charles LNG	2	20	2-May-2022
SK Gas Trading	Asia-Pacific	Energy Transfer LNG	Lake Charles LNG	0.4	18	3-May-2022
ExxonMobil LNG Asia Pacific	Asia-Pacific	Venture Global LNG	Plaquemines Phase 2	1	20	10-May-2022
ExxonMobil LNG Asia Pacific	Asia-Pacific	Venture Global LNG	CP2	1	20	11-May-2022
POSCO	Asia-Pacific	Cheniere	Corpus Christi Phase 3	0.4	20	25-May-2022
China Gas	Asia-Pacific	Energy Transfer LNG	Lake Charles LNG	0.7	25	5-June-2022
Equinor	Europe	Cheniere	Corpus Christi Phase 3	0.875	15	9-June-2022
Equinor	Europe	Cheniere	Corpus Christi 4	0.875	15	9-June-2022
EnBW	Europe	Venture Global LNG	Plaquemines Phase 2	0.75	20	21-June-2022
EnBW	Europe	Venture Global LNG	CP2	0.75	20	21-June-2022
Chevron	Portfolio	Venture Global LNG	Plaquemines Phase 2	1	20	22-June-2022
Chevron	Portfolio	Venture Global LNG	CP2	1	20	22-June-2022
Chevron	Portfolio	Cheniere	Corpus Christi 4	1	15	22-June-2022
Chevron	Portfolio	Cheniere	Sabine Pass	1	15	22-June-2022
China Gas Hondga Energy	Asia-Pacific	NextDecade	Rio Grande	1	20	5-July-2022
Guangdong Energy Group	Asia-Pacific	NextDecade	Rio Grande	1.5	20	6-July-2022
Shell Eastern Trading	Portfolio	Mexico Pacific	Mexico Pacific (Puerto Libertad, Sonora, Mexico)	2.6	20	12-July-2022
Vitol	Portfolio	Delfin	Delfin	0.5	15	13-July-2022
PetroChina	Asia-Pacific	Cheniere	Corpus Christi 4	0.9	22	20-July-2022
PetroChina	Asia-Pacific	Cheniere	Corpus Christi Phase 3	0.9	24	20-July-2022
PTT	Asia-Pacific	Cheniere	Corpus Christi Phase 3	1	20	22-July-2022
ExxonMobil AsiaPacific	Asia-Pacific	NextDecade	Rio Grande	1	20	27-July-2022
Shell	Portfolio	Energy Transfer LNG	Lake Charles LNG	2.1	20	24-August-2022
Woodside Trading	Asia-Pacific	Commonwealth	Commonwealth	2	20	2-September-2022
Woodside Trading	Asia-Pacific	Commonwealth	Commonwealth	0.5	20	2-September-2022
EnBW	Europe	Venture Global LNG	Plaquemines Phase 2	0.25	20	6-October-2022
EnBW	Europe	Venture Global LNG	CP2	0.25	20	6-October-2022
ConocoPhillips	Portfolio	Sempra Infrastructure	Port Arthur Phase 1	5	20	22-November-2022
Ineos	Europe	Sempra Infrastructure	Port Arthur Phase 1	1.4	20	1-December-2022
Engie	Europe	Sempra Infrastructure	Port Arthur Phase 1	0.875	15	6-December-2022
Galp	Europe	NextDecade	Rio Grande	1	20	20-December-2022

Buyer	Destination	Seller	Origin Facility	Volume (million tonnes per annum)	Years	Announcement Date
Inpex	Asia-Pacific	Venture Global LNG	CP2	1	20	26-December-2022
ENN LNG (Singapore)	Asia-Pacific	NextDecade	Rio Grande	0.5	20	27-December-2022
RWE Supply	Europe	Sempra Infrastructure	Port Arthur Phase 1	2.25	15	28-December-2022
Itochu	Asia-Pacific	NextDecade	Rio Grande	1	15	19-January-2023
PKN Orlen	Europe	Sempra Infrastructure	Port Arthur Phase 1	1	20	25-January-2023
ExxonMobil Asia Pacific	Asia Pacific	Mexico Pacific	Mexico Pacific (Puerto Libertad, Sonora, Mexico)	3	20	7-February-2023
Subtotal 2020 volume				3.5		
Subtotal 2021 volume				20.8		
Subtotal 2022-3 volume				58.125		
Grand total				**82.425**